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UPPER
Unleashing the Potential of Public Transport in Europe

D2.1: User groups' mobility needs, motivations and patterns

WP2 User needs, baselines definition and project requirements

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Author(s)	Organisation
Juan F. Giménez	Instituto de Biomecánica de Valencia (IBV)
Amparo López	Instituto de Biomecánica de Valencia (IBV)
Carol Soriano	Instituto de Biomecánica de Valencia (IBV)

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EU-RES: Classified Information - restraint UE;
EU-CON: Classified Information - confidential UE;
EU-SEC: Classified Information - secret UE

List of abbreviations and acronyms

Abbreviation/Acronym	Meaning
LEV	Light Electric Vehicle
PT	Public transport
VRU	Vulnerable Road User

Abstract

The UPPER project includes a user research component to identify needs and expectations of end users regarding Public Transport (PT), with the aim of identifying keys to tackle the required improvements to increase PT usage. This user research has been performed in two steps: a qualitative research aimed to reveal critical aspects and innovation opportunities in the public transport, and a quantitative research to validate the main findings through a survey. The qualitative research has included interventions with citizens (*Netnography, Experience notebook*), being part of different users' groups employing PT (young, elderly, women, low income, adult with children, functional diversity), and with professionals (mobility agents, social agents). All the UPPER demo sites have participated in this user research, and the survey has been distributed in the nine countries where the sites are located.

The results of each intervention are presented separately, and have been combined to make up cards, presenting the different requirements that diverse user groups have regarding mobility in PT: the mobility maps. A general mobility map of the UPPER project presents the requirements of users from the behavioural change point of view, while the other maps are related to citizens with special needs at risk of exclusion from PT as the main resource to cover their mobility needs.

Keywords

User research, (Public Transport, private transport, Netnography, Delphi, experience notebook, Metro, Subway, Bus, Taxi, Shared bike, Shared LEV, Shared car, young, women, elderly people, low income people, adult with children, functional diversity, persona, mobility maps.

Executive summary

This report presents the results generated in the user research performed within Task 2.1 of the UPPER project.

The user research has been divided in qualitative research and quantitative research. The qualitative research has included three interventions: *Netnography*, Delphi questionnaire, and an Experience Notebook. The *Netnography* was performed by analysing ratings and comments published on different social networks by PT users, in five different cities: València, Ile de France, Rome, Oslo and Manheim. The Delphi questionnaire, split in two intervention rounds, was completed by the mobility agents of the UPPER consortium and professionals working with exclusion risk's groups (social agents) in nine EU countries, i.e. Belgium, France, Germany, Greece, Hungary, Italy, Norway, Spain and Portugal. The Experience Notebook, a questionnaire prepared to report the mobility habits of end users on a daily basis, was filled in by citizens from eight EU counties, i.e. Belgium, France, Germany, Greece, Italy, Norway, Spain and Portugal. These citizens were part of the following user groups: young, elderly, women, adult with children, low income people and people with functional diversities.

The quantitative research included a survey distributed in the nine countries where the UPPER project will implement mobility measures, i.e. Belgium, France, Germany, Greece, Hungary, Italy, Norway, Spain and Portugal. At least 200 users participated per country with a total sample size of 2676 participants.

The document presents separately the results generated in each intervention (3 qualitative and 1 quantitative), introducing the methodology followed in each intervention.

The main findings generated in the user research are wrapped up in a group of cards, named *mobility maps*. A general mobility map of the UPPER project presents the main motivations and expectations regarding the PT of users from the point of view of the behavioural change. A second group of cards presents the features of users' profiles that could be excluded from PT usage if their special needs are not considered.

Table of Contents

1 Introduction

This report presents the work performed by UPPER consortium members from January 2023 to October 2023, to define the users' needs and expectations related to Public Transport (PT). The results presented in the document have been generated in the task 2.1 of the project planning, covering from M1 and M10. The employment of online tools for contacting end users and intermediate users allowed us to perform a user research exercise, which is presented in the following section. In addition, all the consortium members have contributed to the generation of these results, by participating in plenary workshops.

UPPER is an innovation project aimed at implementing mobility measures in ten sites from nine EU countries, to foster sustainable mobility by increasing the use of PT. The project includes a definition of users' requirements and the mapping of citizens' mobility needs, that has been tackled by performing a user research task, focused on identifying key points and critical factors to increase the use of PT.

We have followed a basic strategy to perform this task and achieve our objective, consisting of user observation, collection of users' insights, firstly in an open way, secondly in an addressed way, and finally describing the main characteristics of the citizens groups that employ the PT, by using *Persona technique*[1].

Observation tasks are described in section *2.1*, and the results obtained are presented in section *2.1.2*. The observation was performed by reviewing online chats and social networks, where users rate different transport modes and make comments about their mobility experience, in the cities where they live or they visit as tourists. We collected data from five UPPER's living labs.

In the users' insights collection, we differentiate between end users (citizens moving with PT), and intermediate users (different professionals of the mobility sector and social agents). The methodology applied to get intermediate users' opinions regarding the PT is presented in section *2.2.1*, and results in section *2.2.2*. The method to collect end users' perceptions is presented in section *2.3.1*, and results in section *2.3.2.*

To validate quantitatively the main hypothesis and statements extracted from the qualitative research, we have performed a big survey. More than 2,000 users have participated in the survey, distributed in nine different EU countries. The survey definition is described in section *3.1*, and the results obtained are presented in section *3.2*.

Section *4* presents the descriptions of the different user profiles that employ PT in EU cities, in PERSONA format. These descriptions are the base to map the citizens' mobility needs (mobility maps) and have been created to support the cities in the implementation of the UPPER mobility measures.

In section *5* we discuss about how to interpret the results we have obtained in the different tasks related to the user research, and our conclusions regarding this topic.

[1] https://en.wikipedia.org/wiki/Persona_(user_experience)

2 Qualitative research

User qualitative research aims to understand which are the main factors (positives and negatives) that explain the mobility experience of citizens when employing PT. To understand this experience, its key factors and critical points, we have basically performed two types of interventions: observational interventions and inquire interventions, i.e., interventions including a questionnaire, or a previous script based on hypothesises.

By observing, we intend to learn about the problems positive experiences users have when employing PT to cover their transport needs in their daily life, and the context related to this use. Once we learned about the problems, we directly inquired about the reasons for these problems, and if there are any interventions, new ways of use or even strategies to overcome the failures they suffer when using the PT.

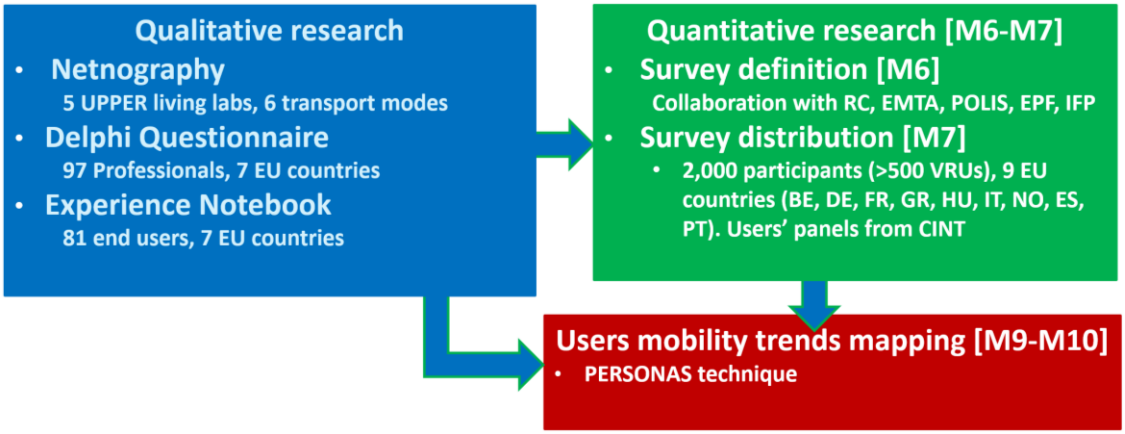


Figure 1: User research performed in UPPER project

Figure 1 presents an overview of the user research activities performed in UPPER project. All these activities are linked, as results generated in the *Qualitative research* have been employed to design the survey related to the *Quantitative research*. Similarly, qualitative and quantitative results have supported the mapping of citizens' mobility needs, by employing PERSONAs technique.

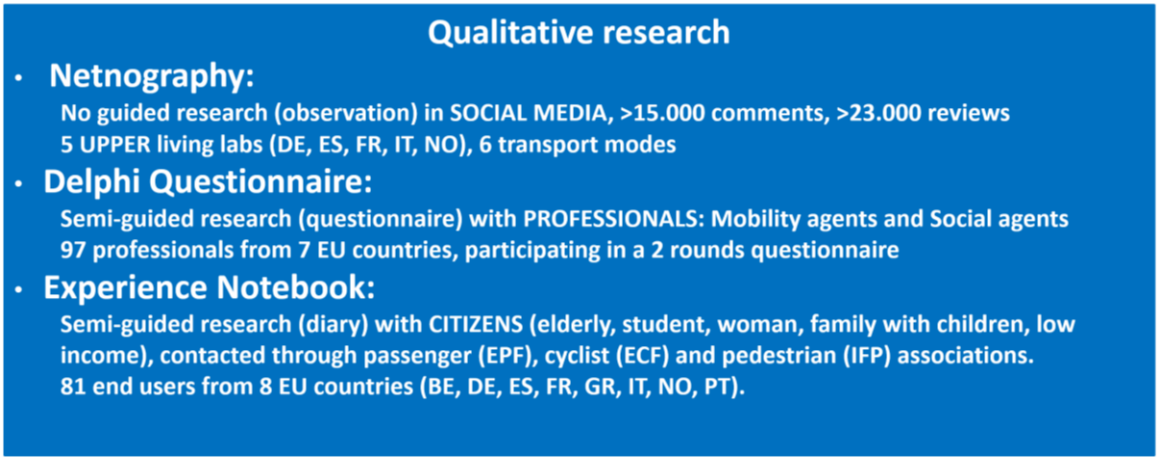


Figure 2: Overview of UPPER qualitative research

The number of users involved in the UPPER qualitative research, a brief profile description and the countries of the participants are presented in *Figure 2*. In the following sections the methodology related to each qualitative intervention and the results generated are presented.

2.1 Qualitative research i: Netnography in the Living Labs

2.1.1 Methodology description

To perform the online observation, we have applied *Netnography*[2]. This is an online research method aimed at understanding social interaction in contemporary digital communications contexts. *Netnography* uses the assessments and comments occurring in social media platforms as data, substituting the traditional in-person observation techniques by interactions and experiences manifesting through digital communications.

TYPE OF TRANSPORT:	SAMPLE: CITIES: VALENCIA (SPAIN)		ILE DE FRANCE (FRANCE)		ROME (ITALY)		OSLO (NORWAY)		MANNHEIM (GERMANY)		TOTAL:	
	Nº Reviews	Nº Comments	Nº Reviews	Nº Comments	Nº Reviews	Nº Comments	Nº Reviews	Nº Comments	Nº Reviews	Nº Comments	Nº Reviews	Nº Comments
a. SHARED BIKE	387	292	1.194	1.049	-	-	49	49	32	19	1.662	1.409
b. BUS	623	363	952	512	1.087	835	251	140	44	18	2.957	1.868
c. SUBWAY /TRAM	847	847	2.923	2.923	2.377	942	459	336	187	101	6.793	5.149
d. TAXI	1.506	910	2.341	1.647	2.126	829	1.251	662	2.095	1.036	9.319	5.084
e. SHARED LEV	309	174	620	410	699	622	85	75	105	105	1.818	1.386
f. SHARED CAR	93	64	237	191	133	127	608	371	109	105	1.180	858
TOTAL:	**3.765**	**2.650**	**8.267**	**6.322**	**6.422**	**3.355**	**2.703**	**1.633**	**2.572**	**1.384**	**23.729**	**15.344**

[2] Robert V. Kozinets (1998),"On Netnography: Initial Reflections on Consumer Research Investigations of Cyberculture", in NA - Advances in Consumer Research Volume 25, eds. Joseph W. Alba & J. Wesley Hutchinson, Provo, UT : Association for Consumer Research, Pages: 366-371

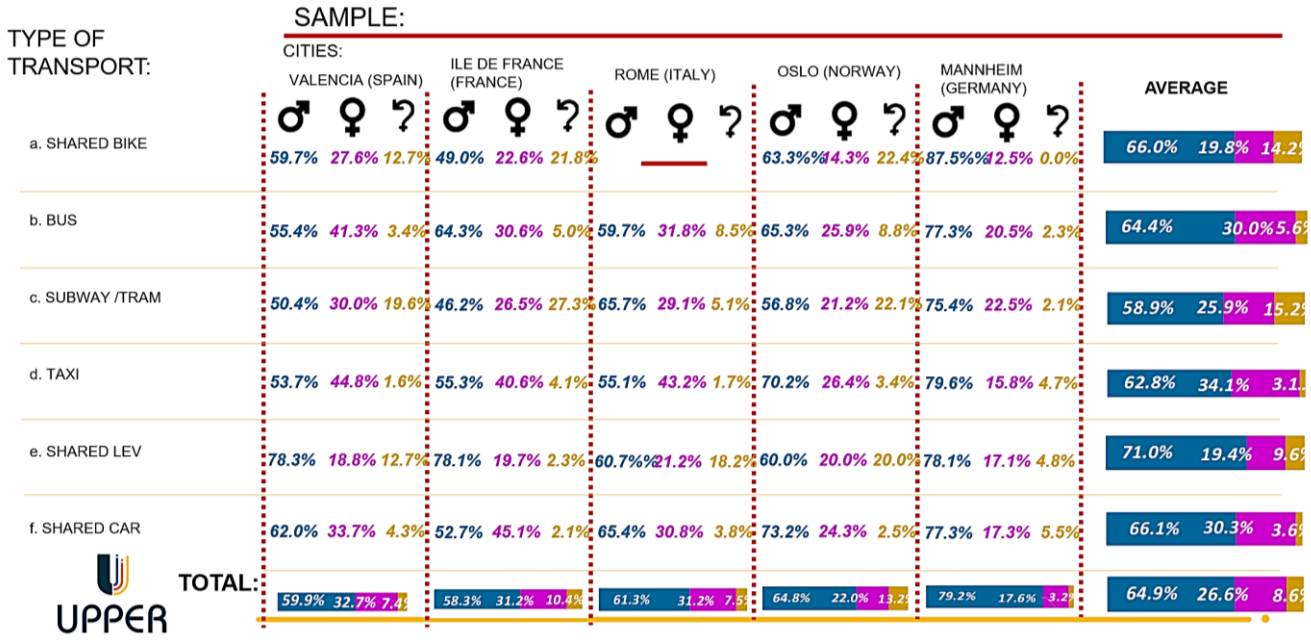


Figure 3: Sample description of the Netnography intervention.

The main aim of this *Netnography* intervention[3] has been to analyze citizen transport (in its different modes), through the analysis of online comments and assessments (ratings). The methodology consisted of analyzing 5 representative cities in EU that participate in the UPPER project as Living Labs, and are: Valencia, Ile de France[4], Rome, Oslo and Mannheim.

The transport modes analyzed have been: Bus, Subway/*Tram*, Taxi, Shared bike, Shared LEV (motorbike and/or e-scooter), and Shared car. The methodological approach followed has included these steps:

1. Web Scraping to identify gender and residence aspects (tourists vs. local residents), using language extraction and gender detection tools (e.g. ScrapeHero or Gender API), and the assessment (extraction of rating).
2. Number of reviews per year, to determine the evolution of usage.
3. Analysis of textual data (natural language processing) represented in:

[3] As other social research tools, *Netnography* is a generic tool to study human behaviour. The application to the study of persons mobility comes from the fact that our interest is to investigate the human behaviour when employing different public transport modes. Some applications of Netnography and natural language processing in persons mobility, can be found here (https://revistas.unal.edu.co/index.php/innovar/article/view/42525, https://link.springer.com/chapter/10.1007/978-3-030-65785-7_15, https://www.researchgate.net/publication/334486943_A_Natural_Language_Processing_Approach_for_Appraisal_of_Passenger_Satisfaction_and_Service_Quality_of_Public_Transportation).

[4] Data for Ille the France was mainly extracted from ratings and comments for Paris transport modes.

a. Sentiment-polarity analysis; classifying the comments as POSITIVE, NEGATIVE, MIXED or NEUTRAL.
b. Analyzing the emotions and the hate/aggressive level of the comments.
c. Word clouds: The word cloud allows us to synthetically view key words, according to their frequency of occurrence.
d. Semantic analysis by manual coding: manual coding consists of reading the set or a representative sample of the answers (around 100). Corresponding topics and categories are chosen, according to meaning at expert level.
e. Extraction of characteristic verbatim: Once the topics of the comments have been identified, the verbatim are extracted to illustrate the topics addressed.

4. Comparison study per transport mode considering aggregated data.
5. Comparison study per transport mode at each city considered in the study.

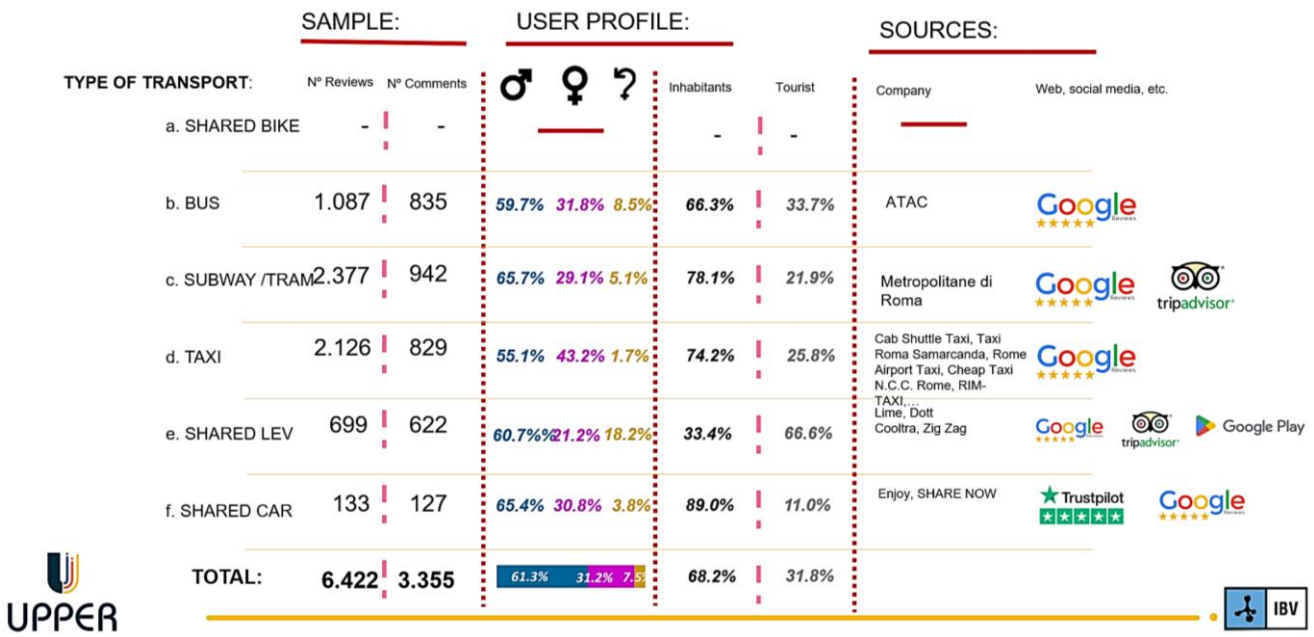


Figure 4: Sample description of Rome, including the data sources

A description of the sample considered in the *Netnography* study is presented in *Figure 3*. The number of reviews is higher than the number of comments, as all the comments are linked to a review, but a review does not imply writing a comment.

As shown in *Figure 4*, *tripadvisor* and *Google reviews* (and also other social networks like *Twitter*) have been the main data sources of the study, although these sources can slightly vary among the five cities included in the study. The data for this study was collected from mid-January 2023 to the end of February 2023.

2.1.2 Results per transport mode

The transport mode rating per city and the comments analysis is presented in *Figure 5*. This figure also shows the aggregated data per transport mode, offering a general rating of different transport modes in five EU cities.

Indeed, *Figure 6* shows the average value obtained for each transport mode, presenting three value levels: 3.5, 3 and 2.5[5]. According to this classification we could state that the best rated transport modes are the *Subway/Tram*, the *Taxi* and the *Shared LEV*. On a second level we can find the *Shared bike* and the *Shared car*, and in third level the *Bus*.

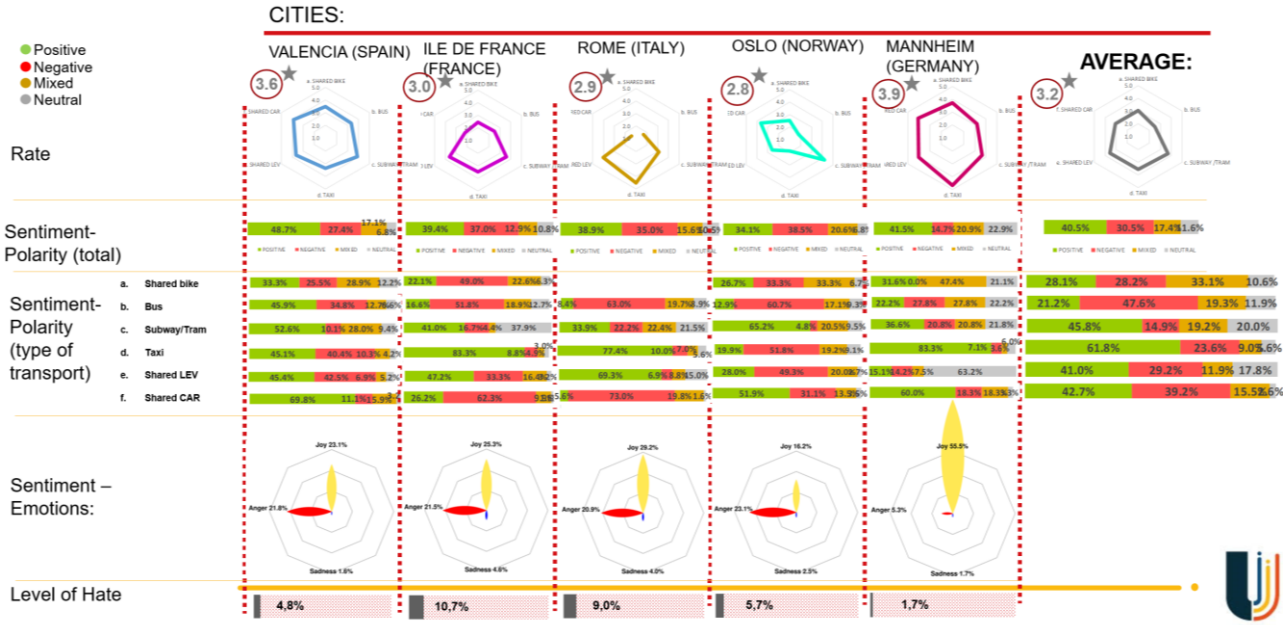


Figure 5: Rating per transport mode and comments analysis[6]

If we consider the results presented in *Figure 6* from the point of view of type of transport, we see that the collective transport modes (Subway/*Tram* and *Bus*) are rated very different(3.7 vs. 2.5, the best rating vs. the worst rating), while the particular/individual transport modes (Taxi, Shared LEV, Shared bike, Shared car) are grouped in two rating levels (Taxi&Shared LEV -> 3.6, Shared bike&Shared car -> 3).

[5] Ratings range from 1 to 5. Users typically rate the transport modes selecting stars: 1 star is the worst assessment, and 5 stars is the best.

[6] To review the figures contained in this graph, please download the complete report at https://www.upperprojecteu.eu/wp-content/uploads/2023/07/UPPER_Netnography_VLC_IdF_ROM_OSL_MAN_Updated.pdf

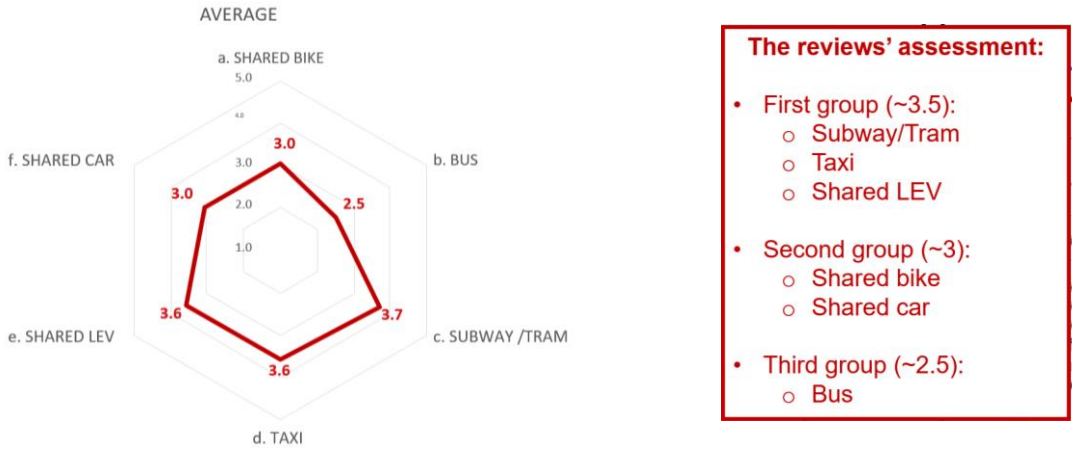


Figure 6: Transport mode rating in five UPPER Living Labs

The comments classification presented in *Figure 5* offers another perspective to enrich the ratings analysis presented in the previous paragraph. Indeed, *Figure 7* shows that *Subway/Tram*, *Taxi*, *Shared LEV* and *Shared car* have obtained more positive comments than negative comments, while for *Bus* and *Shared bike* this ratio changes. On the other hand, the best rating (Subway/*Tram*) has not been obtained by the transport mode with more positive comments, but with the best ratio positive/negative comments (3 for Subway/*Tram* vs. 2.5 for Taxi). So according to this ratio, and considering that positive comments and negative comments are related to fulfilling users' expectations, we get another transport mode classification where *Subway/Tram* and *Taxi* are transport modes that cover reasonably user's expectations and *Shared LEV*, *Shared car*, *Shared bike* and *Bus* do not.

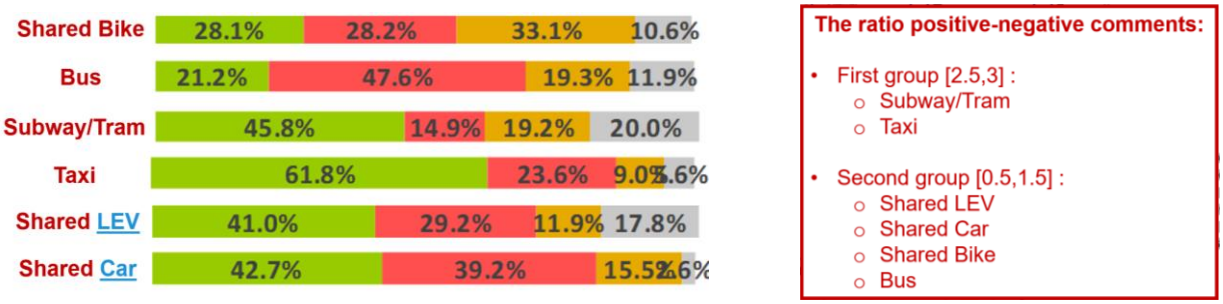


Figure 7: Comments classification for the aggregated data, per transport mode

In order to have a deeper understanding about the particular issues with those transport modes that are part of the second group (*Figure 7*), we can explore what the users are saying when they make positive and negative comments (verbatim analysis). Indeed, *Figure 8* presents the semantic analysis of the comments collected in the five Living Labs for the *Shared car*.

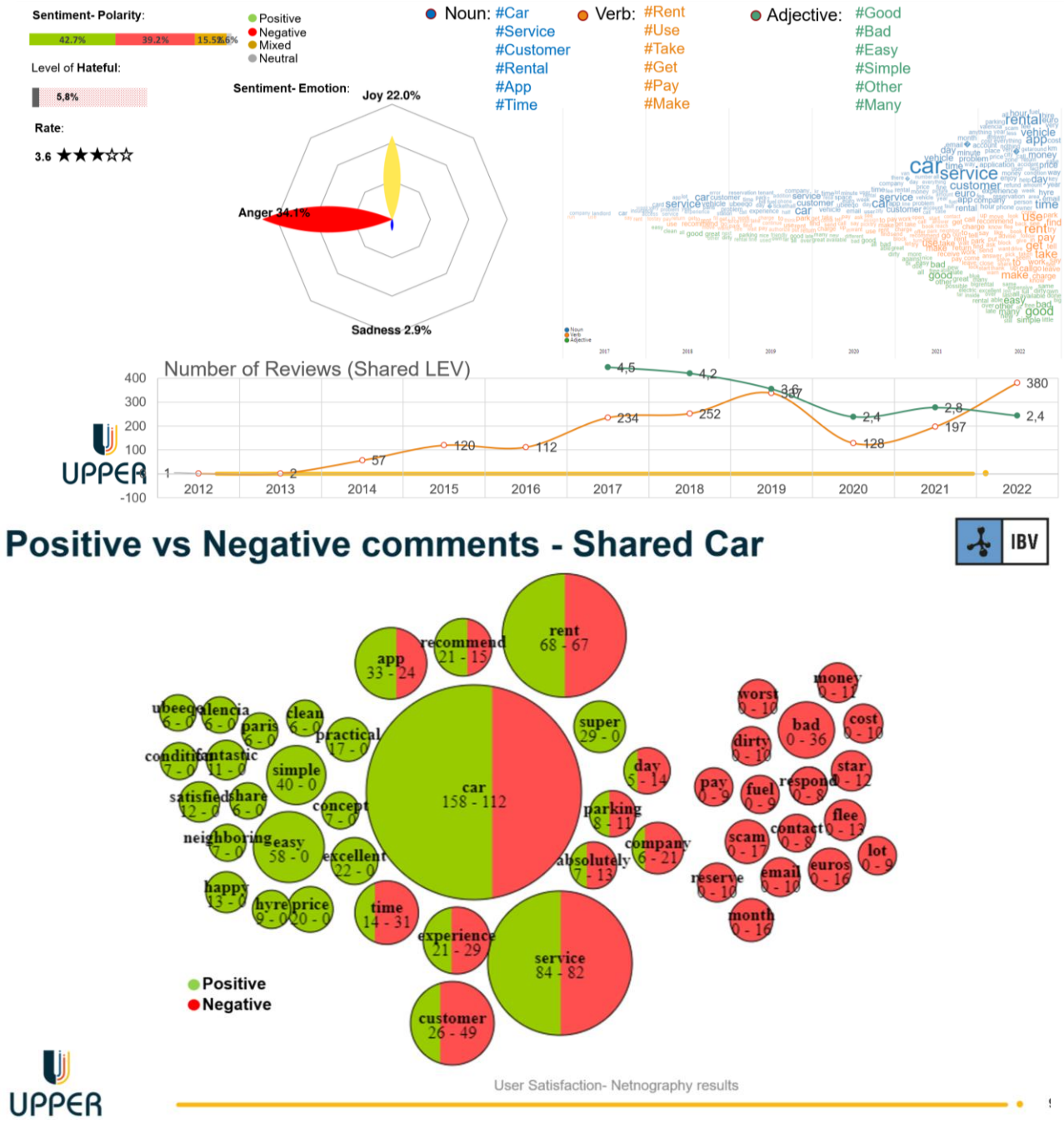
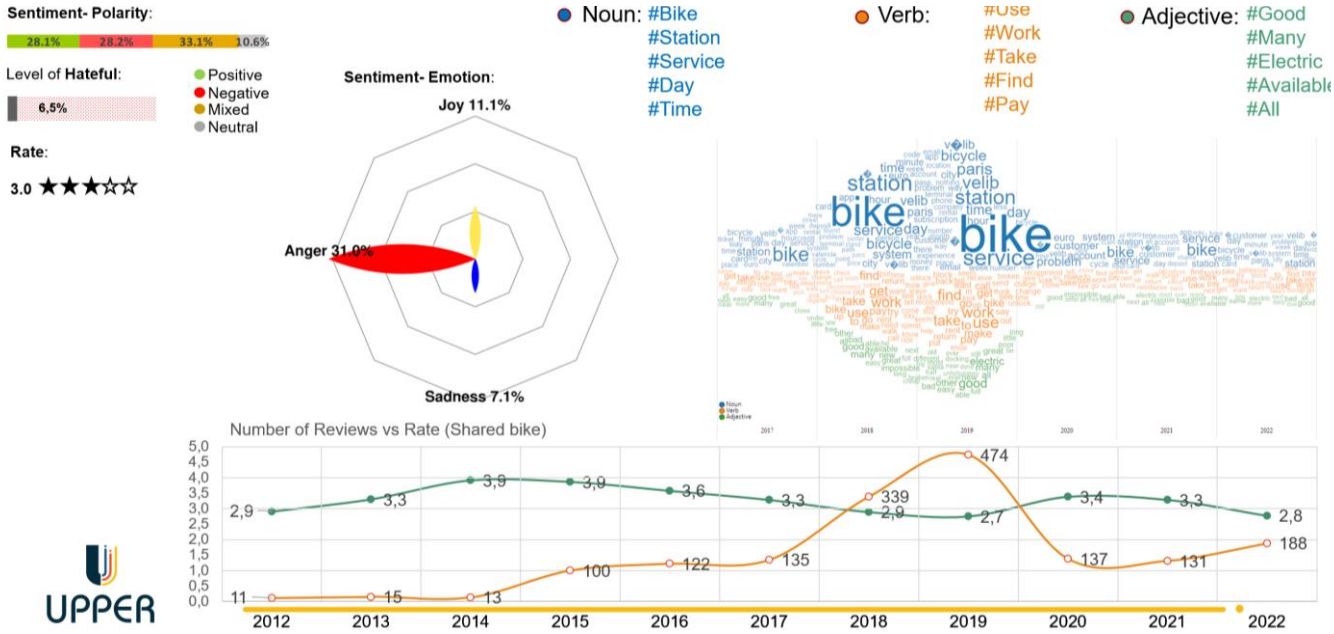


Figure 8: Semantic analysis for the Shared car

The shape of the word cloud reveals the novelty of a system, that had a significative increase after the pandemic. As a working hypothesis, that should be validated in a study that is out of the scope of this research, we have related the increase of comments about a transport mode, with the increase of the use of this transport mode. On the other hand, the comments are processed by an algorithm that identifies *Sentiment-Polarity* (*Positive-Negative-Mixed-Neutral*) and *Sentiment-Emotion* (*Joy-Anger-Sadness*). For the *Shared car*, the analysis reveals a high percentage of comments related to *joy*.

The bubble graph included in *Figure 8* presents the terms related to positive comments and negative comments for the *Shared car*. The terms *bad*, *cost* and *dirty* used exclusively in negative comments, jointly with *car, service*, *rent* and *customer* (employed in both, positive and negative comments), suggest that users consider the cars are not in good condition, the customer service in not working properly, and that in general this transport mode is expensive.



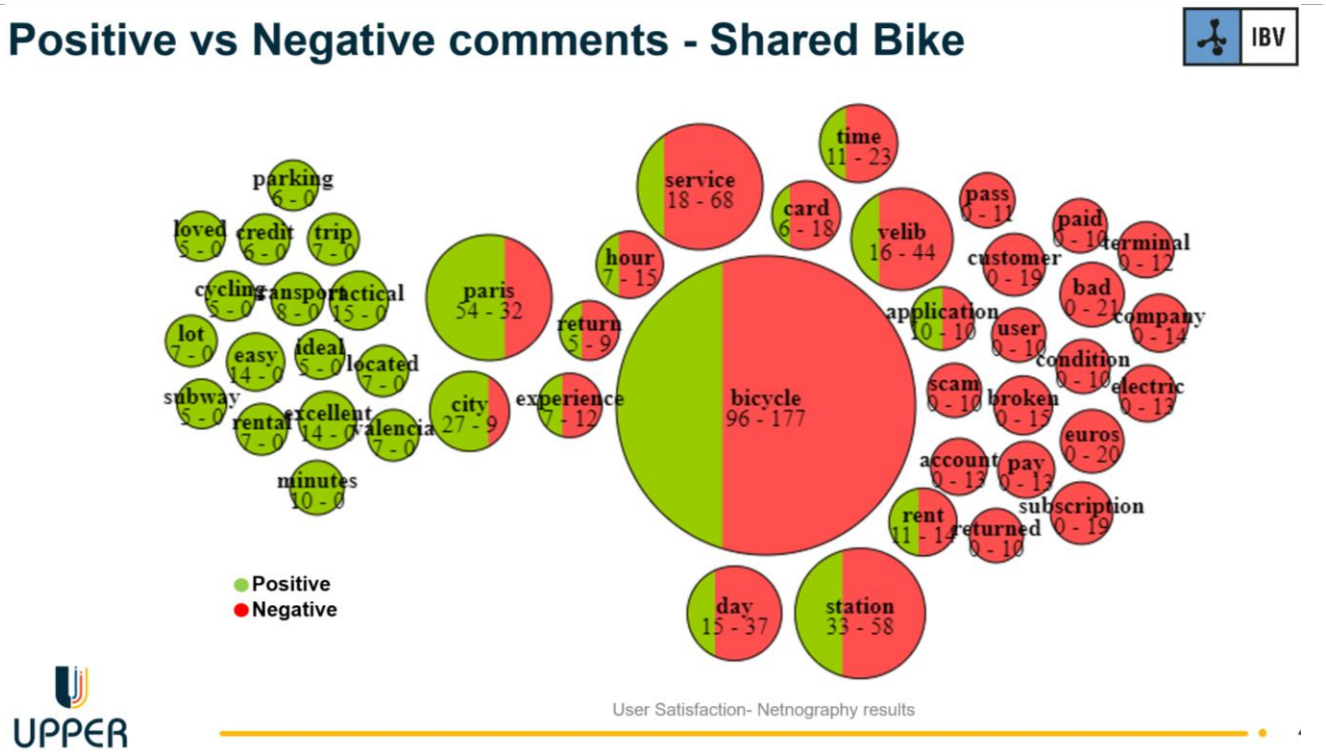
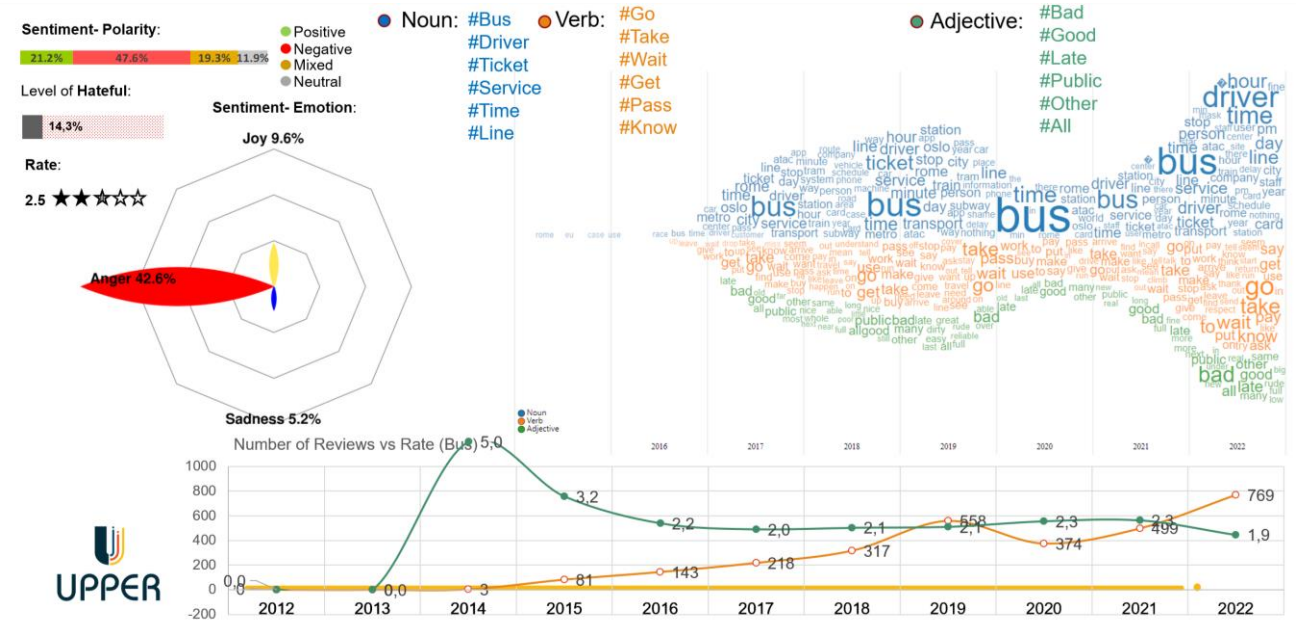


Figure 9: Semantic analysis for the Shared bike

Figure 9 presents the semantic analysis of the comments collected in the five Living Labs for the *Shared bike*. The shape of the word cloud suggests the use of the service has not recovered the pre-pandemic level. Indeed, the word cloud presents a decrease in the number of comments between 2019 and 2020, and the number of comments does not recover the level previous to pandemic. On the other hand, the *Sentiment-Emotion* analysis reveals a low percentage of comments related to *joy*, and a percentage of *anger* comments very similar to the *negative* comments, suggesting that nearly all the negative comments are related to *anger*.

The bubble graph included in *Figure 9* presents the terms related to positive comments and negative comments for the *Shared bike*. The terms *customer*, *terminal*, *broken* and *electric* used exclusively in negative comments, jointly with *bicycle, service*, *station* and *application* (employed in both, positive and negative comments), suggest that users consider bikes and docks are not properly maintained, e-bikes could be an interesting alternative, and the customer service should improve.



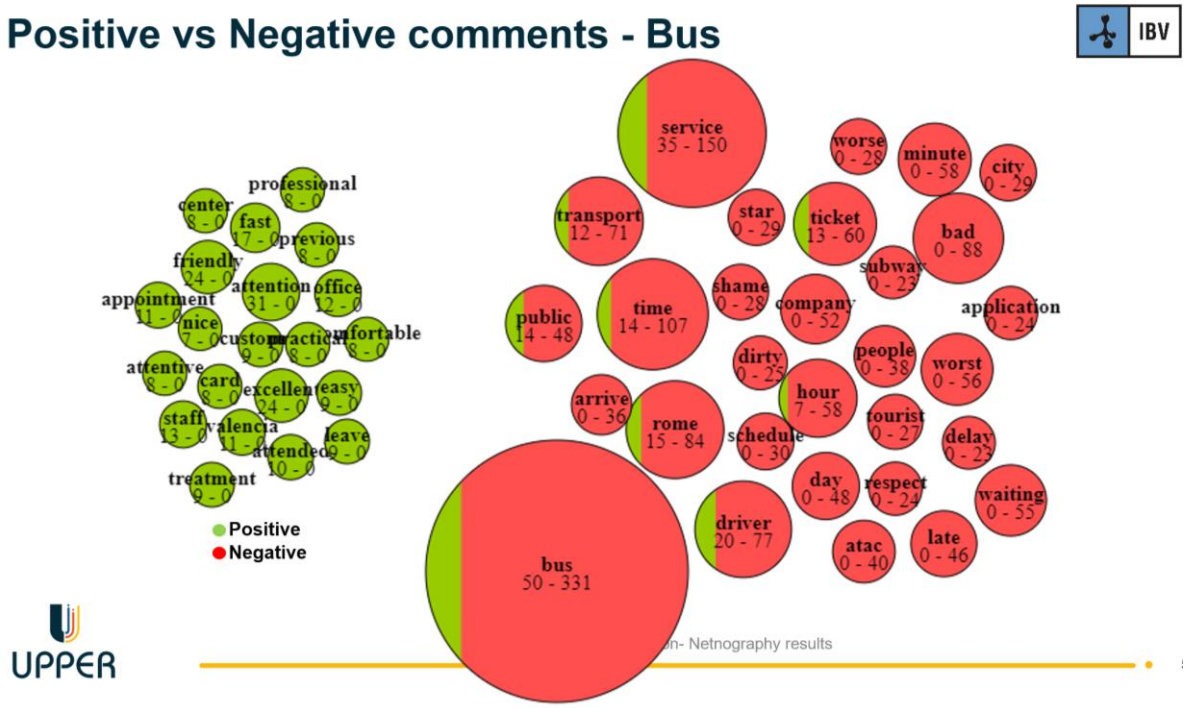


Figure 10: Semantic analysis for the Bus

Figure 10 presents the semantic analysis of the comments collected in the five Living Labs for the *Bus*. The shape of the word cloud suggests a recovery of the service similar to the pre-pandemic level (number of comments decreases in 2020 but increases in 2021, and on onwards). On the other hand, the *Sentiment-Emotion* analysis reveals a low percentage of comments related to *joy*, and a percentage of *anger* comments very similar to the *negative* comments, suggesting that most of the negative comments are related to *anger*.

The bubble graph included in *Figure 10* presents the terms related to positive comments and negative comments for the *Bus*. The terms *waiting*, *minute*, *late* and *delay* used exclusively in negative comments, jointly with *bus, service*, *time* and *driver* (employed in both, positive and negative comments), suggest that service has difficulties to accomplish schedules, and the driver has a high interaction level with users, that most of the times is not pleasant.

Individual public transport vs. collective public transport (I)

- According to the number of reviews, **individual transport** has **grown more after the COVID pandemic** compared to mass public transport.
- There are observed **changes in mobility patterns after the pandemic**: **public mass transport is gradually recovering**, **taxis show a quicker recovery**, shared transport experiences a slower and uneven recovery (**shared bicycles do not recover** and have seen a decline in usage even before the pandemic, they are the oldest service with the most improvement needs). Finally, **motorcycles, electric scooters, and car sharing return to pre-pandemic levels**.
- The **best mass public transport valued is Subway/Tram** and the worst valued is the Bus.
- **For individual transport modes**, **the best valued is the Taxi**, followed by Shared LEV, Shared Car and Shared Bike.
- According to emotions, **Anger and Joy are balanced for the Subway/Tram**, but surprisingly **Taxi users feel Joy** (nearly half of the comments) when they use the service.
- Mass public transport has the lowest average ratings. There is a high correlation between the increase in reviews (usage) and the decrease in average ratings (correlation of -0.7).
- In that line, shared transport is experiencing a decline in satisfaction year after year, regardless of the COVID pandemic, due to wear and lack of improvements made by the companies. There is a negative correlation between usage and satisfaction (-0.4).
- Taxis are the only mode of transport that increases their average rating (satisfaction) after the pandemic. There is a positive correlation (0.5) between the number of reviews (usage) and higher ratings (satisfaction).

Individual public transport vs. collective public transport (II)

Collective public transport

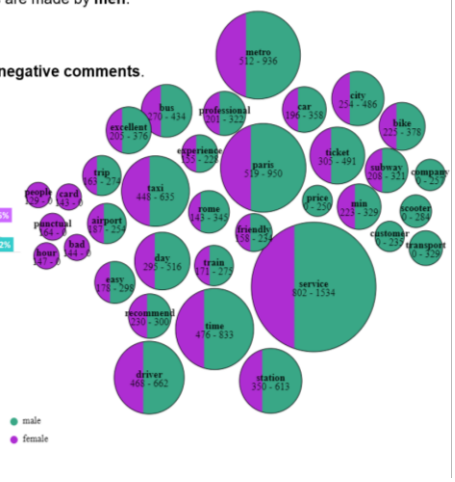
- **Subway/Tram** is positively perceived as **easy, clean, excellent, efficient, fast, network**. On the contrary, **Bus** is negatively perceived as **bad, minute, worst, waiting, late, arrive, schedule**. Considering these terms, Subway/Tram fulfils users' expectations related to trip duration, including waiting time and access, and Bus does not.
- **The main difference between** these two communal transport modes **is the infrastructure** they use; **Subway/Tram has a dedicated one, and the Bus shares the infrastructure with all the other actors integrating the daily traffic**. This difference by itself should mostly explain this result.
- Regarding the **Bus**, the **positive comments** are related to the terms **attention, excellent, friendly, fast, staff, office, appointment**. Some of them (attention, friendly or staff) can be related with the driver, although the term driver has gathered four negative comments per one positive. This result shows an interaction between drivers and customers, that in most situations is difficult.

Individual public transport

- Among individual transport modes, Shared Bike is the only one that is active. Users **value positively the bikes as practical, easy, excellent, transport, trip, rental, ideal, cycling**. On the contrary, the users relate their **negative comments** to terms like **pay/paid, bad, euros, inscription, customer, broken, company, electric, account, terminal, pass, scam, user, returned**, which seem to be related to the **service of hiring the bikes**, and the **bikes maintenance**.
- For **Shared LEV**, the positive comments are related to **excellent, friendly, city, day, staff, experience, recommend, super and practical**, while the **negative comments are** related **to minute, bad, application, phone, euros, card, expensive, company, and finish**. Most of the comments are reported by men, who value the experience of moving by the city with LEV, but have objections about the price and the service.
- **Taxi is positively perceived as professional, excellent, recommend, friendly, perfect, super, pleasant, and nice**. On the contrary, **Shared Car is negatively perceived as bad, app, company, scam, euros, month, recommend, and day**. Basically, both transport modes are cars for private transport, but this result suggest that the service supplied by the taxi driver is not counterbalanced by the better price (**cost is a negative comment for Taxi and price is positive for Shared Car**) and the digital experience offered by the Shared Car.

Analysis of Gender Differences

- According to gender data, there would be a **gender bias** in **shared transport** (Bike+LEV+Car). **67.7%** of comments are made by **men**.
- According to the data, **women** tend to use **bus, taxi, and subway** more, but less **shared transport**.
- **Men** are more **critical** of **public transport** than **women**, with a lower percentage of **positive comments** and more **negative comments**.



- Although there are some differences **in the topics that women and men are addressing when assessing the transport modes**, in general the assessment **in terms of emotions (anger-joy-sadness) is very similar**.
- However, media hate levels are similar for men and women, but are significantly higher for women both on the bus and on the shared bike.
- If we compare the **terms that women and men use** the most, it stands out that **women** name more: **punctual, hour** and **bad**. **Men**, on the other hand, **transport**, **scooter**, **company** and **customer**.

Figure 11: Main conclusions extracted from Netnography study[6]

The results of the UPPER *Netnography* study are available in *ANNEX 1*, and in the UPPER website[6]. The transport modes are analysed per Living Lab, and similar graphs to those presented in *Figure 8*, *Figure 9*, *Figure 10* are presented for each city. *Figure 11* presents the main conclusions extracted from the study. These conclusions are focused on comparing the different transport modes analysed, distinguishing between collective transport modes and individual transport mode, and also presenting a gender analysis of the PT.

2.2 Qualitative research ii: Delphi questionnaire with professionals

2.2.1 Methodology description

To capture the professional perspective when dealing with PT improvement, we have applied the *Delphi methodology*. This methodology foresees the participation of professionals and experts, who answer questions related to the state of the art of a technology, and how this technology is evolving.

Considering that the UPPER consortium includes representatives of the most relevant entities participating in the PT sector (PTOs, PTAs and Road Authorities, Technology developers, Municipalities and end users and professionals' associations), we have worked with these professionals (*mobility agents*), following the Delphi methodology. To enrich the results generated in this qualitative intervention, and with the idea of having the professional perspective of an inclusive PT, we also included the participation of *social agents*, external to the consortium. *Social agents* are professional who work with persons belonging to groups that are in exclusion risk (*Figure 13*).

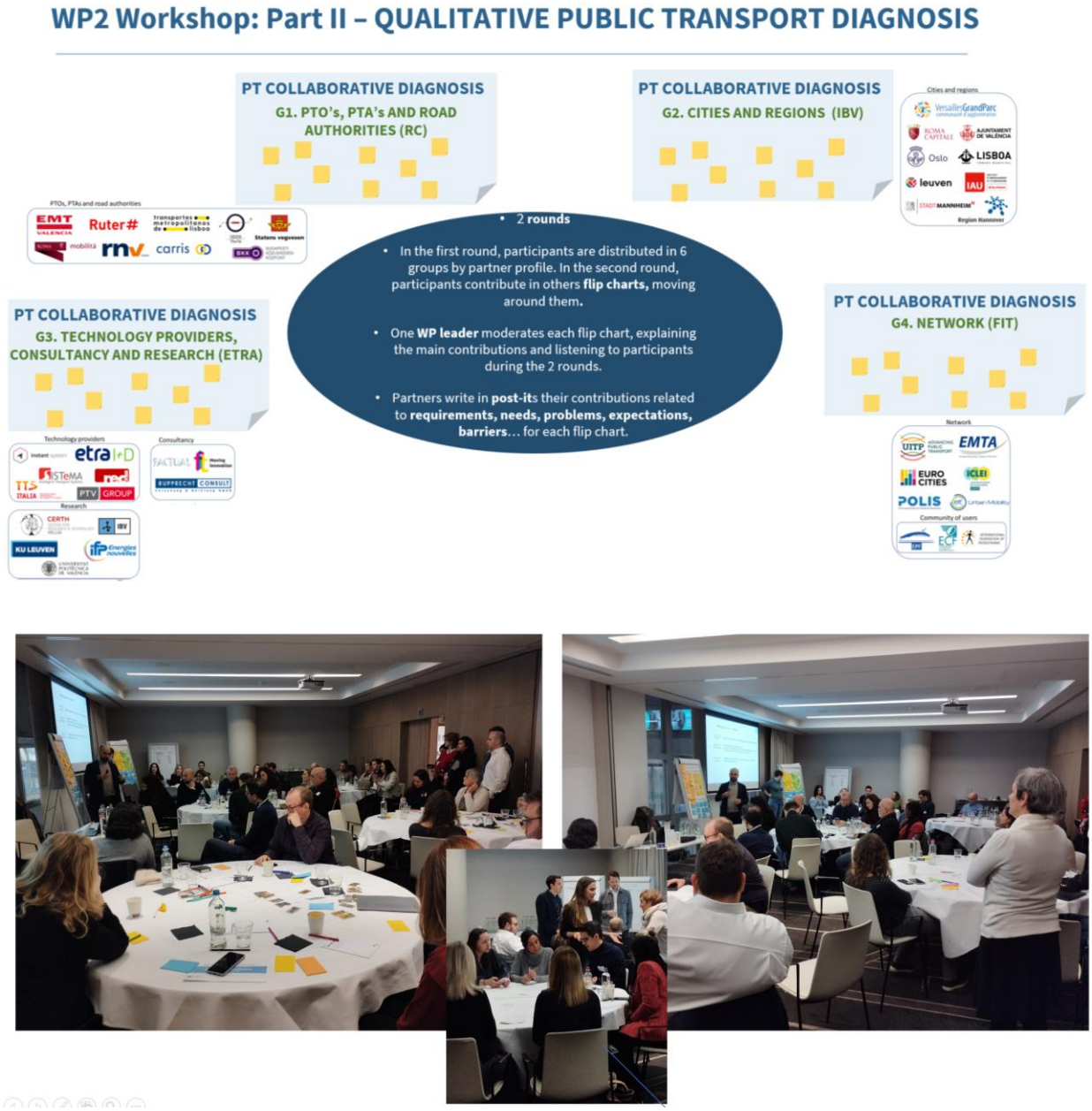


Figure 12: Distribution of tables, and results presentation in the workshop with mobility agents

For this purpose, we proposed the application of the Delphi methodology in two rounds. In the first round we worked separately with the *mobility agents* (consortium members) and with the *social agents* (external to the project). With the mobility agents we performed an in-person workshop during the project *Kick off Meeting*. All the consortium members were distributed in four different tables (approximately ten people per table, *Figure 12*), working on a flip chart, including barriers, strengths and expectations of PT.

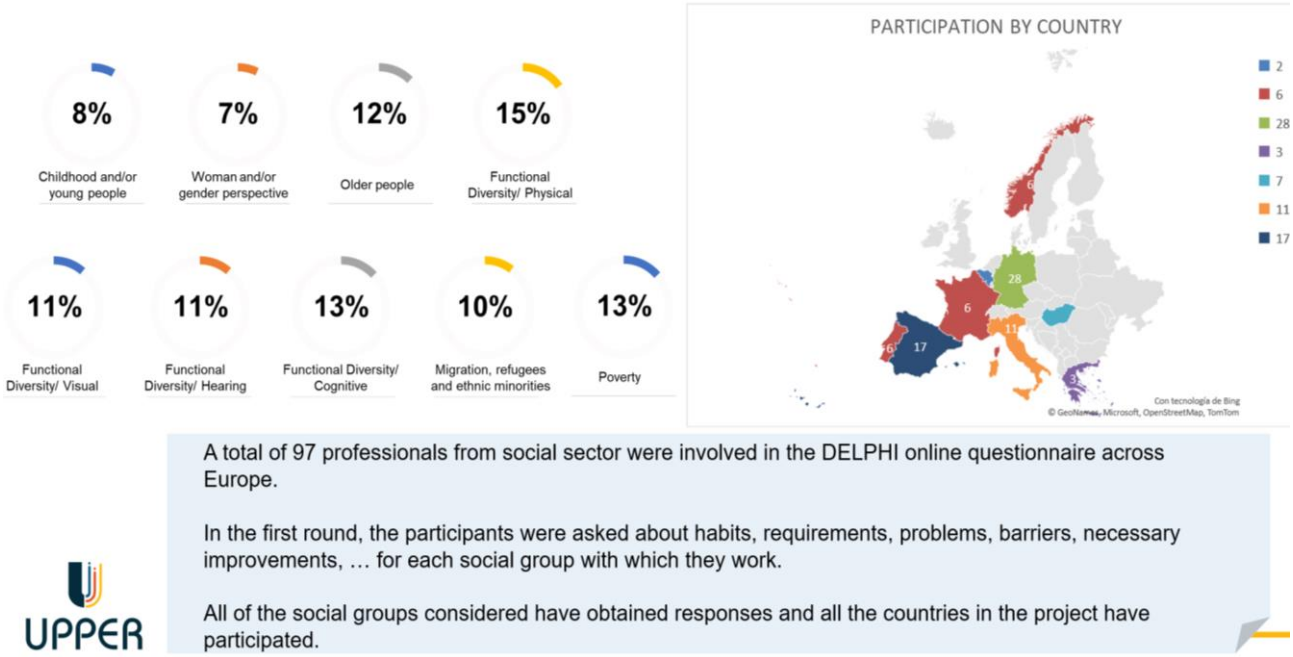


Figure 13: Social agents participating in Delphi's first round[7]

The results generated in the workshop were employed to create an online questionnaire, that was distributed among social agents through the SurveyMonkey online platform[8] (*ANNEX 1*). These social agents were contacted by the municipalities among social entities actives in their cities, so participants were 97 professionals from 7 different EU countries (*Figure 13*).

[7] To review the figures included in the graph, please find the complete results of the Delphi intervention in *ANNEX 4*.

[8] https://www.surveymonkey.com/

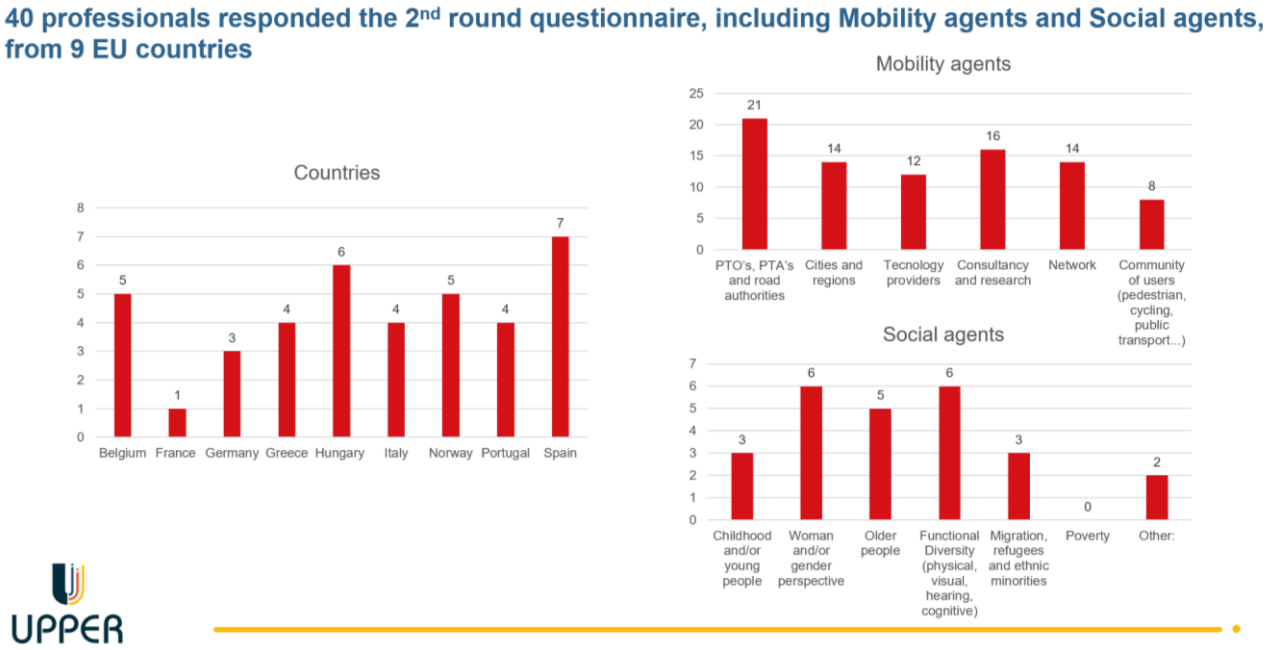


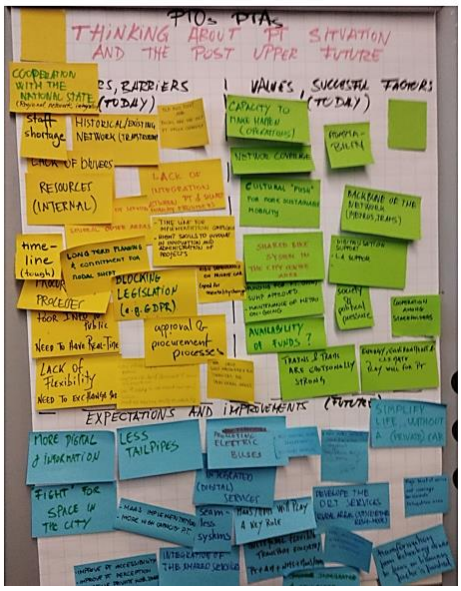
Figure 14: Mobility agents and social agents participating in Delphi's second round

The analysis of the collected data allowed the generation of the second-round questionnaire, distributed again through SurveyMonkey among mobility agents and social agents. A total number of 40 professionals participated in the Delphi's second round (*Figure 2*). The results related to this qualitative intervention are presented in the following section (*ANNEX 3*).

2.2.2 Analysis and results

The flipcharts generated in the workshop attended by the consortium members (mobility agents) were reviewed, extracting all the contributions and putting them together in a digital format. *Figure 15* shows an example of the digital panel generated by PTOs, PTAs and Road authorities.

WP2 Workshop: Part II – CHART G1. PTOs, PTAs, ROAD AUTHORITIES (MODERATED BY RC)



Stoppers: Cooperation with the National State (Regional network integration), Staff shortage, Historical/existing network (tram, trolley), Old bus fleet and buses are the only PT option currently, Lack of drivers/Resources (internal), Lack of integration between PT & Shared mobility providers, Frequency of services in several outer areas, Time-line (tough), Time line for implementation compliance, Right skills to involve in innovation and administration projects, Procurement processes, Long term planning/Commitment for modal shift, Blocking legislation (e.g. GDPR), High dependency on private car (need for mentality change), Approval & procurement processes, Lack of flexibility/Need to exchange nodes, Only low frequency bus services for peri urban areas, Low reliability of vehicles (buses+metro), Low service level (frequent PT service interruption), Low PT supply in suburban semi-peripheral areas, Need to improve multimodality.

Values: Capacity to make happen (operations), New electric buses procurement, Bus fleet renewal, Network coverage, Adaptability, Cultural *push* for more sustainable mobility, Backbone of the network (metros, trams), Shared bike system in the city centre area, Digitalisation support, IA support, Society & Political pressure, An optimum of expected funding for PT (now), SUMP approved, Maintenance of metro ongoing, Availability of funds?, Cooperation among stakeholders, Trains & Trams are emotionally strong, Energy, Environment & climate play well for PT.

Expectations: More digital & information, Less tailpipes, *Fight* for space in the city, MaaS implementation, More high capacity PT, Improve PT accessibility, Improve PT perception, Decrease private mobility share, Better air quality, Less vehicle occupancy, Promoting Electric buses, Better integrated (digital) services, Seamless systems, Integration of the shared services, Maas/MDMS will play a key role, Multimodal flexible transport ecosystem, PT+AM+NMS+MaaS/MDMS, Integrated/Connected modes, New metro system (main line+one extension, New PT options for all users (inclusive), Develop the DRT services (rural areas, outside the rush-moor), New multimodal interchanges in operation, Simplify life without a private car/Better quality of life, High level of service and coverage for the whole metropolitan area, Transformation from technology driven to focus on human factor is finished.

Figure 15: Flip chart generated by one table in the Mobility agents' workshop

Table 1: PT Stoppers classified by categories

	Management · Resources · Multimodality · Quality&Inclusion · Behavioural change · Smart Mobility CATEGORIES
PTOs, PTAs, and Road Authorities	Cooperation with the National State (Regional network integration), Staff shortage, Historical/existing network (tram, trolley), Old bus fleet and buses are the only PT option currently, Lack of drivers/Resources (internal), Lack of integration between PT & Shared mobility providers, Frequency of services in several outer areas, Time-line (tough), Time line for implementation compliance, Right skills to involve in innovation and administration projects, Procurement processes, Long term planning/Commitment for modal shift, Blocking legislation (e.g. GDPR), High dependency on private car (need for mentality change), Approval & procurement processes, Lack of flexibility/Need to exchange nodes, Only low frequency bus services for peri urban areas, Low reliability of vehicles (buses+metro), Low service level (frequent PT service interruption), Low PT supply in suburban semi-peripheral areas, Need to improve multimodality.
Cities and regions	Congestion, PT time table not reliable, Frequency (network problems), Frequencies too low <> users too low (investment), Bike infrastructure: additional points & security, Political will to implement (unpopular measures), Mindset of users must be changed (PT reputational aspects), Complex fare system, PT integration remoted zones, Lack of understanding of customers+data, Proper user data, Public transport information is not integrated (EMT-Fernanbus-FGV), Customer information, Recruiting of drivers (lack of drivers), Not enough drivers.
Technology, Research& Consultancy	Data availability, Data provision from PTOs, Lack of availability in sub-urban areas, Complexity (modelling requires personnel, knowledge, …), Having to create login & username & password for each app, Health restrictions (e.g. COVID-19), Rest on laurels (world is progressing, no change=regression), Least adaptable users are most in need (VRUs, …), Safety perception (health, security, access), Reliability and delays (scheduling, aging assets/fleets), Innovation process (procurement, specification tests/demos).
Network	Lack of data for active modes & some mobility services, Sensitive to cyber-attacks, Lack of safe cycling infrastructure (parking + to go to PT hubs), Lack of reliability (resilience), Social safety/Lack of security, Unknown to non-daily users, Fragmentation of PT competences among different administrations (planning, execution, …), Accessibility in surrounding areas/Intermunicipal PT lines, No clear information in stops/stations, Accessibility public space (many players, operators not aware, municipalities more worries with sojourns than PT), Lack of efficiency, Poor service (lack of dedicated space for PT), Not appropriate communication, Fragmentation of service between (central) city and outskirts of periphery, Payment accessibility (credit cards can be difficult for some people), PT is not always attractive (expensive, bad timetables, …), Too many players but little coordination, Digitalization (assumption), Fragmentation of fares & tickets (not catering for different users, e.g. occasional users).

The contributions generated in the four working groups (*Figure 12*) were put together, conforming three tables, one for each of the topics tackled in the workshop (Stoppers-Values-Expectations). To have all the contributions together allowed us to group them by categories, getting a table as the one shown in

Table 1 where *Stoppers* identified by each mobility agents' group are presented per identified categories (*Management-Resources-Multimodality-Behavioural change-Smart Mobility*)

Table 2: Stopper-Values-Expectations organized by the defined Categories

Stoppers' Categories	Health restrictions (e.g. COVID-19), Sensitive to cyber-attacks
Management	Cooperation with the National State (Regional network integration), Time-line (tough), Time line for implementation compliance, Procurement processes, Blocking legislation (e.g. GDPR), Approval & procurement processes, Having to create login & username & password for each app, Rest on laurels (world is progressing, no change=regression), Innovation process (procurement, specification tests/demos), Fragmentation of PT competences among different administrations (planning, execution, …), Accessibility public space (many players, operators not aware, municipalities more worries with sojourns than PT), Lack of efficiency, Not appropriate communication, Too many players but little coordination, Complex fare system.
Resources	Staff shortage, Historical/existing network (tram, trolley), Old bus fleet and buses are the only PT option currently, Lack of drivers/Resources (internal), Right skills to involve in innovation and administration projects, Lack of flexibility/Need to exchange nodes, Congestion, Frequencies too low <> users too low (investment), Recruiting of drivers (lack of drivers), Not enough drivers, Complexity (modelling requires personnel, knowledge, …), Poor service (lack of dedicated space for PT), .
Multimodality	Lack of integration between PT & Shared mobility providers, Long term planning/Commitment for modal shift, Need to improve multimodality, Bike infrastructure: additional points & security, Lack of data for active modes & some mobility services, Lack of safe cycling infrastructure (parking + to go to PT hubs).
Quality & Inclusion	Frequency of services in several outer areas, Only low frequency bus services for peri urban areas, Low reliability of vehicles (buses+metro), Low service level (frequent PT service interruption), Low PT supply in suburban semi-peripheral areas, PT time table not reliable, Frequency (network problems), PT integration remoted zones, Lack of availability in sub-urban areas, Least adaptable users are most in need (VRUs, …), Safety perception (health, security, access), Reliability and delays (scheduling, aging assets/fleets), Lack of reliability (resilience), Social safety/Lack of security, Unknown to non-daily users, Accessibility in surrounding areas/Intermunicipal PT lines, No clear information in stops/stations, Fragmentation of service between (central) city and outskirts of periphery, Payment accessibility (credit cards can be difficult for some people), PT is not always attractive (expensive, bad timetables, …), Fragmentation of fares & tickets (not catering for different users, e.g. occasional users).
Behavioural change	High dependency on private car (need for mentality change), Political will to implement (unpopular measures), Mindset of users must be changed (PT reputational aspects).
Smart Mobility	Lack of understanding of customers+data, Proper user data, Public transport information is not integrated (EMT-Fernanbus-FGV), Customer information, Data availability, Data provision from PTOs, Digitalization (assumption).
Values' Categories	
Management	Adaptability, Cooperation among stakeholders, Democratizing mobility.
Resources	Capacity to make happen (operations), New electric buses procurement, Bus fleet renewal, Network coverage, Backbone of the network (metros, trams), An optimum of expected funding for PT (now), Maintenance of metro ongoing, Availability of funds?, Energy, PT network, Public transport facilities, Bus company owned by municipality, Low fare or free, Renewed fleet (mostly electric), Decarbonisation of fleets, Green PT + mobility (H_2, e-buses), Incentives (discounts for students, elderly, …), Cheap (for users).
Multimodality	Shared bike system in the city centre area, Efficient connection of PT modes among them + with other (active) modes, Multimodal hubs (including cycling), (good) Service drives demand & reinforces modal shift, Intermodality.
Quality & Inclusion	Good connection between cities, Ticketing integration, Accessibility (pedestrian, PT), PT stops (90% barrier free in Manheim), Serving all users, Intuitive use of system, Accessibility to opportunities, Equity justice/Gender age, Safety/Security, Sustainability, Good service in capital cities or big cities.
Behavioural change	Cultural *push* for more sustainable mobility, Society & Political pressure, SUMP approved, Trains & Trams are emotionally strong, Environment & climate play well for PT, Climate aware (new generation), PT time = usable time (work, phone, read, …), (air) Less pollution/more green/cleaner spaces, Public acceptance: PT is identified as an important asset.
Smart Mobility	Digitalisation support, IA support, Pilot project on demand *Sprinti*, Semaphore coordination + harmonization of PT, Sensorization (app → taxi, persons with reduced mobility), Data availability, Robust evaluation framework (data)/Close the debate/Scale up with public support, Traffic and PT management & data (AI tech).
Expectations' Categories	
Management	Will the public sector host a central booking platform? (if so, huge CO_2 & congestion savings).
Resources	Less tailpipes, *Fight* for space in the city, More high capacity PT, Promoting Electric buses, New metro system (main line+one extension, More money for PT infrastructure, Dedicated lanes on all crucial segments, More infrastructure dedicates (bus lanes), Decarbonised.
Multimodality	Maas/MDMS will play a key role, Multimodal flexible transport ecosystem, PT+AM+NMS+MaaS/MDMS, New multimodal interchanges in operation, Multimodal monthly pass (all integrated with active modes), Change modal split to enhance PT (more users), Integration of different modes, Freedom of choice in different kind of mobility options.
Quality & Inclusion	Improve PT accessibility, New PT options for all users (inclusive), Develop the DRT services (rural areas, outside the rush-moor), High level of service and coverage for the whole metropolitan area, Automated high frequency lines with peripheral hubs, Reduced transportation time, Better connexions reducing trip time, Increase of frequency, Seamless, fast, efficient, pleasant/Connections, Defining mobility as a Right (not just more PT), Better metropolitan transport network, High levels of walkability & accessibility, Comfort, Inviting, Develop PT away from (male) commuter centricity, Good service for surrounding areas, Mobility as a Right for all users (inclusiveness), More inclusive (vulnerable groups), More sustainable, Have a more user-centric approach, Inclusive digital flexible services (not exclusively digital), Accessibility as n°1 priority.
Behavioural change	Improve PT perception, Decrease private mobility share, Better air quality, Less vehicle occupancy, Transformation from technology driven to focus on human factor is finished, Increase PT use by kids and students, PT as a healthy way of getting around the city.
Smart Mobility	More digital & information, MaaS implementation, Better integrated (digital) services, Seamless systems, Integration of the shared services, Integrated/Connected modes, Simplify life without a private car/Better quality of life, Better data analysis + dashboarding, Automated minibuses door to door, Inclusion of multiple modes in one app (MaaS), Door-to-door mobility (family or individual), Interoperability (ticketing, MaaS, PT & micro-providers of mobility & shared mobility), Growing role of DRT & private hire of robotaxi (at least in suburbs and rural), Reliable real-time information, Tools are fitting the needs, Users are at ease with the tools (know how to use the tools, what they can do with them), Information, MaaS, Digitalised (more), Full inclusion of cycling in digital solutions (e.g. route planning, with high quality static + dynamic data).

The next step in our analysis was to reorganize the information included in the tables, presenting the Stoppers-Values-Expectations organized by categories. these are presented in *Table 2*.

The number of contributions collected suggests that *Quality & Inclusion* and *Management* are the main PT barriers today, followed by *Resources* and *Multimodality*. *Behavioural change* and *Smart mobility* seem to be low level barriers. Regarding values, *Resources* is the most relevant strength of PT, while *Behavioural change* of the citizenship and the arriving of new technology related to data seem to be important assets for the PT. Although *Quality & Inclusion* has also many contributions in values, the number of comments related to expectations suggest that this is an important improvement factor for PT. On the other hand, expectations in PT seem to be mainly related to the improvement of the *Quality* of the service and the *Inclusion*, the implementation of smart tools for the mobility, and the *Multimodality*.

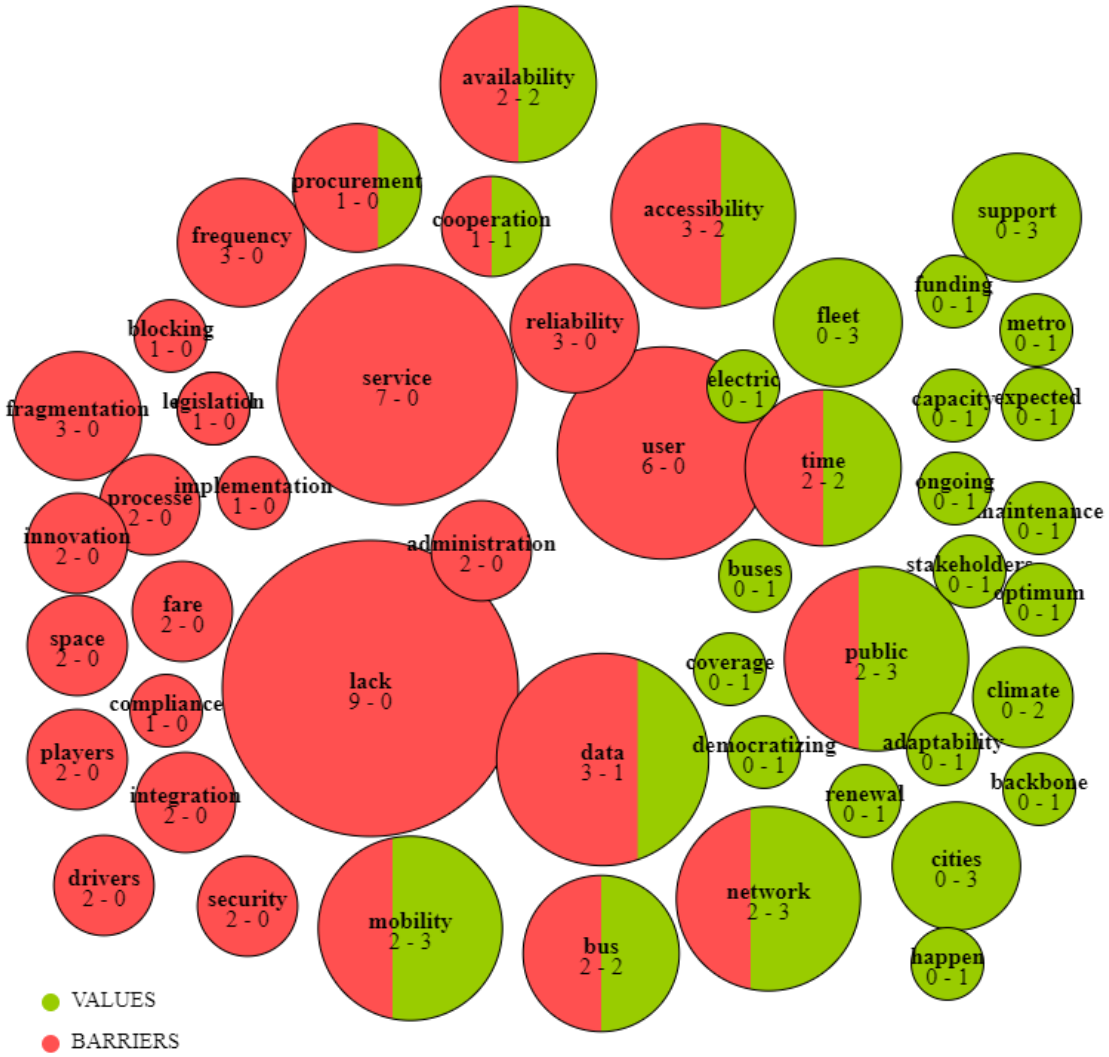


Figure 16: List of terms related to Barriers and Values

Figure 16 shows the list of terms related to Barriers and Values collected in the workshop. While some terms are clearly related to barriers (as *fragmentation*, *lack* or *service*), and others to values (as *climate*, *support* or *fleet*), there are some terms that are considered in both conditions. This double condition could refer to concepts

that in principle are perceived as positive (values), but can be considered as barriers when not properly deployed or implemented.

The data collected with the questionnaire for social agents (*ANNEX 1)* followed an analysis procedure similar to that described in the precedent paragraphs. The participants' contributions were classified in categories, including the professional profile as an additional classifying topic. Categories for social agents were similar to those defined for mobility agents, except *Sensitization and awareness* which refers to the awareness level of citizenship and PT's staff on difficulties and limitations of people with special needs (*ANNEX 4*), when using a collective transport mode.

Table 3: Categories related to Stoppers-Values-Expectations by social agents' profile

STOPPERS	
General barriers	Accessibility, Economic resources, Smart communication, Sensitization and awareness, Quality
Older people	Accessibility, Economic resources, Smart communication, Sensitization and awareness, Quality
Functional Diversity/ Physical	Accessibility, Smart communication, Sensitization and awareness, Quality
Functional Diversity/Visual and hearing	Accessibility, Economic resources, Smart communication, Quality
Functional Diversity/Cognitive	Accessibility, Smart communication, Sensitization and awareness, Quality
Childhood/young people	Accessibility, Economic resources, Smart communication, Sensitization and awareness, Quality
Woman/gender perspective	Quality
Migration, refugees, ethnic minorities and poverty	Economic resources, Smart communication, Sensitization and awareness, Quality
VALUES	
General values	Accessibility, Economic resources, Quality, Environmental impact
Older people	Accessibility, Economic resources, Sensitization and awareness, Quality
Functional Diversity Physical	Accessibility, Economic resources, Quality
Functional Diversity/Visual and hearing	Accessibility, Smart communication
Functional Diversity/ Cognitive	Accessibility
Childhood/young people	Accessibility, Quality
Woman /gender perspective	Accessibility, Economic resources, Quality
Migration, refugees, ethnic minorities and poverty	Accessibility, Economic resources, Sensitization and awareness, Quality
EXPECTATIONS	
General expectations	Accessibility, Economic resources, Sensitization and awareness, Quality, Environmental impact
Older people & Functional Diversity Physical	Accessibility, Economic resources, Smart communication, Sensitization and awareness, Quality, Environmental impact
Functional Diversity/Visual and hearing	Smart communication, Sensitization and awareness, Quality

Functional Diversity/ Cognitive	Smart communication, Sensitization and awareness, Quality
Childhood/young people	Accessibility, Economic resources, Sensitization and awareness, Quality, Environmental impact
Woman /gender perspective	Smart communication, Quality
Migration, refugees, ethnic minorities and poverty	Economic resources, Smart communication, Quality

Table 3 presents the categories related to Stoppers-Values-Expectations per social agent's profile. The terms related to each category are presented in *ANNEX 4* ***¡Error! No se encuentra el origen de la referencia.*** , and the amount of contributions related to each category suggests that the lack of *Accessibility*, *Economic resources and Sensitization and awareness* are the main PT *barriers* today (by frequency and severity). The following level of barriers, *Smart communication* and *Quality* seem to be low level barriers from the point of view of the severity, but with a high degree of improvement. Regarding *values*, all the identified criteria are currently implemented at some level, but they present deficiencies and a high degree of improvement. *Expectations* in PT seem to be mainly related to the improvement of all the categories (*Accessibility*, *Economic resources, Sensitization and awareness, Smart communication and Quality), with Environmental impact* as a relevant aspect to play an important role in the near future. As a conclusion, PT provides to people with special needs *independence*, *well-being*, *increase self-esteem*, *enjoy the city*, *access leisure*, *shopping*, *socialize* and *feel part of society*.

Figure 17: Agreement level in the PT Stoppers identified by Delphi[9]

The second round of the Delphi questionnaire was focused on defining the agreement level with the *Stoppers-Values-Expectations* identified in the previous stage (*ANNEX 3*). *Figure 17* shows that *Management*, *Quality and Inclusion-Accessibility-Quality*, *Resources*, *Multimodality* and *Behavioural change-Sensitization and awareness* are the stoppers that most respondents agreed with.

[9] The respondents of the questionnaire had the results of the Delphi 1st round (2ANNEX 4), so they were asked: 'Please indicate the agreement on the identified Stoppers'.

Figure 18: Agreement level in the PT Values identified by Delphi[10]

Social agents point out an economic barrier for some groups, but Mobility agents do not identify this as a stopper. The *Environmental impact* is considered more a value and an expectation than a barrier. *Smart Mobility* is not a stopper at all; in fact, the lack of data is pointed out as a barrier to develop the potential of smart PT, or even its performance. *Management* means the public administrations must be more efficient managing the existing facilities, but more *Resources*, in terms of infrastructures, are needed.

Multimodality requires appropriate infrastructures, but also to focus on door-to-door mobility. *Quality&Inclusion-Accessibility* means an efficient (in time) transport mode for citizens, secure and easy to access for all vulnerable collectives (inclusive). *Behavioural Change-Sensitization and awareness* are social values, involving different user groups. We need to trigger a change in the citizens that mainly user their private car to move daily, and we also need to raise awareness of PT workers and end users regarding the adjustments needed by certain groups (from women to people with functional diversity) when using PT.

Results shown in *Figure 18* confirm that main values of PT are *Resources*, *Multimodality*, *Quality&Inclusion* and *Smart Mobility*. It is considered that PT attracts important investments, so PT managers have available many *Resources*; this fact is seen as a strength.

Quality&Inclusion means the PT has a good transport network, including adapted access and different services (from ticketing system to facilities for people with special needs). However, accessibility is not as good as it should be.

[10] The respondents of the questionnaire had the results of the Delphi 1st round (2ANNEX 4), so they were asked: 'Please indicate the agreement on the identified Values'.

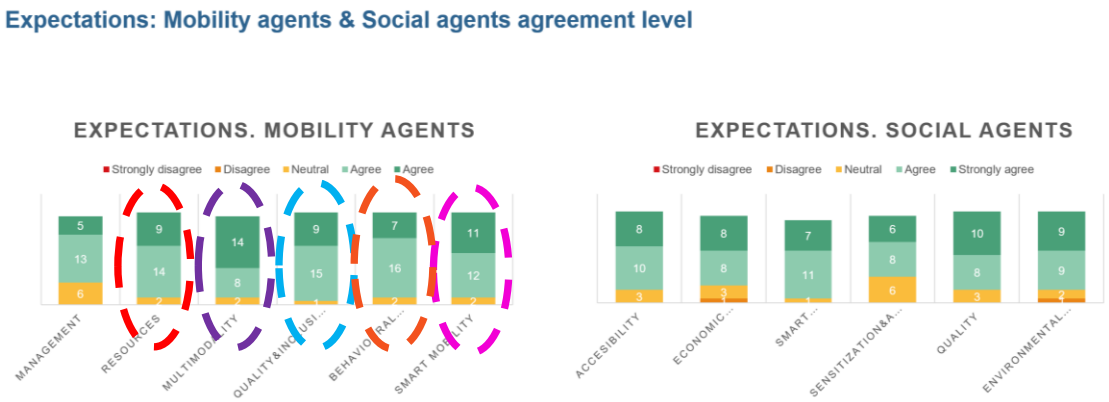


Figure 19: Agreement level in the PT Expectations identified by Delphi

PT is viewed as a driver for multimodal transport, and this is seen as a positive value. On the other hand, *Smart mobility* has the potential to transform PT. Technologies like AI applied to dynamic traffic management, the monitoring of vehicles, or on-demand transport are seen as the future, but their implementation is not trivial.

Sustainability is a relevant value for PT. The *Environmental impact* should be an asset for PT, as people are moving in a more efficient way, generating less emissions.

In general, the results presented in *Figure 19* show that there is potential for PT improvements in all the categories proposed in the study. The *Management*, *Resources*, *Multimodality*, *Quality & Inclusion & Accessibility*, *Behavioural change-Sensitization and awareness*, *Smart Mobility and Communication*, and *Economic resources* are fields where innovation is expected.

Among all these topics, *Multimodality*, *Smart Mobility*, *Quality & Inclusion*, *Resources* and *Behavioural change* concentrate the highest agreement level. *Multimodality* will bring the smooth integration of the different transport modes available in the city. *Smart Mobility* is the facilitator for multimodality, shared mobility or MaaS. It also includes the data provision (*Smart communication*) that users are expecting in order to have a higher level of predictability when using PT.

Quality & Inclusion improvements are related to trip time reduction, MaaR, better metropolitan-rural area connections, comfort, and *Accessibility* for all the collectives as a priority.

Resources implies more infrastructures for PT and equipment that facilitate decarbonization. *Behavioural change* of citizens will support a new mobility, not focused on the private car's use.

2.3 Qualitative research iii: Experience notebook with end users

2.3.1 Methodology description

The objective of this work is to understand and to analyse citizens' transport mode (in its different forms), through the analysis of the users' personal mobility experiences. The end users' profiles considered in this study were elderly people, students, woman, family with children, low-income people and persons with functional diversity, with the aim of exploring requirements for an inclusive PT.

The methodology consisted of analyzing user experiences in different European cities and countries, participating in the UPPER project. The applied technique has been an online notebook, in which users have shared their experiences in their daily mobility. This online notebook has a questionnaire format, uploaded in the SurveyMonkey[8] platform, that was accessible through a link, and it was answered in an anonymous way. The questionnaire is presented in *ANNEX 5*.

To contact citizens in different EU countries, the UPPER project's end user associations (passengers EPF, cyclists ECF and pedestrians IFP) distributed the online questionnaire among their national associates. As a result of this, 72 persons from 8 EU countries (BE, DE, ES, FR, GR, IT, NO, PT,) completed the notebook. *Figure 20* shows the sample size and the user profiles of the participants in this qualitative intervention.

Figure 20: Participants' sample in the Experience Notebook

To analyze the collected information reported in the notebooks, we have followed the subsequent process:

- Extraction of stories and characteristic verbatim: the stories and verbatims allow to illustrate the mobility patterns.
- Comments review and analysis, identifying emotions.
- Semantic analysis: assigning the contents to the chosen topics and categories, according to meaning at expert level.
- Grouping the main findings of the study by user profile, taking the age as main variable (considering that this variable defines the point a person is in its life cycle).
- Comparative analysis and differences according to gender.

2.3.2 Analysis and results

The main features related to the mobility experiences for each user profile were summarized in a graphic format, including both demographic data and mobility data.

Figure 21 presents the main features of the young profile's mobility experiences. 14 participants in the Experience Notebook have been classified under this profile, coming from Belgium, France, Norway and Spain. They mainly live with other persons (friends, partners and relatives), and the sample is gender balanced. The

young people are active in their mobility habits (they walk and move by bike), or use public transport (*Bus* or *Metro*[11]/*Tram*).

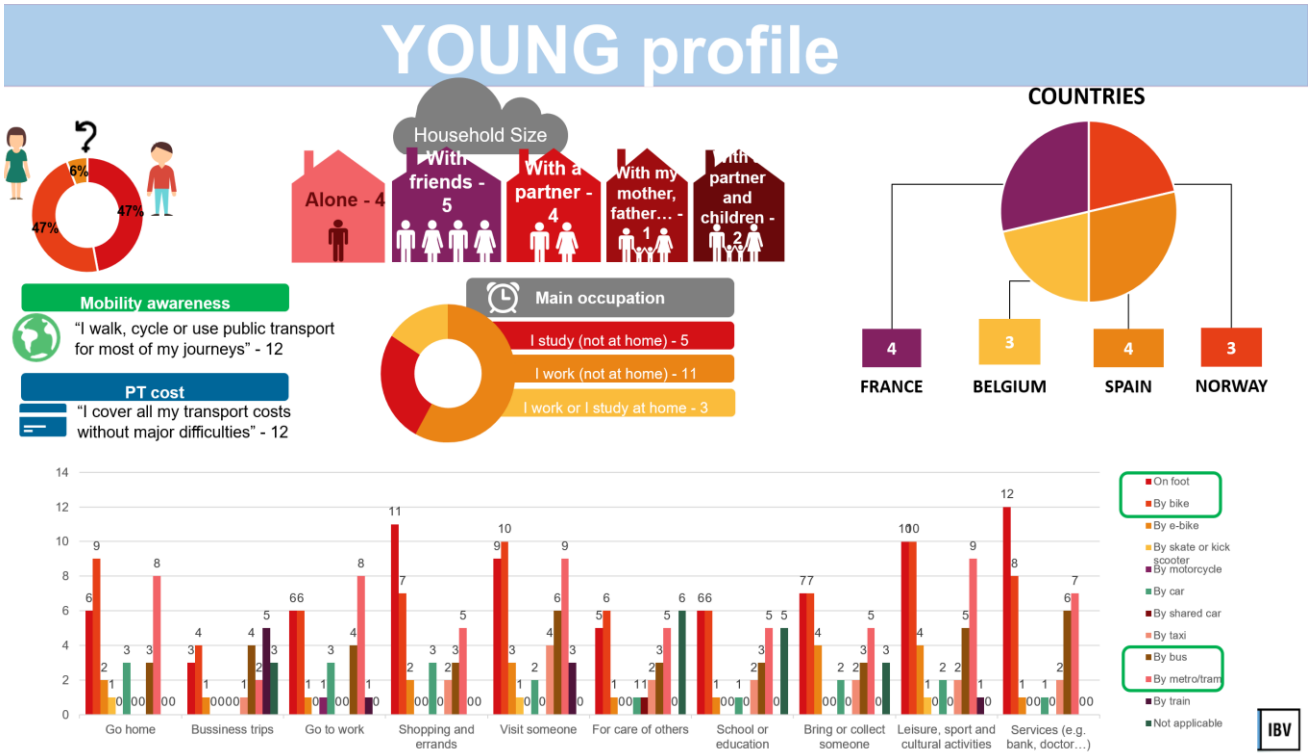


Figure 21: Main features of YOUNG profile's mobility experiences

[11] Across the report, Metro and Subway are employed as synonyms.

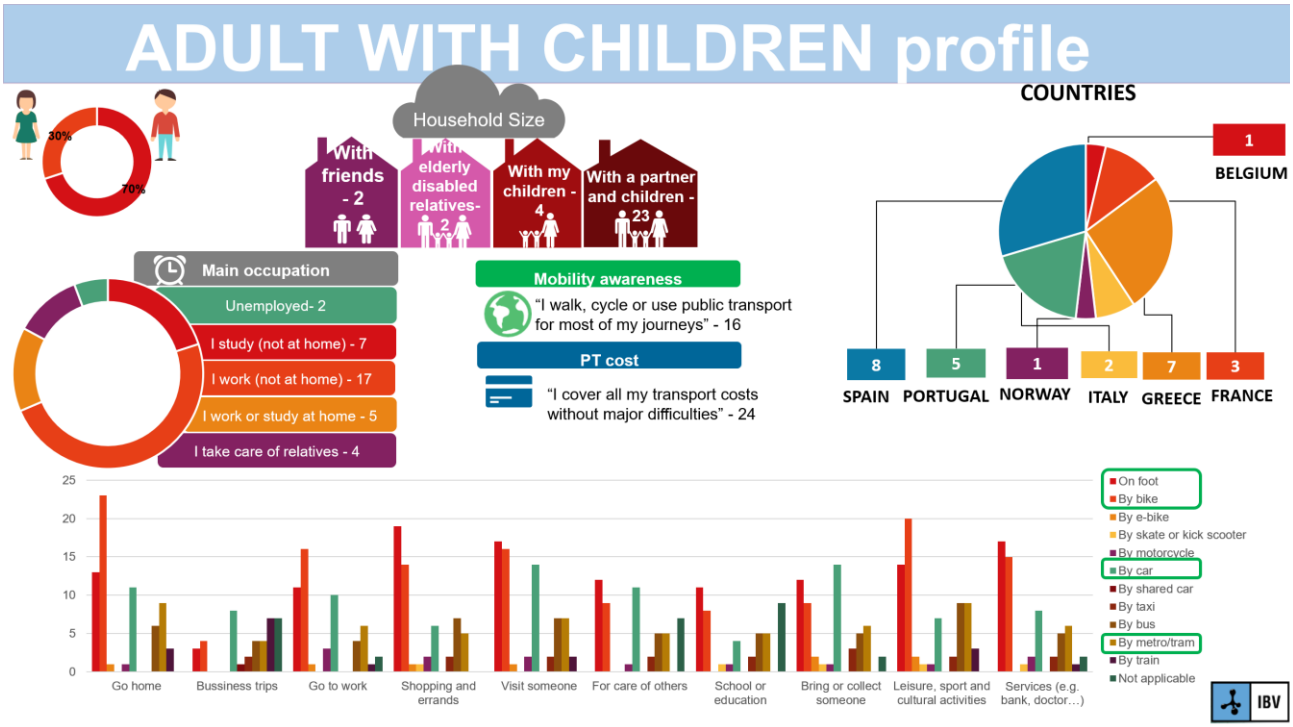


Figure 22: Main features of ADULT WITH CHILDREN's mobility experiences

Figure 22 presents the main features of the adult with children profile's mobility experiences. 27 participants in the Experience Notebook have been classified under this profile, coming from Belgium, France, Greece, Italy, Norway, Portugal and Spain. They mainly live with a partner and their children (family), and the sample is gender unbalanced (30% women and 70% men). The adults with children are active in their mobility habits (they walk and move by bike), use public transport (*Metro*/*Tram*), but they also use (private) car.

Figure 23 presents the main features of the women profile's mobility experiences. 30 participants in the Experience Notebook have been classified under this profile, coming from Belgium, France, Germany, Greece, Italy, Norway, Portugal and Spain. They mainly live with a partner, with their children or alone. The women are active in their mobility habits (they walk and move by bike), use public transport (*Metro*/*Tram*), but they also use (private) car.

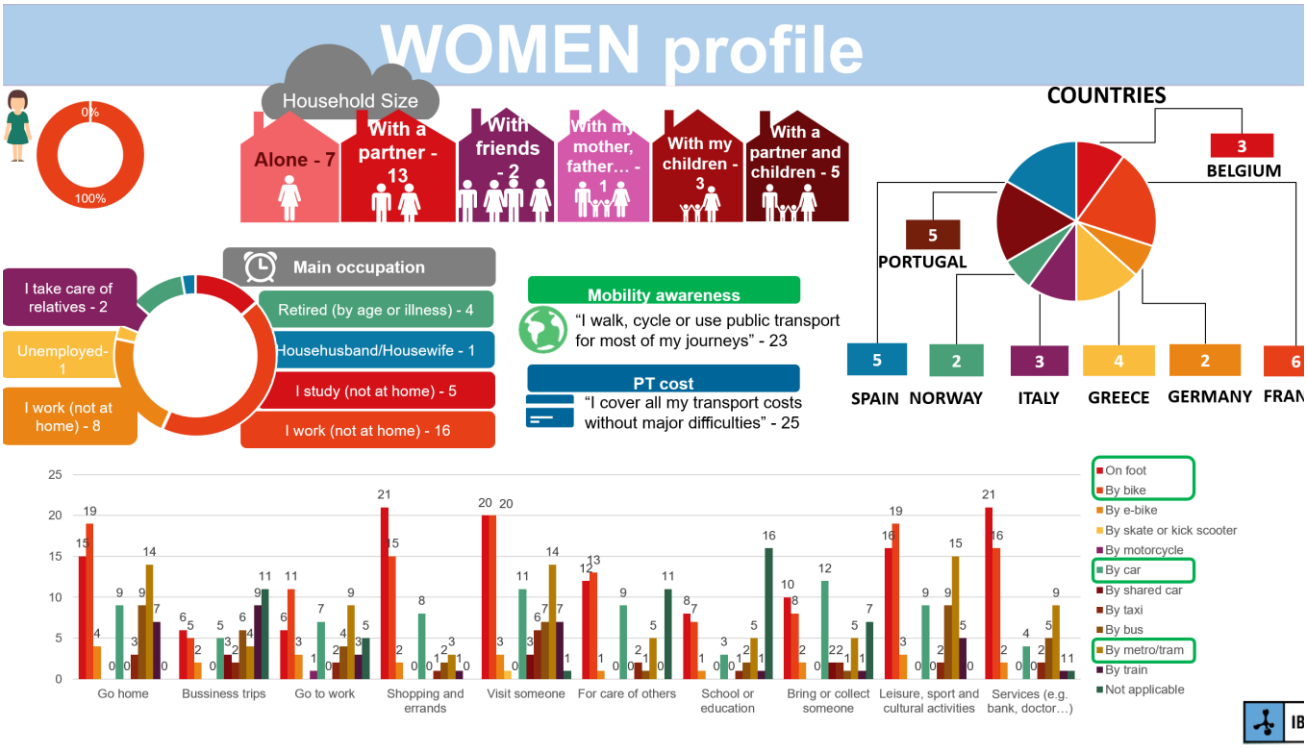


Figure 23: Main features of WOMEN profile's mobility experiences

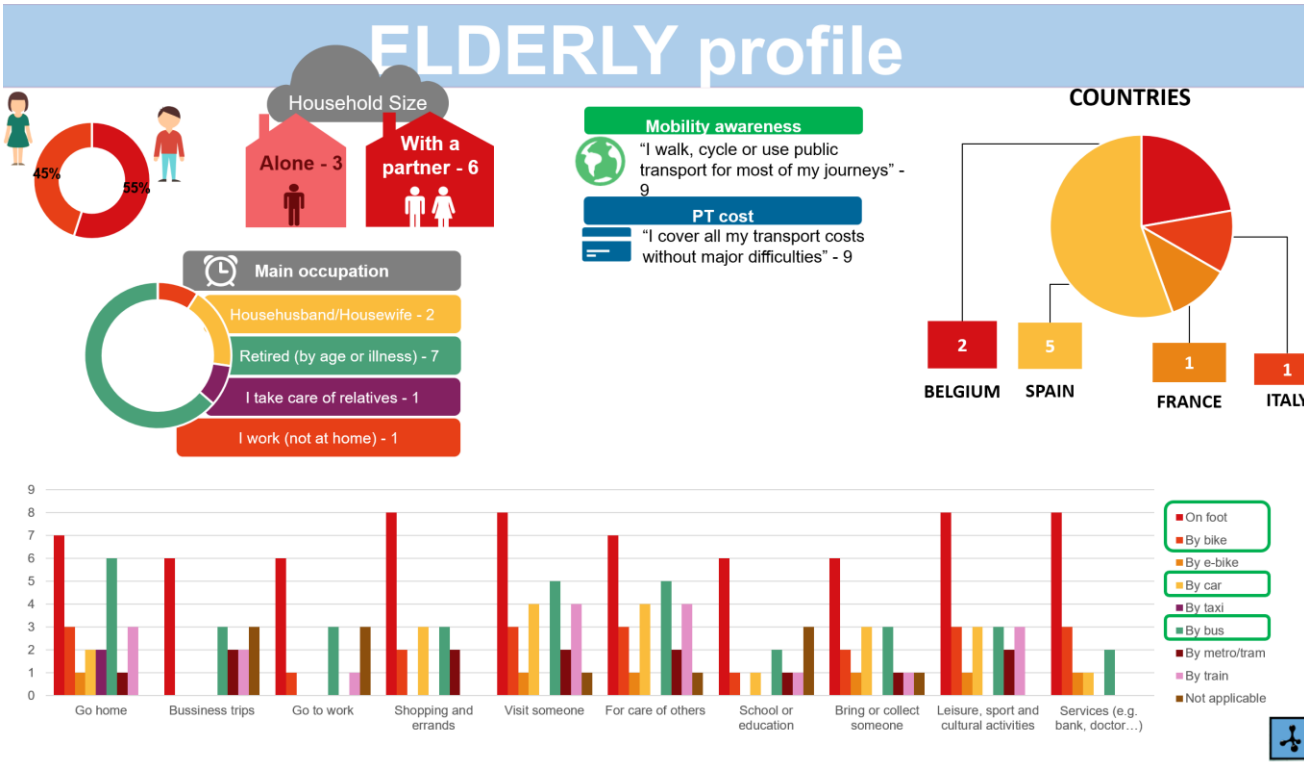


Figure 24: Main features of ELDERLY profile's mobility experiences

Figure 24 presents the main features of the elderly profile's mobility experiences. 9 participants in the Experience Notebook have been classified under this profile, coming from Belgium, France, Italy and Spain. They live with a partner or alone, and the sample is balanced between women and men. The elderly people are active in their mobility habits (they walk and move by bike), use public transport (*Bus*), but they also use (private) car.

Figure 25 presents the main features of the low-income profile's mobility experiences. 11 participants in the Experience Notebook have been classified under this profile, coming from France, Greece, Spain and Portugal. They mainly live with a partner, with children or alone, and the sample is balanced between women and men. The low-income people are active in their mobility habits (they walk and move by bike), and use public transport (*Metro/Tram*).

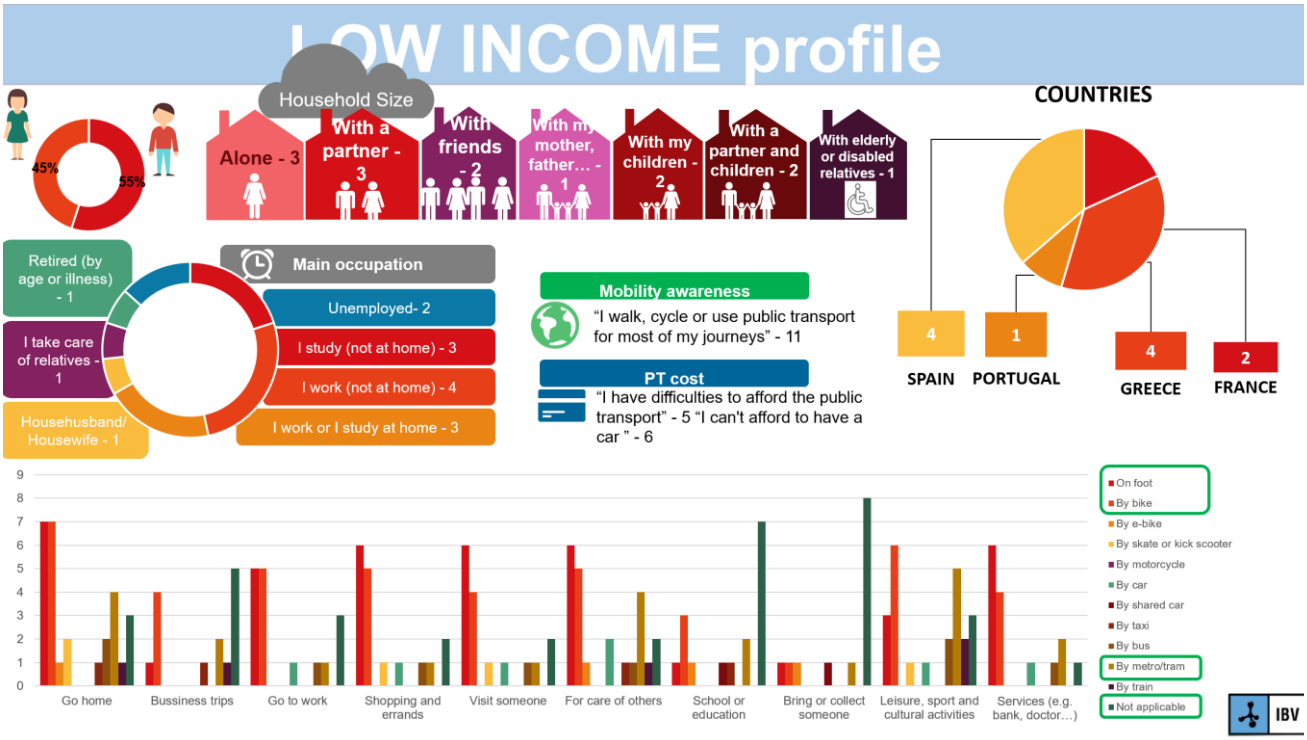


Figure 25: Main features of LOW-INCOME profile's mobility experiences

Figure 26 presents the main features of the functional diversity profile's mobility experiences. 5 participants in the Experience Notebook have been classified under this profile in Spain. They live alone or with relatives, partner o caregiver, and the sample is balanced between women and men. The functional diversity people are active in their mobility habits (walk), and use the public transport (*Bus*), or (private) car.

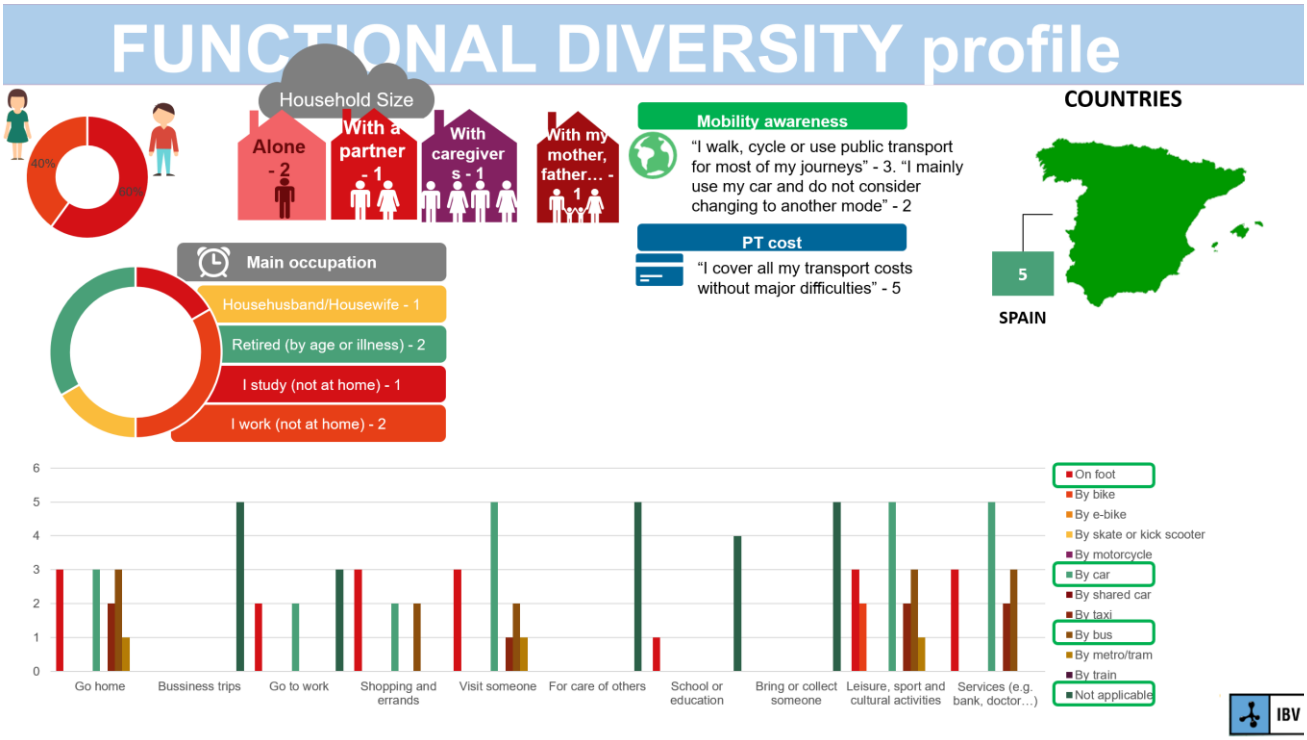


Figure 26: Main features of FUNCTIONAL DIVERSITY profile's mobility experiences

Results also include relevant stories reported by participants. These stories are divided into stories of a daily journey, and stories of leisure days (*Free time stories*). *Figure 27* shows the stories related to a daily journey of an adult with children. *ANNEX 6* includes all the stories reported by all the participants.

Figure 27: Users' stories reported in the Experience Notebook

The results presented in *ANNEX 6* also include a list of strengths, weaknesses and recommendations to increase the use of PT per user profile. *Figure 28* presents the PT's strengths, weaknesses and recommendations to increase the use from the point of view of functional diversity people.

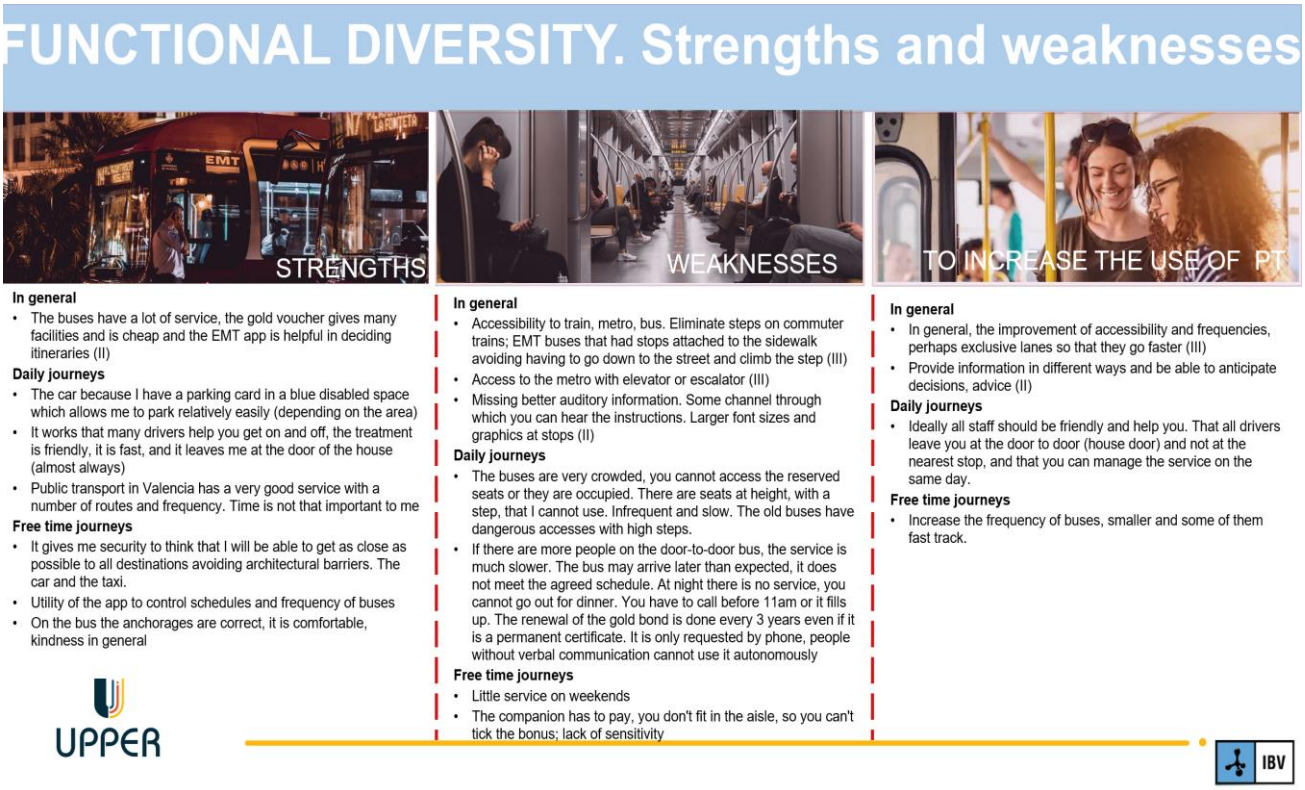


Figure 28: List of strengths, weaknesses and recommendations to increase PT's use, per user profile

The analysis of the mobility experiences reported by participants through the Experience Notebook allowed the identification of two basic profiles, regarding the awareness level on mobility: High awareness level, and Low awareness level. This classification is based on the individual situation each profile taking part in the study has, and some users are included in a profile by necessity, and other are included by conscience or willingness, but in general we can identify the following common features:

- High mobility awareness

  People of any age with values and habits related to health, physical exercise and environmental awareness.

  People who live in urban environments with good public transport services and infrastructure for active modes.

  People who live close to their jobs and frequent activities.

  The student profile is highly represented in this group.

  They do not give up the use of the private vehicle, they mainly reduce it.

  Main reasons for using a bike or public transport: speed, well-being, health, exercise, reducing pollution, family time, relaxing time...

- Low mobility awareness

  Workers.

  Middle-aged people, with complex itineraries, who work and take care of dependents (children or dependent relatives) or with many activities, have a greater use of private vehicles.

  People who live far from their place of work or with a poor combination of public transport are less aware of PT options.

  People who move door to door (they have parking at home and at work) are prone to use a private vehicle.

  People who, due to accessibility problems, can't use public transport.

  Main reasons for using a private vehicle: speed, guarantee of arriving on time, freedom to choose the moment of travel, door-to-door comfort...

On the other hand, the analysis has also allowed us to identify the three main features characterizing the participating profiles:

- Young:

  Greater diversity, less resistance to change, greater use of shared vehicles and electric scooters.

  Freedom, speed and economy as decision criteria.

  High mix of modes of transport; familiar with electric vehicles and less use of private cars.

- Adult with children:

  Complexity of displacements (work, housework, picking up children at school...) and diversity in the ways of living.

  Importance of the values of coexistence and environment.

  Importance of the time factor, efficiency and security in their decisions.

- Elderly:

  Importance of health status for the ability to use of different modes of transport.

  Higher degree of satisfaction with public transport due to lower importance of the time factor.

  Greater enjoyment of travel time.

  Reduction of the number of trips when health problems appear.

- Low-income people:

  Few trips in general, life is reduced to the neighbourhood.

  Access to transport vouchers and economic advantages are far from their reality (complex procedures).

  Main use of bicycle and electric scooter when accessing a mode of transport.

- People with functional diversity:

  Mobility affected by accessibility. Ordinary public transport is not a real option in many cases.

  Specialized services heavily protocolized that limit the possibility of making decisions in the short term.

People with autonomy opt for the private car.

The comparison of strengths, weaknesses and improvements to increase the use of PT identified for each participating profile, gives us the following collection of topics, concentrating the higher agreement level:

- Strengths:
  - Efficiency and speed of the bike (24)
  - Easiness and speed of PT (19)
  - Faster and flexible (12)
- Weaknesses:
  - Frequency, punctuality and schedule compliance (28)
  - Regularity and reliability (20)
  - Limited offer (e.g. at night, in the outskirts…) (20)
  - Poor maintenance of the bike infrastructure and little prioritized (20)
- Improvements to increase the use of PT:
  - Increase the frequency (28)
  - Affordable and cheaper (24)
  - Punctual and schedule compliance (24)
  - Regularity and reliability (20)

From the gender analysis, **women** highlight proximity, **flexibility** and **fluidity** as most **relevant strengths**, and **men** highlight **efficiency**, **comfort**, **price** and **distance**.

Regarding **weaknesses women** mention to a greater extent aspect such as **safety**, **shared vehicle** and the need to address **improvements for pedestrians**. On the other hand, **men** highlight aspects such as **maintenance**, **distance** and **traffic** more prominently.

Related to **improvements** to increase the use of PT and gender analysis, **women** mention to a greater extent aspect such as **connection**, **reliability**, **faster** and **fit**. On the contrary, **men** highlight aspects such as **price**, the **use of the car**, and the opportunity for **using any modality at any moment** more prominently.

3 Quantitative research: survey

3.1 Survey design and definition

In order to obtain the relative weight of the most relevant aspects related to different modes of PT, we performed a survey in nine different countries. These countries are those represented in the UPPER consortium by pilot sites, i.e. València-Spain, Ile de France-France, Rome-Italy, Oslo-Norway, Manheim &Hannover-Germany, Lisbon-Portugal, Leuven-Belgium, Budapest-Hungary, Thessaloniki-Greece.

The survey is addressed to PT users in these nine EU countries. As shown in *ANNEX 7*, additionally to the country of origin, different demographic variables such as *age*, *gender*, *functional diversity's level*, *transport mode preferences* or *household composition*, have been employed to get the participants characterization. The size of the sample was 2000 participants, including 500 *VRUs*[12].

The survey (*ANNEX 7*) includes 30 questions, distributed in six sections. The questions have been created according to the results generated in the qualitative research, and address *citizens' motivations to use PT*, *mobility habits*, *assessment of PT*, *PT improvements*, and *evaluation on mobility measures to enhance the PT's use*.

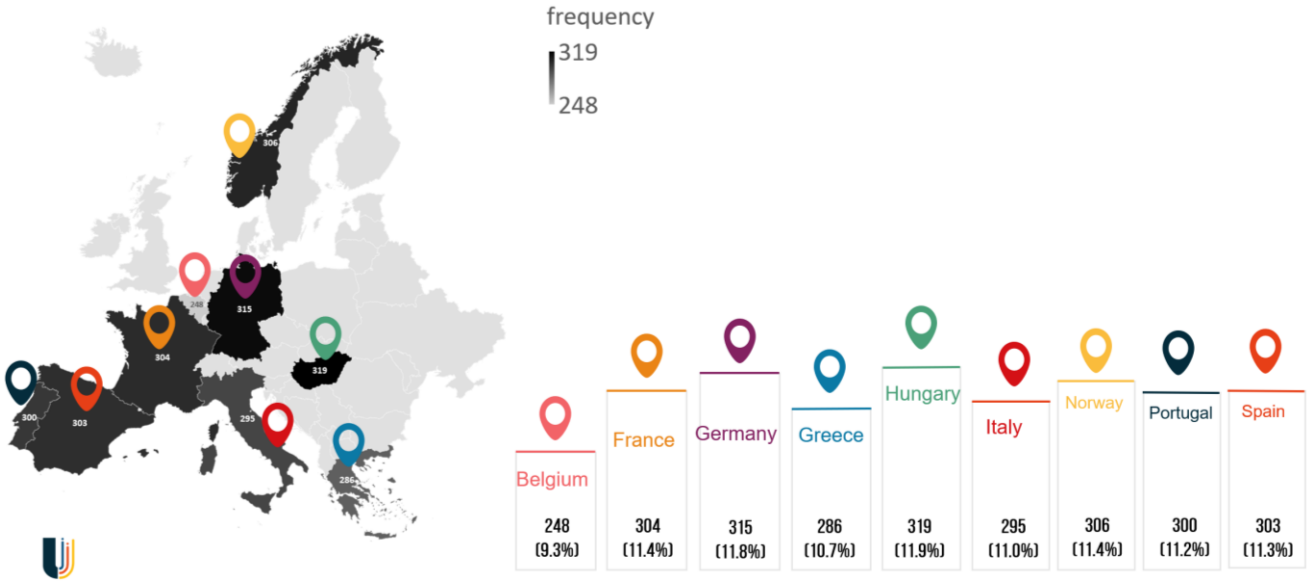


Figure 29: Description of the study sample

The total sample comprises **2676 participants**, distributed across the 9 countries as presented in *Figure 29*. Respondents from each country represented approximately 11% of the sample.

The sample has been stratified based on gender, age, PT user (50%) - Non-PT user (50%), and geographic distribution, with the aim of achieving equitable representation in terms of gender, a population resembling the normal distribution, and a minimum of 200 users per country.

Geographically, the sample is concentrated in major cities within the studied countries, including their respective capitals and the UPPER's pilot sites. This approach ensures a diverse representation of locations. In each city, the same stratification of the sample has been applied.

Simultaneously, special care has been taken to ensure the inclusion of individuals with special needs (functional diversity), people with low incomes, the elderly, and those with varying sensitivities towards public transportation (awareness).

[12] As an inclusive project, our aim in the UPPER survey was including 500 users from those groups which represent people who are in exclusion risk, i.e., persons with disabilities or reduced mobility and orientation. https://transport.ec.europa.eu/transport-themes/intelligent-transport-systems/road/action-plan-and-directive/its-vulnerable-road-users_en

To enrol all the required participants in the nine countries, we bought users' panels. A user panel is a group of target users, who match the characteristic of the sample defined for a survey. Although initially it was planned to get the users' `panels from the Survey Monkey platform, we finally worked with *Cint*[13], in order to ensure the size and the quality of the sample. The participants should match the user profile defined for the study, what in practice means a limitation in the guaranteed amount of survey's respondents, so we had to adjust our requirements to our objective sample size in each country.

The survey was launched at the beginning of August 2023 (July 30th), and responses were collected for the entire month (September 3rd).

3.2 Analysis and results

3.2.1 Socio demographic and economic profile

Figure 30 shows the survey's sample distribution by gender and age. The survey responses are well balanced in terms of gender, as women and men are represented equally. Regarding the age distribution, young people (18-35 years old) represent 28.4% of the sample, a percentage identical to that of elderly people (over 56 years old) in the sample. The most represented group is in the middle age (23.1%, those being between 36 and 45 years old).

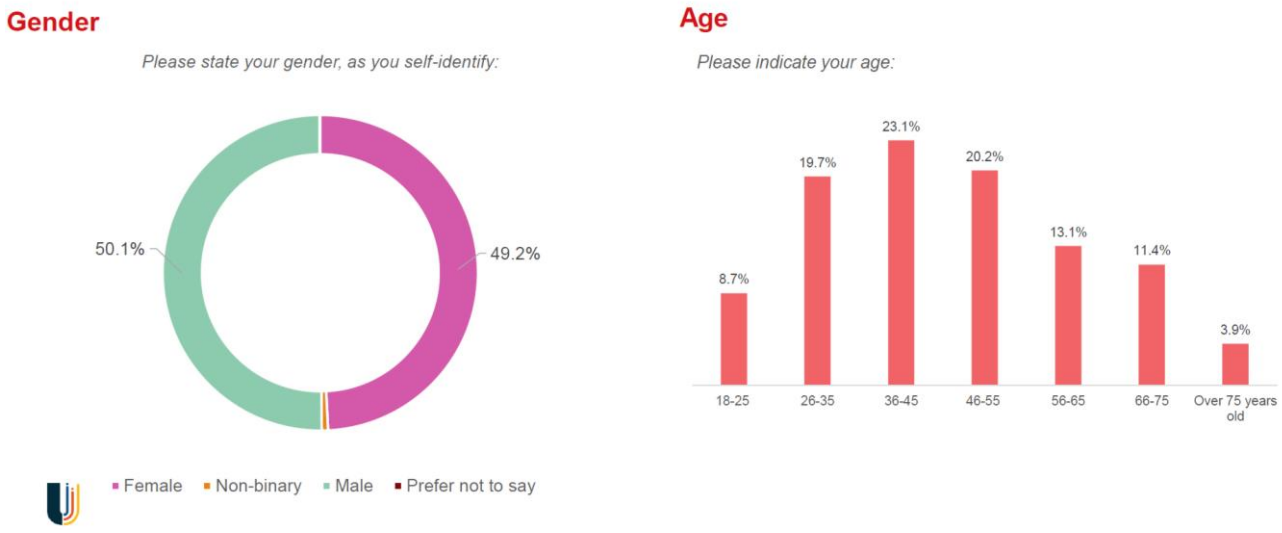


Figure 30: Sample distribution by Gender and Age

[13] https://www.cint.com/

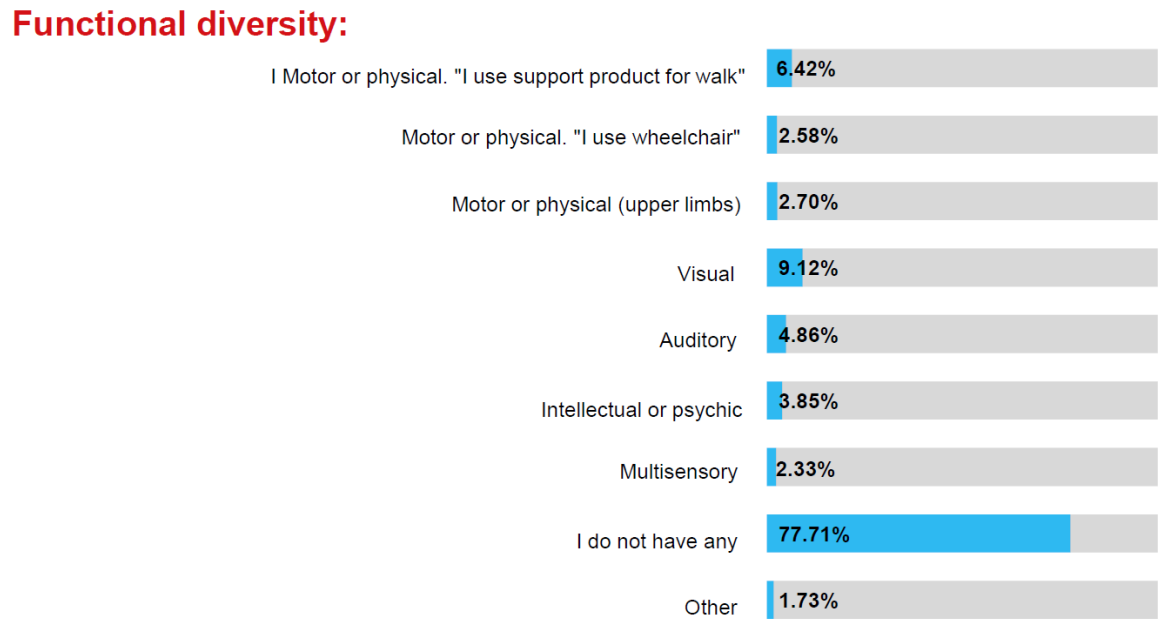


Figure 31: Typology of functional diversity in the survey's sample

As shown in *Figure 31*, 22.3% of the total participants have a functional diversity. Among them, nearly 12% have a motor disability, while visual, auditory and intellectual disabilities are also represented. 3 out 4 of the participants declare to have no functional diversity.

The sample has been characterized based on *occupation*, *type of employment* (including mobility requirements), and their capability to afford transportation needs. It is noteworthy that the majority of individuals work and study outside their homes (68.6%, *Figure 32*), requiring some form of transportation. Additionally, 60.3% of respondents state covering all their transportation expenses without significant difficulties, while a notable percentage face difficulty in affording public transportation (9.7%), and particularly, private transportation (23.4%).

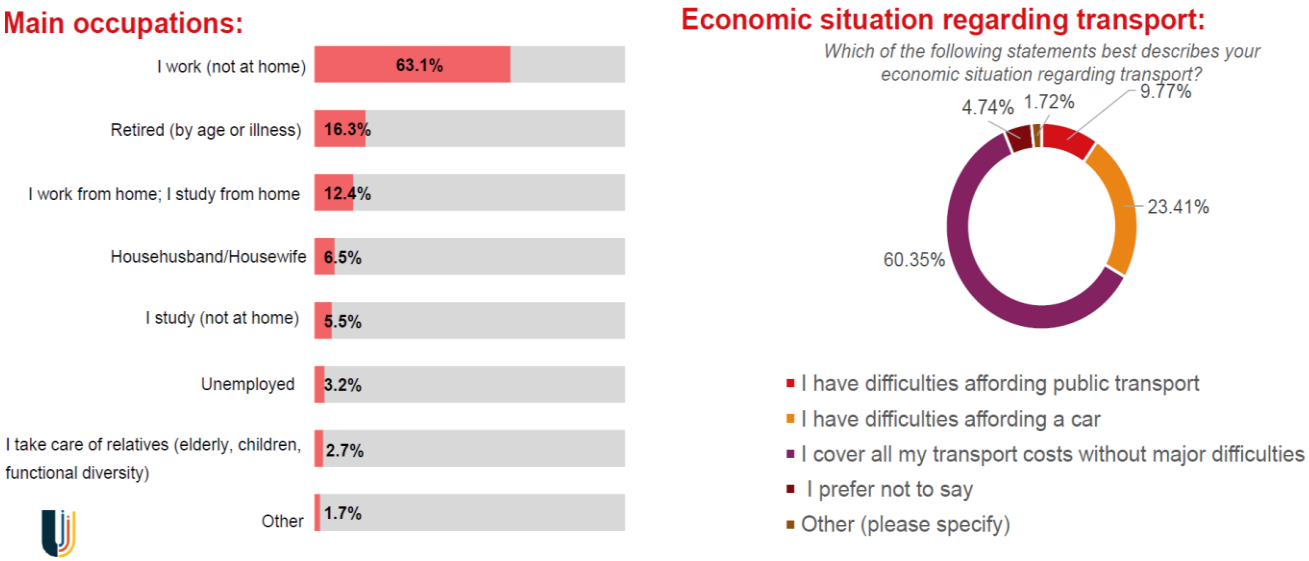


Figure 32: Economic profile

3.2.2 PUBLIC AND PRIVATE TRANSPORTATION USAGE HABITS.

The question related to results shown in *Figure 33,* serves as the primary filter in the questionnaire[14], allowing us to have a sample equally distributed between *PT users* and *non-PT users*. Thus, this question has a larger sample size (4952 respondents), enabling us to analyze the modal distribution, both as a whole and broken down by country.

As presented in *Figure 33*, nearly the same percentage of citizens (45%) use public transport and private transport in their daily journeys, while around primarily use 10% have active modes (on foot and by bike). Relating the use of public transport with GDP, we find a moderate correlation between them, concluding that the more incomes citizens have, the less they use the PT.

According to results collected by country, Norway and Germany are the countries where the use of PT is lower (~28%), and Hungary and Spain where are higher (~58%). Nevertheless, other factors have to be considered to explain the high level of PT usage in France and Belgium (~50%).

Regarding the frequency of use, *Figure 34* clearly shows the *Bus* stands out as the most widely utilized mode of transport. In this sense, buses are the most accessible means of transportation, serving 88.2% of the population, followed closely by the *Metro/Tram/Train* at 80.5%.

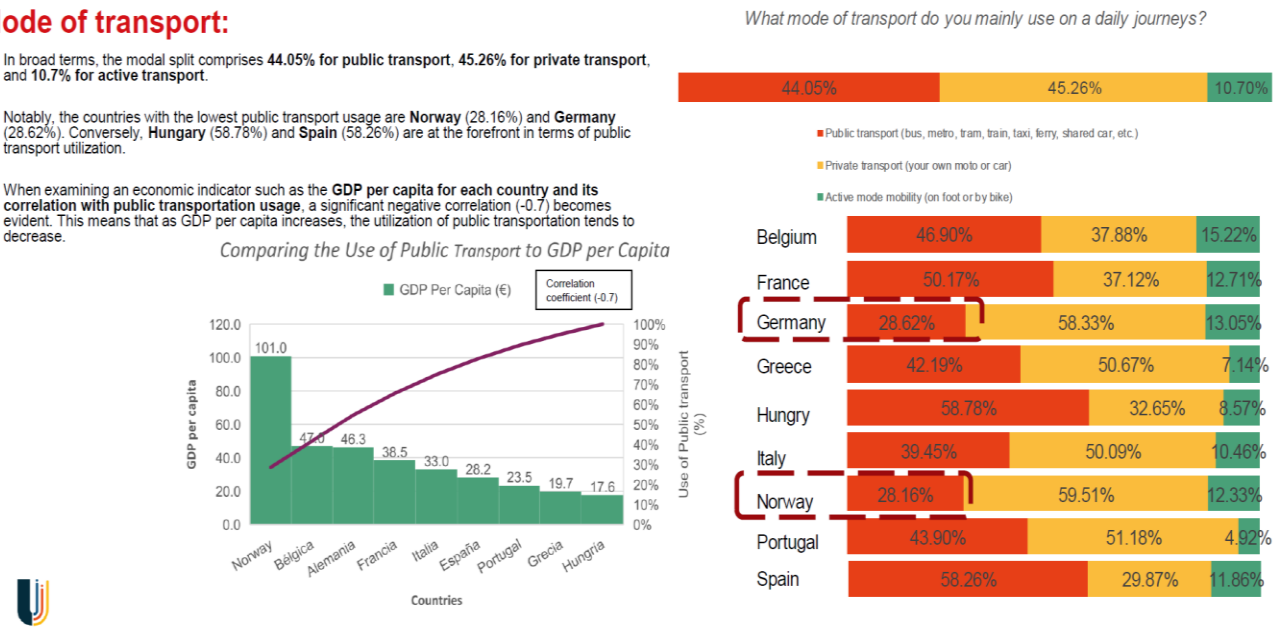


Figure 33: Transportation modes in the different countries participating in the project[15]

Taxis are used by 67.6% of the population, but their usage frequency is relatively low, primarily for occasional trips, with 50.4% of respondents reporting their use once or twice a month, or even less.

[14] The number of participants per country was limited for PT users and non-PT users. When a participant in a given country was filling the questionnaire, and he was identified as a member of a group with the covered sample, he was not allowed no continue with the questionnaire.

[15] To review the figures in the graph, please find the complete results report on *ANNEX 8*.

Shared public transportation, including *Shared bicycles*, Shared *Light Electric Vehicles* (LEV), and carpooling, is chosen by 32.1% of the population. Among these options, shared CARs are the most popular, accounting for 36% of the usage.

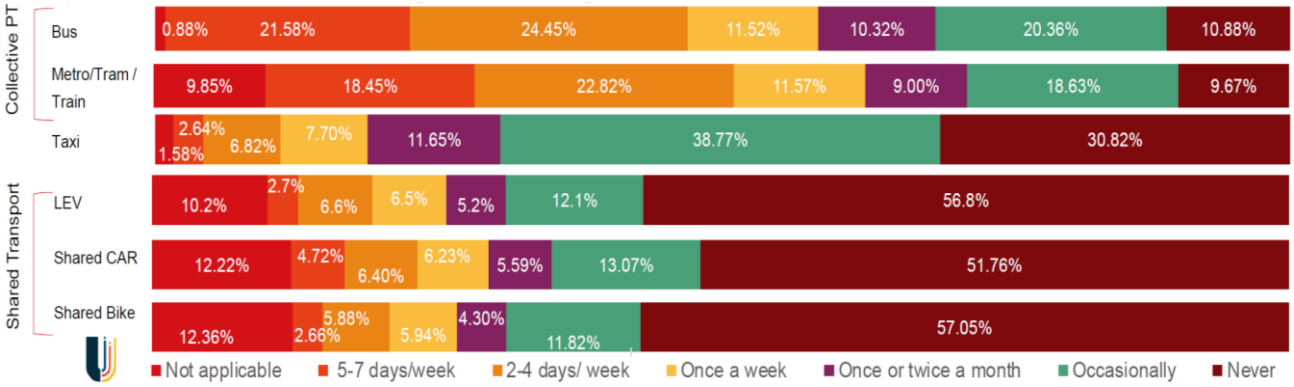
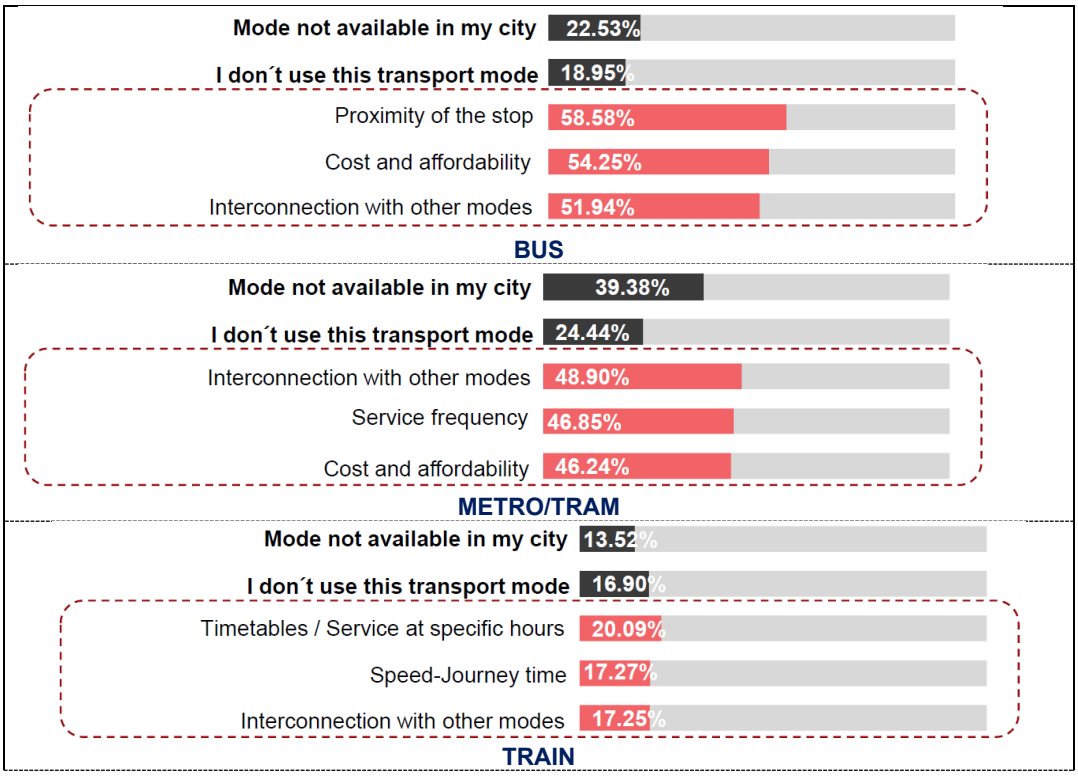


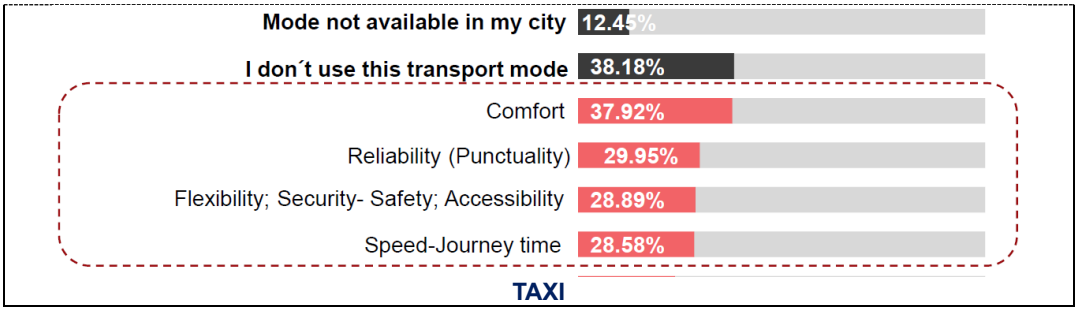
Figure 34: Frequency of use of the PT

Regarding the reasons given by participants to employ each transport mode, the three main topics shown by the survey's results are (*Table 4*,

Table 5):

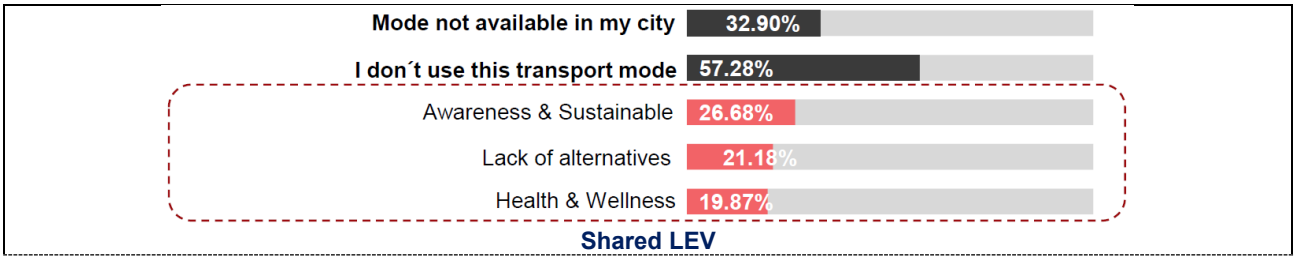
Table 4: Main reasons to employ Bus, Metro/Tram, Train and Taxi

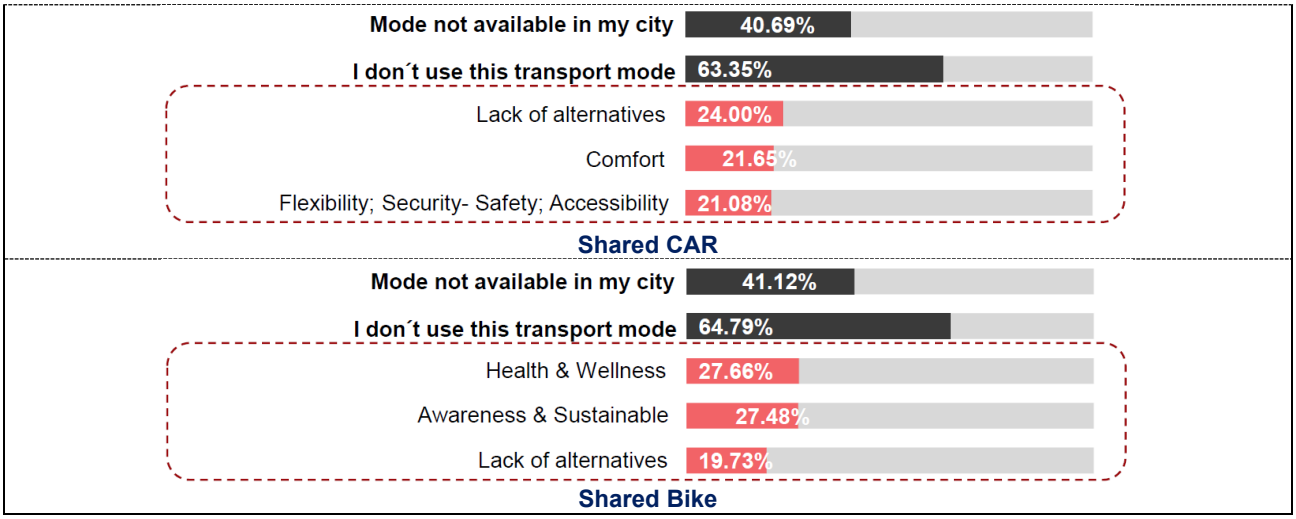




- Bus:
  - Proximity of the stop
  - Cost and affordability
  - Interconnection with other modes
- Metro/Tram:
  - Interconnection with other modes
  - Service frequency
  - Cost and affordability
- Train:
  - Timetables / Service at specific hours
  - Speed-Journey time
  - Interconnection with other modes
- Taxi:
  - Comfort
  - Reliability (punctuality)
  - Flexibility, Security, Accessibility and Speed of journey time

Table 5: Main reasons to employ Shared LEV, Shared CAR, Shared Bike.





- Shared LEV:
  - Awareness & sustainability
  - Lack of alternative options
  - Health and wellness
- Shared Car:
  - Lack of alternatives
  - Comfort
  - Flexibility; Security-Safety; Accessibility
- Shared bike:
  - Health & wellness
  - Awareness & sustainability
  - Lack of alternative options

Regarding active mobility, the main reasons to use personal modes of transportation such as walking or biking (electric or non-electric bicycles) are *awareness and sustainability*, and *health and sustainability*. The third reason is *cost and affordability*. Conversely, people use their own skateboards or e-scooters due to *lack of alternatives* and *awareness and sustainability*.

Among the reasons to use a motorcycle and one's own car, the primary factors include *Speed of journey time*, *comfort*, *reliability (punctuality)*, and, in the case of the motorcycle, *lack of alternatives*.

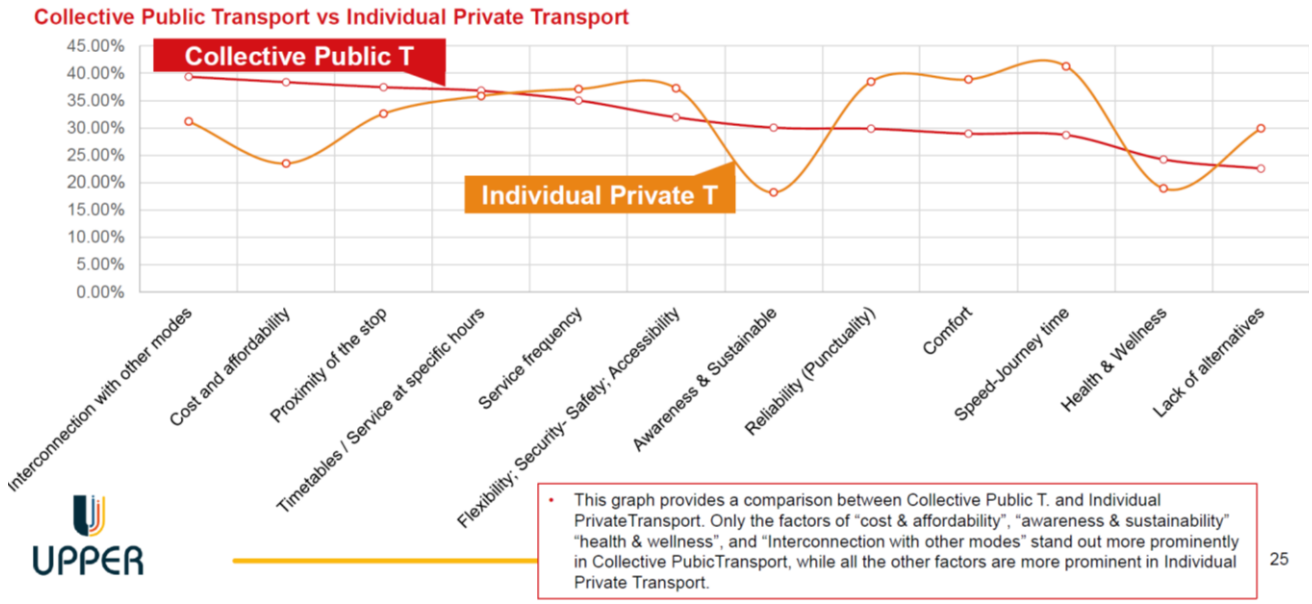


Figure 35: Comparison of the reasons to employ Collective PT and Individual Private Transport

Figure 35 provides a comparison between reasons to employ *Collective PT* and *Individual PrivateTransport*. The participants identified *Cost and affordability*, *Awareness & Sustainability*, and *Interconnection with other modes* as advantageous reasons to employ *Collective PT*. On the other side, the *Individual Private Transport* presents advantages in *Flexibility; Security-Safety:Accessibility*, *Reliability (Punctuality)*, *Comfort*, and *Speed-Journe time*.

3.2.3 Level of awareness

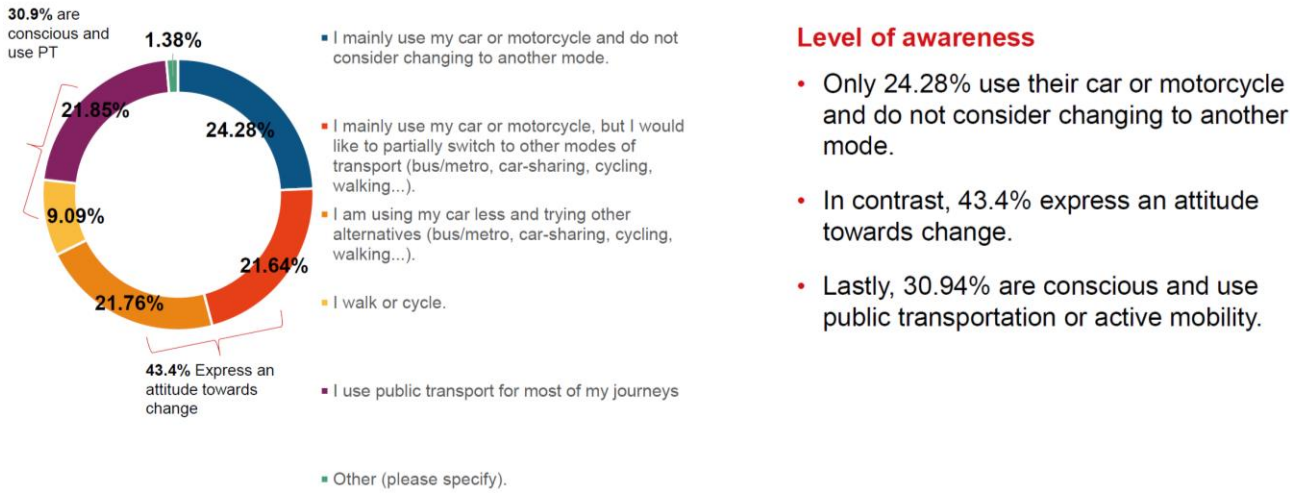


Figure 36: Awareness level in the use of PT.

Figure 36 presents the awareness level of participants regarding public transport. 43.6% of participants declare they use public transport, although only 21.8% use PT for most of their journeys. This percentage, jointly with the 9.1% of participants using active mobility modes, form the group of users (52.7%) who are committed to a

more sustainable mode of mobility. Nearly 46% of the participants are not PT users, but approximately half of this group (21.6%) are rethinking their mobility habits, to shift to a more sustainable behaviour.

3.2.4 Importance and satisfaction

Figure 37 relates the level of importance to satisfaction among the different transport modes included in the survey. This comparison allows us to determine if the modes of transportation considered most important are also the ones that fulfil users' expectations, generating higher satisfaction levels. As we can see in the upper right quadrant of *Figure 37*, there is a high correlation between importance and satisfaction (0.92), as the more important the transport mode is considered to be, the higher the satisfaction levels generated.

In this sense, the collective PT transport modes (*Metro*, *Bus*, and *Tram*) are the most important for users, and correspondingly are the ones generating higher satisfaction levels. In contrast, *Shared moto* and *Shared e-scooter* (Shared LEV) are considered the least important and generate lower satisfaction levels.

The satisfaction level of the *Taxi* is slightly lower than the *Bus*, but its importance level is lower.

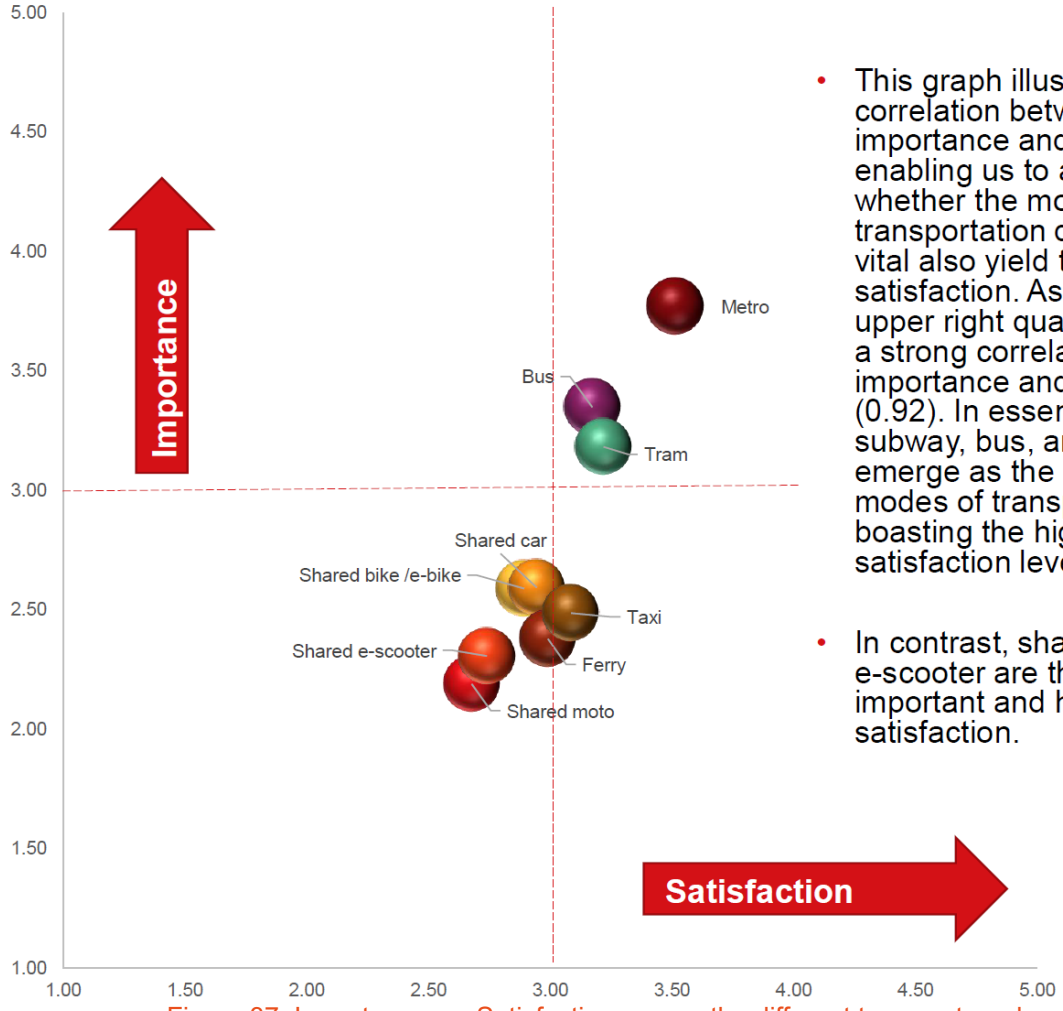


Figure 37: Importance vs. Satisfaction among the different transport modes

3.2.5 Routine Journeys

This subsection presents the results obtained for the questions included in the survey, to identify the main activities performed by users during their daily journeys. As shown in *Figure 38*, different activities were presented to users to select. Nearly half of the participants select *work* as the main reason to move in their daily routine.

95% of the participants declare to do a second trip, where 30% of respondents identify shopping or doing errands as the purpose of the trip.

87% said they do a third journey, being the main reason for 32% of the participants going shopping or going to services.

Visiting friends or leisure activities are the main reasons for most of users to make more trips in their daily routines. Two out of three of the respondents go home in their last journey of the day.

The transport mode that participants declare to use in their daily journeys is their own car as a first option, and on foot as a second option (*ANNEX 8*, *Section 6*).

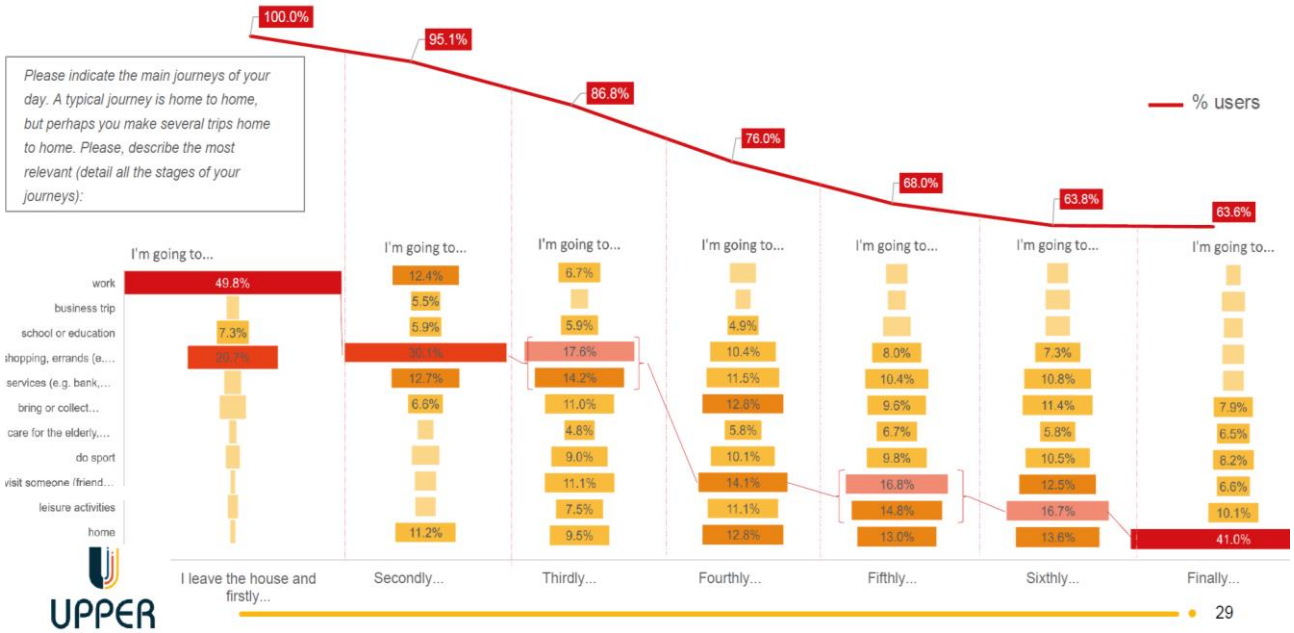


Figure 38: Main activities performed by users in their routine journeys

3.2.6 Safety in the public transport

Figure 39 presents the results obtained to investigate the perception of safety levels in public transport. The primary perceived cause of lack of safety in public transportation is *thefts and robberies*, particularly at *stations and stops*, but also when travelling, specifically in *Metro/Tram/Train* and *buses* (collective PT). Obviously, the safety perception related to *thefts and robberies* is higher in individual transport modes (*shared transport* and *taxi*).

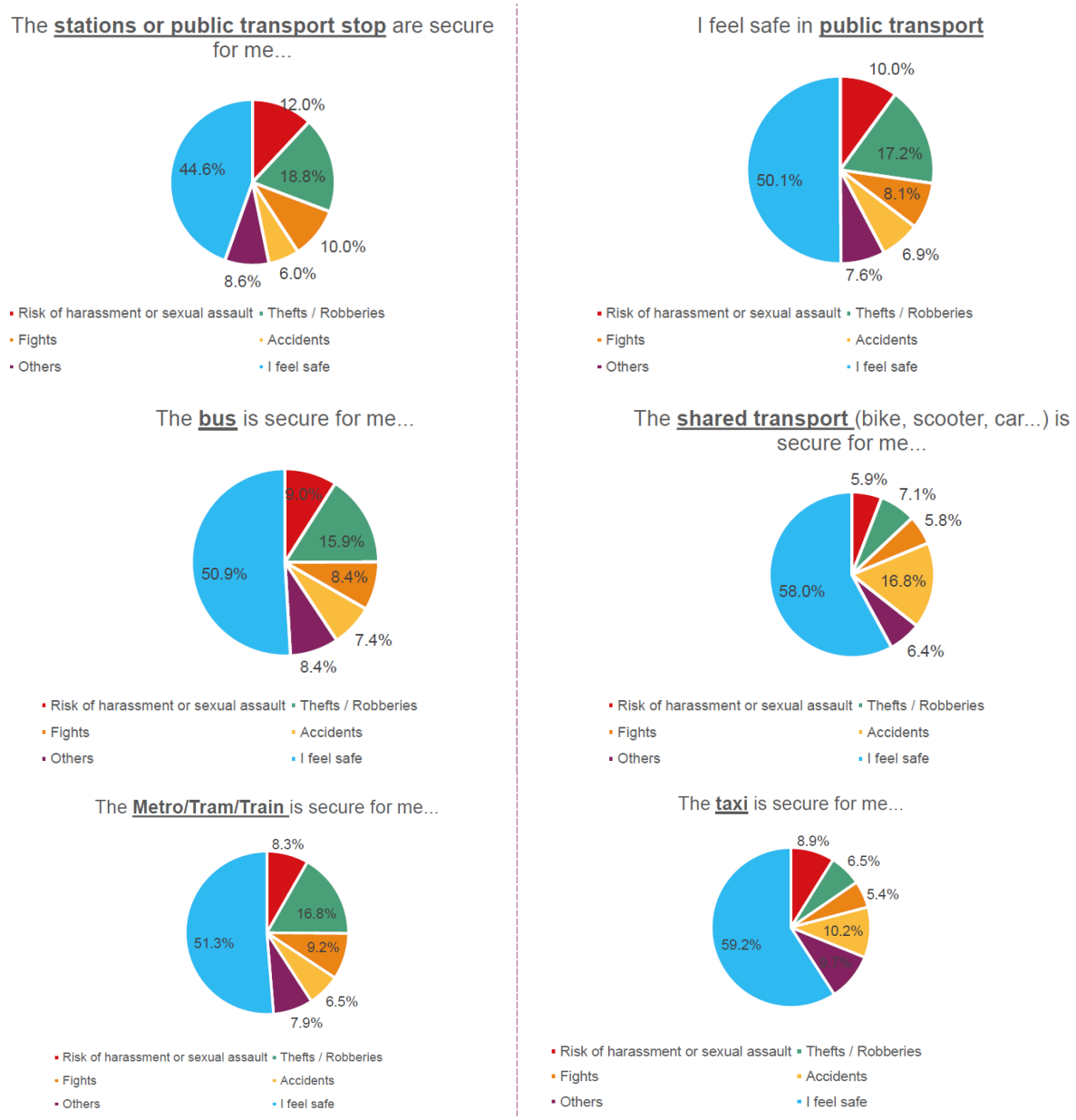


Figure 39: Safety in the different transport modes

Conversely, *shared transportation* mainly faces a perceived lack of safety due to *accidents*. *Taxi* and collective PT (*Metro/Tram/train* and *buses*) are also related to lack of safety due to *accidents*, but at a decreasing level.

The second leading perceived cause of lack of safety at *stations*, *collective PT* (*Metro/Tram/train* and *buses*) and *taxis* is the risk of harassment or sexual assault. This risk affects especially to women.

On the other hand, the risk of *fights* is perceived as especially high in the subway system and represents the second most common reason for feeling a lack of safety, according to the survey´s results.

3.2.7 improvements

Table 6 presents the main *improvements*[16] identified by the survey's participants, who are users[17] of the different transport modes considered. The main collective PTs, (*Bus* and *Metro/Tram/Train*) should increase the *service frequency*, and the reliability. *Improved security* in *Metro/Tram/Train*, and *Intermodality* for *Bus* are also among the most expected improvements.

Table 6: Main improvements related to different transport modes

For *Taxi*, improvements are mainly related to a clearer tariff system, and a better service. The main drivers to improve the service are the customer service, and the training of the drivers, to be friendlier and more professional.

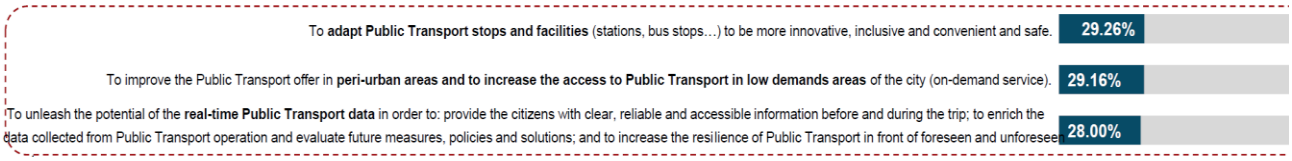


Figure 40: Interventions based on data sharing and technology to promote PT use

[16] In a general sense, an improvement is a requirement that users demand to better fulfil their expectations, regarding a service or a product. It is expected that fulfilling expectations we increase satisfaction, and consequently the use of a service or product, but the question addressed to users in this survey was not directly 'improvements to increase the use'.

[17] Note: This question is intended for individuals who use transportation services at least once or twice a month.

The improvements identified for to *Shared LEV* and *Shared CAR* are mainly related to the quality of the service. Users consider that vehicles are usually in bad conditions, and customer service should improve. In addition, fines related to system failures are too common for *Shared CAR*.

The *Shared Bike* also needs to improve the quality of the vehicles (lighter, electric options and accessories for transporting children or goods), a more efficient integration in the public transport network, and the promotion of this transport mode among citizenship to facilitate safe coexistence with other road users.

Figure 40 presents the results obtained when we asked participants to select the type of interventions, based on data sharing and technology, more suitable to foster the use of PT. The adaptation of stops facilities, to increase the public transport offer in peri-urban areas, and to supply real time information on trip progress, are the better valued interventions.

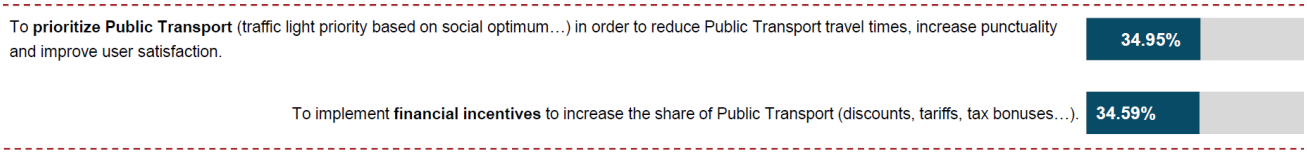


Figure 41: Interventions focused on improving PT sustainability

Regarding interventions to improve the public transport sustainability, the prioritization of PT vehicles within city traffic, and the financial incentives, are the most relevant actions from the users' point of view.

The analysis performed to the survey's results has included the identification of *significant differences* by users' groups. In detail, we have identified differences by gender, age, and among the nine different countries that were included in the sample. These results are presented in the *ANNEX 8*.

4 Mobility maps by users' groups

4.1 Methodology description

Combining the main findings obtained across the qualitative research (*Section 2*) and quantitative research (*Section 3*), we have generated cards, which include a user profile description, the main features of their mobility habits, and their needs and expectations for an improved public transport. These cards have been named *Mobility Maps*.

We have generated two types of *Mobility Maps*: a generic one, (UPPER Mobility Map) including the main findings coming from the survey in terms of user characterization, transport habits, needs and expectations, and improvements for the future, and a second group of mobility maps characterized by a specific user profile.

The user profiles characterizing the second group of *Mobility Maps* are those considered in risk of exclusion along this research, i.e.: *young*, *adult with children*, *women*, *elderly*, *low income* and *functional diversity*. A description of these profiles is presented in *Section 2.3*, (*Figure 21*, *Figure 22*, *Figure 23*, *Figure 24*, *Figure 25*, *Figure 26*), which has been enriched with the survey's results to create the *Mobility Maps*.

To describe the user profile in a more comprehensive way, we have employed *Personas* in the *Mobility Map* make up. The *Persona* technique[18] describes consumer groups through representations of fictional characters, which are described in detail. The characters assume the attributes of the groups they represent: their social and demographic characteristics, their needs, skills, desires, consumption, habits, or culture, among others.

The *Persona* technique facilitates an understanding of the user in terms of their characteristics, needs and goals to achieve a usable system. The goal of the technique is to help the product and service development team feel the world of users, and make them go beyond personal prejudices and stereotypes, focusing on the relevant characteristics of consumer groups.

This information is much more powerful combined with the creation of scenarios that detail the characteristics of the use of the product and service. Mobility Maps are not scenarios, but they provide information to put in context the mobility behaviour of the user profile described by *Persona*.

4.2 PERSONAs Mobility Maps

4.2.1 UPPER general mobility map

Table 7 presents the main features of the Mobility Map related to UPPER general people. *Figure 42* presents these features in a graphic format.

Table 7: UPPER general Mobility Map

FREQUENCY OF USE		
PT users → 44%	PT users employ the following transport modes: • 58% use **bus** weekly • 53% use the ***Metro***, ***Tram*** **or train** weekly • 17% use **taxi** weekly • 16% use **shared LEV** (light electrical vehicle) weekly • 17% use **shared car** weekly • 15% use **shared bike** weekly	
Private transport users→ 45%	• 75% use own **car or motorcycle** weekly	
Active modes practitioners → 11%	• 75% use own **bike** or **on foot** weekly	
PT USERS: REASONS TO USE AND MAIN IMPROVEMENTS		
	Main reasons	**Main improvements**
Bus	• Proximity of the stop • Cost and affordability • Interconnection with other modes	• Frequency • Punctuality/reliability • Good connections
Metro/Tram	• Interconnection with other modes • Service frequency • Cost and affordability	• Frequency • Punctuality • Security
Train	• Timetables, service at specific hours • Speed journey time • Interconnection with other modes	• Frequency • Punctuality • Security
Taxi	• Comfort • Reliability (punctuality) • Flexibility, security, accessibility	• Pricing structure • Friendly and professional • Customer service

[18] https://en.wikipedia.org/wiki/Persona_(user_experience)

Shared LEV	• Awareness and sustainability • Lack of alternatives • Health and wellness	• Quality and reliable • Easy to use • Customer service
Shared Bike	• Health and wellness • Awareness and sustainability • Lack of alternatives	• Improve bikes • Locate bike stations • Integrate the service into public transport
Shared CAR	• Lack of alternatives • Comfort • Flexibility, security, accessibility	• Cars well maintained • Minimize fines • Prevent charging problems
PRIVATE TRANSPORT: REASONS TO USE		
On foot	• Health and wellness • Awareness and sustainability • Cost and affordability	
Bike	• Awareness and sustainability • Health and wellness • Cost and affordability	
Skate, e-scooter	• Lack of alternatives • Awareness and sustainability • Interconnection with other modes	
Car	• Speed journey time • Comfort • Reliability (punctuality)	
MAIN MEASURES FOR THE NEAR FUTURE		
Data sharing and technologies	• To adapt public transport stops and facilities • To increase the offer in peri-urban areas and in low demand areas • Real time public transport data	
Sustainability	• To prioritize public transport • Financial incentives • To balance the level of service and passenger satisfaction	

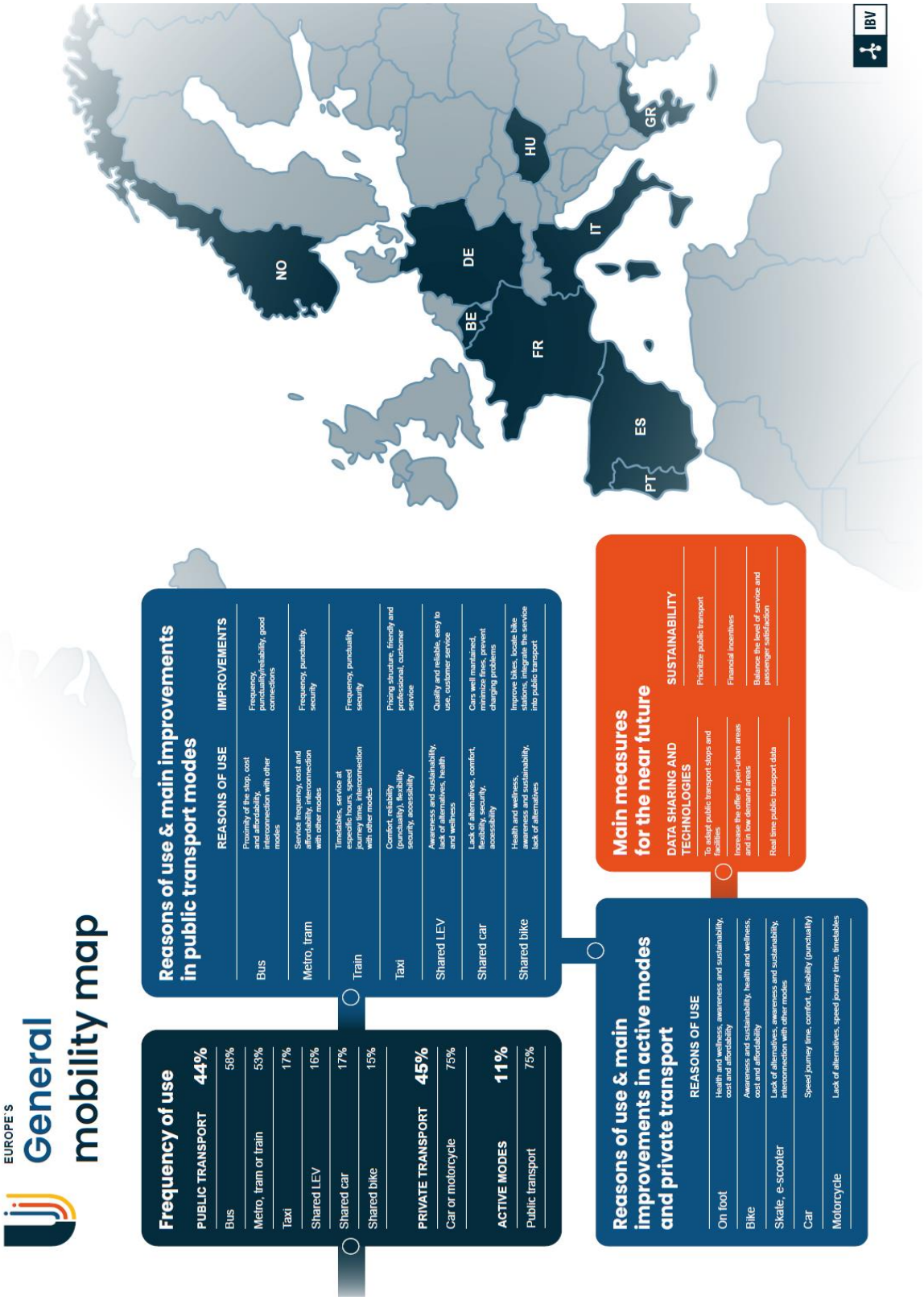


Figure 42: Graphic representation of UPPER General Mobility Map

4.2.2 Young mobility map

Table 8 presents the main features of the Mobility Map related to YOUNG people. *Figure 43* presents these features in a graphic format.

Table 8: YOUNG people Mobility Map

PERSONA:

My name is Jean, I am 21 years old, I study and live with friends. I move everyday with bike.

- **User profile:**

YOUNG people

- **Mobility story:**

I go cycling to University because it's the quickest and easiest option. Going to University by using PT takes me the same time, but it costs money and is not so functional. Sometimes I walk because it's more efficient in time moving without using any vehicle, but my feet hurt and I avoid walking. I go by walking when I meet with other people if it's the quickest and easiest option. If the distance is big, sometimes I move by public transport. When I go shopping or to the gym I go on foot; walking is easiest and quickest.
I mostly commute to university. Safer paths would be desirable and they should better maintained, to be more useful. I use the bike because it is a pleasant way to get around, fast and allows me to be more active. More parking bike bays would also be desirable so that I can easily park near the various amenities. Omnipresence of the car is annoying and problematic.
When I go out with friends I walk or take the bus or metro. If one day we come home late, we take a taxi for 4 people. To visit relatives, I go with my parents on foot or by car.

SOCIODEMOGRAPHICS

- **Age:**

This group represents young people, woman and man of 18-25 years old, up to 35 if they do not have children.

- **Gender perspective:**

The young women highlight the same characteristics as women in other population groups of age or household composition. Younger people feel more insecure on public transport, on the bus, in the subway/tram/train, taxi and transport stations and bus stops. Specifically, they are women, and the cause is sexual harassment.

- **Main occupation:**

They are usually students or workers.

- **Household:**

They usually live alone, with friends, with family (mother, father, siblings….) or with partner.

MOBILITY MODES

The most frequent modes of transport are: public transport (mainly bus), and active modes (on foot, bike, e-scooter and skate). People who live with friends or roommates take more public transport. Young people use public transport more than other population groups. They do not use taxis significantly and the frequency of use of private cars is lower.

MOBILITY AWARNESS LEVEL ASPECTS

- **Low awareness level:**

In general, the group of young people is willing to modify their habits and are not representative of a low level of mobility awareness.

- **High awareness level:**

Younger individuals demonstrate a higher awareness of transport choices (utilizing more public transport and active modes). The 18 to 25 years old group says they use public transport more, and cars less, and those who use cars say they would like to change.

REASONS AND NEEDS

- **Reasons:**

1. The young people use the bus due to frequency, lack of alternatives, schedules/service, and interconnections with other modes, and select the train for speed, frequency, punctuality/reliability, schedules/services, affordability, interconnections, and health/well-being.
2. They use bicycles for frequency, scheduling, interconnectivity, flexibility, safety, accessibility, proximity, health, and well-being. In addition, those aged 18 to 25 use bicycles for reliability and punctuality.
3. They use skateboards or e-scooters for convenience, time efficiency, frequency, punctuality, lack of alternatives, scheduling, flexibility, safety, accessibility, proximity, cost-effectiveness, interconnectivity, and sustainability. In addition, those aged 18 to 25 use them for health and well-being.
4. Young people up to 25 years do not have or do not use cars.
5. They prefer motorcycles for convenience, speed, frequency, reliability, punctuality, lack of alternatives, service, accessibility, affordability, cost-effectiveness, sustainability, and interconnectivity with other modes of transport.
6. Young people (18-25) cite a lack of alternatives, affordability, and sustainability as reasons. In general, this profile opts for shared bikes for speed, reliability/punctuality, flexibility, and accessibility.

- **Needs to address:**

1. About the bus, they demand for improvements in service, capacity, comfort, cleanliness and maintenance, safety, app enhancements, extended operating hours, increased accessibility, and small door-to-door buses.
2. Regarding the metro/tram, there is a greater demand for improvements in comfort, a variety of ticket options, and extended night-time service, and to allow bikes on board.
3. They consider Shared LEVs needs quality and reliable service, easy to use, adequate customer service, good maintenance of vehicles among others. In general, it is essential to promote a good service.

EXPECTATIONS FOR PT IN THE FUTURE:

Young people aspire to have improvements in the near future in these areas: they would like to see bikes and scooters on the subway, train and tram to a greater extent than currently; demand more improvements related to technology aspects (apps, real-time data, ticket purchasing systems based in a MDMS and adapted to different social groups); and expect multimodal nodes, low emission zones and participative governance and dialogue formats.

Figure 43: Graphic representation of YOUNG people Mobility Map

4.2.3 Adult with children mobility map

Table 9 presents the main features of the Mobility Map related to ADULT WITH CHILDREN. *Figure 44* presents these features in a graphic format.

Table 9: ADULT WITH CHILDREN Mobility Map

PERSONA:

My name is Gabriele, I am 38 years old, I live with my wife and children and I am in charge of taking them to school in the mornings.

- **User profile:**

ADULT WITH CHILDREN

- **Mobility story:**

I am a fan of mobility that allows me to move around independently. The train and the underground usually serve that purpose, but the cars do not. I'd like to be able to move more easily from where I live to work by bike, to have more autonomy. However, the state of degradation of the roads is very high and many times, considering that I have 2 children that depend on me, I have to use the car to ensure that I arrive on time to cover their needs.
The problem of work/school time, no regular public transport, lack of coherence between the different actors of the territory, traffic and roads shared with car without any particular action to protect the vulnerable, make not possible to use the bike.
I usually leave home to take the little girl to kindergarten, then I take the child to school, which is 5 minutes away by car, and finally I reach my workplace and from there, again for work reasons, I move on foot. In the afternoons, having a compact cargo bike, I ride with my second child to sports activities and, a couple of times a week, I go shopping. I use the bike because it makes me feel better in terms of mood and because it allows me to move around more quickly and easily. I would like it if public transport worked better in the city and if there were more careful policies to incentivise the use of bicycles and the renunciation of the car for commuting.
My sister lives in the city centre and has much easier mobility. She leaves the house around 8:15 with her two daughters and with her husband. They take the bikes or walk to school, talk about the day's plans, check if the girls have any exams... When they drop them off at school they take the bike and go to work (10-15 minutes).

SOCIODEMOGRAPHICS

- **Age:**

This group represents people with children, men and women that needs commute with them.

- **Gender perspective:**

Women with children respond to the gender pattern in which security is perceived more critically and they feel more insecure when traveling. By having responsibility for their children, this perception of insecurity increases and they also fear situations related to accidents.

- **Main occupation:**

They are usually workers, family caregivers, and housekeeper.

- **Household:**

They usually live with partners and children or with children without partner.

MOBILITY MODES

Adults with children mainly use their own car to get around. Family logistics often mean that they do not consider other alternatives on a day-to-day basis.

They also like walking and using public transport. Living close to their daily activities (school and work) favours these modes of transport and the use of the bike. They use shared modes to a lesser degree.

MOBILITY AWARNESS LEVEL ASPECTS

- **Low awareness level:**

People with children prefer to use their own car because they make multi-stage trips and it gives them more freedom and security. They feel insecure in active modes such as the bike or the electric skate. In general, private transport is more important to them than other modes and they have more resistance to changing their habits.

- **High awareness level:**

People with children who choose public or active modes of transport usually have a good connection to public transport and live in areas close to their destinations, which favours these habits. They consider it more sustainable and healthier to walk significantly compared to other population groups.

REASONS AND NEEDS

- **Reasons:**

1. Adults with children consider the car provides them good connections to other means of transport and places, proximity, flexibility, security, accessibility, reliability, speed, comfort, freedom of schedule and good service. Furthermore, in some cases, they consider not having another alternative.
2. They use the bike and walk for cost and affordability, as well as sustainability and well-being.
3. Bus use is associated with proximity to the bus stop, frequency, accessibility, flexibility, safety, cost and affordability. The use of the bus stands out among adults who live with their children without a partner.
4. Metro/tram use is associated with frequency, speed and comfort.

- **Needs to address:**

1. Thinking about the bus, adults with children demand for increased frequency of service, reliability and good connections.
2. Regarding the metro/tram/train, they demand for more improvements in customer service, enhancing signage, resolving issues with ticket machines, optimizing space, and enhancing accessibility.
3. When they use the bike, it is their own, and the improvements must be aimed at improving safety on the journey (respect for traffic rules and good infrastructure for travel).

EXPECTATIONS FOR PT IN THE FUTURE:

Adults with children aspire to have the next improvements in the near future: To increase the Public Transport offer in peri-urban areas and in low demands areas of the city; to adapt Public Transport stops and facilities; to prioritise Public Transport; to implement financial incentives; and to unleash the real-time Public Transport data.

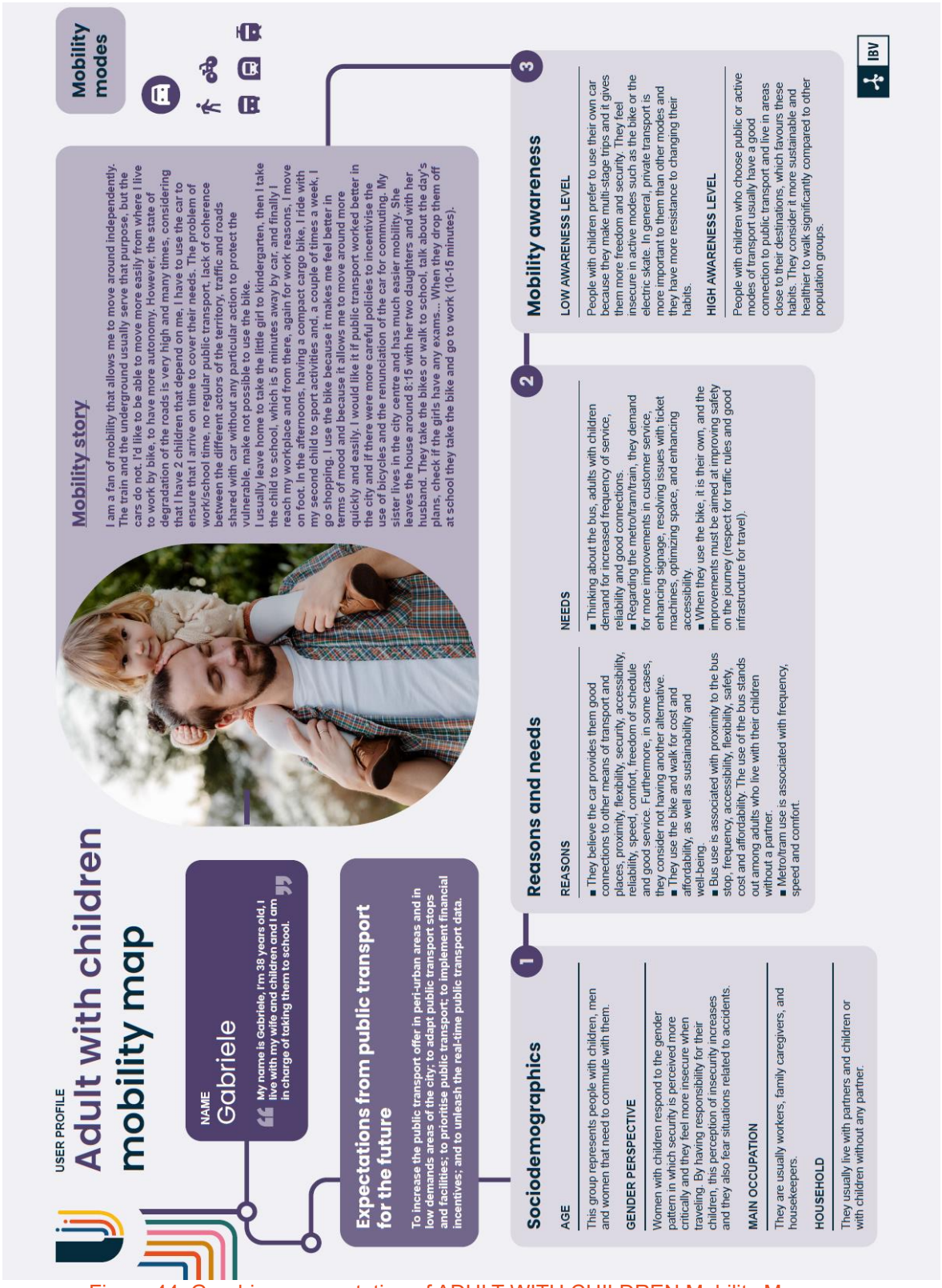


Figure 44: Graphic representation of ADULT WITH CHILDREN Mobility Map

4.2.4 Women mobility map

Table 10 presents the main features of the Mobility Map related to WOMEN. *Figure 45* presents these features in a graphic format.

Table 10: WOMEN Mobility Map

PERSONA:

My name is Ellen, I am 45 years old, I work and I take care of my son Evan. We both live on the outskirts of the city.

- **User profile:**

WOMEN

- **Mobility story:**

Using public transport to get around is a basic principle in my life because I try, firstly, to reduce my contribution to the pollution of the environment, secondly, to follow the landscape evolution and the changes that are happening in it (if I use my own transport I won't be able to look around), thirdly, I observe the behaviour of people and the changes that occur in it, fourthly, I am afraid to use a two-wheeler (by bike or scooter) because of the violation of the rules by the majority of drivers. I would like to see an improvement in public transport and no domination of the car.
I usually go on foot or by public transport; sporadically I also take the bike. It is not always easy to park your bicycle safely; moreover, suitable urban furniture to fasten the bicycles is not always available.
For leisure, I always rely on public transport. Except in situations where there are no other viable alternatives for greater distances.
In my district bus is the only option for public transport. The bus is infrequent and the access road to the city is dangerous, with no sidewalks or crosswalks. My son was run over on that road. We used to ride the bike, but today I have a greater perception of the risk and I can't ride on the road by bike.

SOCIODEMOGRAPHICS

- **Age:**

This group represents women of any age.

- **Gender perspective:**

Women consistently feel more insecure due to the risk of harassment or sexual assault. Additionally, women are more concerned about thefts/robberies in public transport in general and on buses, as well as accidents on buses.

- **Main occupation:**

Similar occupation distribution as men, although it is detected that women's jobs have more variability (part-time job) and women have a higher unemployment rate than men.

- **Household:**

Alone, as a partner without children, as a partner with children, or with children, are the most common types of cohabitation. It is more common for the woman to live alone with her children.

MOBILITY MODES

The most frequent modes of transport are: public transport (mainly bus and metro/trams), and active modes (on foot, e-scooter and bike). Women use public transport more than men.

MOBILITY AWARNESS LEVEL ASPECTS

- **Low awareness level:**

Most women have high mobility awareness, maybe some women, during the time they have children, they prefer the car.

- **High awareness level:**

Women use and prioritize public transport and active mobility. They attach more importance to buses and trams.

They place greater importance on using active mobility modes and public transport more frequently. Specifically, collective public transport (bus, subway, tram) stands out.
Higher percentage of women state, "I use public transportation for the majority of my trips".

REASONS AND NEEDS

- **Reasons:**

1. Women prefer the bus because its schedule, proximity, cost, affordability, and interconnection with other modes of transport, the metro/ tram because its flexibility, safety, and accessibility, and the train for its schedule and service.
2. Women are more likely to choose walking for awareness and sustainability, health and sustainability and cost and affordability.
3. Women consider that using a car is faster, more flexible, safer, more accessible, closer, and facilitates interconnectivity with other modes of transport.
4. Women may not use these modes because they may not have access to them or use them less than men do.

- **Needs to address:**

1. Women are focused on improvements in public transport (bus and subway), specifically seeking enhancements in frequency, punctuality, and reliability, along with requests for extended operating hours and increased security measures.

EXPECTATIONS FOR PT IN THE FUTURE:

Women aspire to have improvements in the near future in these areas:

- To unleash the potential of the real-time Public Transport data in order to: provide clear, reliable and accessible information before and during the trip.
- To adapt Public Transport stops and facilities to be more innovative, inclusive, convenient and safe.
- They are also interested in data revealing insecurity, especially at bus stops and stations.

Figure 45: Graphic representation of WOMEN Mobility Map

4.2.5 Elderly mobility map

Table 11 presents the main features of the Mobility Map related to ELDERLY people. *Figure 46* presents these features in a graphic format.

Table 11: ELDERLY people Mobility Map

PERSONA:

My name is Paqui, I am 78 years old, I live with my husband Pedro, who is 75 years old.

- **User profile:**

ELDERLY people

- **Mobility story:**

On a day-to-day basis I walk, to buy, go to the bank, go to the doctor... Some years ago, I used to buy in larger supermarkets, I went by car with my husband (he loved to drive). Now we buy nearby in local supermarkets. If I have to travel to the city, my sons take me by car. I used to take the bus but I am afraid of falling. I take the subway on a specific occasion if the station is close to where I'm going. Taxi once in a while, for example this last year once back from the hospital.
Now, my husband loves the bus, today he was telling our daughter... *This morning to go to lunch with my friends I took two buses. There were few people and the buses arrived quite frequently. Then I came back home, and there were even less people at the bus. I have taken the bus again to pick up the child (his grandson) from school, and I have taken 2 buses. The perfect experience, they coordinate very well, now the buses are doing very well. Then we went to a shopping centre with 2 buses, the transfer is at the same bus stop. On the way back, we have taken the same buses.*

SOCIODEMOGRAPHICS

- **Age:**

The group represents those over 65 years of age, and mainly those over 75. In this group, in addition to age, it is necessary to consider health status. An active person who is 67 years old, without chronic pathologies, will not have the same mobility pattern as a person with some health incident.

- **Gender perspective:**

As in other age groups, women use public transport more than men, although the gap is smaller. The perceived insecurity in public transport, on the bus, in the subway/*Tram*/train, taxi and transport stations and stops decreases with respect to younger women (especially the risk of sexual harassment). Although the perceived insecurity in shared transportation increases due to accidents.

- **Main occupation:**

They are usually people who are in retirement. The most active ones may be developing learning activities and in general distribute the roles of caring for the home. Other main activities may be taking care of family members, whether grandchildren or parents.

- **Household:**

The most common types of cohabitation are as a couple or alone.

MOBILITY MODES

The most frequent modes of transport are: private vehicle, public transport (bus and *Metro*/*Tram*) and on foot. In that order, linked to age and health status. As the years progress or heath worsens, firstly decrease the use of private vehicles, secondly decrease the use of public transport and finally, the on-foot mode decreases.

MOBILITY AWARNESS LEVEL ASPECTS

- **Low awareness level:**

Over 66 years group uses the car a lot and does not consider changing, if they maintain the activity of driving. The speed, comfort and reliability are the reasons.

- **High awareness level:**

The elderly gives more importance to active mobility. Specifically, those over 75 moves on foot more than other age groups. In this group, the increase in the use of public transport and active modes is related to the insecurity generated by private vehicles. This insecurity can be transferred to public transport. Another motivation for the use of active mobility is to maintain a state of health and well-being. In addition, they usually make short trips. They are early adopters of the 15-minute city.

REASONS AND NEEDS

- **Reasons:**

1. Higher degree of satisfaction with public transport due to the less importance of the time factor.
2. Greater enjoyment of travel time.
3. They walk for health and well-being. Although after 75 years of age they reduce their trips.
4. Reduction of use of your own bike and do not use a motorcycle and shared modalities (bike, electric scooter, motorcycle...).
5. Reduction of all modes of transport from the age of 75 (especially they stop using their own car, bus, train and taxi).

- **Needs to address:**

1. Reduction of the number of trips when health problems appear. They need measures of accessibility.
2. They feel more unsafe in shared transport modes because of accidents.

EXPECTATIONS FOR PT IN THE FUTURE:

In the near future they aspire to more accessible public transport, with service improvements in peri-urban areas and inclusive bus or *Metro*/*Tram* stops.

Figure 46: Graphic representation of ELDERLY people Mobility Map

4.2.6 Low-income mobility map

Table 12 presents the main features of the Mobility Map related to LOW-INCOME people. *Figure 47* presents these features in a graphic format.

Table 12: LOW-INCOME people Mobility Map

PERSONA:

My name is Alison, I am 30 years old, I live with my daughter, who is 10 years old.

- **User profile:**

LOW-INCOME people

- **Mobility story:**

I work as a cook and I do night shifts. I usually get around on an electric scooter, it's faster and it takes me from door to door. I also take the girl to school with the scooter and I go shopping to supermarkets near home.
If I need to go somewhere far away, I go by public transport or in combination with the e-scooter. I prefer the *Metro* because it is faster but there is no a station near my home, so I take the bus Furthermore, the bus covers more areas. I don't really like taking the bus at night because I don't feel very safe, but it is the option that takes me closer to home.

SOCIODEMOGRAPHICS

- **Age:**

This group represents people with low incomes of any age, mainly adults and seniors.

- **Gender perspective:**

The women with low income highlight the same characteristics as women in other population groups of age or household composition, but the insecurity perceived is higher

- **Main occupation:**

They are usually unemployed, students, housewives/househusbands or workers.

- **Household:**

The household composition is varied, all the modalities are referenced.

MOBILITY MODES

The most frequent modes of transport are: public transport (in cities mainly bus), and active modes (on foot, e-scooter and skate).

Low income people use public transport more than other population groups. They do not use taxis significantly and the frequency of use of private cars is lower.

MOBILITY AWARNESS LEVEL ASPECTS

- **Low awareness level:**

37% of the Low income people use private vehicles, due, to the speed and journey time (in car mode), like the general population, and the speed and lack of alternatives (motorcycle).

- **High awareness level:**

The main mode of transport they use is the public transport (54%). Low income people take the public transport (mainly the bus) more frequently than other collectives. For them, the bus is very important, it is a matter of lack of alternatives. They are less satisfied with the public transport than the general population, but, in real terms this collective has high mobility awareness. They have sustainable mobility habits for economic reasons.

REASONS AND NEEDS

- **Reasons:**

1. They use the bus in a notable way due to its speed, frequency, service hours and lack of alternatives, to a greater extent than other population groups.
2. They use active modes like on foot or e-scooters due to a lack of alternatives, in addition to the flexibility, speed and affordable cost that it provides them.
3. They use shared car because of its speed. Not having a car means that they use it to a lesser extent as private transportation.
4. They have a higher percentage of skateboarding than other population groups.

- **Needs to address:**

1. They feel more unsafe in public transport in general (included stops) because of fights, thefts, harassment and accidents.
2. People with low income give more importance to shared LEV, shared car, bus and ferry.
3. They are less satisfied with the PT than other groups (because for them it is a very important mode of transportation and they depend heavily on the service).
4. They feel less safe.
5. They would need a shared bike and shared car offer (they consider that they do not use it because it is not available).
6. They feel fear in the PT due to the possibility of theft and the possibility of accidents.

EXPECTATIONS FOR PT IN THE FUTURE:

People with low incomes aspire to have improvements related to the bus in the near future: increasing service in peri-urban areas, increasing service hours and accessibility, in addition to having larger buses. On the other hand, they would like to see bikes and scooters on the subway, train and *Tram* to a greater extent than currently.

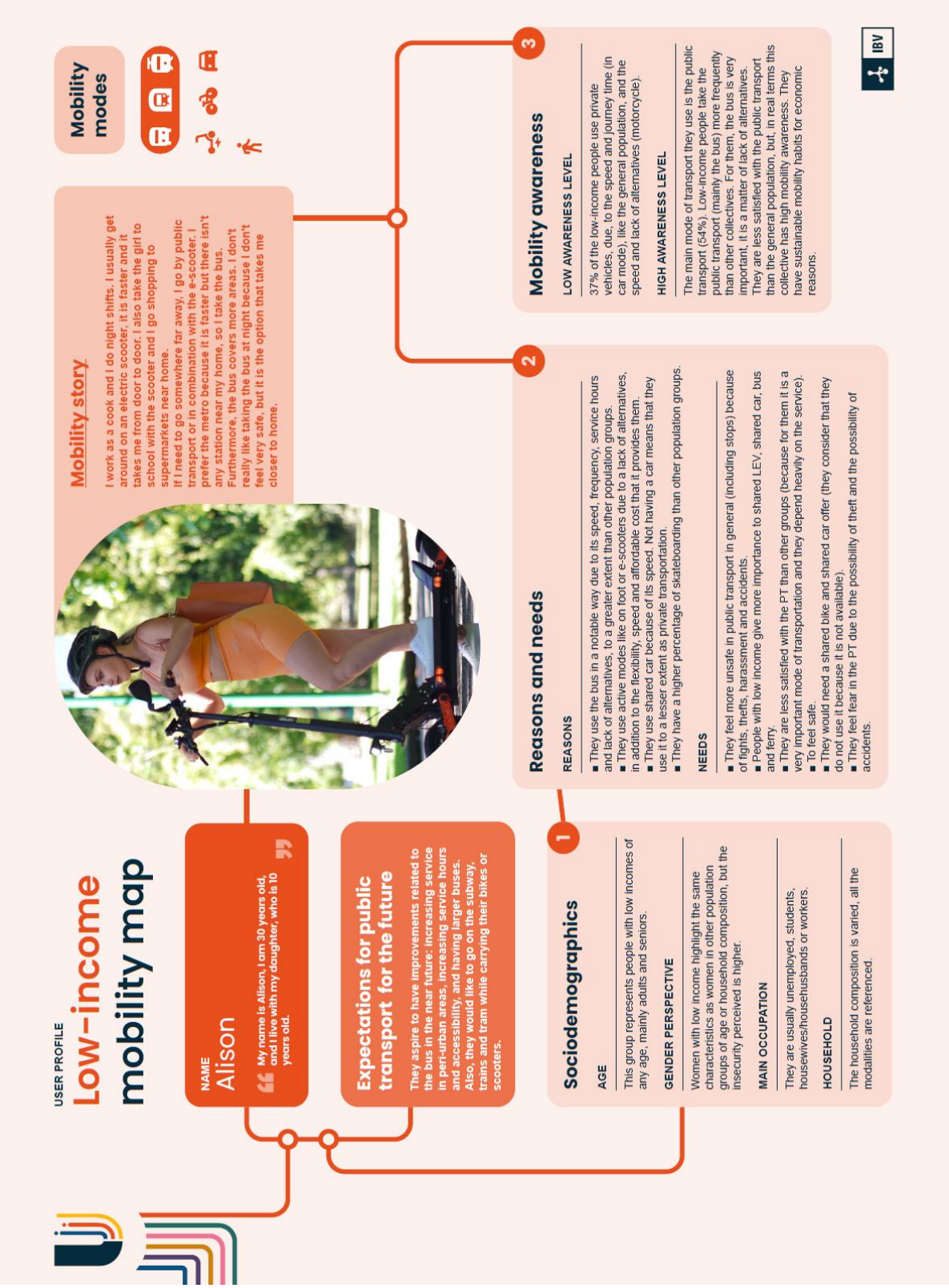


Figure 47: Graphic representation of LOW-INCOME Mobility Map

4.2.7 Functional diversity mobility map

Table 13 presents the main features of the Mobility Map related to FUNCTIONAL DIVERSITY people. *Figure 48* presents these features in a graphic format.

Table 13: FUNCTIONAL DIVERSITY people Mobility Map

PERSONA:

My name is Richard, I am 35 years old, I use crutches to walk, I live alone but I stay with friends a lot. I will try to tell you our experiences.

- **User profile:**

FUNCTIONAL DIVERSITY people

- **Mobility story:**

I go from home to work by car, for short trips on foot or by bus. Since I found job I take the car because it gives me more independence and speed. Besides, it gives me security to think that I will be able to get as close as possible to all destinations avoiding architectural barriers. The buses take a long time and force me to get up much earlier. I never use the *Metro* because the bus has many routes.
My friend Emma is blind, she uses different means of transport, walks in the neighbourhood every day. When she goes further she takes the *Metro* ... In general, she manages by herself, but she has difficulties if she doesn't know the itinerary (lack of information). She can't hear the audio information because of the number of people and they don't usually help if asked. Crowds stress her out a lot and excessive noise disorients her. She avoids the bus because it creates uncertainty.
Finally, my friend Christian uses a wheelchair, he takes a taxi, bus or car (his mother takes him in the car) never the *Metro* because it is not accessible at all the stations. By taxi he always calls the same driver who is very friendly and everything goes well. By bus there are only 2 seats, it is very crowded, when we go with friends with disabilities they can only get 2. You need a companion to help you (call, tick the voucher...). The door to door bus service require excessive planification. You need to have your life programmed and you cannot have improvised activities.

SOCIODEMOGRAPHICS

- **Age:**

This group represents people with functional diversity of any age, mainly adults and seniors.

- **Gender perspective:**

The women with functional diversity highlight the same characteristics as women in other groups. They use public transport and on foot to a greater extent, they feel more insecure in all types of public transport and demand greater frequency, punctuality and schedules.

- **Main occupation:**

They are usually pensioner, students or workers.

- **Household:**

They usually live alone, with partners, with family (mother, father, siblings….) or with caregivers.

MOBILITY MODES

The most frequent modes of transport are: public transport (bus and *Metro*/*Tram* depending on their type of disability), private vehicle (car) and on foot/wheelchair. In that order, linked to disability typology.

MOBILITY AWARNESS LEVEL ASPECTS

- **Low awareness level:**

38% of people with functional diversity use private vehicles, due, among other reasons, to the non-availability of adapted buses or taxis and the speed that the car offers them compared to public transport. The possibility of moving door to door means that part of the group doesn't want to change to this modality.

- **High awareness level:**

Even so, the main mode of transport they use is public transport. People with diversity take the bus, *Metro*-*Tram*-train and taxi more frequently than other collectives. For them, public transport is very important, it is a matter of lack of alternatives. Their accessibility needs dictate the choice of transport mode.

REASONS AND NEEDS

- **Reasons:**

1. The main reason for using a public transport typology is the lack of other alternatives. The lack of alternatives and their needs, guides their choices.
2. Very low level of use of bike, motorcycle and shared modalities (bike, electric scooter, motorcycle...)
3. The speed of the car and the taxi service hours are the main reasons for using these modes.

- **Needs to address:**

1. For them, public transport poses problems of accessibility, uncertainty due to difficulty in accessing information and problems of lack of sensitivity towards their needs by the other passengers, which makes the transition to sustainable mobility difficult.
2. They feel more unsafe in public transport in general (included stops) because of fights, thefts, harassment and accidents.

EXPECTATIONS FOR PT IN THE FUTURE:

In the near future they aspire to more accessible public transport, with service improvements in peri-urban areas and inclusive bus or *Metro*/*Tram* stops. In addition, they hope to get involved in a participative governance.

Figure 48: Graphic representation of FUNCTIONAL DIVERSITY Mobility Map

5 Conclusions

The main conclusions derived from the results presented in the previous sections are:

- The main figures of the UPPER user research are:

  3 qualitative interventions (Netnography, Delphi and Experience Notebook), and 1 quantitative intervention (survey).

  The 9 countries, where the demonstration sites of the project are located, have participated in the user research.

  2 professional profiles (mobility agents and social agents) and 6 end users' profiles (young, adult with children, women, elderly, low income, functional diversity) have participated in the user research.

  97 professionals and 72 end users participated in the qualitative research. In addition, the *Netnography* intervention analyzed 23739 reviews and 15344 comments.

  2676 end users participated in the survey. 22'3% of the participants have a functional diversity, so at least 596 participants are VRUs[12].

  3 collective transport modes analysed: *Metro*, *Tram*, Bus

  3 individual transport modes analysed: Shared LEV, Shared bike, Shared car.

- The satisfaction level of the collective PT and the individual PT, measured on a scale from 1 to 5 (3 is the mean value), ranged for all the transport modes between 2.5 and 3.7. All the ratings are around the mean value (3.2 in Netnography intervention, and 3.1 in the survey), but one collective transport mode is clearly over: Metro.
- The main difference between Metro and the other transport modes is the use of a dedicated infrastructure, that facilitates the reliability of the service, covering users' expectations.
- Users consider Metro, Tram and Bus as the most important (relevant) transport modes. According to Netnography, Tram is also fulfilling users' expectations (similar to Metro), but Bus is not achieving this.
- Considering the importance of the Bus for PT users, the challenge for technology and infrastructure is achieving the satisfaction level of the Metro, in a transport mode that has to coexist with the city traffic.
- Women exhibit a higher preference for the usage of public transportation and active mobility, compared to men. Conversely, men tend to rely more on private transportation.
- Public transportation is more popular among younger individuals, while active mobility is favored by older individuals, particularly those aged 66 and above. Private transportation becomes more significant as people age.
- Taxis and buses are the safest modes of public transportation. Taxis experience minimal incidents of theft compared to subways, and buses (thefts at stations). However, attention must be paid primarily to reduce the possibility of accidents and the feeling of insecurity due to the risk of harassment or sexual assault, which is predominantly experienced by young women.
- Shared transportation stands out as being less secure than the rest, primarily due to accidents involving e-scooters, or bikes.

- The main transport users' demands regarding collective PTs, (Bus and Metro/Tram/Train) are identical: increase the service frequency, and the reliability.
- Improved security in Metro/Tram/Train, and intermodality for Bus are also among the most expected improvements transport users demand.
- Individual transport modes (shared) are critical to support multimodal mobility. For these transport modes, the main users' demands are related to the maintenance of the vehicles, the customer service, and the fines they receive due to system failures.
- For taxi services, users primarily demand: diverse payment methods (ensuring transparency through fixed rates), promoting and encouraging friendly and professional behavior in drivers, and delivering excellent customer service with prompt, adaptable, and courteous assistance.
- Transport users assign different attributes to collective public transport (Cost and affordability, Awareness & Sustainability, Interconnection with other modes) and individual private transport (Flexibility; Security-Safety: Accessibility, Reliability -Punctuality-, Comfort, and Speed-Journey time).
- The advantageous attributes identified for individual private transport (i.e. *Flexibility*, *Reliability*, *Comfort* and *Journey time*) should be converted in collective PT's improvements.
- On the other hand, the advantageous attributes of collective PT seem to support the statement that users prefer individual private transport if they can afford it. Being this the situation, to promote the behavioural change towards a more sustainable mobility emerges as crucial.
- Regarding the behavioural change, half of transport users declare to move in PT or are active users, while the other half are moving in individual private transport. This second group should be the priority to address initiatives that promote a change in mobility habits, that increase the use of PT.
- Transport uses selected the adaptation of stops facilities, to increase the public transport offer in peri-urban areas, and to supply real time information on trip progress as the preferred interventions on PT, based on data sharing and technology.
- To improve the sustainability of PT, transport users value interventions addressed to prioritize the PT vehicles into the city traffic, and financial incentives.
- The UPPER general Mobility Map summarizes the main findings of this research from a behavioural change point of view. In this sense, three groups of transport users are included (PT users, private transport user and active users), and their motivations, preferences and expectations are presented.
- A list of Mobility Maps for specific users' groups have been generated. These mobility maps are intended to exhibit the requirements of users with special needs, that could easily get excluded from PT usage.
- Groups of YOUNG PEOPLE, WOMEN, LOW-INCOME people and people with FUNCTIONAL DIVERSITY use transport modes as a priority. Secondly they use private transport and thirdly active modes. The exceptions to this model are ADULTS WITH CHILDREN, who first use private transport (mainly car), secondly active modes (mainly on foot and by bike) and thirdly public transport, and the ELDERLY people, who use active modes first, private transport (car) second, and public transport third.
- All the users' groups presented in the Mobility Maps make a balanced use of public transport, private transport and active transport weekly (around 60% of cases), except ELDERLY who use weekly public transport (49%) and on foot mobility (75%).

- Regarding the level of sustainable mobility awareness, the users' groups presented in the Mobility Maps are a mix between *use of private vehicles without intention to change* and *use of public transport or intention of greater use*, except YOUNG PEOPLE, who have a predisposition to change their habits towards more sustainable mobility, and WOMEN (if they have no children under their care).
- All women, regardless of their membership in other groups such as FUNCTIONAL DIVERSITY or ADULTS WITH CHILDREN, report a greater feeling of insecurity, when using public transport, than men.
- The general aspirations are: the increase in the offer in peri-urban areas (mainly for ADULTS WITH CHILDREN, the ELDERLY, people with FUNCTIONAL DIVERSITY and LOW-INCOME), the adaptation of bus stops and stations, the availability of real-time data (mainly for ADULTS WITH CHILDREN, WOMEN and YOUNG PEOPLE), prioritization of public transport, economic incentives and balancing quality of service and satisfaction.
- Other expectations, regarding the future of public transport, are clearly different among social groups:

  ADULTS WITH CHILDREN: they expect public transport covering low demand areas.

  ELDERLY: they expect greater accessibility and inclusive bus stops and stations.

  People with FUNCTIONAL DIVERSITY: they expect accessible public transport, with inclusive bus stops ans stations, and the creation of an environment that favors participatory governance (involvement and participation).

  People with LOW-INCOME: they expect to find public transport that increases service hours, buses with greater capacity, and the possibility of taking bikes or electric scooters to public transport.

  WOMEN: they expect better accessibility, innovative and inclusive bus stops and stations, clear information about the routes and data revealing insecurity.

  YOUNG PEOPLE are the most ambitious group in terms of their vision of the future: they aspire to public transport with multimodal nodes, which considers areas with low emissions, with an increase in service hours, the possibility of bringing electric scooters and bikes onto the transport, increase technological aspects (data, various purchasing systems...) and to become involved in participatory governance processes.

ANNEX 1. Netnography results

Unleashing the Potential of Public Transport in Europe

Instituto de Biomecánica (IBV)

Report: Netnography of public transport in UPPER's Living Labs: València, Ile de France, Rome, Oslo and Mannheim

Reported by: Carol Soriano García, Amparo López Vicente, Juan Giménez Pla

Data collected from January to February 2023

This project has received funding from the Horizon Europe research and innovation programme under grant agreement No 101095904

April '23

Index:

***Netnography**, an online research method originating in **ethnography**, is understanding **social interaction** in contemporary **digital communications** contexts. **Netnography** is a specific set of research practices related to data collection, analysis, research ethics, and representation, rooted in participant observation. In netnography, a significant amount of the data originates in and manifests through the digital traces of naturally occurring public conversations recorded by contemporary communications networks. Netnography uses these conversations as data. It is an interpretive research method that adapts the traditional, in-person **participant observation** techniques of **anthropology** to the study of interactions and experiences manifesting through **digital communications** (*).*

(*)Robert V. Kozinets (1998) ,"On Netnography: Initial Reflections on Consumer Research Investigations of Cyberculture", in NA - Advances in Consumer Research Volume 25, eds. Joseph W. Alba & J. Wesley Hutchinson, Provo, UT : Association for Consumer Research, Pages: 366-371.

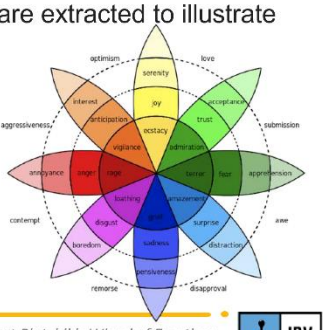
3

1. Objective & methodology (I)

- The **objective** of this work is to analyze **citizen transport** (in its different forms) through the analysis of online comments (*Netnography*).
- The **methodology** consisted of analyzing 5 representative cities in Europe that participate in the UPPER project as Living Labs, and are: **Valencia**, **Ile de France**, **Rome**, **Oslo** and **Mannheim**.
- The following **types of transport** have been analyzed:
  - Bus
  - Subway and/or Tram
  - Taxi
  - Shared bike
  - Shared LEV (motorbike and/or e-scooter)
  - Shared car.
- The **methodological phases** are:
  - **1. Web Scraping to identify gender and residence** aspects (tourists vs local residents), using gender, language extraction, detection tools (e.g. ScrapeHero or Gender API), and the comments' **rate**.
  - 2. **Number of reviews per year,** to determine the evolution of usage.
  - 3. **Analysis of textual data** (natural language processing) represented in:
    - **Sentiment-polarity analysis**; classifying the comments as POSITIVE, NEGATIVE, MIXED or NEUTRAL

1. Objective & methodology (II)

- **Analyzing the emotions** and the **hate/aggressive** level of the comments.
- **Word clouds**: The word cloud allow us to synthetically view key words, according to their frequency of occurrence.
- **Semantic analysis** by manual coding: manual coding consists of reading the set or a representative sample of the answers (around 100). Corresponding topics and categories are chosen, according to meaning at expert level.
- Extraction of **characteristic verbatim**: Once the topics of the comments have been identified, the verbatim are extracted to illustrate the topics addressed.
- 4. **Comparative analysis** of cities.
- 5. **Analysis** grouped **by type of transport**.
- 6. **Differences** according **to gender**.
- 7. **Differences between** the opinion of **residents or tourists.**



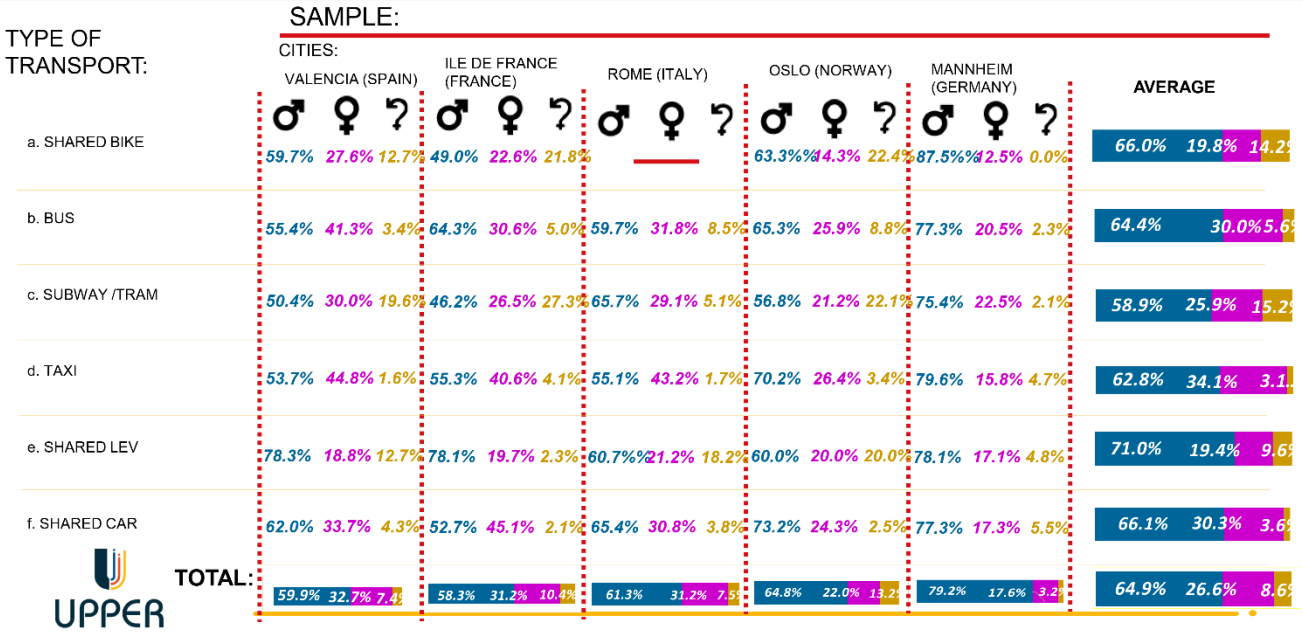
Robert Plutchik's Wheel of Emotions

2. Sample & sources (I)

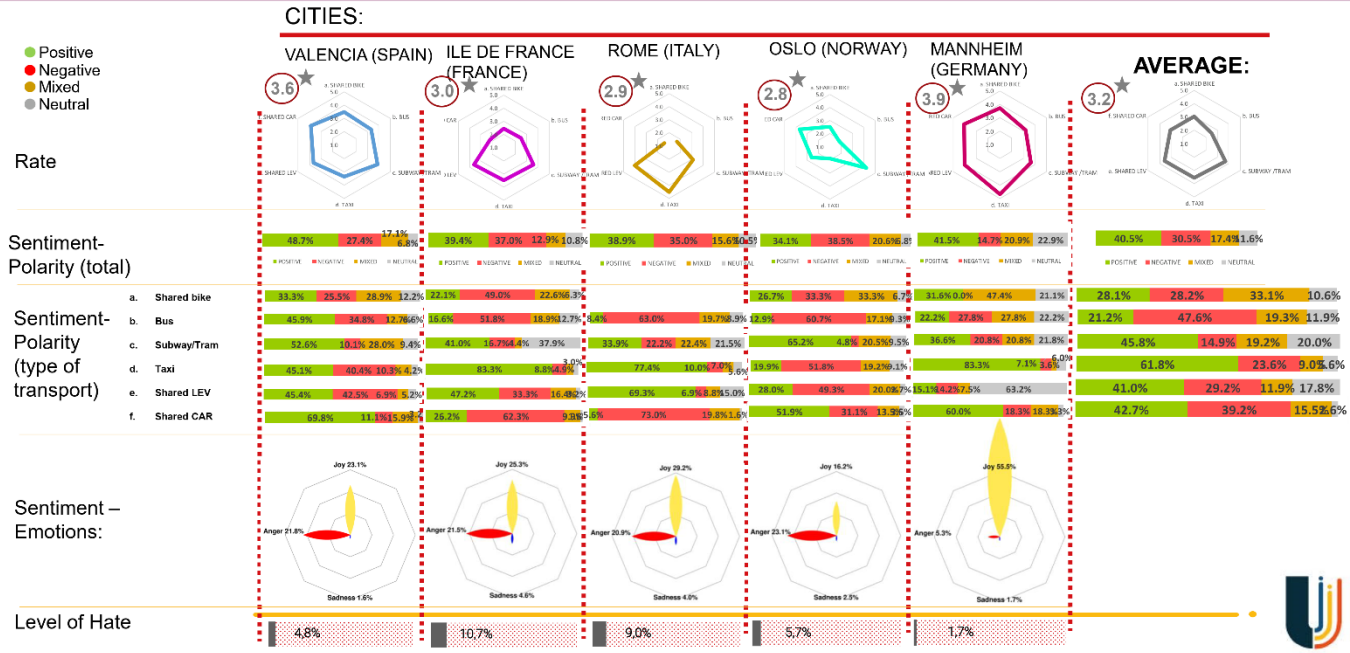
SAMPLE:

TYPE OF TRANSPORT:	CITIES: VALENCIA (SPAIN)		ILE DE FRANCE (FRANCE)		ROME (ITALY)		OSLO (NORWAY)		MANNHEIM (GERMANY)		TOTAL:	
	Nº Reviews	Nº Comments	Nº Reviews	Nº Comments	Nº Reviews	Nº Comments	Nº Reviews	Nº Comments	Nº Reviews	Nº Comments	Nº Reviews	Nº Comments
a. SHARED BIKE	387	292	1.194	1.049	-	-	49	49	32	19	1.662	1.409
b. BUS	623	363	952	512	1.087	835	251	140	44	18	2.957	1.868
c. SUBWAY /TRAM	847	847	2.923	2.923	2.377	942	459	336	187	101	6.793	5.149
d. TAXI	1.506	910	2.341	1.647	2.126	829	1.251	662	2.095	1.036	9.319	5.084
e. SHARED LEV	309	174	620	410	699	622	85	75	105	105	1.818	1.386
f. SHARED CAR	93	64	237	191	133	127	608	371	109	105	1.180	858
TOTAL:	**3.765**	**2.650**	**8.267**	**6.322**	**6.422**	**3.355**	**2.703**	**1.633**	**2.572**	**1.384**	**23.729**	**15.344**

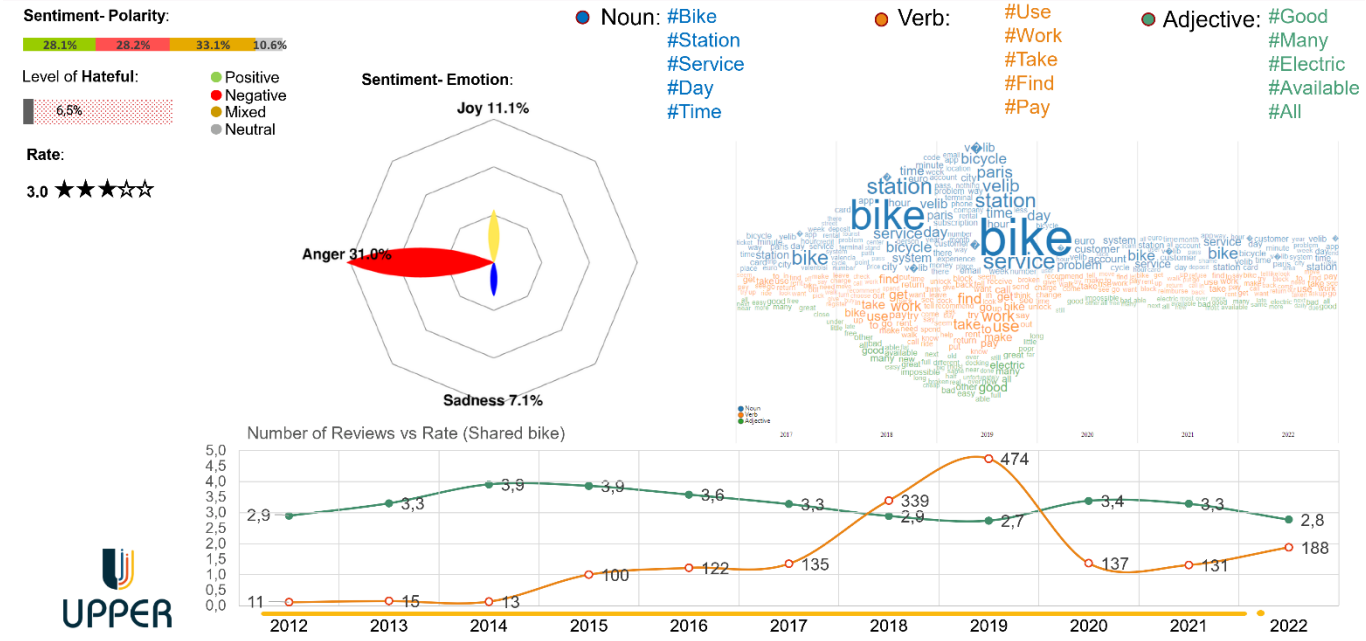
2. Sample & sources (II)



3. Comparative analysis of cities

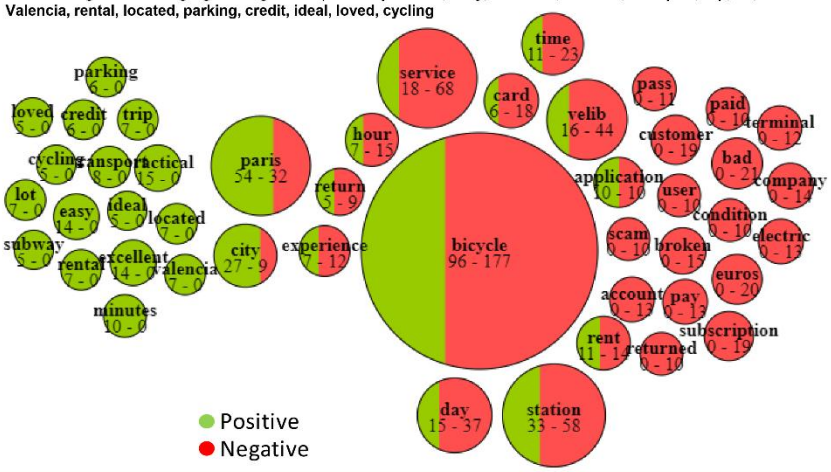


4. Analysis by type of transport: **a. Shared Bike** (Valencia+Ile de France+Rome+Oslo+Mannheim)



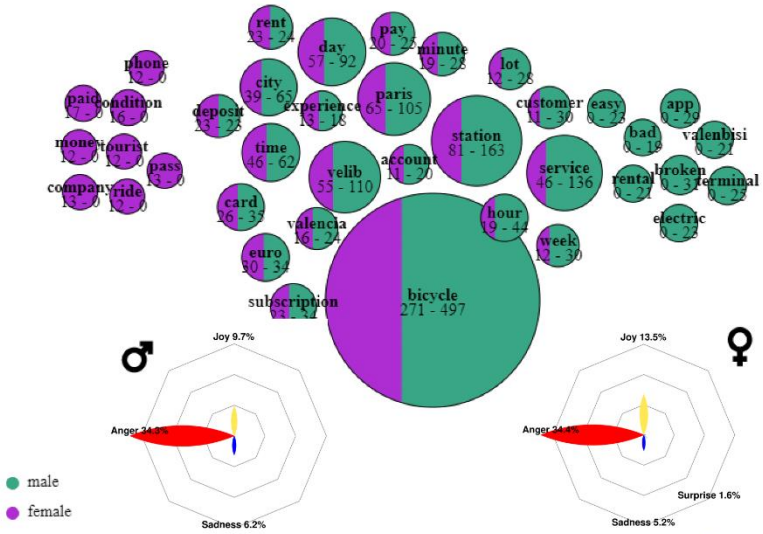
4. Analysis by type of transport: **a. Shared Bike** (Valencia+Ile de France+Rome+Oslo+Mannheim)

- The most repeated words are **bicycle**, **station**, and **service**. In all three cases, there are more negative aspects/to improve than positive ones. Therefore, bikes, stations, and services are important and should improve.
- **Velib** and **Paris** also stand out (due to the volume of comments in the city).
- Other areas for improvement are related to time (**time**, **day**, **hour**), **rent**, **card**, **application**, **experience**, and **return.**
- The following words are highlighted in red as negative: **pay/paid, bad, euros, inscription, customer, broken, company, electric, account, terminal, pass, scam, user, returned.**
- The following words are highlighted in green as positive: **practical, easy, excellent, minutes, transport, trip, lot, Valencia, rental, located, parking, credit, ideal, loved, cycling**



4. Analysis by type of transport: **a. Shared Bike** (Valencia+Ile de France+Rome+Oslo+Mannheim)

- The words that only men say are highlighted as: **broken, app, terminal, electric, rental, Valenbisi** and **bad.**
- The words that only women say are highlighted as: **paid, condition, experience, pass, company, ride, money** and **phone.**
- As for emotions, there are hardly any differences between men and women. The level of hatred is higher in women, 7.3% compared to 5.3% in men.

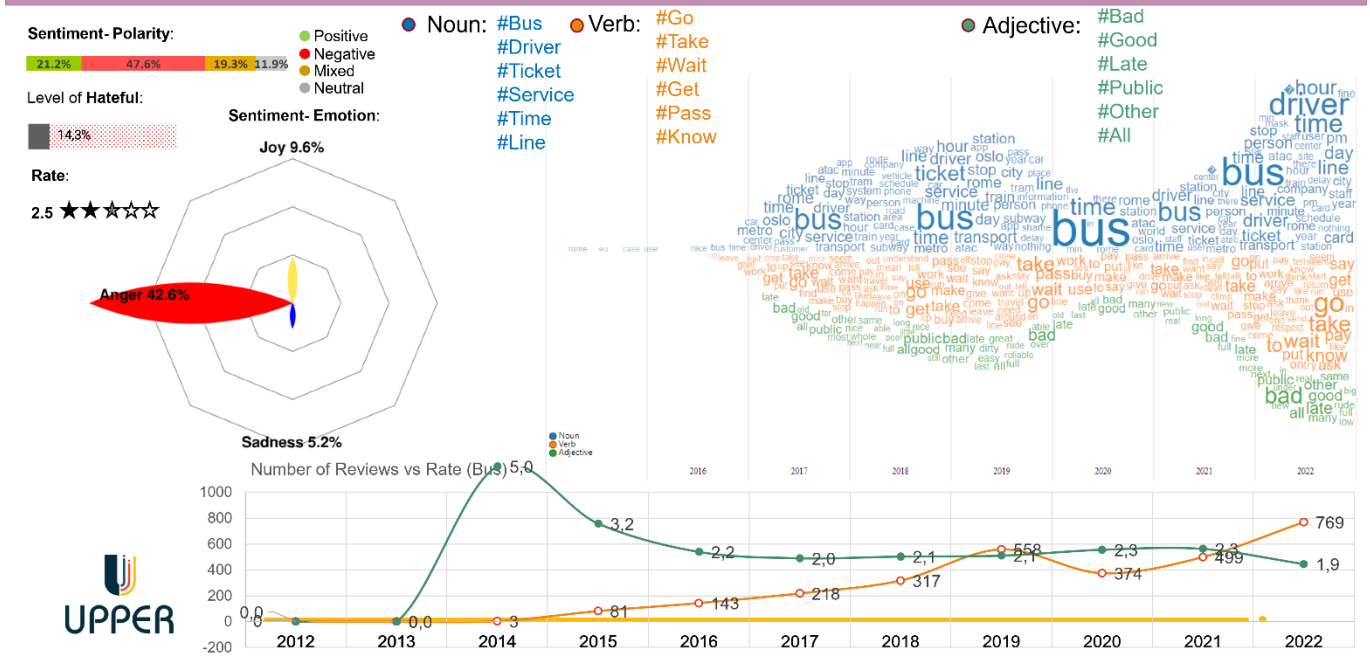


4. Analysis by type of transport: a. Shared Bike (Valencia+Ile de France+Rome+Oslo+Mannheim)

IMPROVEMENTS & MAINTAIN:

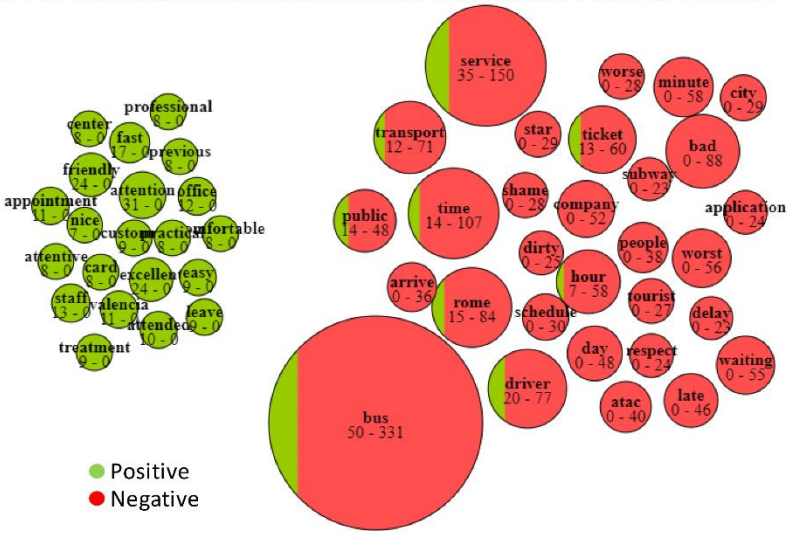
- **To minimize or to eliminate system failures**, and in the event that they occur they must be solved with **good customer service:**
  - Option of attention in different languages (service used by many tourists).
  - That they are solved quickly, at the moment and without costs. (Fast and efficient customer service).
  - Avoid charges for system/service failures (e.g. Advises to remember more frequent problems, such as the bad anchoring of the bike).
- **Well-sized stations:** with enough spaces and bikes (balance according to the influx of users and information in real time)
- **Sufficient and well-located stations,** close to bike lanes and close to other forms of transport, facilitating intermodality.
- **Improvement of the bikes and maintenance of the bikes:** they are considered very heavy with little suspension among other aspects. Need to have electrical rental solutions and accessories to travel with children and/or transport the purchase, etc.
- **App** that notifies in real time about the availability of spaces and bikes, and that works well, is reliable and useful.
- **Transparent and adequate price** with **different types of tickets** for different needs: single ticket, 24 hours, weekly, etc.
- To improve the service by adapting to **new, simpler and more agile forms of payment/rental:**
  - Deposit of less amount of money.
  - 45 minutes free better than 30 min does not meet the needs of tourists.
  - Refund of the deposit in a maximum of 24 hours.
  - Being able to pay with mobile.
- **Continuous service improvement:**
  - Service that adapts to the **changing needs** of inhabitants and tourists.
  - **Being able to have accessories**: being able to place the mobile, transport children, purchase, etc.
- Sufficient, adequate, well signposted and safe **"bike lane" network**.
- **Promotion of the respect** of all citizens for the bike lane and cyclists.
- **Others**: Bikes and covered stations in cities with rain and/or bad weather.

4. Analysis by type of transport: **b. Bus** (Valencia+Ile de France+Rome+Oslo+Mannheim)



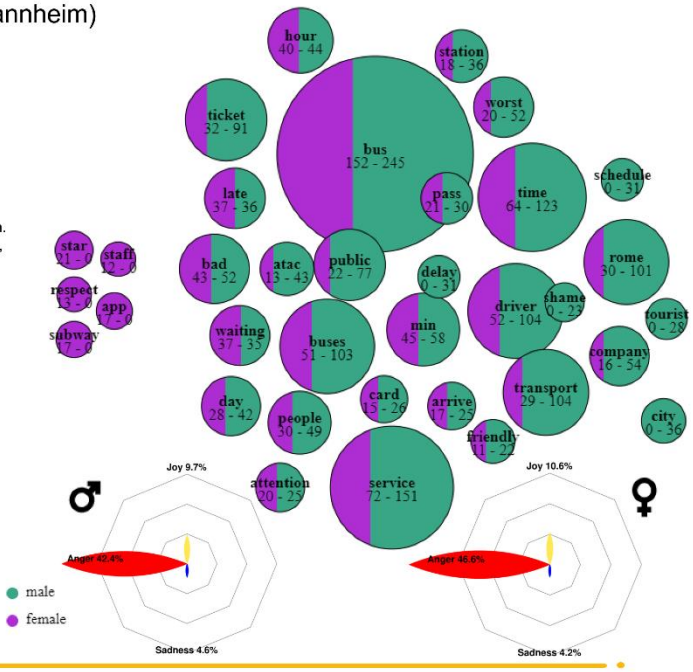
4. Analysis by type of transport: **b. Bus** (Valencia+Ile de France+Rome+Oslo+Mannheim)

- The most repeated words are **bus**, **service**, **time** and **driver**. In all four cases, there are more negative aspects/to improve than positive ones. Therefore, **bus**, **service**, **time** and **driver** are important and should improve.
- The following words are highlighted in red as negative: **bad, minute, worst, waiting, day, lat, atac, arrive, schedule, city,…**
- The following words are highlighted in green as positive: **attention, excellent, friendly, fast, staff, office, Valencia, appointment,…**



4. Analysis by type of transport: **b. Bus** (Valencia+Ile de France+Rome+Oslo+Mannheim)

- The words that only men say are highlighted as: **city, schedule, delay, tourist** and **shame.**
- The words that only women say are highlighted as: **star, app, subway, respect** and **staff.**
- As for emotions, there are hardly any differences between men and women. Slightly higher level of anger in women. The level of hatred is higher in women, 13.3% compared to 11.2% in men.

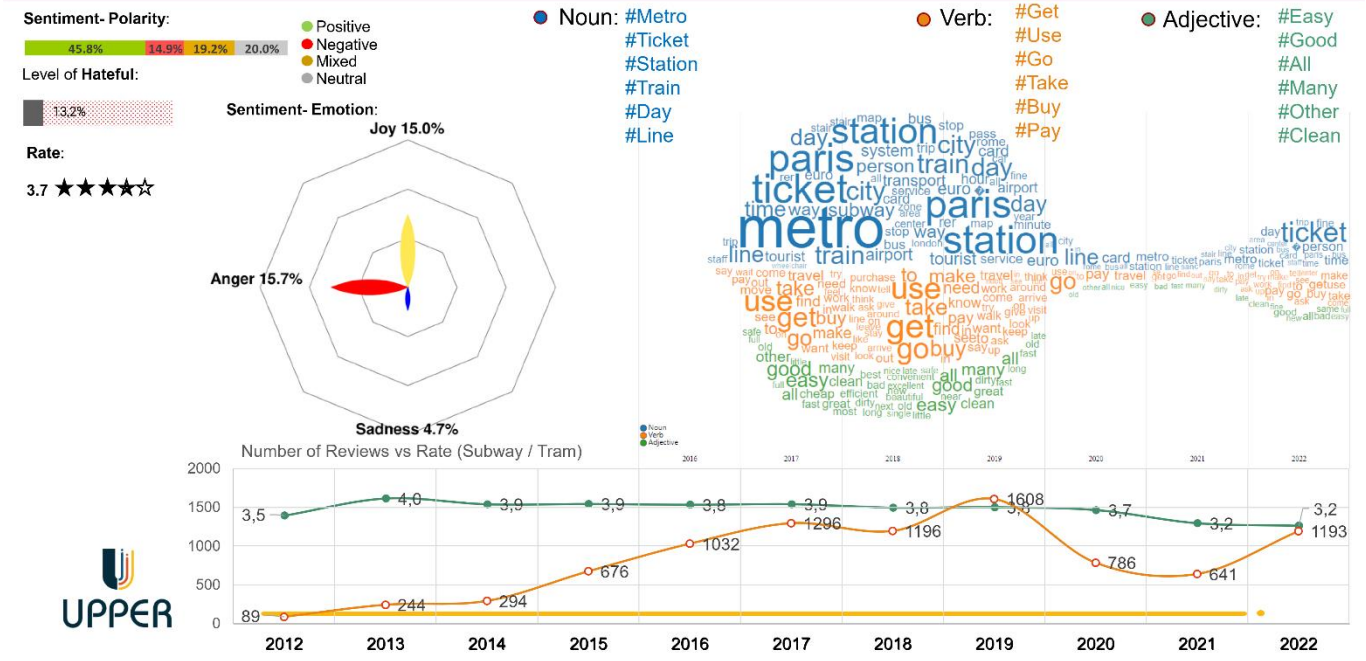


4. Analysis by type of transport: **b. Bus** (Valencia+Ile de France+Rome+Oslo+Mannheim)

IMPROVEMENTS & MAINTAIN:

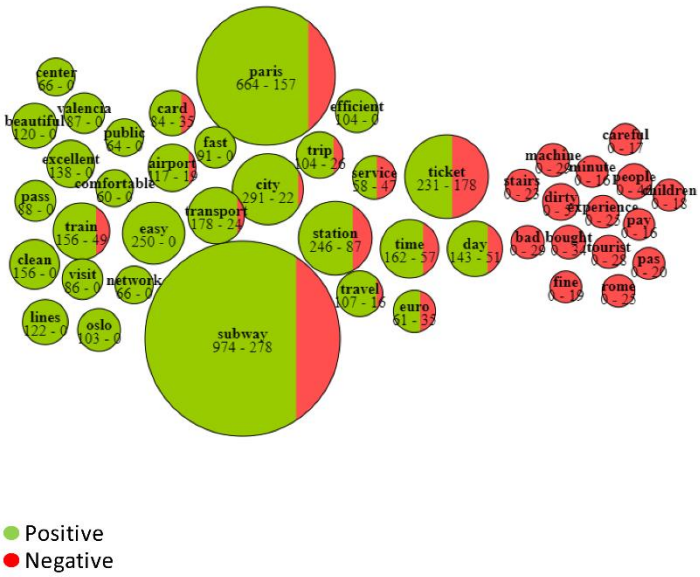
- **Higher frequency** of buses, more buses.
- Greater **punctuality and reliability** (no delays).
- Good **customer service** (quick resolution, 24 hour attention, etc.) and **adequate management** of the public service.
- **Higher capacity buses**, interior redesign to make better use of space.
- **Safe driving**, not so aggressive (avoiding braking and accelerating).
- **Improved attention from drivers** (friendliness and professionalism). (e.g. that they always stop at the bus stops)
- **Intuitive service, easy to use and well signposted.** Easy to get tickets and pay.
- **App** improvement:
  - No bugs, reliable, usable, fast,
  - app accurately informing about the times of the buses,
  - app managing the purchase/recharge of tickets in an agile way.
- **Adequate price** with different types of tickets. As well as cheaper tickets and discounts.
- **More service time** slot (day and night), especially **more night service**.
- More **comfort and modernization of buses** (new services, new needs)
- **Cleanliness and good maintenance**.
- **Good connection** to the airport and other means of transport.
- **Avoid fines** for not knowing how the service works, for being poorly explained, difficult to understand, etc.
- **Greater accessibility** of stops and buses for people with functional diversity, the elderly, baby carriages, ramp lighting, etc.
- **Clear rules** for users and encouragement of respect for them.
- **Speed.**
- **Well located stops**.
- **Adequate air conditioning**; neither cold nor heat
- **Greater safety** for those who are standing, redesign of the way of walking, e.g. semi-sitting
- **Improved security** against theft, etc.

4. Analysis by type of transport: **c. Subway / Tram** (Valencia+Ile de France+Rome+Oslo+Mannheim)



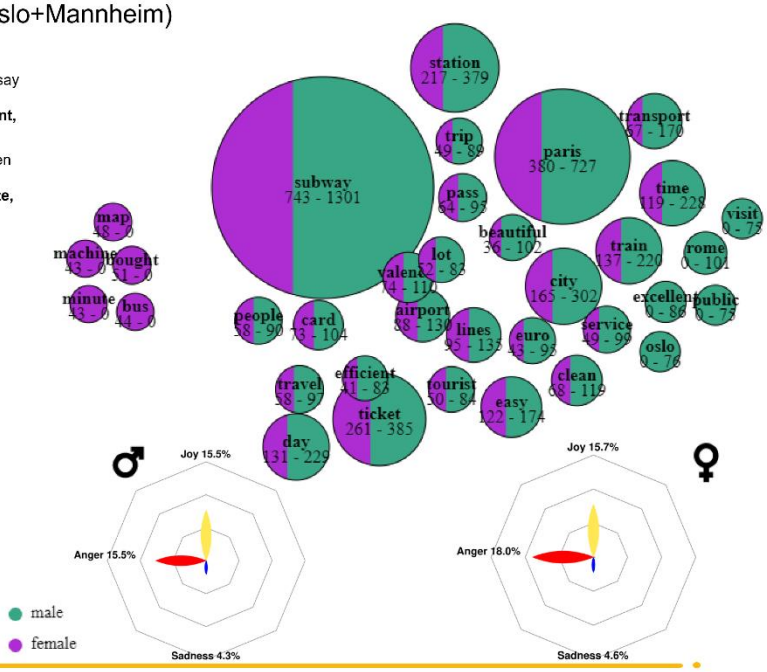
4. Analysis by type of transport: **c. Subway / Tram** (Valencia+Ile de France+Rome+Oslo+Mannheim)

- The most repeated words in addition to **subway** and **Paris** (due to the volume of comments in the city) are: **ticket, station, city, time, easy, train** and **day.**
- These aspects have positive and negative comments (to improve), especially **ticket** (ease, options, price), **station** and **train.**
- The following words are highlighted in green as positive: **easy, clean, excellent, lines, beautiful, efficient, Oslo, fast, pass, Valencia, visit, center** and **network.**
- The following words are highlighted in red as negative: **dirty, service, people, bought, machine, bad, tourist, experience, Rome, stairs, pass, fine, children** and **careful.**



4. Analysis by type of transport: **c. Subway / Tram** (Valencia+Ile de France+Rome+Oslo+Mannheim)

- The words that only men say are highlighted as: **beautiful, Rome, excellent, efficient** and **Oslo.**
- The words that only women say are highlighted as: **bought, map, bus, minute,** and **machine.**
- There are no significant differences in detected emotions and level of hatred.

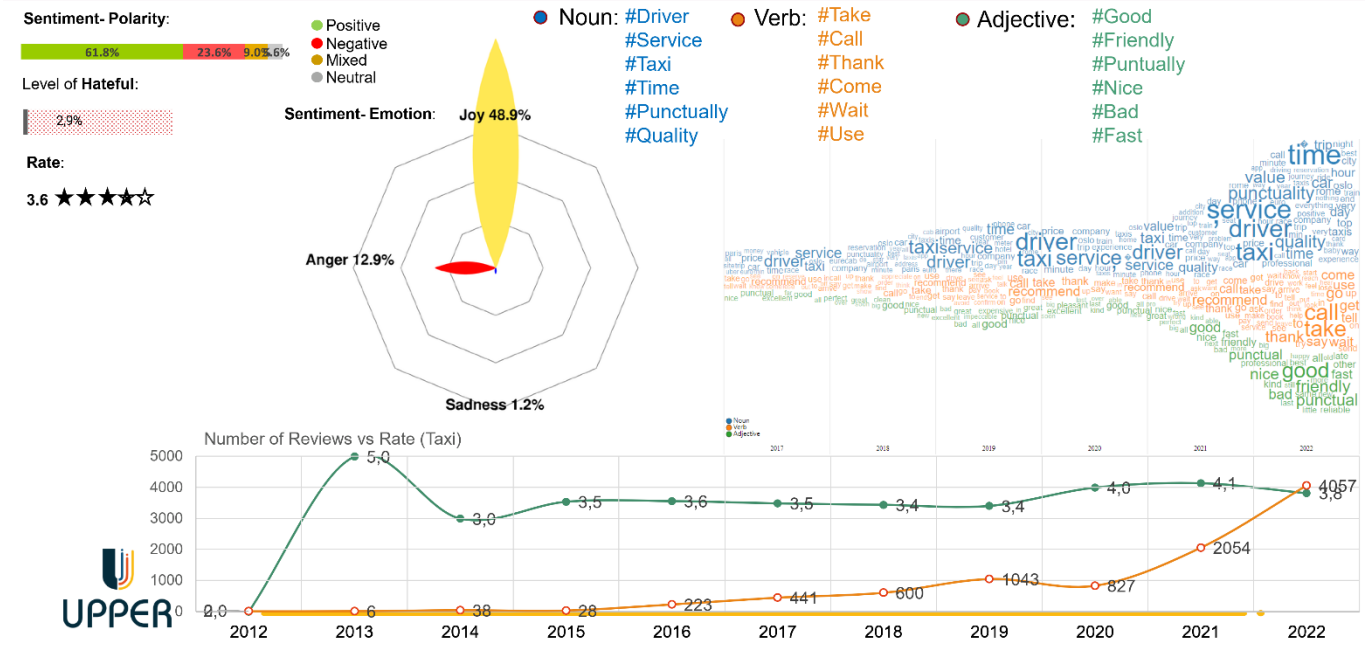


4. Analysis by type of transport: **c. Subway / Tram** (Valencia+Ile de France+Rome+Oslo+Mannheim)

IMPROVEMENTS & MAINTAIN:

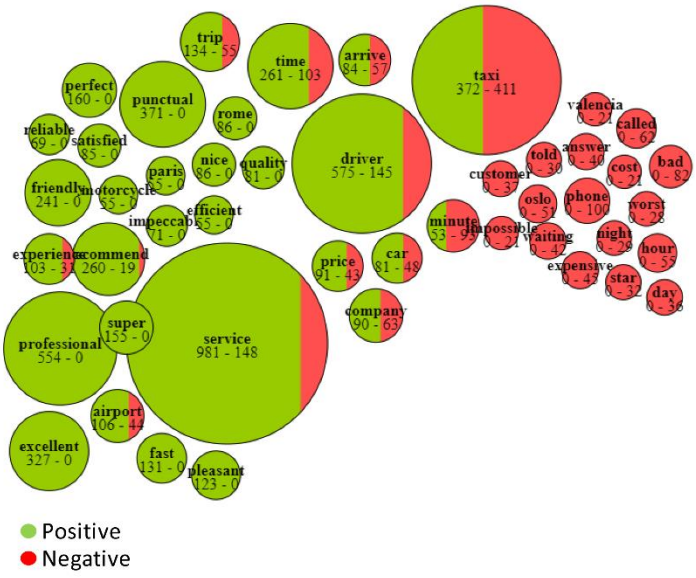
- **Cleaning and maintenance** (Trains and stations, escalators, vending machines, especially in the suburbs, etc.). Maintenance and renovation of trains.
- **Improved comfort, efficiency and usability**.
- **Good connections** with the airport, the rest of the city and other transport (important stations).
- **Being able to get everywhere** with enough lines and stops.
- Improved **security against theft**, etc.
- **Higher frequency** of trains.
- **Punctuality**, **speed** and **reliability** (precision).
- **To eliminate or to minimize fines** for failures or ignorance. (tourists): e.g. by mistake throwing the ticket before leaving.
- **Improvement of accessibility**: people with reduced mobility, baby carriages, etc.
- **Improved customer service** (solve doubts and incidents in a friendly way in several languages), friendly staff.
- **Variety of ticket types** (e.g. day, week or month tickets).
- **Adequate price.**
- **Well marked**. Information available, complete, reliable and accurate on screens, web, etc.
- **Adequate air conditioning.**
- **Clear rules of use and behavior** (supervision, communication campaigns, sanctions,...) and encouragement of respect by users.
- Greater **night service**.
- **Troubleshooting trains**, minimizing problems/errors with ticketing machines (ticketing, etc.).
- **More space inside**. Redesign to optimize space.
- **To facilitate various forms of payment** (e.g. a photo is not necessary for the card).
- **Others:** being able to get bikes on the train (even if they are not collapsible,...), ...

4. Analysis by type of transport: **d. Taxi** (Valencia+Ile de France+Rome+Oslo+Mannheim)



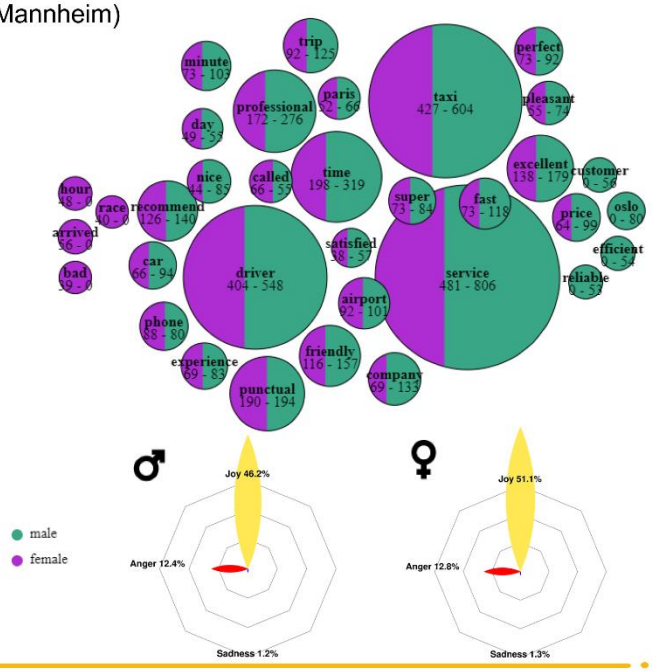
4. Analysis by type of transport: **d. Taxi** (Valencia+Ile de France+Rome+Oslo+Mannheim)

- The most repeated words in addition to **taxi** are: **service, driver, professional, time, excellent** and **recommend.**
- These aspects have more positive comments than negative ones, therefore they are well resolved.
- The following words are highlighted in green as positive: **professional, excellent, recommend, friendly, perfect, super, pleasant, nice,....**
- The following words are highlighted in red as negative: **time, phone, minute, bad, company, called, arrive, expensive, waiting, answer, customer, day, star, told, night, worst, impossible** and **cost.** All of them refer mainly to the waiting times on calls and service arrivals and the cost of the service.



4. Analysis by type of transport: **d. Taxi** (Valencia+Ile de France+Rome+Oslo+Mannheim)

- The words that only men say are highlighted as: **Oslo**, **customer**, **efficient** and **reliable**
- The words that only women say are highlighted as: **arrived, hour, race** and **bad.**
- There are no significant differences in detected emotions and level of hatred. There is a tendency for women to have a higher level of joy and a lower level of hatred.

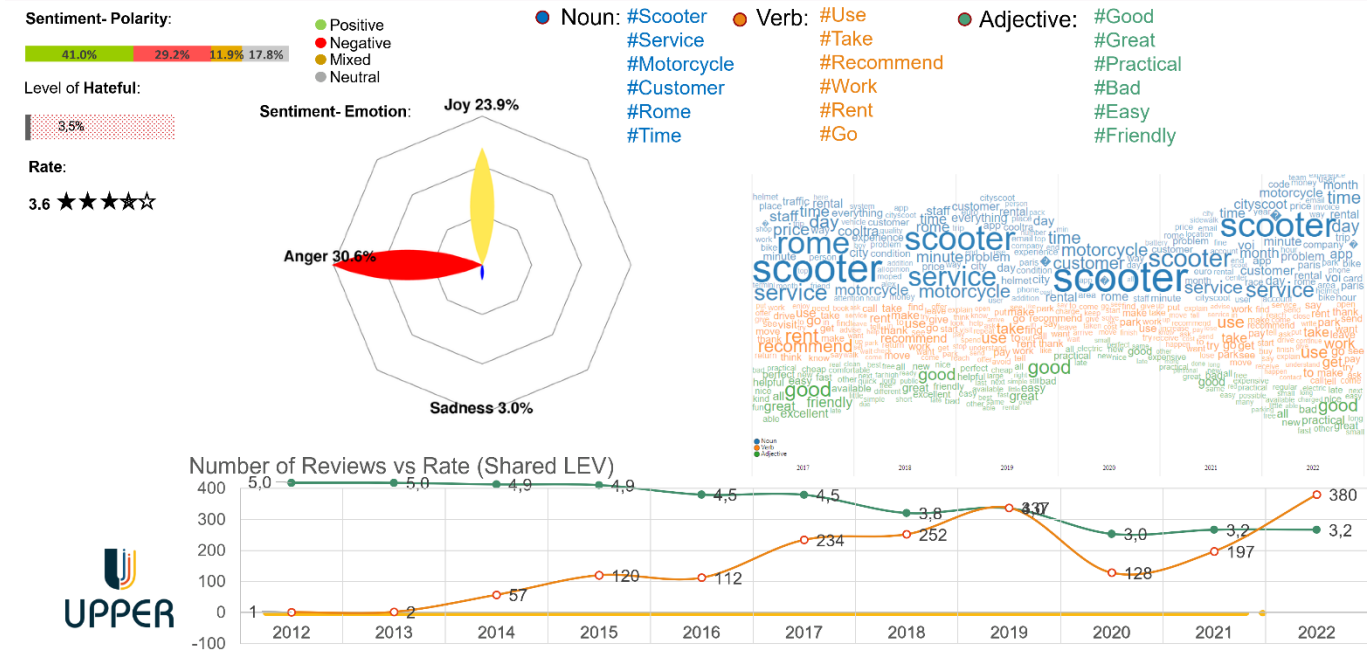


4. Analysis by type of transport: **d. Taxi**(Valencia+Ile de France+Rome+Oslo+Mannheim)

IMPROVEMENTS & MAINTAIN:

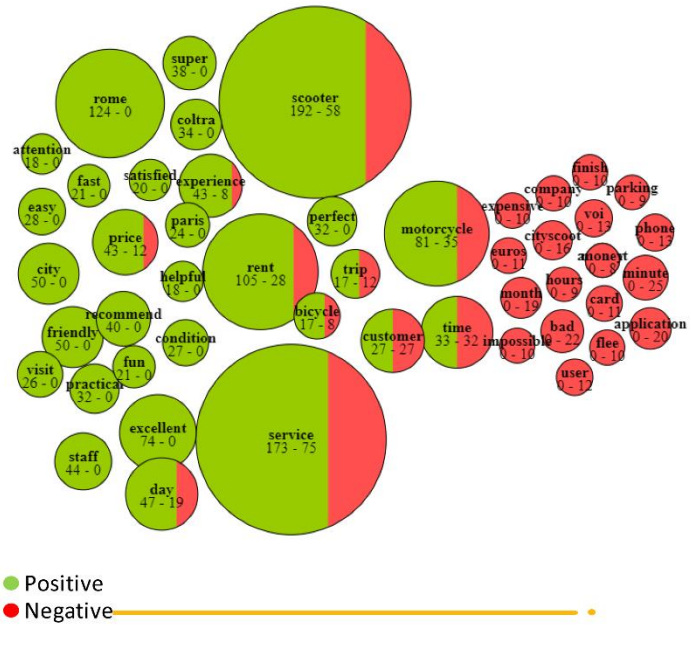
- **Friendly and professional driver** (faster/shorter routes). In addition to being efficient, safe and flexible (in the face of changes).
- **Speed, punctuality, reliability and precision**: if service cancellations, the taxi arrives on time and otherwise they notify you.
- **Good customer service**; fast, flexible and friendly.
- **Quick telephone attention and easy reservation**.
- **Quick** to go to the taxi.
- **Good price**, good value for money and payment with all the comforts and facilities (various forms of payment).
- **Transparency** in prices, rates. Fixed price that does not vary.
- **Clean and comfortable** cars.
- More **service at night**.
- **More accessible cars** and with a suitable car seat for babies / children.
- Being able to recover **lost objects**.
- **App** useful, reliable and easy to use.
- **Taxi availability**.
- **Airport service**.
- Automatic **refund**.
- **Others:** low-emission taxis, home pick-up service, a driver who doesn't talk much, who smells good, who speak different languages, you can go wherever you want without restrictions...

4. Analysis by type of transport: **e. Shared LEV** (Valencia+Ile de France+Rome+Oslo+Mannheim)



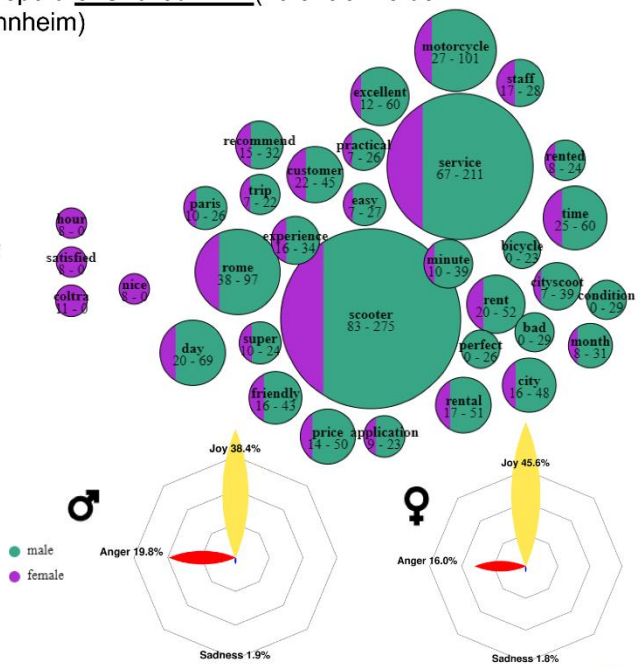
4. Analysis by type of transport: **e. Shared LEV** (Valencia+Ile de France+Rome+Oslo+Mannheim)

- The most repeated words in addition to **scooter /motorcycle** are: **service, rome, rent, excellent, time** and **customer.**
- These aspects have more positive comments than negative ones, therefore they are well resolved. Except for **customer** and **time**, which have the same number of positives as negatives
- The following words are highlighted in green as positive (in addition to scooter/motorcycle, service, rent, Rome): **excellent, friendly, city, day, staff, experience, recommend, super** and **practical.**
- The following words are highlighted in red as negative (in addition to **time** and **customer**): **minute, bad, application, month, Cityscoot, phone, VOI, user, euros, card, expensive, company, finish, impossible** and **flee.** Many words refer to app failures, inability to close the service, and the cost of the service.



4. Analysis by type of transport: **e. Shared LEV** (Valencia+Ile de France+Rome+Oslo+Mannheim)

- The words that only men say are highlighted as: **condition**, **bad** and **perfect**
- The words that only women say are highlighted as: **coltra, satisfied, nice** and **hour.**
- There are no significant differences in detected emotions and level of hatred. There is a tendency for women to have a higher level of joy and a lower level of hatred.

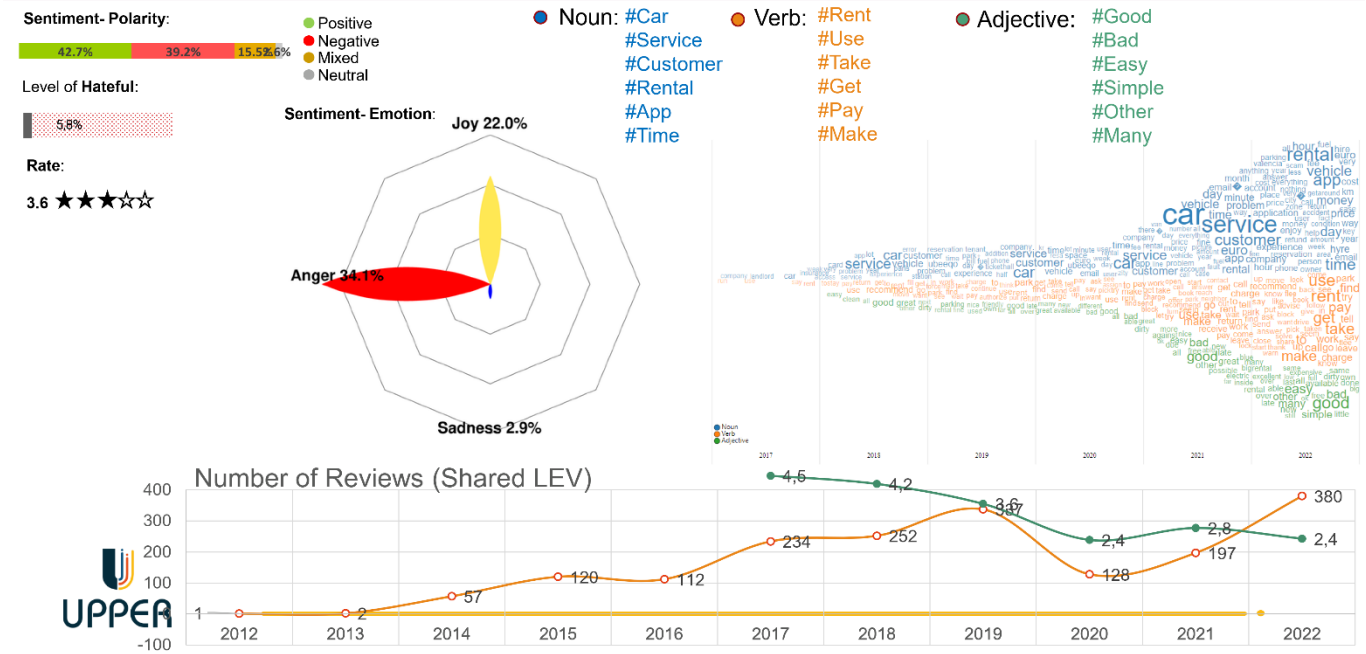


4. Analysis by type of transport: **e. Shared LEV** (Valencia+Ile de France+Rome+Oslo+Mannheim)

IMPROVEMENTS & MAINTAIN:

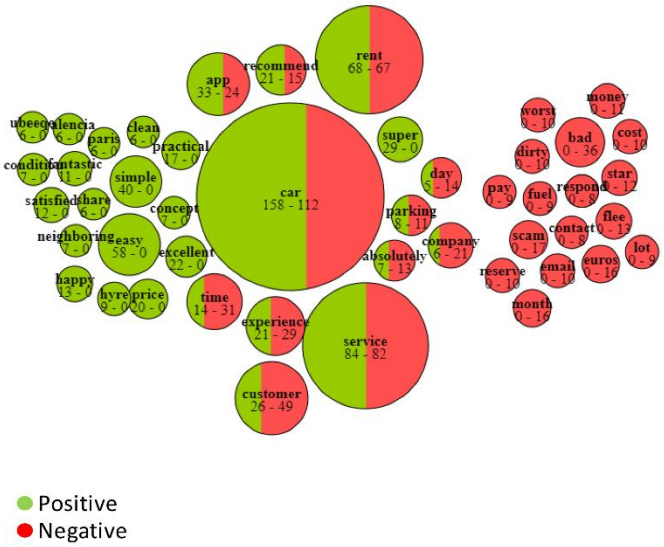
- **Easy-to-use service** (simple, easy to understand, fast, agile and satisfactory) and without errors, minimizing system errors (e.g. improper charges).
- Fast, decisive and adequate **customer service**: 24-hour availability, kindness, etc.
- **Quality and reliable service**: The motorcycles must work well, be easy to drive and have good maintenance, cleanliness, etc.
- Usable, functional, useful and flawless **app**.
- It is a **real alternative** to other forms of transport, it must be improved, regulated and maintained.
- **Suitable price:**
  - **Transparent** price.
  - **Agile and simple forms of payment and rental** (not having to pay a deposit and enter a lot of personal information, etc.).
  - With **discounts according to use and user profiles**.
  - Automatic return (less than 24h)
- **Availability** of motorcycles / e-scooters.
- **To avoid parking** motorcycles/skates **in a disorderly manner** (areas that disturb pedestrians, etc.)
- With an **attractive, comfortable, functional and resistant design**.
- With **insurance** that is managed with the rental and covers the users.
- **Compatibility with cards** from other countries such as the US card.
- **Expansion of the service** radius to areas that do not have it.
- Adequate and secure **management of personal data**.

4. Analysis by type of transport: **f. Shared Car** (Valencia+Ile de France+Rome+Oslo+Mannheim)



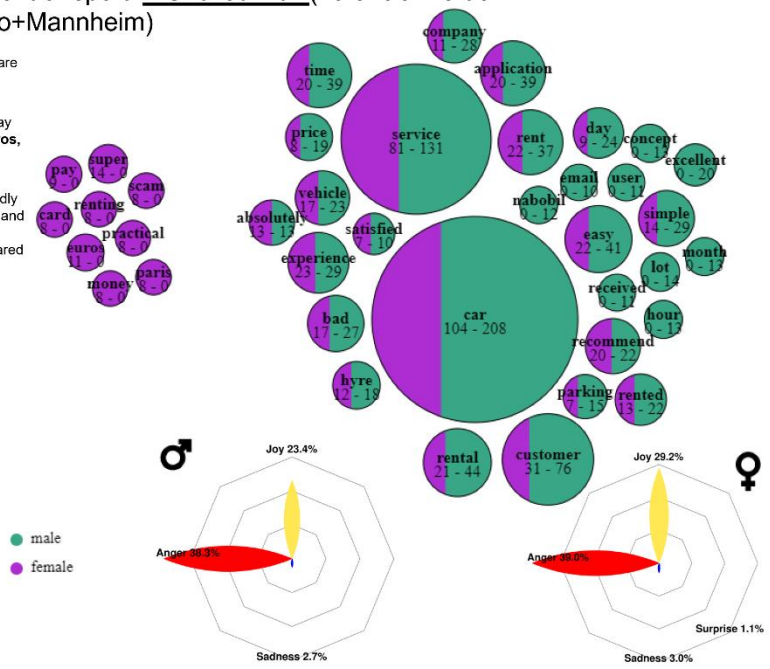
4. Analysis by type of transport: **f. Shared Car** (Valencia+Ile de France+Rome+Oslo+Mannheim)

- The most repeated words in addition to **car** are: **service, rent, customer, easy, app, experience, time** and **simple.**
- These less **easy** and **simple** aspects have a high number of negative comments and therefore need to be improved, especially those related to: **customer, time,** and **experience.**
- The following words are highlighted in green as positive (in addition to easy and simple): **excellent, price, practical, happy, satisfied** and **fantastic.**
- The following words are highlighted in red as negative (in addition to service, customer and experience): **bad, app, company, scam, euros, month, recommend, day** and **flee.** Words that refer to poor management by companies, excessive cost, app not working well, difficulty in parking, and dirtiness of the vehicles.



4. Analysis by type of transport: **f. Shared Car** (Valencia+Ile de France+Rome+Oslo+Mannheim)

- The words that only men say are highlighted as: **excellent**, **lot, concept, month, hour,...**
- The words that only women say are highlighted as: **super, euros, pay, card, renting, scam, practical money** and **hour.**
- As for emotions, there are hardly any differences between men and women. The level of hatred is higher in women, 6.1% compared to 5.0% in men.



4. Analysis by type of transport: **f. Shared Car** (Valencia+Ile de France+Rome+Oslo+Mannheim)

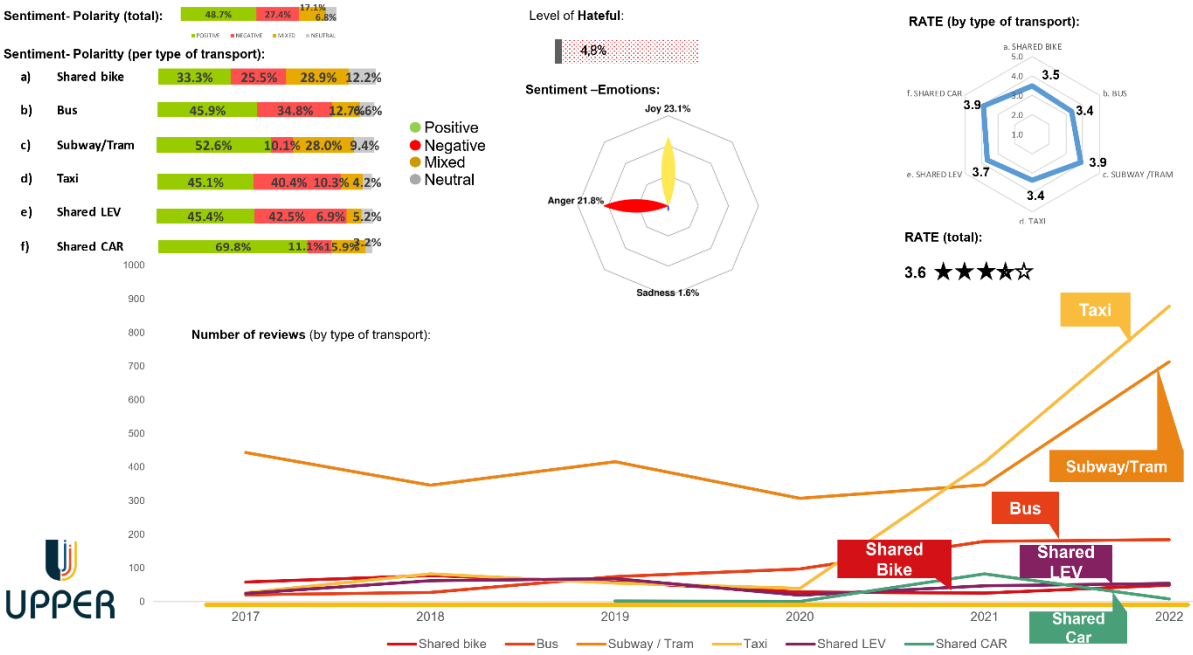
IMPROVEMENTS & MAINTAIN:

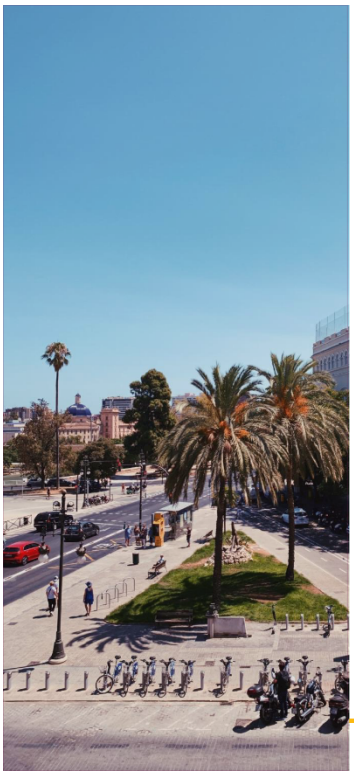
- Good **customer service** with professionalism and good treatment.
- **Useful and practical** service:
  - For **people who do not have a car**, a good alternative to owning a car.
  - To **move around the city**, go to the center and also outside the city.
- **Suitable price:**
  - **It should cost less than owning a car.**
  - Competitive price, **good value for money** and **free registration.**
- **To avoid fines and charges for service / system failures.** For example:
  - The doors do not close and the service cannot be closed.
  - Errors in app or it doesn't work.
  - Not being able to park in the areas due to lack of parking spaces.
  - Problems to lock and unlock cars
  - Cars that are not rented in the end, are returned and the system does not record it
  - Pay admission fee 2 times because the car does not go.
- To avoid **charging problems**. For example:
  - Discharged electric cars (i.e. less than 30% battery)
  - Autonomy indicating unreliable
  - Fines for leaving the car with less than 30% battery
  - False or disproportionate mileage
  - There is no cable in the car or it is broken
- It must be a **fast service** (in 4 min, immediate), easy to use and simple.
- **App** easy to use and works well.
- **Cars have to work well**, be easy to drive, comfortable. If possible, be automatic and have a variety of models / typologies.
- **Cars in good condition**, clean and well maintained.
- **Availability** of cars throughout the city, always close to the user.
- **Facilities to park** (free blue zone or similar).
- **Cars that do not pollute**: electric, ecological.
- **Maintain the quality of the service** over time, with improvements and good maintenance.
- **Vouchers / Discounts for different** types of **user profiles** (eg couples, families, etc.).

5.1. València (Spain). Netnography of **transport**

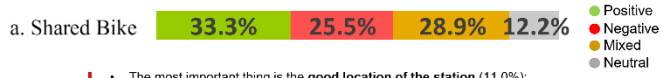
TYPE OF TRANSPORT:	SAMPLE: Nº Reviews	SAMPLE: Nº Comments	USER PROFILE: ♂ ♀ ?	Inhabitants	Tourist	SOURCES: Company	Web, social media, etc.
a. SHARED BIKE	387	292	59.7% 27.6% 12.7%	52.6%	47.4%	Valenbisi	Google, tripadvisor
b. BUS	623	363	55.4% 41.3% 3.4%	96.4%	3.6%	EMT	Google
c. SUBWAY /TRAM	847	847	50.4% 30.0% 19.6%	26.7%	73.3%	Metro Valencia	tripadvisor
d. TAXI	1.506	910	53.7% 44.8% 1.6%	94.2%	5.8%	Radio Taxi Valencia, …	Google
e. SHARED LEV	309	174	78.3% 18.8% 12.7%	78.3%	21.7%	YEGO Valencia Muving Valencia Cooltra Valencia	Google
f. SHARED CAR	93	64	62.0% 33.7% 4.3%	96.8%	3.2%	CARGREEN MOVILIDAD SOSTENIBLE, S.L.	Google
TOTAL:	**3.765**	**2.650**	59.9% 32.7% 7.4%	74.2%	25.8%		

5.1. València (Spain). Netnography of **transport**





5.1.1. València (Spain). Netnography of shared bike



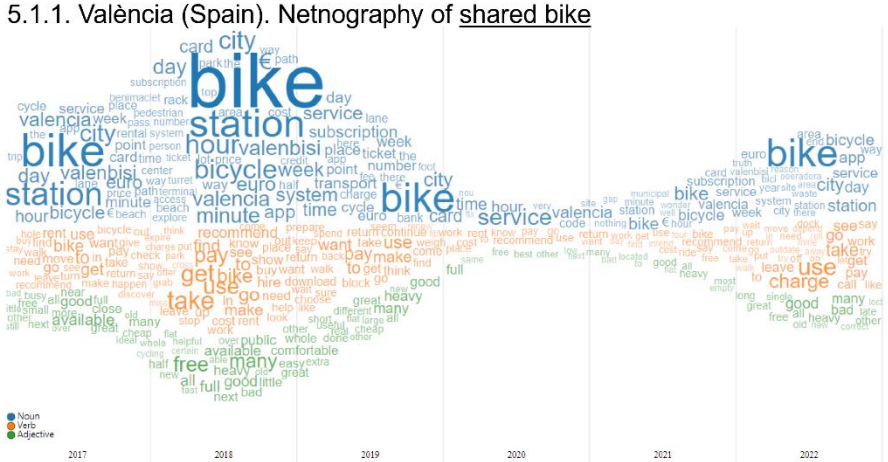
POSITIVE 33.3%

- The most important thing is the **good location of the station** (11.0%):
  - Near the bike path.
  - Well connected with other transport (e.g. near tram stations), facilitating intermodality.
  - Near the historical center, commercial, etc.
- In second place, **the availability of bicycles** at each station (9.6%), **adequate price** (8.3%) and **30 min free** (1.4%).
- Another aspect that is repeated is the **adequacy of the city of Valencia for this service** (7.8%): a city without slopes, flat (2.8%), with a lot of bike lanes (4.1%), with good weather (0.9%).
- **Pleasant, satisfactory, simple service** and it **works well** (5.0%).
- **Useful and practical** service (4.6%).
- It is very important that there are **spaces to leave the bicycle**, that the station has a **size according to its influx / use**.
- It is a **healthy** service (1.8%) **and sustainable** (0.9%).
- The **App is very useful** to know where the nearest stations are and the availability of bicycles and spaces to leave them (1.8%).
- There are few positive comments about the bicycles (0.9%) and they refer to **robustness, resistance and comfort**.

NEGATIVE 25.5%

- The largest number of complaints is focused on **Customer Service** (5.5%):
  - They do not attend in English.
  - There is no contact email or it is not easily found.
  - There is no problem/breakdown resolution at the moment. When they call by phone they do not pick up, therefore, they cannot solve the problem at the moment.
- The most frequent problems is that the **system does not work properly** (5.0%):
  - **Failures in the anchorage** that supposes that the users think that they have returned the bike correctly and this is not the case.
  - Another failure that usually occurs is that they pay the subscription and **do not obtain the code** to be able to use the service.
- **Incidents with cards and extra payments** (3.7%):
  - Lack of transparency: Users complain about extra/additional costs that are hidden or not easily read.
  - They take time to return the deposit (e.g. to return the 150 euros it can take up to 3 weeks).
  - If their credit card expires during the year, the service is blocked and they cannot use it or change their payment card.
- Another frequent problem is **the bikes** (3.2%):
  - **Heavy** (1.4%).
  - Old, broken, damaged brakes (0.9%).
  - They should have support or electric option.
  - **Others**: Uncomfortable, slow, they slip, they go wrong.
- Only **30 minutes free system is not clear** to everyone **and it is not useful for tourists** (3.2%).
- When they arrive at a station there are **no spaces** to leave the bike (2.8%).
- There are **no bicycles** (2.3%).
- **Others**: the **app** is not useful to find out if there are spaces and/or bikes, not very usable, (...)

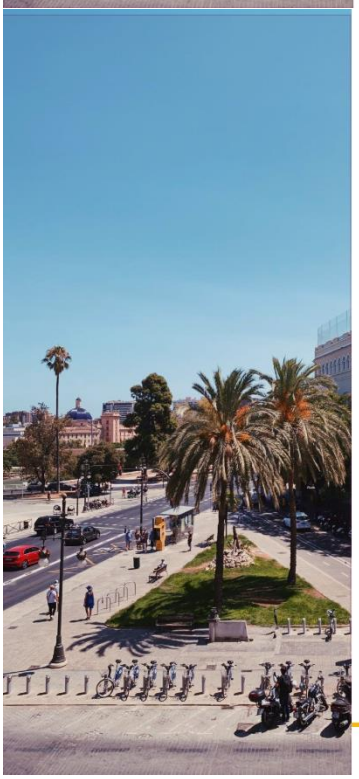
5.1.1. València (Spain). Netnography of shared bike



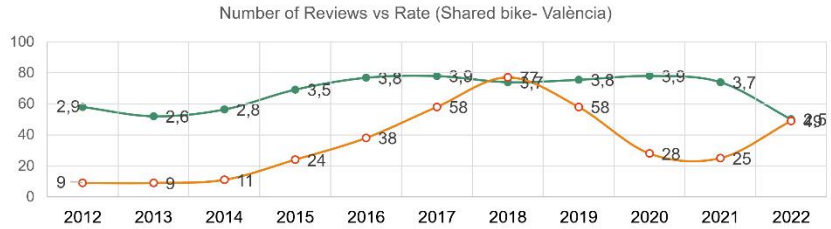
#Bike: "They are quite heavy bikes but it is a very important service for the city".
#Station: "Very small station". "A large station with many bikes".
#City: "Except for the weight of bicycles and some specific incidents, the service is good and helps improve mobility in the city".' The stations are present in many points of the city".
#Service: "I would never recommend this service. First of all, when you have any problem and want to inquire how to fix it…".
#System: "To use the system of this municipal transport of Valencia, you need to make a Valenbisi card…"
#Hour: "Bikes are rented out on a weekly basis as opposed to daily and the payment structure favours short rides under a half hour… not good for exploring".
#Minute: "Buried somewhere in terms and conditions, that are NOT obvious, you have to return the bike every 30 minutes to a docking station to avoid extra charges".
#Week: "You pay for a week (around € 14) or take an annual subscription".
#Valencia: "Valencia is a city to go around absolutely by bike".
#Subscription: "Making the subscription I discovered that it was necessary to leave € 150 with deposit that would be returned at the end of the subscription".
#Time: "So you have to dodge, avoid searching, searching takes time".

#Use: "If you come back I would rent "normal" bikes or use very efficient means.".
#Take: "On the post you always have to enter your ticket number and personal pin code, after which you can take a bike with you.".
#Charge: "…they charge me € 27, I call it to claim, nor at scandalous hours, at 5: at 5: 30 in the afternoon on a Monday, and my surprise is that they do not take it…".
#Pay: "if your lap lasts less than half an hour, you will only pay the initial figure of the subscription…".
#Get: "They serve to get you out of trouble, but they are bad, hard bicycles with poor maintenance".
#Go: "… , moreover the city is covered with many cycle paths, which allows you to go where you want to use the pedestrian sidewalks or the roads.".
#See: "Via the Alibikesnow app you can see on your smartphone where there are bikes at your place of destination"
#Leave: "It is enough, however, at the end of the half hour, change the bike and leave another half hour for free.

#Many: "There are many stations in the city for the bikes and with the app you can easily find them".
#Good: "When you stay for several days it is a good way to move..".
#Free: "…install the application with a parking lot, it will also show the availability free places and free slots…".
#Heavy: "The bikes themselves are quite heavy making it difficult to check a map when you are stopped".
#Bad: "They serve to get you out of trouble, but they are bad, hard bicycles with poor maintenance".
#Full: "Another full station, keep looking……".
#Available: "It usually has available holes and bicycles."

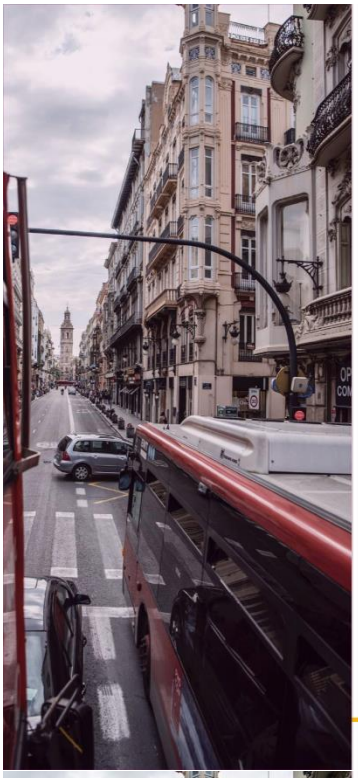


5.1.1. València (Spain). Netnography of shared bike

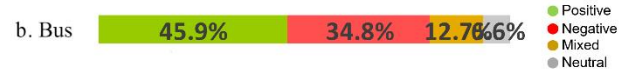


IMPROVEMENTS & MAINTAIN:

- **To minimize or to eliminate system failures**, and in the event that there are any that are solved with **good customer service**:
  - Service option in English, keep in mind that in Valencia it is used by many tourists.
  - Failures must be solved quickly and without additional costs.
- **Advices to remind the most usual problems,** as the incorrect anchorage.
- **Resize the stations** so that they all have **spaces and bikes.**
- **Sufficient and well-located stations**, close to bike lanes and close to other forms of transport, favoring intermodality.
- **App that warns in real time** about the availability of spaces and bikes, working well and being reliable.
- Improved bike **maintenance**.
- **Improved bikes:** users consider them very heavy. To offer electric bikes option, and a chair to carry children.
- In the city of Valencia it is widely used by tourists (45% approx.) and they consider that the limit of 30 free minutes does not suit their needs.
- To improve the rental service by adapting to new, **simpler and more agile forms of payment/rental**. For example:
  - No need for a deposit of 150 €.
  - Being able to pay with mobile.
  - Being able to pay for a single use (single ticket)



5.1.2. València (Spain). Netnography of Bus

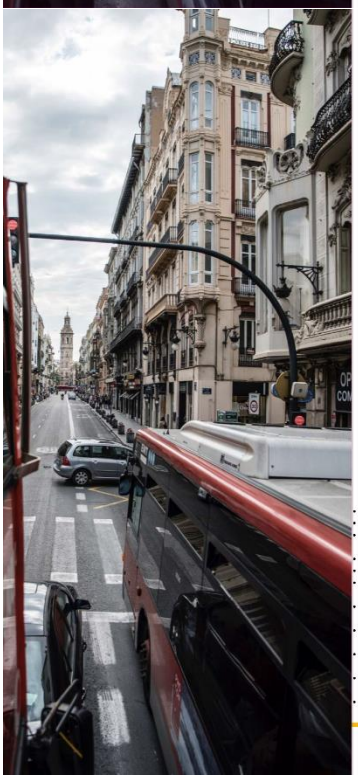


POSITIVE 45.9%

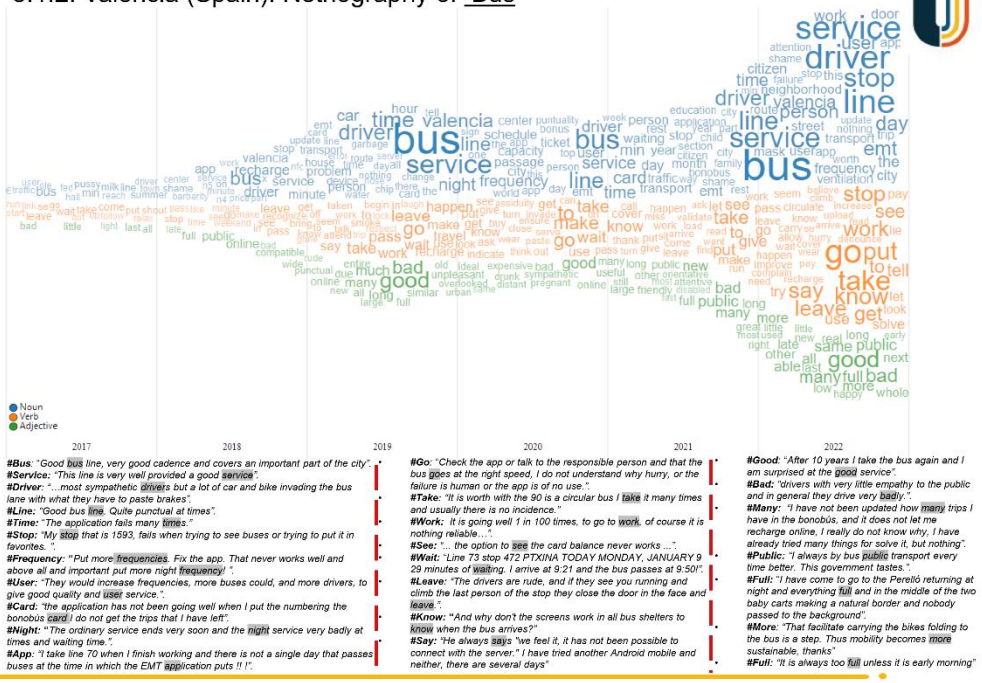
- Good service, bus and/or line that **reaches everywhere** (12.8%)
- **Good bus frequency** (5.8%).
- Good **customer service**; resolution of incidents and procedures (5.2%).
- Friendly and professional **drivers** (3.5%)
- Long hours and **availability** of night hours (1.7%)
- **App** works well and is useful (1.7%)
- Long and **high-capacity** buses (1.1%)
- **New buses** (more comfortable and with accessories such as plugs) (1.1%)
- **Others**: ventilation, efficiency, speed, tranquility.

NEGATIVE 34.8%

- **Low frequency** of passage, there are **no buses**, waits of more than 20 minutes (7.0%)
- **Lack of punctuality** (waiting time notices are not reliable / accurate) (3.5%)
- **App:**
  - Improvable (4.1%)
  - Fails a lot (5.2%)
  - Inaccurate indicated times (4.1%)
  - Online card recharge fails (4.1%)
  - Low reliability (3.5%)
  - Error when giving the route (1.7%)
  - Can't see remaining trips (1.7%)
  - Does not recognize location (1.1%)
  - Others: incompatibility, does not read QR, does not update,...
- **Limited hours**; the daytime hours end early and at night it is scarce (2.3%).
- Harsh driving (1.1%)
- Drivers lack empathy and kindness (1.1%)
- **Others**: lack of accessibility, screens or light in canopies do not work, users do not comply with the rules, there is a lack of service in new neighborhoods, expensive tickets.



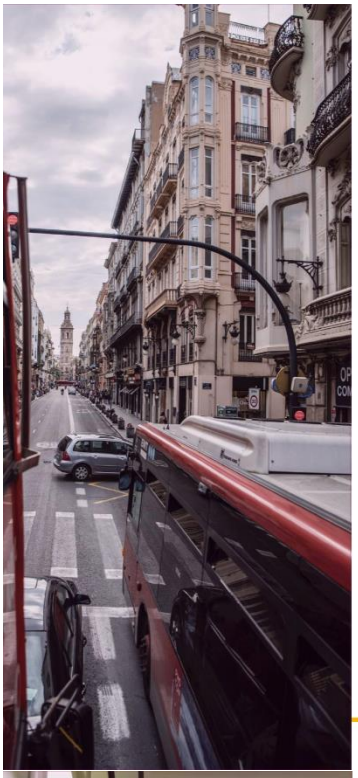
5.1.2. València (Spain). Netnography of Bus



***#Bus**: "Good bus line, very good cadence and covers an important part of the city".*
***#Service:** "This line is very well provided a good service".*
***#Driver:** "...most sympathetic drivers but a lot of car and bike invading the bus lane with what they have to paste brakes".*
***#Line:** "Good bus line. Quite punctual at times".*
***#Time:** "The application fails many times."*
***#Stop:** "My stop that is 1593, fails when trying to see buses or trying to put it in favorites. ".*
***#Frequency:** "Put more frequencies. Fix the app. That never works well and above all and important put more night frequency! ".*
***#User:** "They would increase frequencies, more buses could, and more drivers, to give good quality and user service.".*
***#Card:** "the application has not been going well when I put the numbering the bonobús card.I do not get the trips that I have left".*
***#Night:** "The ordinary service ends very soon and the night service very badly at times and waiting time.".*
***#App:** "I take line 70 when I finish working and there is not a single day that passes buses at the time in which the EMT application puts !! !".*

***#Go:** "Check the app or talk to the responsible person and that the bus goes at the right speed, I do not understand why hurry, or the failure is human or the app is of no use.".*
***#Take:** "It is worth with the 90 is a circular bus I take it many times and usually there is no incidence."*
***#Work:** It is going well 1 in 100 times, to go to work, of course it is nothing reliable…".*
***#See:** "... the option to see the card balance never works ...".*
***#Wait:** "Line 73 stop 472 PTXINA TODAY MONDAY, JANUARY 9 29 minutes of waiting. I arrive at 9:21 and the bus passes at 9:50!".*
***#Leave:** "The drivers are rude, and if they see you running and climb the last person of the stop they close the door in the face and leave.".*
***#Know:** "And why don't the screens work in all bus shelters to know when the bus arrives?"*
***#Say:** "He always says "we feel it, it has not been possible to connect with the server." I have tried another Android mobile and neither, there are several days"*

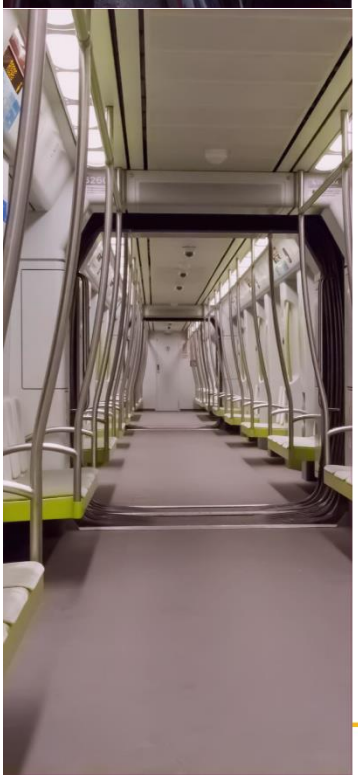
***#Good**: "After 10 years I take the bus again and I am surprised at the good service".*
***#Bad:** "drivers with very little empathy to the public and in general they drive very badly.".*
***#Many:** "I have not been updated how many trips I have in the bonobús, and it does not let me recharge online, I really do not know why, I have already tried many things for solve it, but nothing".*
***#Public:** "I always by bus public transport every time better. This government tastes.".*
***#Full:** "I have come to go to the Peretó returning at night and everything full and in the middle of the two baby carts making a natural border and nobody passed to the background".*
***#More**: "That facilitate carrying the bikes folding to the bus is a step. Thus mobility becomes more sustainable, thanks"*
***#Full:** "It is always too full unless it is early morning"*



5.1.2. València (Spain). Netnography of Bus

IMPROVEMENTS & MAINTAIN:

- More buses to **increase frequency**
- Better **punctuality**
- Improvement of the **app**:
  - No bugs, reliable, user-friendly, fast, with precise bus schedules, and with an agile ticket purchase/loading system)
- **Extended service** hours (day and night)
- Increased bus capacity
- Improved **bus driving**, less aggressive (less sudden stops and accelerations)
- Friendliness and **empathy** from drivers
- Improved customer service
- Better buses in terms of **comfort** and modernization (new services, new needs)
- **Greater accessibility** for people with disabilities, seniors, and baby/child strollers
- Clear rules for users and promotion of respect for them
- Cheaper tickets and discounts



5.1.3. València (Spain). Netnography of Subway/Tram

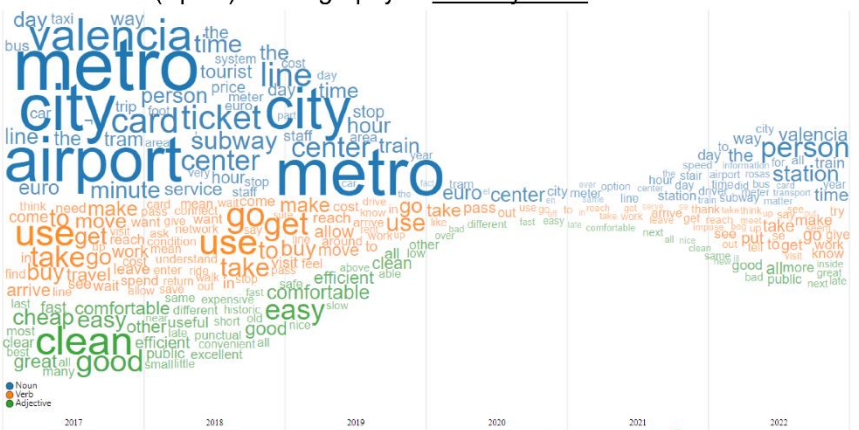
POSITIVE 52.6%

- **Well connected** to the airport, etc (20.6%)
- **You can get to almost anywhere in the city** (12.7%), even to the beach (6.3%)
- **Clean and well-maintained** (14.3%)
- **Functional, comfortable** (9.5%)
- **Punctual**, precise with the minutes it says it will take (9.5%)
- **Suitable bonuses/cards** for multiple trips, tourism and different modes of transportation (9.5%)
- **Easy to use**, understandable and intuitive (9.5%)
- **Fast** (9.5%)
- **Efficient** (6.3%)
- **New and modern** (4.8%)
- **Simple** because it has few lines (4.8%)
- **Good frequency** of service (3.2%)
- **Others**: peaceful, safe, well signposted, with a good website, allows pets, (...)

NEGATIVE 10.1%

- **Low frequency** of service (9.5%)
- **Lack of civility**: people not wearing masks, not paying for tickets, entering with wet bathing suits, etc. (9.5%)
- **Lack of maintenance** in stations, broken escalators, vending machines not working (7.9%)
- **Inadequate air conditioning** (6.3%)
- **Poorly functioning website** (6.3%)
- **Expensive ticket** (single fare without pass) (6.3%)
- **Metro very crowded** (4.8%)
- Need for **improvement/ lack of signage** (3.2%)
- **Reduction of service** (3.2%)
- **Incorrect information on website** about schedules, etc. (3.2%)
- **Lack of night service** (3.2%)
- **Others**: arriving late, no lockers, no assistance for the elderly, need for more machines at the airport, lack of alerts for breakdowns, many breakdowns, no loudspeakers indicating destination, bicycles not allowed...

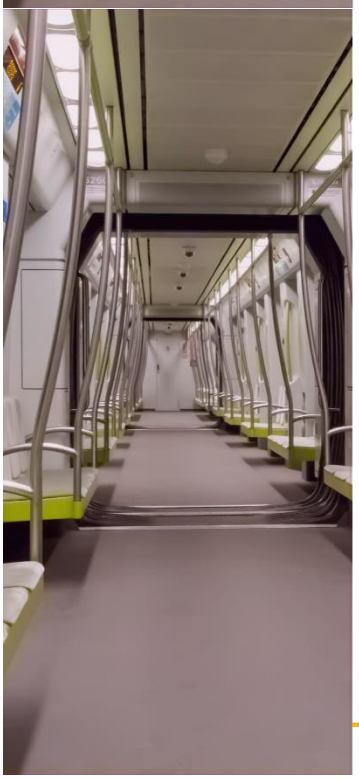
5.1.3. València (Spain). Netnography of Subway/Tram



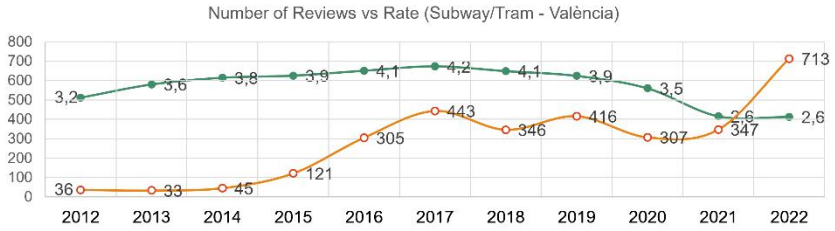
#Metro: "I enjoy walking any city I visit. but having a good metro is also useful.".
#City: "A subway that does not touch all the points of the city as in other similar structures in various European cities but which I seem to be able to define as excellent".
#Airport: "... and a very efficient way to get from the airport to the city.".
#Valencia: "Excellent way to move to Valencia".
#Center: "However punctual train and the center can be easily reached."
#Line: "lines 3 and 5 connect the airport with the city center in 15/20 minutes ...."
#Ticket: "... and also means you don't have to keep buying individual tickets.".
#Train: "Trains run frequently. They're fast, quiet, clean.".
#Card: "There is the possibility of making a card (24, 48 or 72 hours) to very interesting costs ...".
#Time: "Trains on time and clean. Metro network is not very large and therefore easily manageable ..."
#Minute: "...frequency should be increased because certain races expect 15 minutes but it is punctual."
#Subway: "In addition, the subway takes, many lines have half of the equal stops (absurd) and is somewhat expensive"
#Person: "It is not possible for a person to wait 1 hour. person to wait 1 hour".

#Use: "The metro itself is good and easy to use but to my cost, pickpockets operate.".
#Go: "buy a ticket on the platform and see the sights as you go.".
#Take: "They do not take into account the elderly or pregnant women who may need to use them".
#Buy: "Once you buy a card for 0.50 euro, keep it and re-charge it at the machines.".
#Get: "and all kinds of obstacles that prevent you from entering the data and when after wearing patience you get it. ".
#Move: "The metro is an excellent way to move in Valencia.".
#Make: "...or take the tram and make an uncomfortable transshipment... "
#Work: "The tram did not even stop at the bus stop, passed by me, what kind of work is this?"
#See: "Improve the schedules of the website please that it is seen that if I leave a stop at 8 in the morning it is seen that I get to my destination.."
#Travel: "...the people traveling without a bil..."
#Allow: "and not what they allowed in the meter of 5.27 in the morning allowing what so many people would rise, seeing, smoking and without masks ...

#Clean: "...very clean and animals inside the carrier...".
#Easy: "This metro system is very clean, easy to understand& pretty cheap...".
#Good: "...It is a good connection with the airport but also to get to the part where the sea is...".
#Comfortable"The L10 of Alacant-Natzet has surprised me. It is a short, comfortable and very beautiful route".
#Efficient: "The metro in Valencia is really efficient".
#Great: "10 pack of tickets is a great buy.".
#Cheap: "No problem also the metro and the tram brings you down cheaply".
#Usefull: "Really useful, and pretty cheap, too".
#Bad: "Too bad that the service ends about 10 pm".
#Public: "They do not open on Sundays until seven and peak, a public service of Metro does not open Sundays until seven and peak".
#Fast: "It is clean, modern, fast and is usually quite punctual"

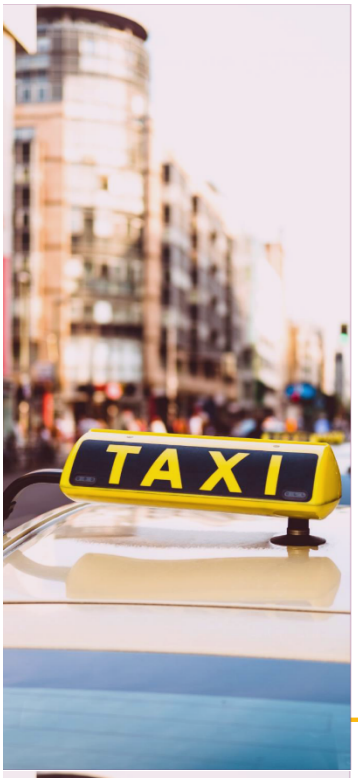


5.1.3. València (Spain). Netnography of Subway-Tram



IMPROVEMENTS & MAINTAIN:

- **Good connections: airport and rest of the city**
- **Cleanliness and maintenance** (escalators, vending machines, etc.)
- **Comfortable**, functional and user-friendly
- **Increased frequency of service**
- Reliable and **accurate information** on screens, website
- Safe
- Adequate **air conditioning**
- Clear **rules of use and behavior** (supervision, communication campaigns, sanctions, etc.)
- Improved signage
- Increased **nighttime service**
- **Greater accessibility**
- Others: being able **to bring bikes** (even if they are not foldable, ...)



5.1.4. València (Spain). Netnography of Taxi

e. Taxi

Positive
Negative
Mixed
Neutral

POSITIVE
45.1%

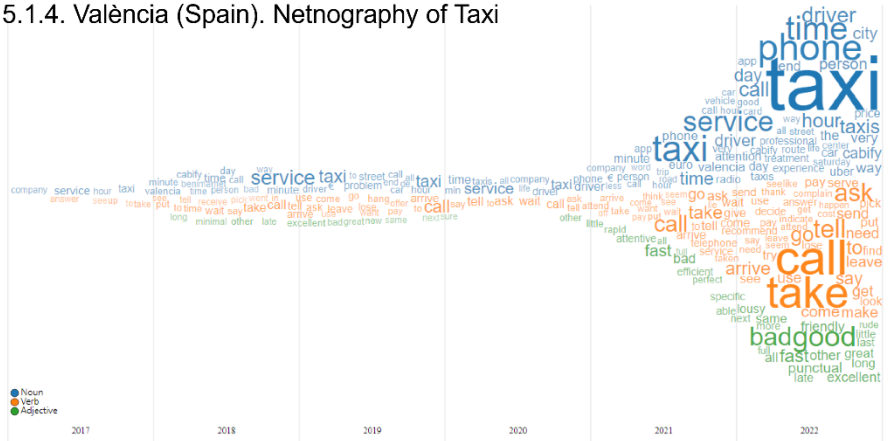
- **Good/excellent service** (19.8%)
- **Quick to respond** (15.4%)
- **Driver's kindness and professionalism** (13.2%)
- **Punctual** (6.6%)
- **Efficient** (6.6%)
- Good, efficient and fast **telephone service** (6.6%)
- Useful, reliable **app** (timetables and accuracy) (5.5%)
- Takes the **shortest route** (without getting lost) (2.2%)
- **Easy payment** (all types of cards, etc.) (2.2%)
- **Accessible** and with seats for children (2.2%)
- **Professionals with** extensive **experience** (2.2%)
- Good value for money (2.2%)
- **Others**: comfort, cleanliness, safety, availability, eco-friendly, home pick-up service, lost and found service, ...

NEGATIVE
40.4%

- **Difficulty in contacting by phone** (they don't answer the phone, there's a recording, etc.) (19.8%)
- **Cancellation of service** without notice, the taxi doesn't show up, they don't provide service in a specific area (8.8%)
- **Poor telephone service**, rude operators (7.7%)
- **Slow to arrive**, takes too long (7.7%)
- **No taxis available** at night (6.6%)
- **Poor service** (6.6%)
- They **don't have a baby seat** or they don't carry it properly (facing forward) (2.2%)
- **Not enough taxis** (2.2%)
- **Unreliable** (2.2%)
- **Others**: lack of empathy, kindness of drivers, expensive payment of unspecified supplement (lack of transparency)

IBV

5.1.4. València (Spain). Netnography of Taxi



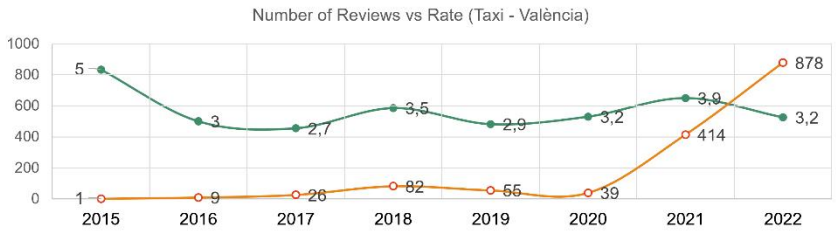
#Taxi: *"We spent 2 hours calling a taxi and it was impossible, they didn't take the phone.".*
#Time: *"They have neither called me nor have they passed through there because I was waiting all the time".*
#Phone: *"I was trying to contact on the phone to request a service and it was totally impossible".*
#Service: *"We have called from the Puig, they have told us that the service was not available".*
#Driver: *"Punctual, very kind the taxi driver.".*
#Hour: *"SHIT SERVICE !!! I have been waiting for more than an hour !!!".*
#Call: *"I asked for a taxi two hours in advance because I needed two baby chairs, they call me 5 minutes to tell me it will be difficult.".*
#City: *"And I'm embarrassed. PATHETIC. Third City of Spain ... but for the tail in terms of taxi service".*
#Person: *"could give the option that a person directly attends you".*
#Day: *"Very good during the day but at night it doesn't work".*
#Cabify: *"Better to take cabify in Valencia, much better treatment, punctual, by the app you can see where they go, clean cars, neat employees. I took 2 airport cabify and much better experience.*
#End: *"in the end They send us the happy taxi after insisting and after again waiting again".*

#Call: *"He called them in the city of Valencia and fulfilled as professionals".*
#take: *"ay, March 16 at 5:00 p.m. I call Radio Taxi to ask for a taxi that takes some friends to the station to take a train. They have more than 10 min waiting.".*
#Ask: *"I call to ask for a taxi for 5 people. They tell me that they will return the call to confirm. They call me again and they tell me that it is worth, approx. about € 20".*
#Tell: *"Appalling. Numerous family with young children who calls to ask for a taxi with 5 seats and tell him of bad ways that there is no and that takes two or the bus".*
#Arrive: *"That I had a dog, so it has made me lose half an hour of my time waiting for two taxis and arrive late to my destiny".*
#Go: *"After reserving the day before a taxi to go to the airport at 6 in the morning warning that we had a 9 -month -old baby, they confirmed that there would be the taxi".*
#Take: *"Do not the phone take Saturday night (at 22:00) to book for the next day? Wow a bad service!"*
#Make: *"I was going with them a lot but they have begun to make mistakes with orders"*
#Wait: *"Much waiting in August ..."*

#Good: *"Good service and efficient".*
#Bad: *"After calling 5 times the canned voice insisted on giving me bad my direction I had to call another company".*
#Fast: *"Fast and kind".*
#Punctual: *"Punctual, fast and effective"*
#Friendly: *"Rapid. Super friendly. All very correct".*
#Excellent: *"Excellent and quality service".*
#Long: *"Long waits especially after 7pm"*
#Great: *"In addition, the Great app service, ..."*
#Other: *"I resist resorting to other things but if this is repeated a lot I will have to consider ..."*
#Lousy: *"A lousy service"*
#Same: *"The previous day the same service at the same time charges me almost half"*

IBV

5.1.4. València (Spain). Netnography of Taxi



IMPROVEMENTS & MAINTAIN:

- Speed and efficiency in **telephone assistance**
- Quick **response** time
- Driver's **friendliness and professionalism**
- **Punctuality**
- **Reliability** (no errors, cancellations, etc.)
- More **nighttime service**
- **Accessories** such as car seats
- **Transparency**
- **Shorter routes**
- Useful, reliable and easy-to-use **app**
- **Payment** with all conveniences and **facilities**
- Other: comfort, cleanliness, safety, availability, eco-friendliness, home pick-up service, lost and found service, etc.

5.1.5. València (Spain). Netnography of Shared LEV

e. Shared LEV

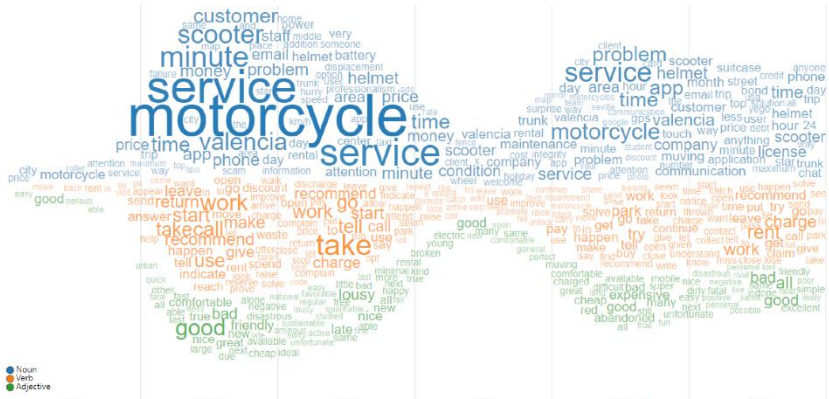
POSITIVE 45.4%

- **Good motorcycles**; reliable, new, comfortable, and attractive (25.0%)
- **Good service**; simple, straightforward, and fast (22.5%)
- Good and fast **customer service** (17.5%)
- **Essential service for** large **cities** (10.0%)
- With **discounts** (10.0%)
- **App** works well (5.0%)
- Two **helmets** available (5.0%)
- **Good price** (5.0%)
- **Others**: useful for short distances, without having to leave a deposit, always motorcycles nearby, ...

NEGATIVE 42.5%

- **System errors** (the motorcycle shuts down), improper charges (helmets, non-existent accidents) (37.5%)
- **Bad motorcycles**: poor maintenance and don't work well, lack of stability (25.0%)
- Poor **customer service** (15.0%)
- **Expensive** service (7.5%)
- **App** crashes (7.5%)
- **Dirty** motorcycles (5.0%)
- They ask for too **much personal information to use them** (5.0%)
- Cannot be driven with a US driver's license (5.0%)
- **Insurance not included**, you have to pay costs in case of an accident (5.0%)
- **Others**: motorcycles bother on sidewalks, few discounts, improve mirror design, few motorcycles,..

5.1.5. València (Spain). Netnography of Shared LEV



2017

***#Motorcycle**: "Very good motorcycle service, the motorcycles that I have caught in Valencia have worked perfectly".*
***#Service:** "Without a doubt, the best electric scooter service in Valencia".*
***#Scooter:** "Positive:? Finding everywhere in the city, a maximum of 5 minutes running until the next scooter?"*
***#Valencia:** "At the time, they were pioneers in Valencia, but something happens with them…".*
***#Time:** "The second time the same thing happens to me: I take a motorcycle, it works, but the direction and the front wheel are badly aligned ... a danger"*
***#Minute:** "I have called for 30 minutes and have not taken the phone.".*
***#Customer:** "Very bad customer service and very bad service"*
***#Problem:** "After having a problem, I tried to contact them and after more than 24 hours there is still no response.."*
***#Helmet:** "A motorcycle only had a helmet and we couldn't take it".*
***#App:** "The application works terribly badly! He sticks, the minutes keep running even if you have already put "close route" (and they charge it, obviously), it does not let you close the motorcycle and tell you all those minutes".*
***#License:** "they told me that my USA license (which I have rented in all parts of the world with that license) told me that I could not be accepted ".*
***#Phone:** " Very poor that you do not have a 24 -hour service phone number to any problem".*
***#Price:** "Good service, good motorcycles and good price."*

2018

***#Take:** "That allows you to start the trip, take the helmet and then the motorcycle does not start is not fair for the user.".*
***#Work:** "I definitely discharge myself, 95% of the times I opt for your service does not work.".*
***#Use:** "I used one (of the few that worked) will make a month, and it is still there, occupying a motorcycle parking space, practically at the door of my house, without appearing in the app ".*
***#Rent:** "Of the last 5 rented motorcycles, 3 of them did not work".*
***#Charge:** "charged me 50 € for allegedly stealing a helmet. ".*
***#Recommend:** "I would only recommend that it be a little cheaper".*
***#Call:** "The next day you call again and the same"*
***#Make:** "Literally, I am on top of a muving and the map continues to make me that there is no motorcycle within my reach"*
***#Park:** "constant changes of parking areas that once you call to complain and indicate the registration changed it ...".*
***#Go:** I do not use these motorcycles because I go by bicycle,…"*

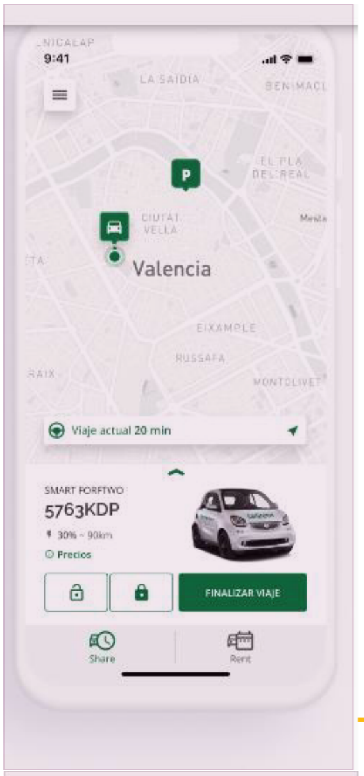
2019

***#Good:** "My experience is good, I have had problems with some motorcycles and if it is true that the customer service is disastrous".*
***#Bad:** "It is the company by distributing them through the city who leaves them badly parked"*
***#All:** "This Deplacement mode is ideal all the more since there is a lot of motorcycle space in Valencia"*
***#Lousy:** "lousy customer service".*
***#Friendly:** "Friendly staff, helped me to fix my backpack :)".*
***#Expensive:** "Very good trade with an expensive treatment".*
***#Nice:** "the motorcycle gives me new and they are super nice and pleasant. ".*
***#Abandoned:** "There is an abandoned motorcycle for fate for more than 2 months on Victor Hino Architect Street in Valencia".*
***#Comfortable:** "New and comfortable scooters that go a wonder, value for money to envy to many other Rent. "*
***# Cheap:** "Professionalism and truly cheap prices"*

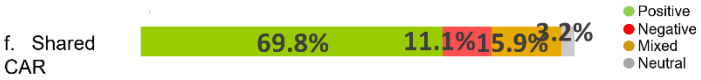
5.1.5. València (Spain). Netnography of Shared LEV

IMPROVEMENTS & MAINTAIN:

- To minimize **system errors**
- To avoid **improper charges**
- To provide fast and adequate **customer service**
- To ensure that the motorcycles work well and are **properly maintained and cleaned**
- The **service** should be **usable:** simple, easy to understand, fast, agile, and satisfactory
- **Usable app** without flaws
- Agile and simple **payment and rental methods** (without having to pay a deposit and provide many personal details, etc.)
- Availability of motorcycles located in areas that **do not bother pedestrians**, etc.
- Service with **good affordable price** with discounts based on usage and user profiles
- With an attractive, comfortable, functional, and durable **design**
- **Insurance** that is managed with the rental and covers users
- **Compatibility** with driver's **licenses from other countries** such as the USA



5.1.6. València (Spain). Netnography of Shared CAR

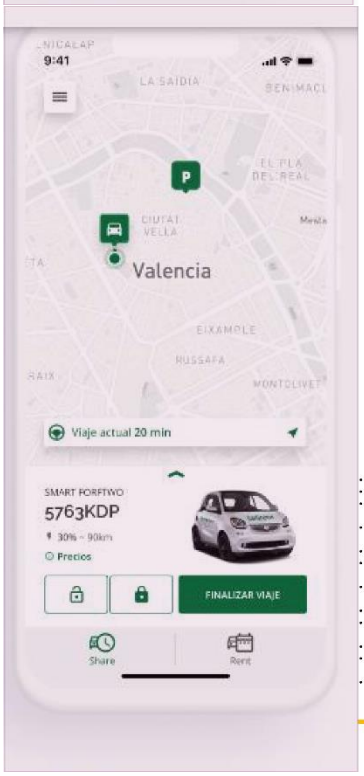


POSITIVE 69.8%

- Great, innovative, and **necessary service** for people who do not have a car (43.3%)
- **Customer service**, professionalism, exceptional treatment (43.3%)
- **Cars work well**, easy to drive, comfortable, and automatic (30.0%)
- Easy-to-use **app** (26.6%)
- **Free parking** in blue zone (26.6%)
- **Fast** (4 minutes, immediate) **and simple service** (26.6%)
- **Practical** for moving around the city, going downtown, and also outside the city (23.3%)
- Electric, **environmentally friendly car** (16.6%)
- Competitive **price**, good value for money (13.3%)
- **Good experience**, recommendable (10.0%)
- **No signup fee** (6.6%)
- Others: reliable, ...

NEGATIVE 11.10%

- **Wrong charges** due to system/service failures (e.g. doors not closing and unable to end service) (10.0%)
- **Customer service** needs improvement and poorly managed refunds (10.0%)
- **Expensive** service (6.6%)
- Issues with the **app** or it doesn't work (6.6%)
- **Charging problems**: (6.6%)
  - Finding cars with less than 30% battery
  - Getting fined for leaving the car with less than 30% battery



5.1.6. València (Spain). Netnography of Shared CAR

2019

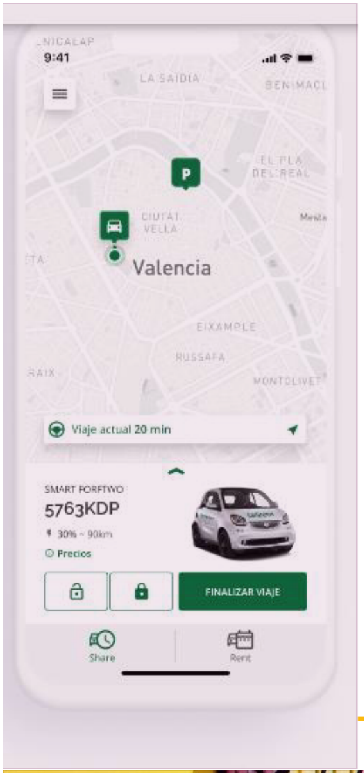
- **#Car:** *"The cars go very well and the application is very easy to use,..."*
- **#Service:** *"Very good innovation soon your services will help us a lot!!"*
- **#Rental:** *"Great car rental company, what I like most about this service is the free parking in the blue zone, and the professionalism..."*
- **#Customer:** *"...good customer service if you have any doubts about being new, thank you."*
- **#Enjoy:** *"I have finally been able to enjoy electric cars thanks to CarGreen, ..."*
- **#Problem:** *"It should be noted that any problem that arises with them is solved immediately."*
- **#Time:** *"Very good service, like its professionals, who attend to you and resolve doubts, at any time and very good treatment".*
- **#App:** *"Intuitive application."*
- **#Euro:** *"A shame, they invented a fine for me and I had to pay 150 euros when the error was theirs because the car stopped working..."*
- **#Money:** *"Don't let a mediocre company steal your money"*
- **#Hour:** *"If everything works the same as the application, we're fine... an hour trying to enter (synchronizing data)"*
- **#Day:** *"After almost 15 days of someone telling me what happens with an extra charge that has been made to me and being impossible to contact by phone, I am going to denounce the company for that extra charge."*

2021

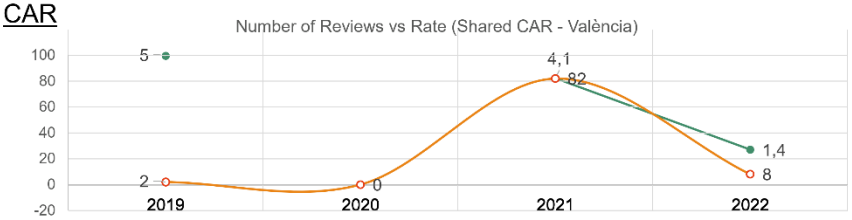
- **#Make:** *"This is amazing, you can move with total mobility around the city, cheap price and free parking in blue zones, which makes it even easier for you to park,..."*
- **#Take:** *"A pity but twice that I have taken the cars twice i've had problems."*
- **#Use:** *"After a reservation that I could not complete due to an error in the app (I was able to reserve but not access the vehicle), hours later I noticed that the application had assumed the use of the vehicle for several hours, ..."*
- **#Call:** *"I called several times during an incident for not being able to open the car, time kept running and no one answered there."*
- **#Try:** *"The project looks very good, and I'm looking forward to trying them".*
- **#Leave:** *"the bad thing is the people who leave it dirty after using it If you want more reviews and places to visit"*
- **#Park:** *"...when it came time to park I immediately found a space in the blue zone for free."*
- **#Charge:** *"First of all, in the bases and conditions in a middle paragraph they "warn" that if you leave the car with less than 15%, they will charge you a surcharge of €30. Even so, they let you get into the car with only 20% of the battery"*

2022

- **#Bad:** *"My experience with this company was very bad. I do not recommend it at all. There are cheaper options that provide much better care."*
- **#Free:** *"Great car rental company, what I like most about this service is the free parking in the blue zone,..."*
- **#Other:** *"Something very innovative, super different from the other displacement options"*
- **#All:** *"Perfect and wonderful all super practical"*
- **#Good:** *"Good quality of vehicles and good way to get around the city. ".*
- **#Rental:** *"Great car rental company."*
- **#Recommended:** *"100% recommended!"*

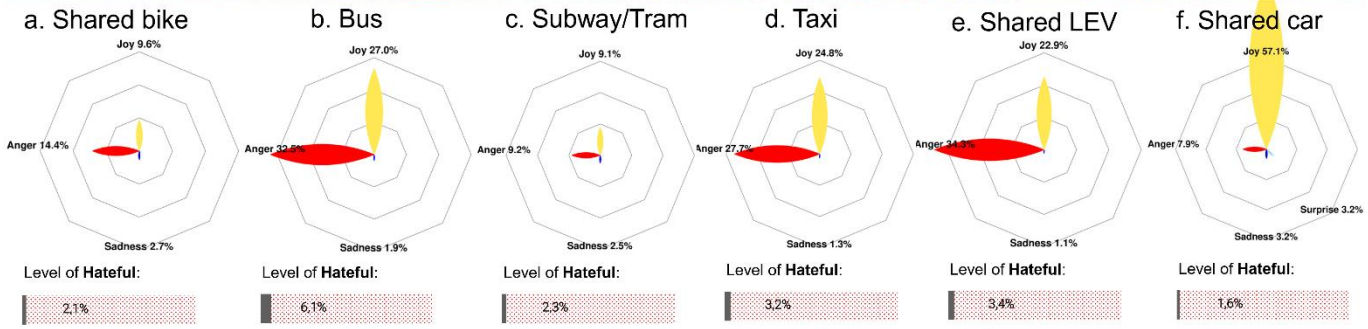


5.1.6. València (Spain). Netnography of Shared CAR



IMPROVEMENTS & MAINTAIN:

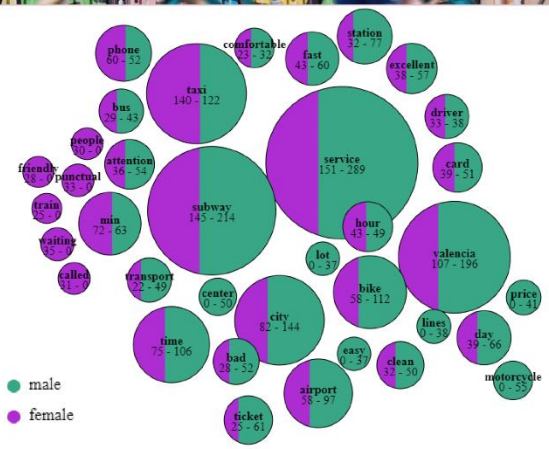
- **Good customer service**, professionalism, exceptional treatment
- Service necessary for people who do not have a car
- Easy-to-use app that works well
- Cars work well, are easy to drive, comfortable and automatic
- Facilities such as being able to park in blue zone for free
- Competitive price, good price-quality ratio and no registration fee
- Fast service (in 4 minutes, immediate), simple, easy to use and recommended
- Practical for moving around the city, going to the center and also outside the city
- Electric, eco-friendly car
- **To avoid errors**, charges for faults, greater reliability:
  - **Doors don't close** and you can't close the service
  - **Errors in app** or it doesn't work
- Problems with **charging**:
  - Finding the car with **less than 30% battery**
  - Being fined if the car is left with less than 30% battery



Level of **Hateful**:	Level of **Hateful**:	Level of **Hateful**:	Level of **Hateful**:	Level of **Hateful**:	Level of **Hateful**:
2.1%	6.1%	2.3%	3.2%	3.4%	1.6%

- The **Bus** is the transportation mode that has the highest percentage of identified hate (6.1%), followed by Shared LEV (3.4%) and taxi (3.2%).
- **Shared Lev** is the transportation mode that has the highest ratio of anger to joy comments.
- **Shared Car** is the transportation mode that has the highest level of joy identified, 57.1% compared to 7.9% of anger, as well as the lowest level of hate.
- **Shared bike** and **Subway/tram** are similar with low percentages of joy, anger, and hate.
- **Shared car** is the only one that has a percentage of surprise (3.2%), perhaps due to the novelty of the service.

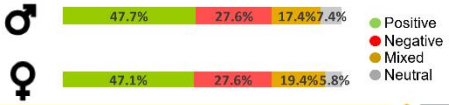
- If we analyze all the transports grouped, the most repeated words excluding Valencia are: **service**, **subway**, **taxi**, **city**, **time**, **bike**, **airport**, **minute** and **station.**
- The words that only men say are highlighted as: **center**, **price**, **lines**, **lot** and **easy.**
- The words that only women say are highlighted as: **waiting, punctual, called, people, friendly** and **train.**



5.9. València (Spain). Conclusions

- According to the number of reviews, Taxi and Subway seem to be the most used transports. According to this indicator, they are also the ones that have grown the most after the COVID pandemic.
- In Valencia, shared transports do not recover after the pandemic (even Shared Car disappears), unlike in other cities.
- There is a high and positive correlation between positive comments, a higher rate level (0.7), and lower levels of hate, and conversely, the lower the rate level, the higher the number of negative and hateful comments.
- The best-rated transports in Valencia are Shared Car and Subway, and the worst-rated is clearly the bus with a 6.1% level of hate, followed by Shared LEV and Taxi.
- 60% of the analyzed users are men, 33% are women, and the remaining 7% are unknown.
- Men use shared transport more, and women use taxi and bus more. There is a slight correlation between a higher percentage of men and a higher percentage of negative and mixed comments (men are more critical).
- 26% of the analyzed users are tourists, and the remaining 74% are residents.
- There is a slight correlation (-0.47) between a higher percentage of tourists and fewer negative comments (they are less critical), and conversely, a higher percentage of residents who give more negative comments (0.47). Tourists make more mixed and neutral comments.
- The higher the number of reviews (the more users of a service), the lower the ratings or satisfaction level (rate) (high correlation, 0.9).

- There are no gender differences in the number of positive, negative, mixed or neutral comments:



5.9. València (Spain). Conclusions

The main highlights / most important aspects of each transport are:

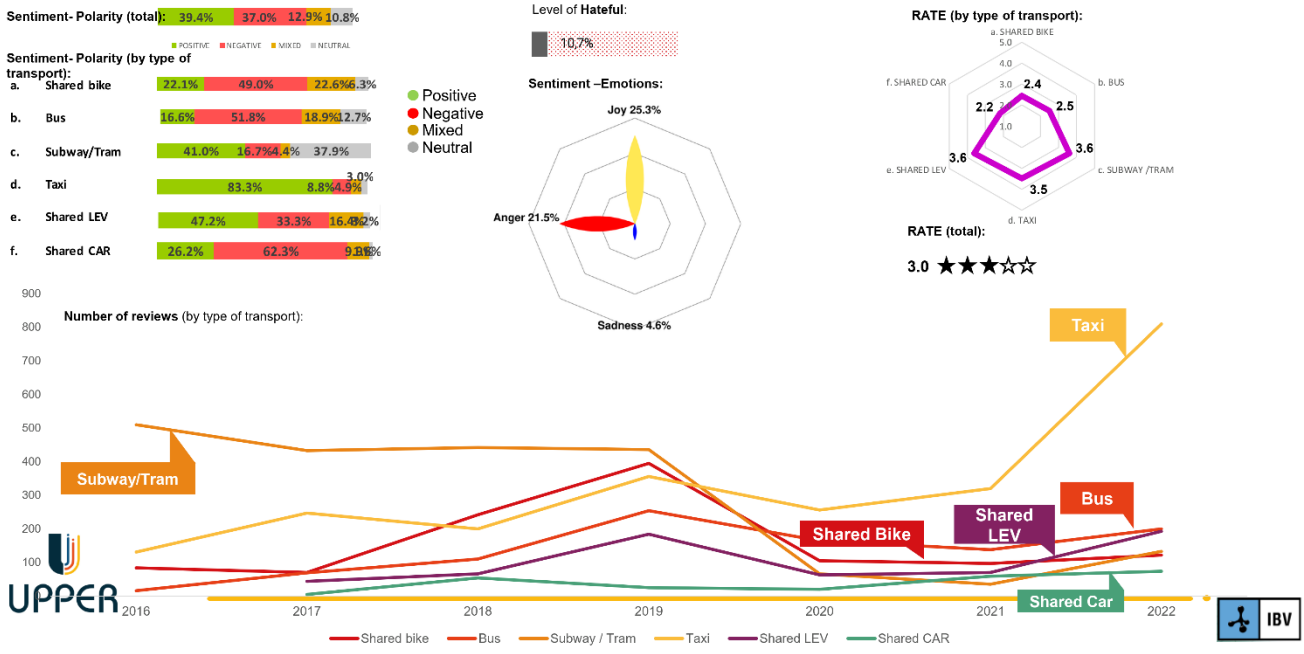
- **Shared Bike:**
  - Good location of the station is the most important aspect for users.
  - Availability of bicycles at each station, adequate pricing, and 30 min free are also crucial factors.
  - Valencia's flat terrain, ample bike lanes, and good weather make it an ideal city for bike sharing.
  - Users value the simplicity, practicality, and usefulness of the service.
  - The biggest issues reported by users are related to customer service, system malfunctions, card incidents, bike quality, and unclear policies regarding the 30-minute free system.
- **Bus:**
  - Good service, bus and/or line that reaches everywhere
  - Low frequency of passage, there are no buses, waits of more than 20 minutes
  - Good bus frequency
  - Good customer service; resolution of incidents and procedures
  - App fails a lot
- **Subway /Tram:**
  - Well connected to the airport.
  - Clean and well-maintained
  - You can get to almost anywhere in the city, even to the beach
  - Punctual, precise with the minutes it says it will take
  - Functional, comfortable
- **Taxi:**
  - Good/excellent service
  - Quick to respond
  - Driver's kindness and professionalism
  - Difficulty in contacting by phone (they don't answer the phone, there's a recording, etc.)
  - Cancellation of service without notice, the taxi doesn't show up, they don't provide service in a specific area
- **Shared LEV:**
  - The main complaints are related to system errors such as the motorcycle shutting down, improper charges for helmets or non-accident insurance, bad motorcycles due to poor maintenance and lack of stability.
  - Good motorcycles are described as reliable, new, comfortable, and attractive.
  - The service itself is praised for being simple, straightforward, and fast.
  - Customer service is a mixed bag with some users experiencing good and fast service, while others complain about poor service.
  - The service is seen as an essential one for large cities and often comes with discounts.
- **Shared CAR:**
  - Great, innovative, and necessary service for people who do not have a car
  - Customer service, professionalism, exceptional treatment
  - Cars work well, easy to drive, comfortable, and automatic
  - Easy-to-use app
  - Free parking in blue zone

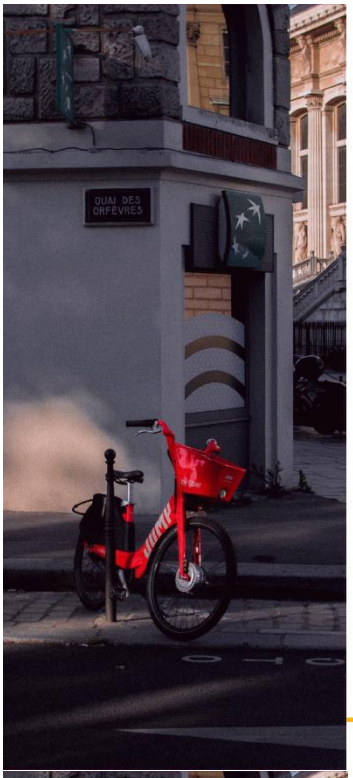
IdF: Netnography of transport

5.2. Ile de France (France). Netnography of **transport**

TYPE OF TRANSPORT:	Nº Reviews	Nº Comments	♂	♀	?	Inhabitants	Tourist	Company	Web, social media, etc.
a. SHARED BIKE	1.194	1.049	49.0%	22.6%	21.8%	55.0%	45.0%	Velib' Métropole	Google, tripadvisor
b. BUS	952	512	64.3%	30.6%	5.0%	94.3%	5.7%	R.A.T.P.,…	Google
c. SUBWAY /TRAM	2.923	2.923	46.2%	26.5%	27.3%	11.0%	89.0%	Paris Metro	tripadvisor
d. TAXI	2.341	1.647	55.3%	40.6%	4.1%	92.8%	7.2%	ACTIFcab, Eurecab, VTC-TAXI, Paris Black Cars, Motofly, Motolead Prestige, TAXI PARISIEN,…	Google, tripadvisor
e. SHARED LEV	620	410	78.1%	19.7%	2.3%	97.5 %	2.5%	Cityscoot, COUP Paris, Troopy, ZEWAY, City Scooter Montparnasse,…	Google
f. SHARED CAR	237	191	52.7%	45.1%	2.1%	97.4%	2.6%	Ubeeqo, Getaround, SHARE NOW, Moovin Paris, …	Google
TOTAL:	8.267	6.322	58.3%	31.2%	10.4%	74.7%	25.3%		

5.2. Ile de France (France). Netnography of **transport**





5.2.1. Ile de France (France). Netnography of shared bike

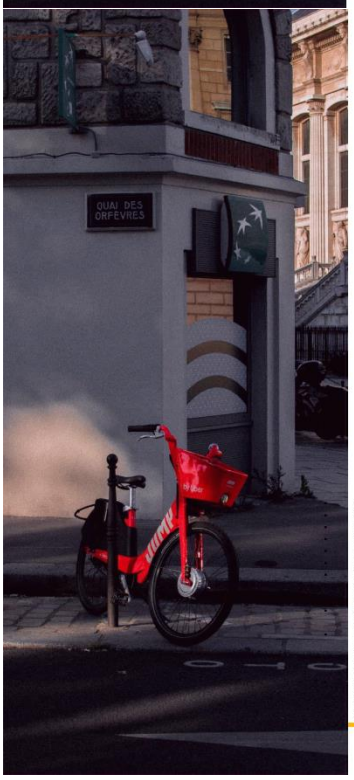
POSITIVE 22.1%

- **Ideal for** sightseeing, **exploring the city** (8%)
- **Many stations** available (7%)
- Many **bike lanes** (5%)
- **Good price**, affordable (1 euro per half hour or less) (4%)
- Useful **app** (4%)
- Amount of **available bicycles** (4%)
- **Useful and practical** (4%)
- First **30 minutes free** (4%)
- **Good service**, operates well (4%)
- **Well-located stations** (3%)
- **24-hour ticket** for 5 euros (3%)
- **Easy to use** (3%)
- **Bikes work well**, both electric and non-electric are comfortable (3%)
- **Drivers** respect bikes and bike lanes (2%)
- **Deposit refunded** in a few days (2%)

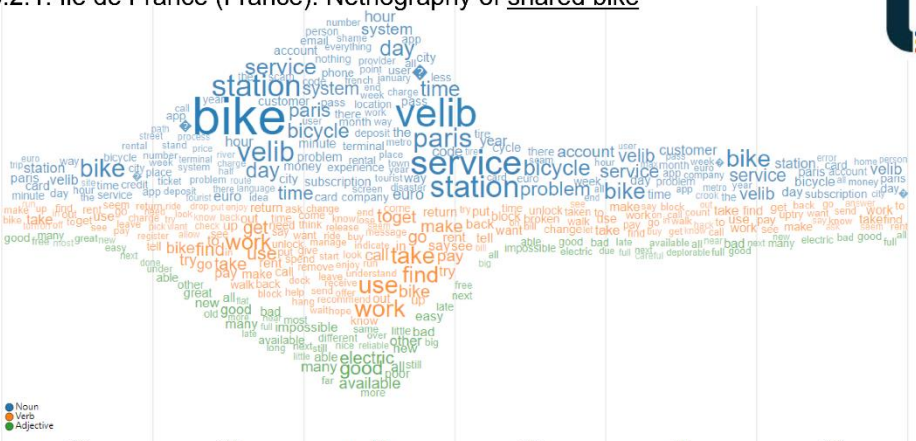
NEGATIVE 49.0%

- **Bicycles don't work**, have poor maintenance, and are dirty. For example: they're broken, tires are flat, not charged (electric ones), the screen doesn't work, etc. (25%)
- Poor **customer service**: long wait times, ineffective, doesn't solve problems, unpleasant, only in French,... (22%)
- **System failures**, stations don't work (can't unlock bikes, codes don't work, etc.), problems when returning the bike (20%)
- **Unfair or unclear charges**, charges for system failure (malfunction, scam) (14%)
- Long wait times for **deposit refund** (high) (8%)
- **Poor service** and functionality in general (8%)
- **No bikes** available (7%)
- Only **a few bikes work** in each station (5%)
- A lot of time is wasted (5%)
- **Worsening of the service** with the new company (5%)
- Unusable **app**, malfunctions, errors (3%)
- **Others**: can't buy the 24h ticket at all terminals, bikes are heavy (non-electric), bike lane is difficult to recognize

IBV



5.2.1. Ile de France (France). Netnography of shared bike



2017

#Bike: *"Of the 10 bikes at the station there are only three that are not broken. ".*
#Velib: *"Good Velib station, well located and often with a choice of bikes".*
#Service: *"... They charge you and then you can't use them. Terrible service!".*
#Station: *"Station closed for more than 3 months."*
#Paris: *"Station closed for more than 3 months."*
#Day: *"We paid 7 days and we couldn't enjoy it once a day. Very bad".*
#Time: *"So a lot of time lost to find it and when you finally find it, it is misery to rest. ".*
#System: *"I think there is a new system called Mobike, which is being used most and does not work with stations rather you leave it anywhere in the city. ".*
#Problem: *"I highly recommend it, the only problem is the deposit of 150 euros per bicycle, for those who are in 6 (2 parents + 4 children) are 900 euros of deposit"*
#Acount: *"The money was not refunded to my account and they do not accept any responsibility for making this charge or for providing the refund.".*
#Minute: *"I broke 2 nails trying to pull it out for use when I stopped for a few minutes. Not cool when the majority of their users are women.".*
#Hour: *"Price for a week 8 Euro and if you take the bike in tranche half an hour is not spent anything more".*
#Customer: *"This is the most shocking me is the intransigence of the Velib employees of customer service"*

2018

2019

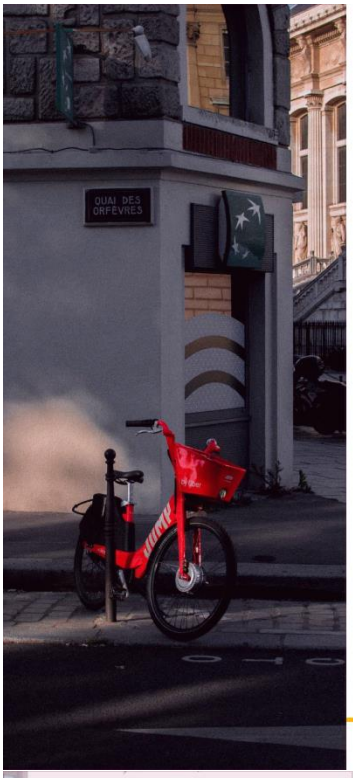
#Use: *"You can use paying only the daily rate".*
#Work: *"I am often forced to do 3 or 4 station To find 1 that works".*
#Take: *"I regularly use the Velib to go take the train because I don't have a metro nearby, but 2 times out of 3 I have a problem...".*
#Find: *"I lost my time to find a bike than to use them. I ended up taking public transport. In short it is a scam".*
#Get: *"Impossible to get clear information in English".*
#Pay: *"Sometimes it's impossible to return the bike and you end up paying hundreds of euros."*
#Go: *"I have several times have problems with restitution of unregistered bikes, with invoices that can go up to more than 45 euros."*
#Call: *"I had to call them 10 times, always the same answer "Sorry, we don't know"".*
#Try: *"The first 2 times we used the bikes we ended up riding from station to station for at least 30 minutes trying to find empty docks to return the bikes to.*
#Return: *"We found two bikes which had just been returned that worked"*

2020

2021

2022

#Good: *"At each station, for 1 bike in good condition, ...".*
#Available: *"This afternoon for example, it is impossible to take Vélibs yet available: 8 trials on 3 stations, no possible taking,...".*
#Electric: *"Bycicles availability has improved a bit with the electric bikes, ...".*
#Impossible: *"... electric bikes are the worst, it is impossible to find a correct one on several occasions".*
#Bad: *"Very bad maintenance of Velib, recurring brake problem, speed change, punctured tires, not enough Velib available. ...".*
#Broken: *"Actually a lot of them are broken and you can not find bike on every station, but generally with 5-10 minutes walking it was possible to find bike.".*
#Many: *"Many defective bicycles, app not always accurate..."*

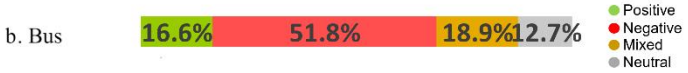


5.2.1. Ile de France (France). Netnography of shared bike

IMPROVEMENTS & MAINTAIN:

- Bicycles should work, be well **maintained and cleaned**, and be more durable.
- **Improved customer service**: quick, efficient, and friendly attention.
- Elimination of **system failures and errors** (issues when taking and returning the bike, etc.)
- More **transparency** in prices, avoiding charges for mistakes.
- **Lower deposit** amounts, especially for large families.
- Maximum **deposit refund time** of 24 hours.
- **Sufficient bicycles and stations** (rebalancing according to usage, real-time information).
- Useful and easy-to-use **app**, with real-time information.
- Service that **meets the needs** of residents and tourists.
- Well-located **stations**.
- Suitable, well-signposted, and safe **bike lanes**.
- **Respect** from all citizens for bike lanes and cyclists.

5.2.2. Ile de France (France). Netnography of Bus



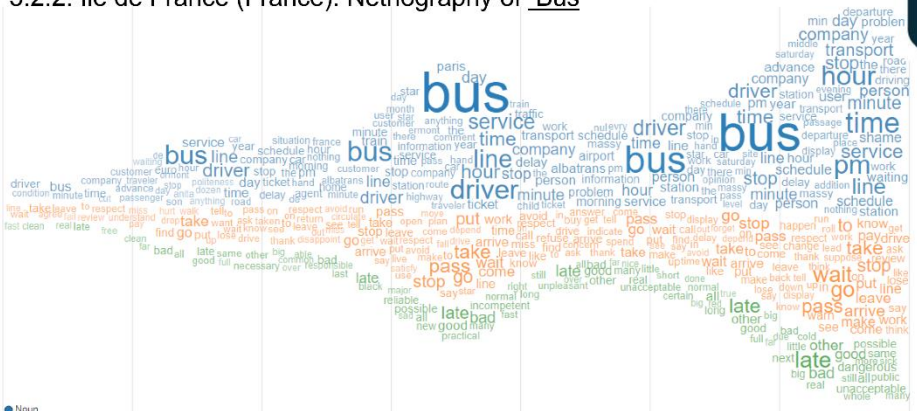
POSITIVE 16.6%

- **Good service**, works well (8%)
- Friendly and professional **driver** (helps passengers) (7%)
- Good connection and good price to the **airport** (7%)
- **Well-located stop** with good access, pleasant (6%)
- **Simple, easy to use, practical** (5%)
- **Punctual** (4%)
- **Fast** (4%)
- Clean and well **maintained** (2%)
- Possibility to recover lost items (2%)
- **Others**: luggage space, peaceful trip, ease of payment, Navigo card is practical,...

NEGATIVE 51.8%

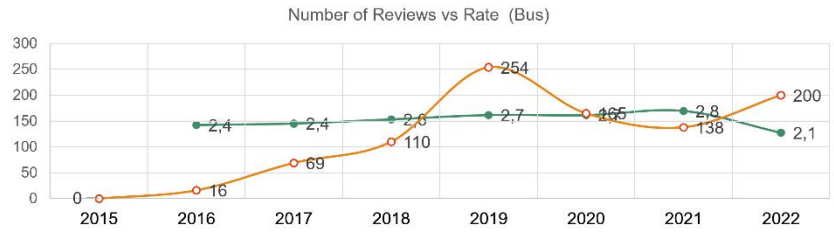
- **Low frequency** of buses, they take a long time to come (1 or 2 hours), little reliability, causing people to arrive late for work (21%)
- **Buses** often **don't stop** (because they are full) or don't come (18%)
- Schedules are not followed, **buses often arrive later** or earlier than indicated (**little reliability**) (16%)
- **Few buses** and they are full (9%)
- Dangerous driving by the **drivers** (9%)
- Incompetent company, **poor management** of a public service (8%)
- Unpleasant and unprofessional **drivers** (8%)
- Poor service, **service in decline** (5%)
- Difficulty in paying/reactivating **Navigo card** (3%)
- Standing on a moving bus is dangerous (2%)
- **Few lines** and therefore few alternatives (2%)
- Heat, **poor air conditioning**, thermal comfort (2%)
- Poor communication, **customer service** (2%)
- **Others**: no service at night, dirtiness, frequent reboots.

5.2.2. Ile de France (France). Netnography of Bus



- **#Bus:** "Buses never on time,…".
- **#Driver:** "Drivers very often rude (not all fortunately), on their laptop by driving, with risky pipes for users (to try to catch up with many delays surely)…".
- **#Line:** "Line 02 it's been more than 2 hours that I don't expect a single bus frankly it's not serious".
- **#Hour:** "Buses go to an hour".
- **#Service:** "A mediocre service !!!!!!!!!!!!! Jia missed my exam because of your buses, I was at a stop for 30 min any bus?".
- **#Time:** "Bus 91.11 does not stop at Camille Claudel to take the people waiting in the stop! This is the third time in the month that it happens to me! It is unacceptable.".
- **#Pm:** "… today 07/19/2022, bus n 8 from 5:46 pm has not passed…".
- **#Minute:** "Buses go up regularly 5 minutes ahead (without even time to stop!) Or late.".
- **#Person:** "There is accumulation of person etc. And this type of problem is very often encountered in 91.04 I do not pay my ticket, lack of respect and not professional at all this company.".
- **#Company:** "The problems have been recurrent without any improvement for 1 year scandalous for a company undergoing public service,…".
- **#Stop:** "1 hour waiting in a stop when I had to wait theoretically 20min max. ".
- **#Wait:** "Do not wait in the cold for 1 hour because a driver was not able to do his job with professionalism !!!!".
- **#Go:** "If you are at 12:15, you can go to the time and stand early.".
- **#Take:** I had to take the bus at 9:24 p.m., having not been able to run with a sick leg to obtain a seat. …".
- **#Pass:** "And again, when he even passes 15 minutes late we consider himself happy because very often he simply does not pass. ".
- **#Stop:** "They stop at stops without saying why (10/15 minutes of waiting).".
- **#Arrive:** "Never on time especially in winter, you arrive you cannot even warm up. …".
- **#Come:** "Bus 91.11 either late or it does not come.".
- **#Put:** "Why put schedules if your drivers do not respect them?".
- **#Make:** "Still late it happens but the worst it stays when it comes in advance it makes me crazy the bus is supposed to come at 7:59 am,…".
- **#Leave:** "…the driver had to leave around twenty people outside".
- **#Late**"They are still late and sometimes the buses do not even come. ".
- **#Bad:** "Very very bad service on this 9105 Massy Palaiseau-Evry Center bus line.".
- **#Other:** "The lines as worse as each other…"
- **#Good:** "More transport would be good for certain areas which are almost neglected by transport.".
- **#Dangerous:** "Some dangerous drivers (line 11 to 8:00 am)… ".
- **#All:** "they drive almost all bad and too fast and fail to drop certain passengers".
- **#Unacceptable:** "…, this lack of professionalism is unacceptable ".
- **#Many:** "Buses 9101 are never there on time, which makes us arrive late and miss the trains many times. ".

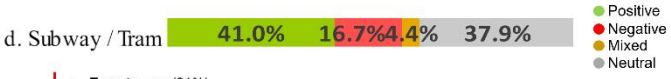
5.2.2. Ile de France (France). Netnography of Bus



IMPROVEMENTS & MAINTAIN:

- **Increase frequency** of buses and more buses on the route
- Use buses with larger capacity and redesign interiors to make **better use of space**
- Improve **punctuality and reliability**
- Drivers should have a less abrupt, aggressive, and dangerous **driving style**
- Improve customer service and **friendliness from drivers**
- Good **connection to airport** at a reasonable price
- Service should be **easy to use**: easy payment, etc.
- **Faster** service
- Well-located and **accessible bus stops**
- Cleanliness and good **maintenance**
- Safety for standing passengers, redesign the **way to stand**, e.g. semi-sitting
- More bus lines, **more alternatives**
- Adequate **climate control**; neither too cold nor too hot
- More **night service**.

5.2.3. Ile de France (France). Netnography of Subway/Tram



POSITIVE 41.0%

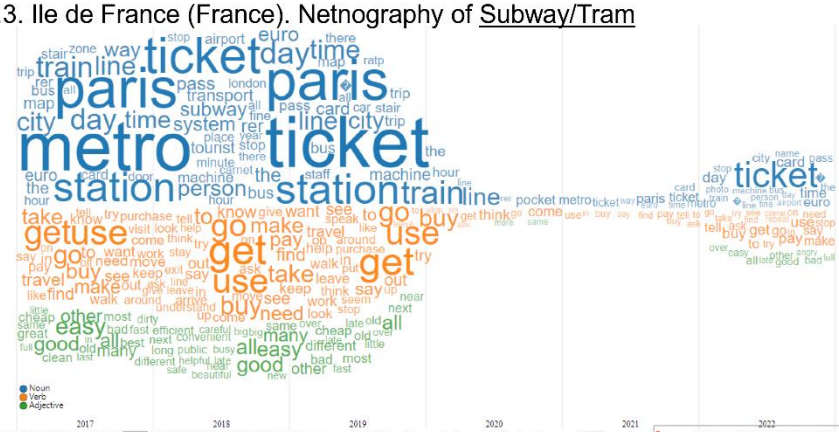
- **Easy to use** (21%)
- **Reaches everywhere** (20%)
- **Fast** (13%)
- **Efficient, punctual** (12%)
- **Variety of ticket** / card options (11%)
- Good **price** (11%)
- **Well signposted**: interior panels, etc. (9%)
- Reduced **wait times**, reduced frequency of passage (7%)
- **Clean** (7%)
- **Well connected** (5%)
- **Pleasant experience** (5%)
- Sufficient **lines** (5%)
- Suitable for **tourism** (5%)
- You **can't sneak** into the metro (5%)
- **Metro map** available (5%)
- The **best transportation** in the city (4%)
- **Safe** (3%)
- **Stops close** to each other (3%)
- **Live music** (3%)
- **Others**: Bakeries and other services, ticket valid for other transportation, ease of payment, connection to the airport, app, customer

NEGATIVE 16.7%

- **Insecure**, with many pickpockets, frequent robberies and scammers (26%)
- Excessive **fines for mistakes** (such as throwing away the ticket before exiting) (20%)
- Poor **customer service**, unpleasant and only in French (20%)
- **Dirty, old, poorly maintained** and with bad odor (16%)
- Poor **accessibility** (escalators, elevators) (8%)
- **Very crowded** (6%)
- **Not easy to board with children** (baby strollers) (3%)
- **Photo** required **for the Navigo** card (3%)
- **Noise** (2%)
- Heat, poor **thermal comfort** (2%)
- Doors close and catch you, **little time open** for people getting on and off (2%)
- **Expensive** (2%)
- **Others**: queues at the machine, outdated system, ...

IBV

5.2.3. Ile de France (France). Netnography of Subway/Tram

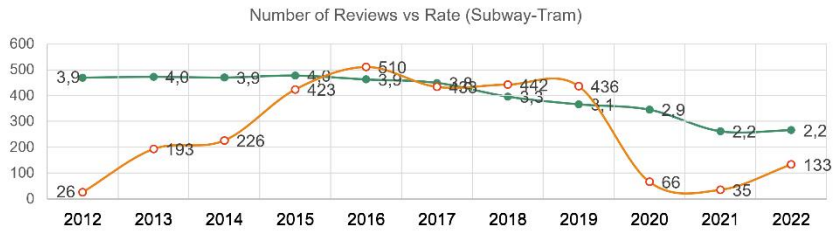


#Metro: *"Paris is a huge city, yet with the metro you reach the opposite head of the city in a few minutes. ".*
#Ticket: *"It is very easy to take the train, and there are staff of the Metro company that help you buy the ticket."*
#Paris: *Ideal for moving to Paris associated with an app that holds up and it's great.".*
#Station: *"Well, the metro is dirty, mind -blowing smells in stations".*
#Train: *"The trains run on time and it worked out better value for money to purchase the 7 day ..."*
#Day: *"We paid 22 € to use the seven days and use subway, RER and buses.."*
#Line: *"The Parisien metro transport system consist of 14 lines each identifiable by it's number and destination...".*
#City: *"The metro of Paris is very complete, with many lines, allowing access to any point of the city. "*
#Subway: *"Confused subway! We could only find ourselves after we downloaded an app that helped us a lot!"*
#System: *"compared to London's tube system, this is third world. ticket machines perennially not working, crazy queues every first of the month, Navigo passes completely not flexible and ...".*
#Person: *"... the 10 trip ticket only serves a person. "*
#Transport: *"Not only does RATP not even allow tramway to be combined with another mode of transport on the same ticket"*

#Get: *"The Paris metro is excellent in that it's easy to get around and is all at a very affordable price...".*
#Use: *"We used the Metro as we had a daughter on crutches...the stairs in and out were a challenge".*
#Go: *"Fortunately it is very practical to go from point A to point B quickly.".*
#Take: *"The tracks are poorly indicated and sad without counting that it is necessary to take countless stairs while escalators would suit the elderly, people with strollers, disabled ...".*
#Make: *"The Mayor want to make the city Green by encouraging people to use transit. She needs to address accessibility. And what to the disabled citizens do? Stay in their apartments?"*
#Buy: *"Buy the carnet navigo (you need a photo) valid from Monday to Sunday for € 27. ".*
#Pay: *"This works very similar to the tube in London, except for the easy payment of contactless London has, Paris metro still uses the buying tickets method.".*
#Tell: *"Employees not in the ticket booths are hard to find and they don't wear uniforms like in London so it wasn't easy to tell if they worked for the transport or not.*
#Travel: *"This is definitely the way to travel if you want to get around Paris quickly and efficiently.*

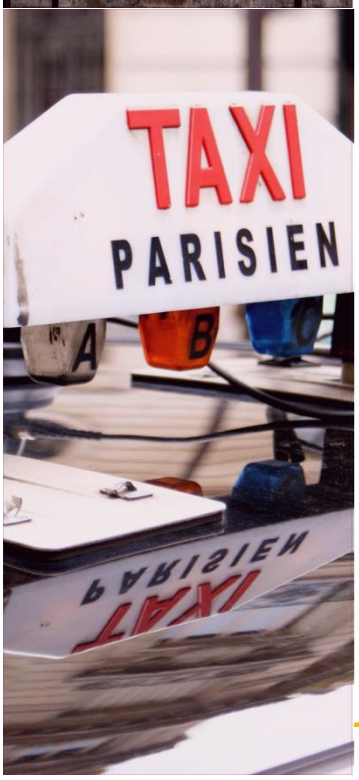
#Easy: *"Once you figure out the routes, stops it's very easy way to get around the city.*
#Good: *"In Paris, metro stations are far from all clean, in good condition and above all decorated"*
#Many: *"They are friendly to use in many languages by touching the screen"*
#All: *"It is cheaper and you don't have to wait in line all the time."*
#Other: *"... controls equal to zero and incredibly rude staff and unable to speak any other language that is not French ".*
#Cheap: *"Trains are very frequent, relatively quiet, cheap, wide network. ".*
#Bad: *"The connections with the RER (train) were bad and difficult. ".*
#Different: *"Cora-lighter of the various stations are the artistic decorations on the walls, always different and original.".*
#Same: *"The color is the same as a bus running in the city, and the white -based green line looks fashionable. ".*
#Great: *"Great means of transport"*

5.2.3. Ile de France (France). Netnography of Subway-Tram



IMPROVEMENTS & MAINTAIN:

- **Improvement of security** against theft, etc.
- **Elimination of fines for mistakes** or lack of knowledge (tourists), such as throwing the ticket before exiting the metro.
- System that is **easy to use.**
- Being able to reach everywhere with **enough lines and stops**.
- Improvement of **customer service** (resolving doubts, incidents in a friendly manner in various languages)
- More **cleanliness and** better **maintenance**.
- **Fast and punctual**.
- **Variety of tickets** according to needs.
- Good **price.**
- **Well signposted**.
- **More frequent service**.
- **Improved accessibility** for elderly people, people with mobility problems, children in strollers (more elevators and escalators).
- **Others:** not requiring a photo for the Navigo card.



5.2.4. Ile de France (France). Netnography of Taxi

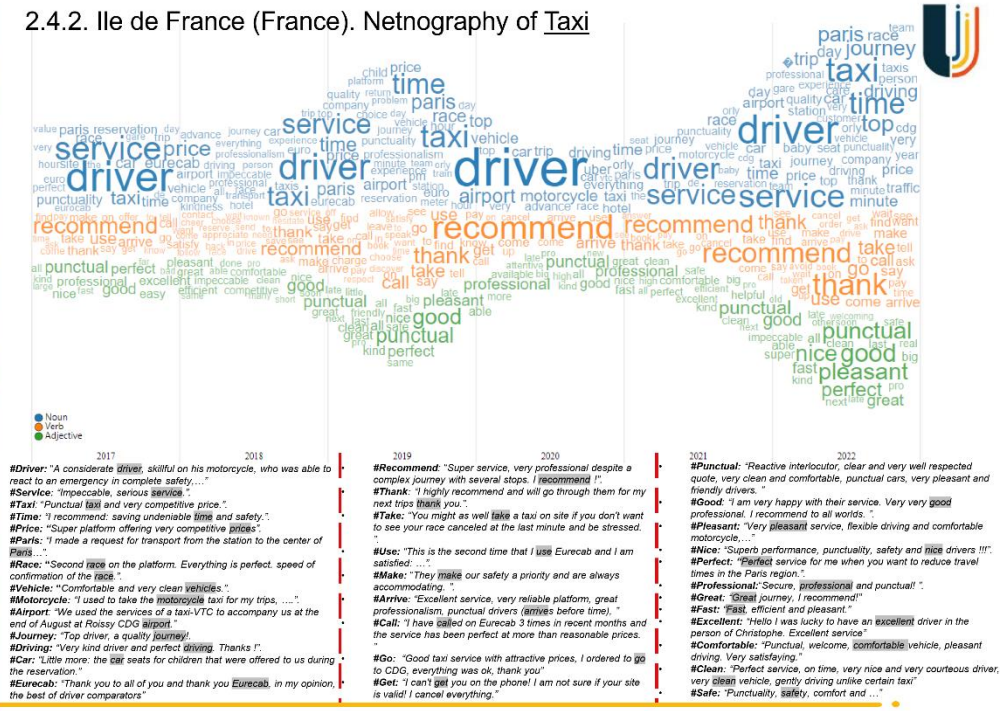
POSITIVE 83.3%

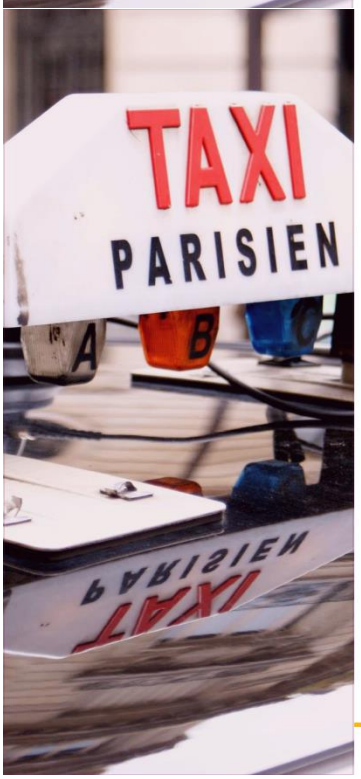
- Kind and pleasant **driver** (28.3%)
- **Professional and efficient** driver/service (28.3%)
- **Recommendable** (28.3%)
- **Punctual** (26.6%)
- **Fast** (18.3%)
- **Safe service**: skilled driver and appropriate driving (15%)
- **Good price**, appropriate quality-price ratio (11.6%)
- Good **customer service** (6.6%)
- **Quality** service (5%)
- **Comfortable**, pleasant (5%)
- **Airport** service (3.3%)
- **Flexibility** (3.3%)
- **Others**: child seat, cleanliness, etc.

NEGATIVE 8.8%

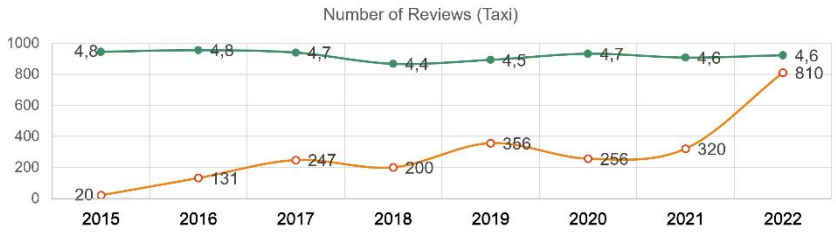
- Charge for **service not provided** (11.6%)
- Cancellation of service without notice or too late (11.6%)
- Poor **customer service** (10%)
- Late **refund** (3.3%)
- **Non-transparent pricing** or pricing that varies depending on the day, gas prices, etc. (3.3%)
- **Others**: overcharging, bad driver...

2.4.2. Ile de France (France). Netnography of Taxi





5.2.4. Ile de France (France). Netnography of Taxi

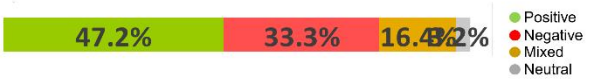


IMPROVEMENTS & MAINTAIN:

- **Friendly, efficient, and professional drivers providing safe service with skilled driving and proper driving**
- **Punctuality**
- **Reliability**: services should not be cancelled without notifying the customer with sufficient time to seek alternatives
- **Speed**
- **Good customer service**; quick, flexible, and friendly
- **Clear pricing**, transparency, fixed price that does not vary
- **Quality service**
- **Comfortable** and pleasant service
- **Airport** service
- **Flexibility**
- **Automatic refunds**
- **Cleanliness**
- **Child** car **seat**

5.2.5. Ile de France (France). Netnography of Shared LEV

e. Shared LEV



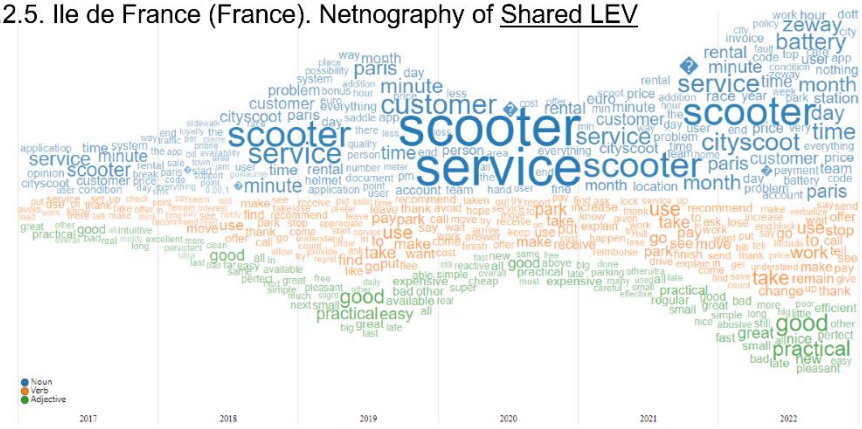
POSITIVE 47.2%

- **Easy-to-use**, efficient, practical, and professional service (20%)
- Good **customer service** (18%)
- Scooters in **good condition**: good quality, new, and clean (18%)
- Mobility option that was missing in the city, revolutionizing the way of getting around, **practical for daily use** (18%)
- **Recommended** (10%)
- **Availability** (6%)
- **Fast**, faster than other modes of transportation (6%)
- **Good price**, good value for money (4%)
- Easy-to-use **app** (4%)
- **Eco-friendly** (4%)
- **Others**: Intuitive service, easy pickup, beautiful scooter, discounts, exchange stations everywhere, ..."

NEGATIVE 33.3%

- Service **failures**: unlocking and locking issues, server failures that don't connect or don't work (16%)
- Poor **customer service** (14%)
- Expensive and/or misleading **prices** (14%)
- **Refunds** are not processed automatically, take too long, or are not made at all (10%)
- **Unjustified fines and charges** due to system failures (10%)
- **Scooters** in poor condition, deterioration and poor maintenance of the service (6%)
- Insecure **app**, prone to hacking (4%)
- **Dirty** motorcycle and helmet (4%)
- **Others**: heavy scooters, slow app, charging time included in rental time, inadequate treatment of personal data, speed limited to 46 km/h, rarely fully charged, ...

5.2.5. Ile de France (France). Netnography of Shared LEV

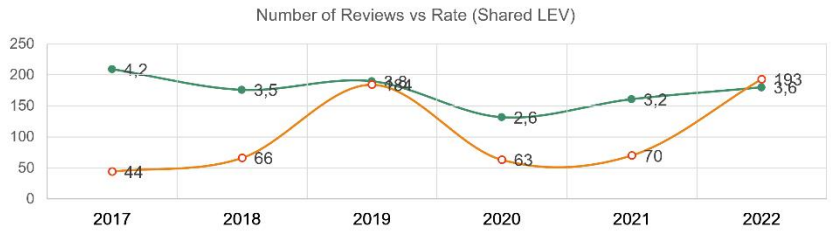


#Scooter: "scooters are of better quality, the ignition system, end of rental is clear and very simple, .."
#Service: "Deplorable customer service ...".
#Customer: "Though the scooters are Great the Customer Service "Leave something to be desired" ."
#Motorcycle: "I park the scooter properly in a place dedicated to motorcycles. Unfortunately, I receive an email telling me that the scooter had been removed and put in the pound because poorly parked (fine+pound). ".
#Cityscoot: "we contacted the City Scoot service explaining this problem to them. The service was unpleasant on the phone".
#Minute: "I was charged 10 minutes when I used only 7 minutes and that at almost every time. ".
#Time: "The end of the rental is too problematic, 90% of the time you have to wait almost 5 minutes and obviously at your expense"
#Rental: "Rentals always rounded above".
#Month: "I have rented a Zeway scooter for 3 months and I find the scooter very pleasant to drive and the very excellent rental formula.."
#Paris: "Very good alternative in Paris and its suburbs, professional and attentive team.".
#Problem: "Each time I encounter problems to finish my rentals which makes me always pay much more than my race".
#Zeway: "The Zeway team is very friendly and always responds quickly to requests. ".

#Use: "Already that most invoices seem really high compared to the real use of the service".
#Take: "The minutes rolled during the month of October were not taken into account for the calculation of the loyalty bonus.".
#Work: "It works well, rather effective and not too expensive.".
#Park: "cityscoot scooters are very hard to park with the central crutch...".
#Make: "Perfect for the use I make of it, unbeatable price, ultra handy scooter"
#Find: "This service saved my life in times of strike. Not always easy to find a scooter when everyone rushes Dessusus (thank you RATP) but it works well,..."
#Move: "...very good way to move easily in Paris".
#Put: "people can move the scooter it was put on the road I paid more than 250 € ..."
#Pay: "The price announces on the site is false and at the time of invoicing the tent rental company and wanted to make me pay twice written on the website. ".
#Put: "1 First problem: the helmet impossible to put in the trunk that does not work. ".

#Practical: "Hyper practical to move quickly in Paris! "
#Good: "Top scooters, very reactive in boost, comfortable, excellent braking and always in very good condition...".
#Easy: "A great discovery, the grip of the scooter is fast and easy".
#Great: "Very good team! Listening and top! The scooters are great. "
#Available: "Perfect, easy to use, reactive customer service and a lot of scooters available.".
#All: "You monopolize all the parking spaces near the Institut Curie in Saint Cloud. ...".
#Nice: "Good evening very nice young people, a great service, reachable at all times,... ".
#New: "Excellent new scooters and boost. ".
#Expensive: "In short, expensive for scooters that lock once in two, it's just a money pump. Buying a scooter will cost you much cheaper".
#Perfect: "The service is perfect, the professionals are very nice and accommodating. ".
#Pleasant: "Super light scooter, pleasant driving, I recommend".

5.2.5. Ile de France (France). Netnography of Shared LEV



IMPROVEMENTS & MAINTAIN:

- Easy to use and **error-free service**
- Good **customer service**: efficient and friendly
- Scooters in good and clean **condition**
- Real alternative offer that **improves other transportation options**
- Appropriate and transparent **pricing**
- Automatic **refunds** (less than 24h)
- **Avoid charges/fines** due to system errors
- Security and good management of **personal data**
- **Availability** of scooters and parking space
- Easy-to-use **app**

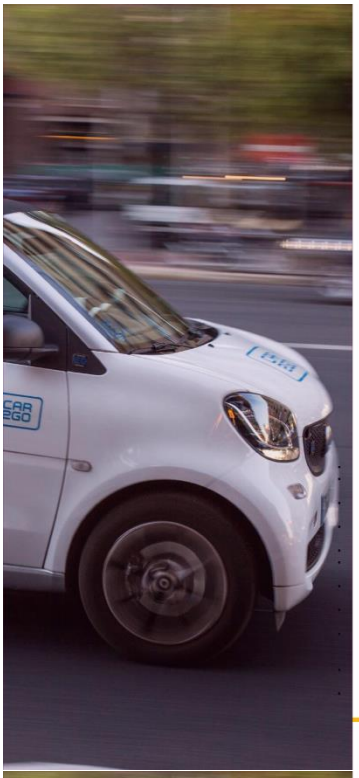
5.2.6. Ile de France (France). Netnography of Shared CAR

POSITIVE 26.2%

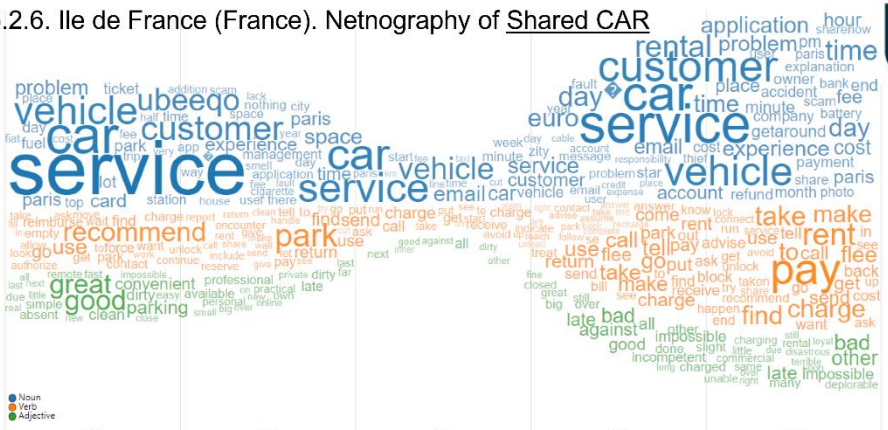
- **Useful and necessary service**, good service (16.6%)
- **Good cars** and variety (8.3%)
- **Practical** (6.6%)
- Good **price** (6.6%)
- **Fast** (no queues) and simple (6.6%)
- Practical and fast **app** (5%)
- Good **customer service** (3.3%)
- **Recommendable** (3.3%)
- **Availability of cars** (1.6%)
- **Availability of spots** (1.6%)
- **Easy to use** (1.6%)
- **Clear and transparent rules** on usage (1.6%)
- **Quick refund** (1.6%)

NEGATIVE 62.3%

- Bad **customer service** (43.3%)
- **Fines**, charges for service/system failures (e.g. inability to park in areas due to lack of space) (33.3%)
- **Dirty cars** inside and out (6.6%)
- Little car **maintenance** (6.6%)
- **Problems** locking and unlocking cars (6.6%)
- Unreliable indicated **autonomy** (5%)
- **No refunds** (5%)
- Electric **cars discharged** (5%)
- **Dangerous**, cars in poor condition (3.3%)
- **Difficult to park**, no spaces available (3.3%)
- False, disproportionate **mileage** (3.3%)
- **No cable** in the car or it is broken (3.3%)
- Cars are not in the location indicated by the **app** (3.3%)
- **Expensive** (3.3%)
- **Others**:
  - Service that has deteriorated over time
  - Broken terminal
  - Unstable app
  - No invoice



5.2.6. Ile de France (France). Netnography of Shared CAR



2018

#Service: *"Very easy to use service allowing access to vehicles anywhere in Paris! "*
#Vehicle: *"Maintenance of terminals and vehicles should be the priority to enable a "just" usable service. "*
#Car: *"I took a car that was over 30% battery and ran out of fuel on the device after 40min. I had to pay 200€ for a tow truck"*
#Customer: *"Finally the customer service is incompetent, real thieves I invite everyone to boycott this company".*
#Rental: *"Disappointed with my last rental"*
#Time: *"I continued to use this service from time to time until day when I realized that I had just been scammed.".*
#Problem: *"Super service I recommend despite a small problem with the parking badge"*
#Day: *"He wants to make me pay a fine that arrived 3 days after the date of my rental, they are thieves."*
#Email: *"I have never had to deal with such incompetence on the part of customer service and a CEO who was touched by my email but who did not respond. I advise against ZITY 100%."*
#Experience: *"Second experience, almost 1 hour in the vehicle without having rolled 1 cm"*
#Acount: *"I gave you all my information to access my account, It is useless to send me back to your mailbox you never answered it.*

2019

#Pay: *"They make you pay for repairs for damage that cannot be detected during the inventory. Definitely avoid."*
#Charge: *"I was charged 100 euros without any explanation. I asked for a call back, I'm still waiting... "*
#Rent: *"The damaged vehicle that is rented is inadmissible on the part of the company,..."*
#Recommend: *"Convenient and inexpensive service. I recommend"*
#Return: *"Six days apart everything could have happened on the car that I had already returned. Still no response from Getaround after 4 emails, and I notice that I was charged € 660, then € 60 3 days later"*
#Find: *"Difficult to find the car to take it, charged only at 60 percent, totally insufficient for the planned trip, not easy to recharge in Paris, and in the end after a breakdown during the recharge..."*
#Take: *"To flee don't take a car with them you will pay for more than 300€ in the end."*
#Make: *"The more time passes, the more the quality deteriorates, with a contact team that makes no effort to remedy a declared concern."*
#Flee: *"But they tell you: go see the general conditions, in short a scam! Only one recommendation from me: FLEE!!!!"*
#Use: *"I will no longer use the service."*

2020

2021

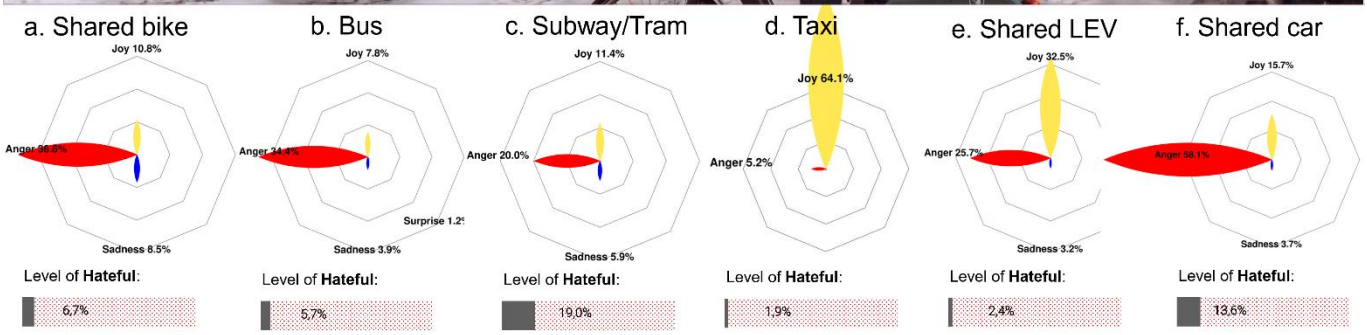
2022

#Good: *"At first good service with lots of cars available... However, terrible customer service.".*
#Great: *"Great and helpful service that was missing in Paris!!"*
#Bad: *"Too bad we can't put 0.."*
#Other: *"To flee ! Other much more professional applications exist"*
#Late: *"And, the next day, 21/10, I was billed 36 euros for late return when I warned the owner"*
#Against: *"I I strongly advise against!! I was charged 100 euros without any explanation. I asked for a call back, I'm still waiting..."*
#All: *"Above all, do not book with them!!!!! A scam !!!! The vehicle I reserved was broken down..."*
#Impossible: *"Terminal broken, impossible to restart because the reboutage button is faulty"*
#Dirty: *"Very dirty vehicle, crushed cigarettes, empty pocket filled with paper and cigarette ends, stained armchairs, greasy table of dried sodas, in short, a real trash can*

5.2.6. Ile de France (France). Netnography of Shared CAR

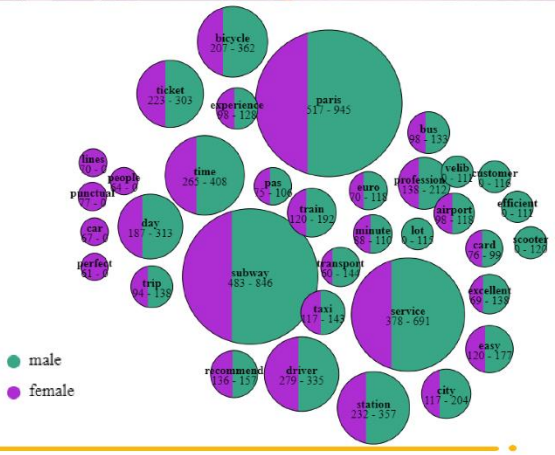
IMPROVEMENTS & MAINTAIN:

- **Improvement in customer service** with automatic refund and without fines and charges for service/system failures, e.g.:
  - Inability to park in certain areas due to lack of space
  - Issues with locking and unlocking the cars
- **Service** should be **practical and easy** to use
- Clean and **well-maintained cars**
- **Cars** in good **condition** and safe
- Improvements in the car **charging system**:
  - Reliable autonomy indications
  - Charged electric cars
  - Available and functional cable
- Good **price**
- Good cars and **variety**
- Fast (no queues) and simple service
- Availability for **parking** with enough space
- Reliable and well-functioning **app**
- **Availability** of cars
- Clear and **transparent rules** of use
- **Service** should be **maintained** and improved.



- The **Subway/Tram** is the transportation mode that has the highest percentage of comments identified as hate (19.0%), followed by **Shared Car** (13.6%) and **Shared Bike** (6.7%).
- Although getting the highest percentage of hate comments, **Subway/Tram** is the second transport generating lower level of anger.
- **Shared Car, Bus**, and **Shared Bike** are the transportation modes that have the highest ratio of anger to joy comments.
- **Taxi** is the transportation mode that has the highest level of identified joy, 64.1%, compared to only 5.2% of identified anger, as well as the lowest level of identified hate, at only 1.9%.
- **Shared Bike** and **Subway/Tram** are the transportation modes that have the highest percentage of comments identified as sadness

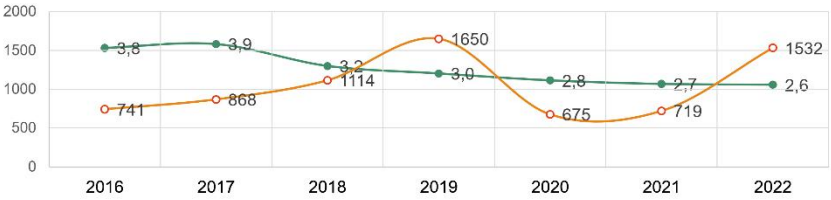
- If we analyze all the transports grouped, the most repeated words excluding Paris are: **subway**, **service**, **time**, **driver**, **station**, **bicycle**, **ticket**, **day, professional** and **recommended**.
- The words that only men say are highlighted as: **scooter**, **customer**, **lot**, **efficient** and **velib**.
- The words that only women say are highlighted as: **punctual, lines, car, people** and **perfect.**



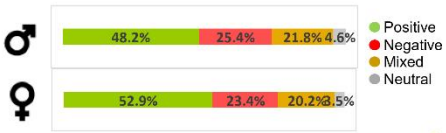
5.2.9. Ile de France (France). Conclusions

- Attending to the number of reviews, **Subway** and **Taxi** seem to be the most used transports. Considering the same indicator, **Taxi** is the only transportation that has recovered after the pandemic and significantly increased the number of reviews. **Bus, Shared LEV**, and **Shared Car** have returned to pre-pandemic figures. In contrast, the **Subway** (due to tourism) presents the lower recovery level.
- In Île-de-France, **shared transport** is recovering after the pandemic (except for **shared bikes**), just like in other cities.
- There is a high and positive correlation between positive comments, a higher rate level (0.7). There is no clear correlation (strong) between the percentage of negative comments and a high percentage of hate.
- The best-rated transport options in Ile de France are **Taxi** (due to the moto-taxi service) and **Shared LEV**, while the worst-rated options are clearly **Shared Car** and **Shared Bike**, with a 13.6% and 6.7% level of hate, respectively.
- 58% of the analyzed users are men, 31% are women, and the remaining 11% are unknown.
- Men use shared light electric vehicles (**LEV**) more often, while women use **shared cars** and **taxis** more often. There is a moderate correlation (0.5) between a higher percentage of men using shared LEVs and a higher percentage of mixed comments.
- 75% of the analyzed users are residents, and the remaining 25% are tourists.
- There is a weak correlation (0.4) between a higher percentage of residents and higher negative comments, indicating that residents tend to be more critical. On the other hand, tourists tend to make more neutral comments, with a higher correlation of 0.87.
- In the case of Île-de-France, there is no strong correlation (-0.3) between the higher number of reviews (the more users of a service) and lower ratings or satisfaction level (rate).

Number of Reviews vs Rate (TOTAL –ILE DE FRANCE)



- In the case of Ile de France, men are slightly more critical, with a higher number of negative comments and a lower number of positive comments. Although the differences are not significant.



IBV

5.2.9. Ile de France (France). Conclusions

The main highlights / most important aspects of each transport are:

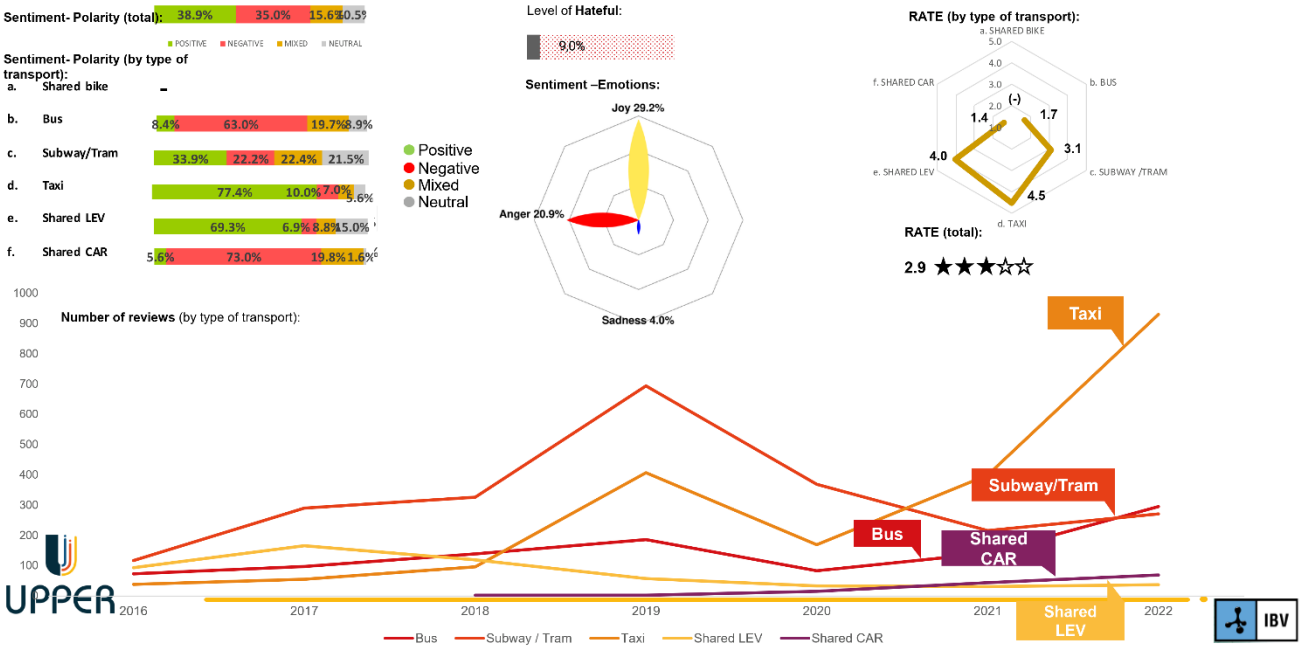
- **Shared Bike:**
  - Improving bike maintenance and cleanliness to ensure bikes are in good working condition.
  - Enhancing customer service to provide better support and faster issue resolution.
  - Fixing system failures and addressing station issues to improve the bike rental process.
  - Ensuring that charges are clear and transparent to avoid confusion and dissatisfaction.
  - Reducing wait times for deposit refunds to improve the overall customer experience.
- **Bus:**
  - To improve bus reliability by increasing the frequency of buses, improving adherence to schedules, and ensuring that buses stop at all designated stops.
  - To maintain and expand positive aspects of the service, such as good connections to important destinations, friendly and professional drivers, and convenient stop locations.
  - To address issues with bus overcrowding by adding more buses or increasing capacity on existing buses.
  - To address negative driver behavior by providing training and incentives for safe and professional driving, and enforcing standards for appropriate behavior towards passengers.
  - To address miscellaneous issues by improving payment and card reactivation processes, providing safe seating for all passengers, ensuring adequate air conditioning and temperature control, and improving communication with customers.
- **Subway /Tram:**
  - Improved security measures to reduce pickpocketing and prevent robberies and scams
  - Improved signage and information to make it even easier to use (e.g., clear maps, route information, and instructions).
  - Reduction of excessive fines for minor mistakes, such as accidentally discarding a ticket
  - Improved customer service with multi-lingual support and friendly and professional staff
  - Increased frequency of service to reduce wait times and ensure that the metro reaches all areas of the city.
- **Taxi:**
  - Kind and pleasant drivers are highly valued by customers.
  - Customers appreciate professional and efficient driver/service.
  - Punctuality is also important for customers.
  - Customers appreciate fast transportation.
  - Safe service with skilled drivers and appropriate driving is a factor that should not be overlooked.
- **Shared LEV:**
  - The service needs to maintain its ease of use, efficiency, practicality, and professionalism to ensure customer satisfaction.
  - The service has revolutionized the way people get around the city and is practical for daily use.
  - Good customer service is highly valued by customers, and the service should continue to provide prompt and effective support to maintain customer satisfaction.
  - Maintaining the quality, cleanliness, and condition of the scooters is essential to meet customer expectations.
  - Technical issues such as unlocking and locking problems and server failures need to be addressed to ensure smooth service operations and customer satisfaction.
- **Shared CAR:**
  - Poor customer service
  - Penalties and fees for service or system failures
  - The service is useful and necessary with good quality
  - Wide variety of good cars available
  - The service is practical, affordable, fast, and easy to use.

IBV

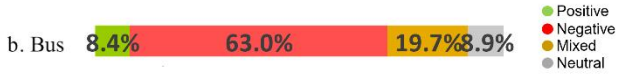
5.3. Rome (Italy). Netnography of **transport**

TYPE OF TRANSPORT:	SAMPLE: Nº Reviews	Nº Comments	USER PROFILE: ♂	♀	?	Inhabitants	Tourist	SOURCES: Company	Web, social media, etc.
a. SHARED BIKE	-	-				-	-		
b. BUS	1.087	835	59.7%	31.8%	8.5%	66.3%	33.7%	ATAC	Google
c. SUBWAY /TRAM	2.377	942	65.7%	29.1%	5.1%	78.1%	21.9%	Metropolitane di Roma	Google, tripadvisor
d. TAXI	2.126	829	55.1%	43.2%	1.7%	74.2%	25.8%	Cab Shuttle Taxi, Taxi Roma Samarcanda, Rome Airport Taxi, Cheap Taxi N.C.C. Rome, RIM-TAXI,...	Google
e. SHARED LEV	699	622	60.7%	21.2%	18.2%	33.4%	66.6%	Lime, Dott Cooltra, Zig Zag	Google, tripadvisor, Google Play
f. SHARED CAR	133	127	65.4%	30.8%	3.8%	89.0%	11.0%	Enjoy, SHARE NOW	Trustpilot, Google
TOTAL:	**6.422**	**3.355**	61.3%	31.2%	7.5%	68.2%	31.8%		

5.3. Rome (Italy). Netnography of **transport**



5.3.1. Rome (Italy). Netnography of Bus

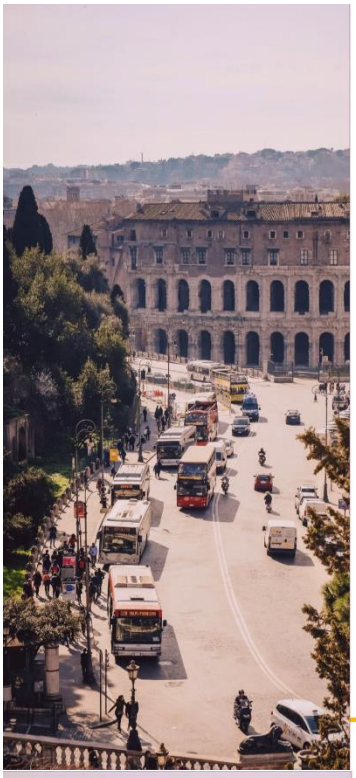


POSITIVE 8.4%

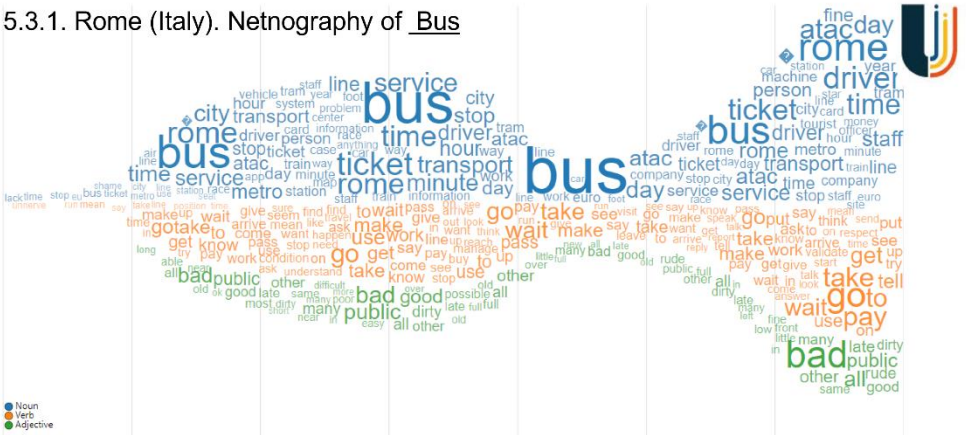
- Good **customer service**: professional, friendly, lost and found management (6.25%)
- Intuitive, easy to use, well **signposted** (6.25%)
- **Frequency** of service (5%)
- **Good service:** Comfortable and functional (5%)
- **Improved** (3.75%): clean (3.75%) and renovated (2.5%)
- **Weekly ticket** available (2.5%)
- **Inexpensive** (2.5%)
- **Covers all areas**, sufficient stops (2.5%)
- Other positive aspects include **availability in multiple languages**, safety, and air conditioning. (…)

NEGATIVE 63.0%

- **Poor service**: degraded and chaotic (26.25%)
- **Obsolete**, not modernized, rustic (do not accept cards, cannot be renewed online), break down frequently, in poor condition (16.25%)
- Bad **customer service** (13.75%)
- **Long waiting** times (10%)
- **Dirty**, bad smell (8.75%)
- **Bad drivers**, don't provide information, dangerous driving, unpleasant (6.80%)
- **Unreliable** and not transparent (timetables) (6.80%)
- Buses **don't pass or stop** (6.25%)
- **Lack of punctuality** (5%)
- **Poor management** by the company and public administration (5%)
- **Lack of information** and signage (5%)
- **Rules/norms not respected**: Covid, etc. (5%)
- Always **overcrowded** (3.75%)
- **Tourists fined for system failures** or difficulty in understanding how it works (3.75%)
- **App** not very useful (3.75%)
- **Not very accessible** for elderly or disabled people (3.75%)
- **Unsafe**: pickpockets (2.5%)
- Other negative aspects include noise, slow speed, abandoned outskirts, discriminatory prices, poorly lit stops, and few ticket vending machines.

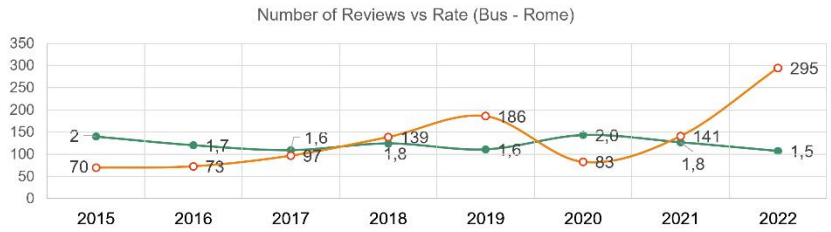


5.3.1. Rome (Italy). Netnography of Bus



2017	2018	2019	2020	2021	2022
#Bus: "Obsolete buses that are lost pieces from the ceiling with the risk of getting seriously hurt".		**#Go:** "but on Sunday who has to go to work, what does it do?".			**#Bad:** "Very very bad service on this 9105 Massy Palaiseau-Evry Center bus line.".
#Ticket: "The buses do not charge you and the drivers do not know how to help or where to buy the ticket."		**#Pay:** "If I have to pay for such a poor service, well ... we're really bad !!"			**#Public:** "If you want to turn Rome by public transport you need a lot of patience and good legs because in the end it is better to go on foot !!!"
#Service: "A shame for the capital to have such a service".		**#Wait:** ". . , only one bus after 40min we were waiting for.".			
#Rome: "Bad bus service in Rome.".		**#Take:** "I take line 764 every morning, punctually the buttons do not work to book the stops, notify the driver and he responds with very arrogant and rude tones ????. Bader, negative experience.".			**#Good:** "More transport would be good for certain areas which are almost neglected by transport.".
#Time: "Bad service, long waiting times".					
#Transport: ". Bus transportation is very bad. Go on foot that arrives before. Hours of waiting…".		**#Know:** "This is not an urban service !!! in any city in the western world I do not know that it is so badly organized !"			**#Dirty:** "The vehicles are in the breakthrough: dirty both outside and inside and if you do not find a place to sit large risks for tosing."
#ATAC: "Like a mirror of Italian society and its strengths and weaknesses, ATAC works very badly."		**#Make:** "Impossible to make a subscription. On average there is a 1 hour wait."			**#Rude:** "Bus conductor 441 was really rude. "
#City: "Shameful for a big city like Rome...".		**#Get:** "Public transport is usually a disaster. If you get in, it is advisable to keep your wallet well."			**#Late:** "Once we took the bus, which was probably a lot late. Also, it was full and the air conditioning didn't play properly.. ".
#Minute: "160 in front of Villa Borghese an hour and 10 minutes is expected !!!? ".		**#Work:** "Controllers make fines for good people who go to work every day and give a contribution in society"			**#Many:** ", he has many cars Vetuste who still circulate by generating delays (when they pass), ".
#Driver: "Unfortunately, a star is a must to write the review but the very scarce preparation of the drivers does not even deserve that…".		**#Tell:** ":..., for example today I had the 69 that started from Piazzale Clodio at 10:49, I arrive at 10:49 and another driver tells me he was Already started, ..."			
#Day: "...one journey ticket, 1,2,3 or 7 day tickets are valid on buses, trams and metro…"					
#Hour: "...in the top hours always loaded with travelers abundantly beyond the capacity limit."		**#Pass:** "Worse than the worst, full buses that never pass, close the doors in front of the nose despite you were there to enter.			**#Most:** "I think it is the most ridiculous company that exists"
#Stop: "jump the races despite the fact that there are people waiting for their bus number at the stop."					

5.3.1. Rome (Italy). Netnography of Bus

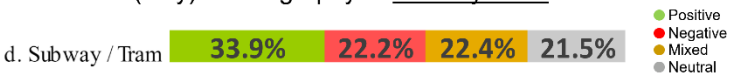


IMPROVEMENTS & MAINTAIN:

- Adequate **maintenance of the service**, improvements, and modernization
- **Customer service**: quick resolution, 24-hour service, etc.
- Intuitive, easy-to-use, and well-signposted **service**.
- **Innovation, modernization, and improvements** are being implemented to enhance the public transportation system. Specifically, improvements to the buses include modernization and the redesign of space.
- **Increased frequency** of service, more buses
- Proper **cleaning and maintenance**
- **Good price** and variety of ticket options
- Safe driving and **friendly service**
- Punctuality and **reliability**
- Compliance with **rules** on the bus (rules of coexistence, etc.)
- **Avoiding fines** due to lack of knowledge, poorly explained service, difficult to understand, etc.

- Useful and reliable **app**
- **Accessibility** and lighting of stops
- Improved **security** (theft, etc.)
- Adequate **air conditioning**.

5.3.2. Rome (Italy). Netnography of Subway/Tram



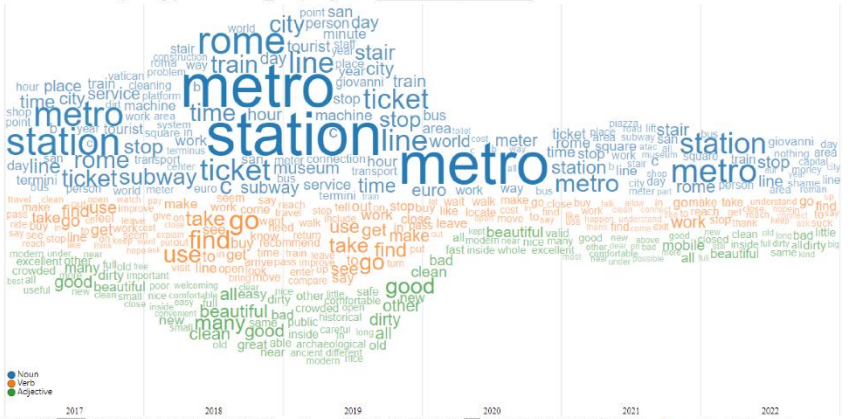
POSITIVE 33.9%

- Clean, new, beautiful **stations** with museums and services (shops, vending machines) (30%)
- Intuitive, **easy to use** (10%)
- **Reaches** important **places** (monuments, center) (9%)
- **Well connected** with the central station of Termini (6%)
- Good **price** (4%)
- **Interconnected** with other public transports, good connections (4%)
- **Works well**, practical, useful (4%)
- **Punctual** and fast (3%)
- **Well-located stations** (3%)
- **Efficient**, short waiting time, availability (3%)
- Supervised, **safe** (2%)
- Machines **in English** (2%)
- **Good attention** (2%)
- **Well-signposted**, informative panels (2%)
- **Different ticket options** (2%)
- **Accessible**: stairs and elevators (2%)
- **Others**: ventilated, etc.

NEGATIVE 22.2%

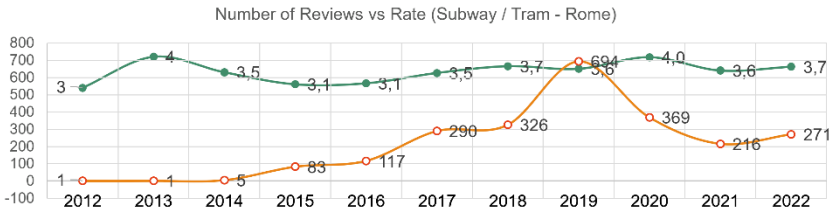
- **Dirtiness** (stations and trains), even more in suburbs (13%)
- **Limited accessibility** for wheelchairs and strollers, lack of elevators, broken escalators (12%)
- **Technical problems and breakdowns**: ticket machines swallowing money, not returning change, train malfunctions, slow problem resolution (7%)
- **Degraded**, neglected, old trains, lack of maintenance, outdated, not modern (7%)
- **Insecurity**: pickpockets, homeless, little police presence (6%)
- **Small, incomplete, few lines**, stations and connections (6%) Very crowded (3%) Low frequency of trains (3%)
- **Poorly signposted**, lack of information (2%)
- Unpleasant **staff** (2%)
- Do **not accept bills** or cards (2%)
- **Others**: bad smell, closed bathrooms, no air conditioning, slow, no service on Christmas, expensive, uncomfortable, ...

5.3.2. Rome (Italy). Netnography of Subway/Tram



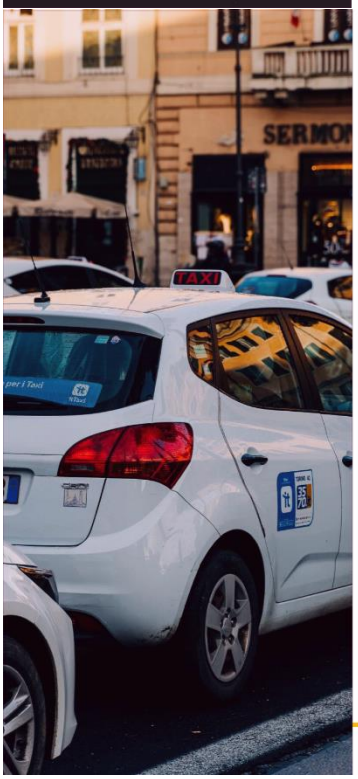
- ***#Station:*** *"Very useful station to get to Roma Termini through Piazza di Spagna".*
- ***#Metro:*** *"Metro station, trains are often on time ".*
- ***#Rome:*** *"Beautiful! A real museum in the new metropolitan station C in Rome…."*
- ***#Ticket:*** *"Metro tickets € 1.50 purchased with contactless or with cash on the machine.".*
- ***#Subway:*** *"…but careful transport in Rome work regularly, my first day in Rome and a strike, closed subway, last train at 8:30 and did not open until 5:00 p.m."*
- ***#Stop:*** *"Metro stop like all the other dirty and without staff in charge"*
- ***#Train:*** *"The metro service is always crowded and trains should be overhauled."*
- ***#Line:*** *"Line B line station is not very used except by the boys from the three schools nearby".*
- ***#Time:*** *"The meter sucks and dirty does not work lift and mobile stairs have been stopped for a long time. "*
- ***#City:*** *"An old station in the city center …".*
- ***#Day:*** *"Often busy and full of tourists during the day.".*
- ***#Hour:*** *"Biblical times, few trains, overcrowding in the top hours, almost daily disservices, lack of staff in the stations, "*
- ***#Find:*** *"…and I am sorry to find it in a not exactly excellent condition, but this because of those who use it…"*
- ***#Go:*** *"The other day a lady with the wheelchair did not know how to go up and those to the cage that did not move in the least to help her. A shame!".*
- ***#Take:*** *"…, so be careful to which it takes because then once the ticket is stamped there is no possibility to choose…".*
- ***#Use:*** *"I am forced to use the private car, congratulations !!".*
- ***#Work:*** *"For a while it has become a "work" to get out of the metro…"*
- ***#Get:*** *"We should get it all over and make it aesthetically the same as the line C side".*
- ***#See:*** *"As an Italian I am ashamed when tourists see those very dirty and smelly means and improper delays !!!"*
- ***#Buy:*** *"There's plenty of signage, regular trains and a one-way fare is 1.50 EUR but you can buy a seven-day pass for 24 EUR.".*
- ***#Pay:*** *"easy accessibility to paying the ticket (good subscription conventions for tourists), trains with good frequency…".*
- ***#Say:*** *"I can't say anything about punctuality and service because when I entered the elevator to get off from the Spanish square to the metro, seeing dirt and degradation I went out and preferred more means…"*
- ***#Good:*** *"We rode the metro several times during our 4 days in Rome. It's a good way to get around town."*
- ***#Beautiful:*** *"Rome deserves much more above all because it is one of the most beautiful cities in the world and among the most visited by tourists from all over the world and the image we offer is not the best"*
- ***#Many:*** *"I have been to Rome many times, but every time I take the metro I get goosebumps."*
- ***#Dirty:*** *"… but the orange one that leads to San Pietro was very dirty and not suitable for such an important city as Rome. Certainly it can be improved."*
- ***#Clean:*** *"Stations without particular architectural embellishments very simple and often not always very clean … "*
- ***#Crowded:*** *"Always crowded but it works well"*
- ***#All:*** *"…don't understand all is arrogance but have you seen the prices you have?."*
- ***#Easy:*** *"Clean, and easy to travel".*

5.3.2. Rome (Italy). Netnography of Subway-Tram



IMPROVEMENTS & MAINTAIN:

- Trains and stations that are **clean** and have basic services
- Intuitive, easy-to-use, and well-signposted **service**
- Improvement of **maintenance and cleanliness** in the suburbs
- **Improved accessibility** for people with reduced mobility, strollers, etc.
- **Communication** with other transports and important stations (e.g. Termini)
- Sufficient lines and stops that cover the **needs of the entire city**
- **To solve** train breakdowns, and to minimize problems/errors with ticket vending machines (ticket issuance, etc.)
- **Maintenance** and renewal of trains
- More **security** (robberies, etc.)
- More frequent train service to prevent **overcrowding**
- Punctuality, **reliability**, and speed
- **Friendly staff**
- Facilitation of diverse **payment methods**
- Availability of various **types of tickets**
- **Extended** daytime and nighttime **schedule**
- Good **air conditioning** and ventilation



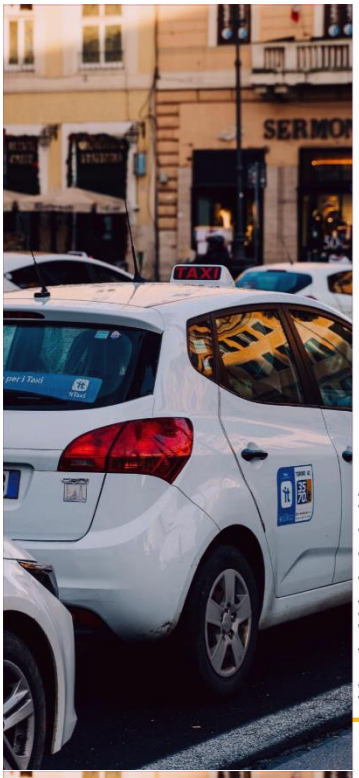
5.3.3. Rome (Italy). Netnography of Taxi

POSITIVE 77.4%

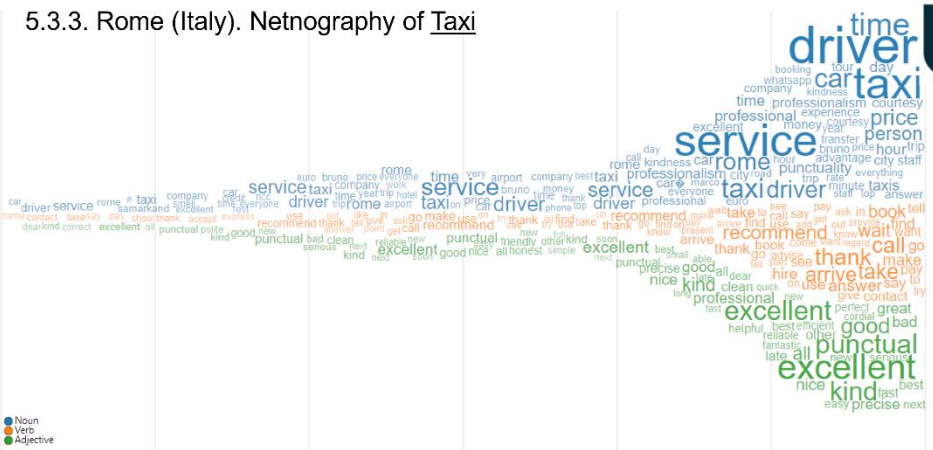
- Kind and professional **driver** (30%)
- **Good service**, efficient (20%)
- **Punctual**, precise, and reliable (20%)
- **Immediate response**, easy to book (4.4%)
- **Recommended** service (11.11%)
- **Good value for money** (7.7%)
- **Accurate** and detailed information about the city, etc. (6.6%)
- **Clean** and tidy (5.5%)
- **Easy to book**, simple, and quick (4.4%)
- **Fast** (4.4%)
- Adapt to changes, **flexibility** (3.3%)
- **Comfortable** (2.2%)
- Saves time (2.2%)
- **Well-equipped** (2.2%)
- **Others**: pleasant journey, time-saving compared to other transports, help with luggage, cash payment accepted, etc.

NEGATIVE 10.0%

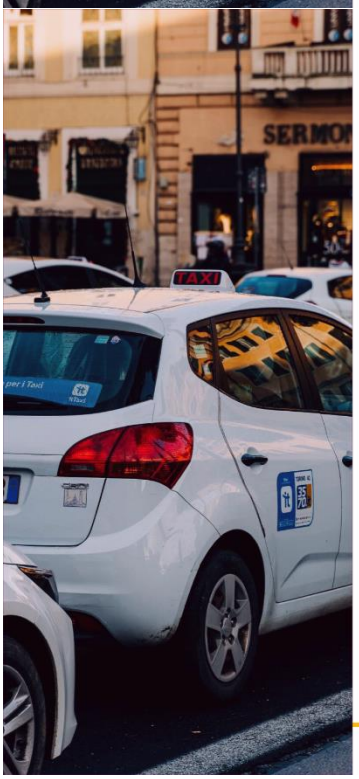
- After booking, **the taxi does not show up**, cancellation of service without notice (11.1%)
- They **don't answer the phone**, long waiting times for calls (10%)
- **Scams** to customers (higher prices than they should, not using the meter, questionable route) (8.9%)
- Poor **customer service**: complaints, etc. (4.4%)
- Unpleasant, rude **driver** (3.3%)
- **Bad service**, not practical (3.3%)
- **Only accept cash** payments (3.3%)
- Lack of **punctuality** (3.3%)
- **Expensive** (2.2%)
- **Unprofessional** (2.2%)
- **Others**: air conditioning not working, no taxis available, no car seats for children or in poor condition,...



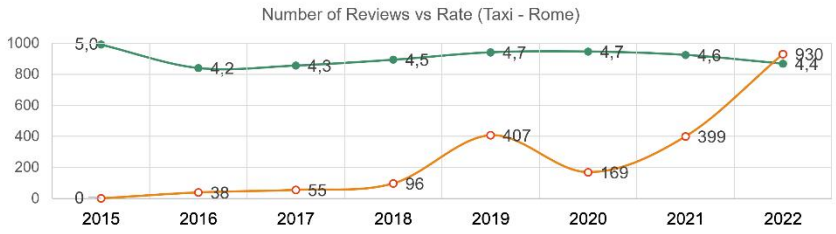
5.3.3. Rome (Italy). Netnography of Taxi



- **#Service:** "Fantastic service, punctuality and immediate availability ."
- **#Driver:** "The driver's service attitude is very good, the car is clean and tidy, very comfortable"
- **#Taxi:** "Quick and precise, dear like all taxis in Rome but a good service".
- #Rome: "Every time I go to Rome and for work I will often, they are my first contact".
- **#Time:** "Perfect service. Respected times, discreet staff but ready to respond, impeccable service, cool water ".
- **#Car:** "Impeccable, punctual service and the clean car."
- **#Price:** "The prices are really democratic".
- **#Punctuallty:** "Precision, punctuality and accuracy of the logistical details characterized the service. ".
- **#Professionalism:** "When you are looking for professionalism and also find kindness and sympathy. An excellent service. I recommend it to everybody".
- **#Courtesy:** "Perfectly combined courtesy and professionalism"
- **#Kindness:** "I found every time maximum punctuality, kindness and an impeccable service."
- **#Recommend:** "A very kind, nice driver, a very high level, professional in his work. I recommend everyone!".
- **#Thank:** "The excellent service is a very nice conductor a trip from Rome to Sutri exceptional. Thanks for everything and best wishes".
- **#Take:** "It was a pleasure to take advantage of your services !! Punctuality and courtesy by the driver".
- **#Arrive:** "thanks to the taxi driver Super kind and human I arrived in time".
- **#Make:** " I have holiday homes and for my guests I always make use of their services, they all remain very satisfied. Gentile drivers and impeccable machines.".
- **#Book:** "quick response switchboard, pity that taxi cannot be booked for the next day"
- **#Call:** "e driver Fausto was very kind so much that we left a bag in the taxi and we called and after 5 minutes they returned to us again."
- **#Answer:** "Huge wait without answers"
- **#Find:** "Our family remained incredibly surprised, we had never happened to find such a good person in what he does, service of ten and honors."
- **#Go:** "I took advantage of the service to go to the center.."
- **#Excellent:** "excellent service. Excellent price. I asked to approve a shuttle almost from the moment, during the night, a courteous driver provided with an excellent vehicle."
- **#Punctual:** "Very good service! Punctual, clean car and great price.".
- **#Good:** "Super effective. Good service. Reliable. Recommendable"
- **#Kind:** "The best service in all of Rome. Professionism, punctuality, kindness and availability.".
- **#Helpful:** "Super kind and helpful staff.".
- **#Professional:**"Professional and honest"
- **#Nice:** "Excellent service, very nice gentleman and the van looks like a limousine"
- **#Great:** "Excellent service and great punctuality. Guaranteed"



5.3.3. Rome (Italy). Netnography of Taxi



IMPROVEMENTS & MAINTAIN:

- Amiable and professional **drivers** (using faster routes) who are flexible and can adapt to changes
- **Reliable** and efficient service
- **Punctuality** and accuracy
- **Quick response** time and ease of booking
- **Transparency** in prices and fares
- Reasonable **prices**
- Clean and **comfortable cars**.
- Various **forms of payment** accepted
- **Availability** of taxis

5.3.4. Rome (Italy). Netnography of Shared LEV

e. Shared LEV

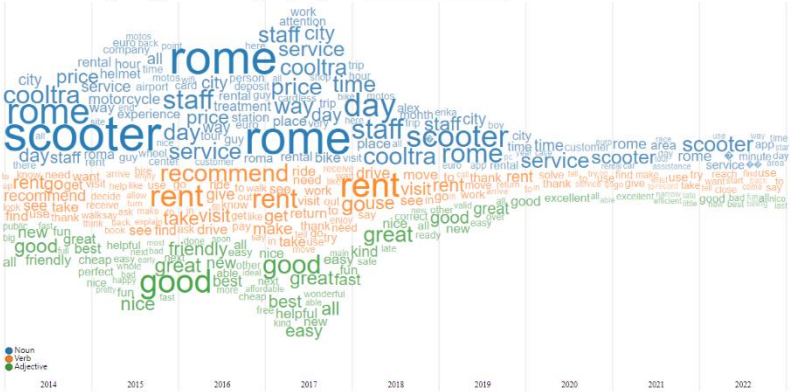
POSITIVE 69.3%

- **Good service**; excellent, impeccable (28.3%)
- Available and friendly **customer service** (18.3%)
- **Saves time**, facilitates mobility, especially for short trips (10%)
- Good, reliable and **easy-to-drive scooters** (10%)
- **Reliable service**, works well (10%)
- **Improvement of mobility**, without waiting or having to look for parking space (8.3%)
- Competitive **prices** (8.3%)
- **Recommended service** (6.6%)
- **Helmet, insurance**, etc. included (5%)
- **Comfortable**, useful, practical and effective (3.3%)
- Managed through an **app** (3.3%)
- **Discounts** (3.3%)
- **Fast** (3.3%)
- **Easy to use** (3.3%)
- **Others**: clean, replacement service, repairs, complete offer, economic savings, for daily use, ...

NEGATIVE 6.9%

- Poor **customer service** (slow and inefficient) (21.6%)
- Outdated, inefficient, non-functional **app** with frequent errors (11.6%)
- Scooters **not functioning properly** (e.g. broken brakes) (8.3%)
- **Poorly maintained** and dirty scooters (6.6%) Incorrect charges due to system failures (booking start and end) (8.3%)
- **Bad service** (6.6%)
- **No delivery of invoices** (lack of transparency/legal compliance) (5%)
- **Limited coverage area** (doesn't cover university area) (3.3%)
- **Other**: missing second helmet, expensive service, ...

5.3.4. Rome (Italy). Netnography of Shared LEV

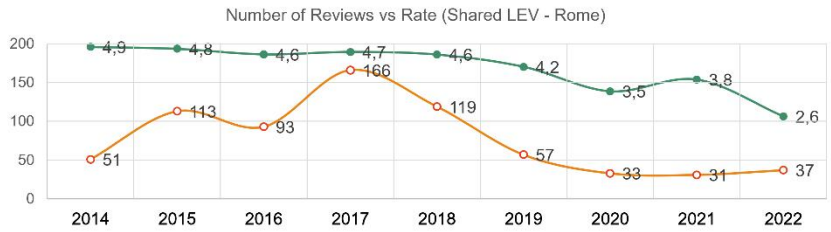


#Scooter: *"Not very advice, never take their scooters if you don't want to run into these problems"*
#Rome: *"Definitely the best on Rome, never had problems"*
#Service: *"Excellent electric scooter sharing service"*
#Staff: *"Excellent service used during my trip to Rome. always courteous staff"*
#Motorcycle: *"Motorcycles in perfect condition"*.
#Cooltra: *"I decided 2 check Cooltra Motos because their scooters looked well maintained"*.
#Price: *"Magnificent service especially at a good price if you leave with Booking code. Immediate availability and very good state of motorcycles"*.
#Day: *"Staff was very kind and helpfull. We rented scooter for a day and everything was excellent"*
#City: *"you will move very fast through the city but also it takes time park them"*.
#Time: *"Due to the short time I've had in Rome, they made it possible to take a short trip on their scooter which I've rent! They're helpful, good enghlis knowledge and flexible attention! "*
#Experience: *"Bad experience. reached their destination, the top box did not close. After half an hour of rehearsal I look for a phone: nobody answers on the phone…"*.
#Rental: *"Our stay in Rome thanks to this rental was even more magnificent. Easy of movement, speed, etc"*.
#Helmet: *"good conditions and nice helmets."*
#Way: *"A scooter is also the ideal way to explore Rome"*
#App: *"All motorcycles carry two helmets and with the application you can book them until you reach them"*

#Rent: *"My boyfriend and I rent a motorcycle to meet Rome. The first day we did most of the taxi and walking routes (because the Rome subway is very small and only has two lines), and after being another 4 days visiting everything with a motorcycle we can say that it is the best way to know."*.
#Recommend: *"it is really a recommendation to go along Cooltra Motos Roma if you want to explore Rome in a fun and fast way!"*.
#Visit: *"The best to visit Rome. Great motorcycles and at a very good price. "*
#Go: *"Take a scooter and go wherever you want."*.
#Take: *"on a handy scooter to take you there while you explore more in less time"*
#Use: *"I recommend to everyone to use the two wheels as a means of transport"*
#Get: *"A fabulous way to get to know Rome and its surroundings"*.
#Give: *"The freedom a scooter gives you explains the number of those vehicles in Rome."*
#Drive: *"Driving scooter in Rome is an absolute must !!!!"*.
#Find: *"A race with a loaded scooter and in perfect condition that did not work and went to one per hour, which I had to load to me to find a possible parking lot."*.

#Good: *"Very good the scooters, good speed, made me save me a lot of money in Rome, better it was impossible"*.
#Great: *"Very easy to use, great service"*
#Friendly: *"Good prices and very friendly and helpful people! "*
#Helpful: *"Staff was very kind and helpfull."*
#Excellent: *"It was really amazing, excellent service courtesy"*.
#Perfect: *"The perfect motorcycle and I could park in many places without problems"*
#All: *"The staff tell you all you need both to get around nicely and safely and ride pleasurably."*.
#Best: *"A little scooter experience is the best!"*.
#Nice*"Very nice equipment and very nice people."*.
#Easy: *"It was easy to book."*.
#Available: *"The hotline is immediately available."*
#Cheap: *"Everything was nice. Good scooters. Cheap price."*

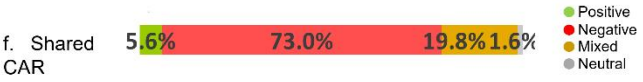
5.3.4. Rome (Italy). Netnography of Shared LEV



IMPROVEMENTS & MAINTAIN:

- Improved **customer service**: availability 24/7, friendliness, etc.
- High-quality and **reliable service**
- **Reliable**, easy-to-drive, well-maintained and clean scooters
- Functional and useful **app**
- Elimination of **charges due to system failures**
- Expansion of **service radius** (universities)

5.3.5. Rome (Italy). Netnography of Shared CAR

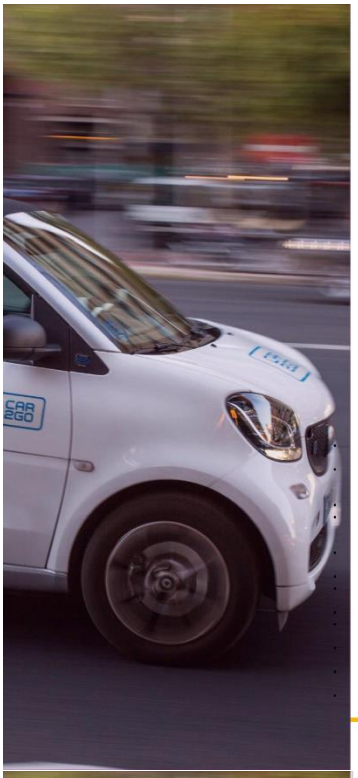


POSITIVE 5.6%

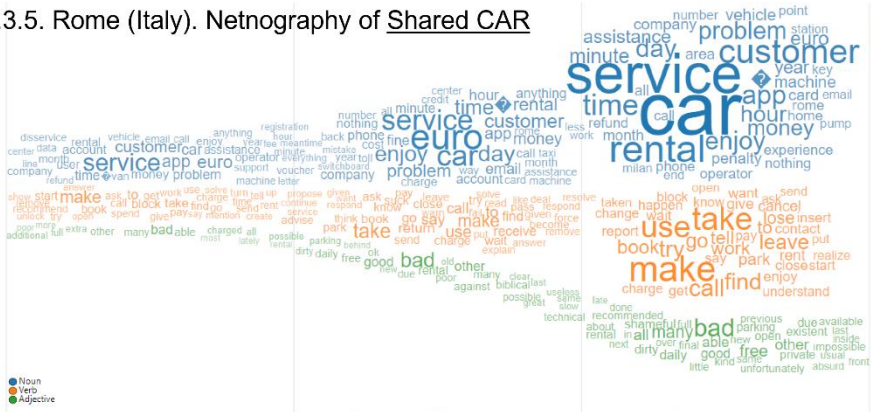
- Comfortable, **innovative**, and interesting **service** (15%)
- **Clean** cars (10%)
- Clarity and simplicity in the **rental process** (5%)
- Low **rates** (5%)
- **Quick deposit refund** (3-4 days) (5%)
- **Alternative to owning a car**, convenient for commuting (5%)

NEGATIVE 73.0%

- Poor **customer service** (long wait times on the phone) (40%)
- **Issues** with starting/unlocking the car (app, etc.) (30%)
- **Cars not functioning properly** (20%): Bluetooth not working, issues with handbrake, battery, oil, engine, deflated tires, low autonomy
- **Limited parking** space (10%)
- Unclear usage instructions (10%)
- **Issues** when closing the service, returning the car (10%)
- No invoice provided (10%)
- **Excessive costs** and high penalties (10%)
- **No GPS** navigation
- **App** shows also rented cars
- Very **limited** usage **area**
- **Dirty** and not disinfected (e.g. vomit)
- **Cars parked incorrectly**, in private spots
- **Occupying spaces** needed for residents
- **Unreliable**
- **Service** has worsened
- **Issues when renewing** the service.



5.3.5. Rome (Italy). Netnography of Shared CAR



2020

#Car: *"I recommend, for those like me who use the car sharing frequently not to use Enjoy."*

#Service: *"Finally, always for the lack of clarity in the terms also of the rental service, their electric cars have limited autonomy and it is not allowed to leave them except in areas close to the rental point"*

#Rental: *"But each rental becomes unnerving"*

#Customer: *"I call customer service that tells me that this is the only way to conclude the procedure, and if it doesn't work "it is strange .." It will be the fault of my phone (Google Pixel4a, with native Android)…".*

#Enjoy: *"Car rental Enjoy for 10 minutes and I find myself held back for 3 days € 69 for their line problem"*

#Problem: *"If the problem was due to the app, please solve!"*

#Time: *"The cars visible most of the time are already booked, or there are problems with the beginning and the rental end".*

#App: *"I do not recommend the use of this app."*

#Euro: *"Very bad experience. 1 time subtracted 70 euros for no reason, now a mistake with a charge of 500 euro."*

#Money: *"Always dirty and damaged machines and they charged me more money than the duration of the rental. Not very not recommended!"*

#Hour: *"An unclear service charge you the rate at the hours even if you have chosen the rate for € 39 in promotion until January 8th"*

#Day: *"Terrible experience, i got a fine while i was with their rental, i got notified after 53 days from notification which means i did not get the 30% discount on the fine,…"*

2021

#Make: *"the very approximate geolocation makes you do kilometers to find the selected car"*

#Take: *"I strongly advise against, far better to take a taxi, extreme disappointment, bad, not recommended."*

#Use: *"I have repeatedly used the Enjoy Car Sharing service in Rome and I found myself really well. Machines in order and clean, clarity and simplicity of the beginning and end of the rental ."*

#Call: *"I have called the toll -free number many times to make them re -credited by asking why they hold my pre -order money even after I finished the rental"*

#Try: *"I try to call, the same thing that repeats itself. I try to look for an email, without outcome. I try to leave a message to the contact us, that too does not work."*

#Find: *"…find this totally appalling, especially considering that I have been a customer for many years and my documents are fully compliant with the Ministry of Transport's requirements, …"*

#Leave: *"their electric cars have limited autonomy and it is not allowed to leave them except in areas close to the rental point."*

#Book: *"I booked the car that was left in a private road in via Frati Bigi. I couldn't use it because it takes the key to entering"*

2022

#Bad: *"bad experience,…A night spent at the tel. to contact non -existent customer service because of a problem."*

#Free: *"I have called the toll -free number many times to make them re -credited by asking why they hold my pre -order money even after I finished the rental…"*

#Many: *"Many margins of improvement.*

#Other: *"As soon as I tried to book the Dobló but like many other times I have not been able to do anything"*

#All: *"They are beautiful and good scammers I highly recommend not to register a company that is not at all correct that steals almost 20 euros without warning takes the money only after you have inserted the card.*

#Daily: *"bad experience and the request for assistance refused to solve the problem by inventing that the car had been clear on the instructions making me lose the daily rental"*

#Shameful: *"Shameful. Non -existent customer service. The worst rental of my life.*

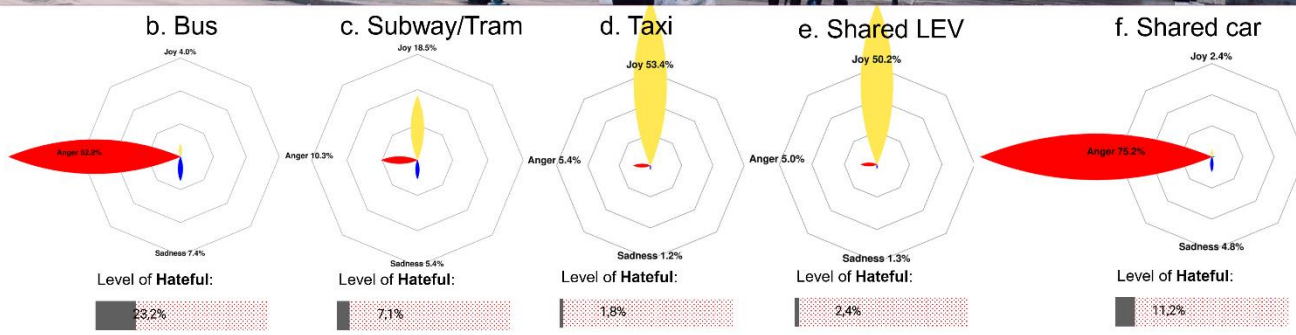
#Good: *"The service seems good but then they take away the money from the card € 25 …."*

5.3.5. Rome (Italy). Netnography of Shared CAR

IMPROVEMENTS & MAINTAIN:

- Better **customer service** with reduced wait times
- Improved functionality of the **app** for starting and unlocking cars
- Better **maintenance of cars** to ensure they function properly
- More **parking spaces** allocated for car sharing
- Clearer and more detailed usage **instructions for customers**
- **Improved process** for closing and returning the car
- Provision of **invoices** for each rental
- **Fairer pricing** with reduced costs and penalties
- Addition of **GPS navigation** to the cars
- Increased **cleaning and disinfection** measures for the cars to ensure they are in a hygienic condition.

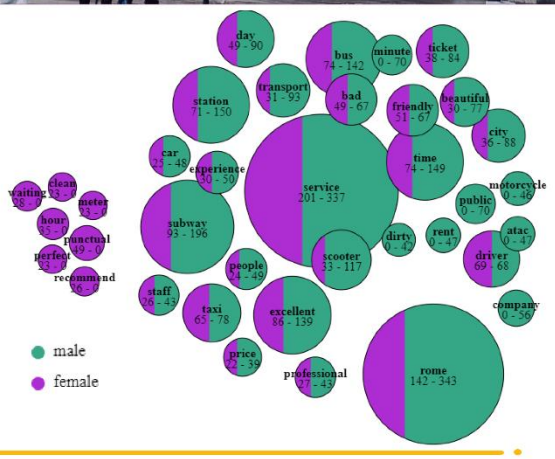
5.3.6. Rome (Italy). Emotions by type of transport



- The **Bus** is the transportation mode that has the highest percentage of comments identified as hate (23.2%), followed by **Shared Car** (11.2%) and **Subway/Tram** (7.1%).
- **Shared Car** and **Bus** are the transportation modes that have the highest ratio of anger comments.
- **Taxi** is the transportation mode that has the highest level of identified joy, 53.4%, compared to only 5.4% of identified anger, as well as the lowest level of identified hate, at only 1.8%.
- Second **Shared LEV** is the transportation mode with the highest percentage of Joy (50.2%) compared to 5.0% of Anger. As well as the second lowest level of hatred (2.4).

5.3.7. Rome (Italy). Differences by gender

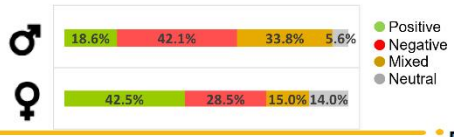
- If we analyze all the transports grouped, the most repeated words excluding Rome are: **service, subway**, **excellent**, **time**, **station**, **bus, taxi,** and **driver.**
- The words that only men say are highlighted as: **public**, **company**, **ATAC**, **rent**, **motorcycle** and **dirty.**
- The words that only women say are highlighted as: **punctual, hour, waiting, recommend, perfect** and clean.



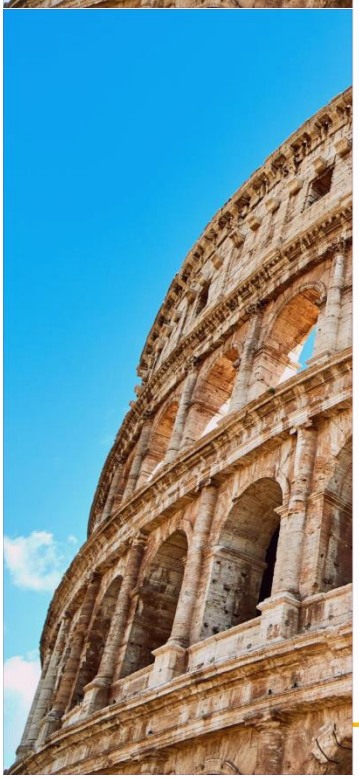
5.3.8. Rome (Italy). Conclusions

- Considering the number of reviews, it seems that **Subway**, **Taxi**, and **Bus** are the most commonly used forms of transportation. Following the pandemic, only **Taxi**, **Bus**, and **Shared Car** have shown signs of recovery. The number of reviews for **Taxi** has significantly increased, while **Bus** and **Shared car** usage has returned to pre-pandemic levels. However, due to decreased tourism, the **Subway** has shown the slowest recovery and remains the least used form of transportation.
- There is a high and positive correlation between positive comments, a higher rate level (0.9), and lower levels of hate, and conversely, the lower the rate level, the higher the number of negative and hateful comments.
- The best-rated transport options in Rome are **Taxi** (due to the **moto-taxi service**) and **Shared LEV**, while the worst-rated options are clearly **Bus** and **Shared Car**, with a 23.2% and 11.2% level of hatred, respectively.
- Out of the analyzed users, 61% are men, 31% are women, and the remaining 8% are unknown. It is noteworthy that men have provided more feedback on all forms of public transportation. Additionally, men have demonstrated a higher usage of **Shared Car**, **Subway**, and **Shared Bikes**, whereas women have shown a preference for taxis, buses, and shared light electric vehicles, although still using them less frequently than men.
- 68% of the analyzed users are residents, and the remaining 32% are tourists.

- If we analyze separately the comments made by men and women, we see that men are more critical with a lower number of positive comments (18.6%) compared to 42.1% made by women. The percentage of negative comments is higher, 42.1% compared to 28.5%.
- Men make more mixed comments (containing positive and negative aspects) than women. 33.8% compared to 15.0%.



IBV



5.3.8. Rome (Italy). Conclusions

The main highlights / most important aspects of each transport are:

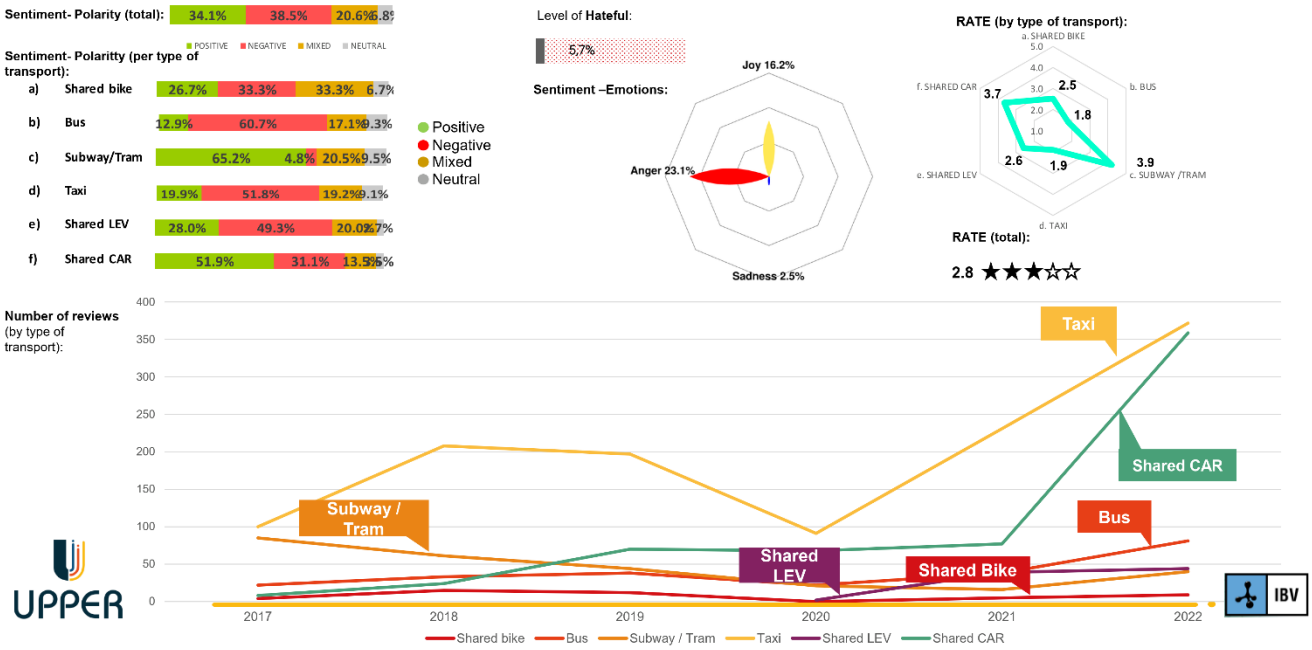
- **Bus:**
  - Poor service: disorganized and confusing
  - Outdated and unimproved: unable to accept cards or renew online, frequent breakdowns, and poor condition
  - Unacceptable customer service
  - Excessive waiting times
  - Unhygienic and unpleasant odor
- **Subway /Tram:**
  - Clean, modern, and aesthetically pleasing stations that offer additional services such as museums and shops
  - Dirtiness and lack of maintenance in both stations and trains, particularly in suburban areas
  - Limited accessibility for people with disabilities, due to broken escalators, lack of elevators, and other obstacles
  - Technical issues such as malfunctioning ticket machines, slow problem resolution, and other breakdowns
  - Degraded, neglected, and outdated trains that lack maintenance and modernization
- **Taxi:**
  - Kind and professional drivers
  - Good and efficient service
  - Punctual, precise, and reliable
  - No-show or cancellation without notice after booking
  - Long waiting times for phone calls or no answer at all
- **Shared LEV:**
  - Excellent and impeccable service.
  - Friendly and available customer service.
  - Slow and inefficient customer service.
  - Non-functional, outdated and inefficient app with frequent errors.
  - Malfunctioning scooters with issues like broken brakes.
- **Shared Car**
  - Improve customer service by reducing wait times on the phone and increasing responsiveness to customer inquiries.
  - Address technical issues related to starting and unlocking the cars through the app to provide a seamless rental experience.
  - Conduct regular maintenance checks to ensure that all cars are functioning properly and address any issues promptly.
  - Review and adjust pricing and penalties to ensure they are fair and reasonable for customers.
  - Improve overall user experience by providing clear usage instructions, simplifying the process of closing the service, and ensuring that invoices are provided to customers. Additionally, consider expanding parking availability to provide more convenient options for renters.

IBV

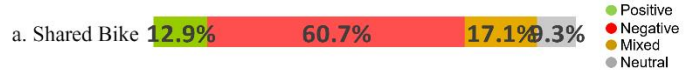
5.4. Oslo (Norway). Netnography of **transport**

TYPE OF TRANSPORT:	SAMPLE: Nº Reviews	SAMPLE: Nº Comments	USER PROFILE: ♂	USER PROFILE: ♀	USER PROFILE: ?	Inhabitants	Tourist	SOURCES: Company	SOURCES: Web, social media, etc.
a. SHARED BIKE	49	49	63.3%	14.3%	22.4%	30.0%	70.0%	Oslo City Bike	tripadvisor, yelp, Google Play
b. BUS	251	140	65.3%	25.9%	8.8%	86.4%	13.6%	Ruter	Google, Trustpilot
c. SUBWAY /TRAM	459	336	56.8%	21.2%	22.1%	25.3%	74.7%	Sporveien T-Banen	Google, tripadvisor
d. TAXI	1.251	662	70.2%	26.4%	3.4%	86.7%	13.3%	Oslo Taxi, Sentrum Taxi, City Taxi 2, Oslo Varetaxi, Norgestaxi, Christiania Taxi, Bytaxi AS, Bogstadveien	Google, tripadvisor
e. SHARED LEV	85	75	60.0%	20.0%	20.0%	77.8%	22.2%	Voi Technology Norway AS,	Google, Trustpilot
f. SHARED CAR	608	371	73.2%	24.3%	2.5%	94.7%	5.3%	Hyre, Vybil, Getaround Norge (ex-Nabobil), Bilkollektivet SA, Fleks, Move About	Google
TOTAL:	2.703	1.633	64.8%	22.0%	13.2%	66.8%	33.2%		

5.4. Oslo (Norway). Netnography of **transport**



5.4.1. Oslo (Norway). Netnography of Shared bike



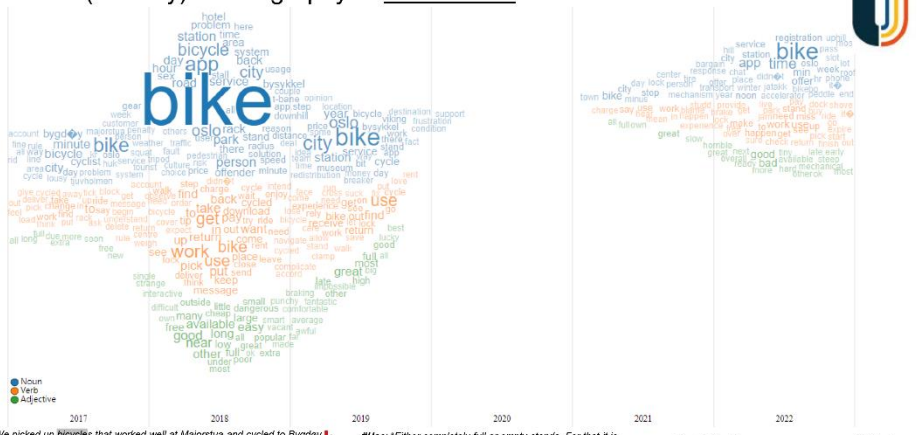
POSITIVE 12.9%

- The **app** works well: easy to download, useful, shows stations, number of available bikes and spaces (20%)
- Suitable **price** (20%)
- **Perfect mode** of transportation for the city (15%)
- **Day pass** (24h) (15%)
- **45 minutes free** (15%)
- **Sufficient stations** (15%)
- Availability of **bikes** and **spaces** to leave them, good redistribution between stations (10%)
- **Other**: you can place your mobile phone (elastic band) (5%)

NEGATIVE 60.7%

- **Penalties** for system anchoring failures (service closure) (30%)
- **Missing bikes or spots**, poorly balanced or redistributed stations (20%)
- Bikes in **poor condition**, damaged (deflated tires, blocked pedals, dirty, etc.) (20%)
- **Service** has not evolved, rather it has **degraded** (10%)
- Poor **customer service**: no response, only via chat (10%)
- **Easy to use**: ease of registration, clear instructions (10%)
- **Others**: Mechanical bike without electric assistance in a city with a lot of elevation (5%)
  - Some bikes with larger wheels and others with smaller ones (5%)
  - Price not appropriate (5%)
  - Inadequate infrastructure (5%)
  - Service not suitable for tourist needs (5%)
  - Bikes not suitable for people with a lot of weight (5%)

5.4.1. Oslo (Norway). Netnography of shared bike

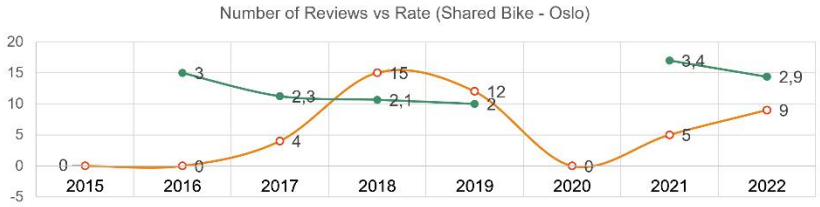


***#Bike /bycicle**: "We picked up bicycles that worked well at Majorstua and cycled to Bygdøy where we had to change bicycles due to the 45-minute rule.".*
***#App:** "According to Oslo bysykkels we did not return 1 of our bikes. Absurd!!!! We didn't lock to biKe properly????? Strange because we received By app a Message.".*
***#City:** "A ride may take a maximum of 45 minutes, which is easy to do in this city. "*
***#Oslo:** "We were visiting Oslo as tourists, and used the day pass option, and found the system fun and useful, and at a very reasonable 49kr for the day."*
***#Station:** "Most of the stations have 0 or 1 bikes. Most of the bikes need a repair. ".*
***#Year:** "Either the stands are completely full or empty. Therefore it is impossible to rely on. This will be my last year.".*
***#Person:** "First, the bikes are not comfortable to ride anymore, probably come to the person and physique.".*
***#Service:** "Support team doesn't care about the users. Fingers crossed they fix this and this could be a great service for everyone!".*
***#Park:** "There is no option to park the bike when there is no free at the stand.".*
***#System:** "1hour before we received for the other biKe a conformation that we did return our biKe??? Does the system work.?????".*
***#Day:** "For 98 NOK (10 euros) I was allowed to use the Citybikes for 3 days.".*
***#Minute:** "Cons: not the best bikes and you have to return/ pick a new bike every 45 minute. This said, you find bike parkings all over the City."*

***#Use:** "Either completely full or empty stands. For that it is impossible to use and rely on!".*
***#Work:** "They blamed me for their own lock mechanism not working and charged me $40 ".*
***#Get:** "The only minus is that the bike does not always lock, but gets a quick response to the chat.".*
***#Take:** "Then it is very boring to have only a chat feature that sometimes takes too long to get answers when you are in a hurry".*
***#Bike:** "I am a big fan of city bikes when they work. ".*
***#To:** "Good offer, and it is a joy to cycle. However, this only applies if the bike works. :)."*
***#Return:** "returned the bike to one of the station in Spikersuppa but I cannot register that I returned the bike."".*
***#Up:** "The app is reset up to several times during the week and so it can't be. ".*
***#Cycled:** "Had to cycle all the way to Tjuvholmen before we found a tripod to get rid of the bikes ...."*
***#Pay:** "Step 2: Pay for 24 hours rent via creditcard. ".*

***#Available:** "if you go over you pay more @ 15-min increments. The bikes were readily available. The app worked really well.".*
***#Long**: " Then it is very boring to have only a chat feature that sometimes takes too long to get answers when you are in a hurry.".*
***#Electric:** "The cost is a bit high. After the introduction of electric scooters in streets of Oslo, the cycle is less preferred…".*
***#Impossible:** "his makes it impossible to depend on the bikes and is completely unjustifiable when you look at how good the apps are for other offers out there. ".*
***#Bad:** " ... sometimes experiencing bad brakes and slow provides"*
***#Broken:** "My friend had a broken saddle mechanism and cannot restore the bike and pack a new one.".*
***#Many:** "thee cycles stations are not at all available in all parts of the city and many of the stations are always empty."*

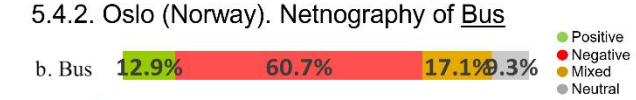
5.4.1. Oslo (Norway). Netnography of shared bike



IMPROVEMENTS & MAINTAIN:

- The **app** functions well: easy to download, useful, shows available bikes and parking spaces at stations
- Different vouchers/**tickets available** for different needs: 24 hours, weekly, etc.
- Reasonable **pricing**
- **Bikes** are in good condition and properly maintained
- First 45 minutes **free**
- **Stations** are appropriately sized based on usage
- Bike **redistribution** according **to demand**
- Good **customer service**
- Continual **improvement of the service** to meet evolving needs (service has remained the same since its creation and needs to evolve)
- Availability of **accessories**, such as phone holders
- **Other improvements** include electrification, infrastructure upgrades (bike lanes), bikes adapted to different weight ranges and ages, and a service that caters to the needs of tourists.

5.4.2. Oslo (Norway). Netnography of Bus



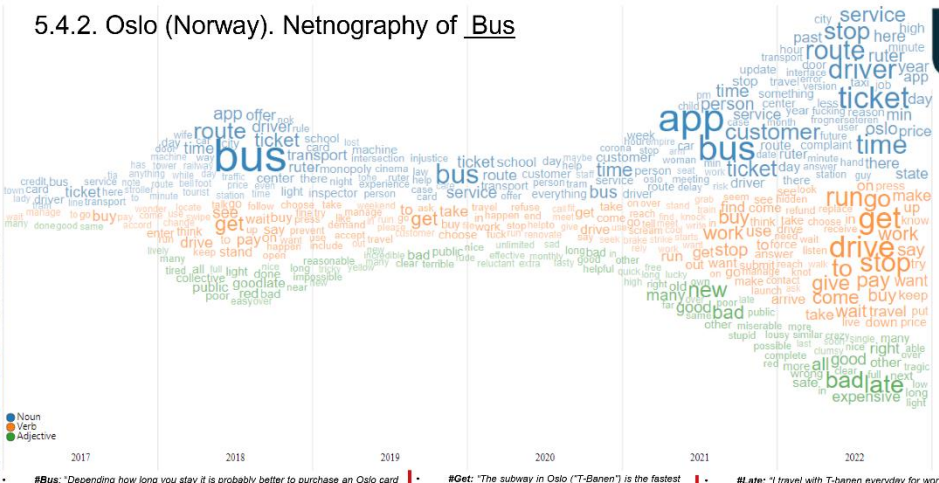
POSITIVE 12.9%

- Good **customer service** (friendly, etc.) (8%)
- **Friendly**, attentive driver who assists passengers (8%)
- **Good public transportation**, good service (6%)
- **Others**:
  - You can usually find a seat
  - Runs smoothly
  - Tickets of different types
  - Good, appropriate routes
  - Adequate information about routes and during service
  - User-friendly and clear app.

NEGATIVE 60.7%

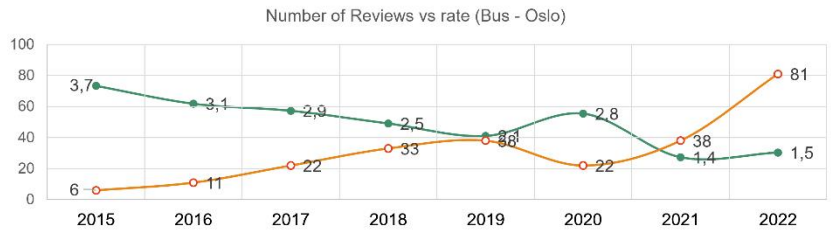
- **Poor management** of public transportation, no competition, etc. (16%)
- **Long waits**, infrequent bus schedules (14%)
- Unreliable for commuting, **frequent delays** (12%)
- **Aggressive**, dangerous, and unpleasant driving by the drivers (12%)
- Poor **customer service** (8%)
- High **prices** (8%)
- **Drivers** not stopping (8%)
- **Poorly designed routes** and schedules (6%)
- Difficulty **purchasing tickets** (one by one and with different cards) (6%)
- **Penalties** for system/service failures (e.g. app failure) (4%)
- **Inaccurate**, slow app with ticket purchase failures (4%)
- **Others**:
  - Strikes
  - Poorly visible stops
  - Stops under direct sunlight
  - Inadequate climate control.

5.4.2. Oslo (Norway). Netnography of Bus



- ***#Bus:*** *"Depending how long you stay it is probably better to purchase an Oslo card which also allows the use of the boats and buses".*
- ***#App:*** *"You can also buy tickets online, app and in kiosks."*
- ***#Ticket:*** *"Nice with the opportunity to buy a ticket on the app or via travel card".*
- ***#Route:*** *"Funny thing is the line to Holmenkollen (line 1) takes you there on such a route that it more looks like a mountain railway instead of metro, very nice route.".*
- ***#Time:*** *"Good service, clean, on time. We used this public transport service many times during our 6-day stay ".*
- ***#Driver:*** *"Clean .Very friendly drivers. Ok information and not to expensive.".*
- ***#Person:*** *"In my opinion the best T-Bahn in the northern countries. Cheap if you take a 24-hour ticket. We were two people and you can only pay with a card. For each person you can only pay on one card.".*
- ***#Stop:*** *"... destinations and stops are clearly marked at stations and on trains. And the RUTUR app is pretty good."*
- ***#Service:*** *"The Oslo subway is an excellent, efficient and punctual service that connects the city center with all areas to the forest and the ski resorts of Nordmarka.".*
- ***#Transport:*** *"The subway is fast and stable transport in Oslo. It has high operating stability and effectively transports you where you are going. ".*
- ***#Get:*** *"The subway in Oslo ("T-Banen") is the fastest and cheapest way to get around in Oslo and the surroundings."*
- ***#Drive:*** *"Neat and nice drive".*
- ***#Stop:*** *"Info over the speakers there will be unexpected stops or lower speeds. Greet. Good trip!."*
- ***#Run:*** *"All trains run either East or West and the stations have good signs"*
- ***#Go:*** *"Download the RUTER app for tickets!! To figure out wherer to go, and wich train to take Download the RUTER app for tickets!! To figure out wherer to go, and wich train to take"*
- ***#Work:*** *"It works very well and serves important parts of the city.."*
- ***#Buy:*** *"The only negative thing was buying you pass at the automatic machines...not very user friendly"*
- ***#Pay:*** *"We were two people and you can only pay with a card. For each person you can only pay on one card. I was lucky with me two cards"*
- ***#Late:*** *"I travel with T-banen everyday for work and also on my free time - it is seldom delays (at least lately ;). " "Trains are very rarely late.".*
- ***#Bad:*** *"Very bad experience. It is embarrassing to claim that the train arrives in 2 minutes and actually take more than 20! Not only once, almost every day in stations in periods when there are works.".*
- ***#All:*** *"Almost all areas are served by this efficient system of 6 metropolitan lines, which climbs up to the Marka woods, in spectacular natural oases not far from the center."*
- ***#Expensive:*** *"Even though it's not that fast and rather expensive it's a good choice for moving around in Oslo.."*
- ***#Right:*** *"...maps and better information are missing at the station to choose the right output."*
- ***#Good:*** *"Nice and good. T The track towards the center stops very high above the platform but other than it quite nice".*
- ***#Many:*** *"We used the public transportation many times"*

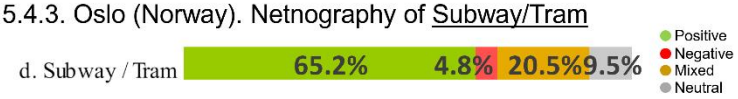
5.4.2. Oslo (Norway). Netnography of Bus



IMPROVEMENTS & MAINTAIN:

- Good **customer service**
- Adequate **management**
- Increased **frequency of buses**
- **Punctuality**, reliability (no delays)
- Safe **driving**
- Reasonable **prices** and different types of tickets
- Friendly and helpful **drivers**, professionals (e.g. always stop at the designated stops)
- Well-designed **routes** and schedules
- Easy ticket **purchasing process**
- Accurate, user-friendly, and stable **app** (no crashes)
- **Avoid penalties** for service failures
- Comfortable **stops** (covered, seating available, easily visible, etc.)
- Adequate **information about routes** and always available during the trip
- Proper **climate control**

5.4.3. Oslo (Norway). Netnography of Subway/Tram



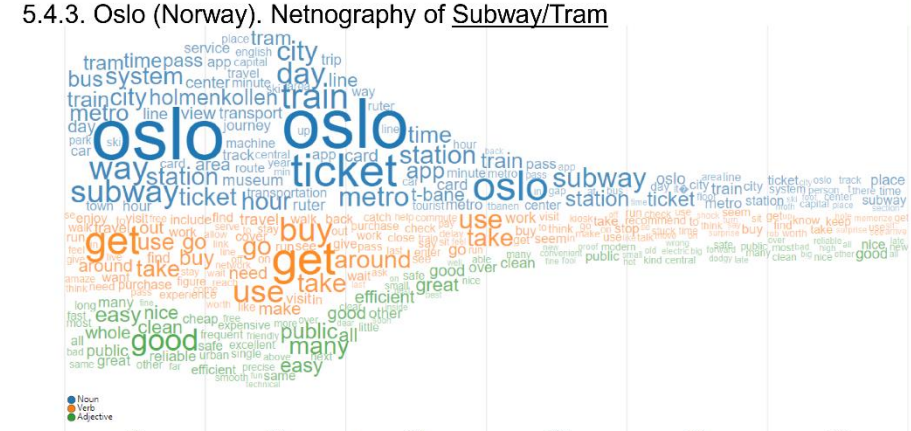
POSITIVE 65.2%

- **Reaches** the outskirts: mountains, nature, ski resorts (metro lines 1 and 5) (26%)
- **Punctual** (22%)
- Day, week or month **tickets** available (20%)
- **Clean** (18%)
- **Efficient** (18%)
- **Best transport** in Oslo (12%)
- **Sufficient stops**, takes you to important places, good network (10%)
- **Comfortable**, pleasant (e.g. lines at the same level) (10%)
- Good **price** (e.g. lines at the same level) (10%)
- Fast (10%)
- Good **frequency** (8%)
- **Useful**, the most suitable/easy way to get around Oslo (8%)
- **Easy to use**, understand and simple (8%)
- **Safe** (8%)
- **Central station** in the city where all lines connect (6%)
- Good **signage**, adequate **information** (4%)
- Useful **app**, helps to purchase tickets and use it easily (4%)
- Inspectors and **guards** (4%)
- **Others**: quiet, accessible, not too crowded, friendly staff, some stations have free 24-hour parking

NEGATIVE 4.8%

- **Insecure** (pickpockets, homeless people, etc.) (8%)
- **Delays**, lack of precision, not punctual (8%)
- **Expensive** (8%)
- **Dirty**, no toilets and bad odor (8%)
- **Crowded** (6%)
- **Not accessible** for wheelchairs and baby carriages (4%)
- **Lack of information** on screens, incorrect or incomplete (4%)
- **Others**: basic rules of coexistence not respected, low frequency, heat in summer, no adequate emergency plan, slow, etc.

5.4.3. Oslo (Norway). Netnography of Subway/Tram

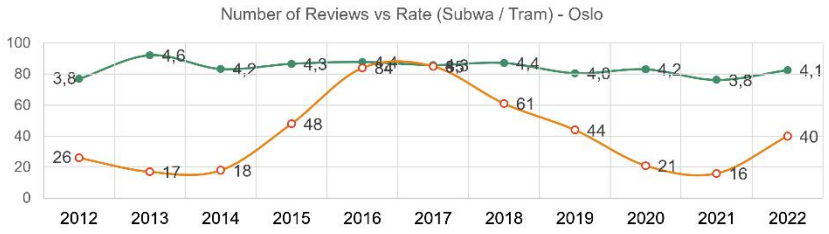


#Oslo: *"The T-banen (know changed its name to the Metro) is running to many different places inside Oslo.".*
#Ticket: *"A little downturn that the ticket only lasts 1 hour.".*
#Subway: *"Oslo subway. Nothing special. Modern, well organized, respects the traffic schedule, clean. It circulates both underground and on the surface, on very long sections."*
#Train: *"Trains come one after another don't need to wait much. Make sure to validate ticket. Although I was never checked."*
#Station: *"I found the station's clean and the services very reliable and smooth".*
#Metro: *"I found the Oslo metro really reliable and very punctual as was all the public transport ".*
#Way: *"The public transit system in and around Oslo is efficient, easy to figure out and get you anywhere quickly and in a cost-effective way"*
#App: *"The app made it SO EASY to get around."*
#Hour: *"In my opinion the best T-Bahn in the northern countries. Cheap if you take a 24-hour ticket. "*
#City: *"Taking the "-trikk " as some Norwegian still call it can be an excellent way of getting around the city especially when you are pushed for time.".*
#Time: *"It is convenient to use the subway as the waiting times are not long.*

#Get: *"Comfortably get around Oslo like the locals!...".*
#Take: *I love taking public transit. Oslo's metro is very modern, clean and efficient.".*
#Use: *"For sure don't use the old stations like the National Theatre station. That is the worst.".*
#Buy: *". If you buy an Oslo pass, you should definitely go to the Okolin Bow sculpture park, the Munch Museum, etc.".*
#Go: *"This train walking is very beautiful. Do not stop going! For the whole family and age! Great views of the city!".*
#Around: *"great way to get around Oslo."*
#Find: *"There is no link between the route finder app (RuteReise) and the ticketing app (RuterBillett), so you cannot find a route and then click/tap to buy the ticket"*
#Need: *"you will need to check your start and finish zones before ordering a ticket."*
#Make: *"Public transportation is excellent and makes it easy to get around in Oslo."*
#Visit: *"We used it numerous times during our splendid visit to the city."*
#Out: *"Easy to figure out, reliable, clean and very safe methods of public transportation. "*
#Work: *"Fine and reliable in terms of access to and from work".*

#Good: *"...departures are frequent and connections between t-bane and bus/trains/trams are good. "*
#Public:
#Many: *"Trains and metro system are linked in many places, trams and busses connect the whole thing.."*
#Clean: *"Affordable, clean wagons, safe and trains that kept the timetable."*
#Easy: *"you are sure that connections with the heart of the city are easy and probably without bad surprises".*
#Great: *"Took the subway from the city center up to Ullevål Stadium from the city center, great way to get ahead.2*
#Nice: *"A good, fast, nice way to get around in Oslo."*
#Efficient: *"They are clean, efficient and much quieter than transportation in other countries."*
#All: *"...When in Oslo, get Oslo Card at the Airport. gives unlimited accsess to all transport. 1, 2 or 3 days pass."*
#Over: *"With a day card you swipe over a lot in one day."*

5.4.3. Oslo (Norway). Netnography of Subway-Tram



IMPROVEMENTS & MAINTAIN:

- **Efficiency**, usefulness, ease of use, best way to get around
- **Punctuality**, reliability, accuracy; service in all parts of the city, e.g. reaches the mountains, etc.
- Variety of **ticket types** (e.g. day, week, or month tickets)
- **Cleanliness**
- Reasonable **price**
- **Safety**
- **More space** and good **frequency** are necessary to avoid overcrowding.
- Sufficient **stops**, takes you to important places, good network
- **Comfort** (e.g. level boarding)
- **Speed**
- **Accessibility** for wheelchairs and strollers
- Available, complete, and reliable **information**
- **Others**: respect for basic rules of coexistence, adequate climate control

5.4.4. Oslo (Norway). Netnography of Taxi

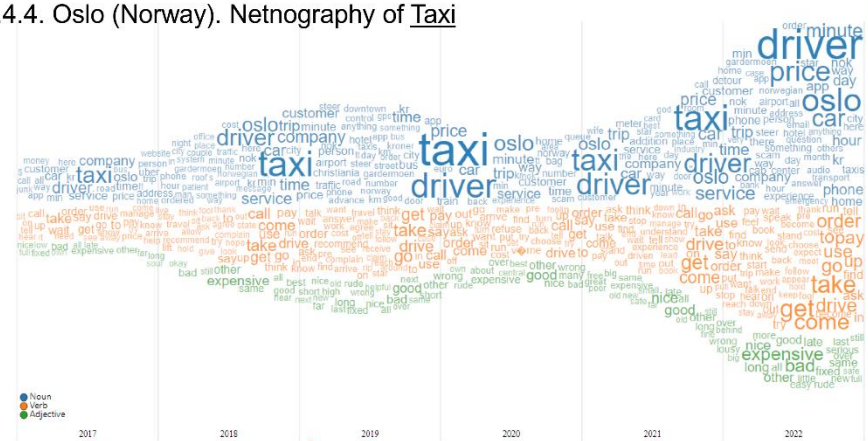
POSITIVE 19.9%

- **Recommended**, reliable, punctual, and serious (10%)
- **Pleasant**, polite, helpful (8.3%)
- Good **drivers**, safe and professional (8.3%)
- Good service, **quality** (6.6%)
- Good **price**, cheap (5%)
- Good **customer service** (3.3%)
- **Safe**, no deception (3.3%)
- **Other**: comfortable car, driver does not talk much, ...

NEGATIVE 51.8%

- Deception by **taking longer routes** and charging more than what should be or what is stipulated in the fares (21.6%)
- Poor **customer service** (11.6%)
- Taxi does **not arrive** and/or no notification is given (10%)
- **Unprofessional** service (8.3%)
- **Long waits**, queues (8.3%)
- **Expensive** (8.3%)
- Unpleasant, unstable, unprofessional **driver** (6.6%)
- **Slow to answer** or pick up calls (6.6%)
- **Few accessible cars** and/or cars with suitable **child seats** (5%)
- Cannot retrieve **lost items** (3.3%)
- **Other**:
  - Charges for mistakes
  - Better with Uber
  - Bad smell
  - Arrives earlier
  - Do not speak
  - Norwegian
  - Do not want to go to a specific destination (e.g. Gardermoen)

5.4.4. Oslo (Norway). Netnography of Taxi

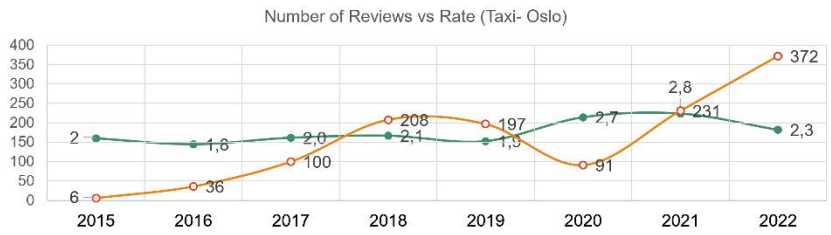


- **#Taxi**: "Had pre -ordered taxi on app. Got tel 10 min before that they could not get a car. Unreliable. ".
- **#Driver:** "The driver spoke very drefit Norwegian"
- **#Oslo:** "Only alternative in Oslo. Besides Uber"
- **#Price:** "simply the most unknowable drivers in the city, but with one of the most expensive prices ".
- **#Company:** "More than double price of max price in the app on tel! The roof team counted at a sick speed, it cannot possibly be legal. Never more this company!"
- **#Service:** "Do not call their customer service if you lost something in one of their cars.".
- **#Trip:** "The driver drove big detours and we had to end the trip. "
- **#Time:** "Did not find the address and came 12 hours before the agreed time.".
- **#Car:** "The car did not come and we were not told that they did not have a car for us. "
- **#Minute:** "After 45 minutes there was a taxi who claimed he had been assigned 15 minutes before coming."
- **#Customer**: "Drit -expensive and rotten customer service!"
- **#Phone:** "The driver who answered the phone was very rude and not accommodating."

- **#Take:** "A taxi that would take 10 min to get to the pick -up site took 40. Not very nice in the cold. . ".
- **#Come:** "Order Taxi at 1 pm, comes at 14. Giant service"
- **#Get:** "It took 1.5 hours to get the whole group transported !! They are not to be trusted!"
- **#Drive:** "Seems like none of them actually manages to drive the right way ever ...."
- **#Pay:** "Coming 25 minutes late to have to pay full price even though I discuss with the driver."
- **#Go:** "We were going from Vippetangen to Oslo S, but the driver from Norgestaxi refused to drive us and waved himself only behind even though he was in the queue first."
- **#Use:** "Don't use this company!"
- **#Order**: "ordered a maxi taxi at 4.30 at night to Gardemoen (to reach one flight). Taxi never came...".
- **#Call:** "Terrible service, the taxi called 1 hour before departure, the driver got lost on the road, waisted for half an hour and waited for him to show up. ...".
- **#Say:** "They have a fixed price it says on websites but then you have to call the call center. "

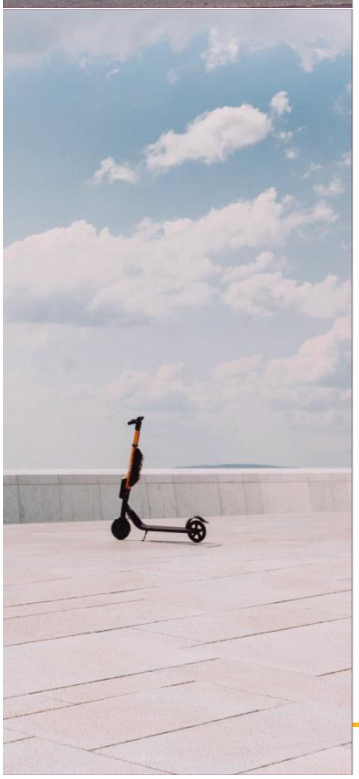
- **#Expensive:**"Too expensive ... steer clear of this company."
- **#Bad:** "Watery bad service! Have just got off the phone where I have been scolded after incredibly poor follow -up
- **#Good:** "I am very happy with their service. Very very good professional. I recommend to all worlds".
- **#Nice:** "Incredibly nice and safe driver, made us effective, was informative, not least zero nonsense with payment."
- **#Long:** "The driver also chose to take a longer way than necessary."
- **#Other:** "No other taxi company should be used. Oslo Taxi is serious "
- **#Same:** "Twice as expensive as Oslo Taxi for the same stretch in the Oslo center"
- **#Best:** "Best in Norway on passenger transport."
- **#Late:** "They can arrive 10 minutes early or up to one quarter later."
- **#Fixed:** "use ONLY OSLO TAXI and ask for the fixed fare, otherwise the price can easily double!"
- **#New:** "About the quality of the taxi in Oslo are new and good maintenance!"

5.4.4. Oslo (Norway). Netnography of Taxi



IMPROVEMENTS & MAINTAIN:

- **Professionalism**, seriousness: no deception by taking longer routes
- **Reliability**, punctuality: the taxi arrives and in case it doesn't, they notify
- **Pleasant**, polite, helpful treatment
- Good **price**
- Good **customer service**
- Good **drivers**, safe and professional
- **Prompt attention**, when picking up the call
- Good service, **quality**
- **Few accessible cars** and/or cars with suitable child seats.
- Cannot retrieve **lost items**
- **Other**: safe, comfortable car, driver does not talk much, good smell, speak languages, can go wherever you want ...



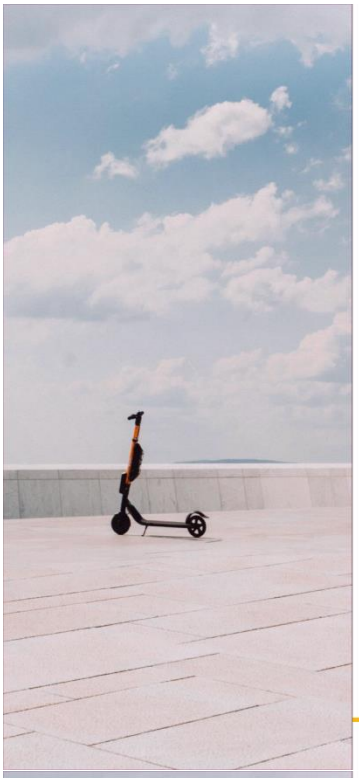
5.4.5. Oslo (Norway). Netnography of Shared LEV

POSITIVE 28.0%

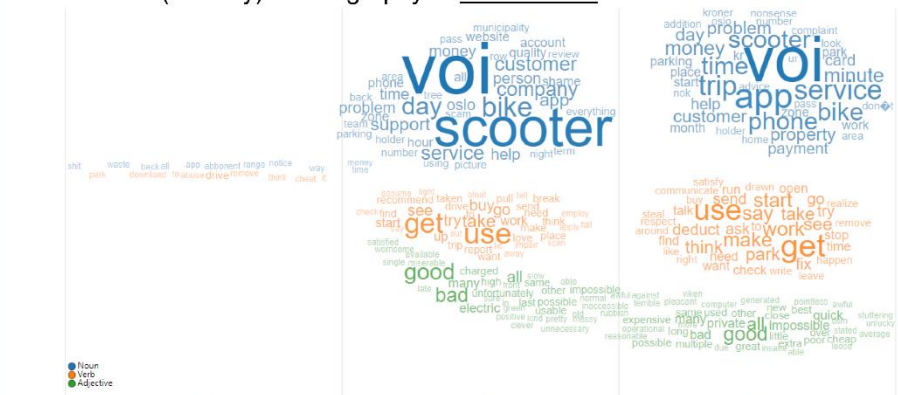
- **Good scooters**; they drive well, have power, speed and stability (20%)
- Good **customer service and fast** (17.5%)
- **Good service**, recommended and a good way to get around (7.5%)
- **Fun and nice** (7.5%)
- **Easy to use**
- **Cheap**
- Good **app**

NEGATIVE 49.3%

- Bad **customer service** (15.0%)
- **Charges for failures** or because the service is not clear (7.5%)
- Impossible to **close the service** (park the scooter) (7.5%)
- The scooters bother are messy on the floor (they prevent passage and cause accidents) (7.5%)
- **Failures at the** time of service **start** (5%)
- **No availability** of scooters
- **Expensive**
- You cannot **cancel the service** (failure that causes the customer to be charged without using the service)
- Motorcycle **degradation** and service
- There **could be more bonuses**
- **Limited area** of use
- **Cannot be used at night**



5.4.5. Oslo (Norway). Netnography of Shared LEV



2020

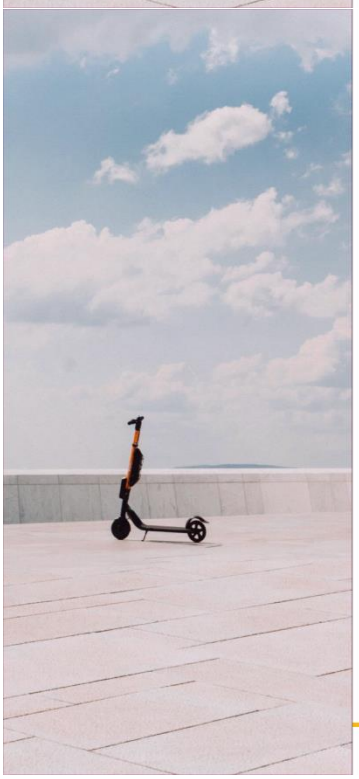
- **#VOI:** "She tripped, fell and broke her neck because of Voi's business in Oslo - Shame on you!" "I scan the QR code on are "inaccessible", even though it lights up green. This has happened 2 days in a row. Will never use VOI again, for some rubbish!"
- **#Scooter:** "The scooters are some of the most high quality scooters, they are fast,..."
- **#Bike:** "...But they keep sending me emails saying they are going to remove a wrongly parked bike on my property..."
- **#Service:** "Steals money from the card, charges the card for days you have not used Voi. No response to customer service."
- **#App:** "Very simple app, get help when you need it via support."
- **#Day:** "I spent Voi Skuter two days and you pulled a lot of money from the account, want you to send your money back".
- **#Time:** "Nice rental voi scooter, but bad breaks 2 times.".
- **#Trip:** "Had a complaint about the shooter. They took it further to take a closer look at about fixing it. Plus I got the money back for the trip without asking about it ?? ".
- **#Phone:** "I started a trip in Oslo, put my phone in their phone hilder and made sure it was secure. Little did I know that their phone holders don't cope with vibration at all and it sent my phone flying onto the ground not even 2 minutes into starting."
- **#Customer:** "It's not possible. When you go to the website, customer service does not exist in Norway even if you click on Norwegian. ".
- **#Problem:** "other problems is with the app it self, if you are unlucky the app wont even open after u have started the ride...."
- **#Money:** "I tried to get my money back but the customer support is impossible to work with..."

2021

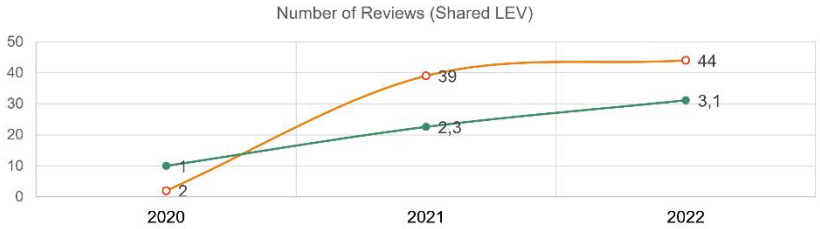
- **#Use:** "I bought 24 hours and had to use it for 3 hours so stopped it"
- **#Get:** "... it is impossible to get back to the frontpage of the App...."
- **#Take:** "Very bad service....they have taken money for whole day but I couldn't start any of their scooter."
- **#Work:** "Works fine, but I had wanted more powerful engine in the uphill slopes"
- **#Say:** "I wrote them a complaint and the help I got was a trip refund and a note saying «u use our phone holders at ur own risk»"
- **#Start:** "I want to start of by saying that i really liked Voi when they first started. The quality was great, always a scooter around and the pricing was reasonable."
- **#See:** "It is difficult to see how much time you have left when you subscribe."
- **#Go:** "So I'm not going to use Voi again, as it hasn't happened to my competitors.".
- **#Try:** "Bought day cards. Starts by getting a error message in the app every time I try to start. The voi just stops.".

2022

- **#Good:** "A good way to get around the city".
- **#All:** "I need an explanation and overview of all my payment from Voi Customer Service.".
- **#Bad:** "But I unfortunately can't recommend the service because their support team could not offer me compensation for my phone breaking because of bad design for the phone holder"
- **#Impossible:** "Why am I being charged and why is it impossible to report the problem?"
- **#Many:** "many times I cant lock the scooter in a parking zone, but the worst part is the customer support."
- **#Private:** "Voi does not respect that it is forbidden to park on other people's private property."
- **#Electric:** "Bibi Vance is 83 years old and visually impaired. She did not see the electric scooter lying on the ground in front of the entrance to Mallhausen square on Skøyen. "
- **#Same:** "Piece of trash service, impossible to park even remotely close to a tier and Ryde parking the same place"

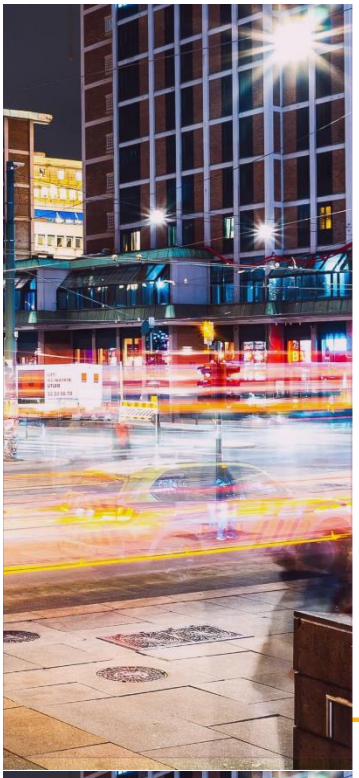


5.4.5. Oslo (Norway). Netnography of Shared LEV



IMPROVEMENTS & MAINTAIN:

- Good **customer service**; fast and that responds to service failures.
- The motorcycles must have an **adequate design** according to the needs of the city.
- That there are no failures when starting the service, canceling it or closing the **service**.
- Avoid **unfair charges** for service failures.
- Control of **where the motorcycles are left**, prevent them from being left in places that hinder the passage, private squares or in places where they can cause accidents
- **Availability** of motorcycles in a suitable area
- Reasonable **price**, not extortionate
- **Good maintenance** of the motorcycles and the service, avoiding degradation.



5.4.6. Oslo (Norway). Netnography of Shared CAR

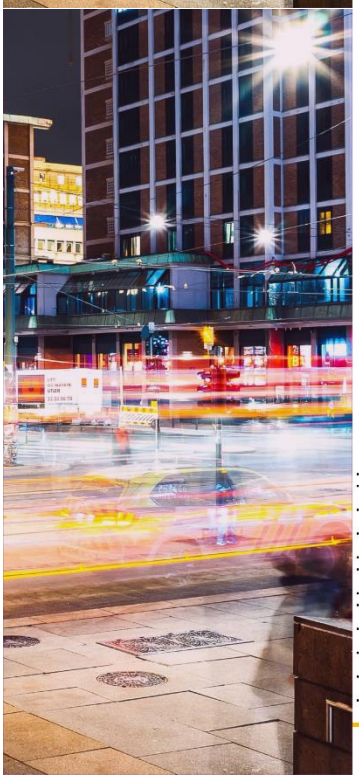
f. Shared CAR

POSITIVE 51.9%

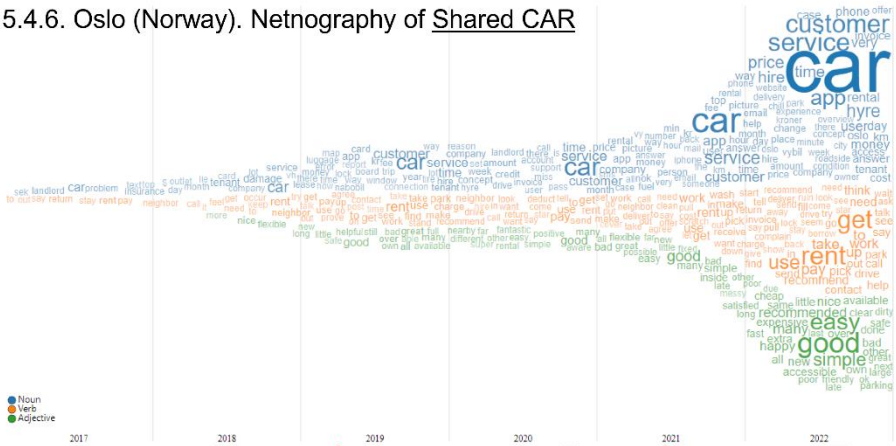
- **Easy to use**, simple and straightforward **service** (22.9%)
- Good **customer service** (15.7%)
- Easy-to-use **app**, accessible and easy to make reservations through it (14.3%)
- Good, new, modern, and practical **cars** (12.9%)
- Useful and practical **service**, recommendable (11.5%)
- **Availability of cars**, accessibility, and proximity (11.5%)
- Good **price** (10%)
- Fun, **good experience** (7.1%)
- **Others**: Flexible service Sustainable Easy to move around All-inclusive Clear and transparent pricing

NEGATIVE 31.1%

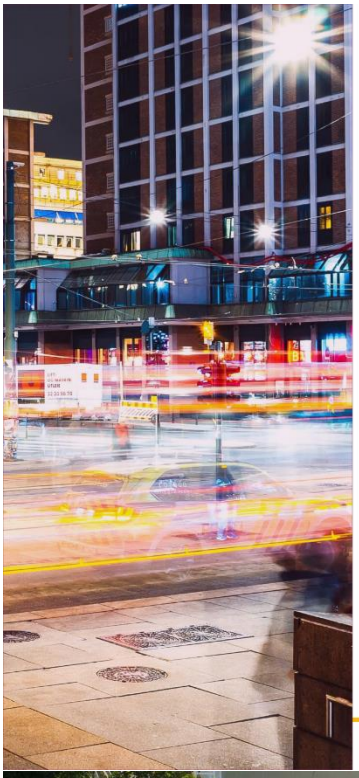
- Unauthorized charges due to **system/service errors** (cars not rented, returned but not registered, etc.) (18.6%)
- Poor **customer service** (unpleasant, unresponsive, etc.) (12.9%)
- **Poor service**, bad company, lack of professionalism (8.6%)
- Cars in **bad condition** (mechanical issues, etc.) and dirty (7.1%)
- **App** errors, not user-friendly or useful, etc. (5.7%)
- **Expensive** service (4.3%)
- **Uncharged** cars (4.3%)
- **Not recommended** service (4.3%)
- **Non-transparent pricing (**2.9%)
- **Others:**
  - Difficult to unlock and lock
  - Difficulty finding parking spots
  - Car's autonomy is not as indicated
  - Costs money to retrieve forgotten items, as one needs to pay to unlock the car



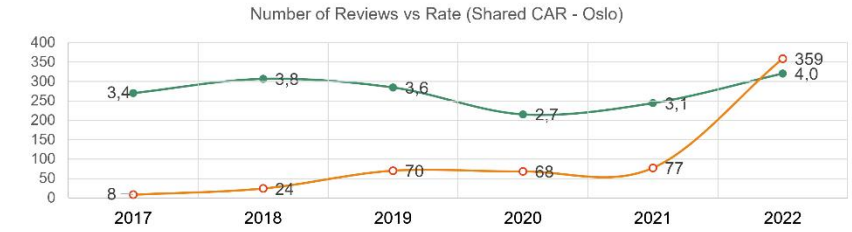
5.4.6. Oslo (Norway). Netnography of Shared CAR



- **#Car:** *"So simple and easy that it is fun to rent a car :-)"*
- **#Customer:** *"Absolutely miserable customer experience. Were charged for their own technical errors."*
- **#App:** *"Very easy to use the app and reserve a car. Unproblematic to pick up and use the car and deliver again. Can be recommended."*
- **#Service:** *"Very happy with the cars, the app, customer service and everything with hire"*
- **#Hyre:** *"Top to rent a car at Hyre. Recommended. We will do that again."*
- **#Price:** *"Flexible and practical service, great customer service and good price"*
- *explaining this problem to them. The service was unpleasant on the phone".*
- **#Time:** *"Cars in many locations and accessibility are better than in a long time."*
- **#Money:** *"I got the money that was drawn to the app, but the money for fuel that I paid too much I did not get back"*
- **#Rental:** *"Over 2 weeks ago rental and no response or payment from neighboring cars. Neighbile has become insolvent !!!!"*
- **#Tenant:** *"Very good. Could have been cleaned somewhat better from the previous tenant. Easy price."*
- **#Company:** *"Practical and affordable rental car company. Very clear via the app, which is also key."*
- **#Rent:** *"Is a very simple and nice way to rent a car."*
- **#Get:** *"I borrowed a car to get lots of stuff to the West Kanttorets market and did not find parking nearby after off".*
- **#Use:** *"Expensive! It will never be worthwhile to use flex! You want to get better out of it leasing a car."*
- **#Take:** *"Customer service shows zero willingness to cooperate or understanding. Take a taxi. Or Limmo for that matter. It will potentially be cheaper."*
- **#Work:** *"but customer service was easily accessible on chat and phone and got switched to a car in the same place that worked. And then it was all super simple."*
- **#Pay:** *"Had to pay $ 12,000 for an injury I was not responsible for. Picture Certificate did not hold ....."*
- **#Up:** *"The one I picked up was a delicious automatic car (Seat Leon Stv 2018). Natural extra costs such as toll passes and fuel can occur. "*
- **#To:** *"Easy parking, with plenty of space. Pretty central. Short distance to public transport."*
- **#Recommend:** *"Had it been possible to give zero stars, they would have received this. Rude customer service and long answer time. Do not recommend using their services"*
- **#Good:** *"Fantastic concept Good selection of cars, good prices and super service".*
- **#Simple:** *"Simple app, good selection and great services."*
- **#Many:** *"Will use many times in the future!"*
- **#Recommended:** *"Quick on answering, and easy to use. Recommended!"*
- **#Nice:** *"Was very nice car to drive, but struggled to lock and unlock the car ..."*
- **#Bad:** *"Is not recommended, If you choose to rent anyway: Take very good pictures and movies of the car, before and after. Inside and outside. In bad lighting conditions, do not tire the car."*
- **#Expensive:** *"Had a slight injury was very expensive so there is something pulling down"*
- **#Cheap:** *"Easy to book and cheap car hire."*
- **#Accesible:** *"So light, fine priced and accessible when you need an extra car quickly."*
- **#Great:** *"Very simple, great modern car and a good experience. . "*
- **#Clear:** *"Incredibly simple and clear. Lots of cars available. A little too much seat cars..."*



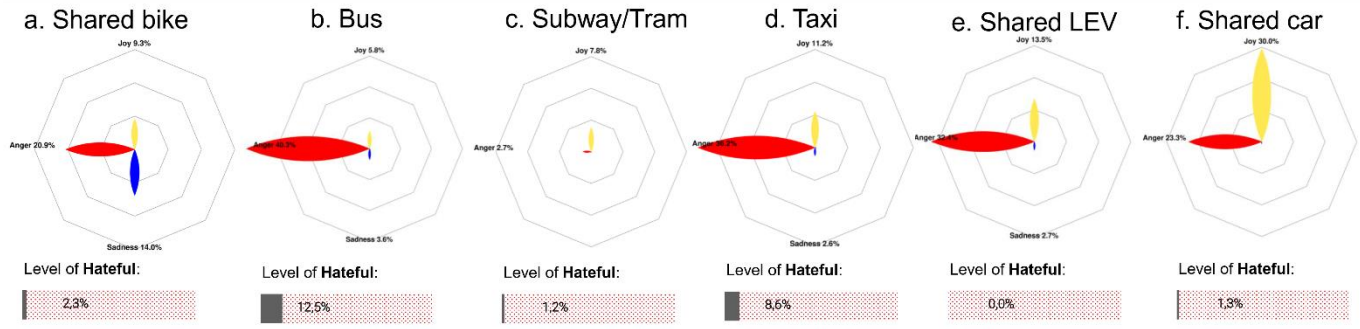
5.4.6. Oslo (Norway). Netnography of Shared CAR



IMPROVEMENTS & MAINTAIN:

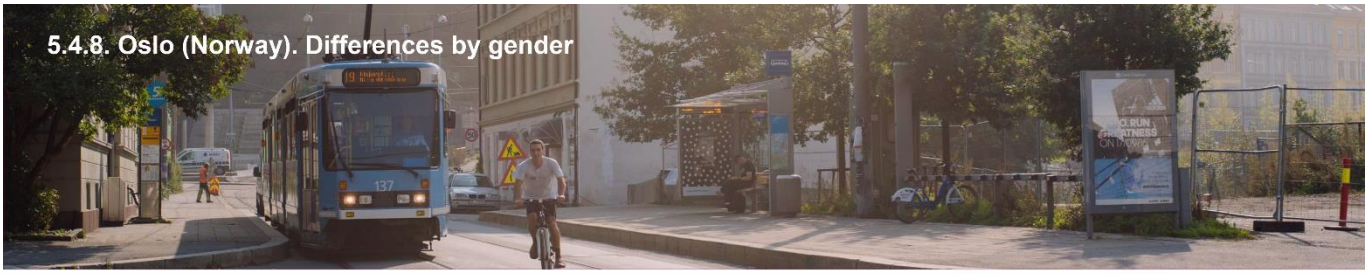
- Adequate **customer service** (pleasant, quick to respond, etc.)
- **Easy-to-use**, simple, flexible and straightforward service
- Unauthorized charges due to **system/service errors** (cars that are not rented, returned but not registered, It's difficult to unlock and lock ...)
- User-friendly **app**, accessible and easy to make reservations through
- Good, new, modern and practical **cars**
- Good **price**
- **Availability** of cars, accessibility and proximity
- **Poor service**, bad company, lack of professionalism
- Fun, enjoyable **experience**
- **Cars** in poor **condition** (malfunctioning, etc.) and dirty
- App errors, low **usability**, usefulness, etc.
- **Cars not charged** or the car's autonomy is not what it indicates
- All-inclusive and the **price** should be clear and transparent
- **Sustainable**
- Difficulty finding **parking spots**

5.4.7. Oslo (Norway). Emotions by type of transport

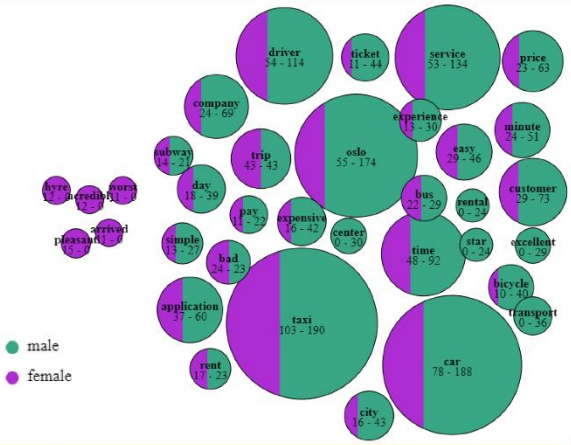


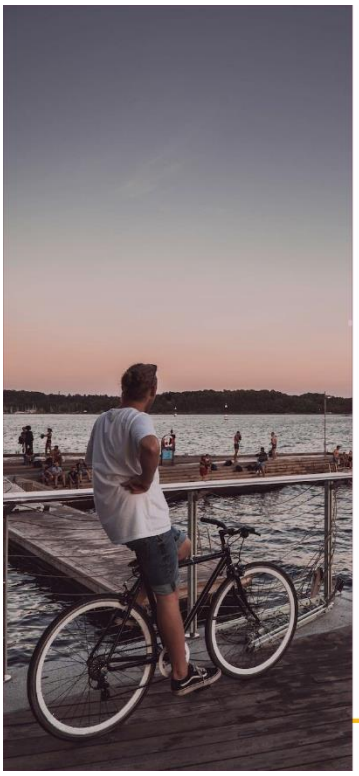
Level of **Hateful**:	Level of **Hateful**:	Level of **Hateful**:	Level of **Hateful**:	Level of **Hateful**:	Level of **Hateful**:
2,3%	12,5%	1,2%	8,6%	0,0%	1,3%

- In **Oslo**, it stands out that the level of joy in all types of transport is lower than in the rest of the cities studied.
- The **Bus** is the transportation mode that has the highest percentage of identified hate (12.5%), followed by **Taxi** (3.4%).
- **Bus** is the transportation mode that has the highest ratio of anger to joy comments.
- **Shared Car** is the transportation mode that has the highest level of joy identified, 30.0% compared to 23.3% of anger.
- **Subway/tram** are similar with low percentages of joy, anger, and hate.



- If we analyze all the transports grouped, the most repeated words excluding Oslo are: **taxi**, **car**, **service**, **driver**, **time**, **customer** and **application.**
- The words that only men say are highlighted as: **transport**, **center**, **excellent**, **rental** and **star.**
- The words that only women say are highlighted as: **pleasant, hyre, credible, worst** and **arrived.**



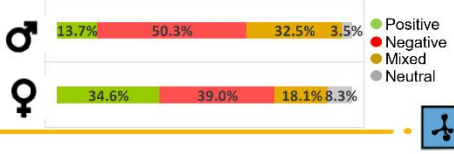


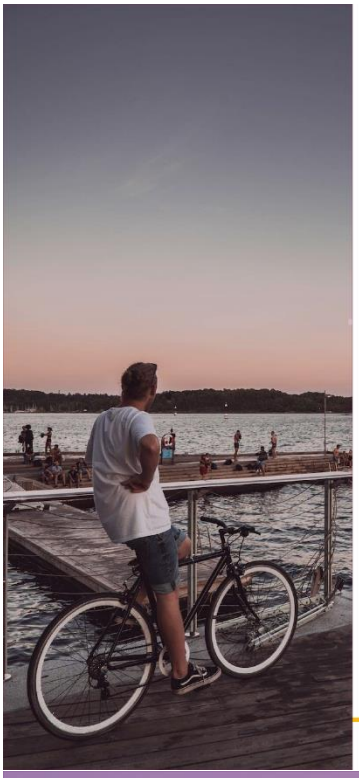
5.4.9. Oslo (Norway). Conclusions

- According to the number of reviews, **Taxi**, **Shared Car**, and **Subway/Tram** appear to be the most used modes of transportation **Taxi** and **Shared Car** are the ones that have grown significantly after the pandemic. **Bus** and **Shared Lev** have grown less, **Shared Bike** remain stable, and lastly, the **Subway** has not recovered.
- In Oslo, shared transportation does recover after the pandemic (except for **Shared Bike**), as in most other cities.
- There is a high and positive correlation between positive comments, a higher rate level (0.9), and lower levels of hate, and conversely, the lower the rate level, the higher the number of negative and hateful comments.
- The highest-rated modes of transportation in Oslo are the **Subway** and **Shared Car**, while the lowest-rated is clearly the **Bus**, with a 12.5% level of *hate*, followed by **Taxi**, with an 8.6% level of *hate*.
- 65% of the analyzed users are men, 22% are women, and the remaining 13% are unknown.
- Men use shared transport (shared car) more, and women use **Taxi** and **Bus** more.
- 33% of the analyzed users are tourists, and the remaining 67% are residents.
- There is a medium-high correlation (-0.7) between a higher percentage of tourists and fewer negative comments (they are less critical), and conversely, a higher percentage of residents who give more negative comments (0.7). Tourists make more mixed comments.
- There is no correlation between usage (number of reviews) and satisfaction (rate).

Number of Reviews vs Rate (TOTAL - Oslo)

- If we analyze separately the comments made by men and women, we see that men are more critical with a lower number of positive comments (13.7%) compared to 34.6% made by women. The percentage of negative comments is higher, 50.3% compared to 39.0%.
- Men make more mixed comments (containing positive and negative aspects) than women. 32.5% compared to 18.1%.





5.4.9. Oslo (Norway). Conclusions

The main highlights / most important aspects of each transport are:

- **Shared Bike:**
  - The app performs well; it is easy to download, useful, and displays information on available bikes and parking spaces at
  - There are various vouchers/tickets available to meet different needs, including 24-hour and weekly options.
  - The pricing is reasonable.
  - The bikes are in good condition and are properly maintained.
  - The first 45 minutes of usage are free.
- **Bus:**
  - Users demand excellent customer service
  - Effective management
  - Increased frequency of bus service
  - Punctuality and reliability (no delays)
  - Safe and reliable driving
- **Subway /Tram:**
  - Efficiency, usefulness, and ease of use are essential factors in determining the best way to get around.
  - Punctuality, reliability, and accuracy are critical elements that define excellent service throughout the city, even in remote areas such as the mountains.
  - A variety of ticket types, including day, week, or month tickets, provides flexibility and convenience for passengers.
  - Cleanliness is also an important aspect of a top-notch transportation system.
  - Finally, a reasonable price is a crucial consideration for many people when choosing their mode of transportation.
- **Taxi:**
  - Professionalism and honesty: no deceptive tactics such as taking longer routes
  - Dependability and punctuality: the taxi arrives on time and if there are any delays, customers are promptly notified
  - Friendly, polite, and helpful demeanor
  - Competitive pricing
  - Users demand excellent customer service
- **Shared LEV:**
  - Users expect prompt and responsive customer service that is excellent in addressing any service failures.
  - Motorcycles must have a design suitable for the city's specific needs.
  - No glitches or malfunctions when starting, canceling, or terminating the service.
  - Fair and transparent policies to avoid any unjustified charges for service failures.
  - Proper monitoring and control of where motorcycles are parked or left.
- **Shared CAR:**
  - Users demand customer service that is not only excellent but also friendly, prompt, and efficient
  - User-friendly, simple, flexible, and straightforward service
  - Resolution of unauthorized charges resulting from system/service errors (e.g., cars that were not rented, returned but not registered, difficult to unlock and lock, etc.)
  - Accessible and easy-to-use app for making reservations
  - Availability of high-quality, new, modern, and practical cars

IBV

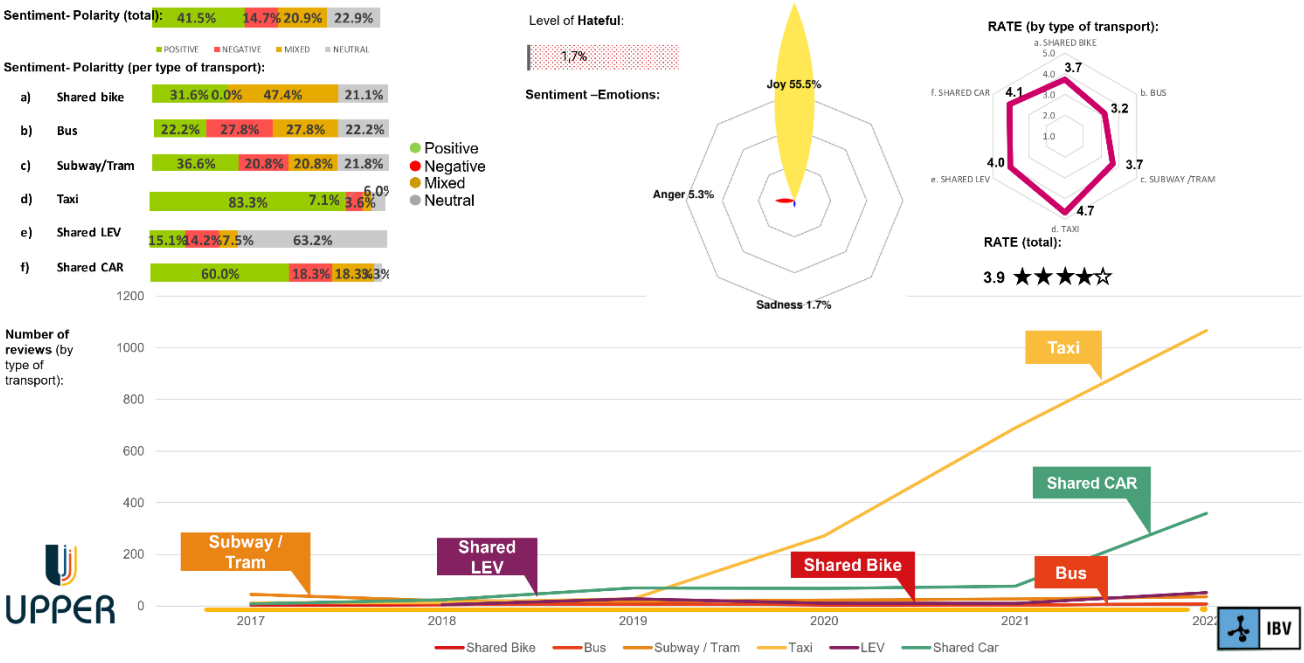
Mannheim: Netnography of transport

IBV

5.5. Mannheim (Germany). Netnography of **transport**

TYPE OF TRANSPORT:	SAMPLE: Nº Reviews	Nº Comments	USER PROFILE: ♂	♀	?	Inhabitants	Tourist	SOURCES: Company	Web, social media, etc.
a. SHARED BIKE	32	19	87.5%	12.5%	0.0%	87.5%	12.5%	VRNnextbike Mannheim	Google
b. BUS	44	18	77.3%	20.5%	2.3%	93.7%	6.3%	RNV bus	Google
c. SUBWAY /TRAM	187	101	75.4%	22.5%	2.1%	91.9%	8.1%	RNV Tram	Google
d. TAXI	2.095	1.036	79.6%	15.8%	4.7%	96.6%	3.6%	Mannheim Taxi, Taxi Mannheim, taxi Mannheim-City, Tesla Taxi Mannheim, XXL taxi Mannheim	Google
e. SHARED LEV	105	105	78.1%	17.1%	4.8%	7.6%	92.4%	Lime	Trustpilot, Google Play
f. SHARED CAR	109	105	77.3%	17.3%	5.5%	96.4%	3.6%	Stadtmobil, mobileeee – Carsharing, FRANKLIN Mobil	Google
TOTAL:	2.572	1.384	79.2%	17.6%	3.2%	79.0%	21.0%		

5.5. Mannheim (Germany). Netnography of **transport**



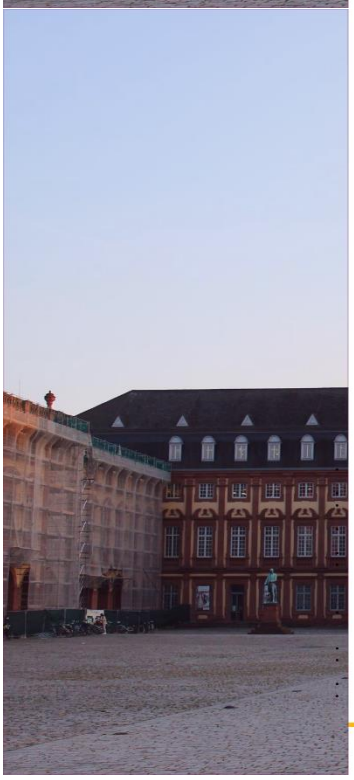
5.5.1. Mannheim (Germany). Netnography of shared bike

POSITIVE 31.6%

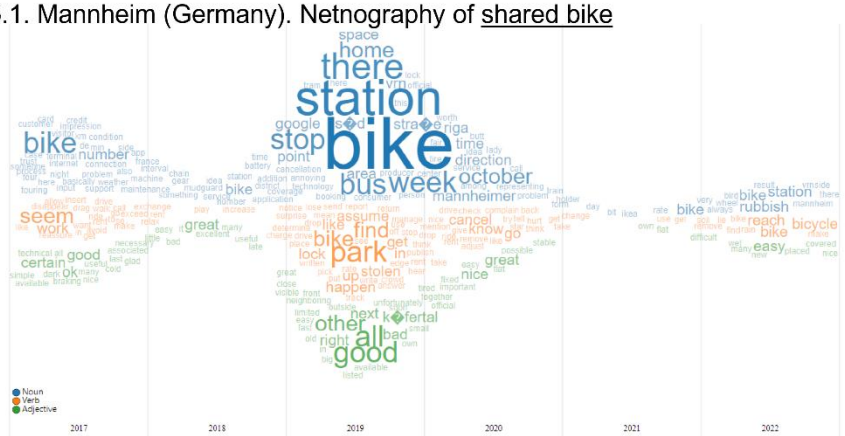
- **Availability**, enough bikes (33.3%)
- Good **service**, useful, good idea (33.3%)
- **Well-located stops** (e.g. near bus stop) (20%)
- Easy-to-use **app** (6.6%)
- **Quick rental** (6.6%)
- Good **customer service** (6.6%)

MIXED 47.4%

- **Technical problems**, technology, app (26.6%)
- Bikes are **not in good condition** (handlebars, chain, etc.) (20.%)
- No bike **availability** (13.3%)
- **Stations missing in some districts** and north (13.3%)
- **No space** to leave bikes (13.3%)
- **Uncovered stations** (bikes get wet and dirty) (13.3%)
- Charges for service failure (6.6%)
- **Expensive** service (6.6%)
- **Bikes** without suspension, **uncomfortable** (6.6%)

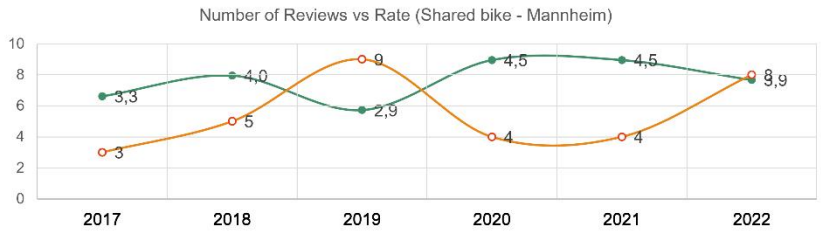


5.5.1. Mannheim (Germany). Netnography of shared bike



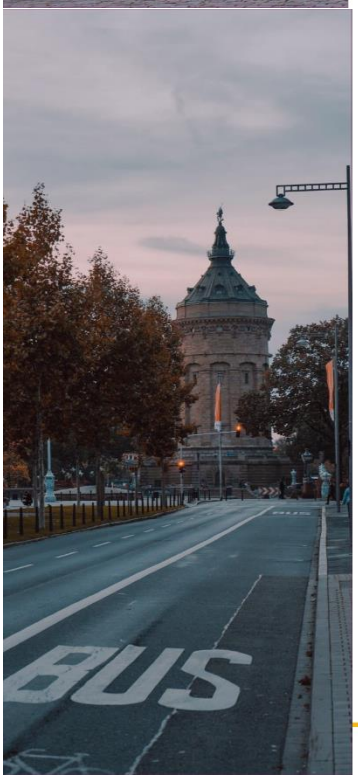
- ***#Bike**: "…last night I wanted to rent a bike, but their terminal did not have internet connection.".*
- ***#Station:** "The idea is great and the coverage with stations is now quite useful.. "*
- ***#Week**: "But that only happened after two weeks and I answered promptly as it should be, but then after another almost four weeks I haven't heard anything from you. .."*
- ***#There:** "There are almost never bikes available as they are always picked up very quickly"*
- ***#Stop:** "Otherwise good station, directly at the bus stop".*
- ***#Home**: "…after an experience in my own home country with NextBike: Among those 19 bikes that are at the official drop-off point at the bus and tram station, I parked the bike at the very edge because the other 18 bikes there have already crowded the very limited space of stationary locks. ".*
- ***#Number:** "But there were also a few dark sides: The associated app never seems to work - so at least my impression when I was the support number, have called. Basically ok, as long as someone is always available (which seems to be the case).".*
- ***#Rubbish:** "There is also a lot of rubbish and rubbish lying around.".*
- ***#Direction:** "… it is placed on the outermost edge in the direction of the center of Käfertal.".*
- ***#Time:** "Often there are no bikes at peak times".*
- ***#Area:** "would also like to mention that the bikes are probably only insufficiently maintained, as I found out at the beginning of this odyssey in the VRN area.".*
- ***#Park**: "It was very easy to see from the small car park on the ABB premises in front of the old kiosk, right next to the bus stop in the direction of Neckarau/Rheinau. ".*
- ***#Bike /bycicle:** "I do not get any Tour de France machines here - rather such a simple touring bike. "*
- ***#Find:** "The location is very easy to reach and find. ".*
- ***#Seem:** "The associated app never seemts to work - so at least my impression when I was the support number."*
- ***#Get:** "Always bikes available, it can be a bit expensive if you use it too often. Better get a flat rate or your own bike".*
- ***#Cancel:** "Now I know it was the terminal. The lady from the call center was super nice, canceled it and told me the next station."*
- ***#Stolen:** "It was very good there visible and could easily have been stolen, which didn't happen - which is a miracle at this point"*
- ***#Happen:** "But that only happened after two weeks and I answered promptly as it should be, but then after another almost four weeks I haven't heard anything from you."*
- ***#Good:** "Also their bikes are not in so good condition."*
- ***#All:** "And the second bike, which led to this incident, wasn't all right either, because the chain sometimes got stuck"*
- ***#Other:** "I parked the bike at the very edge because the other 18 bikes there have already crowded the very limited space of stationary locks…."*
- ***#Great:** "Great services".*
- ***#Nice:** "Very nice and new"*
- ***#Certain:** "My friend had a broken saddle mechanism and cannot restore the bike and pack a new one."*
- ***#Next:** ". Once it was not possible to adjust the saddle. I complained via the contact form, was canceled the next day."*
- ***#Easy:** "This VRN bike station in Mannheim is very well placed and easy to reach from many sides."*
- ***#Ok:** "Basically ok, as long as someone is always available (which seems to be the case)"*
- ***#Bad:** "I was so relaxed, because I was glad to drive at all. But a little more well-groomed by the state would not have been bad."*

5.5.1. Mannheim (Germany). Netnography of shared bike

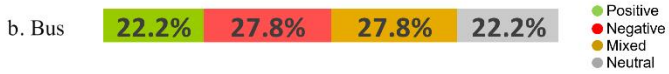


IMPROVEMENTS & MAINTAIN:

- Appropriate **station size**
- **Availability** of bikes and spaces to leave them
- No **system failures or charges** due to system/service errors
- **Well-located stations** in all areas of a city
- Useful and functional **app**
- Well-maintained **bikes**
- **Covered** bikes/stations
- Reasonable **pricing**
- **Improved bikes** (e.g. suspension)



5.5.2. Mannheim (Germany). Netnography of Bus

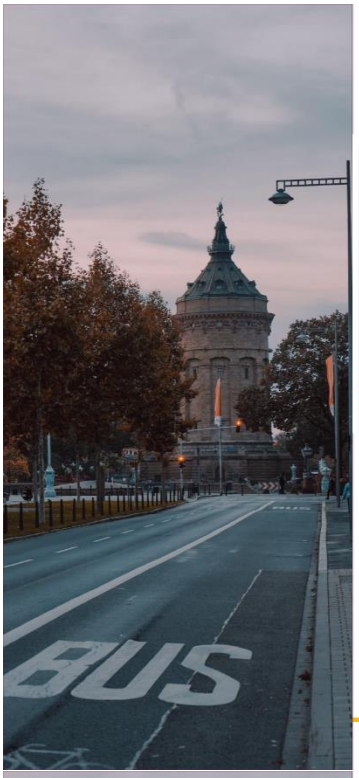


POSITIVE 22.2%

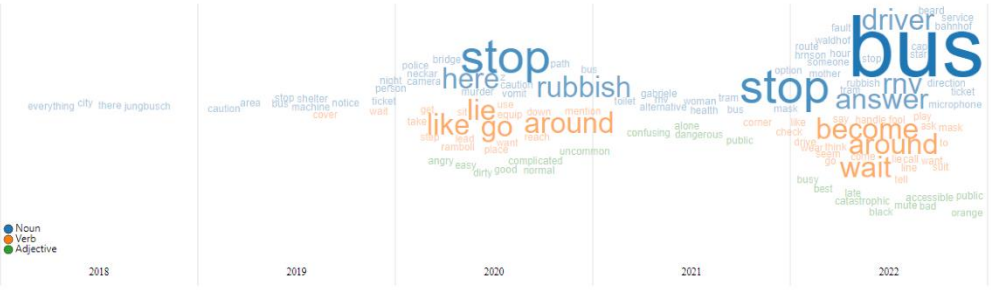
- Large and well-equipped **station** (5.5%)
- Sufficient **ticket machines** (5.5%)
- Useful notices and **information** (5.5%)
- **Accessible** (5.5%)

NEGATIVE 27.8%

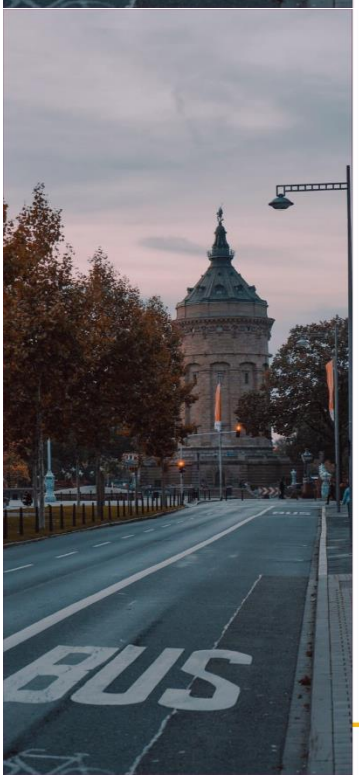
- **Dirt**, garbage, and urine (22.2%)
- Unsafe and **dangerous** stop **for women** (11.1%)
- Late and reckless **drivers** (11.1%)
- **Unsafe stop**, delays (e.g. of 1 hour) (5.5%)
- **Uncovered** stop (5.5%)
- Poor **customer service**, unresponsive staff (5.5%)
- Users not following **rules** (e.g. mask-wearing) (5.5%)



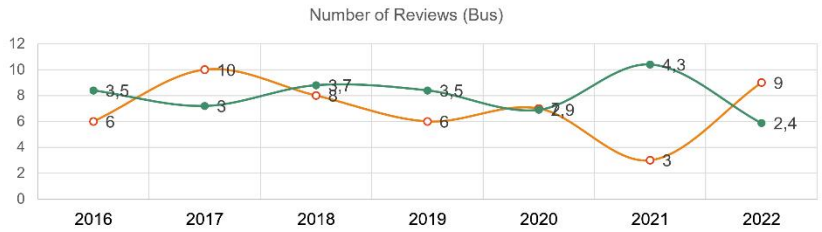
5.5.2. Mannheim (Germany). Netnography of Bus



- ***#Bus**: "Great bus stop with a shelter without a ticket machine.".*
- ***#Stop:** "Quite normal stop, but often rambolled and there is often a lot of rubbish lying around."*
- ***#Rubbish:** "There is a lot of rubbish lying around here, some of the people sitting at this bus stop are extremely aggressive and it is not uncommon for you to get angry about stepping on vomit. ".*
- ***#Driver:** "Bus drivers have become catastrophic, always late, especially line 55 in the direction of Waldhof Bahnhof..".*
- ***#Answer:** "My mother has been waiting at the bus stop for 1 hour. She asked me to call RNV but no one answers or someone answers but the microphone is on mute so you think it's a fault".*
- ***#RNV:** "Compulsory masks only seem to be an option at RNV!? It goes without saying that the passengers handle it as it suits them. ".*
- ***#Tram:** "I like the stop of the tram and the 60 bus from the rnv."*
- ***#Around:** "Easily accessible but there is a lot of rubbish lying around."*
- ***#Become**: "If public transport is to become more attractive, then the health of the passengers should not be played with".*
- ***#Wait:** "Unfortunately no covered waiting area."*
- ***#Go**: "Easy to reach, but dirty, complicated, and every path leads somewhere you didn't want to go.".*
- ***#Like:** "Would like the bridge to be equipped with police cameras, just like down on the Neckar where it is very dangerous at night"*
- ***#Good:** "Perfect for cornering and a good alternative to public toilets".*
- ***#Public:** "If public transport is to become more attractive, then the health of the passengers should not be played with."*
- ***#Dangerous:** "The stop is confusing and dangerous for women, it is better not to be alone at this stop."*



5.5.2. Mannheim (Germany). Netnography of Bus



IMPROVEMENTS & MAINTAIN:

- Improve **cleanliness** and maintenance of the station to reduce dirt, garbage, and urine.
- Increase **safety** measures and provide security personnel to ensure the stop is safe **for women**.
- Implement stricter hiring and training procedures for **drivers** to reduce incidents of reckless driving and lateness.
- Ensure that all stops have adequate **infrastructure and maintenance** to avoid delays and provide a safe environment for passengers, including covered shelters.
- Provide better **customer service** training for staff and establish more efficient complaint resolution procedures.
- Enforce **rules** more strictly and educate users on the importance of following them, such as wearing masks.
- Expand and improve **facilities at the station** to accommodate increased passenger traffic, including more seating and restrooms.
- Increase the number of **ticket machines** to reduce wait times and improve the purchasing experience for passengers.
- Provide clear and comprehensive **information for passengers**, including schedules, route maps, and fare prices.
- Ensure that the stop is easily **accessible for all passengers**, including those with disabilities or mobility issues, by providing ramps, elevators, and other necessary accommodation.

5.5.3. Mannheim (Germany). Netnography of Subway/Tram

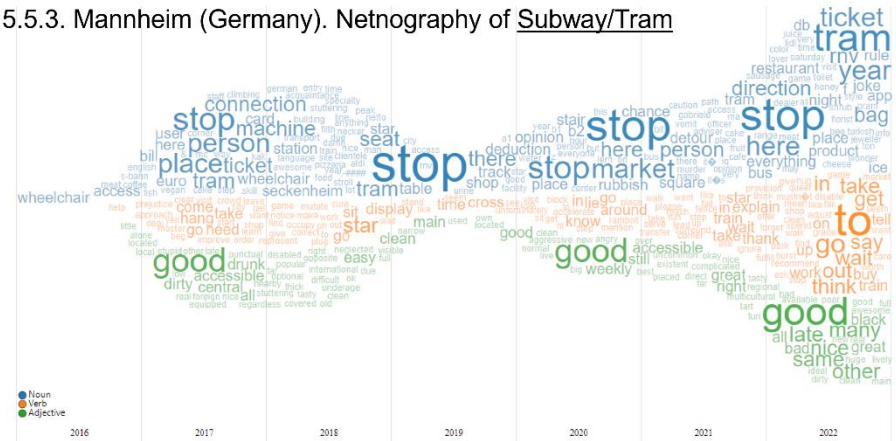
POSITIVE 36.6%

- **Good location** (30%)
- **Stops with services**: parking, cafes, etc. (23.3%)
- **Accessible** for wheelchairs, etc. (13.3%)
- **Clean** and organized (10%)
- **Good connection** with other lines (10%)
- **Station** with seating (6.6%)
- **Easy-to-see**, real-time information that is accurate and works perfectly (6.6%)
- **Good atmosphere** (6.6%)
- Everything is okay (6.6%)
- **Others**:
  - Good **customer service** (3.3%)
  - Punctual trains (3.3%)

NEGATIVE 20.8%

- **Dirty** and poorly maintained (benches), bad odor, etc. (20%)
- **Insecurity**: aggressive people, beggars, unsafe for women, etc. (16.6%)
- **Not accessible** for wheelchairs and strollers (6.6%)
- **Others**:
  - Train malfunctions, not running, long wait times (3.3%)
  - Expensive (3.3%)
  - Poor management (3.3%)

5.5.3. Mannheim (Germany). Netnography of Subway/Tram



- ***#Stop:*** *"A tram stop which needs steps climbing.".*
- ***#Tram:*** *"It's a normal tram station. It has many seats to sit. Display board of the bus stop is visible from long distance.".*
- ***#Here:*** *"People with restricted mobility have no chance here… ."*
- ***#Place:*** *"Not to mention that the murder of Gabriele Z took place here in 2013"*
- ***#Ticket:*** *"Actually a nice and central stop, with a covered waiting area, notices, seats and ticket machines."*
- ***#Year:*** *"…pay a lot of money every year and what do I get? Lots of delayed trains, endless construction sites and incompetent staff."*
- ***#Wheelchair:*** *"Not accessible for people in wheelchairs or for prams".*
- ***#Station:*** *"Unfortunately, the underground station is in a poor condition".*
- ***#Everything:*** *"She wrote down everything I could do to get my bag and gave me another glass of water. Such nice and unbureaucratic service made up for the wait for my bag ".*
- ***#Direction:*** *"The train (line 5) in the direction of Weinheim didn't come and nobody could tell us where it was, even the conductors didn't know! "*

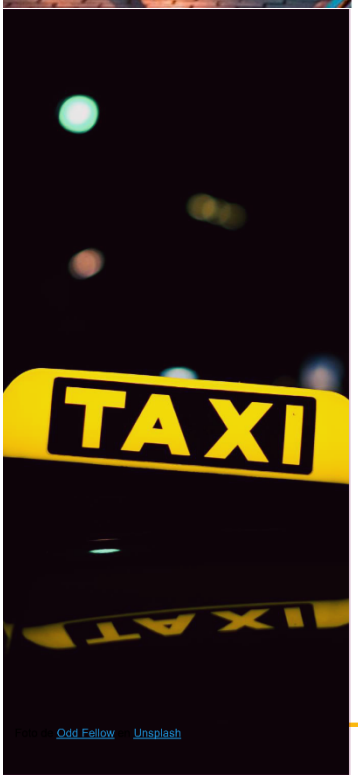
- ***#To:*** *"Display board of the bus stop is easy to observe. ".*
- ***#Go:*** *"The stop is at a construction site that has been going on for many year.".*
- ***#Wait:*** *"it is not always pleasant to wait here. The stop is spacious and has seating. .".*
- ***#Think:*** *" I think it's very good that the Lidl is right next to the tram stop.".*
- ***#Take:*** *"One wonders why the people take the train".*
- ***#Star:*** *"1 star deduction for the rubbish."*
- ***#Train:*** *"Trains run until late at night."*

- ***#Good:*** *"There is a very good connection with the tram in both directions"*
- ***#Many:*** *"It's the same as in many other places in Mannheim. Unfortunately, there is also a lack of security staff here."*
- ***#Late:*** *"Either the train is 10 minutes late or 10 minutes early!!!.. "*
- ***#Other:*** *"Those responsible must have an iq below 60, there is no other way to explain it".*
- ***#Nice:*** *"Very nice, big, with cafes surrounded by and tram stop in front of the market square."*
- ***#Great:*** *"The range of dealers is simply great".*
- ***#All:*** *"The smell of urine was so bad, it was dirty and scrawled all over the place when you enter the main entrance*
- ***#Same:*** *"Same bad quality, every year at an increased price."*
- ***#Bad:*** *"The staff is very friendly, but the tram always comes to Schpet, which is really bad."*

5.5.3. Mannheim (Germany). Netnography of Subway-Tram

IMPROVEMENTS & MAINTAIN:

- **Good location** is highly valued by users.
- Stops with **additional services**, such as parking and cafes, are appreciated.
- Dirty and **poorly maintained facilities**, such as benches and bad odors.
- **Insecurity** due to aggressive people, beggars, and unsafe conditions **for women**.
- **Accessibility** for wheelchairs, strollers, and other mobility aids is crucial to users, while lack of it can be a significant challenge for them.
- **Cleanliness** and organization are significant factors for users.
- **Good connection** with other lines is important to users.
- **Station seating** is valued by users.
- Accurate and easy-to-see **real-time information** is crucial for users.
- A **good atmosphere** at the station is appreciated by users.
- **Others**: Poor train performance, including malfunctions and long wait times, coupled with high service costs and inadequate management, are significant issues that need to be addressed.



5.5.4. Mannheim (Germany). Netnography of Taxi

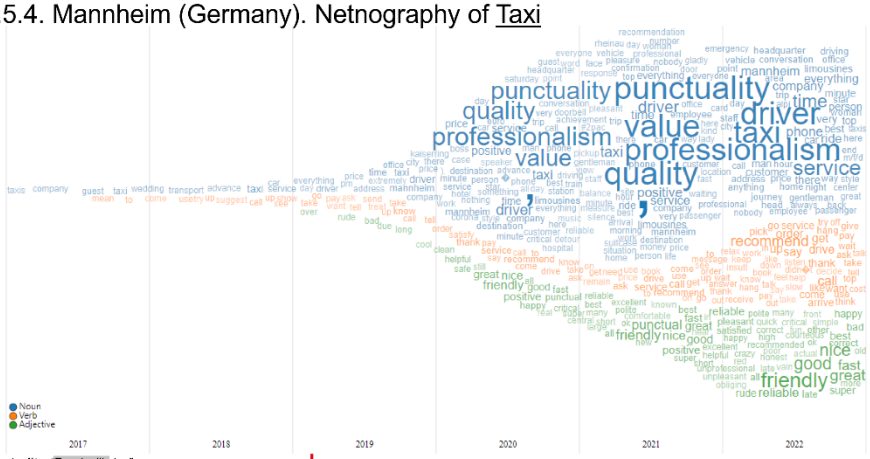
POSITIVE 83.3%

- **Punctuality** (30%)
- **Professionalism** (20%)
- **Value** (20%)
- **Speed** (20%)
- Reliable and friendly **driver** (20%)
- **Quality** (20%)
- **Fast** (20%)
- User-friendly, **easy to use** (10%)
- **Reliable** service (10%)
- Great service, **recommended** (6.6%
- **Others**:
  - Available (3.3%)
  - Clean taxi (3.3%)
  - Quick response to calls (3.3%)

NEGATIVE 7.1%

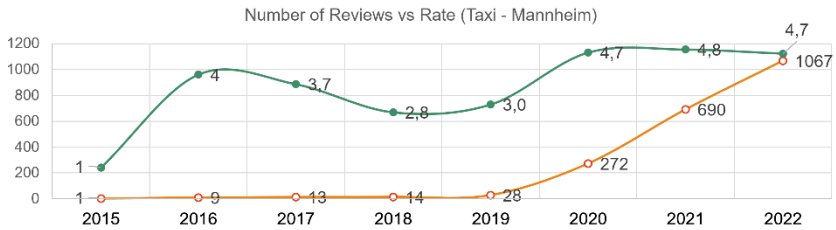
- Bad **customer service** (10%)
- **Unprofessional**, unreliable (10%)
- **Unavailable** or taxi doesn't show up (10%)
- Unpleasant, **rude** (10%)
- **Don't answer** the phone (6.6%)
- **Others**:
  - Lack of punctuality, arrive late (3.3%)
  - No refunds (3.3%)
  - Poor service (3.3%)
  - Unsafe, driving at high speed, using phone, etc. (3.3%)

5.5.4. Mannheim (Germany). Netnography of Taxi



- ***#Punctuality:*** *"Punctuality top"*
- ***#Driver:*** *"Very reliable driver is very nice"*
- ***#Quality:*** *"Positive: Professionalism , Quality , Value"*
- ***#Professionalism:*** *"Positive: Professionalism , Punctuality , Quality , Value"*
- ***#Value:*** *"Better driver good service and value for money top top"*
- ***#Taxi****: "A very good taxi company in Mannheim".*
- ***#Time:*** *"Everything was great and on time!.".*
- ***#Company:*** *"I am very satisfied with the company. Ahead of time!!!"*
- ***#Phone:*** *"I have never experienced such an impudent, unfriendly and impatient person on the phone as the "lady" from the Mannheim taxi company."*
- ***#Person:*** *"I hardly ever leave reviews, but I just pre-booked a cab and had what must have been the rudest person on the phone. I have never experienced anything like it.".*
- ***#Positive:*** *"Positive: Quality Fast & friendly!. "*
- ***#Recommend:*** *"Very satisfied recommended".*
- ***#Call:*** *"Fast answering of calls no matter what time you call, friendly drivers and always there very quickly after you have ordered it.".*
- ***#Say:*** *"On time, good value and friendly. I don't think I need to say more about a taxi company."*
- ***#Up:*** *"Supposed to be 24/7 and they don't pick up the phone"*
- ***#Order:*** *"The second time I called to order this taxi, I was told quite rudely that something like this is not possible (taken from a village to Mannheim). ".*
- ***#Thank:*** *"Very polite, fast and helpful service team. Thanks"*
- ***#Drive:*** *"Very good company. Good drivers. Conversations lead top."*
- ***#Get:*** *"Call there, try to get a taxi just after 6 in the morning. After asking for my address they just hang up. Had previously tried 1 1/2 hours to reach someone"*
- ***#Arrive:*** *"I had an emergency and needed to go to Uniklinikum Mannheim. The driver arrived immediately…"*
- ***#Friendly:*** *"Punctual and friendly."*
- ***#Good:*** *"Friendly driver, good prices and great music is playing. From my point of view very recommendable"*
- ***#Great:*** *"Used as a taxi to the airport in an emergency very quick very friendly great service definitely would recommend"*
- ***#Nice:*** *"Very nice service, gladly again!."*
- ***#Punctual:*** *"Very punctual and friendly driver"*
- ***#Fast:*** *"Super friendly fast and pleasant taxi ride. always happy ????"*
- ***#Reliable****"Reliable and serious drivers, fast good service. I like it.".*

5.5.4. Mannheim (Germany). Netnography of Taxi



IMPROVEMENTS & MAINTAIN:

- **Punctuality**
- **Professionalism**
- **Value**
- **Speed**
- **Reliable** and **friendly** driver
- **Quality**
- **Fast**
- User-friendly, **easy** to use
- Improve **customer service**
- **Unavailable** or taxi doesn't show up
- **Unpleasant**, rude
- **Quick response** to calls
- **Clean** taxi
- No **refunds**
- **Unsafe**, driving at high speed, using phone, etc.

5.5.5. Mannheim (Germany). Netnography of Shared LEV

e. Shared LEV

- Positive
- Negative
- Mixed
- Neutral

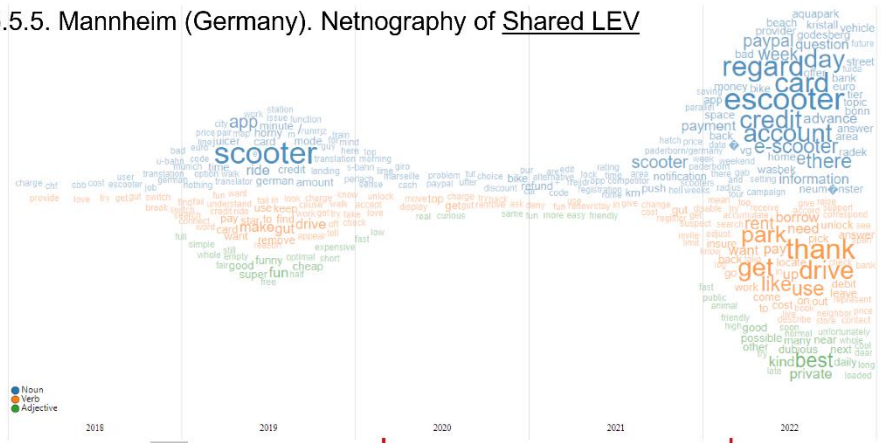
POSITIVE 15.1%

- **Fun** (20%)
- Good **app** (12%)
- **Easy to use** (8%)
- Practical **service** (8%)
- **Good alternative** for transportation (4%)
- **Connects quickly** (4%)

NEGATIVE 14.2%

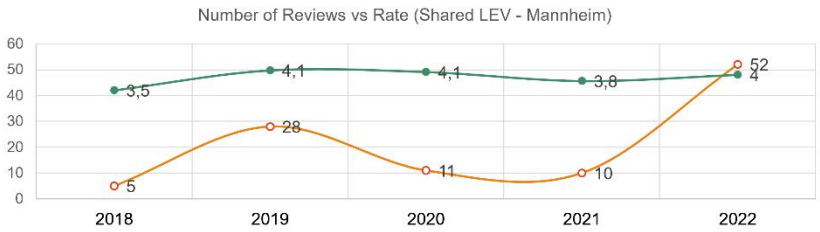
- **Scooters parked where they shouldn't**, obstructing the way, etc. (12%)
- **No** scooters **available** (within a radius of 20-30 km) (4%)
- **Unclear**, non-transparent prices (4%)
- **App** sometimes doesn't work (e.g. search function) (4%)
- Require **too much data** to register (4%)
- Unauthorized charges, **system/service failures** (4%)
- Poor **customer service** (chat only responds in English, pre-set responses) (4%)

5.5.5. Mannheim (Germany). Netnography of Shared LEV



- ***#Scooter / e-scooter:*** *"One of your e-scooters has been in the Harbach underpass for a week. I suspect that he cannot be located there"*
- ***#Credit:*** *"I don't have a credit card, but I can e.g. B. offer PayPal. Is there the possibility to store another payment route as a credit card?"*
- ***#Card:*** *"Unfortunately it is absolutely dubious how to get an account. First you accumulate the card data for payment. Then you get the information that the card is not loaded and it is only an indication of future payments. A minute later I get the news of my bank that was debited around 59 euros.".*
- ***#Account:*** *"I only have a normal savings bank checking account. I also pay account with it."*
- ***#There:*** *"Today there was a Liueferwagen here, but did not invite the scooters! We are not a public parking space if you are not picked up in a timely manner, I contact the local police!"*
- ***#Day****: "Would it also be possible to rent/rent scooters on a daily basis? It has to drive about 12 km to work and back again every day.".*
- ***#Paypal:*** *"Is there only PayPal, credit card, or other number options"*
- ***#Week:*** *"Since 2 Weeks or more there is not 1 scooter in an area of ??30 km where have the scooters stayed in Paderborn. There has not been 1 scooter for 2 weeks or more. Within a radius of 20 km."*
- ***#Drive:*** *"My second question is where can an e-scooter drive?*
- ***#Get:*** *"Prices are fair and those things are everywhere so you can get to where you want from where you want without a lot of issues. ".*
- ***#Park:*** *"I wanted to give the whole scooter topic a chance but it is not a user friendly and only adjusts parking spaces!"*
- ***#Use:*** *"But for daily use its too expensive"*
- ***#Rent:*** *"Would it also be possible to rent scooters on a daily basis?"*
- ***#Pay:*** *"However, this did not drive. Now I should pay 9 euros. For what?"*
- ***#Need:*** *"Where should I become a member. I only need access. To the e-scooters. How can I activate the scooter and*
  there is a short description. Where is my check card still used."
- ***#Borrow:*** *"I would like to borrow an e-scooter for the first time "*
- ***#Best:*** *"Thanks and best regards"*
- ***#Fun:*** *"Fun and fast, but not cheap"*
- ***#Private:*** *"For days, an e-scooter has been on private grounds around Bahngasse 48 or 48a courtyard"*
- ***#Good****: "Good app. Connects quickly to the scooter. Search function sometimes doesn't work and the map appears empty for the whole city.",*
- ***#Daily:*** *"Our question now is what costs for a daily rent and how long the accule output lasts?"*
- ***#Possible****: "Why no Paypal chargement possible?"*
- ***#Expensive:*** *"But for daily use its too expensive"*

5.5.5. Mannheim (Germany). Netnography of Shared LEV



IMPROVEMENTS:

- Improve the **app's functionality** to make it even better.
- Streamline the app's interface to make it even **easier to use**.
- **Expand the service** to more areas to make it more practical for users.
- **Develop a better system** to prevent scooters from being parked in prohibited areas and obstructing pathways.
- Optimize the connection speed to provide a seamless **user experience**.
- Increase the number of **available scooters** to avoid situations where there are none within a reasonable distance.
- Provide clearer and more transparent **pricing information** to avoid confusion or surprises.
- Simplify the **registration process** to minimize the amount of personal information required.
- Implement better **monitoring and prevention** mechanisms to prevent unauthorized charges or system failures.
- Improve the quality of **customer service** by providing more personalized and effective support, including multilingual support.

5.5.6. Mannheim (Germany). Netnography of Shared CAR

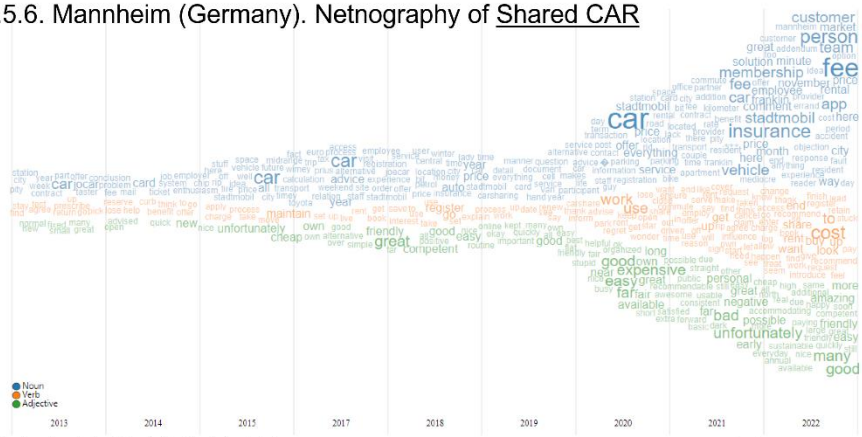
POSITIVE 60.0%

- **Good service** provided by the provider (20%)
- Good **customer service** (20%)
- **Availability** of cars throughout the city, always nearby (20%)
- **Fair price**, cheaper than owning a car (20%)
- Good **alternative** to owning a car or renting a car (17.1%)
- Good **experience** (8.6%)
- **Easy to use**, easy to handle (8.6%)
- **Quick and easy** to register/rent (8.6%)
- Cars in **good condition**, clean and well maintained (8.6%)
- **Others**:
  - Good location (2.9%)
  - Good cars (2.9%)
  - Makes life easier (2.9%)
  - App works well (2.9%)

NEGATIVE 18.3%

- **Incorrect charges**, hidden penalties (e.g. paying admission fee twice because the car is not functioning) (11.4%)
- **Expensive** service (8.6%)
- **Others**:
  - The service has lost quality (2.9%)
  - Poor customer service (2.9%)
  - No parking available (2.9%)
  - No discounts for couples/families (2.9%)
  - Occupies necessary parking spots (2.9%)
  - No available parking spots (2.9%)
  - Expensive if you lose the card (2.9%)
  - App malfunctions (2.9%)
  - Not suitable for commuting to work (2.9%)

5.5.6. Mannheim (Germany). Netnography of Shared CAR



- **#Car:** "A great way to be mobile and still not have to buy a car. Or as a temporary solution. Very easy handling, team always available and different cars available. The app is still giving me problems, but that's probably my fault."
- **#Stadtmobil:** "Registering for Stadtmobil CarSharing was super easy and went really quickly."
- **#Fee:** "Stadtmobil charges a whopping €30 processing fee for this! Sorry, but that's just a rip off."
- **#Insurance:** "I signed up for membership at the end of November 2020 and I am requesting insurance to cover accident costs."
- **#App:** "Had a booking at 6pm. Was there 5 minutes before my pickup when I no longer had access to my account in the app, even though I entered my relevant credentials."
- **#Customer:** "My experience is negative. Customers are systematically ripped off here. I can only agree with the negative comments.".
- **#Vehicle:** "Large selection of vehicles."
- **#Here:** "My favorite provider for car sharing is now also here in ..."
- explaining this problem to them. The service was unpleasant on the phone".
- **#Team:** "Very easy handling, team always available and different cars available".

- **#Cost:** "Rebooking at the parking lot due to a defect in the rented car cost me a rebooking fee"
- **#Up:** "The normal cars with the fixed stations are one thing, but the new JoCar offer, where you can pick up and return the cars in many parts of the city, is really a great thing. "
- **#To:** "The app is very easy to use and the fees are standard in the market."
- **#Buy:** "A great way to be mobile and still not have to buy a car. Or as a temporary solution"
- **#Work:** "There are almost always clean and well-kept cars available and booking by cell phone works perfectly"
- **#Go:** "It's pretty easy to register and there is auto all over the city the price for having the auto is okay especially when you have to go far away"
- **#Register:** "Registering for Stadtmobil CarSharing was super easy and went really quickly"
- **#Want:** "Not recommended if you want to be treated fairly."

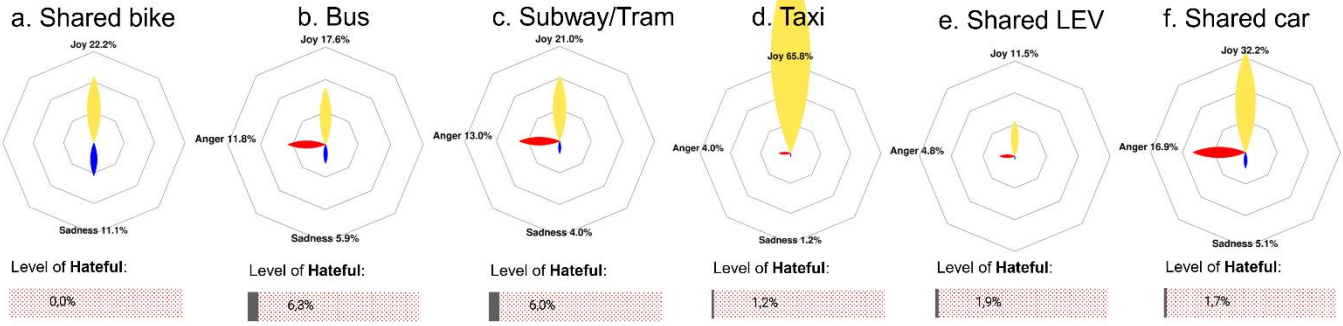
- **#Good:** "Very good advice and service.".
- **#Unfortunately:** "Unfortunately, my enthusiasm was curbed recently: I had lost my chip card and had to apply for a new one. It went smoothly, the new card came promptly in the mail., but..."
- **#Great:** "Great alternative to renting a car and friendly staff. "
- **#Easy:** Good location. Road is not too busy. Easy parking in and out.
- **#Expensive:** "Only if you lose the card is that a bit expensive, otherwise there would be 5 stars."
- **#Many:** "Absolutely smooth transaction. Many locations. Fair prices."
- **#Bad:** "Can't say anything bad."
- **#Friendly:** "Very friendly service, my questions were answered very quickly and competently".
- **#Far:** "So far I've always been very satisfied but that's not possible at all!"
- **#Possible:** "There are enough cars around. So far, a car has always been available, even for short-term rentals. Even renting for several days is possible. Everything at a fair price"

5.5.6. Mannheim (Germany). Netnography of Shared CAR

IMPROVEMENTS & MAINTAIN:

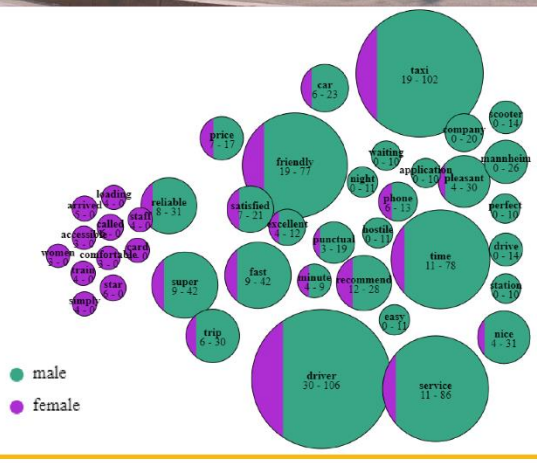
- **Fair price**, cheaper than owning a car
- **Good service** provided by the provider
- Good **customer service**
- **Availability** of cars throughout the city, always nearby
- Good **alternative** to owning a car or renting a car, good for commuting to work
- **Easy to use**, register/rent, easy and quick handling
- **Incorrect charges**, hidden penalties (e.g. paying admission fee twice because the car is not functioning)
- **Expensive** if you lose the card
- **Cars** in good condition, clean and well maintained
- No available **parking spots**
- **App** works well

- **Others:**
  - Good location
  - The service has lost quality
  - No discounts for couples/families
  - Occupies necessary parking spots



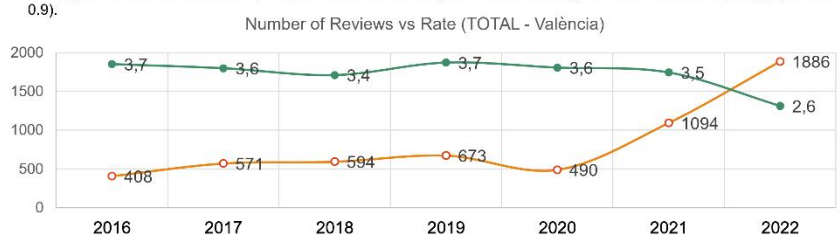
- The **Bus** is the transportation mode that has the highest percentage of identified hate (6.3%), followed by Subway/Tram (6.0%).
- **Taxi** and **Shared Bike** are transportation modes with the highest ratio of joy to anger comments. However, shared bike has no comments classified as anger but does have comments classified as sadness (11.1%), the highest percentage among all modes of transportation.
- **Taxi** and **Shared Bike** are transportation modes with the highest levels of identified joy, 65.8% and 32.2% respectively.
- **Shared bike** and **Taxi** have the lowest levels of hate.
- In general, Mannheim's ratings are the best compared to the rest of the cities

- If we analyze all the transports grouped, the most repeated words are: **driver**, **taxi**, **service**, **friendly**, **time**, **super, fast** and **reliable.**
- The words that only men say are highlighted as: **company, drive**, **scooter**, **hostile**, **night**, **station, waiting** and **perfect.**
- The words that only women say are highlighted as: **star**, **called, arrived, train, staff, simply, loading, card, women, accessible** and **comfortable.**

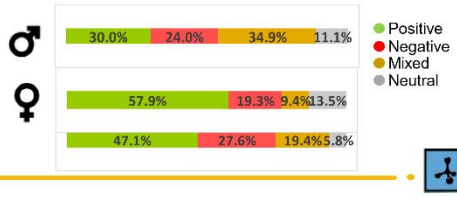


5.5.9. Mannheim (Germany). Conclusions

- According to the number of reviews, **Taxi** and **Subway/Tram** seem to be the most used transports.
- **Taxi** and shared car are the ones that are growing the most after the pandemic.
- There is a high and positive correlation between positive comments, a higher rate level (0.7), and lower levels of hate (-0.6).
- The best-rated modes of transportation in Mannheim are **Taxi** and **Shared Car**, while the worst-rated are clearly the **Bus** and **Subway/Tram**, with levels of hate of 6.3% and 6.0% respectively
- 79% of the analyzed users are men, 18% are women, and the remaining 3% are unknown.
- Men tend to use shared transportation more, while women tend to use the **Subway/Tram** and **Bus** more. There is a high correlation between a higher percentage of women and a higher percentage of negative and low ratings (women tend to be more critical)
- 21% of the analyzed users are tourists, and the remaining 79% are residents.
- The higher the number of reviews (the more users of a service), the lower the ratings or satisfaction level (rate) (high correlation, 0.9).



- If we analyze separately the comments made by men and women, we see that men are more critical with a lower number of positive comments (30.0%) compared to 57.9% made by women. The percentage of negative comments is higher, 24.0% compared to 19.3%.
- Men make more mixed comments (containing positive and negative aspects) than women. 34.9% compared to 9.4%.



IBV

5.5.9. Mannheim (Germany). Conclusions

The main highlights / most important aspects of each transport are:

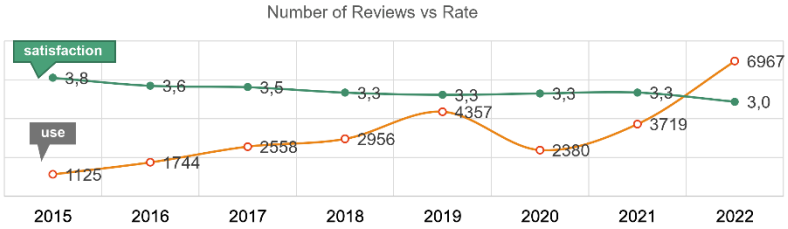
- **Shared Bike:**
  - Availability of bikes is crucial for users.
  - Good service and well-located stops are appreciated.
  - Technical problems and poor bike condition are major complaints.
  - Some districts and areas lack stations.
  - Uncovered stations and uncomfortable bikes are also problems.
- **Bus:**
  - Hygiene issues, including dirt, garbage, and urine
  - Safety concerns for women
  - Late and reckless drivers
  - Unsafe stops with delays
  - Poor customer service and rule-breaking users
- **Subway /Tram:**
  - Good location of stations
  - Stops with services: parking, cafes, etc.
  - Dirty and poorly maintained (benches), bad odor, etc.
  - Accessible for wheelchairs, etc.
  - Insecurity: aggressive people, beggars, unsafe for women, etc.
- **Taxi:**
  - Punctuality
  - Professionalism
  - Value
  - Speed
  - Reliable and friendly driver
- **Shared LEV:**
  - Fun factor
  - Good app
  - Issues with scooter parking
  - User-friendly
  - Practicality
- **Shared Car:**
  - Improve service quality and features to enhance customer satisfaction.
  - Strengthen customer service training to provide prompt and effective support.
  - Increase the number of cars available and their distribution to reduce wait times and ensure they are always nearby.
  - Continuously assess pricing strategies to ensure a fair and cost-effective alternative to owning a car.
  - Communicate the benefits of the service and promote it as a viable alternative to car ownership or rentals.
  - Implement clear and transparent billing practices to avoid hidden fees or penalties.

IBV

6. Conclusions & actions

General conclusions (I)

- If we **group** all public transport modes together, it can be observed that during the **pandemic**, the **usage** of all public transport modes **decreases** due to **restrictions**, **remote work**, etc., and it is not until **2022** that a **recovery** is seen. There is a **high correlation** (-0.88) between the **increase** in **reviews** (usage) and the **decrease** in **average ratings**. The evaluations is lowering from 2015 to 2022 (average of satisfaction from 3.8 to 3), which is based on the large increase in users, and probably a more saturated PT.

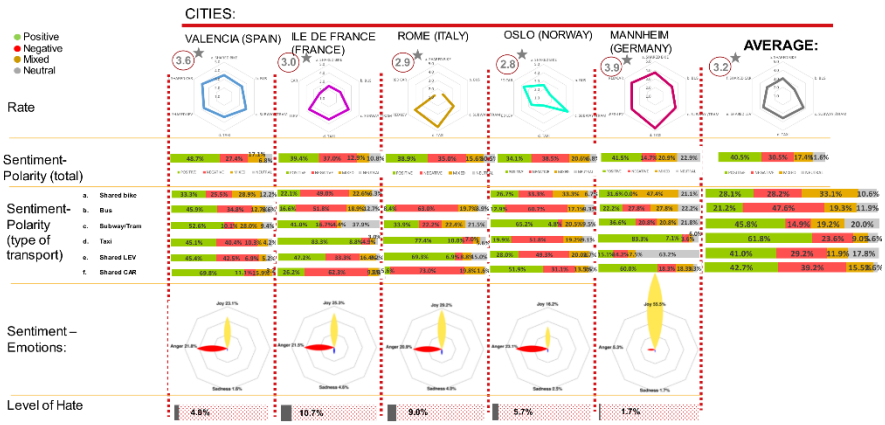


- There is a correlation between **lower ratings** and **larger cities** with higher **population density** and greater **complexity**, such as **Rome** and **Ile de France**.
- The results and improvement needs **repeat** in the **5 analyzed cities** (Valencia, Ile de France, Rome, Oslo, and Mannheim), leading us to conclude that the information can be **extrapolated** to most **European cities.**

6. Conclusions & actions

General conclusions (II)

- On average, **for all the transport mode** analysed, **there are 25% more positive comments than negative comments**.
- All transport modes in the 5 cities obtain an **average rating** of **3.2 out of 5**. Above the average, we have the **metro** with **3.7, taxi** with a **3.6**, and **shared LEV** and **shared Car** with **3.6.** Below the average, and with lower average ratings, we have **shared bike** with **3**, and the **bus** with the lowest score of (**2.5**).
- There is a **correlation** between the **average star ratings**, the **percentage of positive comments**, and the levels of **hate speech**. The **bus** has the lowest average star rating (**2.5** out of 5), the lowest percentage of positive comments (**21.2%**), and the highest percentage of negative comments (**47.6%**) and hate speech (**10.7%**).
- According to the ratio positive/negative comments, **we can distinguish two groups** in the assessment of the transport modes: **Subway/Tram and Taxi ([3,2.5]),** and **Shared Car, Shared Bike, Shared LEV and Bus ([1.5,0.5]).**

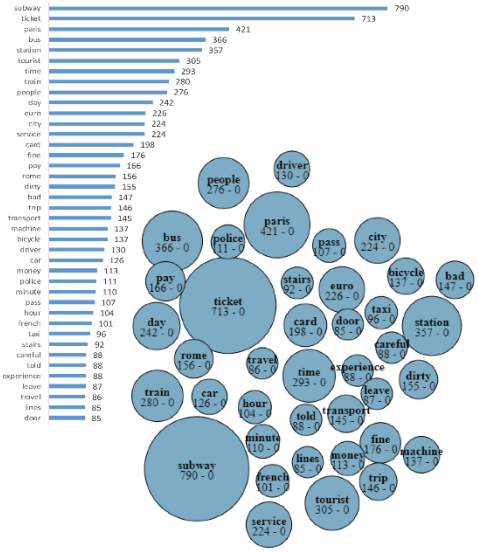


- The **best valued** (**Subway/Tram**) and **the worst valued** (**Bus**) are both **communal transport modes**.
- **For individual transport modes**, the **best valued is the Taxi**, followed by Shared LEV, Shared Car and Shared Bike.

6. Conclusions & actions

Analysis of hate level

- **The hate level related to the big cities** of the study is double to those related to the middle size cities, **and five times** to that related to the small city of the study. This result suggests that **PT mobility in big cities is more difficult that in middle size cities or small cities**. Paris and Rome are the most mentioned cities in hateful comments due to their complexity and the volume of tourists they receive.
- It is important to pay attention to the levels of hate and aggression to see **which topics provoke this extreme emotion in users**. Among the most repeated words in comments containing hate, the highlighted topics that are most frequently mentioned refer to:
  - Ticket: **problems** when purchasing tickets **due to queues**, **malfunctioning machines**, **difficulty understanding** which ticket is appropriate and **how to obtain** it, **fines** for errors in ticket purchase or validation, **limited flexibility** in payment methods, **high prices** or **poor value for money**…
  - Subway: **insecurity**, **degraded or outdated** carriages, **overcrowding**, **limited flexibility** in payment methods, **lack of accessibility**, **no single ticket** for different modes of transport, **poor customer service**, **limited usability**, **dirty** stations, stops, and carriages, **malfunctioning app**, **no night service**, etc.
  - Bus: **old**, **poorly maintained**, and **dirty**, **aggressive** and **unsafe** driving, **crowded** (especially in tourist cities), **long waiting times**, **lack of information and functioning screens**, **no air conditioning**, fines for errors in ticket validation, **not user-friendly**, **limited stops**, **poor customer service**...
  - Station: **poorly designed**, **poorly maintained**, **inaccessible** with long corridors, difficult for carrying luggage and carts, **lack of staff to ask for assistance**, **dirty**, **unsafe**, **pickpockets**, **lack of lockers or difficult to use**, **no bathrooms**, **smell of urine**, **disrespectful people** and **bad manners**...



6. Conclusions & actions

Individual public transport vs. collective public transport (I)

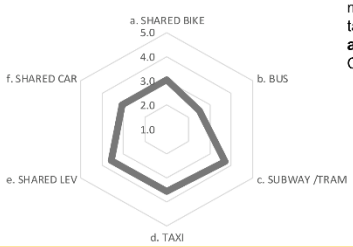
- According to the number of reviews, **individual transport** has **grown more after the COVID pandemic** compared to mass public transport.
- There are observed **changes in mobility patterns after the pandemic**: **public mass transport is gradually recovering**, **taxis show a quicker recovery**, shared transport experiences a slower and uneven recovery (**shared bicycles do not recover** and have seen a decline in usage even before the pandemic, they are the oldest service with the most improvement needs). Finally, **motorcycles, electric scooters, and car sharing return to pre-pandemic levels**.
- The **best mass public transport valued is Subway/Tram** and the worst valued is the Bus.
- **For individual transport modes**, **the best valued is the Taxi**, followed by Shared LEV, Shared Car and Shared Bike.
- According to emotions, **Anger and Joy are balanced for the Subway/Tram**, but surprisingly **Taxi users feel Joy** (nearly half of the comments) when they use the service.
- Mass public transport has the lowest average ratings. There is a high correlation between the increase in reviews (usage) and the decrease in average ratings (correlation of -0.7).
- In that line, shared transport is experiencing a decline in satisfaction year after year, regardless of the COVID pandemic, due to wear and lack of improvements made by the companies. There is a negative correlation between usage and satisfaction (-0.4).
- Taxis are the only mode of transport that increases their average rating (satisfaction) after the pandemic. There is a positive correlation (0.5) between the number of reviews (usage) and higher ratings (satisfaction).

6. Conclusions & actions

Individual public transport vs. collective public transport (II)

Collective public transport

- **Subway/Tram** is positively perceived as **easy, clean, excellent, efficient, fast, network**. On the contrary, **Bus** is negatively perceived as **bad, minute, worst, waiting, late, arrive, schedule**. Considering these terms, Subway/Tram fulfils users' expectations related to trip duration, including waiting time and access, and Bus does not.
- **The main difference between** these two communal transport modes **is the infrastructure** they use; **Subway/Tram has a dedicated one, and the Bus shares the infrastructure with all the other actors integrating the daily traffic**. This difference by itself should mostly explain this result.
- Regarding the **Bus**, the **positive comments** are related to the terms **attention, excellent, friendly, fast, staff, office, appointment**. Some of them (attention, friendly or staff) can be related with the driver, although the term driver has gathered four negative comments per one positive. This result shows an interaction between drivers and customers, that in most situations is difficult.



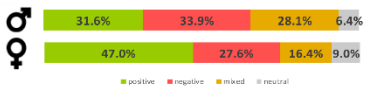
Individual public transport

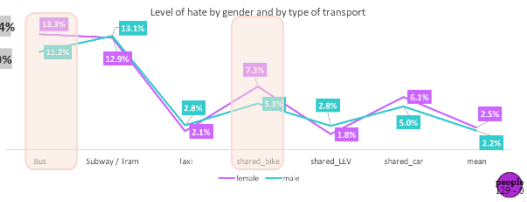
- Among individual transport modes, Shared Bike is the only one that is active. Users **value positively the bikes as practical, easy, excellent, transport, trip, rental, ideal, cycling**. On the contrary, the users relate their **negative comments** to terms like **pay/paid, bad, euros, inscription, customer, broken, company, electric, account, terminal, pass, scam, user, returned**, which seem to be related to the **service of hiring the bikes**, and the **bikes maintenance**.
- For **Shared LEV**, the positive comments are related to **excellent, friendly, city, day, staff, experience, recommend, super and practical**, while the **negative comments are** related **to minute, bad, application, phone, euros, card, expensive, company, and finish**. Most of the comments are reported by men, who value the experience of moving by the city with LEV, but have objections about the price and the service.
- **Taxi is positively perceived as professional, excellent, recommend, friendly, perfect, super, pleasant, and nice**. On the contrary, **Shared Car is negatively perceived as bad, app, company, scam, euros, month, recommend, and day**. Basically, both transport modes are cars for private transport, but this result suggest that the service supplied by the taxi driver is not counterbalanced by the better price (**cost is a negative comment for Taxi and price is positive for Shared Car**) and the digital experience offered by the Shared Car.

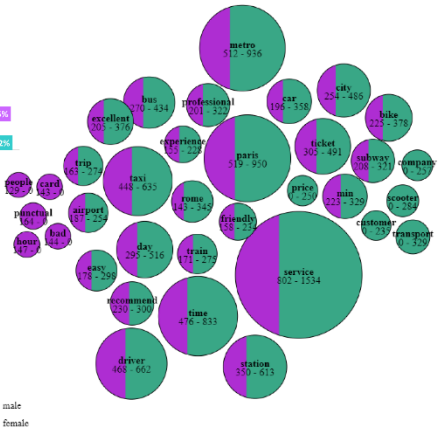
6. Conclusions & actions

Analysis of Gender Differences

- According to gender data, there would be a **gender bias** in **shared transport** (Bike+LEV+Car). **67.7%** of comments are made by **men**.
- According to the data, **women** tend to use **bus, taxi, and subway** more, but less **shared transport**.
- **Men** are more **critical** of **public transport** than **women**, with a lower percentage of **positive comments** and more **negative comments**.





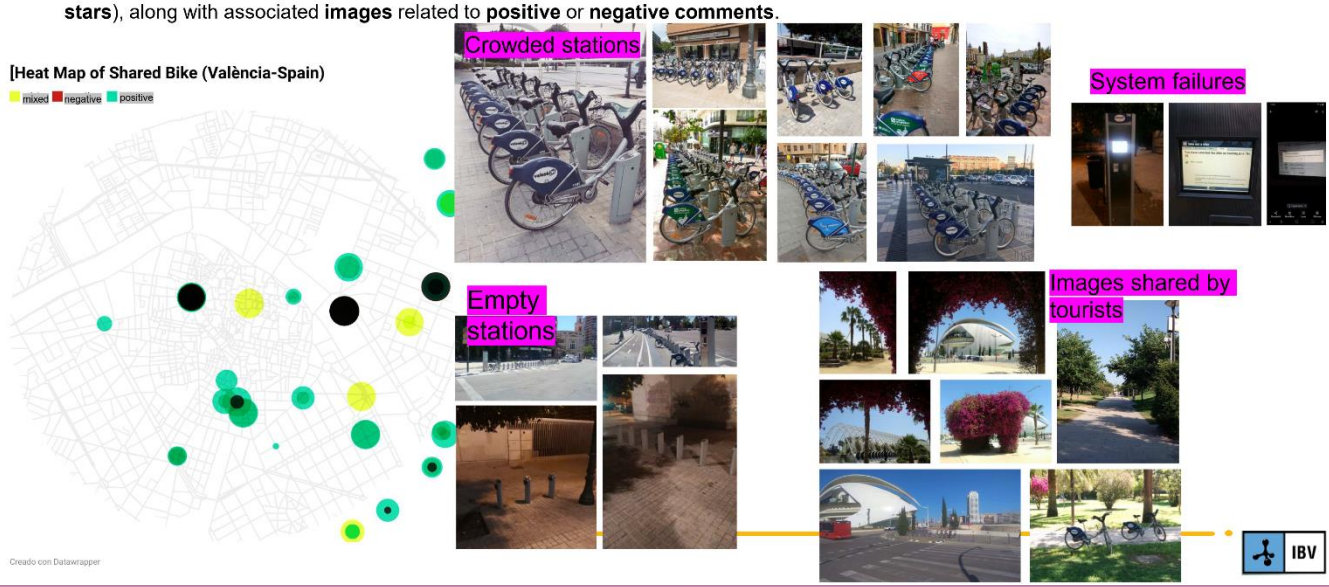


- Although there are some differences **in the topics that women and men are addressing when assessing the transport modes**, in general the assessment **in terms of emotions (anger-joy-sadness) is very similar**.
- However, media hate levels are similar for men and women, but are significantly higher for women both on the bus and on the shared bike.
- If we compare the **terms that women and men use** the most, it stands out that **women** name more: **punctual, hour** and **bad**. **Men**, on the other hand, **transport**, **scooter**, **company** and **customer**.

6. Conclusions & actions

Georeferenced data and images

- Furthermore, all these **data** are **georeferenced**, and **images** are also shared. Although this study did not analyse them, as an example, **heat maps** of cities can be generated based on whether the comments are **positive** (or have **4 or 5 stars**) or **negative** (or have **1 or 2 stars**), along with associated **images** related to **positive** or **negative comments**.



6. Conclusions & actions

1. Service Coverage and Reliability
- Increase the frequency of buses and the number of buses available to **improve service coverage**.
- Ensure greater **punctuality and reliability** by minimizing delays and adhering to schedules.
- Provide good **customer service** with quick resolution of issues and 24-hour availability for assistance, along with effective management of the public service.

2. Bus Capacity and Comfort
- Enhance bus capacity by redesigning the interiors to **maximize space utilization**.
- Upgrade buses to **improve comfort** and modernize services according to new requirements.
- Maintain cleanliness and ensure regular maintenance of buses to provide a **pleasant environment** for passengers.
- Enhance safety for standing passengers through redesigned walking spaces, such as **semi-sitting options**.
- Provide adequate air conditioning on buses, maintaining a **comfortable temperature**.

3. Driver Professionalism and Safety
- Promote safe driving practices, reducing aggressive maneuvers such as excessive braking and accelerating.
- Improve driver attentiveness, emphasizing friendliness and professionalism, and ensuring that buses consistently stop at designated bus stops.
- Focus on optimizing bus speed without compromising safety.

4. Ticketing and Mobile App
- Develop an intuitive, user-friendly, and well-signposted service for **easy ticket acquisition and payment**.
- Enhance the functionality of the mobile app, eliminating bugs, ensuring reliability, speed, and usability. The app should accurately provide bus schedules and enable **agile ticket purchase/recharge**.
- Establish an appropriate pricing structure with different ticket options, including cheaper tickets and discounts.

5. Service Accessibility and Connections
- Extend the service time slots, especially for night service, to cater to the needs of passengers during all hours of the day.
- Establish good connections between the bus service, airports, and other means of transportation.
- Improve accessibility of bus stops and buses for individuals with disabilities, the elderly, and those using baby carriages. This includes features like ramp lighting and other accommodations.

6. Safety and Security
- Avoid fines by providing clear explanations and easy-to-understand instructions for using the service.
- Establish clear rules for users and promote respect among passengers.
- Implement improved security measures to **prevent theft and other safety concerns**.
- Ensure well-located bus stops for convenient access and visibility.

1. Cleaning, Maintenance, and Upgrades
- **Implement** a comprehensive cleaning and maintenance program for trains, stations, escalators, and vending machines, with particular emphasis on suburban areas.
- **Conduct** regular maintenance and renovation of trains to ensure their reliability and performance.
- **Enhance** comfort, efficiency, and usability of the train service through upgrades and improvements.

2. Service Coverage and Connections
- **Establish** good connections between the train service, airports, major city hubs, and other modes of transportation.
- **Expand** the train network to ensure comprehensive coverage with enough lines and stops to serve all areas.

3. Security, Punctuality, and Frequency
- **Improve** security measures to prevent theft and other safety concerns for passengers.
- **Increase** the frequency of trains to provide more frequent service and reduce waiting times.
- **Emphasize** punctuality, speed, and reliability of the train service, ensuring precision in adherence to schedules.

4. Ticketing, Accessibility, and Customer Service
- **Minimize** or eliminate fines for failures or lack of knowledge, especially for tourists, such as accidental ticket disposal before leaving.
- **Enhance** accessibility for individuals with reduced mobility, baby carriages, and other special needs.
- **Improve** customer service by addressing inquiries and incidents in a friendly manner, catering to multiple languages, and ensuring helpful staff.
- **Offer** a variety of ticket types, including day passes, weekly passes, and monthly passes.
- **Establish** an adequate pricing structure that balances affordability with the quality of service provided.
- **Ensure** clear and visible signage, complete and reliable information on screens, websites, and other platforms.

5. Comfort and Rules
- **Provide** appropriate air conditioning on trains to maintain a comfortable environment for passengers.
- **Establish** clear rules of use and behavior, including effective supervision, communication campaigns, and sanctions, to encourage respectful behavior among users.
- **Expand** the night service to cater to passengers during late hours.

6. Technological Improvements
- **Implement** troubleshooting measures to minimize problems or errors with ticketing machines and other systems.
- **Optimize** the interior space of trains through redesigning to maximize capacity and comfort.
- **Facilitate** various forms of payment, eliminating the need for a physical card and allowing alternative payment methods.

7. Multi-Modal Transportation Options
- **Consider** allowing passengers to bring bikes on the train, even if they are not collapsible, to promote multi-modal transportation options.

1. Driver Behavior and Efficiency:
- Train and encourage **friendly** and **professional** behavior among drivers.
- Emphasize taking **faster** and **shorter routes** while maintaining **efficiency**, **safety**, and **flexibility**.
- Accommodate changes in routes when necessary.

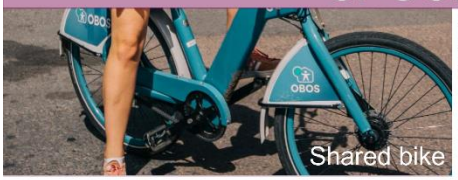
2. Service Quality and Customer Support:
- Prioritize **speed**, **punctuality**, **reliability**, and **precision** in taxi services.
- Provide good **customer service** with **fast**, **flexible**, and **friendly assistance**.
- Streamline the process of **hailing a taxi**.
- Develop a **useful**, **reliable**, and **user-friendly** mobile app for taxi services.
- Explore the use of **low-emission** taxis for environmental sustainability.

3. Pricing and Transparency:
- Establish a good **pricing structure** that offers **value for money** and accommodates various forms of payment.
- Ensure **transparency** in pricing and rates, offering **fixed prices**.
- Establish an **automatic refund system** for overpayment or other refund situations.

4. Vehicle Condition and Accessibility:
- Maintain **clean** and **comfortable** cars.
- Increase taxi service **availability** during nighttime hours.
- Make taxis more **accessible**, including suitable car seats and accommodations for passengers with specific accessibility needs.
- Implement a system for **recovering lost items** in taxis.

5. Additional Services and Convenience:
- Increase taxi **availability** and **accessibility**.
- Provide dedicated taxi services to and from **airports**.
- Consider offering a **home pick-up service**.
- Allow passengers to specify **preferences**.
- Promote **multilingualism** among drivers.
- Remove unnecessary **restrictions** on travel destinations.

6. Conclusions & actions



1. Customer Service and Communication
- Implement an option for **customer service in different languages** to cater to the needs of tourists.
- Ensure that system failures are **solved quickly, efficiently, and without any additional costs** to the customers.
- Develop a system that avoids charging customers for system or service failures and provide **advisories** to address common issues.

2. Bike Stations and Infrastructure
- Establish **well-sized bike stations** with an adequate number of spaces and bikes, balanced according to user demand and real-time information.
- Ensure that bike stations are **conveniently located near bike lanes** and other transportation options, promoting intermodality.
- Establish a comprehensive, well-signposted, and safe network of **bike lanes**.
- Consider implementing bikes and covered stations in cities with **rain and/or harsh weather conditions** to ensure customer comfort and protect the equipment from damage.

3. Bike Improvements and Accessories
- Improve the bikes by addressing concerns such as excessive weight, inadequate suspension, and introduce **electric rental solutions** and accessories for transporting children or purchases.
- Provide accessories for customers, including **holders for mobile devices**, **child seats**, and **cargo options** for purchases.

4. Mobile Application and Real-time Information
- Develop a **mobile application** that provides real-time information about the availability of bikes and spaces, ensuring its reliability, usefulness, and user friendly interface.

5. Pricing and Payment
- Establish transparent and appropriate **pricing options** with different types of tickets for various customer needs, including single tickets, 24-hour passes, weekly passes, etc.
- Improve the service by adapting to new, simpler, and more agile **payment and rental methods**, such as reducing the deposit amount, offering a 45 minute free rental period, and ensuring the refund of deposits within a maximum of 24 hours.
- Enable **mobile payment options** to enhance convenience for customers.

6. Continuous Improvement and Safety
- Continuously improve the service to meet the changing needs of both residents and tourists.
- Promote respect among all citizens for bike lanes and cyclists to ensure a safe and harmonious coexistence with other road users.

1. Service Excellence and Usability:
- Ensure an **easy-to-use service** that is **simple, fast, agile, and satisfactory**, minimizing system errors such as **incorrect charges**.
- Develop a **usable, functional, useful, and flawless mobile app** for seamless interaction with the service.
- Set a suitable and **transparent price structure** that is easily understandable to users.

2. Customer Service and Support
- Provide **fast, decisive, and adequate customer service** with **24-hour availability** and a focus on **kindness and responsiveness**.
- Offer **discounts based on usage and user profiles** to incentivize frequent and loyal customers.

3. Service Quality and Maintenance
- Deliver a **quality and reliable service** by ensuring **motorcycles work well**, are **easy to drive**, and undergo regular **maintenance and cleanliness**.
- Design motorcycles and e-scooters to be **attractive, comfortable, functional, and durable**.
- Provide **insurance coverage** that is integrated with the rental service and adequately protects users.

4. Expansion and Availability
- Establish the service as a **viable alternative to other forms of transportation** by **improving, regulating, and maintaining** it effectively.
- Maintain a sufficient **availability of motorcycles/e-scooters** to meet user demand at various locations.
- **Expand the service radius** to cover areas that currently do not have access to the service, improving its availability and reach.

5. Payment and Transactions
- Implement **agile and simple forms of payment and rental processes**, minimizing the need for large deposits or excessive personal information.
- Ensure **automatic return of funds** within a timeframe of less than 24 hours for smoother transactions.

6. Parking and Orderliness
- Enforce proper **parking protocols** to prevent disorderly parking that may inconvenience pedestrians or disrupt public spaces.

7. International Compatibility
- Ensure **compatibility with international cards**, including cards from other countries such as the US.

8. Data Security and Privacy
- Establish robust and secure management practices for handling **personal data**, prioritizing user privacy and data protection.

1. Customer Service Excellence
- Implement **good customer service practices** with **professionalism** and **excellent treatment** towards users.
- Minimize fines and charges for service or system failures by addressing common issues such as **malfunctioning doors**, **app errors**, **parking difficulties**, **locking/unlocking problems**, **unrecorded returns**, and **double admission fee charges**.

2. Service Development and Accessibility
- Develop a **useful** and **practical service** that serves as a **viable alternative** for individuals without a car, offering **convenience** and **flexibility**.
- Ensure the service caters to both **city transportation needs** and **trips outside the city center**.

3. Competitive Pricing and Value
- Set a **suitable** and **competitive pricing structure** that costs **less than owning a car**, providing **good value for money** and offering **free registration**.

4. Charging Efficiency and Reliability
- Prevent charging problems by maintaining electric cars with a **battery charge level of more than 30%**, ensuring **reliable autonomy indications**, avoiding fines for **low battery levels**, preventing **false or disproportionate mileage charges**, and ensuring the presence and functionality of **charging cables**.

5. Fast and User-Friendly Experience
- Offer a **fast and user-friendly service** that allows users to access and start using cars within **four minutes**, emphasizing **simplicity** and **ease of use**.
- Develop an **intuitive and well-functioning mobile app** that is **easy to use** and provides a **seamless experience** for users.

6. Vehicle Condition and Variety
- Ensure cars are in **good working condition**, **easy to drive**, and **comfortable**, preferably offering a **variety of models and typologies**, including **automatic transmission options**.
- Maintain cars in **good condition**, regularly **cleaning** and performing necessary **maintenance tasks** to ensure a positive user experience.

ANNEX 2. Delphi questionnaire for social agents

UPPER - Delphi Social agents

Welcome to the DELPHI questionnaire of the UPPER project.

We would like you to share with us your opinions (habits, barriers, strengths and improvements) regarding the mobility and public transport, both in the city and in the urban environment, of the different social groups.

The Europe Missions UPPER project, aims to increase the use and satisfaction of public transport, improving the public transport and implementing active mobility measures in 10 European cities that will generate successful initiatives applicable to other EU cities.

The "DELPHI" activities consist of the following tasks:

1- To detail the typical displacements of the collectives that you represent.
2- To identify the main barriers of public transport for these collectives.
3- To identify the successful cases of the use of public transport in these collectives.
4- To explain the necessary improvements to incentivize the public transport in these collectives.

The deadline to fill up the questionnaire is March 15th.

This participation is completely anonymous. No personal data will be requested (only a few socio-demographic characteristics). If you consider that any of these demographic questions could reveal any personal data, please, do not answer. The information will be analyzed in aggregate and grouped form. No specific data or cases will be identified.

Thank you very much for your cooperation!

UPPER - Delphi Social agents

Some information about you

1. Please indicate the social sectors you work with:

- [ ] Childhood and/or young people
- [ ] Woman and/or gender perspective
- [ ] Older people
- [ ] Functional Diversity/ Physical
- [ ] Functional Diversity/ Visual
- [ ] Functional Diversity/ Hearing
- [ ] Functional Diversity/ Cognitive
- [ ] Migration, refugees and ethnic minorities
- [ ] Poverty
- [ ] Other:

2. Please indicate the entity that you represent:

3. Indicate your occupation / position in the entity:

4. Indicate the years of experience with the collective:

5. Indicate the modes of travel that people from the group you represent usually use:

	Walking	By bike	On skate or scooter	On motorcycle	By car	By public bus	By contracted bus	By metro/tram	By taxi
To go to work/studies/care center...	☐	☐	☐	☐	☐	☐	☐	☐	☐
To make personal management/purchases...	☐	☐	☐	☐	☐	☐	☐	☐	☐
For leisure and free time in the city	☐	☐	☐	☐	☐	☐	☐	☐	☐

Other:

UPPER - Delphi Social agents

MOBILITY EXPERIENCES OF SOCIAL GROUPS AT RISK OF EXCLUSION FROM PUBLIC TRANSPORTATION

In this section we are going to ask you about the factors that limit access to public transport, the factors that favour the use of public transport, and the improvements that must be made in public transport to increase the use of peopl in the collective who you represent.

1. Detail the way in which the people you represent usually get around the city:

2. Explain the reasons and **factors that limit or hinder the use** of public transport for the people you represent:

3. Explain the reasons and **factors that favors the use** of public transport for the people you represent:

4. Explain the **necessary improvements to increase the use** of public transport by the people you represent:

ANNEX 3. Second round Delphi questionnaire

UPPER - SECOND ROUND DELPHI

Welcome to the second round DELPHI questionnaire of the UPPER project.

We would like you to validate the information that integrate the diagnosis of the public transport (barriers, strengths and expectations/improvements). The agreement level and the necessary aspects to complete the diagnosis.

The Europe Missions UPPER project, aims to increase the use and satisfaction of public transport, improving the public transport and implementing active mobility measures in 10 European cities that will generate successful initiatives applicable to other EU cities.

The "DELPHI" second round activities consist of the following tasks:

1- To detail the agreement level of the identified barriers.
2- To detail the agreement level of the identified strengths.
3- To detail the aspects and factors missing in the diagnosis.

The deadline to fill up the questionnaire is May 7th.

This participation is completely anonymous. No personal data will be requested (only a few socio-demographic characteristics). If you consider that any of these demographic questions could reveal any personal data, please, do not answer. The information will be analyzed in aggregate and grouped form. No specific data or cases will be identified.

Thank you very much for your cooperation!

UPPER - SECOND ROUND DELPHI

Some information about you

1. Please indicate the sectors you work with:

- [ ] PTO's, PTA's and road authorities
- [ ] Cities and regions
- [ ] Technology providers
- [ ] Consultancy and research
- [ ] Network
- [ ] Community of users (pedestrian, cycling, public transport...)
- [ ] Childhood and/or young people
- [ ] Woman and/or gender perspective
- [ ] older people
- [ ] Functional Diversity (physical, visual, hearing, cognitive)
- [ ] Migration, refugees and ethnic minorities
- [ ] Poverty
- [ ] Other:

2. Please indicate your country:

3. Please indicate the entity that you represent:

4. Indicate your occupation / position in the entity:

5. Indicate the years of experience with the collective:

UPPER

UPPER - SECOND ROUND DELPHI

Agreement level and other factors description

6. Please indicate the agreement of the identified barriers (slides 4, 10, 11, 12, 13, 14, 15):

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	N/A
Mobility agents - Management	○	○	○	○	○	○
Mobility agents - Resources	○	○	○	○	○	○
Mobility agents - Multimodality	○	○	○	○	○	○
Mobility agents - Quality & Inclusion	○	○	○	○	○	○
Mobility agents - Behavioural change	○	○	○	○	○	○
Mobility agents - Smart Mobility	○	○	○	○	○	○
Social agents - Accessibility	○	○	○	○	○	○
Social agents - Economic resources	○	○	○	○	○	○
Social agents - Smart communication	○	○	○	○	○	○
Social agents - Sensitization & awareness	○	○	○	○	○	○
Social agents - Quality	○	○	○	○	○	○
Social agents - Environmental impact	○	○	○	○	○	○

7. Explain the factors and aspects that are missing in the diagnosis about the barriers: (Please, indicate the topic of reference)

8. Please indicate the agreement of the identified values (slides 5, 16, 17, 18):

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	N/A
Mobility agents - Management	○	○	○	○	○	○
Mobility agents - Resources	○	○	○	○	○	○
Mobility agents - Multimodality	○	○	○	○	○	○
Mobility agents - Quality & Inclusion	○	○	○	○	○	○
Mobility agents - Behavioral change	○	○	○	○	○	○
Mobility agents - Smart Mobility	○	○	○	○	○	○
Social agents - Accessibility	○	○	○	○	○	○
Social agents - Economic resources	○	○	○	○	○	○
Social agents - Smart communication	○	○	○	○	○	○
Social agents - Sensitization & awareness	○	○	○	○	○	○
Social agents - Quality	○	○	○	○	○	○
Social agents - Environmental impact	○	○	○	○	○	○

9. Explain the factors and aspects that are missing in the diagnosis about the values: (Please, indicate the topic of reference)

10. Please indicate the agreement of the identified improvements and expectations (slides 6, 19, 20):

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	N/A
Mobility agents - Management	○	○	○	○	○	○
Mobility agents - Resources	○	○	○	○	○	○
Mobility agents - Multimodality	○	○	○	○	○	○
Mobility agents - Quality & Inclusion	○	○	○	○	○	○
Mobility agents - Behavioral change	○	○	○	○	○	○
Mobility agents - Smart Mobility	○	○	○	○	○	○
Social agents - Accessibility	○	○	○	○	○	○
Social agents - Economic resources	○	○	○	○	○	○
Social agents - Smart communication	○	○	○	○	○	○
Social agents - Sensitization & awareness	○	○	○	○	○	○
Social agents - Quality	○	○	○	○	○	○
Social agents - Environmental impact	○	○	○	○	○	○

11. Explain the factors and aspects that are missing in the diagnosis about the improvements and expectations: (Please, indicate the topic of reference)

12. Finally, indicate the agreement with the conclusions (slides 7 and 21) and explain the factors and aspects that you miss:

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	N/A
Mobility agents conclusions	○	○	○	○	○	○

Extend or explain the factors and aspects that you miss:

Social agents conclusions	○	○	○	○	○	○

Extend or explain the factors and aspects that you miss:

ANNEX 4. Delphi results

A. López – C. Soriano – J. Giménez

DELPHI questionnaire for mobility agents and social agents. WP2 - T2.1

IBV – Instituto de Biomecánica de Valencia

This project has received funding from the Horizon Europe research and innovation programme under grant agreement No 101095904

June 2023

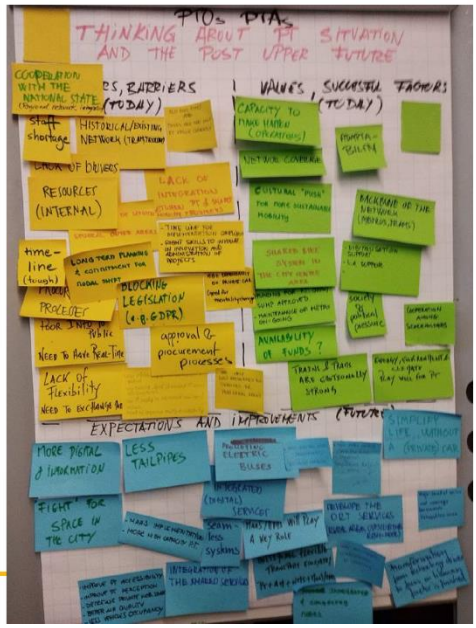
WP2 - T2.1 DELPHI: QUALITATIVE PUBLIC TRANSPORT DIAGNOSIS WORKSHOP (MOBILITY AGENTS)

Almost all the consortium was participated in the workshop. A total of 43 professionals were involved in the session.

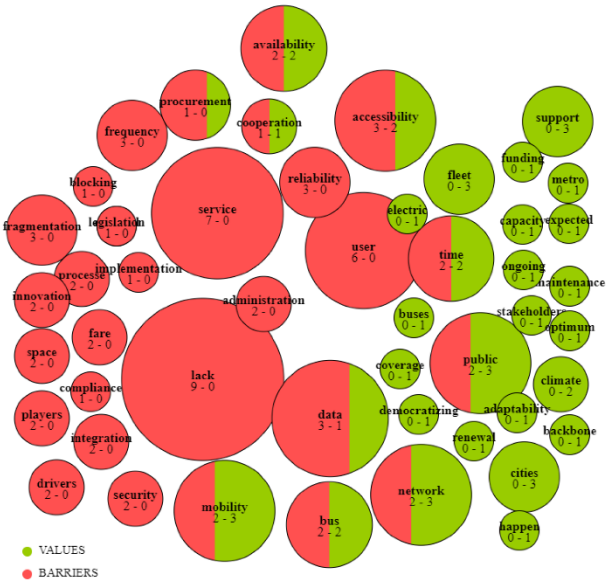
In the first round, participants were distributed in 4 groups by partner profile. In the second round, participants was contributed in others flip charts, moving around them.

One WP leader moderated each flip chart, explaining the main contributions and listening to participants during the 2 rounds.

Partners wrote in post-its their contributions related to requirements, needs, problems, expectations, barriers… for each flip chart.



WP2 - T2.1 DELPHI: QUALITATIVE PUBLIC TRANSPORT DIAGNOSIS WORKSHOP (MOBILITY AGENTS)



STOPPERS	
Management	Cooperation with the National State (Regional network integration), Time-line (tough), Time line for implementation compliance, Procurement processes, Blocking legislation (e.g. GDPR), Approval & procurement processes, Having to create login & username & password for each app, Rest on laurels (world is progressing, no change=regression), Innovation process (procurement, specification tests/demos), Fragmentation of PT competences among different administrations (planning, execution, …), Accessibility public space (many players, operators not aware, municipalities more worries with sojourns than PT), Lack of efficiency, Not appropriate communication, Too many players but little coordination, Complex fare system.
Resources	Staff shortage, Historical/existing network (tram, trolley), Old bus fleet and buses are the only PT option currently, Lack of drivers/Resources (internal), Right skills to involve in innovation and administration projects, Lack of flexibility/Need to exchange nodes, Congestion, Frequencies too low <> users too low (investment), Recruiting of drivers (lack of drivers), Not enough drivers, Complexity (modelling requires personnel, knowledge, …), Poor service (lack of dedicated space for PT).
Multimodality	Lack of integration between PT & Shared mobility providers, Long term planning/Commitment for modal shift, Need to improve multimodality, Bike infrastructure: additional points & security, Lack of data for active modes & some mobility services, Lack of safe cycling infrastructure (parking + to go to PT hubs).
Quality & Inclusion	Frequency of services in several outer areas, Only low frequency bus services for peri urban areas, Low reliability of vehicles (buses+metro), Low service level (frequent PT service interruption), Low PT supply in suburban semi-peripheral areas, PT time table not reliable, Frequency (network problems), PT integration remoted zones, Lack of availability in sub-urban areas, Least adaptable users are most in need (VRUs, …), Safety perception (health, security, access), Reliability and delays (scheduling, aging assets/fleets), Lack of reliability (resilience), Social safety/Lack of security, Unknown to non-daily users, Accessibility in surrounding areas/Intermunicipal PT lines, No clear information in stops/stations, Fragmentation of service between (central) city and outskirts of periphery, Payment accessibility (credit cards can be difficult for some people), PT is not always attractive (expensive, bad timetables, …), Fragmentation of fares & tickets (not catering for different users, e.g. occasional users).
Behavioural change	High dependency on private car (need for mentality change), Political will to implement (unpopular measures), Mindset of users must be changed (PT reputational aspects), Health restrictions (e.g. COVID-19), Sensitive to cyber-attacks.
Smart Mobility	Lack of understanding of customers+data, Proper user data, Public transport information is not integrated (EMT-Fernanbus-FGV), Customer information, Data availability, Data provision from PTOs, Digitalization (assumption).

IBV

VALUES	
Management	Adaptability, Cooperation among stakeholders, Democratizing mobility.
Resources	Capacity to make happen (operations), New electric buses procurement, Bus fleet renewal, Network coverage, Backbone of the network (metros, trams), An optimum of expected funding for PT (now), Maintenance of metro ongoing, Availability of funds?, Energy, PT network, Public transport facilities, Bus company owned by municipality, Low fare or free, Renewed fleet (mostly electric), Decarbonisation of fleets, Green PT + mobility (H_2, e-buses), Incentives (discounts for students, elderly, …), Cheap (for users).
Multimodality	Shared bike system in the city centre area, Efficient connection of PT modes among them + with other (active) modes, Multimodal hubs (including cycling), (good) Service drives demand & reinforces modal shift, Intermodality.
Quality & Inclusion	Good connection between cities, Ticketing integration, Accessibility (pedestrian, PT), PT stops (90% barrier free in Manheim), Serving all users, Intuitive use of system, Accessibility to opportunities, Equity justice/Gender age, Safety/Security, Sustainability, Good service in capital cities or big cities.
Behavioural change	Cultural push for more sustainable mobility, Society & Political pressure, SUMP approved, Trains & Trams are emotionally strong, Environment & climate play well for PT, Climate aware (new generation), PT time = usable time (work, phone, read, …), (air) Less pollution/more green/cleaner spaces, Public acceptance: PT is identified as an important asset.
Smart Mobility	Digitalisation support, IA support, Pilot project on demand Sprinti, Semaphore coordination + harmonization of PT, Sensorization (app → taxi, persons with reduced mobility), Data availability, Robust evaluation framework (data)/Close the debate/Scale up with public support, Traffic and PT management & data (AI tech).

IBV

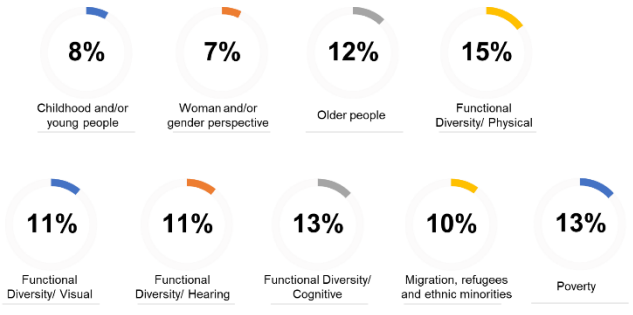
EXPECTATIONS	
Management	Will the public sector host a central booking platform? (if so, huge CO_2 & congestion savings).
Resources	Less tailpipes, Fight for space in the city, More high capacity PT, Promoting Electric buses, New metro system (main line+one extension, More money for PT infrastructure, Dedicated lanes on all crucial segments, More infrastructure dedicates (bus lanes), Decarbonised.
Multimodality	Maas/MDMS will play a key role, Multimodal flexible transport ecosystem, PT+AM+NMS+MaaS/MDMS, New multimodal interchanges in operation, Multimodal monthly pass (all integrated with active modes), Change modal split to enhance PT (more users), Integration of different modes, Freedom of choice in different kind of mobility options.
Quality & Inclusion	Improve PT accessibility, New PT options for all users (inclusive), Develop the DRT services (rural areas, outside the rush-moor), High level of service and coverage for the whole metropolitan area, Automated high frequency lines with peripheral hubs, Reduced transportation time, Better connexions reducing trip time, Increase of frequency, Seamless, fast, efficient, pleasant/Connections, Defining mobility as a Right (not just more PT), Better metropolitan transport network, High levels of walkability & accessibility, Comfort, Inviting, Develop PT away from (male) commuter centricity, Good service for surrounding areas, Mobility as a Right for all users (inclusiveness), More inclusive (vulnerable groups), More sustainable, Have a more user-centric approach, Inclusive digital flexible services (not exclusively digital), Accessibility as nº1 priority.
Behavioural change	Improve PT perception, Decrease private mobility share, Better air quality, Less vehicle occupancy, Transformation from technology driven to focus on human factor is finished, Increase PT use by kids and students, PT as a healthy way of getting around the city.
Smart Mobility	More digital & information, MaaS implementation, Better integrated (digital) services, Seamless systems, Integration of the shared services, Integrated/Connected modes, Simplify life without a private car/Better quality of life, Better data analysis + dashboarding, Automated minibuses door to door, Inclusion of multiple modes in one app (MaaS), Door-to-door mobility (family or individual), Interoperability (ticketing, MaaS, PT & micro-providers of mobility & shared mobility), Growing role of DRT & private hire of robotaxi (at least in suburbs and rural), Reliable real-time information, Tools are fitting the needs, Users are at ease with the tools (know how to use the tools, what they can do with them), Information, MaaS, Digitalised (more), Full inclusion of cycling in digital solutions (e.g. route planning, with high quality static + dynamic data).

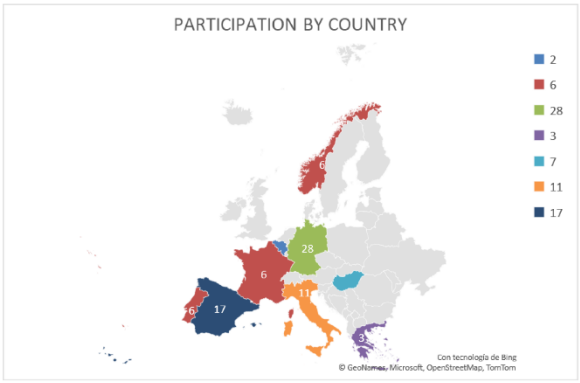
WP2 T2.1 DELPHI (first round)– Some conclusions

Mobility agents

- Considering the amount of contributions, the results suggest the lack of *Quality & Inclusion* and *Management* are the main PT *barriers* today.
- Following this rationale, the following level of barriers are *Resources* and *Multimodality*. *Behavioural change* and *Smart mobility* seem to be low level *barriers*
- Regarding values, *Resources* is the most relevant strength of PT.
- The *Behavioural change* of the citizenship and the arriving of new technology related to data seem to be important assets for the PT.
- Although *Quality & Inclusion* has also many contributions in *values*, the amount of comments related to *expectations* suggest that this is an important improvement factor for PT.
- *Expectations* in PT seem to be mainly related to the improvement of the *Quality* of the service and the *Inclusion*, and the implementation of *Smart* tools for the mobility.
- Multimodality seems to be a relevant aspect of PT, to play an important role in the near future.

WP2 - T2.1 DELPHI: QUALITATIVE PUBLIC TRANSPORT DIAGNOSIS WORKSHOP (SOCIAL AGENTS)





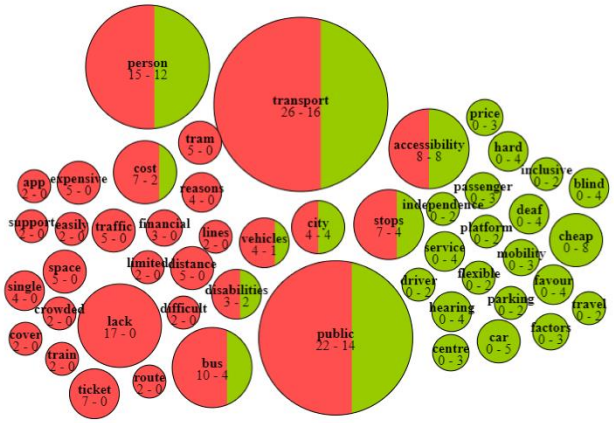
A total of 97 professionals from social sector were involved in the DELPHI online questionnaire across Europe.

In the first round, the participants were asked about habits, requirements, problems, barriers, necessary improvements, … for each social group with which they work.

All of the social groups considered have obtained responses and all the countries in the project have participated.

IBV

WP2 - T2.1 DELPHI: QUALITATIVE PUBLIC TRANSPORT DIAGNOSIS QUESTIONNAIRE (SOCIAL AGENTS)



IBV

WP2 - T2.1 DELPHI: QUALITATIVE PUBLIC TRANSPORT DIAGNOSIS QUESTIONNAIRE (SOCIAL AGENTS)

STOPPERS	
General barriers	**Accessibility:** Factors hindering access to public transport are found on two fronts: on the one hand, architectural barriers that do not allow access to public mobility, such as the lack of working platforms in buses, lifts in the metro, and sound signals at bus stops; on the other hand, barriers to mobility on the road (disconnected pavements, lack of wheelchair passages) do not allow people with disabilities to move safely from bus stops to their destinations, further discouraging the use of public transport; Shortage of space, hard to get of/on buses, trains etc; Long distances and a urban space full of obstacles; Doors are rarely placed correctly according the markers on the placements; Lack of universally designed stop and means of transport when getting on and off; Some stops not barrier-free; Risk of falling especially in buses. **Economic resources:** Expensive tickets, Too high costs. **Smart communication:** Lack of information to be able to plan the trip well; Lack of information about which line is coming and where it stops; Lack of information and support on unforeseen events and deviations; Lack of confirmation that I`m on the right track and when to get off; Lack of reliable information access in the event of cancellations at short notice; Important information is usually not available in the form needed. **Sensitization and awareness:** Lack of help from drivers; The drivers seems stressed because they are always late; Not every driver drive close enough to the platform; The drivers are not service minded; Varying degree of service attitude from service personnel; Negative meetings between passengers; Careless behaviour of other passengers. **Quality:** Too traffic; Long distances and waiting times; The traffic congestion and the limited forms of public transports available to cover high distances within the city; The city is not well served by means of transport; The limited number of available means; The frequent delays there are no direct means of transport and the journey time by means doubles; The old trams are still impossible; Some buses are dangerous; The start and stops are very abrupt; Public transport is not easily available and it's very busy and slow; Too little space in the trains for walkers/wheelchairs; Overcrowded trains and buses especially at peak times or in the event of cancellations.

WP2 - T2.1 DELPHI: QUALITATIVE PUBLIC TRANSPORT DIAGNOSIS QUESTIONNAIRE (SOCIAL AGENTS)

STOPPERS	
Older people	**Accessibility**: Stops that are not barrier-free; Vehicles of the local traffic that are not barrier-free; Step to high to get on the bus of train, bus firmly of unexpected stopping and starting is dangerous for fall-prone patients; There are many bus or tram lines doesn't have buses or trams with low floor, therefore the elderly people or people using wheelchair cannot use the buses or trams with stairs on it; Some metro lines there are no elevators on the metro stations; Too long distance to next stop; Many buses and trams are not yet barrier-free, it is difficult to get on and off; Reduced mobility - difficulty walking to public transport; Accessibility of public transport is problematic, mostly as far as access to bus stops and bus stations is concerned; Risk of falling, especially on buses; Too little space in the trains for walkers/wheelchairs, Some stops not barrier-free; Fear and risk of falling, of being pushed around; Difficulty getting on the bus (height of the step, getting on with a cane, walker, tiredness of waiting, there are not always benches). **Economic resources**: Too little money to buy a ticket; Too high fares. **Smart communication**: Information that is not accessible without barriers; The lack of guidelines that guides the blind people through a square to help them go straight; Navigating the system because of a disability, cognitive difficulties make it difficult to understand information and understanding how to get where they need to go; Apps of the local traffic are not barrier-free; The 2-senses principle is missing; Older people often illiterate; Lack of reliable information access in case of short-term cancellations; Difficult to look at. **Sensitization and awareness**: There are no accompanying tickets for relatives, as neither old age nor dementia is considered disabilities that would allow the use of an accompanying ticket; Passengers are not very polite, so they often do not give up their seats to those in need; Due to the stigmatization of dementia and the often "strange" behavior associated with the condition, those affected and their relatives are reluctant to participate in public transport; In many cases the vehicles themselves are overcrowded and lack audible and visible information; Problems concerning staff behaviour towards disabled users have also been mentioned; Careless behaviour of other passengers; Fear when there are too many people. **Quality**: Public transport can be very busy, stressful to get off or to get a seat; Public transport vehicles are often crowded; Ice and snow in winter; Uses on the hilly part are rare and many areas are not sufficiently covered by the service; Speed, height of steps, waiting time, walking distance; Overcrowded trains and buses, especially at peak times or when there are cancellations; Road works, and delays; Noise/music; Fear of being attacked.

WP2 - T2.1 DELPHI: QUALITATIVE PUBLIC TRANSPORT DIAGNOSIS QUESTIONNAIRE (SOCIAL AGENTS)

STOPPERS	
Functional Diversity/ Physical (I)	**Accessibility**: Lack of barrier-free stops, sidewalks, sidewalk islands, and believed to be barrier-free but not correctly constructed (according to the regulations and standards); Lack of barrier-free suburban trains multiplies the time it takes to get into the city center; In some areas even if the vehicle is step-free, the platform height is not adapted to the entry height of the step-free vehicle, so it is difficult or impossible to use them with wheelchairs or electric mopeds; accessibility of stops and buses (willingness of drivers...) varies a lot no reservation necessary anymore but non-accessible stops still limit independent use perception is still very negative; On an unknown route the lack of barrier-free access for vehicles, sidewalks and sidewalk islands hinders and makes wheelchair users uncertain; There are few elevators in the subways; Disabled people riding mopeds are not allowed to get on buses; In the metro some places the gap between the train and station is too large, especially for those with electric wheel chairs; Reduced mobility difficulty walking to public transport; Accessibility of public transport is problematic, mostly as far as access to bus stops and bus stations is concerned; Stops that are not barrier-free; Vehicles of the local traffic that are not barrier-free; Public transport is not fully accessible, neither bus-stops or buses so many have persons with disabilities who do not drive themselves have to use taxi to get around; Architectural barriers on public roads and access to transport and within the transport itself (absence or ineffectiveness of escalators and elevators in metro stations); Lack of accessibility in public transport vehicles or poor timing of usable vehicles; Lack of reliable information access in the event of cancellations at short notice; Risk of falling, especially in buses; Broken ramps or lifts restrain the capability of using buses and the subway, which combined to the uncertainty of the availability of these equipment lead to people being less available to use public transport, as they might loose their time or not even being able to get out of certain places. **Sensitization and awareness**: Accessibility of stops and buses varies a lot because the willingness of drivers; In the event of a service interruption, replacement buses are with stairs and not a low-floor one; Another handicap is the fact that where barrier-free access is solved with the help of the driver, in this case it also depends on the technical condition of the vehicle (whether there is a suitable ramp) and the attitude of the driver, and thus it cannot be said to be smooth; In many cases the vehicles themselves are overcrowded and lack audible and visible information; Problems concerning staff behaviour towards disabled users have also been mentioned; Careless behaviour of other passengers. **Smart communication**: Navigating the system because of a disability, cognitive difficulties make it difficult to understand information and understanding how to get where they need to go; The 2-senses principle is missing; Information that is not accessible without barriers; Apps of the local traffic are not barrier-free; as well as communication signs - sound signals, subtitles - that allow autonomous use , by people with disabilities; Unreliable information about when which vehicle is used; **Quality**: Outdated vehicles that are not low floored (mostly trams) and unfrequently low floored vehicles; You can get to many places with low-floor buses, but only with roundabouts, which significantly extends the time to get from A to B; The main reasons are related to the reliability of the network; Too little space in the trains for walkers/wheelchairs; Overcrowded trains and buses, especially at peak times or during cancellations;

WP2 - T2.1 DELPHI: QUALITATIVE PUBLIC TRANSPORT DIAGNOSIS QUESTIONNAIRE (SOCIAL AGENTS)

STOPPERS	
Functional Diversity/ Physical (II)	**Accessibility:** Lack of accessibility: If public transport is not accessible to persons with disabilities, it is difficult or impossible for them to use it; Lack of ramps, lifts, platform lifts and other accessibility devices on public transport vehicles and at public transport stops can be a barrier for persons with disabilities; Lack of transport adaptations: If public transport vehicles are not adapted to meet the needs of persons with disabilities, it is difficult for them to use them; Lack of wheelchair spaces, anchoring devices and other adaptive systems can be a barrier for some persons with disabilities; City buses have space for a PRM and do not have anchorages; In public buses, the armrests of the reserved seats; Not being able to punch the voucher because they do not have access to it; Failure in the ramps or that it is so full that you cannot get on or maneuver; Taxis can only transport mechanical wheelchairs (those who can get into the car!), they cannot transport electric wheelchairs. **Smart communication:** Lack of information: If information about public transport is not clear or accessible to persons with disabilities, it can be difficult for them to understand how to use it and plan their journeys; Lack of information in accessible formats, such as large text, Braille, audio and plain language, can be a barrier for some persons with disabilities; **Sensitization and awareness:** Lack of staff training: If public transport staff are not trained to deal with persons with disabilities, it may be difficult or uncomfortable for them to use public transport; Drivers and other staff need to know how to interact with persons with disabilities and provide assistance if needed; Discrimination and prejudice: If persons with disabilities are discriminated against or face prejudice when using public transport, they may be less likely to use it; Lack of awareness and respect for the needs of persons with disabilities can be an obstacle to their inclusion in society; Most are not autonomous in their movements in public spaces, so many travel with an accompanying person; There is little social awareness of facilitating access for PRM; Sometimes you have to ask for support in advance to be able to use a station; Having to go with a companion; **Quality:** Not being sure if you are going to be able to take the transport as you do not know if there is space for PRM; The reduced number of seats, the space as they use large chairs; Having to make several transfers; The distance to the stop from their homes and the access to the public road.

WP2 - T2.1 DELPHI: QUALITATIVE PUBLIC TRANSPORT DIAGNOSIS QUESTIONNAIRE (SOCIAL AGENTS)

STOPPERS	
Functional Diversity/ Visual and hearing	**Accessibility:** Few sidewalks have tactile paving in order to find the bus stop; Dangerous sidewalk with variety of obstacles; Most of buses do not have audible signs inside the buses for the stops; Lack of big size letters on the front and the side the bus for low vision passengers; Unfindable stops for blind people not barrier-free. **Economic resources:** Expensive taxi; **Smart communication:** The light signals, the audible warnings and the written messages depend a lot on the location of the person inside the carriage, the lighting conditions and the noise level; The lack of guidelines that guides the blind people through a square to help them go straight; If they announce over the public address system that there has been a breakdown, the deaf person does not find out; Sometimes they try to talk to the driver and can't because they don't understand each other, there should be an interface or a magnetic loop (especially with the taxi drivers); Lack of audible 'beeping' signals on the traffic lights; Lack of communication signs, sound signals, subtitles, that allow autonomous use , by people with disabilities; The communication accessibility of public transport has not yet been solved. There is a lack of textual display of spoken information and no textual display of spoken communication on vehicles. In case of emergency, there are no solutions to rescue deaf and hard of hearing people; There is no accessible version of passenger information; There is no special emergency signaling for the hearing impaired in the lifts to the platforms; There are no signal amplification systems in ticket offices; Staffs are not trained to receive hearing impaired passengers; **Quality:** Very few buses per line, so usually are already full.
Functional Diversity/ Cognitive	**Accessibility:** Many buses and trams are not yet barrier-free; It is difficult to get on and off; **Smart communication:** The most important thing for people with intellectual disabilities is the availability of easy-to-understand information during public transport; In the absence of this, their sense of security decreases, they need external help and are greatly hindered in their everyday life; They do not have the autonomy to check another itinerary and it is difficult for them to use mobile apps to learn how to get there; **Sensitization and awareness:** They usually do the same route every time; Sometimes they stop doing things because they don't know how to get there or because they don't go alone; They are overwhelmed by the crowds; There are no accompanying tickets for relatives, as neither old age or dementia is considered disabilities that would allow the use of an accompanying ticket; Passengers are not very polite, so they often do not give up their seats to those in need; Due to the stigmatization of dementia and the often "strange" behavior associated with the condition, those affected and their relatives are reluctant to participate in public transport. **Quality:** Public transport vehicles are often crowded.

WP2 - T2.1 DELPHI: QUALITATIVE PUBLIC TRANSPORT DIAGNOSIS QUESTIONNAIRE (SOCIAL AGENTS)

STOPPERS	
Childhood / young people	**Accessibility**: Hard to get of/on busses, trains etc; Some buses are dangerous; Too little space in the trains for walkers/wheelchairs, Some stops not barrier-free; Risk of falling especially in buses. **Economic resources**: Too high costs; Expensive tickets. **Smart communication**: Important information is usually not available in the form needed; Lack of reliable information access in the event of cancellations at short notice. **Sensitization and awareness**: Lack of help from drivers; The drivers seems stressed because they are always late; The start and stops are very abrupt, not every driver, drive close enough to the platform, doors are rarely placed correctly according the markers on the placements; The drivers are not service minded; The dedicated areas for children and disabled, are often crowded by other; Passengers' lack of understanding for children with conspicuous behavior; Careless behaviour of other passengers. **Quality**: Shortage of space, The old trams are still impossible; Public transport is not easily available and it's very busy and slow; Overcrowded trains and buses especially at peak times or in the event of cancellations.
Woman /gender perspective	**Quality**: Connectivity between lines is difficult; Reasons for distance and working hours; The transport network is not very favourable, it is always one-way and uncertain (buses are unpredictable); Not suitable when they live in the suburbs and it takes too long; Overcrowded trams and buses especially at peak times or during breakdowns; Safety and Security.
Migration, refugees, ethnic minorities and poverty	**Economic resources**: Costs for transportation are the main factor (few opportunities for people on low incomes); Financial supplies by the state are nor enough to cover costs for transportation; No ticket sales on the train; Free access to stops and free boarding of the train possible without a ticket (again, fare evasion); Required online payment service or credit card (not available without credit rating); Financial problems single ticket expensive; There is no short-distance ticket for the city area; There is no discounted monthly pass; Collection from the doorstep is complicated and expensive; **Smart communication**: The lack of information about the bus; The lack of information about the stops; Not enough information about public transport and language are further barriers; Disorientation due to lack of language skills; Ticket machines difficult to operate, therefore often wrong ticket (risk of fare evasion high!); Complicated for people without access to the internet or smartphones; Lack of reliable information access in the event of cancellations at short notice; **Sensitization and awareness**: Social tickets limited in number, only available upon personal presentation at an authority; For persons without valid residence there is a residence obligation (obligation to stay in a city throughout - but the city border is not visible in public transport); Increasingly digital tickets; Unsympathetic bus drivers; **Quality**: The few timetables, The crowds of people inside the bus; The narrowness of the bus; The few seats; The limited number of means available; The frequent delays there are no direct means of transport and the journey time by vehicle is doubled; Reasons for distance and working hours; Lack of public transports during some parts of the day and, specially, nigths - this situation affects particularly people who work in shifts; Fear of controls; Poor or no connection to destination, journey times too long in relation to car (1h public transport, 15 minutes car); Sometimes poor connections for clients living in the outskirts of the city or outside; Poor frequency of usable vehicles; Related to this, unreliable information about when which vehicle is used; Bad or no connection to the destination.

WP2 - T2.1 DELPHI: QUALITATIVE PUBLIC TRANSPORT DIAGNOSIS QUESTIONNAIRE (SOCIAL AGENTS)

VALUES	
General values	**Accessibility**: Availability, Accessibility and low-threshold; People must use public transportation because they are unable to drive a car or ride a bicycle due to their disability; Already barrier-free; Already barrier-free stops with audible timetables. **Economic resources**: Public transport is still the cheapest means of transport; Avoid getting fines because there is not much parking in the city; Factors that may favour the use of public transport might be the increase of fuel prices in the recent period; Costs for car, high traffic volume in the city, attractive public transport frequency. **Quality**: Public transports are very useful if we have to reach the city center; Good network of buses and tube lines; In a few minutes you can reach the other end of the city; Fewer road works, few delays; Good public transport connection to the city centre, route on foot not possible or too far. **Environmental impact**: Sustainable and efficient travel; Sustainable and efficient travel;
Older people	**Accessibility**: Bus stop or train station nearby home and direct line to for example hospital, increases independence, quick and no stress when public transport can avoid traffic; In essence, for the experience gained in the service, which accompanies the user to his or her destination, it is necessary not only to have accessible public transport, but a city accessible to transport; Old people travel like everybody else; Barrier-free vehicles; People who are already used to the public transport network find it easier to continue using it after the loss of autonomy; Discovering a new route by being accompanied several times (by a social worker, a nurse or a home help) allows the person to be more autonomous afterwards, to reduce their fears or to find strategies. **Economic resources**: Cheap price for old people. **Sensitization and awareness**: Polite fellow passengers, more priority seats. **Quality**: More frequent service; Smaller crowd; Mobility impaired users mostly prefer the accessible DRT service operated by the local transport operator (OASTh) which utilizes accessible buses and a "door to door" function; Good connection of public transport to the city centre, distance on foot not possible or too far.

WP2 - T2.1 DELPHI: QUALITATIVE PUBLIC TRANSPORT DIAGNOSIS QUESTIONNAIRE (SOCIAL AGENTS)

	VALUES
Functional Diversity/ Physical	**Accessibility:** Elevators and low floor buses and trams on every lines; The accessibility of the metro, turning point in the city's public transport, large number of low-floor vehicles, such as CAF trams, and various buses; For users who lives in peripheral districts, the public transport can be the unique option due to the follow reasons: lack of parking spaces and high fuel prices act as an incentive to use public transport, searching for parking spaces is time consuming, public transport is faster and more favorable, disabled people using public transport can feel like they have "equal opportunities"; The implementation of accessibility features on mainstream public transport services paying the same as everyone else; Public transport that is 'structured' also for those with disabilities (lifts, platforms operating in real time, audible signaling of stops), on the other hand, a road system that allows people with disabilities to move along pavements and streets to easily reach their destination from bus and metro stops; Fundamental to this are wheelchair-accessible pavements; The lack of a driver's license (or the skills required to drive a car) and a private car, forces to use public transport; Transportation by taxi or the transportation services of NGOs are very convenient for wheelchair users; For those who live near barrier-free Subway lines, it is significantly faster to get from A to B by using public transport; **Economic resources:** Relatively cheap and (in theory) flexible. **Quality:** Mobility impaired users mostly prefer the accessible DRT and a "door to door" function; The currently improvements have allowed more people with disabilities to move around the city autonomously.
Functional Diversity/ Visual and hearing	**Accessibility:** Universal design vehicles and stations; Guidelines helping the blind to go straight on the bus stops; Stops with timetables that can be called up acoustically; Correct placement to the dedicated places for the blind aid markers; Routes for the blind, and traffic lights with audible signals, especially near major transport hubs; Audible signaling of stops. **Smart communication:** Information both visually and by sound; The electronic screens that announce stops and news are very helpful.

WP2 - T2.1 DELPHI: QUALITATIVE PUBLIC TRANSPORT DIAGNOSIS QUESTIONNAIRE (SOCIAL AGENTS)

	VALUES
Functional Diversity/ Cognitive	**Accessibility:** When inclusive leisure outings are organised and we go in groups, we use public transport, new routes and stops (they like); Travel like everybody else; Discovering a new route by being accompanied several times allows the person to be more autonomous afterwards, to reduce their fears or to find strategies.
Childhood / young people	**Accessibility:** Childhood and youngers travel like everybody else; No elevation; Free space; Closeness to platform. **Quality:** Smooth stops and starts.
Woman /gender perspective	**Accessibility:** Proximity; No need for parking if you are in the center of the city. **Economic resources:** It is an economical means of transport; Affordable in monetary terms and to be able to go to places where it is impossible or very expensive to go by car. **Quality:** It is more comfortable;
Migration, refugees, ethnic minorities and poverty	**Accessibility:** Accessibility and low threshold; Close to bus stops; Easy access to home pickup options for seniors and those with mobility challenges. **Economic resources:** Cars are much more expensive; Public transport can be more flexible with regard to costs; Due to economic limitations, public transports is the only option for moving; It would be a clear advantage if there were free or significantly cheaper tickets for the target group; Public transport is still the cheapest means of transport; Lower public transport costs; Cheaper monthly tickets. **Sensitization and awareness:** Control staff now multilingual. **Quality:** Public transport is often the only way for longer distances; People have access to services and activities; No car available, public transport offers the possibility of longer journeys; Often accommodation is far away from the city center, so the only option is to use public transport; There is no other means of transport available (bike, car, taxi); Short distances are mostly covered on foot, but longer distances are not possible due to lack of a car, so public transport has to be used, migrants cannot always ride bicycles.

WP2 - T2.1 DELPHI: QUALITATIVE PUBLIC TRANSPORT DIAGNOSIS QUESTIONNAIRE (SOCIAL AGENTS)

IMPROVEMENTS AND EXPECTATIONS	
General expectations	**Accessibility:** Greater range of hours and vehicles; A PT-system designed for everybody; More support for access to vulnerable people; Offensive ongoing positive campaign regarding consideration for passengers with disabilities, elderly people, people with prams, so that the resources made available are also available to this group of people. **Economic resources:** Free public transport or low price for public transport; **Sensitization and awareness:** Ongoing training of the driver as well as the staff (development of an attitude/culture and sensitisation), recruitment of people with disabilities, refugees… **Quality:** Better attention from drivers in every way; Smooth stops and starts; Replace old trams and trains; The public transport has to be more efficient; Preferential lane and greater frequency; The increase of underground lines; Create car-sharing opportunities in public transport; Expand bus and, above all, metro transport so that every neighbourhood is well served and connected; Increase transport, bus and metro lines. **Environmental impact:** Pollution and traffic reduction;
Older people and Functional Diversity/ Physical	**Accessibility:** Public transportation should be accessible to people with disabilities; Architectural barriers, such as steps and high curbs, must be removed and ensure that people with disabilities can access and exit transport safely and comfortably; The availability of ramps on all buses, the availability of anchorages, accessibility at metro and train stops, the positive attitude of the staff and other users, the fact that there is no need to request support in advance, reduce uncertainty about whether there will be space (information on the canopies in real time...); To intervene in places outside transport hubs with paths for people with disabilities (accessible pavements, paths for the blind, acoustic traffic lights) and in transport facilities with fast, functioning platforms and/or lifts; Modify the buses to bridge the gaps between bus and platform, the same way as subway and tram; Conversion of all stops into barrier-free stops; Public transportation vehicles must be adapted to meet the needs of people with disabilities, such as wheelchairs, anchorage devices, and communication systems; More seats and parking spaces for people with disabilities, more safety handholds/devices. **Economic resources:** The cost of public transport is affordable for people with disabilities, it can be a cheaper option than other means of transport, especially if discounts or special rates are offered for people with disabilities. **Smart communication:** Information about public transport, such as timetables and routes, must be clear and easy to understand for all people, including those with disabilities. Audio and visual information systems, such as announcements and screens, must be installed in vehicles and at bus and subway stops. **Sensitization and awareness:** Awareness campaigns should be carried out to improve understanding of the needs of people with disabilities. This includes promoting respect and empathy towards people with disabilities and fostering inclusion in society. To involve people with disabilities and their organizations in the process of improving public transport; Drivers and other public transport staff must receive training on how to care for people with disabilities, including how to operate wheelchairs and how to provide assistance if necessary. **Quality:** Public transportation should be easy to use and has a good frequency. Public transport should be more comfortable, safe, and attractive. The vehicles should be clean and well-maintained, and the staff friendly and helpful. **Environmental impact:** Public transport can be a more sustainable and environmentally friendly option than other means of transport.

WP2 - T2.1 DELPHI: QUALITATIVE PUBLIC TRANSPORT DIAGNOSIS QUESTIONNAIRE (SOCIAL AGENTS)

EXPECTATIONS	
Functional Diversity/ Visual and hearing	**Smart communication:** Better information both visually and by sound, more universally designed vehicles and stations. **Sensitization and awareness:** The public transport is inclusive for deaf and hard of hearing people in the following cases: staff are trained in the communication needs of deaf and hard of hearing persons, all audible information is displayed in text during passenger information, accessibility plans are in place for all emergency solutions to rescue deaf and hard of hearing passengers, lifts and platforms have an indicator button in case of distress for deaf and hard of hearing persons, discounted, free travel passes should be well-known among inspectors, the discount cards should be compatible with digital systems, thus reducing the need for the necessary interpersonal communication, light signaling safety devices at the crossing points of light rail and other fixed-track public transport vehicles to ensure the safe crossing of deaf and hard of hearing persons; Must be easier to get of/on, more help and patience from drivers, available information for those hard of hearing or with visual impairments; Good service from service personnel. **Quality:** Stops and transport mean that are universal designed.
Functional Diversity/Cognitive	**Smart communication:** Information at bus stops is displayed with pictograms (ARASAC). **Sensitization and awareness:** Polite fellow passengers, more priority seats. **Quality:** More frequent service and ensure more space. *In general, idem Older people and Functional Diversity/ Physical*
Childhood / young people	*Idem general expectations*
Woman /gender perspective	**Smart communication:** More information on how public transportation is connected - how to use more than one lines; Better planning taking into account the number of people and the traffic which is very regular. **Quality:** More coverage, with more transport and measures to promote a more favourable circulation of public transport.
Migration, refugees, ethnic minorities and poverty	**Economic resources:** Public transport allows for societal participation, therefore, an affordable and accessible transportation is fundamental; Low prices for tickets and social tickets with discounts are important means; Public transports should be cheaper, have a larger territorial coverage, be more frequent and function during more hours, specially nights. **Smart communication:** More information on how public transportation is connected - how to use more than one lines; Multilingual information at bus stops and on the trains. **Quality:** Reducing the procedures necessary to apply for financial aid for transport; Safety at bus stops should be increased, the surroundings of some bus stops are more likely to cause uncertainty; Punctuality and reliability need improvement; Better connections in peripheral areas and at off-peak times.

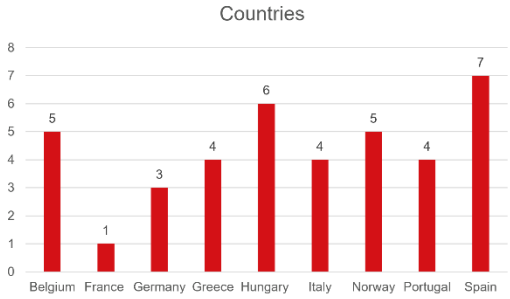
WP2 T2.1 DELPHI (first round) – Some conclusions

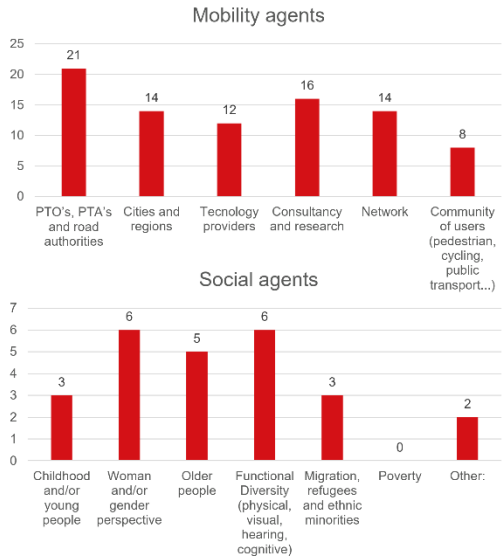
Social agents

- Considering the amount of contributions, the results suggest the lack of *Accessibility*, *Economic resources and Sensitization and awareness* are the main PT *barriers* today (by frequency and severity).
- Following this rationale, the following level of barriers, *Smart communication* and *Quality* seem to be low level *barriers from the point of view of the severity but with a high degree of improvement.*
- Regarding values, all the identified criteria are currently implemented at some level, but they present deficiencies and a high degree of improvement. It could be said that *public transport is at a point of linear quality, in which improvements in the identified lines will provide an improvement in use and satisfaction*.
- *Expectations* in PT seem to be mainly related to the improvement of the all the criteria (*Accessibility*, *Economic resources*, *Sensitization and awareness*, *Smart communication* and *Quality*).
- Environmental impact, seems to be a relevant aspect of PT from the point of view of the social agents, to play an important role in the near future.
- As a conclusion, PT provide *independence, well-being, increase self-esteem, enjoy the city, access leisure, shopping, socialize* and *feel part of society*.

WP2 T2.1 DELPHI second round: statements' validation

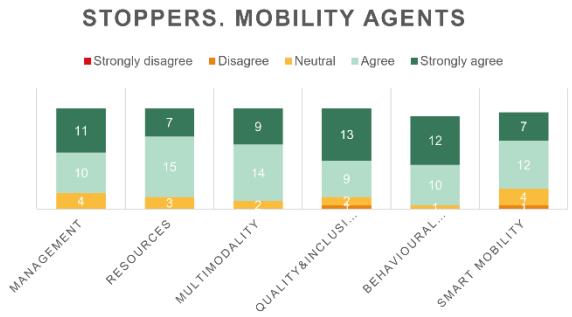
40 professionals responded the 2nd round questionnaire, including Mobility agents and Social agents, from 9 EU countries

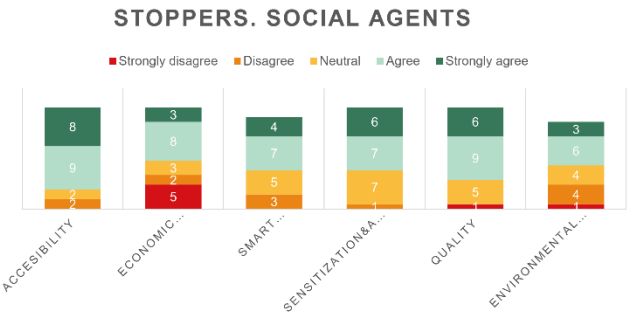




WP2 T2.1 DELPHI second round: statements' validation

Stoppers: Mobility agents & Social agents agreement level





WP2 T2.1 DELPHI second round: statements' validation

Stoppers: Missing factors and aspects for Mobility agents

- **Resources**: Main barriers that need to be mentioned and addressed at the i) management and ii) resources level of public administrations to promote the use of PT at the mid and long-term: lack of dedicated infrastructure for PT (not only inside cities, but also in metropolitan/suburban areas - why should people take a bus to go to the main city if they'll be stuck in a traffic jam as if they will be using their own car?) - linked to the previous, lack of coordination between public administrations that have mobility competences (local level, metropolitan level, regional level and national level); This lack of coordination leads to a lack of investment and execution of the infrastructures and services needed to promote PT. All the other topics listed are important and complement the previous ones; We can improve information in stations, we can improve integration of services, etc., but if we do not invest and execute PT infrastructure and services, we will never make it attractive for citizens. As an example, a dedicated bus lane at the access of a city combined with an express bus service that can reduce 10-15 min the travel time compared to using a private car will make more people use the bus.
- **Multimodality**: Low focus on first and last mile; The door-to-door mobility is highly relevant to move people from private car to PT; Lack of real time and multimodal info to the public is a very critical barrier, not mentioned!; Comparison with other available modes of transport, which is what users will use mostly to make a decision on PT use; Lack of a uniform ticketing system and information (each time one changes city, go on holiday, one should understand the ticketing system of the city, the network, ...).
- **Quality&Inclusion**: Low resilience of PT (relevant drop of service quality in front of expected and unexpected events such as sport events, bad weather,...); Interchanges are generally not efficient (time consuming and add uncertainty to the trip), safety and security needs to be expanded to lighting, design of space in stations/stops, appropriate fare integration; There are several barriers to inclusion of people with walking difficulties not mentioned.
- **Behavioural change**: Strong focus (of incentives, campaigns,...) on the students and young people (which already use the PT more frequently) and low focus on the users groups that mainly use the private car; There is a need to understand the reasons behind that behaviour and initiate corrective actions to change the mindset of that user groups.
- **Smart mobility**: PT should be understood as a "common interest topic" for the municipality, mobility agents, PTOs, PTAs and citizens. Thus, data should be shared and the mobility should be managed in an integrated way.

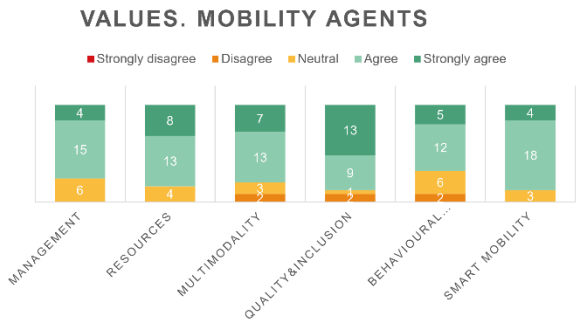
WP2 T2.1 DELPHI second round: statements' validation

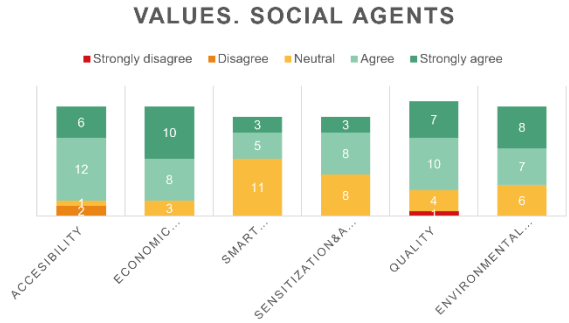
Stoppers: Missing factors and aspects for Social agents

- **Accessibility:** The long distance between PT stops is also an accessibility barrier. PT should be accessible by walking in a reasonable time/distance. Also, the access to PT with a bike is sometimes difficult.
- **Economic resources:** High cost of multimodal trips. Discounts should be applied to multimodal trips.
- **Quality:** Too long trips due to the planning of long routes and many stops to go from one point to another. There is a need to create "express routes", especially at peak times, to make the PT more efficient and attractive, Safety (both in the vehicles and at the stations) and comfort (cleanliness, comfort, heating, air conditioning etc.).
- **Sensitization and awareness:** Safety perception during night trips, either in the PT stop and in the bus/tram/metro, The topic of gender needs review as it's less developed than the rest and should be looked at through an intersectional lense (together with race, ethnicity, sexuality etc), Lack of training of drivers and personnel to deal with gender-based harassment/violence, (sexual) harassment between passengers, lack of understanding and support from other passengers in view of harassment/violence etc., Another thing missing is a look at gender beyond man/woman, not a binary thing and should be noted the issues about transgender (and also LGBTQ people) in regards to sensitization and awareness, and quality.
- **Smart Communication:** Lack of information about options suitable for trip-chaining, lack of information about accessibility etc.

WP2 T2.1 DELPHI second round: statements' validation

Values: Mobility agents & Social agents agreement level





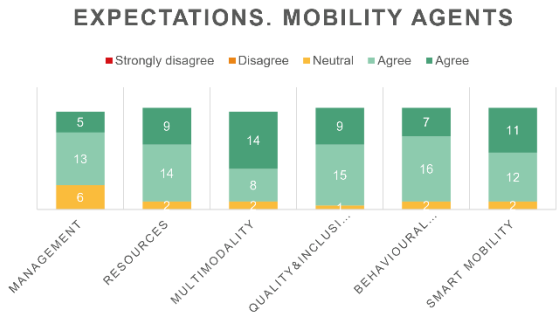
WP2 T2.1 DELPHI second round: statements' validation

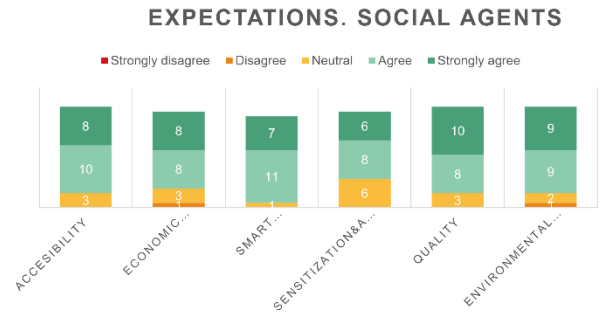
Values: Missing factors and aspects for Mobility agents and Social agents

- **Mobility agents**
  - **Management:** PT prioritization; dedicated lanes.
  - **Multimodality:** Integrated ticketing system (MaaS). Availability of different payment systems (QR, APP, PT card, money,...) that fit the needs of different user groups.
- **Social agents**
  - **Accessibility:** PT guarantees the access to low emissions and zero emissions zones. Moreover, although it can be improved, the PT allows you to reach almost any part of the city.
  - **Sensitization and awareness:** Creation of "purple stops" for night bus routes (stop on demand near the house/destiny of the woman).
  - **Environmental impact:** Environmental aspects seem to be overlooked, especially by social agents.
- **General comments:**
  - There is a lack of mentions to specific needs of some social groups, such as women mobility needs and there is a focus on people only needing public transport because they can use or afford a car, instead of public transport being the available as a first choice.
  - The values vary strongly from one PT system to the other, from one city to the other. This assessment would be better done at local level rather than European level.
  - Democratizing mobility (already included in management) and accessibility to opportunities (included in quality and inclusion) are by far the most important values that must be associated to PT. Also, reliability.

WP2 T2.1 DELPHI second round: statements' validation

Expectations: Mobility agents & Social agents agreement level





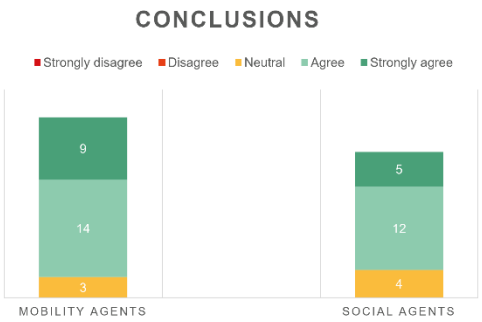
WP2 T2.1 DELPHI second round: statements' validation

Expectations: Missing factors and aspects for Mobility agents and Social agents

- **Mobility agents**
  - **Management:** Need to manage mobility (traffic, PT,...) in an integrated way and not independently. Need to prioritise PT. Public sector management should be more ambitious, increasing management capacity, covering new mobility services, turning more flexible and competitive comparing with cars.
  - **Resources:** Need to create dedicated lanes to isolate PT from traffic.
  - **Multimodality:** Again, real time and multimodal info to the public has to be an expectation - trully important!.
  - **Quality&Inclusion:** Better inclusion of people with low walking capacity, gerder issues and inclusion of minorities have to be expectations to meet.
- **Social agents**
  - **Sensitization and awareness:** Passengers that don't harass other passengers ... Drivers trained to deal with such situations. In general should say safe space more often, but in particular in the gender section where it's crucial.
  - **Environmental impact:** Environmental aspects seem to be overlooked, especially by social agents.
- **General comments:**
  - Efficiency of PT in comparison with other modes is a key improvement and expectation for PT users.

WP2 T2.1 DELPHI second round: statements' validation

Conclusions' agreement level: Mobility agents & Social agents



WP2 T2.1 DELPHI second round: statements' validation

Missing factors and aspects: Mobility agents & Social agents

- **Mobility agents**
  - Resistance to behavioural change is still a relevant barrier.
  - Access to human resources (e.g., drivers) is a significant challenge.
  - I do miss the importance of listening to people and use the needs they tell us as reference for the development of the networks instead of the now a days procedure based on guessing user needs without solid data.
  - I strongly agree that Quality of PT and the use of smart tools are the main leverage for improvement. I would add or enhance the Efficiency aspect as part of the service quality.
  - Improvement/execution of dedicated PT infrastructure (can be included in both management and resources) leads to better quality of service.
- **Social agents**
  - We perceive a gap between the identified barriers and the (high) expectations expressed.
  - Last statement concerning PT doesn't completely apply for Rome case, at present.
  - The last statement concerning PT provisions doesn't completely apply for Rome case, at the moment.
  - I agree that PT contributes to citizens' independence and enjoyment of cities, and that accessibility is a key improvement required. But I would highlight the inclusivity of planning and operations: PT must cover better all areas of cities, not only the hyper center.
  - An interesting discussion to have is the funding of PT. Social agents push for a free or almost free PT, whilst this might be seen as complicated by public administrations. PT will never be economically sustainable (it has other positive externalities that can monetized though) and administrations must take its cost. Reducing PT fares and or making PT free only increases the problem on how to fund PT: this would lead to the fact that more money from public budgets has to be placed on the daily maintenance and operations of PT and it would not be oriented to other important aspects (such as the before mentioned investment on PT infrastructures) that can increase the quality of the services.

WP2 T2.1 DELPHI – Main Conclusions - Stoppers

- **Results confirm that Management, Quality&Inclusion&Accessibility, Resources, Multimodality, Behavioural Change&Sentizitation and Awareness are the main stoppers for the PT.**
- **Social agents point out an economic barrier for some collectives, but Mobility agents do not agree on this at all.**
- **The Environmental impact is more a value and an expectation than a barrier.**
- **The Smart Mobility is not a stopper; in fact the lack of data is pointed out as a barrier to develop the potential of the smart PT, or even its performance.**
- **Management means the public administrations must be more efficient managing the existing facilities, but more Resources, in terms of infrastructures, are needed.**
- **Multimodality requires appropriate infrastructures, but also to focus on door-to-door mobility.**
- **Quality&Inclusion&Accessibility means an efficient (in time) transport mode for citizens, secure an easy to access for all vulnerable collectives (inclusive).**
- **Behavioural Change&Sentizitation and Awareness are social values, involving different user groups. We need to trigger a change in the citizens that mainly user their private car to move daily, and we also need to raise awareness on PT workers and end users about the vulnerability of some collectives (from women to people with functional diversity) when employing the PT.**

WP2 T2.1 DELPHI – Main Conclusions - Values

- Results confirm that main values of the PT are Resources, Multimodality, Quality&Inclusion and Smart Mobility.
- It is considered that PT attracts important investments, so the PT managers have available many Resources; this fact is seen as a strength.
- Quality&Inclusion means the PT has a good transport network, with adapted accesses, and with different services (from ticketing system to facilities for people with special needs). However, accessibility is not so good as it should be.
- PT arises as a driver for multimodal transport, and this is seen as a positive value.
- Smart mobility has the potential to transform the PT. Technologies like AI applied to dynamic traffic management, the monitorization of vehicles, or the on demand transport are seen as the future, but implementation is not trivial.
- Sustainability is a relevant value for PT. The Environmental impact should be an asset for PT, as people is moving in a more efficient way, generating less emissions.

WP2 T2.1 DELPHI – Main Conclusions - Expectations

- In general, all the categories proposed in the study have the potential to take improvements for the PT.
- The Management, Resources, Multimodality, Quality&Inclusion&Accessibility, Behavioural change & Sensitization and awareness, Smart Mobility and Communication, and Economic resources are fields were innovation is expected.
- Among all these topics, Multimodality, Smart Mobility, Quality&Inclusion, Resources and Behavioural change concentrate the highest agreement level.
- Multimodality will bring the smooth integration of the different transport modes available in the city.
- Smart Mobility is the facilitator for multimodality, shared mobility or MaaS. It also includes the data provision (Smart communication) that users are expecting in order to have a bigger control of their mobility when using PT.
- Quality&Inclusion improvements will bring trip time reduction, MaaR, better metropolitan-rural area connections, comfort, and Accessibility for all the collectives as a priority.
- Resources implies more infrastructures for PT and equipments that facilitate decarbonisation.
- Behavioural change of citizens will support a new mobility, not focused on the private car's use.

ANNEX 5. Experience notebook

UPPER - Mobility Experience Notebook_CONT

Welcome to the UPPER project MOBILITY EXPERIENCE NOTEBOOK

We would like to hear more about your mobility habits and opinions to help us better understand how to improve public transport and increase its usage, which is the goal of the UPPER project (https://www.uitp.org/news/unleashing-the-innovation-potential-of-public-transport-as-backbone-of-urban-mobility-upper-project-launches/).

What would you need to do?

· Describe and evaluate all the journeys you make on a typical day during the week, including commuting to work / school (if applicable);
· Describe and evaluate all the journeys you make on a typical day off or weekend day, including leisure trips in the city or urban area (i.e., not including trips outside the city).

Participation is completely anonymous. The information will be analysed in aggregate and grouped form.

Thank you very much for your cooperation!

* 1. **Before starting we would like you to share with us some information about you**

Your age:

* 2. Your gender:

- Man
- Woman
- Other

* 3. Composition of your household: (you can choose more than one)

- I live alone
- I live with my mother/father/sibling(s)...
- I live with friends/roommates/ professional caregivers
- I live with a partner
- I live with son(s)/daughter(s)
- I live with elderly or disabled relatives

>

- Indicate the age of your sons / daughters if it is the case:

* 4. Main occupations (you can choose more than one):

- [ ] I study (not at home)
- [ ] I work (not at home)
- [ ] I work or I study from home
- [ ] Househusband/Housewife
- [ ] I take care of relatives (elderly, children, disabled)
- [ ] Retired (by age or illness)
- [ ] Unemployed

>

- [ ] Other:

5. Which of the following statements fits best to describe your economic situation regarding transport?

- ( ) I prefer not to say
- ( ) I have difficulties to afford the public
- ( ) transport I can't afford a car
- ( ) I cover all my transport costs without major difficulties

>

- ( ) Other:

* 6. Indicate your municipality/city and country:

* 7. Which of the following statements fits you best?

- ( ) I have lived in this area most of my life
- ( ) I come from another country or geographic area and plan to stay
- ( ) I come from another country or geographical area and I will be here temporarily

>

- ( ) Other:

* 8. Transport modes that you usually use, thinking about the past month: (Multiple answers allowed)

	On foot	By bike	By e-bike	By skate or kick scooter	By motorcycle	By car	By shared car	By taxi	By bus	By metro/tram	By train	Other	Not applicable
Go home	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Business trip	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Go to work	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Shopping, errands	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Visit someone	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
For care of others	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
School or education	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Bring or collect someone	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Leisure, sport, cultural activities	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Services (e.g. bank, doctor)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Type of shared transport used or other type of transport:

* 9. Which of the following statements fits / describes you best?

- ◯ I mainly use my car or motorcycle and do not consider changing to another mode.
- ◯ I mainly use my car or motorcycle, but I would like to partially switch to other modes of transport (bus/metro, car-sharing, cycling, walking...).
- ◯ I am using my car less and trying other alternatives (bus/metro, car-sharing, cycling, walking...).
- ◯ I walk, cycle or use public transport for most of my journeys.

>

- ◯ Other state (please specify)

* 10. Please indicate the journeys of a usual day. A typical journey is home to home, but perhaps you make several trips home to home. Please, detail all the stages of your journeys by indicating the different modes of transport you reach, firstly, secondly, thirdly, ...:

	I'm going to...	I travel by...	For how long?
I leave the house and firstly...			
Secondly...			
Thirdly...			
Fourthly...			
Fifthly...			
Sixthly...			
Finally ...			

Other or more situations:

* 11. **We start with the experience of daily mobility in the city or metropolitan area...**

Please, tell us in detail your story about your journeys during the day: (your expectations, your alternatives, why you choose those modes of transport... if it felt comfortable, if you would like to have other alternatives, and so on)

12. Detail the advantages and disadvantages of your daily journeys:

What works well:

What has to be improved:

What would make you increase the use of public transport in this situation:

- 13. Please describe your different leisure and free time journeys in urban/city environment: (I leave home to go to...)

	I travel by...	and by...	For how long?
To do sport			
To visit friends or relatives			
To go shopping as a leisure activity			
To go to the cinema, theater, museums...			
To have a walk, urban excursions...			
To go to a restaurant, to have a drink, meet with friends...			
To go back home			

Other situations:

* 14. **We detail the mobility of days off or leisure in the city or metropolitan area...**

Please, tell us in detail your story about your leisure or free time journeys in the city or metropolitan area during a day: (your expectations, your alternatives, why you choose those modes of transport... if it felt comfortable, if you would like to have other alternatives, and so on)

* 15. Detail the advantages and disadvantages of your free time journeys:

What works well:

What has to be improved:

What would make you to increase your use of public transport in this situation:

ANNEX 6. Experience Notebook results

A. López – C. Soriano – J. Giménez

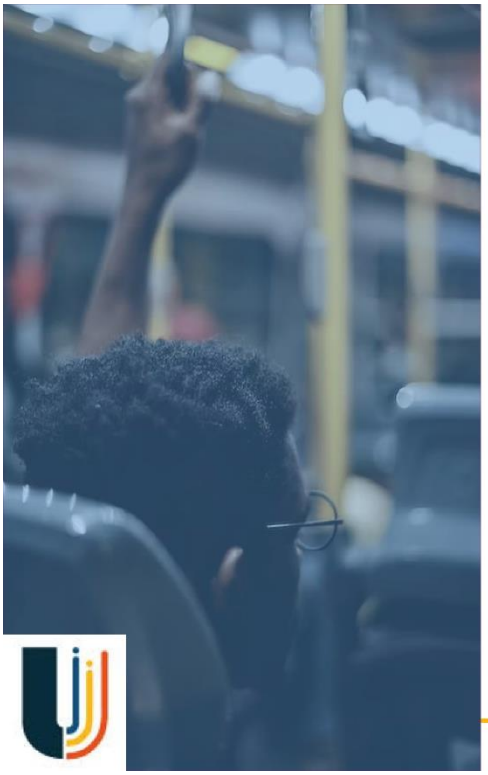
UPPER
Unleashing the Potential of Public Transport in Europe

EXPERIENCE NOTEBOOK. Mobility experiences of the citizenship. WP2 - T2.1

IBV – Instituto de Biomecánica de Valencia

This project has received funding from the Horizon Europe research and innovation programme under grant agreement No 101095904

July 2023

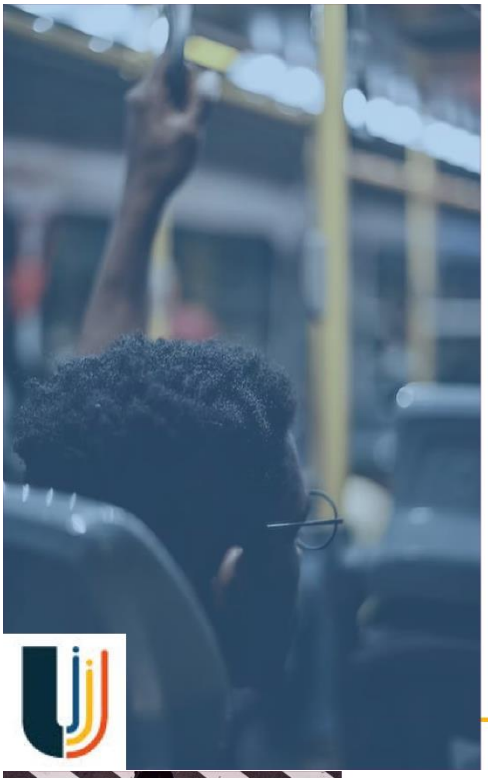


EXPERIENCE NOTEBOOK. Mobility experiences of the citizenship.

Index:

Reported by: A. López-Vicente, J. Giménez, C. Soriano
May '23
Data collected from February to May 2023

IBV



EXPERIENCE NOTEBOOK. Mobility experiences of the citizenship.

Index:

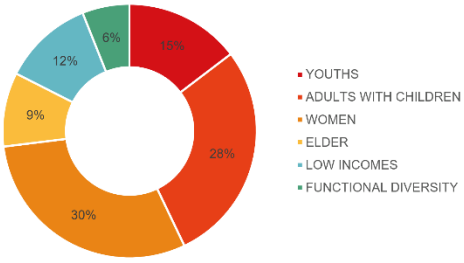
1. Objective & methodology

- The **objective** of this work is to **understand** and analyse **citizen transport** (in its different forms) through the **analysis of the users' personal mobility experiences**.
- The **methodology** consisted of analysing 72 representative user experiences in different European cities, participating in the UPPER project.
- The applied technique has been an **online notebook**, in which **users have shared their experiences in their daily mobility**.
- **Analysis** process:
  - Extraction of **stories** and **characteristic verbatim**: the stories and verbatims allows to illustrate the mobility patterns.
  - **Analyzing the emotions** of the comments.
  - **Semantic analysis** consists of assigning the contents to the chosen topics and categories, according to meaning at expert level.
  - **Analysis** grouped **by user profile (human life cycle)** and **awareness level.**
  - **Comparative analysis** and **differences** according **to gender**.

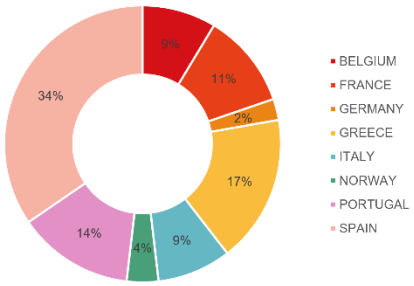
2. Sample

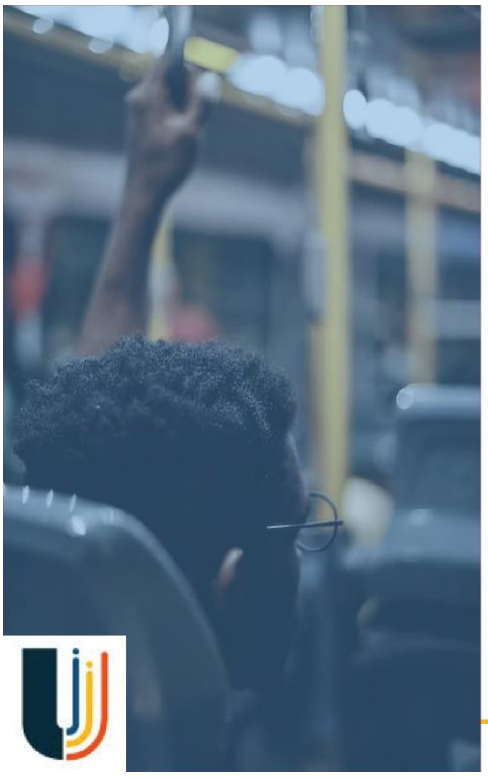
SAMPLE: 81 USER

SAMPLE BY USER PROFILE



SAMPLE BY COUNTRY



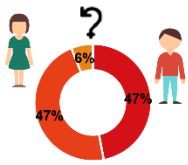


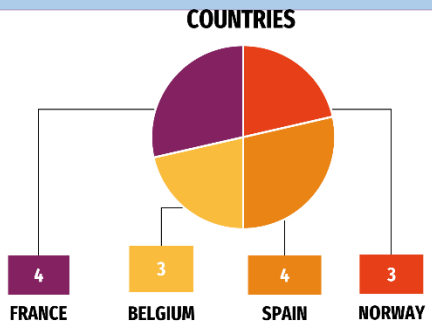
EXPERIENCE NOTEBOOK. Mobility experiences of the citizenship.

Index:

1. Objective & methodology
2. Sample
3. **Analysis by user profile**
   1. **Profile**
   2. **Daily journeys stories**
   3. **Free time journeys**
   4. **Strenghs and weaknessess**
4. Analysis by mobility awareness level
5. Comparative analysis and conclusions

YOUNG profile



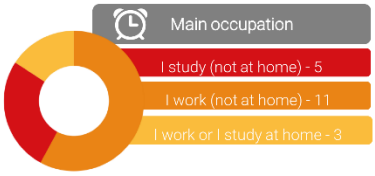


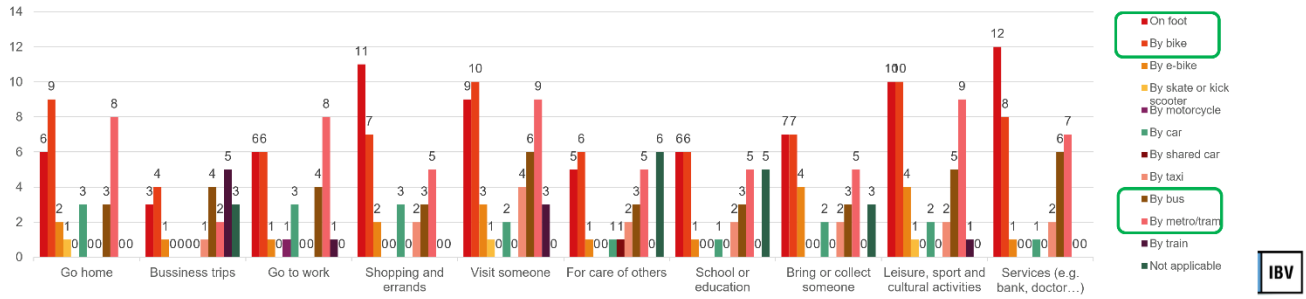
Mobility awareness

"I walk, cycle or use public transport for most of my journeys" - 12

PT cost

"I cover all my transport costs without major difficulties" - 12





IBV

YOUNG. Daily journeys stories

Man, 31 y.o., Norway
Cycling to work because it's the quickest and easiest option. I could have taken public transport in about the same time, but it costs money and is not as useful. Sometimes I walk because it's easy not to have my bike with me and I don't lose much time, but my feet hurt and I avoid walking. I walk to some work meetings because it's the quickest and easiest option. Sometimes by bike or public transport - depending on the distance. When I pick up or drop off at the day care centre, it is easiest and quickest to walk. It's often the same for shopping or going to the gym.

Woman, 32 y.o., Norway
I walk or use a city bike to work. Then I expect there to be a city bike near my home and I expect there to be a free space for my bike in a city bike rack outside work. This doesn't happen very often - I would like it t I find cycling in Oslo scary, with all the angry drivers, tram rails, fast cyclists and bike lanes that suddenly just end in the middle of the road. I wish I had my own electric bike, or that the route card also included a city bike. And that the city bikes were electric bikes.

Woman, 27 y.o., France
Journeys of less than 10 minutes by bike: I choose the Vélib bicycle, preferably electric, or if I have time, I walk Journeys of more than 10 minutes: I prefer the metro / except in the evening, I feel more comfortable taking a VTC

Man, 31 y.o., France
I mostly commute to work. More safe routes would be desirable and better maintenance of these would also be useful. I use the bike because it is a pleasant way to get around, fast and allows me to be more active. More parking bays would also be desirable so that I can easily park near the various amenities. Omnipresence of the car is annoying and problematic.

Man, 34 y.o., Belgium
I usually use the cargo bike because it is the most efficient way to get around Brussels with the children

Woman, 29 y.o., Belgium
Mostly I walk on foot in my city as I work from home and find everything I need here. When I travel to work I go by train and metro, finding the journey uncomfortable and long, but being the only viable means of transport, since car is not possible.

Woman, 29 y.o., Spain
From home to work: it's uncomfortable because most of the time I'm standing and I carry a lot of things in my hand and the trip lasts about 40 minutes and I have to change from tram to bus From work to home: I sit down resting but it lasts 45 minutes and then took the tram from the house to do some shopping: it takes 5 minutes by tram it works for me when I do a lot of shopping from the house to the gym: it's very far so I took the tram. I do sports at night so it takes 10 minutes for the tram to arrive.

Man, 29 y.o., Spain
I leave home for work. Usually by car. When I finish, I take advantage of the fact that I have come by car to do the shopping and load it in the boot. Then I go back home. On days when I don't need the car after work, I try to use the tram (not always). Usually, it is quite full in the morning and in the evening. Sometimes it is difficult to travel seated even on long journeys. On days when I leave home late, I always go by car because it takes less time to get to work. On weekdays when I go out for sport I always use the car because it takes less time to get home when I finish. I don't use public transport because it takes longer and because the time frequency, at the time I finish the activity, is not

IBV

YOUNG. Free time journeys stories

YOUNG strengths and weaknesses

In general
- When it works, my journeys are fluid.
- Faster and flexible.
- Uncrowded roads or safe cycle paths.
- Efficiency and speed of the bike.

Daily journeys
- Swiftness.
- The indication board.
- It is faster to cycle than to take the tram.
- Most of my trips are within relatively short distances that are pleasant to walk in.
- Freedom and flexibility to walk or cycle, I get health-promoting and delicious exercise, and I get to be outdoors, I avoid being crowded with others on public transport.

Free time journeys
- Availability shared car- price & comfort by train.
- It takes little time to reach the destination by public transport. There is always transport at any time.
- Taxi sharing service, city bike.
- The city is quite compact, so trips are within reasonable distance by e-bike.
- It is quite easy to get anywhere by bus and walking. València is compact enough to move by walking, and the weather also supports this option.
- The scope of the different lines that compose it. I can get anywhere.

In general
- The frequency of metro/tram, timetable reliability. Frequency of passage of the EMT (València). There are moments that are frustrating.
- Make the individual car disappear.
- Security
- The cycling infrastructure and cycling culture; wider pavements and safer cycle paths
- Better bicycle arrangements
- The maintenance of cycle paths and their development.
- A lot of people go there

Daily journeys
- Safety in front of the cars
- Number of bus passages
- More connected cycle paths
- Comfort and travel time by train
- More time, so not so close in time

Free time journeys
- Accessibility By train station - especially outside Brussels
- Evening passages OV: often a long wait in the evening
- More limited parking for rental scooters
- Trains at night
- Arriving at a stop and getting the next passes in 15-20 minutes does not seem acceptable to me and ends up limiting its use (more than once I have done it or seen how they did it: get to the stop, check the weather and hail a taxi). . In addition, these waiting times occur at times when one expects displacement, such as a Saturday in the afternoon.

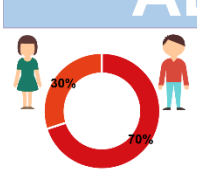
In general
- Improve the frequency of the metro/tram, reliability of timetables, especially LESS crowded.
- Improve the opportunities to walk or cycle, free/paid public transport.

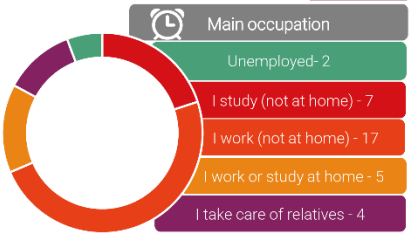
Daily journeys
- Possibility to put your bike in it (intermodality).
- Acceptable prices and possibility of boarding the bike.
- Speed.
- More chance of faster connections.
- City bike included.
- Public transport in Oslo is great. But I find that it goes faster when cycling/using an electric kick scooter and therefore choose this.
- Comfort and time, more night transport and transport connecting supermarkets and the center.

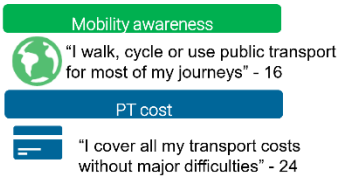
Free time journeys
- Acceptable prices and possibility of boarding the bike.
- Better public transport in the stations outside the capital
- (still) Later passages in the weekend of OV
- That there are no regular routes and it takes a long time, I often choose a taxi-sharing service for my free time.
- More trains at night
- Fundamentally step frequency.
- Improve transfers between metro lines. Quite a bit of time is wasted.

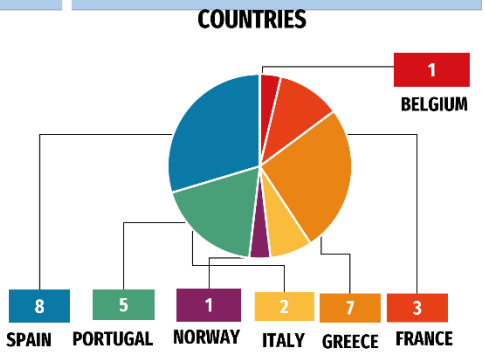
IBV

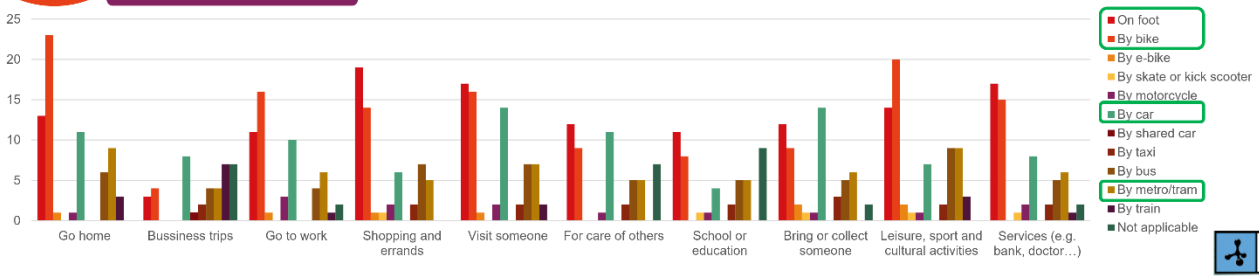
ADULT WITH CHILDREN profile











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ADULT WITH CHILDREN. Daily journeys stories

Man, 31 y.o., Norway
Cycling to work because it's the quickest and easiest option. I could have taken public transport in about the same time, but it costs money and is not as useful. Sometimes I walk because it's easy not to have my bike with me and I don't lose much time, but my feet hurt and I avoid walking. I walk to some work meetings because it's the quickest and easiest option. Sometimes by bike or public transport - depending on the distance. When I pick up or drop off at the day care centre, it is easiest and quickest to walk. It's often the same for shopping or going to the gym.

Man, 38 y.o., France
The problem of work/school time imposes a rhythm that is not always feasible by bike. No regular public transport, lack of coherence between the different actors of the territory I chose to try to develop my professional activity in the vicinity by breaking with my former job which required more than 80min of car

Man, 34 y.o., Belgium
I usually use the cargo bike because it is the most efficient way to get around Brussels with the children

Man, 45 y.o., Portugal
Delays on public transport lead me to use the car

Woman, 47 y.o., Spain
We all leave the house together around 8:15, my two daughters, my husband and myself. We take the bikes but we walk to school. It's a rushed ride (we're short of time) but a pleasant one, we talk about the day's plans, check if the girls have any exams? When we drop them off at school we take the bike and go to work, it's quicker, another 10-15 minutes, walking would take us twice as long, it's relaxing, most of the journey is on the university campus. If it rains a lot we take the car for convenience, those days the bike is lazy. On the way back every day is different, but typically we go from work to school or extracurricular activities by bike, pick up the girls and walk home, many of those days we stop to do some shopping. The truth is that I get tired but I don't consider any other way, it relaxes me more when I walk all the way but for the girls it's demanding and the bike allows you to go faster.

Woman, 39 y.o., Portugal
I am a fan of mobility that allows me to move around independently. The train and the underground usually serve that purpose, but the cars do not. So I'd like to be able to move more easily from where I live to work by bike, to have more autonomy. However, the state of degradation of the roads (between Costa da Caparica and Pragal, where I catch the train) is very high and many times, taking into account that I have 2 children that totally depend on me, I have to use the car to ensure that I arrive on time to supply their needs

Man, 45 y.o., Italy
I move almost entirely on foot or by bike, unfortunately immersed in traffic and on roads shared with car without any particular action to protect the vulnerable. I leave home to take the little girl to kindergarten, while the older children go to school on foot, then I reach my workplace and from there, again for work reasons, I move on foot. In the afternoons, having a compact cargo bike, I cycle my second child to sports activities and, a couple of times a week, I go shopping, again on my bike. I use the bike because it makes me feel better in terms of mood and because it allows me to move around more quickly and easily. I would like it if public transport worked better in the city and if there were more careful policies to incentivise the use of bicycles and the renunciation of the By car for commuting.

IBV

ADULT WITH CHILDREN. Free time journeys stories

ADULT WITH CHILDREN. Strengths and weaknesses

In general
- On foot and bike trips (IIIIII)
- The train and the metro (IIIIII)
- Speed, ease, comfortability (IIII)

Daily journeys
- Bicycle in the city (takes less time than coming by public transport, freedom and flexibility to walk or cycle, I get health-promoting and I get to be outdoors, I avoid being crowded with others, I know how long it takes for the trip, I value the conviviality...) (III)
- Ease and reliability of transportation (I arrive at the time I predicted) (III)

Free time journeys
- On foot or by bike for short distances (enjoyable and relaxed ride because of beautiful urban environment and reasonable distance) (IIII)
- Fluidity of movement (II)
- Availability shared car, car- price & comfort by train
- The existing cycle paths and also more drivers aware of issues involving smooth mobility, greater contact with nature, physical activation, exercise, well-being
- By bike trips were fun, reconcile sport, and protection of the environment
- Fewer people on transport and trips, more comfortable than during the week
- Not using the car saves you from having to park
- The taxi modality is very good when the 4 of us go, it is cheap and fast.
- The bus with voucher is cheap although it takes a long time to pass and reach your destination

In general
- It needs to be an extensive and secure network of cycle paths (IIIIII)
- Traffic density (IIIII)
- Poor offer and regularity of the PT (IIII)
- Travel distance (must be reduced). Shuttle itineraries and preference of passage to make it more reliable in time (III)
- Car sharing (II)

Daily journeys
- Caution and safety in front of the cars (IIIII)
- A lot of people are afraid to use their bike (III)
- Sidewalks, wide streets, public spaces. Everything has been taken over by cars (III)
- Poor bus and access roads for bicycles allow people to use more car on their journeys
- The roads, including cycle paths, in better condition and daily maintenance
- The duration, the fatigue associated with the trip, the huge queues

Free time journeys
- The bike through the city center is a little more stressful due to the number of bikes and electric scooters that circulate.
- Accessibility at train station
- The roads and drivers are not prepared/educated to share the road with pedestrians and cyclists
- In far distances, the children cannot go with their own bike
- Traffic status; night time public transport; taxi availability

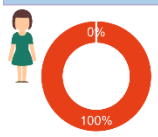
In general
- More frequently routes (IIIIIII)
- Regularity and reliability (IIIIII)
- Agile and speed (IIII)
- Cheaper and cheaper (IIII)
- Restrictions on the use of private vehicles; environmental awareness (IIII)
- Highest security, frequency and regularity of the early morning network (II)

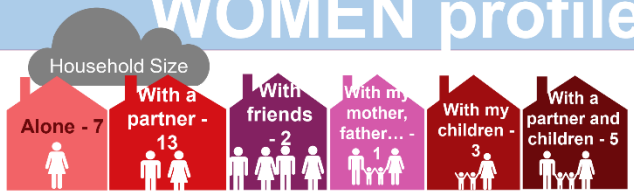
Daily journeys
- Easier to reach the destination (greater intermodality)
- Punctual attendance and greater travel
- The existence of more diversified transport other than bus
- To increase the cycle path network and to make it purely for bicycles
- Better bicycle arrangements

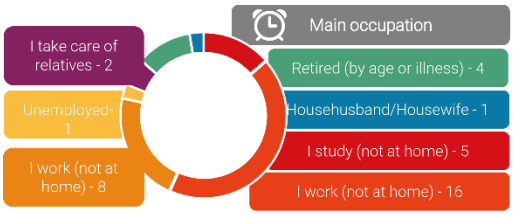
Free time journeys
- Better public transport in the stations outside the capital
- Give priority of passage so that the times improve.

IBV

WOMEN profile





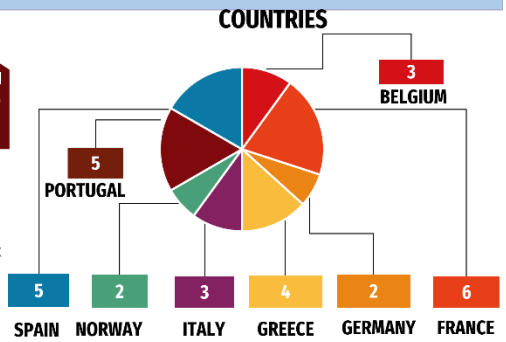


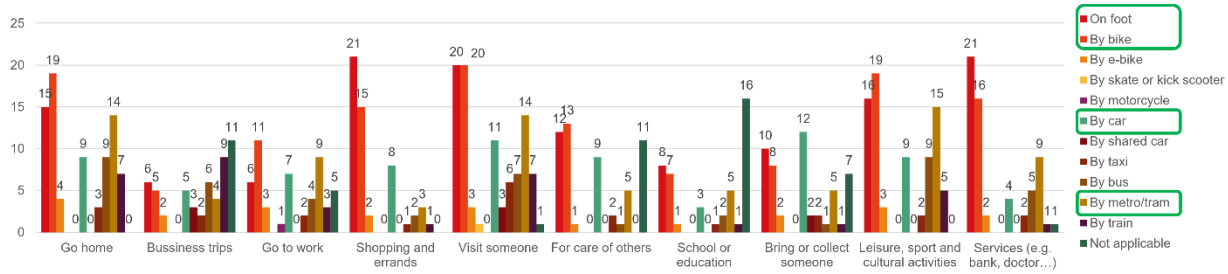
Mobility awareness

"I walk, cycle or use public transport for most of my journeys" - 23

PT cost

"I cover all my transport costs without major difficulties" - 25





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WOMEN. Daily journeys stories

Woman, 34 y.o., Norway

I go to work. I always walk to work this takes about 10-15 min and is about 1km. I am in the office all day (very little meetings outside). I walk home from work 10-15min, the shop is on the road so I shop on the return journey. 5-6 times a week I see someone else. These are trips that vary in length and my means of transport accordingly. If it is a weekend I can use a taxi sharing service in the evenings and nights. on weekdays I usually walk up to 3km approx. If the walk is longer than about 3km I cycle if I have not dressed up, then I choose an electric scooter to feel fresh on arrival (from May-September). I take the bus when I go out of the municipality on business. I live in Oslo and use the burrrrrrr333333s if I'm going to asker or bærum.

Woman, 66 y.o., France

I usually travel by bike, it's very practical and I can cover long distances. When I go to the center of my small town, I am usually on foot. I regret that there are no more trains in my small town and bus journeys are not as frequent. Sometimes I have to take the car, but on longer trips. I give priority to carpooling when possible: for example, to go to events, shows, etc. I am aware that I have to stop or reduce my car use, which I have been doing for a long time. When I was still working, I always used my bike to get around. We could still improve the cycle lanes in the area and in the city, make them safer.

Woman, 29 y.o., Belgium

Mostly I walk on foot in my city as I work from home and find everything I need here. When I travel to work I go by train and metro, finding the journey uncomfortable and long, but being the only viable means of transport, from car is not possible.

Woman, 77 y.o., Spain

On a day-to-day basis I walk, to buy, go to the bank, go to the doctor... Before I bought in larger supermarkets, I went by car with my husband, now we buy nearby in local supermarkets. If I have to travel to Valencia, my children take me by car, before I used to take the bus but I have become afraid of falling. I take the subway on a specific occasion if the stop is close to where I'm going. Taxi once in a while, for example this last year once back from the hospital.

Woman, 50 y.o., Italy

On working days I have to use the car because I have to travel 37 km to go and 37 km to come back and there is no alternative. On weekends I use the bicycle for errands and to get to places where I can do sport.

Woman, 45 y.o., Greece

I use the bike in my municipality because it is the fastest and simplest means of transport. If I need to go somewhere far away, I go by public transport or in combination with the bike. I prefer the metro because it is fast and sometimes the bus because it covers more areas.

UPPER

IBV

WOMEN. Free time journeys stories

Woman, 32 y.o., Norway

I often have a lunch appointment that I walk to. Or I use an electric scooter/bike or public transport (depends on time, place and weather). I walk home and look in shops and buy what I need. If I go out later, I take a taxi or electric scooter. I walk home from the city or use a taxi. I rarely take a bus home (if I'm close to a bus that goes to where I live)

Woman, 23 y.o., France

I travel mostly by bike because it's faster, more autonomy, more ecological. I feel quite comfortable but I would like more facilities to feel safe

Woman, 54 y.o., Germany

Always by bike because flexible, fresh air and exercise. Buses and trains are only used during Blitzeis. The OV does not represent an alternative because it is too slow. I only use it in combination with the folding bike if it's more than 20 km each way. The OV is very well developed overall, but fresh air is better!

Woman, 31 y.o., France

I do a lot of on foot trips at the weekend because I have the possibility of having what I need because of my home. If I have to travel further (visiting family, visiting museums, shopping etc.), I use the car. As a family, at 4, I see little interest in public transport, it quickly becomes expensive, and you have to anticipate logistics, timetables, etc. There has to be a real saving of time for me to choose this mode of transport, which is rare.

Woman, 69 y.o., Belgium

I usually go on foot or by public transport; sporadically I also take the bike. Not always easy to park your bicycle safely; also not always suitable material to fasten bicycles available

Woman, 44 y.o., Portugal

Generally, I always rely on public transport for leisure. Except in situations where there are no other viable alternatives for greater distances.
In my region there is only the bus as public transport. The bus are infrequent and the access road to the city is dangerous, with no sidewalks or crosswalks... my son was run over on that road. We used to walk a lot by bike, but today I have a greater perception of the risk and I can't drive on the road by bike.

Woman, 63 y.o., Greece

Using MMM for my commute is a basic principle in my life because I try, firstly, to reduce my contribution to the pollution of its environment, secondly, to monitor its evolution and the changes that occur in it (if I use my means I won't be able to fool around), thirdly, I observe people's behavior and the changes that occur in it, fourthly, I am afraid to use a two-wheeler (By bike or motorbike) due to the violation of the KOK rules by the majority of drivers of all media. I would like transport to be improved and the dominance of the car not to exist. By bike is unfortunately not a solution for me anymore since I have a problem with my knees although I could consider using an electric bike. Also the frequency of services on holidays is so sparse that it is unacceptable for a city where people are constantly moving and the population is as large as Athens and its suburbs/districts

Woman, 29 y.o., Spain

Going out to have a meal: it's convenient because I know what time I have to leave to take the subway, but the downside is that there are a lot of people and fewer subways come going out to shop: it's convenient because sometimes I take the bus but it's always full to visit relatives. I go by bike and it is comfortable because it takes a short time to go on a trip: sometimes it is very expensive because I have to take the train or car

UPPER

IBV

WOMEN. Strengths and weaknesses

STRENGTHS

In general
- When it works, my journeys are fluid (III)
- Good in general. By foot / metro / tram / bus (IIII)

Daily journeys
- Fast, flexible, speed, ease (IIIIIII)
- On foot and bike trips quiets. Good pedestrian and bike space (IIIIII)
- Zero petrol, zero euro expense
- The metro is fast, the buses in my area are relatively good
- The car stretch to be covered is smooth and without traffic
- The weather is almost always good
- Indicator signs
- Most trips are within relatively short distances
- Small supermarkets and some local shops close to home
- I live close to the metro and this is an excellent means of transport
- The pass for the entire Metropolitan Area covers a large region for an affordable price

Free time journeys
- Fluidity of movement, relaxed. Travel outside peak hours. In Sunday the streets are empty. Driving quietly, and playing sports (IIIII)
- Bike trips and paths are fun and made it possible to reconcile sport, fun and protection of the environment (II)
- Taxi sharing service and city bikes independent of services, cheap and fast (II)
- My sons take me wherever in their car and I don't abuse asking to go out.
- There is always transport at any time
- The bus with voucher is cheap although it takes a long time to pass and reach your destination

WEAKNESSES

In general
- Infrastructure: improvements on the way - you have to be seasoned and motivated; city bike wider lanes, large network of cycle paths; the urban road system; more and better bike paths (IIIIIII)
- The frequency (IIIIII)
- The regularity and reliability (IIII)
- Less crowded PT (IIII)
- Everything needs to be improved (III).
- Security. Secure bicycle locking, area with cameras at all stations.. (II)
- The possibility of having an alternative to the car like the car sharing (II)
- The acceptance of cyclists and the sharing of the road (drivers education) (II)

Daily journeys
- City at 30 km / hour everywhere
- Traffic density
- Sometimes the bus telematics don't work so I don't know if I have to wait or not
- Number of bus passes
- Comfort and travel time by train
- More connected cycle paths
- Cars and access roads for bicycles, which allow people to be more car on their journeys
- The duration, the fatigue associated with the trip, the huge queues
- Pedestrian space with less slippery pavement, with shade and passing through more garden areas
- It is not possible to take my bicycle on the train/metro

Free time journeys
- More evening offer (II)
- Development of a real cycling policy in the city

TO INCREASE THE USE OF PT

In general
- Have more offer, better schedules, easier to reach the destination (IIIIIII)
- Even more & smoother connections, more chance of faster connections (IIII)
- Less crowded PT (II)

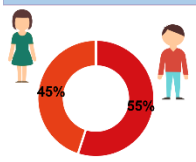
Daily journeys
- More time for more freedom of movement and cheaper or free transport
- Improvement of telematics service
- The creation of a safe route for cycling that was not too long.
- The existence of more diversified transport other than cars, or cars with more regular schedules.

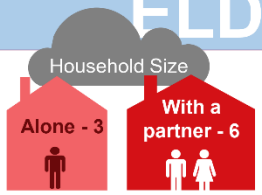
Free time journeys
- To increase the frequency of some tram and bus lines, especially during the later hours; subway until 1 am.
- I don't think it will increase the use of transport.

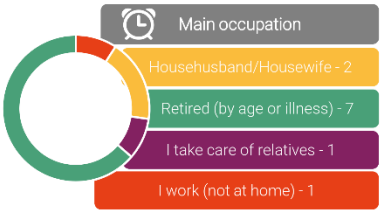
UPPER

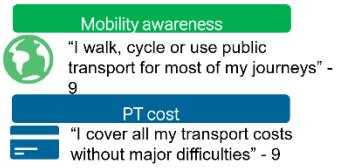
IBV

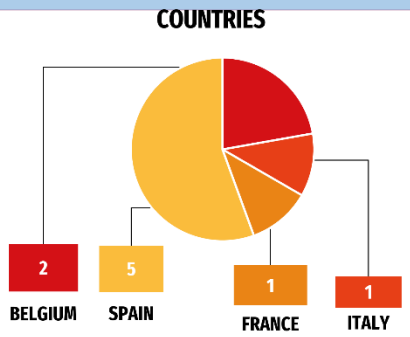
ELDERLY profile

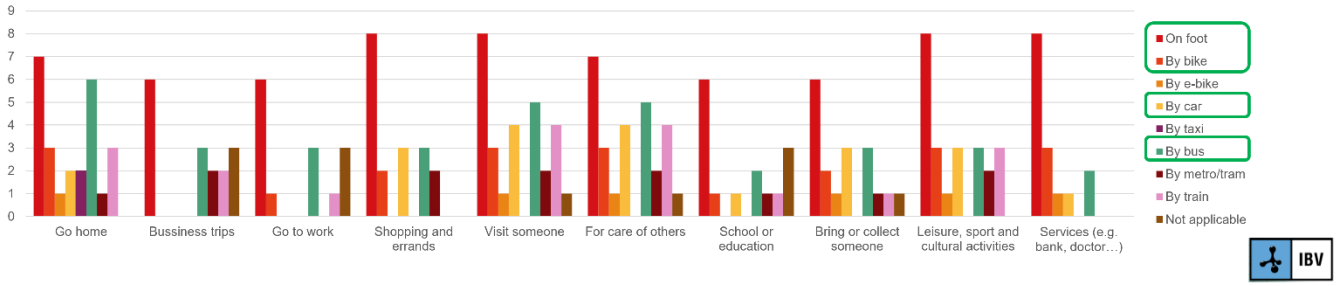




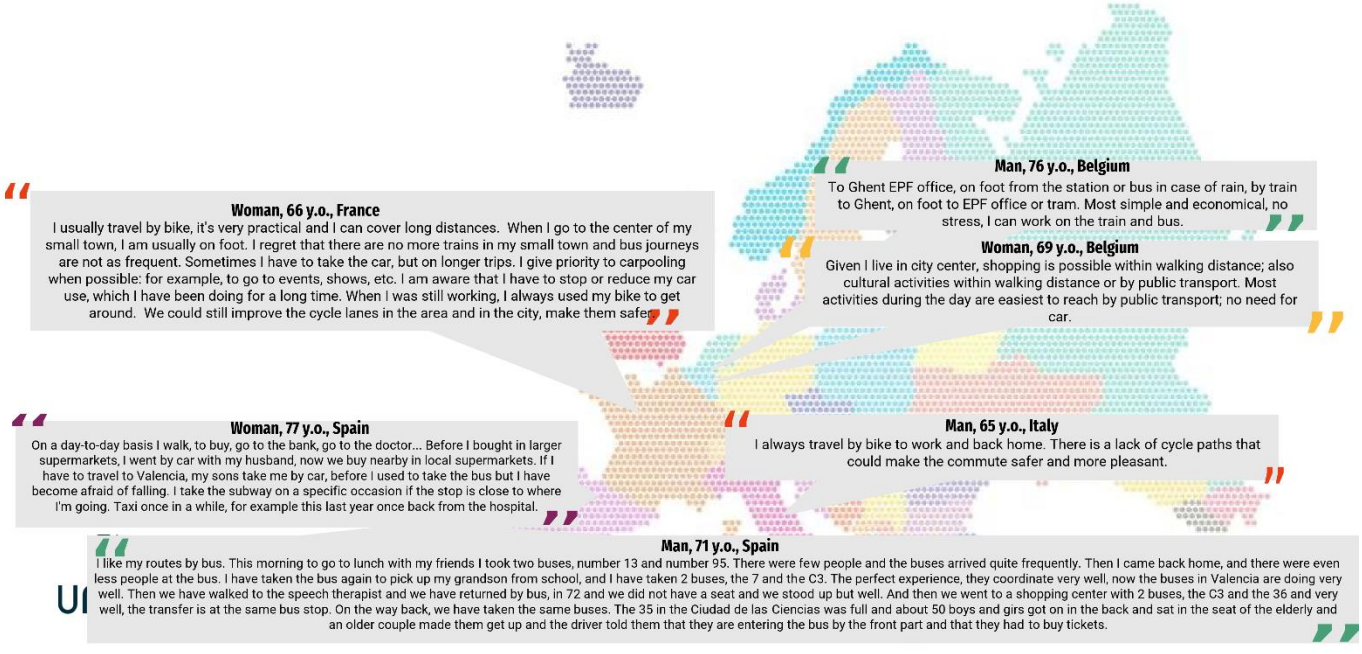








ELDERLY. Daily journeys stories



Woman, 66 y.o., France
I usually travel by bike, it's very practical and I can cover long distances. When I go to the center of my small town, I am usually on foot. I regret that there are no more trains in my small town and bus journeys are not as frequent. Sometimes I have to take the car, but on longer trips. I give priority to carpooling when possible: for example, to go to events, shows, etc. I am aware that I have to stop or reduce my car use, which I have been doing for a long time. When I was still working, I always used my bike to get around. We could still improve the cycle lanes in the area and in the city, make them safer.

Man, 76 y.o., Belgium
To Ghent EPF office, on foot from the station or bus in case of rain, by train to Ghent, on foot to EPF office or tram. Most simple and economical, no stress, I can work on the train and bus.

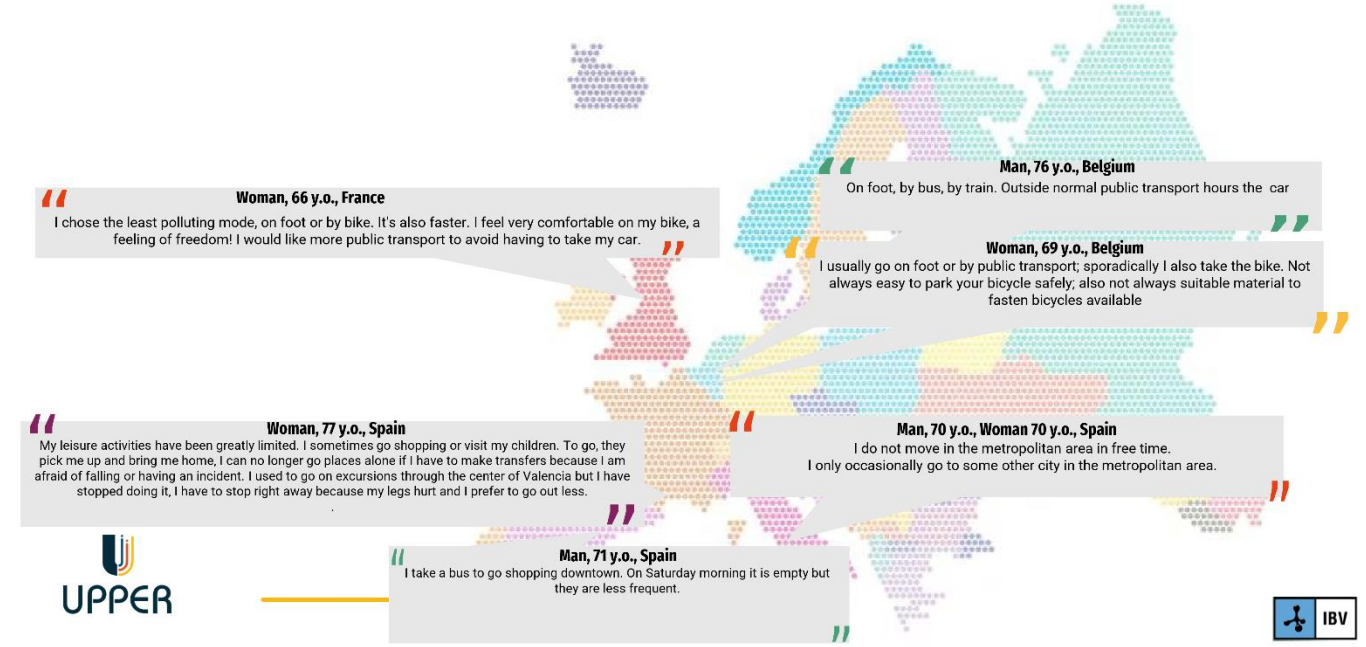
Woman, 69 y.o., Belgium
Given I live in city center, shopping is possible within walking distance; also cultural activities within walking distance or by public transport. Most activities during the day are easiest to reach by public transport; no need for car.

Woman, 77 y.o., Spain
On a day-to-day basis I walk, to buy, go to the bank, go to the doctor... Before I bought in larger supermarkets, I went by car with my husband, now we buy nearby in local supermarkets. If I have to travel to Valencia, my sons take me by car, before I used to take the bus but I have become afraid of falling. I take the subway on a specific occasion if the stop is close to where I'm going. Taxi once in a while, for example this last year once back from the hospital.

Man, 65 y.o., Italy
I always travel by bike to work and back home. There is a lack of cycle paths that could make the commute safer and more pleasant.

Man, 71 y.o., Spain
I like my routes by bus. This morning to go to lunch with my friends I took two buses, number 13 and number 95. There were few people and the buses arrived quite frequently. Then I came back home, and there were even less people at the bus. I have taken the bus again to pick up my grandson from school, and I have taken 2 buses, the 7 and the C3. The perfect experience, they coordinate very well, now the buses in Valencia are doing very well. Then we have walked to the speech therapist and we have returned by bus, in 72 and we did not have a seat and we stood up but well. And then we went to a shopping center with 2 buses, the C3 and the 36 and very well, the transfer is at the same bus stop. On the way back, we have taken the same buses. The 35 in the Ciudad de las Ciencias was full and about 50 boys and girs got on in the back and sat in the seat of the elderly and an older couple made them get up and the driver told them that they are entering the bus by the front part and that they had to buy tickets.

ELDERLY. Free time journeys stories



ELDERLY strengths and weaknesses

In general
- Everything, the frequencies are good, the buses are good, the stops, the price...
- Good pedestrian spaces. (II)

Daily journeys
- On foot travel, by bike, especially around towns.
- The use of the bicycle makes my travel quick and easy on foot / metro / tram / bus.
- Connection every half hour with the train.
- Walking everywhere, I depend on myself and rest when I want, besides, now I always stay close to home, I don't go far. Secondly, my sons always accompany me and take me in their car if the process is more complicated or far away (specialist doctors, purchases of furniture or electrical appliances, bank or municipal procedures...).

Free time journeys
- The time and the opportunity to walk where I fly, even changing ideas.
- On foot / metro / tram / bus.
- Public transport during normal hours.
- My sons take me wherever in their car and I don't abuse asking to go out.

In general
- City bike lanes and public transport priority.
- Frequency some tram and bus lines.
- Too many terraces and skates that invade sidewalks. (II)

Daily journeys
- There would be dedicated cycle paths.
- Punctuality of the train, not reliable, at an important meeting, leave an hour earlier.
- I don't see the buses safe anymore, the steps are very high and when I get the ticket it starts moving, I'm afraid of falling. If there are a lot of people I can't find a place to sit down and I can't go standing up.

Free time journeys
- Coordination different modes, higher amplitudes (early/late), public transport accessibility and reliability, strikes.
- Expand the tram network.
- The shorter frequency on weekends. Sometimes I have to wait 20 minutes (although with the application it works fine).

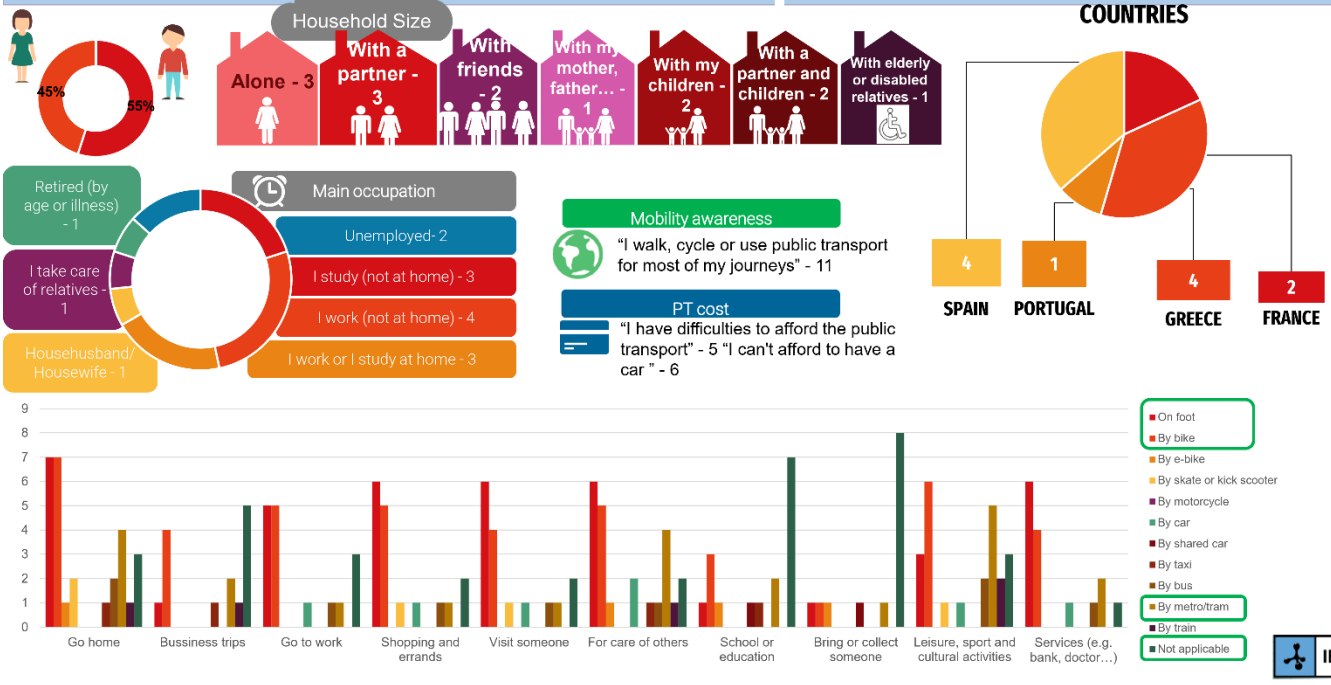
In general
- To improve times for more freedom of movement and cheaper or free transport.
- Even more & smoother connections.
- Affordability, reliability, coordination of means of transport, eco-friendly and accessible physically and booking.

Daily journeys
- Smaller buses that pick me up from home and take me to the exact place I want to go, like public taxis that are requested and can be shared.

Free time journeys
- To increase the frequency of some tram and bus lines, especially during the later hours; subway until 1 am.
- I don't think it will increase the use of transport.

UPPER
IBV

LOW INCOME profile



LOW INCOME. Daily journeys stories

Woman, 66 y.o., France
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Man, 31 y.o., France
I mostly commute to work. More safe routes would be desirable and better maintenance of these would also be useful. I use the bike because it is a pleasant way to get around, fast and allows me to be more active. More parking bays would also be desirable so that I can easily park near the various amenities.

Woman, 38 y.o., Portugal
From where I live to the city where I work and access other services (like doctors, for example), I can only use the train, which has few available times (at most every 30 minutes, even during rush hour). Outside rush hour, the train has half the carriages, and therefore fewer seats, and is only every 1 hour, so it's not the most comfortable. The metro also suffers delays sometimes, but it is the most. The By-cars, which I use less lately, could also circulate more regularly.

Woman, 45 y.o., Greece
I use the bike in my municipality because it is the fastest and simplest means of transport. If I need to go somewhere far away, I go by public transport or in combination with the By bike. I prefer the metro because it is fast and sometimes the By bus because it covers more areas.

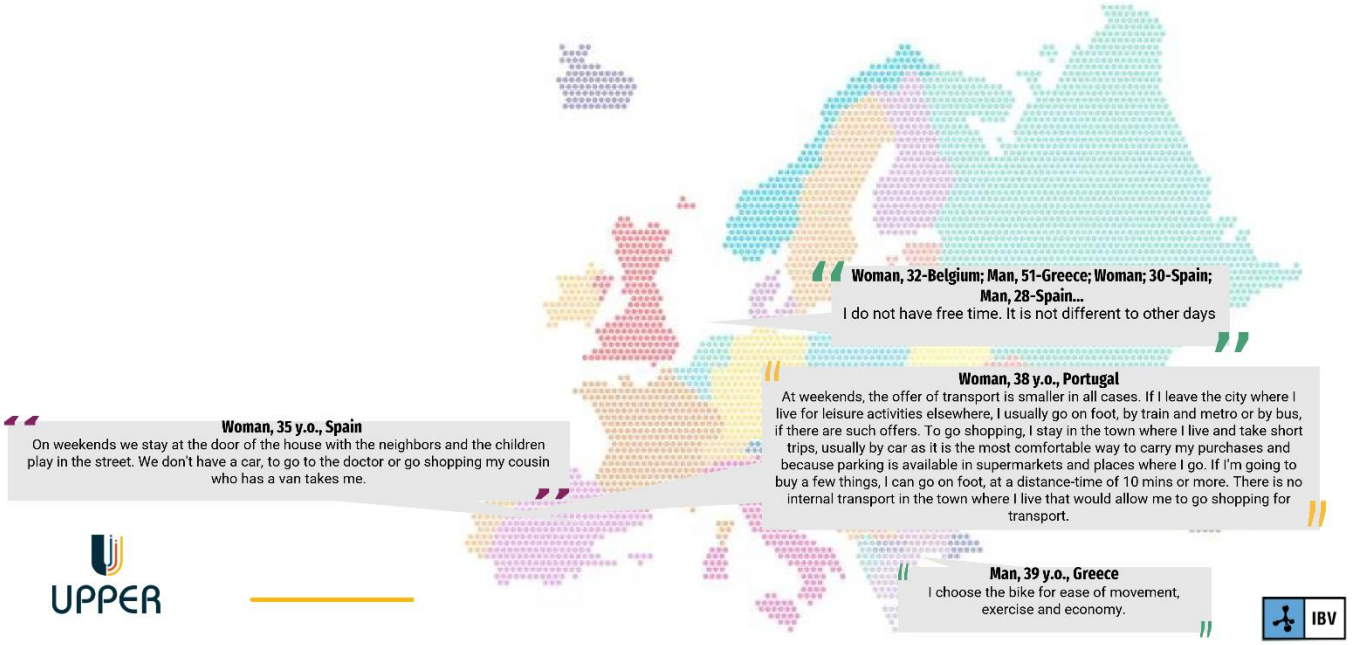
Woman, 30 y.o., Spain
I work as a cook and I do night shifts. I usually get around on an electric scooter, it's faster and it takes me from door to door. I also take the girl to school with the scooter and I go shopping to supermarkets near home.

Man, 72 y.o., Spain
I rarely leave the house, two or three days a week when I go to the senior center, as it is close I walk. I do some small shopping but normally I get food delivered to my home from the social services. If I have ever had to go to the doctor, I take a taxi or have asked a neighbor to take me in their car.

Woman, 35 y.o., Spain
Normally I don't leave my neighborhood and I walk everywhere. In the morning the children get up and go to school, I usually get up later and I walk to buy and my cousin's house, I help him with his mother who is older. Then I go back home to cook food and in the afternoon I don't go out or I go out to the neighbor's house or to the street to chat with the neighbors.

Man, 28 y.o., Spain
I have been living here for a short time, my family is in Morocco. In the city I go walking or by bike. My jobs are sporadic, for example, in the agriculture, and to go they pick us up in a foreman's van, I also collect products from the street and sell them, I go around on my bike and look for material to sell. I never use public transport because I feel uncomfortable and to get a voucher I have to do a lot of paperwork and I have no documents. The bike is useful to me because I can store things. If I had a better job I would buy an electric scooter.

LOW INCOME. Free time journeys



Woman, 32-Belgium; Man, 51-Greece; Woman; 30-Spain; Man, 28-Spain...
I do not have free time. It is not different to other days

Woman, 38 y.o., Portugal
At weekends, the offer of transport is smaller in all cases. If I leave the city where I live for leisure activities elsewhere, I usually go on foot, by train and metro or by bus, if there are such offers. To go shopping, I stay in the town where I live and take short trips, usually by car as it is the most comfortable way to carry my purchases and because parking is available in supermarkets and places where I go. If I'm going to buy a few things, I can go on foot, at a distance-time of 10 mins or more. There is no internal transport in the town where I live that would allow me to go shopping for transport.

Woman, 35 y.o., Spain
On weekends we stay at the door of the house with the neighbors and the children play in the street. We don't have a car, to go to the doctor or go shopping my cousin who has a van takes me.

Man, 39 y.o., Greece
I choose the bike for ease of movement, exercise and economy.

LOW INCOME. Strengths and weaknesses

STRENGTHS

In general
- When it works, my journeys are fluid (III)
- Ease of movement, parking, exercise
- Bicycles in the subway

Daily journeys
- Uncrowded roads or safe cycle paths
- The metro is fast, the buses in my area are relatively good and the area is quiet for bike
- There are no delays in the timetables indicated on the trains
- Sometimes I go by public transport, the bus is very comfortable and the price is very good, what happens is that with the skateboard I arrive before
- I don't need the bus, I don't have the discount voucher and I don't go from here to there
- I rarely go out of the house and I don't use it, although I imagine it works well
- A colleague's wife uses it a lot to go to work and is very happy

Free time journeys
- When it's Sunday morning or Wednesday afternoon and the streets are empty
- There are usually fewer people on transport and trips are more comfortable than during the week

WEAKNESSES

In general
- Frequency, timetable and reliability of some metro, tram and bus lines (IIII)
- The education of the world

Daily journeys
- Sometimes the bus telematics don't work so I don't know if I have to wait or not
- Secure bicycle locking in an area with cameras at all stations. Large network of cycle paths
- I would have to spend in less time, especially on weekends. If I had to go to work by public transport it would be a problem because sometimes I leave very late and there are no buses or they take a long time to come
- I don't know how to use the internet and now everything has to be with the computer or go to the center to do the paperwork. It is very cumbersome
- All financial aid is complicated and I don't know how to manage it, language is also a problem

Free time journeys
- The frequency of metro
- All drivers should be trained not to drive aggressively and with a safe distance from bicycles and two-wheelers in front
- Bike lanes and bus routes

TO INCREASE THE USE OF PT

In general
- The frequency of metro, intermodality, reliability of timetables, less crowded PT

Daily journeys
- More frequency and more stops near my home and work
- The social worker could give me some free vouchers to try
- I am too old to use public transport
- Bonus systems that do not require complicated procedures that could be solved in social services or immigrant associations.
- Improvement of telematics service
- Greater frequency of buses and trolleybuses

Free time journeys
- To operate later on weekdays as well, maybe until 2:00 am.
- The buses should come every 10 minutes.
- Greater availability of timetables, for example, metro and trains until later (instead of the metro closing at 1 am and trains only until around midnight).

FUNCTIONAL DIVERSITY profile

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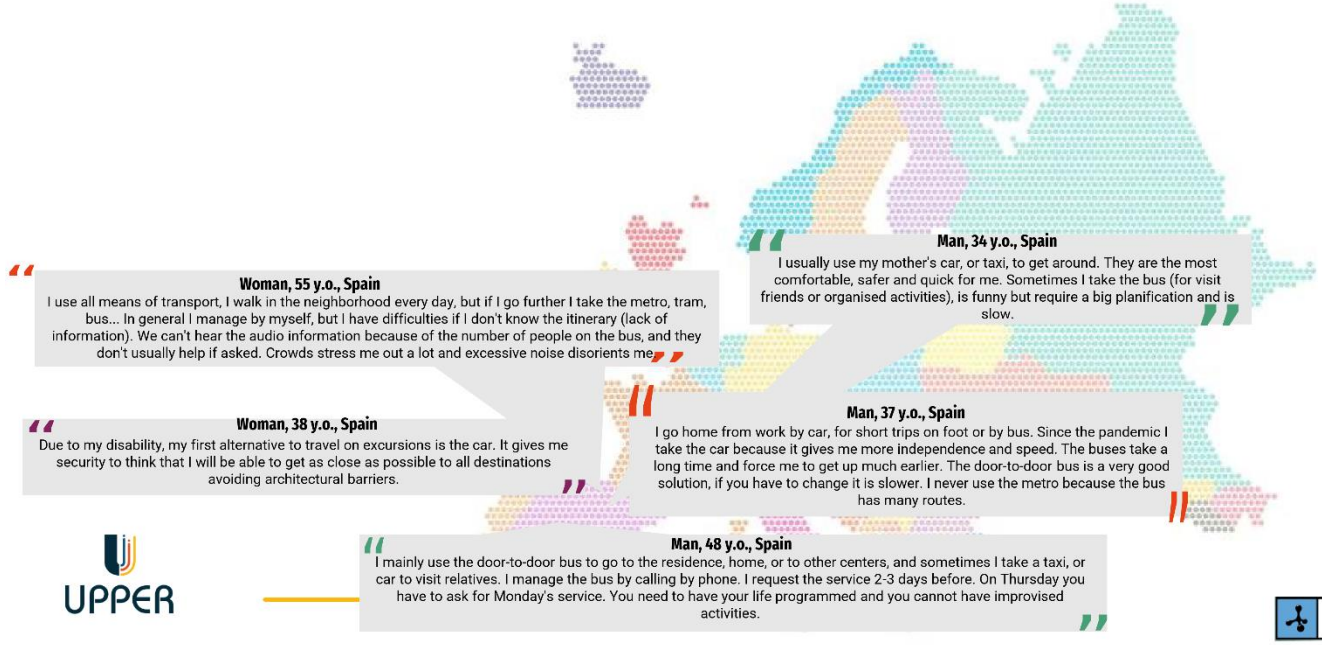
FUNCTIONAL DIVERSITY. Daily journeys stories



Woman, 55 y.o., Spain
I use all means of transport, I walk in the neighborhood every day, but if I go further I take the metro, tram, bus... In general I manage by myself, but I have difficulties if I don't know the itinerary (lack of information). We can't hear the audio information because of the number of people on the bus, and they don't usually help if asked. Crowds stress me out a lot and excessive noise disorients me.

Man, 34 y.o., Spain
I usually use my mother's car, or taxi, to get around. They are the most comfortable, safer and quick for me. Sometimes I take the bus (for visit friends or organised activities), is funny but require a big planification and is slow.

Woman, 38 y.o., Spain
Due to my disability, my first alternative to travel on excursions is the car. It gives me security to think that I will be able to get as close as possible to all destinations avoiding architectural barriers.

Man, 37 y.o., Spain
I go home from work by car, for short trips on foot or by bus. Since the pandemic I take the car because it gives me more independence and speed. The buses take a long time and force me to get up much earlier. The door-to-door bus is a very good solution, if you have to change it is slower. I never use the metro because the bus has many routes.

Man, 48 y.o., Spain
I mainly use the door-to-door bus to go to the residence, home, or to other centers, and sometimes I take a taxi, or car to visit relatives. I manage the bus by calling by phone. I request the service 2-3 days before. On Thursday you have to ask for Monday's service. You need to have your life programmed and you cannot have improvised activities.

UPPER

IBV

FUNCTIONAL DIVERSITY. Free time journeys stories

Woman, 55 y.o., Spain
In my case the situation is the same during the week as it is on the weekend. Maybe before you noticed that during the week there were fewer people and less frequently, but now, due to my schedule, I don't notice the difference. For physical activity, I go by bike with my husband, I like the sensations, but in the city is much stressful for me.

Woman, 38 y.o., Spain
Due to my disability, my first alternative for my leisure or free time trips is the car or the taxi.

Man, 37 y.o., Spain
On weekends there is much less bus service. Even so, if I meet friends I try to use the bus or stay close to my house and walk.

Man, 48 y.o., Spain
On weekends I use the taxi, bus or car, never the metro because it is not accessible. By taxi I always call the same driver who is very friendly and everything goes well. By bus there are only 2 seats, it is very crowded, if you go with friends with disabilities they can only get 2. You need a companion to help you (call, tick the voucher...).

UPPER

IBV

FUNCTIONAL DIVERSITY. Strengths and weaknesses

STRENGTHS

In general
- The buses have a lot of service, the gold voucher gives many facilities and is cheap and the EMT app is helpful in deciding itineraries (II)

Daily journeys
- The car because I have a parking card in a blue disabled space which allows me to park relatively easily (depending on the area)
- It works that many drivers help you get on and off, the treatment is friendly, it is fast, and it leaves me at the door of the house (almost always)
- Public transport in Valencia has a very good service with a number of routes and frequency. Time is not that important to me

Free time journeys
- It gives me security to think that I will be able to get as close as possible to all destinations avoiding architectural barriers. The car and the taxi.
- Utility of the app to control schedules and frequency of buses
- On the bus the anchorages are correct, it is comfortable, kindness in general

WEAKNESSES

In general
- Accessibility to train, metro, bus. Eliminate steps on commuter trains; EMT buses that had stops attached to the sidewalk avoiding having to go down to the street and climb the step (III)
- Access to the metro with elevator or escalator (III)
- Missing better auditory information. Some channel through which you can hear the instructions. Larger font sizes and graphics at stops (II)

Daily journeys
- The buses are very crowded, you cannot access the reserved seats or they are occupied. There are seats at height, with a step, that I cannot use. Infrequent and slow. The old buses have dangerous accesses with high steps.
- If there are more people on the door-to-door bus, the service is much slower. The bus may arrive later than expected, it does not meet the agreed schedule. At night there is no service, you cannot go out for dinner. You have to call before 11am or it fills up. The renewal of the gold bond is done every 3 years even if it is a permanent certificate. It is only requested by phone, people without verbal communication cannot use it autonomously

Free time journeys
- Little service on weekends
- The companion has to pay, you don't fit in the aisle, so you can't tick the bonus; lack of sensitivity

TO INCREASE THE USE OF PT

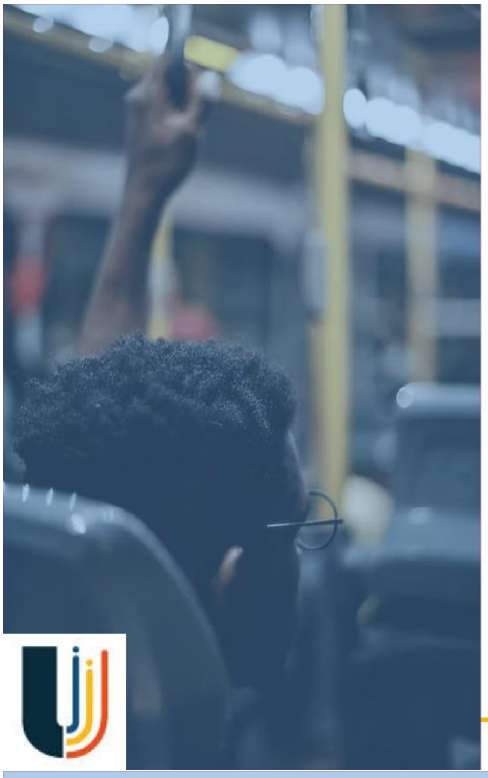
In general
- In general, the improvement of accessibility and frequencies, perhaps exclusive lanes so that they go faster (III)
- Provide information in different ways and be able to anticipate decisions, advice (II)

Daily journeys
- Ideally all staff should be friendly and help you. That all drivers leave you at the door to door (house door) and not at the nearest stop, and that you can manage the service on the same day.

Free time journeys
- Increase the frequency of buses, smaller and some of them fast track.

UPPER

IBV



EXPERIENCE NOTEBOOK. Mobility experiences of the citizenship.

Index:

1. Objective & methodology
2. Sample
3. Analysis by user profile
4. **Analysis by mobility awareness level**
5. Comparative analysis and conclusions

4. Analysis by mobility awareness

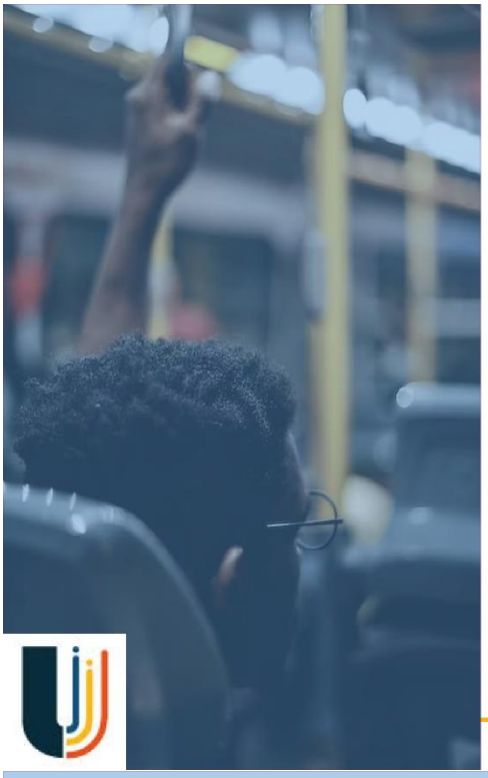
Two profiles are identified regarding awareness level on mobility. Some users are included in a profile by necessity, and other are included in a group by conscience/will.

High awareness level on mobility awareness; some hypothesis

- People of any age with values and habits related to health, physical exercise and environmental awareness.
- People who live in urban environments with good public transport services and infrastructure for active modes.
- People who live close to their jobs and frequent activities.
- The student profile is representative in this group.
- They do not give up the use of the private vehicle, they mainly reduce it.
- Main reasons for using a bike or public transport: speed, well-being, health, exercise, reducing pollution, family time, relaxing time...

Low awareness level on mobility; some hypothesis

- Workers.
- Middle-aged people, with complex itineraries, who works and take care of dependents (children or dependent relatives) or with many activities, have a greater use of private vehicles.
- People who live far from their place of work or with a poor combination of public transport are less aware about mobility.
- People who move door to door (they have parking at home and at work) are prone to use a private vehicle.
- People who, due to accessibility problems, can't use the public transport.
- Main reasons for using a private vehicle: speed, guarantee of arriving on time, freedom to choose the moment of travel, door-to-door comfort...



EXPERIENCE NOTEBOOK. Mobility experiences of the citizenship.

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5. Comparative analysis – Lifecycle and conditions

Young

Greater diversity, less resistance to change, greater use of shared vehicles and electric scooters.

Freedom, speed and economy as a decision criteria.

High mix of modes of transport. Greater familiarity with the electric vehicles and less use of the private car.

Adult with children

Complexity of displacements (work, housework, picking up children at school...) and diversity in the ways of living.

Importance of the values of coexistence and environment.

Importance of the time factor, efficiency and security in their decisions.

Elderly

Importance of health status for the use of different modes of transport.

Higher degree of satisfaction with public transport due to the less importance of the time factor.

Greater enjoyment of travel time.

Reduction of the number of trips when health problems appear.

Low income people

Few trips in general, life is reduced to the neighborhood.

Access to transport vouchers and economic advantages are far from their reality (complex procedures).

Main use of bicycle and electric scooter when accessing a mode of transport.

People with functional diversity

Mobility marked by accessibility. Ordinary public transport is not a real option in many cases.

Specialized services heavily protocolized that limit the possibility of making decisions in the short term.

People with autonomy opt for the private car.

Semantic analysis by gender - STRENGTHS

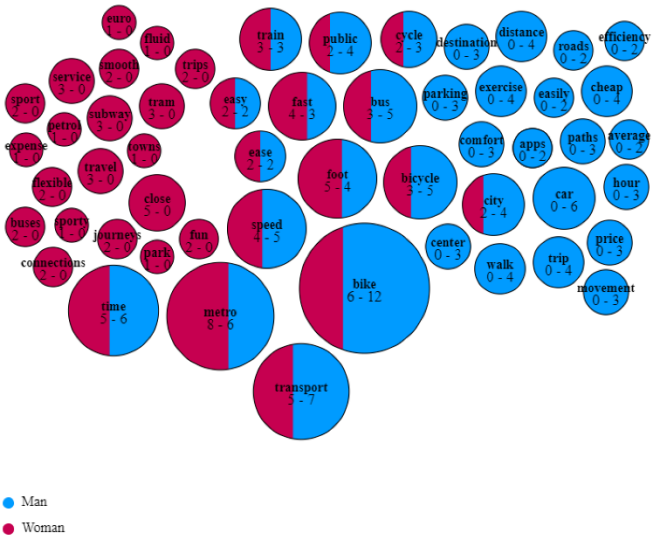
Semantic analysis of gender differences – strenghs in PT

Based on the semantic study of the responses, strengths are identified by gender. Regarding the transport modes, the main satisfactory modes are on foot, bike and bus. For women, other satisfactory modes are the subway/tram/train, and for the men, the car and train.

Both groups, the **main strengths are considered the ease, speed and the times of public transport**.

In addition to these attributes, **women highlight proximity, flexibility and fluidity**, and **men highlight efficiency, comfort, price and distance**.

For the use of the **bike**, both groups consider **making exercise as a strength**.



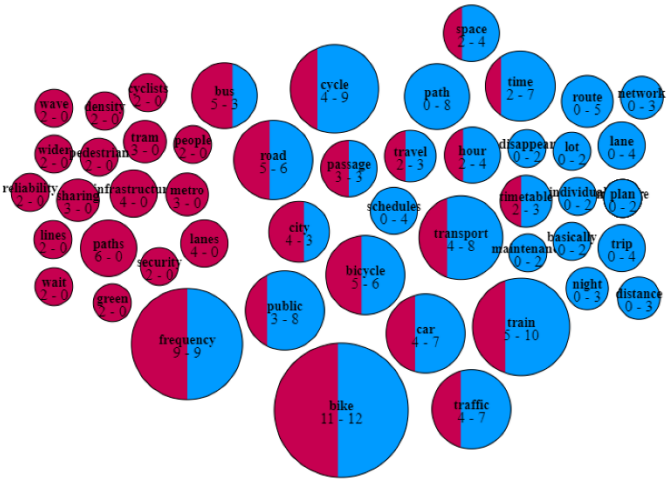
Semantic analysis by gender - WEAKNESSES

Semantic analysis of gender differences – weaknessess in PT

The most important weakness for all the participants is related to the bike: infrastructure, security, wider and maintenance of the paths and lanes… Most of the participants in the study are cyclists or pedestrians and usually practice active mobility modes.

Another **important point to improve** by consensus is related de **reliability, timetables and frequency of the PT** (train, tram, metro specially).

Different aspects are observed **according to gender**: **women mention to a greater extent aspects such as safety, shared vehicle and the need to address improvements for pedestrians.** On the other hand, **men highlight aspects such as maintenance, distance and traffic** more prominently.



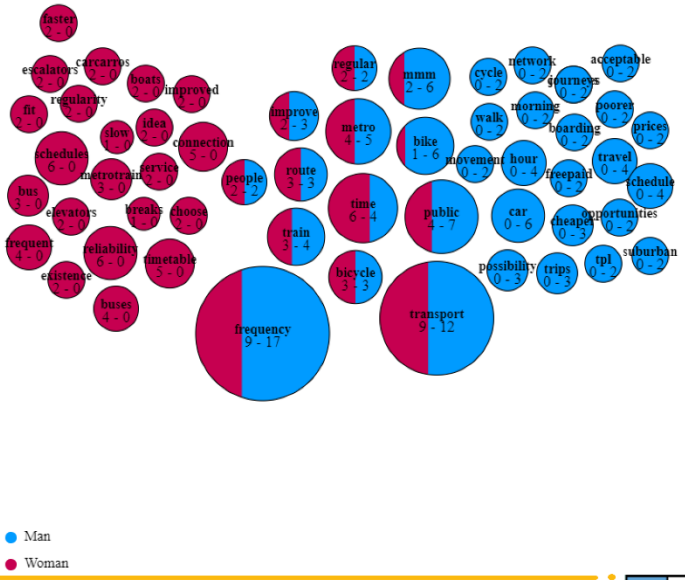
Semantic analysis by gender - IMPROVEMENTS

Semantic analysis of gender differences – improvements for increase the use in PT

The most important improvements for all the participants is related to the **times, frequencies and schedules of public transport** (bus, train, and metro specially). They consider that these are the keys.

Another important points to improve by consensus is related **the use of the bike and the increment of the opportunities for the use of public transport** (more routes, regularity…)

Different aspects are observed **according to gender**: **women mention** to a greater extent aspects such as **connection, reliability, faster and fit.** On the other hand**, men highlight** aspects such as **price, the use of the car, and the opportunity for using any modality at any moment more prominently.**



General conclusions

STRENGHTS

- EFFICIENCY AND SPEED OF THE BIKE (24)
- EASINSESS AND SPEED OF PT (19)
- FASTER AND FLEXIBLE (12)
- WHEN IT WORKS, MY JOURNEYS ARE FLUID: THE FREQUENCIES ARE GOOD, THE BUSES ARE GOOD, THE STOPS, THE PRICE... (8)

IMPROVEMENTS TO INCREASE THE USE OF PUBLIC TRANSPORT

- INCREASE THE FREQUENCY (28)
- AFFORDABLE AND CHEAPER (24)
- PUNCTUAL AND SCHEDULE COMPLIANCE (24)
- REGULARITY AND RELIABILITY (20)
- MORE OFFER (16)
- CONNECTIONS AND INTERMODALITY (10)

WEAKNESSESS

- FREQUENCY, PUNCTUALITY AND SCHEDULE COMPLIANCE (28)
- REGULARITY AND RELIABILITY (20)
- LITTLE OFFER (e.g. at night, in the outskirts…) (20)
- POOR MAINTENANCE OF THE BIKE INFRASTRUCTURE AND LITTLE PRIORITIZED (20)
- A LOT OF PEOPLE, THE PT IS MASSIFIED (15)
- SAFETY AND SECURITY (10)

ANNEX 7. Survey' questionnaire

UPPER- Survey

Welcome to the UPPER project SURVEY

We would like to hear more about your mobility habits and opinions to help us to improve public transport and increase its usage, which is the goal of the UPPER project (https://www.upperprojecteu.eu/).

Your participation consists of filling out a 15-minute survey and it is completely anonymous. The information will be analysed in aggregate and grouped form.

Thank you very much for your cooperation!

1. USER CHARACTERIZATION

1. Please indicate your age:
   - 18-25
   - 26-35
   - 36-45
   - 46-55
   - 56-65
   - 66-75
   - Over 75 years old

2. Please state your gender, as you self-identify:
   - Female
   - Non-binary
   - Male
   - Prefer not to say

3. Could you please indicate if you have functional diversity? (You can choice more than one)
   - Motor or physical. "I use support product for walk"
   - Motor or physical. "I use wheelchair"

- Motor or physical (upper limbs)
- Visual
- Auditory
- Intellectual or psychic
- Multisensory
- I do not have any
- Other (please specify)

4. What mode of transport do you mainly use on a daily journeys?

- Public transport (bus, metro, tram, train, taxi, ferry, shared car, etc.)
- Private transport (your own moto or car)
- Active mode mobility (on foot or by bike)

5. Composition of your household: (you can choose more than one)

- I live alone
- I live with my mother/father/sibling(s)
- I live with friends/roommates
- I live with professional caregivers
- I live with a partner
- I live with son(s)/daughter(s)
- I live with elderly or disabled relatives
- Other (please specify)

6. Indicate the age of your sons / daughters if it is the case:

- Less than 1 year old;
- 1 year old
- 2 years old
- 3 years old…
- More than 14 years old

7. Main occupations (you can choose more than one):

- I study (not at home)

- I work (not at home)
- I work from home; I study from home
- Househusband/Housewife
- I take care of relatives (elderly, children, functional diversity)
- Retired (by age or illness)
- Unemployed
- Other (please specify)

8. Which of the following statements best describes your economic situation regarding transport?

- I have difficulties affording public transport
- I have difficulties affording a car
- I cover all my transport costs without major difficulties
- I prefer not to say
- Other (please specify)

2. MOTIVATION FOR TRANSPORT / MOBILITY

9. Please review the list of public transport options below. For each option that you use, indicate a maximum of two reasons why you use it.

- By shared Bike
- By shared car
- By shared light electric vehicle (e- bike, e-bike; scooter, motorbikes...)
- By taxi
- By bus
- By metro/tram
- By train

Reasons:

- Mode not available in my city
- I don´t use this transport mode
- Comfort
- Speed-Journey time
- Service frequency
- Reliability (Punctuality)
- Lack of alternatives

- Timetables / Service at specific hours
- Flexibility; Security- Safety; Accessibility
- Proximity of the stop
- Cost and affordability
- Interconnection with other modes
- Health & Wellness
- Awareness & Sustainable
- Other (please specify)

10. Please review the list of non-public transport options below. For each option that you use, indicate a maximum of two reasons why you use it.

- On foot
- By own bike / e-bike
- By own skate, e-scooter...
- By own Motorcycle
- By own car
- Other (please specify)

Reasons:

- I don't have this type of vehicle
- I don´t use this transport mode
- Comfort
- Speed-Journey time
- Service frequency
- Reliability (Punctuality)
- Lack of alternatives
- Timetables / Service at specific hours
- Flexibility; Security- Safety; Accessibility
- Proximity of the stop
- Cost and affordability
- Interconnection with other modes
- Health & Wellness
- Awareness & Sustainable
- Other (please specify)

11. Please, indicate the frequency of use and importance of the following types of transport / mobility.

- Public transport (bus, metro, tram, train, taxi, ferry, shared car, etc.)
- Private transport (your own moto or car)
- Active mode mobility (on foot or by bike)

Frequency of transport modes:

- 5-7 days/week
- 2-4 days/ week
- Once a week
- Once or twice a month
- Occasionally
- Never

Importance of transport modes

- No interest
- Less important
- Somewhat important
- Important
- Essential

12. Which of the following statements describes you best?

- I mainly use my car or motorcycle and do not consider changing to another mode.
- I mainly use my car or motorcycle, but I would like to partially switch to other modes of transport (bus/metro, car-sharing, cycling, walking...).
- I am using my car less and trying other alternatives (bus/metro, car-sharing, cycling, walking...).
- I walk or cycle.
- I use public transport for most of my journeys.
- Other (please specify).

3. HOW DO YOU COMMUTE ON A WEEKDAY? UNDESTANDING DOOR-TO-DOOR MOBILITY

We start with the experience of daily mobility in the city or metropolitan area...

13. Please indicate the main journeys of your day. A typical journey is home to home, but perhaps you make several trips home to home. Please, describe the most relevant (detail all the stages of your journeys):

I leave the house and firstly...

Secondly...

Thirdly...

Fourthly...

Fifthly...

Sixthly...

Finally...

I'm going to...

- work
- business trip
- school or education
- shopping, errands (e.g. food)
- services (e.g. bank, doctor...)
- bring or collect someone
- care for the elderly, disabled, children...
- do sport
- visit someone (friends, relatives...)
- leisure activities
- home

I travel by...

- on foot
- own bike
- own e-bike
- own skate or scooter
- own motorcycle
- own car
- taxi
- bus

- metro/tram
- train
- shared bike / e-bike
- shared Light Electric Vehicle (e-scooter, moto, e-bike)
- shared car

For how long?

- Less than 5 minutes
- - 10 minutes
- 11 - 20 minutes
- 21 - 30 minutes
- 31 - 45 minutes
- 46 - 60 minutes
- more than 1 hour

4. PUBLIC TRANSPORT

14. Please, indicate the importance of the following public transport modes for your daily mobility:

- Not applicable
- No interest
- Less important
- Somewhat important
- Important
- Essential

Transport modes:

- Shared bike /e-bike
- Shared moto
- Shared e-scooter
- Shared car
- Bus
- Tram
- Metro
- Ferry
- Taxi

15. Please, indicate the level of satisfaction with the following public transport modes in your city/town:

- Not applicable
- Not satisfactory
- Slightly satisfactory
- Somewhat Satisfactory
- Satisfactory
- Very satisfactory

Transport modes:

- Shared bike /e-bike
- Shared moto
- Shared e-scooter
- Shared car
- Bus
- Tram
- Metro
- Ferry
- Taxi

16. Please, indicate your level of agreement or disagreement with the following statements

- I feel safe in public transport
- The bus is secure for me...
- The Metro/Tram/Train is secure for me...
- The shared transport (bike, scooter, car...) is secure for me...
- The taxi is secure for me...
- The stations or public transport stop are secure for me...

Level of agreement

- Not applicable
- Strongly disagree
- Disagree
- Neutral
- Agree

- Strongly Agree

If you disagree, please provide a reason:

- Not applicable
- Risk of harassment or sexual assault
- Thefts / Robberies
- Fights
- Accidents

5. POTENTIAL IMPROVEMENTS IN THE FOLLOWING PUBLIC TRANSPORT MODES

17. How often do you use the bus in your city?

- 5-7 days / week
- 2-4 days / week
- Once a week
- Once or twice a month
- Occasionally
- Never
- There is not in my city

18. Please, choose the 3 potential improvements that you consider most important for the bus in your city:

- To increase the frequency of buses
- To ensure greater punctuality and reliability
- To provide good customer service
- Improve the capacity of the buses and limit the number of passengers so that they are not crowded. To upgrade buses to improve comfort (seating, temperature, etc) and modernize services
- To maintain cleanliness and ensure regular maintenance of buses To enhance safety for standing passengers
- To promote safe driving practices
- To improve driver attentiveness, emphasizing friendliness and professionalism
- To enhance the mobile app's functionality and user experience, it should provide seamless ticket acquisition and payment options, along with an appropriate pricing structure offering various ticket choices
- To extend the service time slots, especially for night service

- To establish good connections between the bus service, airports, and other means of transport
- To improve accessibility for individuals with disabilities, the elderly, and those using baby carriages, measures such as providing more space, priority seats, and assistance for people with reduced mobility should be implemented at bus stops and on buses.
- To establish clear rules for users and promote respect among passengers, including prioritizing passengers in need, such as the elderly
- Door-to-door small buses with fewer passengers
- Other (please specify)

19. How often do you use the metro/tram/train in your city?

- 5-7 days / week
- 2-4 days / week
- Once a week
- Once or twice a month
- Occasionally
- Never
- There is not in my city

20. Please, choose the 3 potential improvements that you consider most important for the metro/tram/train in your city:

- Improvements in the maintenance and cleanliness of trains and stations, with regular renewal.
- To enhance comfort (temperature, etc), efficiency, and usability of the train service through upgrades and improvements
- To establish good connections between the train service, airports, major city hubs, and other modes of transportation, it is important to expand the train network to ensure comprehensive coverage.
- To improve security measures to prevent theft and other safety concerns for passengers
- To increase the frequency of trains to provide more frequent service and reduce waiting times
- To emphasize punctuality, speed, and reliability of the train service, ensuring precision in adherence to schedules
- To minimize or to eliminate fines for failures or lack of knowledge (especially for tourists)
- To enhance accessibility for individuals with reduced mobility, baby carriages, and other special needs (e.g. more space and priority seats, support in accessing)
- To improve customer service by addressing inquiries and incidents in a friendly manner, catering to multiple languages, and ensuring helpful staff

- To offer a variety of ticket types and establish an adequate pricing structure that balances affordability with the quality of service provided
- To ensure clear and visible signage, complete and reliable information on screens, websites, and other platforms
- To establish clear rules of use and behaviour, including effective supervision, communication campaigns, and sanctions, to encourage respectful behaviour among users
- To expand the night service to cater to passengers during late hours
- To implement troubleshooting measures to minimize problems or errors with ticketing machines and other systems and facilitate various forms of payment
- To optimize the interior space of trains through redesigning to maximize capacity and comfort. To consider allowing passengers to bring bikes / e-scooters on the train
- Other (please specify)

21. How often do you use the taxi in your city?

- 5-7 days / week
- 2-4 days / week
- Once a week
- Once or twice a month
- Occasionally
- Never
- There is not in my city

22. Please, choose the 3 potential improvements that you consider most important for the taxi in your city:

- Train and encourage friendly and professional behaviour in drivers
- Emphasize efficiency, safety, and flexibility by prioritizing faster and shorter routes Prioritize speed, punctuality, reliability, and precision in taxi services
- Provide excellent customer service with fast, flexible, and friendly assistance Streamline the process of hailing a taxi.
- Develop a useful, reliable, and user-friendly taxi mobile app.
- To establish a pricing structure that offers value for money, accommodates various payment methods, ensures transparency with fixed rates.
- To maintain clean and comfortable cars.
- To increase taxi service availability during night time hours.
- To enhance taxi accessibility, provide suitable car seats and accommodations for passengers with specific accessibility needs

- To implement a system for recovering lost items in taxis.
- To provide dedicated taxi services to and from airports. To consider offering a home pick-up service.
- To allow passengers to specify preferences. To promote multilingualism among drivers.
- To remove unnecessary restrictions on travel destinations.
- Other (please specify)

23. How often do you use the Shared Light Electric Vehicles (e-scooter, e-bike) in your city?

- 5-7 days / week
- 2-4 days / week
- Once a week
- Once or twice a month
- Occasionally
- Never
- There is not in my city

24. Please, choose the 3 potential improvements that you consider most important for the Shared Light Electric Vehicles (e-scooter, e-bike) in your city:

- To ensure an easy-to-use service that is simple, fast, agile, and satisfactory, minimizing system errors such as incorrect charges.
- To develop a usable, functional, useful, and flawless mobile app for seamless interaction with the service.
- To establish a transparent and user-friendly price structure, offering discounts based on usage and user profiles to incentivize loyal customers.
- To provide fast, decisive, and adequate customer service with 24-hour availability and a focus on kindness and responsiveness.
- To deliver a quality and reliable service, ensure motorcycles and e-scooters work well, are easy to drive, undergo regular maintenance and cleanliness, and are designed to be attractive, comfortable, functional, and durable.
- To provide insurance coverage that is integrated with the rental service and adequately protects users.
- To maintain a sufficient availability of motorcycles / e-scooters to meet user demand at various locations.
- To expand the service radius to cover areas that currently do not have access to the service, improving its availability and reach.
- To implement agile and simple forms of payment and rental processes, minimizing the need for large deposits or excessive personal information.

- To ensure automatic return of funds within a timeframe of less than 24 hours for smoother transactions.
- To enforce proper parking protocols to prevent disorderly parking that may inconvenience pedestrians or disrupt public spaces.
- To ensure compatibility with international cards, including cards from other countries such as the US.
- To establish robust and secure management practices for handling personal data, prioritizing user privacy and data protection.
- Other (please specify)

25. How often do you use the Shared CAR in your city?

- 5-7 days / week
- 2-4 days / week
- Once a week
- Once or twice a month
- Occasionally
- Never
- There is not in my city

26. Please, choose the 3 potential improvements that you consider most important for Shared Cars in your city:

- To implement good customer service practices with professionalism and excellent treatment towards users.
- To minimize fines and charges due to service or system failures, address common issues including malfunctioning doors, app errors, parking difficulties, locking/unlocking problems, unrecorded returns, and double admission fee charges
- To develop a fast, convenient, and flexible service that serves as a viable alternative for individuals without a car.
- To ensure the service caters to both city transport needs and trips outside the city centre.
- To establish a competitive pricing structure that offers good value for money, costs less than owning a car, and includes free registration.
- To prevent charging problems with electric cars, maintain a charge level above 30%, provide reliable autonomy indications, avoid fines for low battery levels, prevent false mileage charges, and ensure the presence and functionality of charging cables
- To develop an intuitive and well-functioning mobile app that is easy to use and provides a seamless experience for users.
- To ensure cars are well-maintained, regularly cleaned, easy to drive, comfortable, and offer a variety of models, including automatic transmission options.

- Other (please specify)

27. How often do you use the Shared bike in your city?

- 5-7 days / week
- 2-4 days / week
- Once a week
- Once or twice a month
- Occasionally
- Never
- There is not in my city

28. Please, choose the 3 potential improvements that you consider most important for Shared bike in your city:

- Implement multilingual customer service to cater to tourists.
- Resolve system failures quickly and efficiently without additional costs to customers.
- Develop a system that avoids charging customers for system or service failures and provides immediate advice to address common issues.
- Establish well-sized bike stations or a free-floating system with ample parking spaces and balanced bike availability based on user demand and real-time information.
- Conveniently locate bike stations or a sufficient number of bikes in a free-floating system near bike lanes and other transportation options to promote intermodality.
- Create a comprehensive, well-signposted, and safe network of bike lanes.
- Improve bikes by addressing concerns like excessive weight, inadequate suspension, and introducing electric rental solutions and accessories for transporting children or purchases.
- Provide customer accessories such as mobile device holders, child seats, and cargo options.
- Develop a mobile application with real-time information on bike availability and user-friendly interface.
- Establish transparent pricing options with various ticket types for customer needs, including single tickets, 24-hour passes, weekly passes, etc.
- Simplify payment and rental methods, such as reducing deposit amounts, offering a 45-minute free rental period, and ensuring timely deposit refunds.
- Enable mobile payment options for customer convenience.
- Continuously improve the service to meet changing needs of residents and tourists.
- Promote respect for bike lanes and cyclists among all citizens to ensure safe coexistence with other road users.

- Integrate the bike sharing system into the public transport system, such as ticket and subscription integration or inclusion in the public transport mobile application.
- Other (please specify)

6. GENERAL MEASURES TO INCREASE THE USE OF PUBLIC TRANSPORT

29. Choose the 3 improvements related to data sharing and technology, that you consider most important for increase the use of the Public Transport (PT) in your city.

- To redistribute and redesign urban space to promote active travel modes (by bike, on foot…) and public transport (new lanes…), and to reduce on-street parking space in favour of more sustainable modes.
- To create a network of multimodal hubs, increasing the offer of new mobility services, improving the access to public transport and active modes, and improving user experience in the first/last mile.
- To improve the integration of Public Transport ticketing; to modernize and increase the attractiveness of digital sales channels; and to promote private sector partnerships.
- To implement and/or improve the Multimodal Digital Mobility Services (MDMS), to increase visibility and integration of sustainable modes of transport through a single App.
- To implement and/or improve the multimodal route planners (App) to increase the user satisfaction and encourage multimodality.
- To implement data-driven mechanisms as a support for Public Transport planning (optimise Public Transport network, service, frequency…) in order to improve the efficiency and convenience of Public Transport service for all, and in order to better adapt the Public Transport network to the city or transport operators' needs (fleet electrification, creation of Low Emission Zones/Zero Emission Zones…).
- To unleash the potential of the real-time Public Transport data in order to: provide the citizens with clear, reliable and accessible information before and during the trip; to enrich the data collected from Public Transport operation and evaluate future measures, policies and solutions; and to increase the resilience of Public Transport in front of foreseen and unforeseen events.
- To implement dedicated Public Transport lanes (for bus, tram…) in order to reduce travel times and improve Public Transport operation.
- To improve the Public Transport offer in peri-urban areas and to increase the access to Public Transport in low demands areas of the city (on-demand service).
- To study the needs of parking and public transport in different areas of the city and to influence modal shift through congestion sensitive Parking pricing.
- To support local governments in monitoring their Sustainable Urban Mobility Plans and to encourage them to integrate the mobility indicators monitoring in their decision making process.
- To adapt Public Transport stops and facilities (stations, bus stops…) to be more innovative, inclusive and convenient and safe.

30. Finally, choose the 2 improvements related to sustainability, that you consider most important for increase the use of the Public Transport in your city.

- To prioritise Public Transport (traffic light priority based on social optimum…) in order to reduce Public Transport travel times, increase punctuality and improve user satisfaction.
- To better understand dependencies between the level of service and passenger satisfaction and to initiate actions to improve public perception of Public Transport.
- To promote modal shift towards Public Transport through the implementation of a Low Emission Zones/Zero Emission Zones and to adapt Public Transport offer to cover the needs of these zones.
- To implement congestion and/or pollution charging scheme to encourage the shift towards the Public Transport.
- To implement special ticketing systems for different social groups (e.g. adapted to school students).
- To implement financial incentives to increase the share of Public Transport (discounts, tariffs, tax bonuses…).
- To establish participative governance and dialog formats to better address the citizens needs and expectations.
- To implement campaigns to encourage sustainable forms of transport, such as Public Transport, walking and cycling.

ANNEX 8. Survey's results

Unleashing the Potential of Public Transport in Europe

Instituto de Biomecánica (IBV)

UPPER SURVEY RESULTS

Study on Mobility and Public Transportation in 9 EU Countries (Belgium, France, Germany, Greece, Hungary, Italy, Norway, Portugal, Spain)

Reported by: Carol Soriano García, Amparo López Vicente, Juan Giménez Pla

Data collected from July to August 2023

This project has received funding from the Horizon Europe research and innovation programme under grant agreement No 101095904

Date

Index

1. Introduction

- In order to obtain the relative weight of the most relevant aspects related to different modes of PT, we performed a survey in nine different countries. These countries were those represented in UPPER consortium by pilot sites cities, i.e. València-Spain, Ile de France-France, Rome-Italy, Oslo-Norway, Manhein&Hannover-Germany, Lisbon-Portugal, Leuven-Belgium, Budapest-Hungary, Thessaloniki-Greece.

- The survey is addressed to PT users and non PT users in these nine EU countries. Additionally to the country of origin, different demographic variables as age, gender, functional diversity's level, transport mode preferences or household composition, have been employed to get the participants characterization. The proposed sample size in the DoA document was 2000 participants, including 500 VRUs .

- The survey includes 30 questions, distributed in six sections. The questions have been created according to the results generated in the qualitative research, and address citizen's motivations to employ PT, mobility habits, assessment of PT, PT improvements, and evaluation on mobility measures to enhance the PT's use

- The main objective of this task is to facilitate research on the improvement measures that the city labs want to introduce in PT.

2. Description of the Study Sample

- The total sample comprises **2676 users**, distributed across the **9 countries** in the **UPPER project**: **Belgium**, **France**, **Germany**, **Greece**, **Hungary**, **Italy**, **Norway**, **Portugal**, and **Spain**.

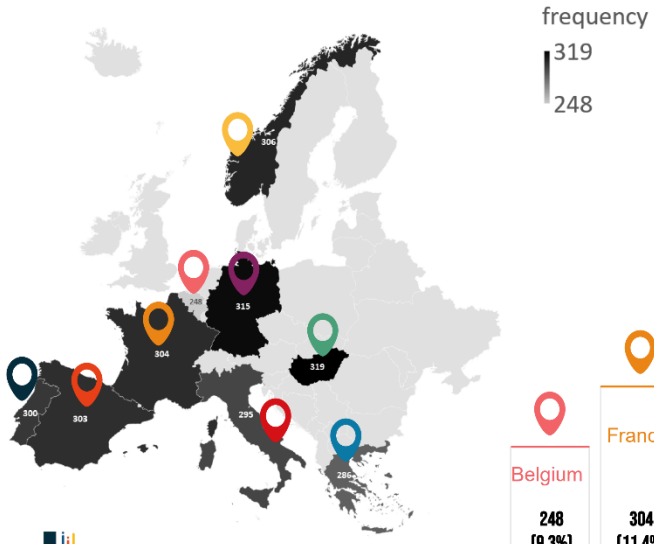
- The sample has been stratified based on **gender, age, and geographic distribution**, with the aim of achieving equitable representation in terms of gender, a population distribution resembling the norm, and a **minimum of 200 users per country.**

- Geographically, the sample is concentrated in major cities within the studied countries, including their respective capitals. This approach ensures a diverse representation of locations.

- In each country, the same stratification of the sample has been applied.

- Simultaneously, endeavors have been undertaken to ensure the inclusion of individuals with special needs (functional diversity), people with low incomes, the elderly, and those with varying sensitivities towards public transportation (awareness).

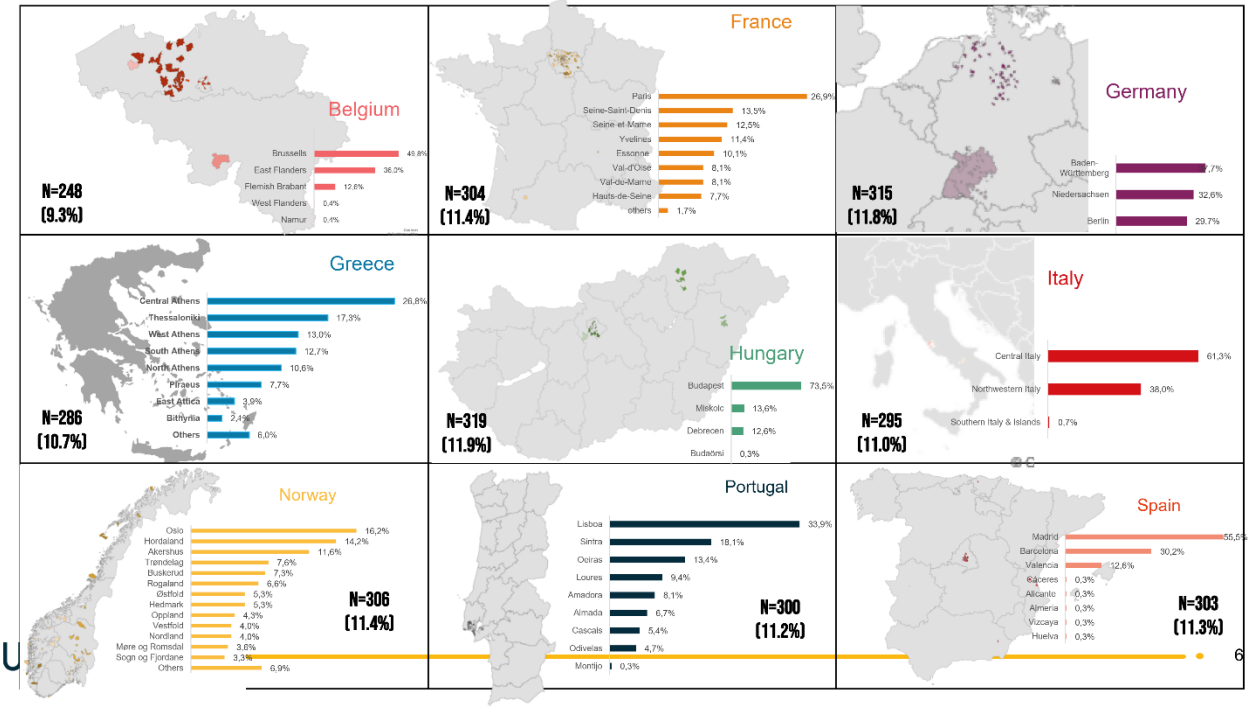
2. Description of the Study Sample



Belgium	France	Germany	Greece	Hungary	Italy	Norway	Portugal	Spain
248 (9.3%)	304 (11.4%)	315 (11.8%)	286 (10.7%)	319 (11.9%)	295 (11.0%)	306 (11.4%)	300 (11.2%)	303 (11.3%)

2. Description of the Study Sample

Sample location

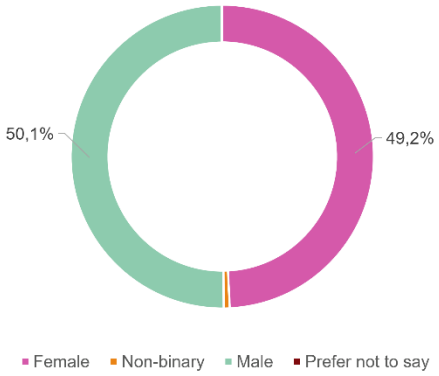


3. Sociodemographic and Economic Profile

- In the following graphs, you can see how the sample is distributed in terms of **gender** and **age** for all grouped countries:

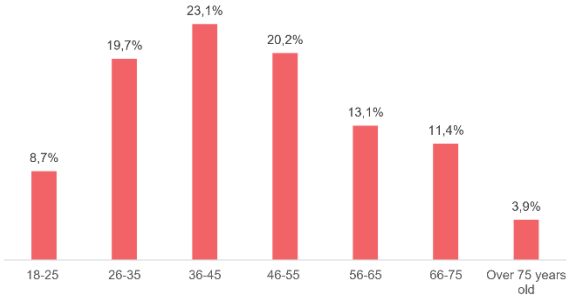
Gender

Please state your gender, as you self-identify:



Age

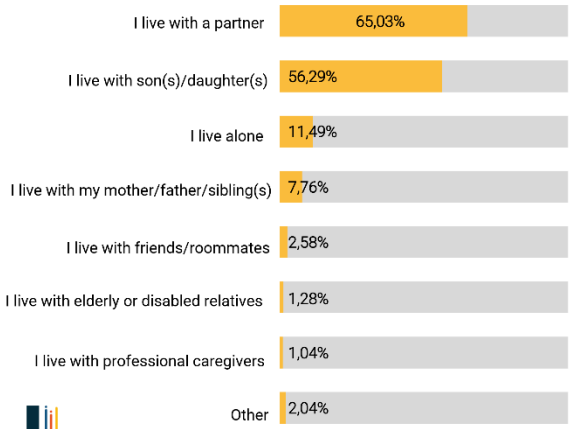
Please indicate your age:



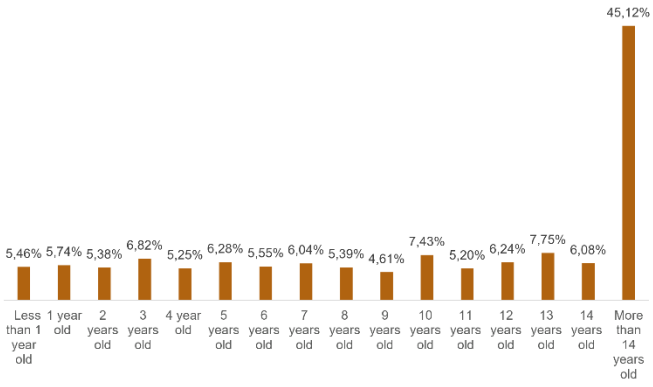
3. Sociodemographic and Economic Profile

- The following graphs illustrate the family composition of the participants and the number of children:

Composition of household:



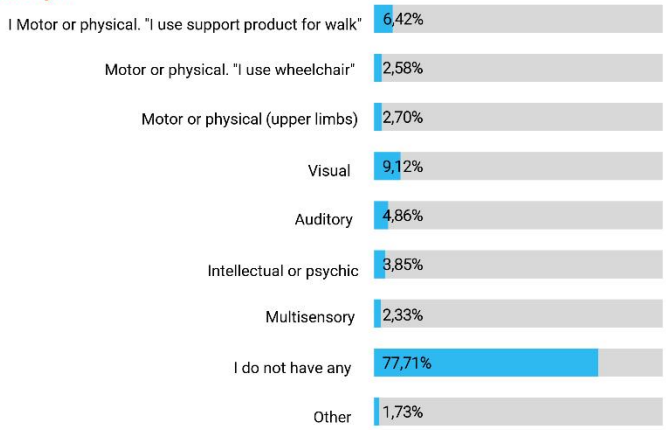
Age of sons/daughters



3. Sociodemographic and Economic Profile

- 77.7% of users report having 'no' functional diversity, while the remaining 22.3% indicate experiencing some form of functional diversity, as depicted in the following graph:

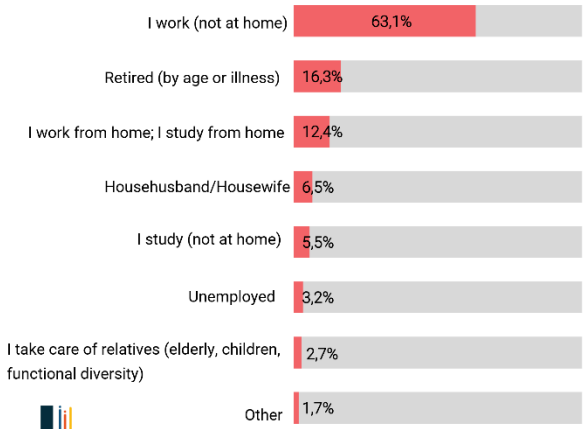
Functional diversity:



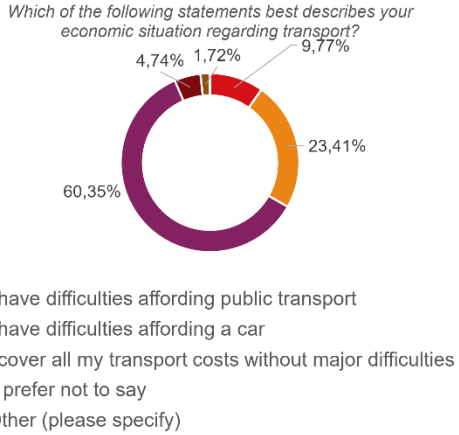
3. Sociodemographic and Economic Profile

- The sample has been characterized based on occupation, type of employment (including mobility requirements), and their ability to afford their transportation mode. It is noteworthy that the majority of individuals engage in work and study outside their homes (68.6%), necessitating some form of transportation. Additionally, 60.3% of respondents 'manage to cover all their transportation expenses without significant challenges,' while a notable percentage faces difficulties in affording public transportation (9.7%), and particularly private transportation (23.4%).

Main occupations:



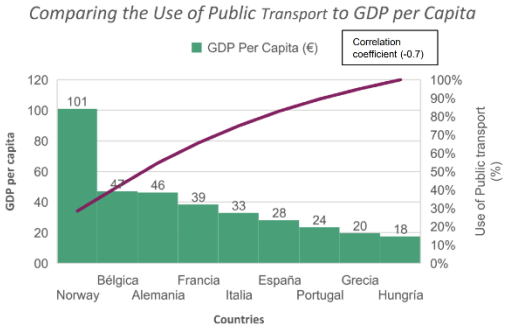
Economic situation regarding transport:

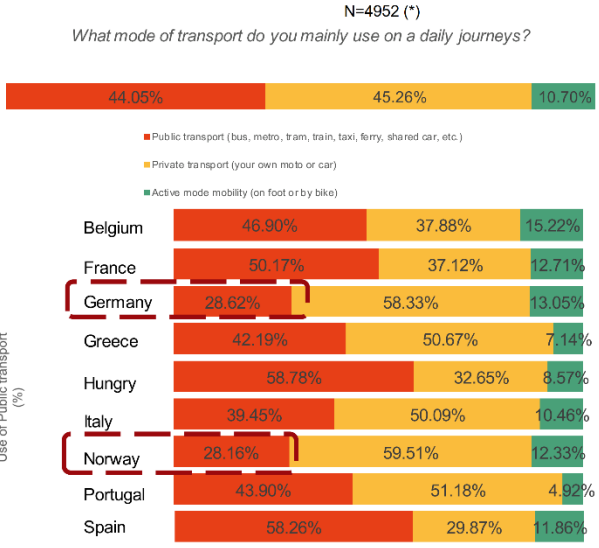


4. Public and Private Transportation Usage Habits

Mode of transport:

- In broad terms, the modal split comprises **44.05% for public transport**, **45.26% for private transport**, and **10.7% for active transport**.
- Notably, the countries with the lowest public transport usage are **Norway** (28.16%) and **Germany** (28.62%). Conversely, **Hungary** (58.78%) and **Spain** (58.26%) are at the forefront in terms of public transport utilization.
- When examining an economic indicator such as the **GDP per capita for each country and its correlation with public transportation usage**, a significant negative correlation (-0.7) becomes evident. This means that as GDP per capita increases, the utilization of public transportation tends to decrease.



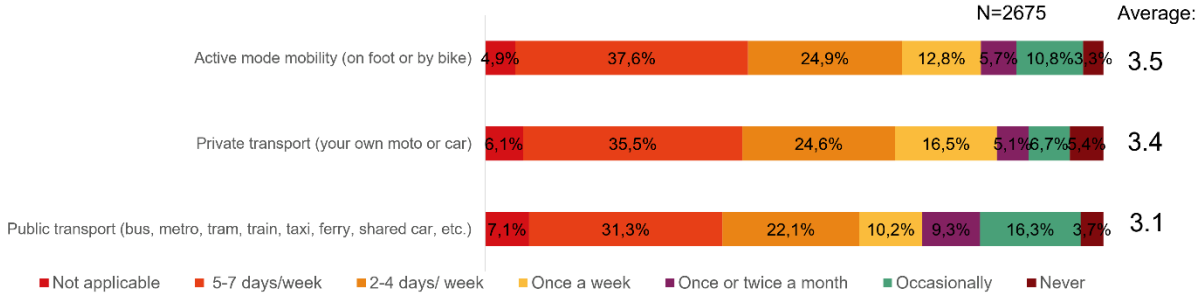


(*) This question serves as the primary filter in the questionnaire, thus providing a larger sample size (4952 respondents). It enables us to analyze the modal distribution both as a whole and broken down by country

4. Public and Private Transportation Usage Habits

Frequency of use:

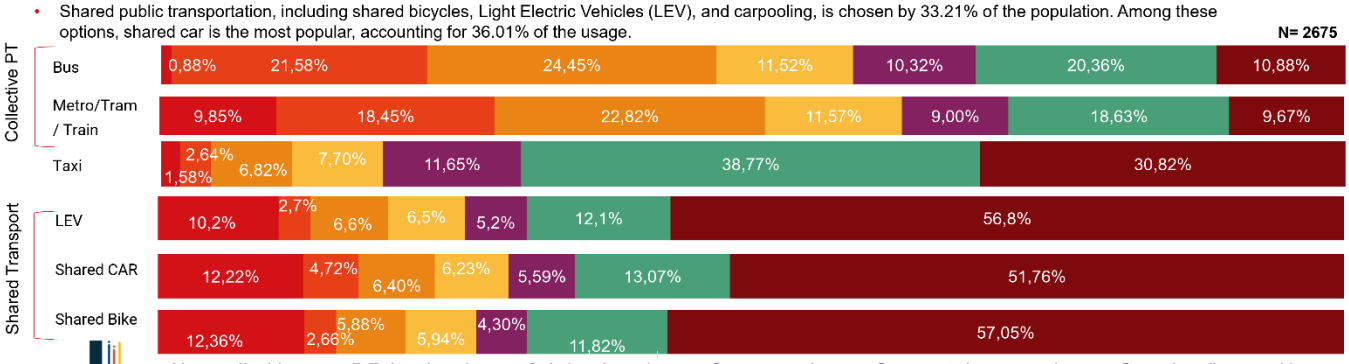
- In line with the preceding query, it is apparent that the active mode of mobility scores an average of 3.5 out of 5, while private transport garners a 3.4 on average out of 5, signifying their more frequent utilization. Conversely, public transportation registers a lower frequency of use (3.1) in the aggregated data across all countries. As illustrated below, disparities emerge when we delve into the analysis by factors such as gender, age, and country.

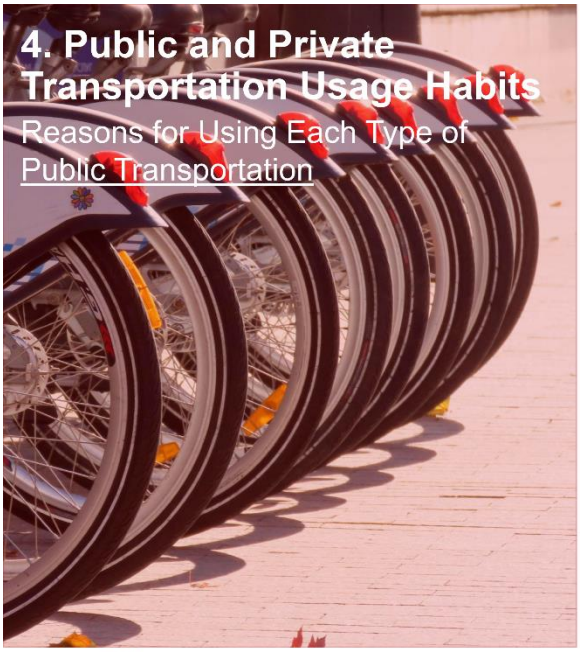


4. Public and Private Transportation Usage Habits

Frequency of use by type of Public Transport:

- Clearly, within the realm of public transportation, the bus stands out as the most widely utilized mode of transit. To begin with, buses are the most accessible means of transportation, serving 88.2% of the population, followed closely by the subway at 80.5%.
- Taxis are used by 67.6% of the population, but their usage frequency is relatively low, primarily for occasional trips, with 50.42% of respondents reporting use once or twice a month.
- Shared public transportation, including shared bicycles, Light Electric Vehicles (LEV), and carpooling, is chosen by 33.21% of the population. Among these options, shared car is the most popular, accounting for 36.01% of the usage.

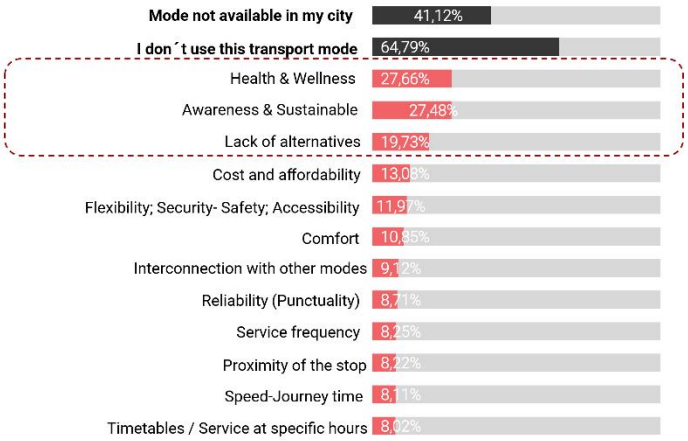


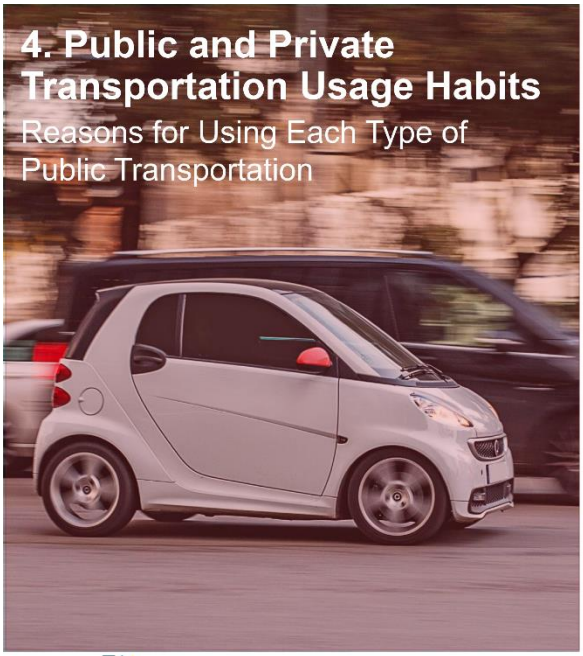


Shared Transportation (PT)

By Shared Bike

- As depicted in the graph below, the primary motivations driving people to use shared bicycles are 'health & wellness' and "awareness & sustainability". In third place, we find "lack of alternative options" as a significant factor.

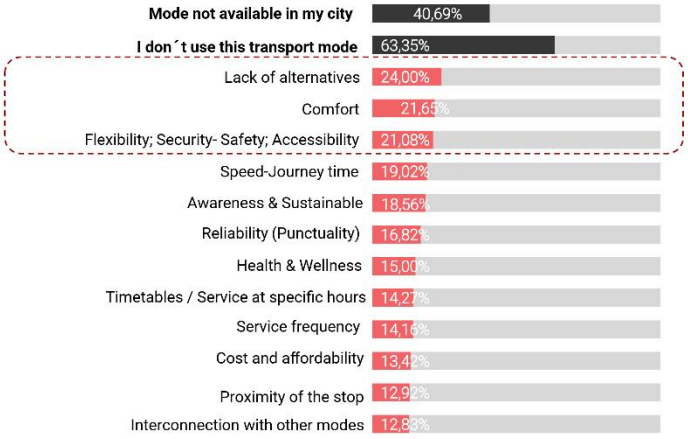




Shared Transportation (PT)

By Shared Car

- As depicted in the graph below, the primary motivation is "lack of alternatives" followed by "comfort" and in third place the grouping "Flexibility; Security-Safety; Accessibility".
- In a closely adjacent category, we find "speed-journey time" and "Awareness & Sustainable" as additional motivating factor



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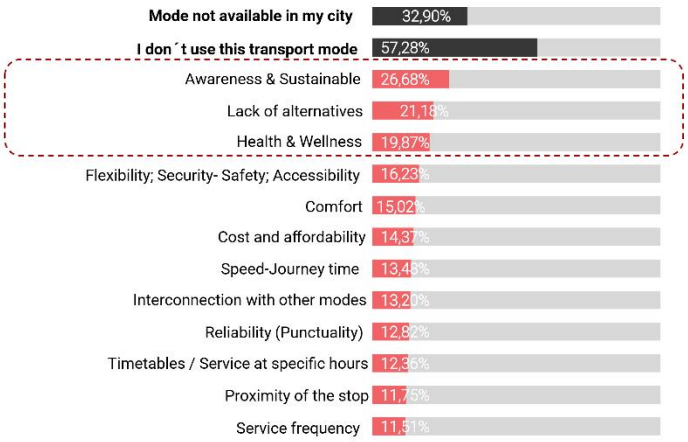
Shared Transportation (PT)

By Shared LEV

- As illustrated in the graph below, the leading motivation for people to use shared Light Electric Vehicles (LEVs) such as e-bikes, e-scooters, and e-motos is "awareness & sustainability". In second place, "lack of alternative options" and "health and wellness" are significant contributing factors.



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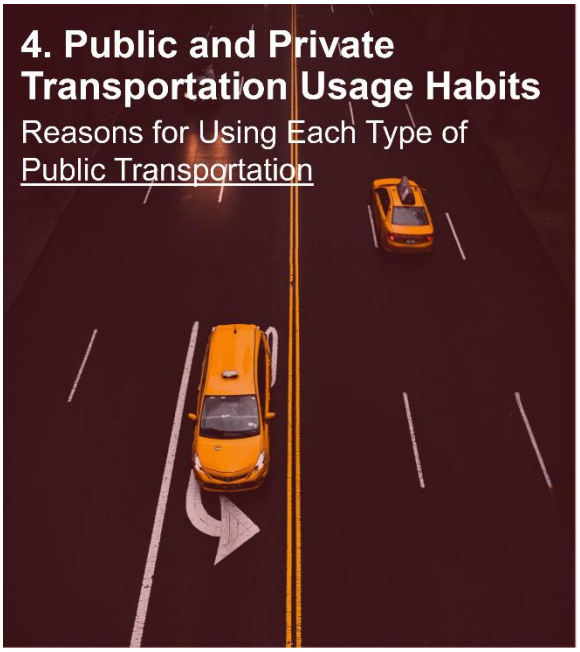
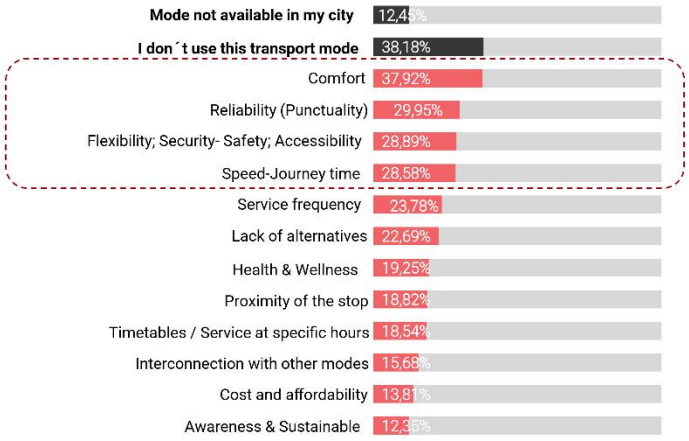
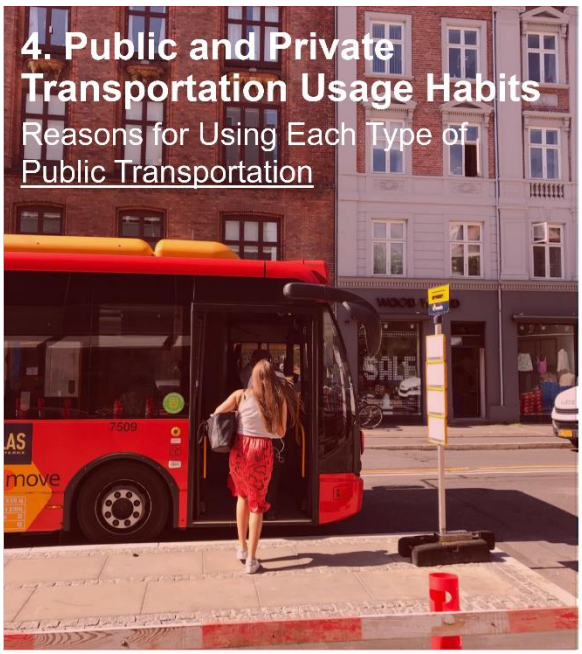


Public Transport -Individual

Taxi

- The primary incentive for utilizing a taxi service is "comfort". In a secondary category, the motivations include "Reliability (punctuality)", "Flexibility, Security, Accessibility" and "Speed of journey time".

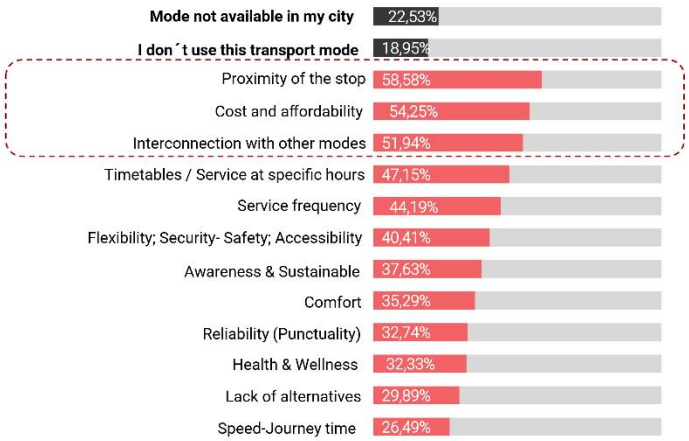


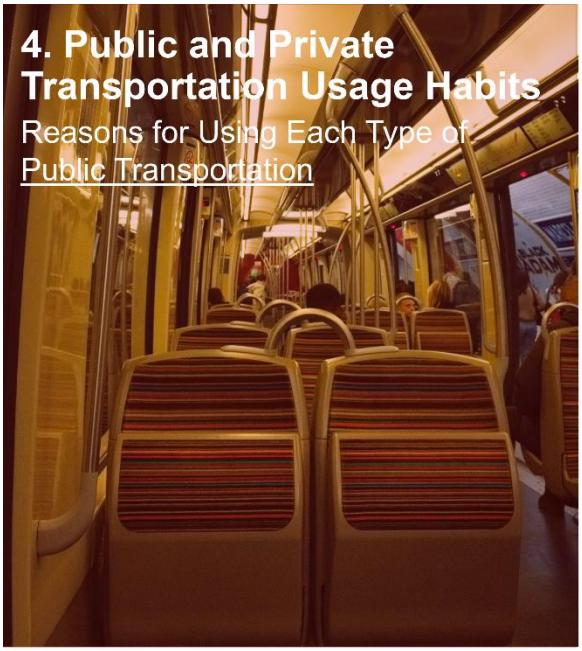


Collective PT

Bus

- The primary incentive for utilizing a bus service is "proximity of the stop". In a secondary category, the motivations include "Cost and affordability" and "Interconnection with other modes

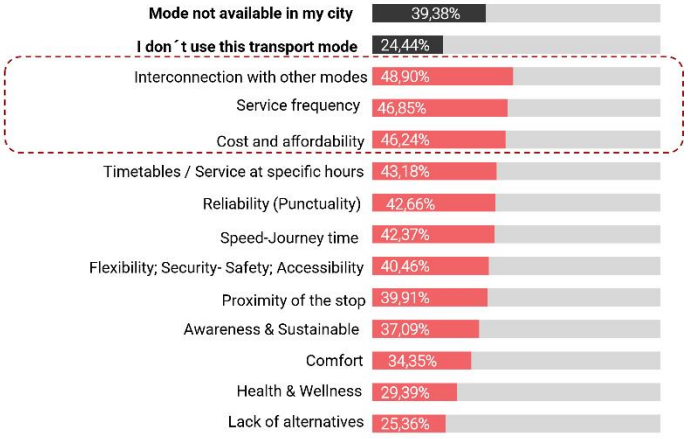




Collective PT

Metro/Tram

- The top three incentives for utilizing a metro/tram service are, firstly, "Interconnection with other modes", followed by "Service frequency", and "Cost and affordability".



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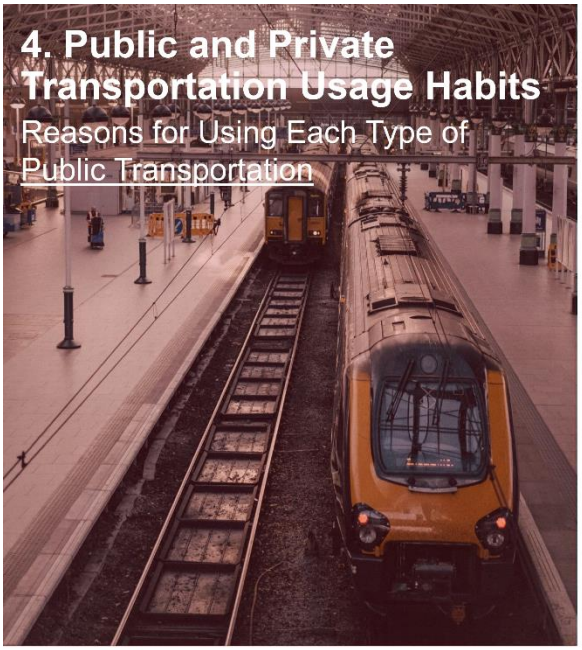
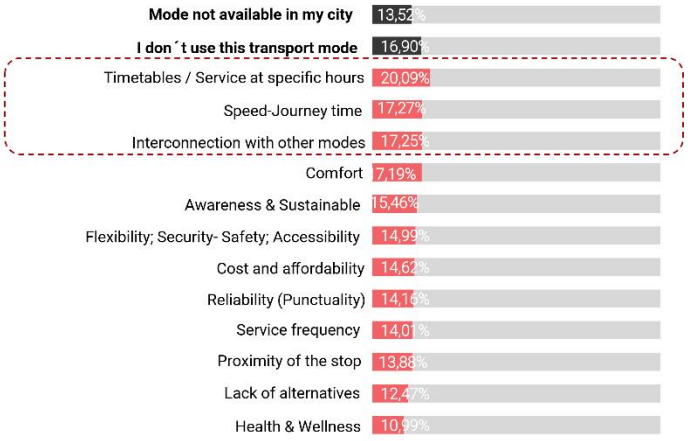


Collective PT

Train

- The top three incentives for utilizing a train service are, firstly, "Timetables / Service at specific hours", followed by "Speed-Journey time", and "Interconnection with other modes".



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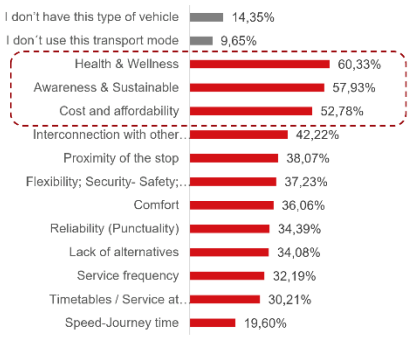
4. Public and Private Transportation Usage Habits

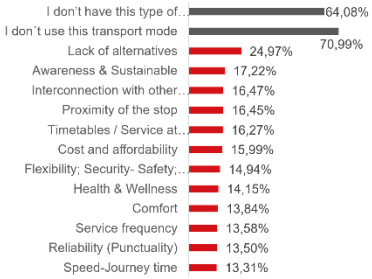
Reasons for Using Each Type of Non Public Transportation

On foot



By own bike / e-bike

By own skate, e-scooter...

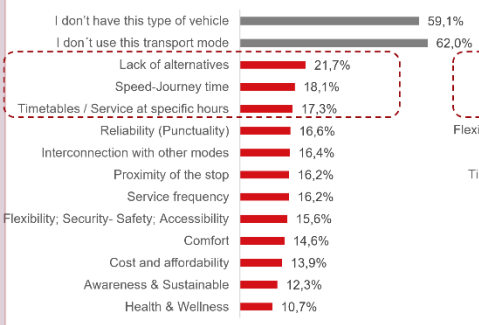


- Regarding active mobility, the reasons for using personal modes of transportation such as walking or using electric or non-electric bicycles are "awareness and sustainability" and "health and sustainability". In third place, there is "cost and affordability".
- Conversely, people use their own skateboards or electric bikes due to "lack of alternatives" and "awareness and sustainability".

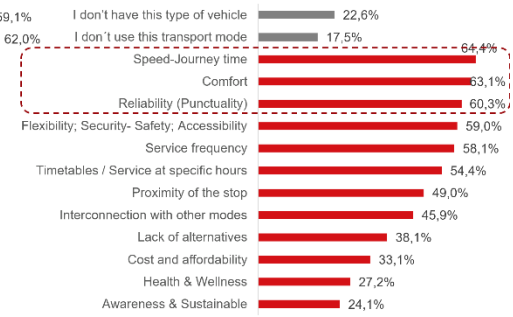
4. Public and Private Transportation Usage Habits

Reasons for Using Each Type of Non Public Transportation

By own Motorcycle



By own car

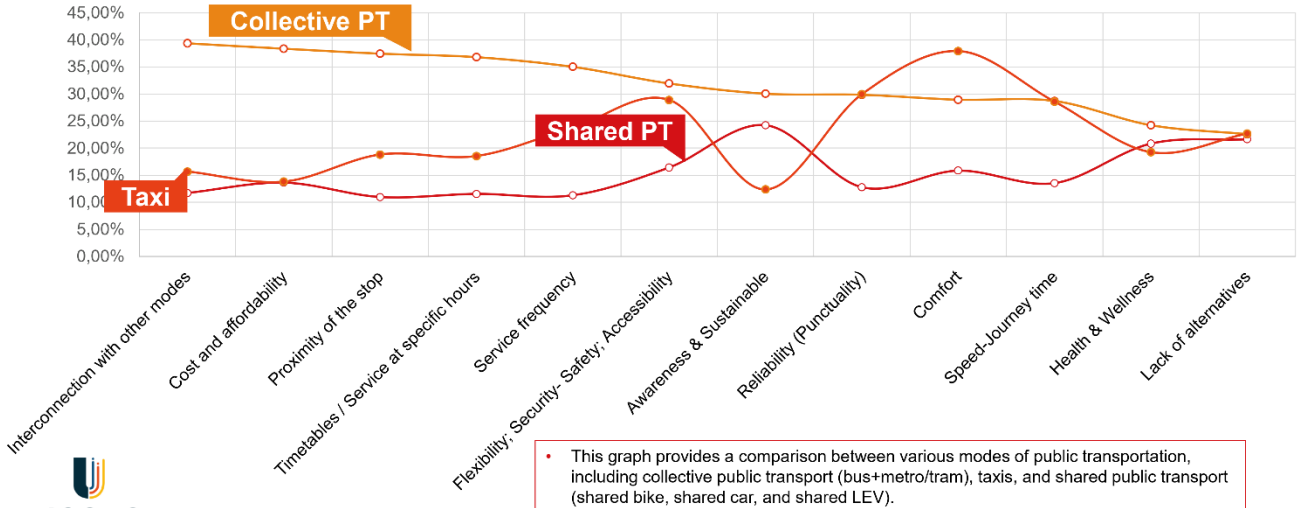


- Among the reasons for using a motorcycle and one's own car, the primary factors include "Speed of journey time",' "comfort", "reliability (punctuality)", and, in the case of the motorcycle, "lack of alternatives".

4. Public and Private Transportation Usage Habits

Reasons for Using different kind of PT…

Collective PT vs Taxi vs Shared PT



- This graph provides a comparison between various modes of public transportation, including collective public transport (bus+metro/tram), taxis, and shared public transport (shared bike, shared car, and shared LEV).

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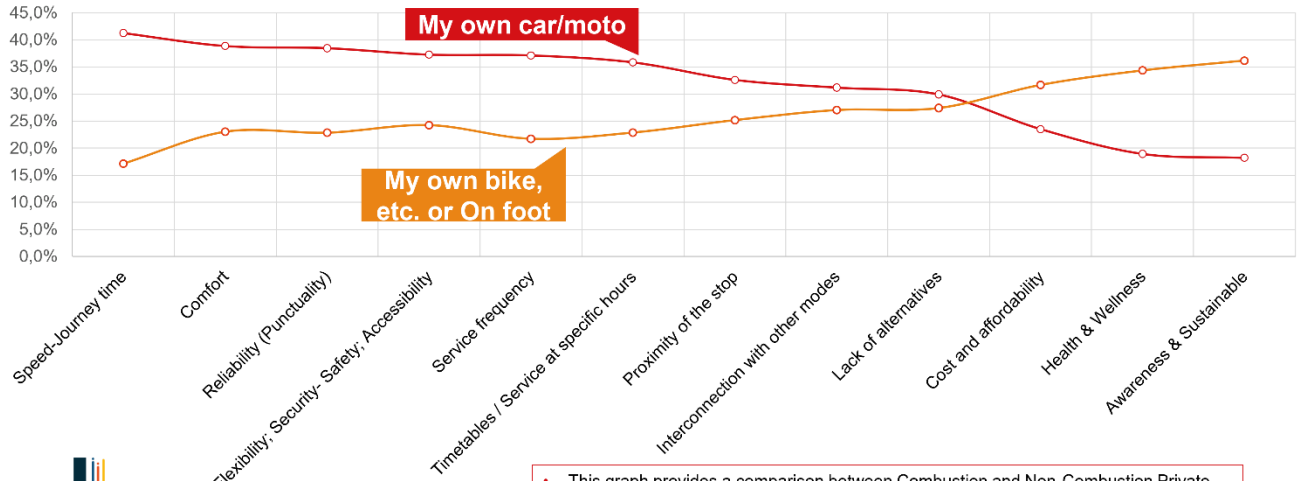
4. Public and Private Transportation Usage Habits

Reasons for Using different kind of Private T…

Combustions Private Transport vs No combustion Private Transport



- This graph provides a comparison between Combustion and Non-Combustion Private Transport. Only the factors of "cost & affordability,' 'health & wellness,' and 'awareness & sustainability' stand out more prominently in Non-Combustion Private Transport, while all the other factors are more prominent in Combustion Private Transport.

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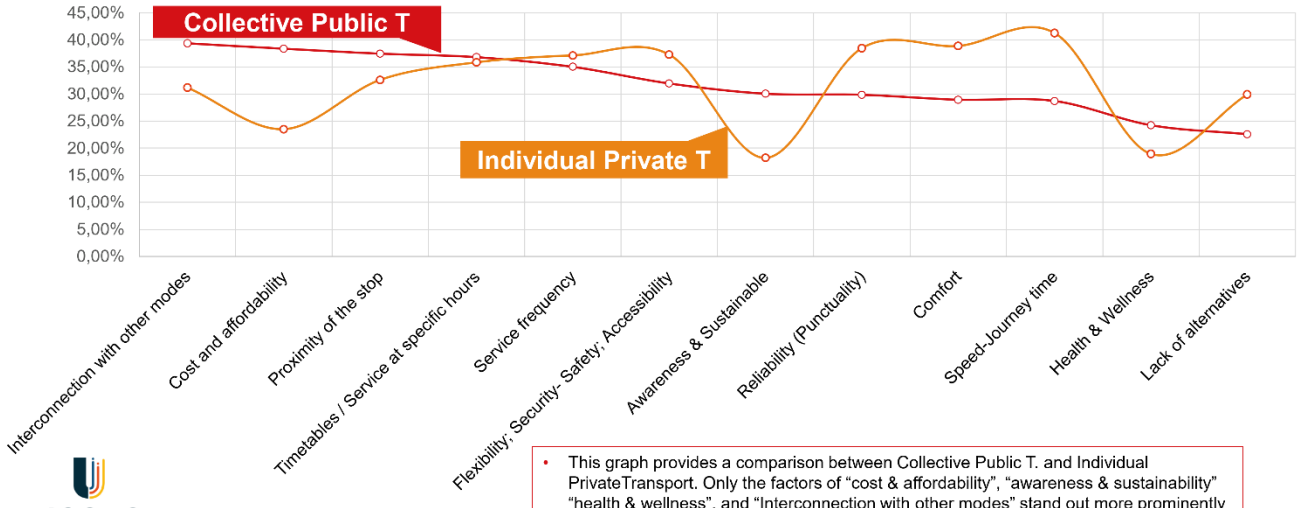
4. Public and Private Transportation Usage Habits

Reasons for Using different kind of PT…

Collective Public Transport vs Individual Private Transport



- This graph provides a comparison between Collective Public T. and Individual PrivateTransport. Only the factors of "cost & affordability", "awareness & sustainability" "health & wellness", and "Interconnection with other modes" stand out more prominently in Collective PubicTransport, while all the other factors are more prominent in Individual Private Transport.

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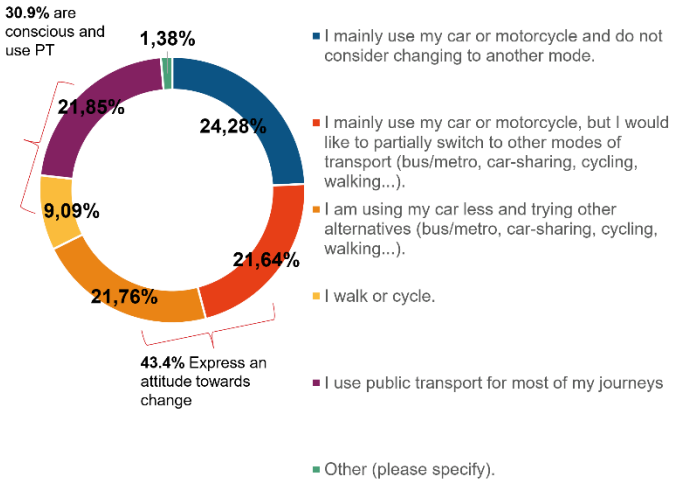
5. Level of awareness in the use of PT

Which of the following statements describes you best?



Level of awareness

- Only 24.28% use their car or motorcycle and do not consider changing to another mode.
- In contrast, 43.4% express an attitude towards change.
- Lastly, 30.94% are conscious and use public transportation or active mobility.

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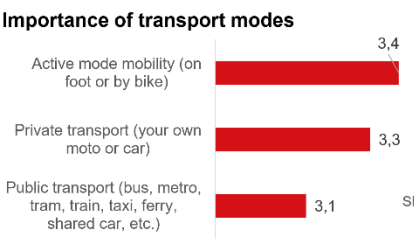
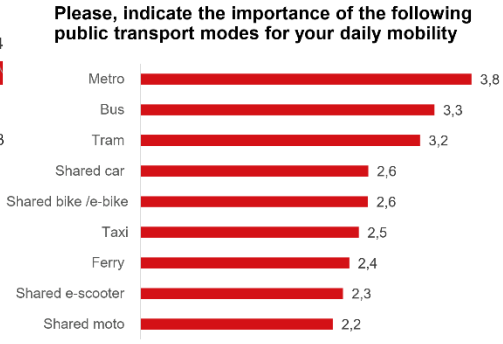
6. Importance vs. Satisfaction

Note: We understand **importance** because of the importance that the user/respondent gives to each transport in their daily mobility.





- When users are asked about the importance of different types of public transportation, they assign higher importance to 'active mode mobility' (3.4 out of 5) and 'private transport' (3.3 out of 5), and finally, they choose public transportation with an importance rating of 3.1 out of 5.
- When we inquire about the various types of public transportation, we find that the subway is the most important (3.8 out of 5), followed by the bus (3.3 out of 5) and tram (3.2 out of 5). Less important are shared car and shared bike or e-bike (2.6 out of 5) and the taxi (2.5 out of 5). In last place, we have the ferry (2.4 out of 5), shared e-scooter (2.3 out of 5), and shared moto (2.2 out of 5).

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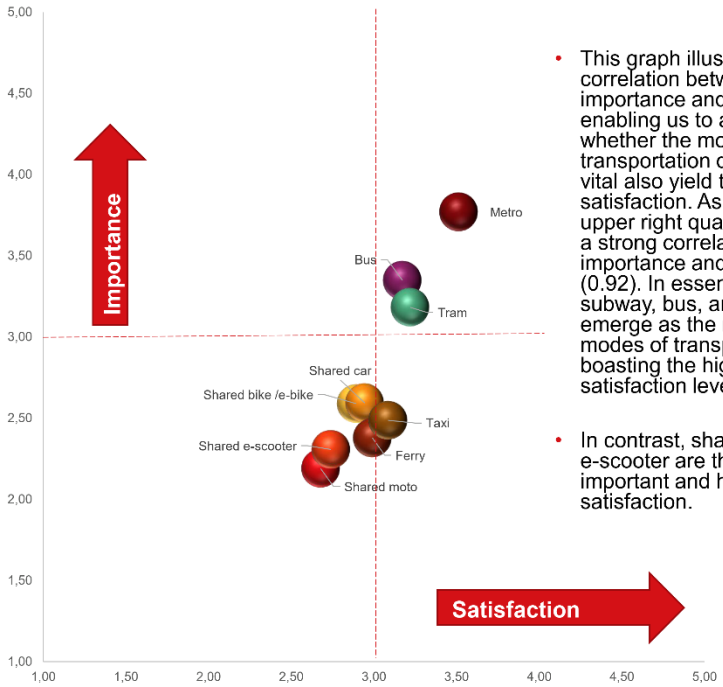
6. Importance vs. Satisfaction



- This graph illustrates the correlation between importance and satisfaction, enabling us to assess whether the modes of transportation deemed most vital also yield the highest satisfaction. As evident in the upper right quadrant, there is a strong correlation between importance and satisfaction (0.92). In essence, the subway, bus, and tram emerge as the most crucial modes of transportation, boasting the highest satisfaction levels.
- In contrast, shared moto and e-scooter are the least important and have lower satisfaction.

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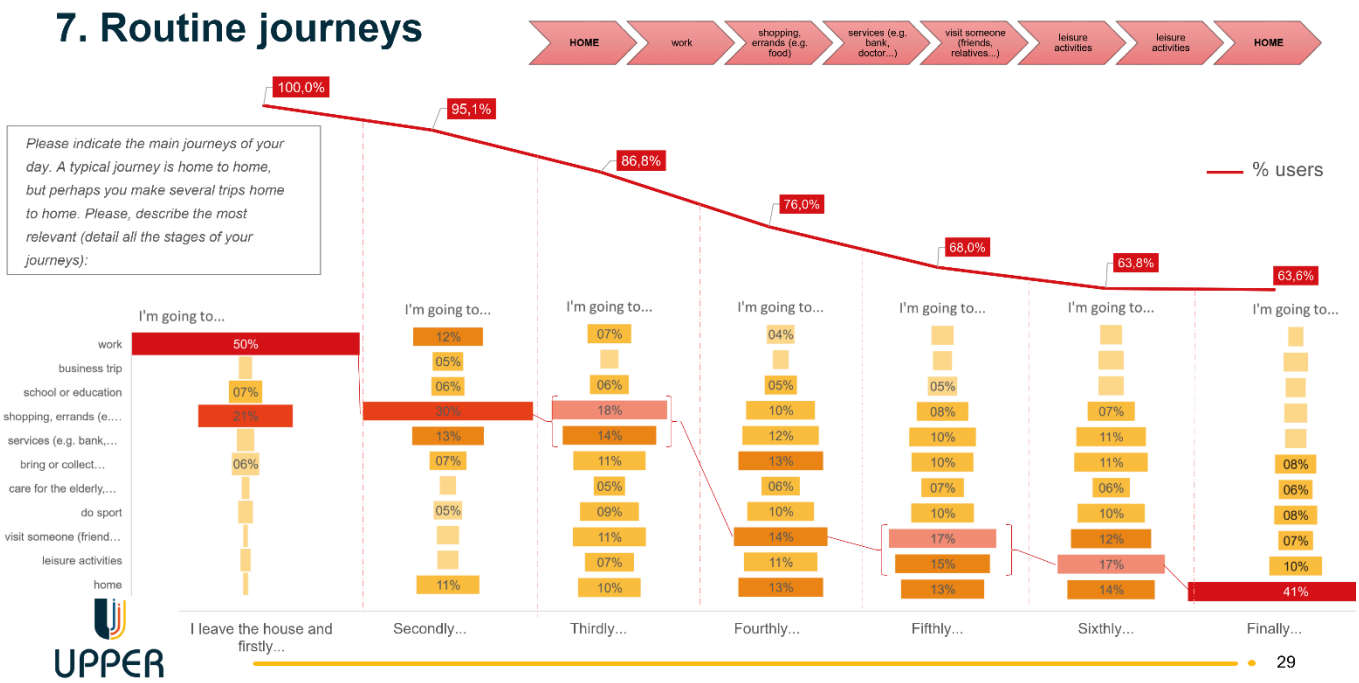
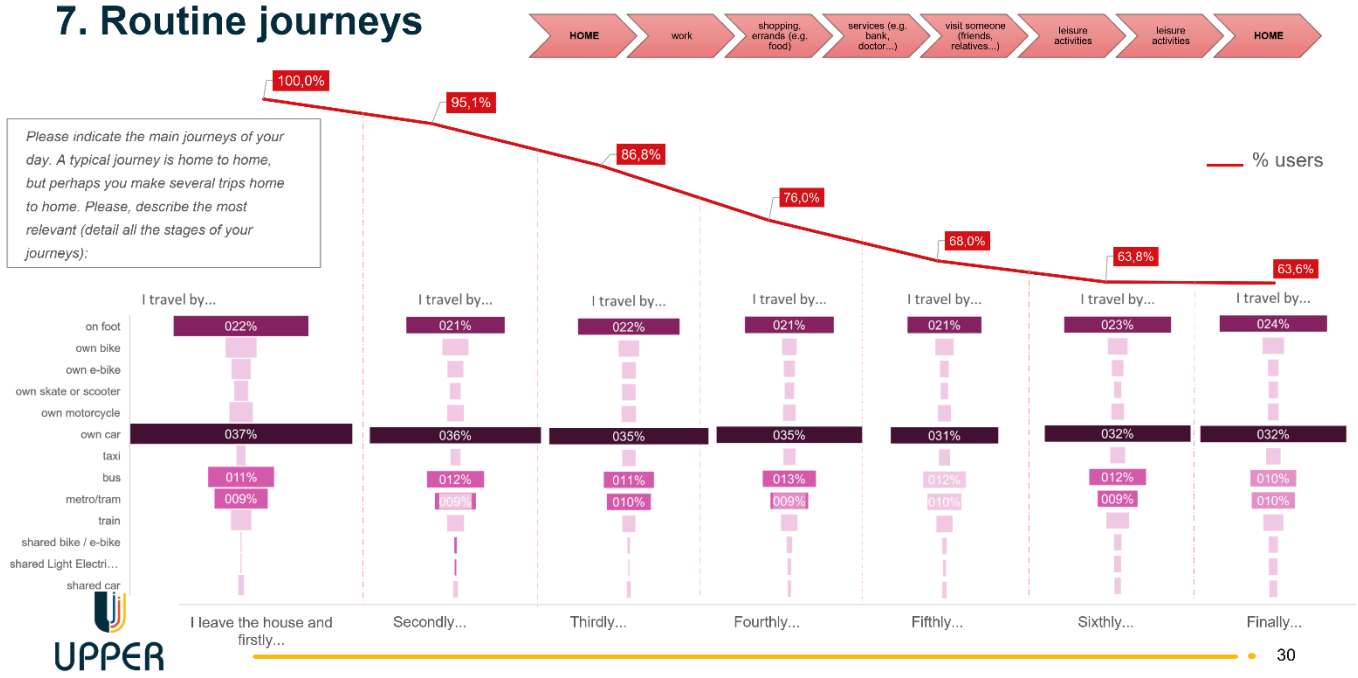

7. Routine journeys
HOME
work
shopping, errands (e.g. food)
services (e.g. bank, doctor...)
visit someone (friends, relatives...)
leisure activities
leisure activities
HOME
Please indicate the main journeys of your day. A typical journey is home to home, but perhaps you make several trips home to home. Please, describe the most relevant (detail all the stages of your journeys):
100,0%
95,1%
86,8%
76,0%
68,0%
63,8%
63,6%
% users
I'm going to...
work
business trip
school or education
shopping, errands (e....
services (e.g. bank,...
bring or collect...
care for the elderly,...
do sport
visit someone (friend...
leisure activities
home
I leave the house and firstly...
Secondly...
Thirdly...
Fourthly...
Fifthly...
Sixthly...
Finally...
UPPER
29


7. Routine journeys
HOME
work
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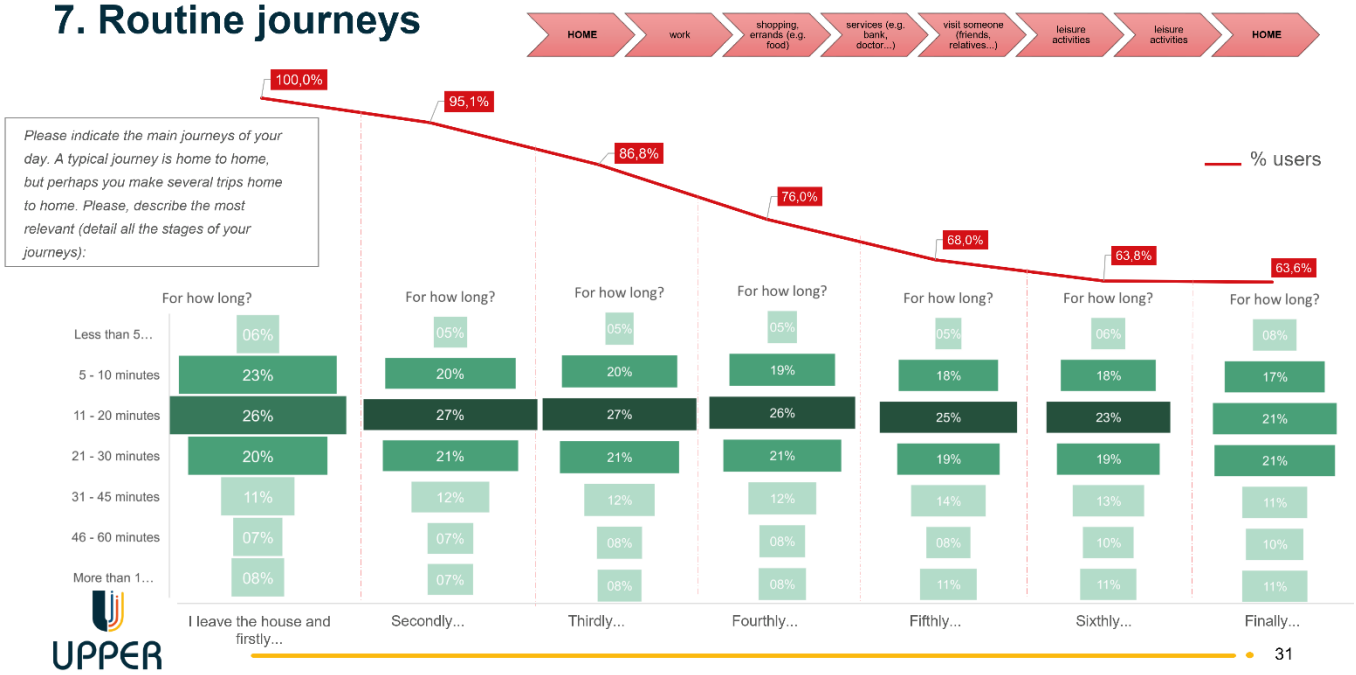
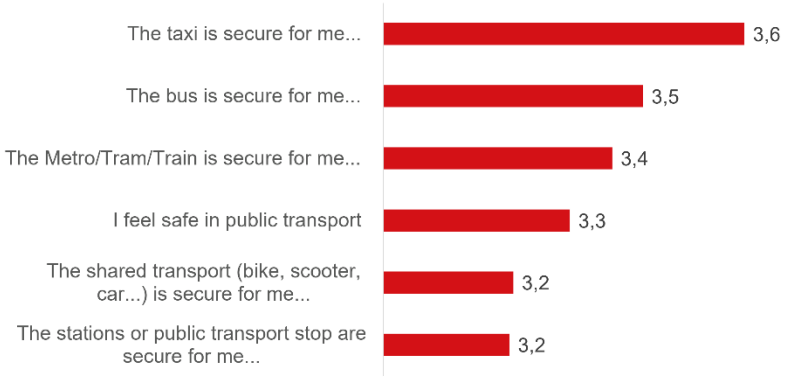
services (e.g. bank, doctor...)
visit someone (friends, relatives...)
leisure activities
leisure activities
HOME
Please indicate the main journeys of your day. A typical journey is home to home, but perhaps you make several trips home to home. Please, describe the most relevant (detail all the stages of your journeys):
100,0%
95,1%
86,8%
76,0%
68,0%
63,8%
63,6%
% users
I travel by...
on foot
own bike
own e-bike
own skate or scooter
own motorcycle
own car
taxi
bus
metro/tram
train
shared bike / e-bike
shared Light Electri...
shared car
I leave the house and firstly...
Secondly...
Thirdly...
Fourthly...
Fifthly...
Sixthly...
Finally...
UPPER
30

7. Routine journeys



8. Safety in public transportation.

Please, indicate your level of agreement or disagreement with the following statements

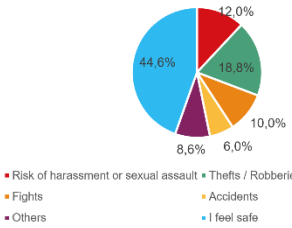


- In general, all types of public transportation have more than 3 points out of 5, which would be considered a "passing grade".
- When asked about public transportation in general, a rating of 3.3 out of 5 is obtained.
- The modes of transportation with higher scores are the taxi, bus, and metro/tram/train, and therefore, they are the perceveid safest options. In contrast, the least safe options are shared transportation modes (we will see the reasons below) and public transportation stations and stops, which score 3.2 out of 5.

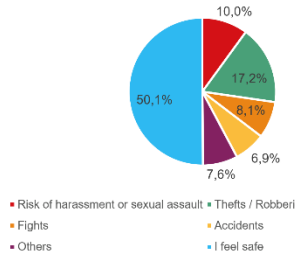
8. Safety in public transportation.

Please, indicate your level of agreement or disagreement with the following statements

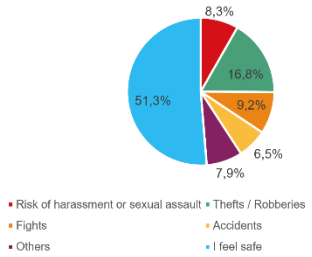
The **stations or public transport stop** are secure for me...



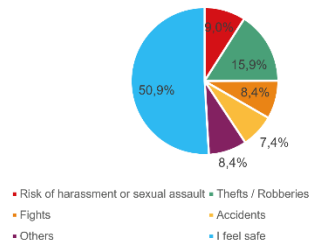
I feel safe in **public transport**



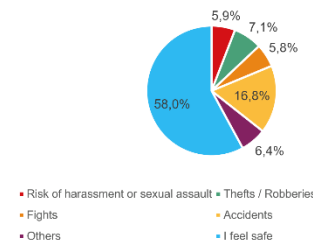
The **Metro/Tram/Train** is secure for me...



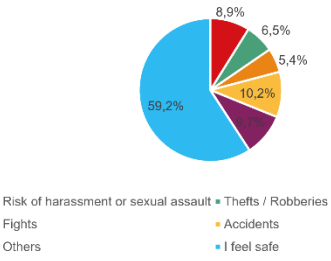
The **bus** is secure for me...



The **shared transport** (bike, scooter, car...) is secure for me...



The **taxi** is secure for me...

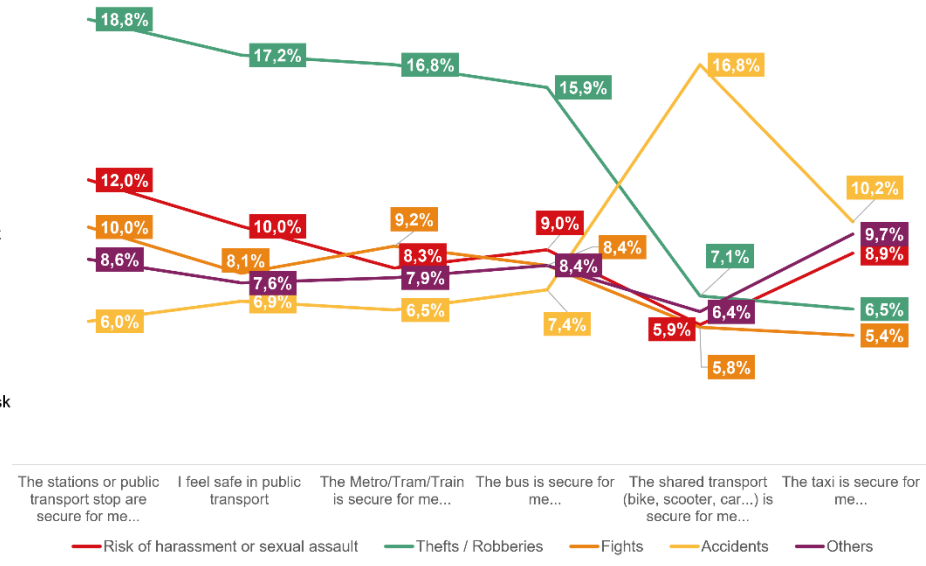


8. Safety in public transportation.

- The primary cause of insecurity in public transportation is thefts and robberies, particularly at stations and stops, encompassing public transport as a whole, including subways and buses.
- Conversely, shared transportation and taxis mainly face insecurity due to accidents.
- The second leading cause of insecurity at stations, public transportation in general, and buses is the risk of harassment or sexual assault.
- Meanwhile, in the subway system, fights represent the second most common reason for feelings of insecurity.

Please, indicate your level of agreement or disagreement with the following statements

I disagree for...the following reasons:



- The most chosen improvements for the bus are:

To increase the **frequency** of buses	37,50%
To ensure greater **punctuality and reliability**	29,75%
To establish **good connections** between the bus service, airports, and other means of transport	22,35%
To **extend the service** time slots, especially for night service	19,36%
To **improve accessibility** for individuals with disabilities, the elderly, and those using baby carriages, measures such as providing more space, priority seats, and assistance for people with reduced mobility should be implemented at bus stops and on buses.	18,99%
To upgrade buses to **improve comfort** (seating, temperature, etc.) and modernize services	18,88%
To maintain **cleanliness and** ensure regular **maintenance** of buses	18,82%
Improve the **capacity of the buses** and limit the number of passengers so that they are not crowded	17,93%
To enhance the **mobile app's** functionality and user experience, it should provide seamless ticket acquisition and payment options, along with an appropriate pricing structure offering various ticket choices	15,95%
To enhance **safety** for standing passengers	15,38%
To establish **clear rules** for users and promote respect among passengers, including prioritizing passengers in need, such as the elderly	14,46%
To improve **driver** attentiveness, emphasizing friendliness and professionalism	11,16%
To promote **safe driving** practices	11,03%
Door-to-door small buses with fewer passengers	9,66%
To provide **good customer service**	9,54%
Others	1,59%

Note: This question is intended for individuals who use transportation services at least once or twice a month.

- The most chosen improvements for the metro/tram/train are:

To increase the **frequency** of trains to provide more frequent service and reduce waiting times	27,38%
To emphasize **punctuality**, speed, and reliability of the train service, ensuring precision in adherence to schedules	26,23%
To improve **security** measures to prevent theft and other safety concerns for passengers	26,08%
To establish **good connections** between the train service, airports, major city hubs, and other modes of transportation, it is important to expand the train network to ensure comprehensive coverage.	21,12%
To **expand the night service** to cater to passengers during late hours	20,28%
To enhance **comfort** (temperature, etc), efficiency, and usability of the train service through upgrades and improvements	19,97%
Improvements in the **maintenance and cleanliness** of trains and stations, with regular renewal.	18,68%
To enhance **accessibility** for individuals with reduced mobility, baby carriages, and other special needs (e.g. more space and priority seats, support in accessing)	17,93%
To offer a **variety of ticket types** and establish an adequate pricing structure that balances affordability with the quality of service provided	16,99%
To establish **clear rules** of use and behaviour, including effective supervision, communication campaigns, and sanctions, to encourage respectful behaviour among users	13,42%
To **optimize the interior space** of trains through redesigning to maximize capacity and comfort.	12,76%
To implement troubleshooting measures to **minimize problems or errors** with ticketing machines and other systems and facilitate various forms of payment	12,10%
To improve **customer service** by addressing inquiries and incidents in a friendly manner, catering to multiple languages, and ensuring helpful staff	11,47%
To ensure **clear and visible signage**, complete and reliable information on screens, websites, and other platforms	9,44%
To consider allowing passengers to bring bikes / e-scooters on the train	9,40%
To minimize or to **eliminate fines for failures or lack of knowledge** (especially for tourists)	8,98%
Others	1,32%

Note: This question is intended for individuals who use transportation services at least once or twice a month.

- The most chosen improvements for the taxi are:

To establish a **pricing structure** that offers value for money, accommodates various payment methods, ensures transparency with fixed rates.	31,4%
Train and encourage **friendly and professional** behaviour in **drivers**	23,0%
Streamline the process of hailing a taxi.	22,9%
Emphasize **efficiency, safety, and flexibility** by prioritizing faster and shorter routes	21,7%
Prioritize speed, punctuality, reliability, and precision in taxi services	21,3%
To maintain **clean and comfortable** cars.	20,2%
To increase taxi service **availability during night time** hours.	19,0%
Develop a useful, reliable, and user-friendly taxi **mobile app**.	18,2%
To enhance taxi **accessibility**, provide suitable car seats and accommodations for passengers with specific accessibility needs	17,9%
To provide dedicated taxi services to and from **airports**. To consider offering a home **pick-up service**.	17,4%
To implement a system for recovering **lost items** in taxis.	16,9%
To allow passengers to **specify preferences**. To promote **multilingualism** among drivers.	13,7%
To **remove unnecessary restrictions** on travel destinations.	11,2%
Others	1,1%

Note: This question is intended for individuals who use transportation services at least once or twice a month.

- The most chosen improvements for the shared LEV are:

To deliver a **quality and reliable service**, ensure motorcycles and e-scooters work well, are easy to drive, undergo regular maintenance and cleanliness, and are designed to be attractive, comfortable, functional, and durable.	23,8%
To ensure an **easy-to-use service** that is simple, fast, agile, and satisfactory, minimizing system errors such as incorrect charges.	21,8%
To provide fast, decisive, and adequate **customer service** with 24-hour availability and a focus on kindness and responsiveness.	21,0%
To enforce proper parking **protocols to prevent disorderly parking** that may inconvenience pedestrians or disrupt public spaces.	20,4%
To establish a **transparent and user-friendly price structure**, offering discounts based on usage and user profiles to incentivize loyal customers.	20,4%
To **expand the service** radius to cover areas that currently do not have access to the service, improving its availability and reach.	20,1%
To develop a usable, functional, useful, and flawless **mobile app** for seamless interaction with the service.	20,0%
To **ensure compatibility** with international cards, including cards from other countries such as the US.	19,4%
To provide **insurance coverage** that is integrated with the rental service and adequately protects users.	19,0%
To **maintain a sufficient availability of motorcycles / e-scooters** to meet user demand at various locations.	17,9%
To establish robust and secure management practices for handling **personal data**, prioritizing user privacy and data protection.	17,2%
To ensure **automatic return of funds** within a timeframe of less than 24 hours for smoother transactions.	17,1%
To implement **agile and simple forms of payment** and rental processes, minimizing the need for large deposits or excessive personal information.	15,3%
Others	0,9%

Note: This question is intended for individuals who use transportation services at least once or twice a month.

- The most chosen improvements for the shared CAR are:

To ensure **cars** are well-maintained, regularly cleaned, easy to drive, comfortable, and offer a variety of models, including automatic transmission options.	39,97%
To **minimize fines** and charges due to service or system failures, address common issues including malfunctioning doors, app errors, parking difficulties, locking/unlocking problems, unrecorded returns, and double admission fee charges	33,89%
To prevent **charging problems** with electric cars, maintain a charge level above 30%, provide reliable autonomy indications, avoid fines for low battery levels, prevent false mileage charges, and ensure the presence and functionality of charging cables	32,72%
To establish a competitive pricing structure that offers good value for money, costs less than owning a car, and includes free registration.	32,42%
To develop an intuitive and well-functioning **mobile app** that is easy to use and provides a seamless experience for users.	27,74%
To develop a **fast, convenient, and flexible service** that serves as a viable alternative for individuals without a car.	27,43%
To implement good **customer service** practices with professionalism and excellent treatment towards users.	27,30%
To ensure the service caters to both city transport needs and trips outside the city centre.	20,77%
Others	0,88%

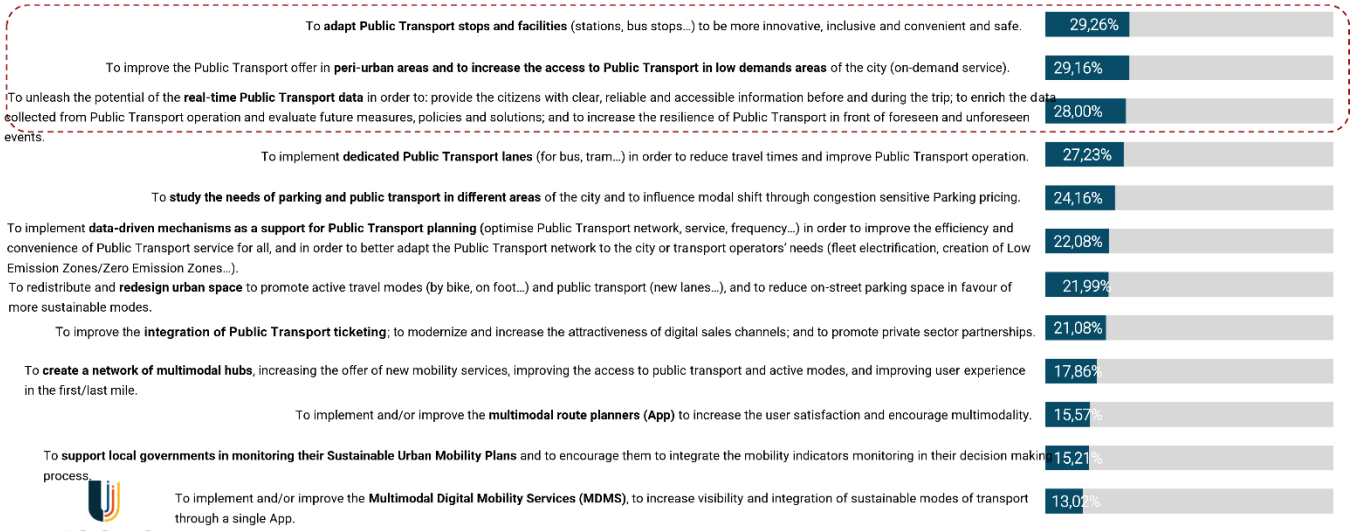
Note: This question is intended for individuals who use transportation services at least once or twice a month.

- The most chosen improvements for the shared BIKE are:

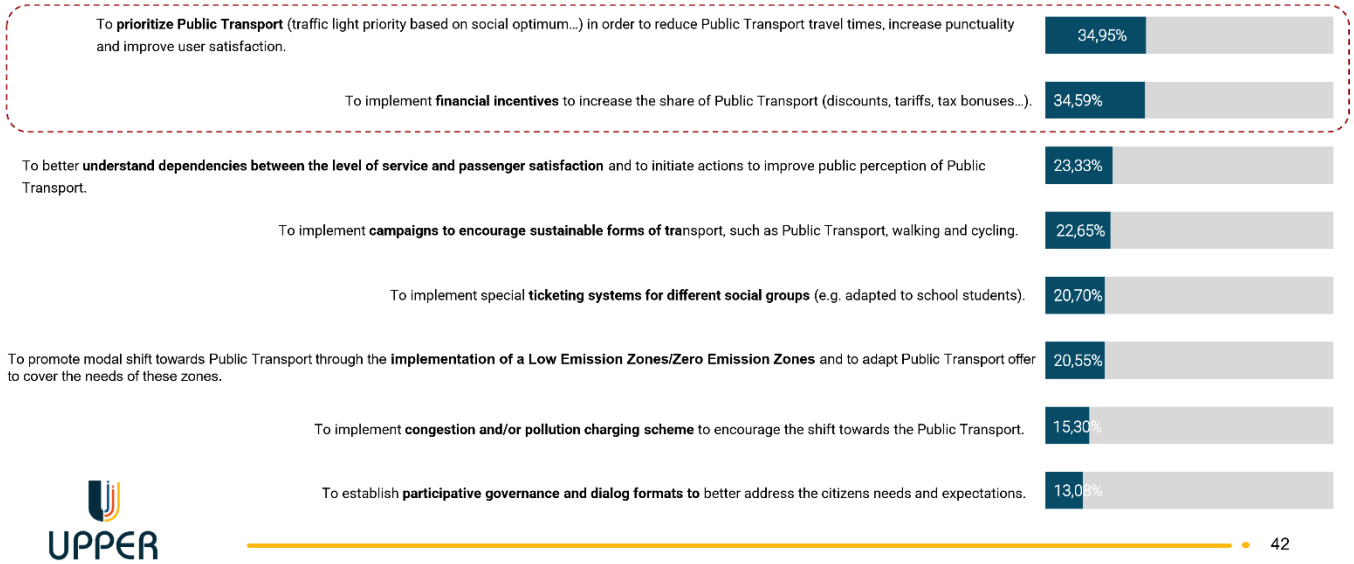
Improve **bikes** by addressing concerns like excessive weight, inadequate suspension, and introducing electric rental solutions and accessories for transporting children or purchases.	21,40%
Conveniently **locate bike stations** or a sufficient number of bikes in a free-floating system near bike lanes and other transportation options to promote intermodality.	20,92%
To **integrate the bike sharing** system into the public transport system, such as ticket and subscription integration or inclusion in the public transport mobile application.	19,85%
Promote respect for bike lanes and cyclists among all citizens to ensure safe coexistence with other road users.	19,31%
Establish **transparent pricing** options **with various ticket types** for customer needs, including single tickets, 24-hour passes, weekly passes, etc.	17,83%
Continuously **improve the service** to meet changing needs of residents and tourists.	17,43%
Establish well-sized bike stations or a free-floating system with ample parking spaces and balanced bike availability based on user demand and real-time information.	17,16%
Develop a system that avoids charging customers for system or service failures and provides immediate advice to address common issues.	17,01%
Develop a **mobile application** with real-time information on bike availability and user-friendly interface.	16,64%
Simplify payment and rental methods, such as reducing deposit amounts, offering a 45-minute free rental period, and ensuring timely deposit refunds.	16,53%
Create a comprehensive, well-signposted, and safe network of **bike lanes**.	14,69%
Resolve system failures quickly and efficiently without additional costs to customers.	13,34%
Enable **mobile payment** options for customer convenience.	13,29%
Provide customer **accessories** such as mobile device holders, child seats, and cargo options.	13,16%
Implement **multilingual customer service** to cater to tourists.	11,93%
Others	0,24%

Note: This question is intended for individuals who use transportation services at least once or twice a month.

9. Improvements related to data sharing and technology for increase the use of the Public Transport

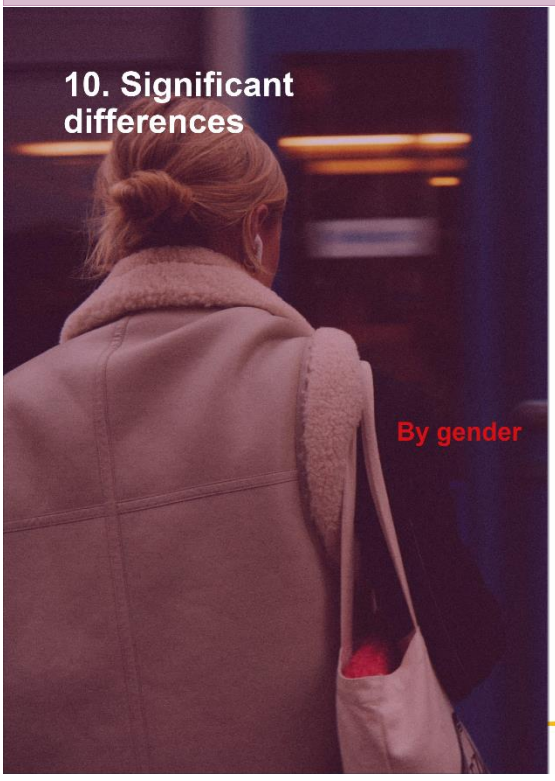


9. Improvements related to sustainability for increase the use of the Public Transport



10. Significant differences

1. **By gender**
2. By age
3. By country



Frequency of use, importance, and satisfaction with public and private transportation, broken down by each type

- Women use and prioritize public transportation and active mobility more than men. Conversely, men use private transportation more frequently than women.
- Men attach greater significance to and use shared bikes, shared LEV and taxis more frequently, while they are also more critical of the latter (expressing lower satisfaction) in comparison to women.
- Women attach more importance to buses and trams

Reasons for Using Transportation

Reasons for using each mode of Public/Active Transportation:

- **Walking:** Women are more likely to choose walking for almost all reasons compared to men.
- **Private Bike:** Women own and use fewer private bikes than men. Additionally, men prefer using private bikes for almost all reasons, including flexibility, safety, accessibility, proximity, cost, and affordability.
- **Shared Bike:** Men choose it more for convenience and sustainability than women.
- **Shared Electric Vehicle (LEV):** Men opt for it more for convenience, cost, and affordability.
- **Bus:** Women prefer it more for its schedule, proximity, cost, affordability, and interconnection with other modes of transport.
- **Subway and tram:** Chosen more by women for its flexibility, safety, and accessibility.
- **Train**: Women choose it more for its schedule and service.
- **Private Skateboard:** Significantly, women do not own and use skateboards as much as men do. Men prefer skateboarding for the following reasons: proximity, cost, affordability, and sustainability.
- **Private Motorcycle:** Significantly, women do not own and use motorcycles as much as men do. Men prefer motorcycles for almost all reasons, including comfort, speed, frequency, and schedule/service.
- **Private Car:** Significantly, women do not own and use cars as much as men do. Despite this, women consider that using a car is faster, more flexible, safer, more accessible, closer, and facilitates interconnectivity with other modes of transport compared to men.
- This suggests that women may not use these modes because they may not have access to them or use them less than men do.

Safety

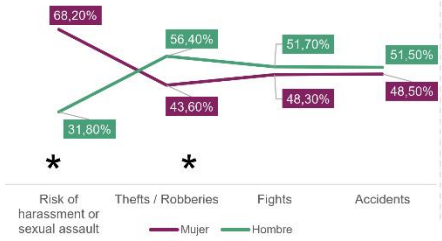
- It's noteworthy that women feel less secure in all types of public transportation and at stops/stations compared to men.

Disagreement with: "**I feel safe in public transport**"

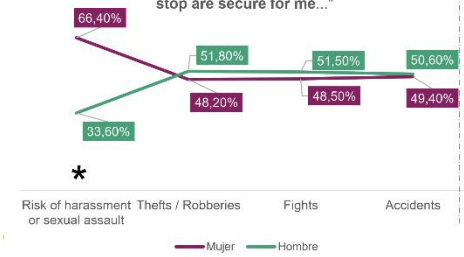
Disagreement with: "**The bus is secure for me... "**

Disagreement with: "**The Metro/Tram/Train is secure for me... "**

Disagreement with: "**The taxi is secure for me... "**



Disagreement with: "**The stations or public transport stop are secure for me..."**



Safety- Reasons

- When comparing the reasons for insecurity in different modes of transportation between men and women, it is observed that:
  - Women consistently feel more insecure due to the risk of harassment or sexual assault.
  - Additionally, women are more concerned about thefts/robberies in public transportation in general and on buses, as well as accidents on buses.
  - Conversely, men are more concerned about fights on public transport and buses.

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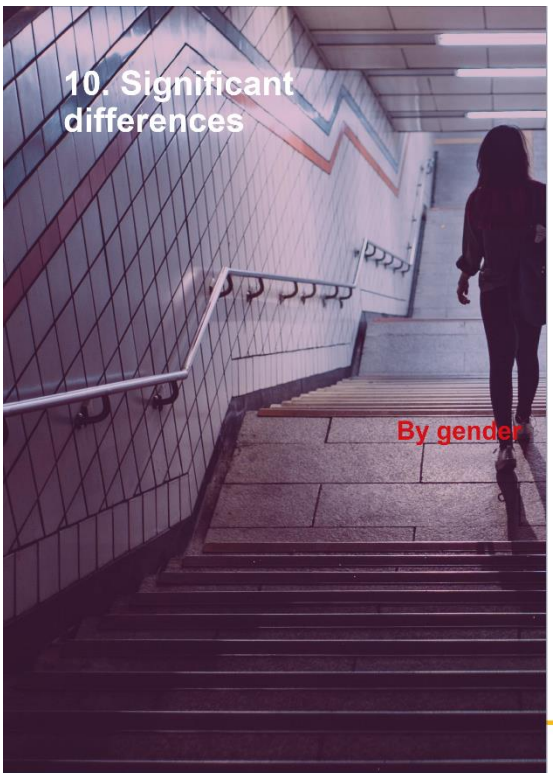
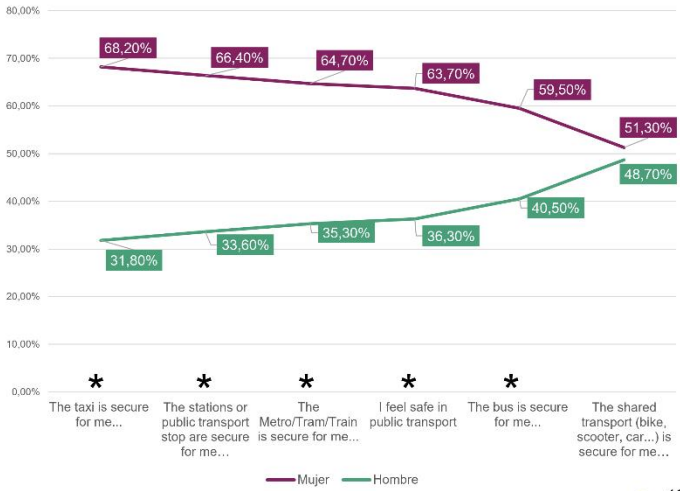


Seguridad- Reasons

- If we analyze the risk of harassment or sexual assault in all types of transportation, significantly, women consider it the primary cause of insecurity more than men, except in shared transport.

Level of **disagreement with the following statements**



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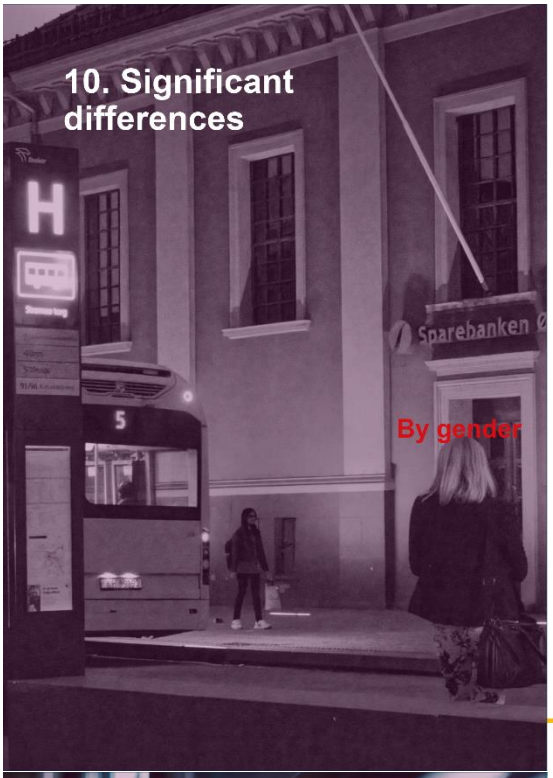

Awareness

- Higher percentage of men state, "I primarily use the car or motorcycle and do not consider switching to another mode of transportation".
- Higher percentage of women state, "I use public transportation for the majority of my trips".

Improvements

- Bus:
  - Women demand higher bus frequency.
  - Women seek greater bus punctuality and reliability.
  - Women request extended bus operating hours
- Metro:
  - Women seek increased security in the subway/tram/train.
  - Men demand better customer service
- Taxi:
  - Men demand more efficiency, safety, and flexibility in taxis.
  - Men call for further improvements in customer service in taxis.
- Shared bike:
  - Men demand more improvement in the application and bicycle, as well as a wider range of bicycle accessories (helmets, child seats, etc.).
- Shared LEV:
  - Men show a higher demand for improvements in transparent pricing, better customer service, inclusion of insurance in the service, simplified payment methods, driver's license compatibility, and proper handling of personal data.
- Shared Car:
  - Men exhibit a greater demand for improvements in car charging, app functionality, and maintenance and cleanliness.

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Proposed improvements for the UPPER project

- Women prefer the following improvements more than men do:
- *To unleash the potential of the **real-time Public Transport data** in order to: provide the citizens with clear, reliable and accessible information before and during the trip; (…)*
- *To adapt Public Transport stops and facilities (stations, bus stops…) to be more innovative, inclusive and convenient and safe.*
  - These results are consistent with previous findings that women place a greater emphasis on frequency, punctuality, and reliability, and real-time data would assist in this regard. They are also in line with data indicating a heightened sense of insecurity, especially at stops and stations
- Men prefer the following improvements more than women do:
- *To redistribute and **redesign urban space** to promote active travel modes (by bike, on foot…) and public transport (new lanes…), and to reduce on-street parking space in favour of more sustainable modes.*
- *To **create a network of multimodal hubs**, increasing the offer of new mobility services, improving the access to public transport and active modes, and improving user experience in the first/last mile.*
- *To improve the **integration of Public Transport ticketing**; to modernize and increase the attractiveness of digital sales channels; and to promote private sector partnerships.*
- *To implement and/or improve the **Multimodal Digital Mobility Services (MDMS)**, to increase visibility and integration of sustainable modes of transport **through a single App**.*
- *To **support local governments in monitoring their Sustainable Urban Mobility Plans** and to encourage them to integrate the mobility indicators monitoring in their decision making process.*
- *To establish **participative governance and dialog formats** to better address the citizens needs and expectations.*

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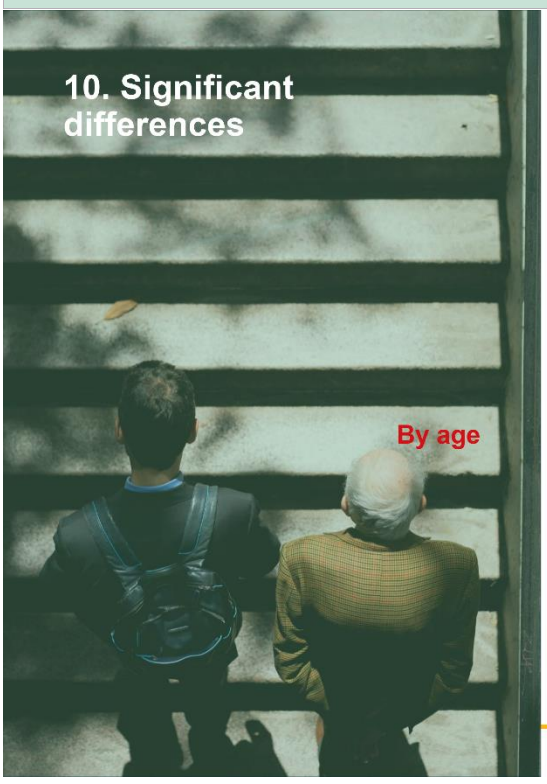
10. Significant differences

1. By gender
2. **By age**
3. By country



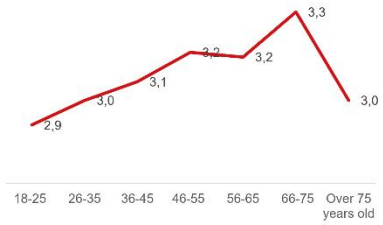
Frequency of use, importance, and satisfaction with public and private transportation, broken down by each type

- **Frequency**
- Public transportation is used more by younger people, whereas active mobility is favored by older individuals (aged 66 and above). Those between 36 and 55 years old tend to rely more on private transportation. As age increases, the significance of private transportation grows.
- Young people predominantly rely on buses and metro/tram services, while the age group of 26 to 35 tends to favor taxis.
- Young people, particularly those aged between 18 and 35, use shared bicycles more frequently. Usage declines significantly after the age of 56.
- Young adults aged 18 to 35 are the most frequent users of shared LEVs and shared cars, with usage gradually declining after the age of 46.
- **Importance and Satisfaction by Transportation Type**
  - **Shared Motorcycle and Scooter**: The 18 to 45 age group places greater importance on shared motorcycles and scooters, while those over 75 years of age assign less significance. Individuals aged 46 and older express lower satisfaction with shared motorcycles and scooters.
  - **Shared Car**: Those over 75 years of age assign less importance to shared cars. The 46 to 55 age group, as well as those over 75, are less satisfied with shared cars.
  - **Bus**: Younger individuals use the bus more frequently, while those over 66 years of age consider it less important.
  - **Subway and Tram:** Younger individuals use the subway/tram more often. However, the importance of subway/tram decreases starting at age 46.
  - **Ferry:** Among older age groups, both the importance and satisfaction with ferries decline (between 45 to 55 years old and over 65 years old).
  - **Taxi:** The 26 to 35 age group utilizes taxis more frequently. After the age of 45, the importance of taxis significantly diminishes.

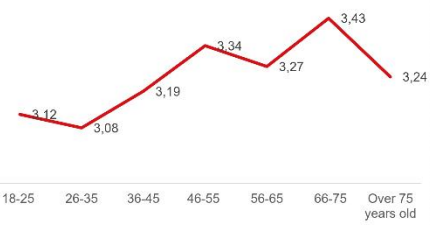
Safety

- Younger individuals feel more insecure in public transportation, on buses, subways/trams/trains, taxis, and at transportation stations and stops. Specifically, as previously observed, it is women who feel this way, and the cause is sexual harassment.
- Individuals over the age of 65 feel more insecure in shared transportation due to accidents.

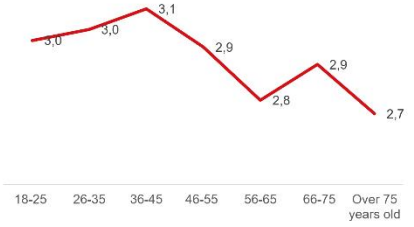
I feel safe in **public transport**



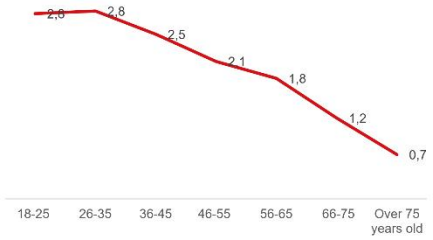
The **bus** is secure for me...



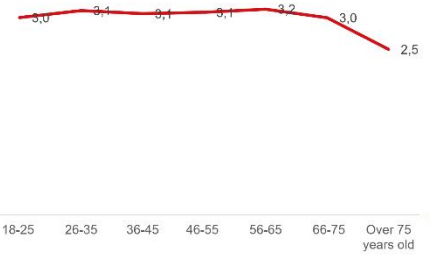
The **Metro/Tram/Train** is secure for me...



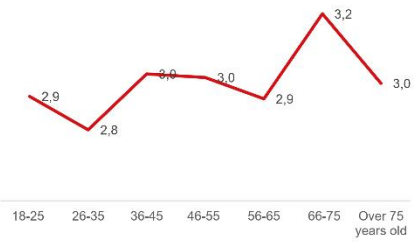
The **shared transport** (bike, scooter, car...) is secure for me...

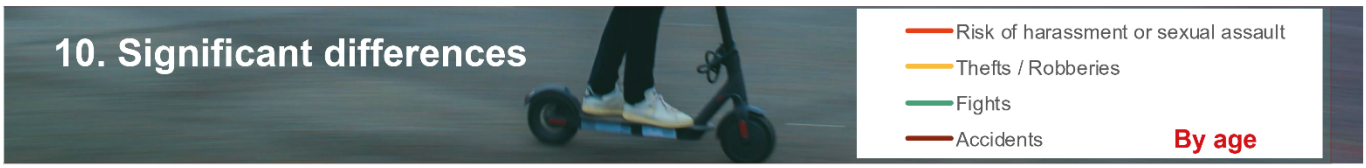


The **taxi** is secure for me...

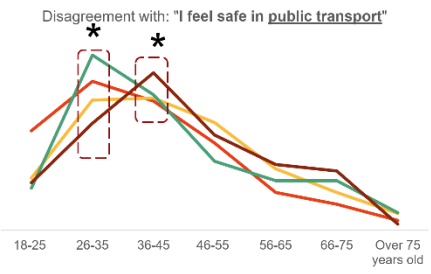


The stations or public transport stop are secure for me...

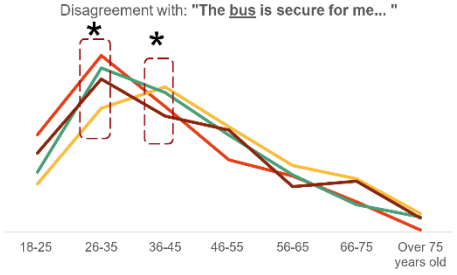




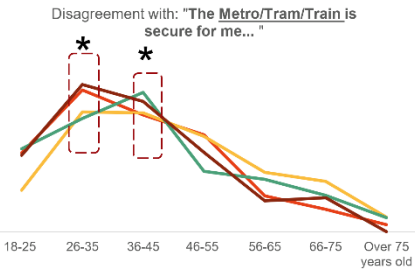
Disagreement with: "**I feel safe in public transport**"



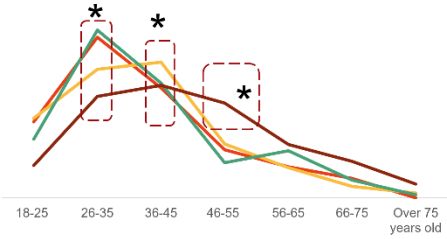
Disagreement with: "**The bus is secure for me...** "



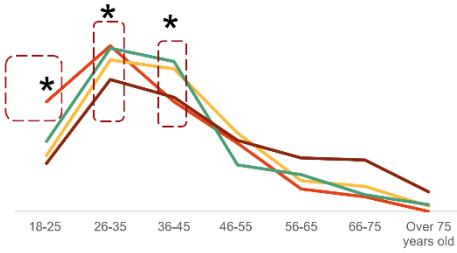
Disagreement with: "**The Metro/Tram/Train is secure for me...** "



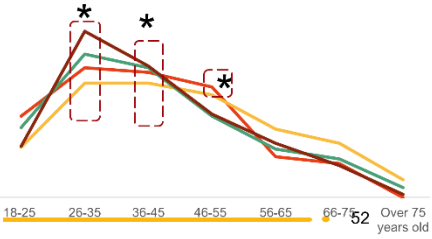
Disagreement with: "**The shared transport is secure for me...** "

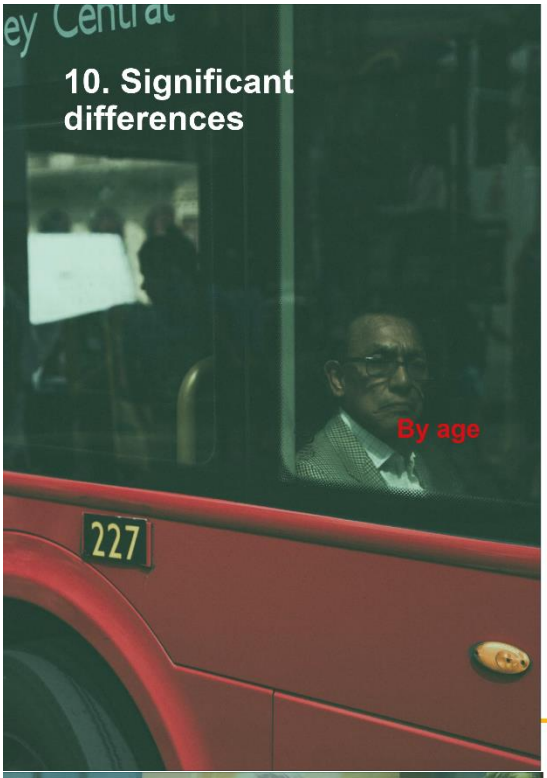


Disagreement with: "**The taxi is secure for me...** "



Disagreement with: "**The stations or public transport stop are secure for me...**"





Reasons for Transportation Use

- Reasons for using Public, Private, and Active Transportation:
  - **Walking:** Those over 75 years of age walk less. Individuals aged 18 to 25 walk more due to frequency, scheduling, and service. In contrast, those between 46 and 65 walk for health and well-being.
  - **Own Bicycle**: People aged 66 and older use and own bicycles less. Additionally:
    - Those under 55 use bicycles more for convenience.
    - Those under 45 use bicycles more for time efficiency, speed, and sustainability.
    - Those under 35 use bicycles for frequency, scheduling, interconnectivity, flexibility, safety, accessibility, proximity, health, and well-being.
    - Those aged 18 to 25 use bicycles for reliability and punctuality.
  - **Own Skateboard or Scooter**: Those over 45 do not have skateboards or scooters, and those over 55 do not use them. Additionally:
    - Those aged 18 to 35 use skateboards for convenience, time efficiency, frequency, punctuality, lack of alternatives, scheduling, flexibility, safety, accessibility, proximity, cost-effectiveness, interconnectivity, and sustainability.
    - Those aged 18 to 25 use them for health and well-being.
  - **Own Motorcycle**: Those aged 66 and above do not have their own motorcycles, and those over 56 do not use them. Additionally:
    - Those under 35 prefer motorcycles for convenience, speed, frequency, reliability, punctuality, lack of alternatives, service, accessibility, affordability, cost-effectiveness, sustainability, and interconnectivity with other modes of transportation (ages 26 to 35).
    - Those under 45 use motorcycles for proximity and health and well-being.
  - **Own Car**: Individuals aged 18 to 25 either do not have or do not use cars, and those over 75 do not use them. Additionally:
    - Those aged 36 to 45 use their own cars for proximity.
    - Those aged 46 to 55 use them for convenience, speed, and punctuality.
    - Those aged 56 to 65 use them for scheduling, services, and proximity.
    - Finally, those aged 46 to 65 use them for frequency, alternatives, and flexibility.

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Reasons for Transportation Use

- **Shared Bike**: The use of shared bikes declines from the age of 46, and it is hardly used from the age of 66 onwards. Additionally:
  - Ages 18 to 25 cite a lack of alternatives, affordability, and sustainability as reasons.
  - Those under 45 use shared bikes for frequency, proximity to stops, health and well-being, and affordability.
  - Those under 35 opt for shared bikes for speed, reliability/punctuality, flexibility, and accessibility.
  - Ages 36 to 55 mention sustainability awareness, health and well-being, and affordability
- **Shared Car**: Usage decreases from age 46, and at 66, there is no use of shared cars. Additionally:
  - Ages 18 to 45 choose shared cars for convenience, frequency, affordability, speed, lack of alternatives, flexibility, safety, accessibility, and sustainability awareness.
  - Ages 26 to 45 prioritize proximity to stops, punctuality/reliability, schedules and service, interconnections with other modes, and health and well-being.
- **Shared Light Electric Vehicle (LEV)**: Usage drops from age 46, and at 66, there is no use of shared LEVs. Additionally:
  - Ages 18 to 35 favor shared LEVs for convenience, reliability/punctuality, flexibility, safety and accessibility, interconnections with other modes, and health and well-being.
  - Ages 18 to 45 value speed, frequency, proximity to stops, affordability, and sustainability awareness.
  - Ages 26 to 35 consider the lack of alternatives and schedules/service.
- **Taxi:** Those over 75 years do not use taxis. Additionally:
  - Those under 35 use taxis for frequency, affordability, health and well-being, sustainability, speed, punctuality/reliability, proximity to stops, and interconnections with other modes.
  - Ages 56 to 75 prioritize frequency and health/well-being.
- **Bus**: Notably, those aged 18 to 25 use the bus due to frequency, lack of alternatives, schedules/service, and interconnections with other modes.
- **Subway and Tram**: Ages 56 to 75 choose the subway/tram for health and well-being, sustainability awareness.
- **Train**: Those over 75 years do not use the train, and ages 18 to 25 select the train for speed, frequency, punctuality/reliability, schedules/services, affordability, interconnections, and health/well-being.

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Awareness

- The 18-25 age group claims to use public transportation more and rely less on cars, and those who do use cars express a desire to change.
- The 26-35 age group uses cars less frequently, and those who do use them express a desire to change and experiment with other alternatives. However, they use public transportation sparingly.
- The 36-45 age group expresses a desire to transition away from car usage but utilizes public transportation infrequently.
- The 56-65 age group heavily relies on cars and has no intention of changing, similar to those over 66 years old, although they use cars less and use public transportation more. Those over 75 tend to walk more

Improvements

- **Bus:**
  - From 18 to 25 years old, there is a higher demand for improvements in service, capacity, comfort, cleanliness and maintenance, safety, app enhancements, extended operating hours, increased accessibility, and small door-to-door buses.
  - From 46 to 65 years old, there is a demand for increased frequency of service.
- **Metro /Tram /Train:**
  - From 18 to 25 years old, there is a greater demand for improvements in comfort, a variety of ticket options, and extended nighttime service.
  - From 26 to 35 years old, there is a demand to allow bikes on board.
  - From 18 to 35 years old, there is a demand for more improvements in resolving issues with ticket machines, optimizing space, and enhancing accessibility.
  - From 18 to 45 years old, there is a demand for more improvements in eliminating unjustified fines, improving customer service, and enhancing signage.
  - Individuals over 75 years old demand increased accessibility.
- **Taxi:**
  - Between the ages of 18 and 25, there is a heightened demand for enhancements in efficiency, safety, reliability, app improvements, cleanliness, comfort, the retrieval of lost items, airport transportation services, multilingualism among drivers, and, ultimately, the elimination of unnecessary travel destination restrictions.
  - From 26 to 35 years old, there is a demand for more improvements in nighttime schedules, accessibility, and pricing.
  - From 26 to 45 years old, there is a demand for more improvements in driver behavior, punctuality, reliability, and speed.
  - From 18 to 45 years old, there is a need for enhanced customer service.
- **Shared bike:** Young people are more inclined to choose all the improvement measures for shared bicycles compared to older people.
- **Shared LEV / Shared CAR:** Individuals aged 18 to 35 are the ones who significantly request all the improvements.

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Proposed improvements for the UPPER project

- **Young people** prefer the following improvements more than older people:
- *To **create a network of multimodal hubs**, increasing the offer of new mobility services, improving the access to public transport and active modes, and improving user experience in the first/last mile.*
- *To implement and/or improve the **Multimodal Digital Mobility Services (MDMS)**, to increase visibility and integration of sustainable modes of transport **through a single App***
- *To implement **data-driven mechanisms as a support for Public Transport planning** (optimise Public Transport network, service, frequency…) in order to improve the efficiency (…)*
- *To **support local governments in monitoring their Sustainable Urban Mobility Plans** and to encourage them to integrate the mobility indicators monitoring in their decision making process.*
- *To establish **participative governance and dialog formats** to better address the citizens needs and expectations.*
- **Older people** prefer the following improvements more than young people:
- *To improve the Public Transport offer in **peri-urban areas and to increase the access to Public Transport in low demands areas** of the city (on-demand service).*
- *To **adapt Public Transport stops and facilities** (stations, bus stops…) to be more innovative, inclusive and convenient and safe.*
- *To **prioritise Public Transport** (traffic light priority based on social optimum…) in order to reduce Public Transport travel times, increase punctuality and improve user satisfaction.*
- *To implement **financial incentives** to increase the share of Public Transport (discounts, tariffs, tax bonuses…).*

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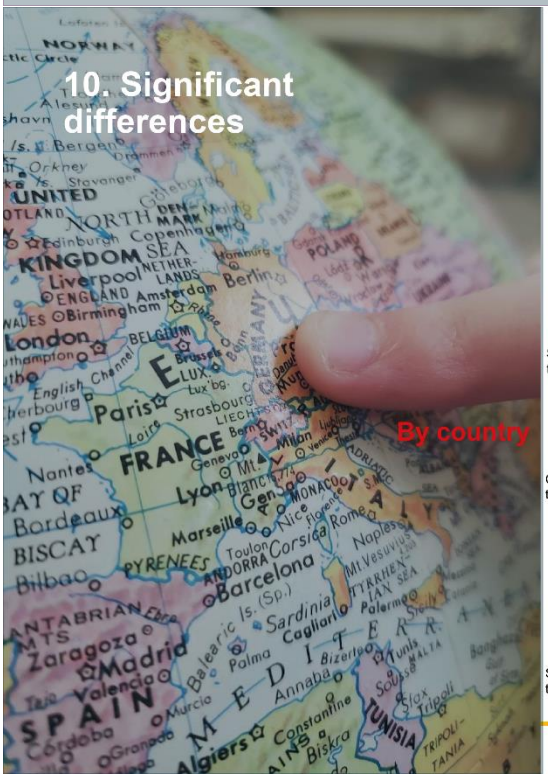
10. Significant differences

1. By gender
2. By age
3. **By country**



Frequency of use, importance, and satisfaction with public and private transportation, broken down by each type

- Among users in Spain, public transportation is the more prevalent choice over private transportation.
- For users in Spain and Portugal, public transportation is held in higher regard. In Italy, Belgium, and Norway, active mobility takes the lead in usage.
- In Italy, Belgium, and Norway, active mobility takes the lead in usage.
- Users in Spain and Greece, on the other hand, prioritize active mobility.
- In Norway, public transportation is less frequently used, and private transportation is favored.
- For users in Germany and Norway, public transportation is given less importance while private transportation takes precedence (similar to Greece).

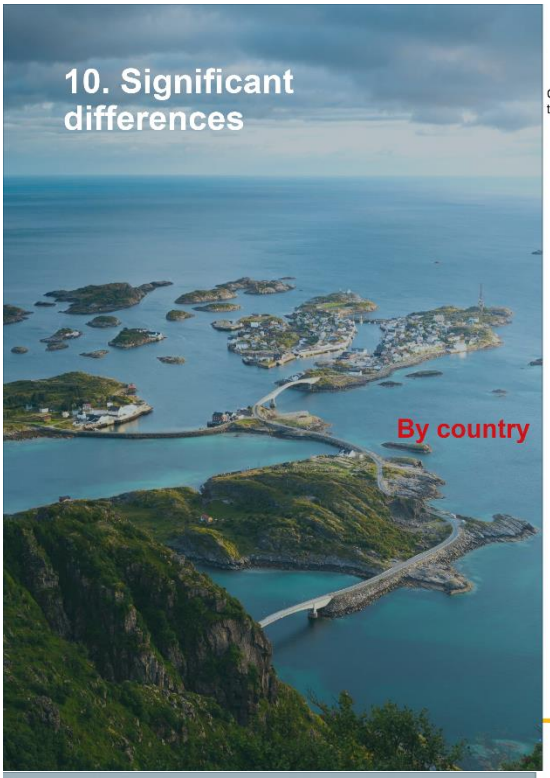
Importance by mode of transportation and by country

Shared transport:
- **Italy**: Among all countries, Italian users place the highest emphasis on shared transportation, including bicycles, motorcycles, and cars.
- **Greece**: Greek users follow Italy's lead in prioritizing shared bicycle and car transportation.
- **Norway**: Norwegian users also stand out for giving greater importance than the rest to shared motorcycles, scooters, and cars.
- **Hungary and Germany**: Users in Hungary and Germany show a lower preference for shared bicycles, scooters, and motorcycles, with Germany placing more emphasis on shared car transportation.

Collective transport:
- **Bus**: Among the surveyed countries, Spain, Hungary, and France stand out for assigning the highest priority to buses, whereas Norway ranks them as of least importance.
- **Tram**: In Hungary and Belgium, tram services are given the utmost significance by users, whereas Norway rates them as the least important.
- **Metro**: Users in Spain and France express the greatest preference for metro transportation, while Norway ranks it with the least importance.
- **Ferry**: Interestingly, users in Norway rank ferry services as the most important, in contrast to Hungary, where they are deemed of least significance.
- **Taxi**: Taxis are highly favored by users in Greece and Spain, while Hungary and Germany consider them of least importance.

Satisfaction by mode of transportation and by country

Shared transport:
- **Shared Bike**: Users in Germany report the highest satisfaction levels with shared bikes, whereas Greece ranks the lowest in satisfaction
- **Shared Moto**: Italy leads in satisfaction with shared motorcycles, while Hungary and Portugal have the lowest levels of satisfaction.
- **Shared LEV**: Germany and Spain top the satisfaction rankings for shared LEVs, while Greece and Hungary rank at the bottom.
- **Shared Car**: Greece and Spain have the highest satisfaction levels for shared cars, while Greece has the lowest satisfaction.



Satisfaction by mode of transportation and by country

Collective transport

- **Bus**: Among transportation users in Spain and France, shared cars receive the highest levels of satisfaction, while Greece and Italy report the lowest levels.
- **Tram**: Spain stands out as the country with the highest tram satisfaction levels, whereas Greece records the lowest satisfaction rates.
- **Metro**: Users in Spain show the greatest satisfaction with metro services, while Germany reports the lowest satisfaction levels.
- **Ferry**: No significant differences in satisfaction levels were observed.

- **Taxi**: Spain and Greece have the most satisfied taxi users among all the countries surveyed, while Belgium reports the lowest satisfaction levels, followed closely by Norway and Hungary.

Frequency by mode of transportation and by country

- In Spain, buses, metros, and trams are the preferred modes of transportation, with frequent usage.
- In Greece, taxis are the more prevalent choice.
- Belgium and France are the leading countries for shared bicycle usage, while Portugal and Spain show the least frequent use.
- Shared LEVs are least popular in Hungary, Greece, and Spain, with the highest utilization found in Germany, Belgium, France, Norway, and Italy, in descending order.
- Lastly, shared cars are least commonly used in Spain and Portugal, while Italy, Belgium, and Greece have the highest adoption rates, respectively.

Security:

- In Spain, people tend to feel safer when using various modes of transportation, with the exception of shared transportation. In Germany, shared transportation is where they feel the most secure.
- Greece, Italy, and France are the countries where people feel the least safe when using public transportation. Italy, Greece, and Belgium are where individuals feel the least safe while on buses. France, Italy, and Germany are the countries where people feel the least safe when using metro, trams, or trains.
- In Greece and Belgium, shared transportation is where individuals feel less secure. In Belgium and Germany, taxis are the mode of transport where people feel less secure. In Germany and France, stations and stops are the locations where people feel less secure.

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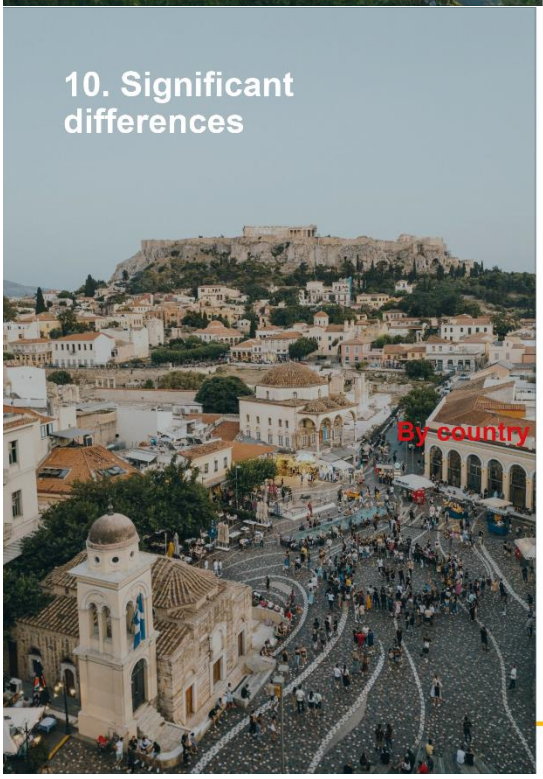

Reasons for Insecurity:

- The reasons behind respondents' **safety** concerns regarding **public transportation** are as follows::
  - Belgium (18.5%) and Germany (17.7%) have the highest levels of sexual harassment, while Portugal (4.8%) and Spain (5.5%) have the lowest.
  - The highest levels of thefts/robberies occur in Italy (18.9%), Greece (15.6%), and Hungary (13.8%). In contrast, the lowest levels are found in Norway (4.6%)
  - The highest levels of altercations/fights are in France (29.4%), and the lowest are in Spain (5%)
  - The highest number of accidents occurs in Norway (21%) and Greece (20.4%), while the lowest levels are in France (4.4%) and Belgium (5%).
- The reasons for **insecurity** among respondents about **buses** are the following:
  - Germany (19.5%) and Italy (17.4%) have the highest levels of sexual harassment, while Portugal (5%) and Spain (5%) have the lowest.
  - The highest levels of thefts/robberies occur in Greece (18.8%) and Italy (17.6%). In contrast, the lowest levels are found in Norway (4%)
  - The highest levels of altercations/fights are in France (25.3%), while the lowest are in Spain (6.2%) and Portugal (7.1%).
  - The highest number of accidents occurs in Greece (17.2%) and Norway (14.1%), while the lowest levels are in Portugal (4.4%) and Italy (5%).
- The reasons for **insecurity** among respondents about **metro/tram/train** are as follows:
  - Germany (24.8%) has the highest levels of sexual harassment, while Portugal (5.4%), Norway (5.9%), and Greece (5.9%) have the lowest.
  - The highest levels of thefts/robberies occur in Italy (18.2%). In contrast, the lowest levels are found in Norway (7%).
  - The highest levels of altercations/fights are in France (27.5%), while the lowest are in Portugal (4.9%).
  - The highest number of accidents occurs in Hungary (17.6%) and Greece (17%), while the lowest levels are in France (5.1%) and Portugal (5.7%)

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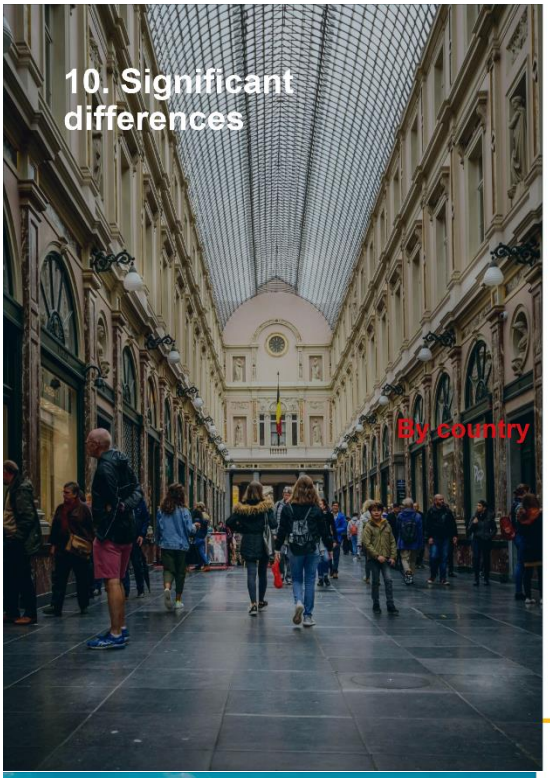

- The reasons for **insecurity** among respondents about **shared transportation** are as follows:
  - Germany (22.2%) has the highest levels of sexual harassment, while Norway (5.7%) has the lowest.
  - The highest levels of thefts/robberies occur in Belgium (23.2%). In contrast, the lowest levels are found in Portugal (4%).
  - The highest levels of altercations/fights are in France (27.5%), while the lowest are in Portugal (4.9%)..
  - The highest number of accidents occurs in Greece (22%). The lowest levels are in Belgium (5.8%)
- The reasons for **insecurity** among respondents about **taxis** are as follows:
  - France (17.7%) and Greece (13.5%) have the highest levels of sexual harassment in taxis, while Hungary (6.3%) and Spain (6.8%) have the lowest.
  - The highest levels of thefts/robberies occur in Italy (17.1%). In contrast, the lowest levels are found in Portugal (7.4%).
  - The highest levels of altercations/fights are in Greece (16.3%), while the lowest are in Spain (4.8%) and Portugal (6.1%).
  - The highest number of accidents occurs in Hungary (14.2%). The lowest levels are in France (6.2%).
- The reasons for **insecurity** among respondents about **stations and stops** are as follows:
  - Germany (20.2%) has the highest levels of sexual harassment at stations and stops, while Portugal (5%) and Spain (5%) have the lowest.
  - The highest levels of thefts/robberies occur in Portugal (15.5%) and Italy (14.5%). In contrast, the lowest levels are found in Norway (6.2%).
  - The highest levels of altercations/fights are in France (23.8%), while the lowest are in Portugal (5.6%) and Spain (5.9%).
  - The highest number of accidents occurs in Greece (17.2%). The lowest levels are in Portugal (3.7%).

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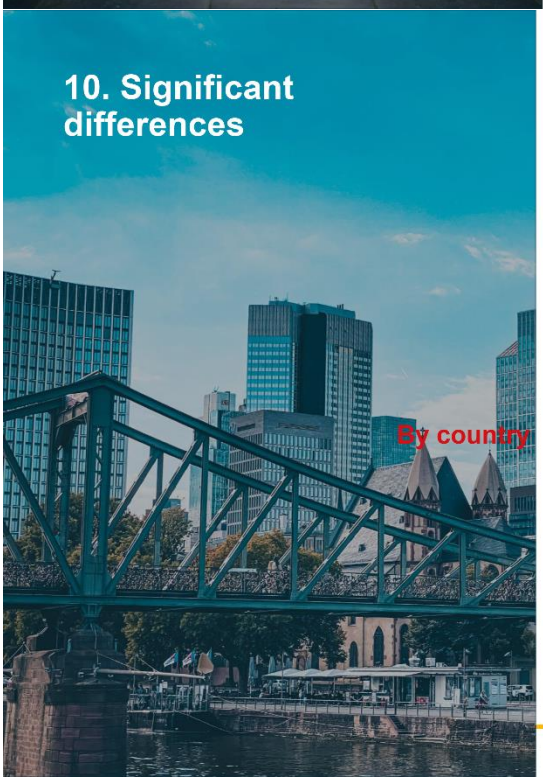

Reasons for Transportation Use

According to the users surveyed:

Shared Bike: Greece has the fewest shared bikes and the lowest usage, with Germany coming in second for both availability and usage, and Portugal in second place for low usage. Additionally:

- France and Norway stand out as the countries that most frequently cite reasons such as convenience, speed, frequency, reliability, lack of alternatives, scheduling or service issues, flexibility, proximity to stops, cost, connectivity, health, and sustainability.

- **Shared Car:** Greece has the lowest availability of shared cars, and Germany and France have the lowest usage. Additionally:
  - In Germany, a significant number of people choose "lack of alternatives" as the reason for using shared cars.
  - Belgium and Italy cite scheduling or service issues more frequently.
  - Greece attributes its usage to the proximity of stops.
  - Norway and Belgium prioritize the interconnectivity with other forms of transportation.
- **Shared Light Electric Vehicle (LEV):** Greece, Germany, and France have the lowest availability of shared LEVs, and Greece, Germany, and Norway have the lowest usage. Additionally:
  - Germany and France opt for shared LEVs primarily due to reasons of convenience, speed, lack of alternatives, safety, accessibility, and flexibility, with cost being a secondary factor.
  - Italy leans towards shared LEVs for health and well-being reasons, scheduling or service issues, and proximity to stops.
  - Norway places a higher emphasis on frequency when choosing shared LEVs.
  - Greece and France prioritize sustainability as a key factor in their choice of shared LEVs
- **Taxi:** France has the lowest usage. Additionally:
  - Greece and Spain opt for shared transportation primarily due to reasons such as comfort, speed, frequency, punctuality, lack of alternatives, flexibility, safety, and accessibility. Proximity to stops is also a significant factor.
  - Spain emphasizes scheduling as a key reason for using shared transportation.
  - Germany prioritizes cost and affordability.
  - Both Spain and Germany consider health and sustainability as important factors in their choice of shared transportation.

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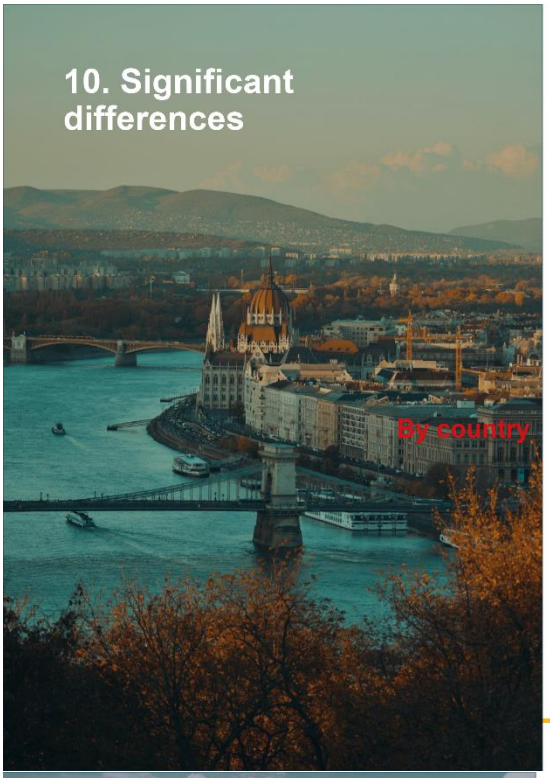

Reasons for Transportation Use

- **Bus:** Belgium and Hungary have fewer shared transportation options, and they also make less use of them. Additionally:
  - Hungary prioritizes speed, frequency, and schedules as the main reasons for choosing shared transportation.
  - Both Hungary and Spain value shared transportation for its convenience, punctuality, flexibility, proximity to stops, cost-effectiveness, connectivity, well-being, and sustainability.
  - Italy and Norway, on the other hand, lean towards shared transportation due to a lack of alternatives.
- **Subway and Tram:**
  - The countries with the lowest availability are Norway and Germany, and the least usage can be observed in Norway and Belgium
  - Spain and Italy opt for the subway/tram due to their convenience, speed, proximity to stops, cost-effectiveness, and sustainability.
  - Spain values it for its interconnections, reliability, punctuality, flexibility, and health benefits. Meanwhile, Norway primarily uses it due to a lack of alternatives, and Greece prefers it for its schedules and services.
  - In Spain, France, and Italy, the preference is for subway/tram systems with high frequency.
- **Train:**
  - Norway has fewer options and lower usage rates.
  - Portugal and France prioritize subway/tram systems more due to their comfort, speed, frequency, punctuality/reliability, proximity to stops, cost-effectiveness, flexibility, safety, accessibility, and interconnections.
  - France, Germany, and Portugal emphasize schedules.
  - Portugal, Germany, and Norway lean towards these systems for health and sustainability reasons. Norway, on the other hand, mainly relies on them due to a lack of alternatives.

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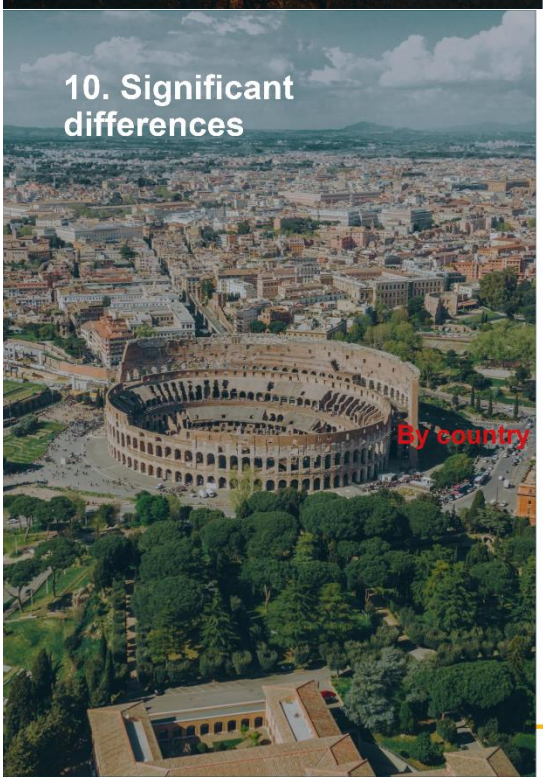

Awareness

According to the users surveyed:

- In **Spain**, public transportation is used more frequently than cars, and people explore other alternatives.
- In **Italy**, they also explore other alternatives.
- In **Germany**, there is greater awareness of reducing car usage, and more people walk or bike, although they do not use other alternatives.
- In **Belgium** and **Norway**, car usage is high, and public transportation is less commonly used.
- In **Portugal**, public transportation is heavily used, and walking or biking is less common.

Improvements

According to the users surveyed:

- Bus:
  - Spain has the highest demand for bus improvements (6), followed by Italy (4), Greece (3), and Hungary (3).
  - Spain is seeking increased frequency, punctuality/reliability, enhanced safety, driver attention improvement, schedule improvements, and better connections.
  - Italy, more than any other country, demands increased frequency, punctuality/reliability, maintenance and cleanliness, and greater safety.
  - Greece, more than any other country, seeks comfort, maintenance and cleanliness, and bus schedules improvement.
  - Hungary, more than any other country, desires comfort, maintenance and cleanliness, and better connections..
- Metro /Tram /Train:
  - Spain has the highest demand for metro/tram/train improvements (10), followed by Italy (6), then Hungary (2), France (2), and Portugal (2).
  - Spain is seeking maintenance and cleanliness, comfort, improved connections, safety, frequency, punctuality/reliability, accessibility, enhanced customer service, clear behavior rules, extended nighttime operating hours, and space optimization.
  - Italy, more than any other country, demands maintenance and cleanliness, improved connections, safety, frequency, punctuality/reliability, and extended nighttime operating hours.

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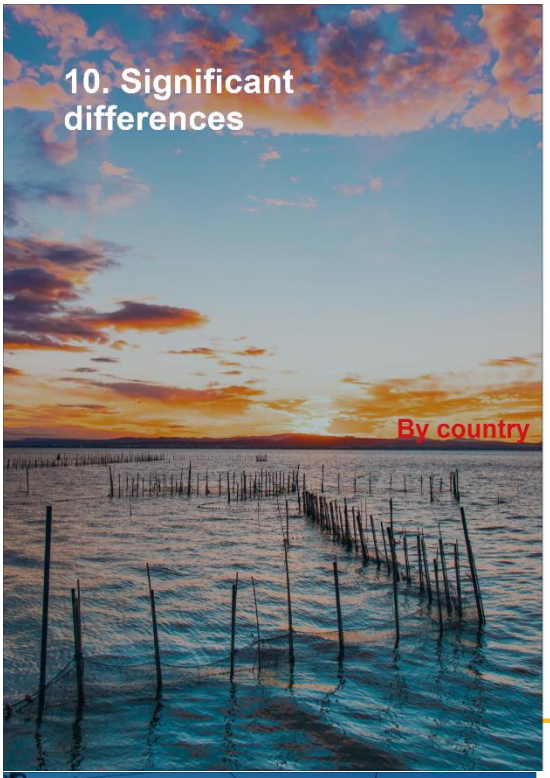

Improvements

According to the users surveyed:

- Taxi:
  - Spain has the highest demand for taxi improvements (12), followed by Greece (10) and Italy (2).
  - Spain is seeking improvements in driver behavior, efficiency, safety, flexibility, speed, punctuality, reliability, customer service enhancement, app improvement, pricing, car cleanliness, comfort, nocturnal schedule improvement, taxi accessibility enhancement, the retrieval of lost items, airport transportation services, , multilingualism among drivers, and, ultimately, the elimination of unnecessary travel destination restrictions.
- Shared bike:
  - France and Germany are more likely to choose to avoid charges due to system errors.
  - Italy and Germany prioritize well-sized stations more frequently.
  - Norway and Italy integrate shared bicycles into public transportation.
- Shared LEV:
  - Norway and Italy request improved performance of motorcycles and scooters.
  - Italy and Germany advocate for coverage or inclusion of insurance.
  - Germany and Norway demand simplified payment options.
- Shared Car:
  - Greece and Italy are the countries that demand the most significant improvements in customer service.
  - Germany, Italy, and Belgium are the ones with the highest demand for minimizing fines due to service faults and errors.
  - Greece, France, and Germany are advocating for improvements that allow shared car trips outside city centers.
  - Belgium, Spain, and Norway are seeking enhancements related to car charging aspects.

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Proposed improvements for the UPPER Project

- **Southern European Countries + Hungary**
- *To redistribute and **redesign urban space** to promote active travel modes (by bike, on foot…) and public transport (new lanes…), and to reduce on-street parking space in favour of more sustainable modes.*
- *To improve the **integration of Public Transport ticketing**; to modernize and increase the attractiveness of digital sales channels; and to promote private sector partnerships.*
- *To implement and/or improve the **multimodal route planners (App)** to increase the user satisfaction and encourage multimodality.*
- *To implement **data-driven mechanisms as a support for Public Transport planning** (optimise Public Transport network, service, frequency…) in order to improve the efficiency (…)*
- *To unleash the potential of the **real-time Public Transport data** in order to: provide the citizens with clear, reliable and accessible information before and during the trip; (…).*
- *To implement **dedicated Public Transport lanes** (for bus, tram…) in order to reduce travel times and improve Public Transport operation.*
- *To **prioritise Public Transport** (traffic light priority based on social optimum…) in order to reduce Public Transport travel times, increase punctuality and improve user satisfaction.*
- *To better **understand dependencies between the level of service and passenger satisfaction** and to initiate actions to improve public perception of Public Transport*
- **Central/Northern European Countries:**
- *To improve the Public Transport offer in **peri-urban areas and to increase the access to Public Transport in low demands areas** of the city (on-demand service).*
- *To **support local governments in monitoring their Sustainable Urban Mobility Plans** and to encourage them to integrate the mobility indicators monitoring in their decision making process.*
- *To **adapt Public Transport stops and facilities** (stations, bus stops…) to be more innovative, inclusive and convenient and safe.*
- *To implement special **ticketing systems for different social groups** (e.g. adapted to school students).*
- *To implement **financial incentives** to increase the share of Public Transport (discounts, tariffs, tax bonuses…).*
- *To establish **participative governance and dialog formats** to better address the citizens needs and expectations.*

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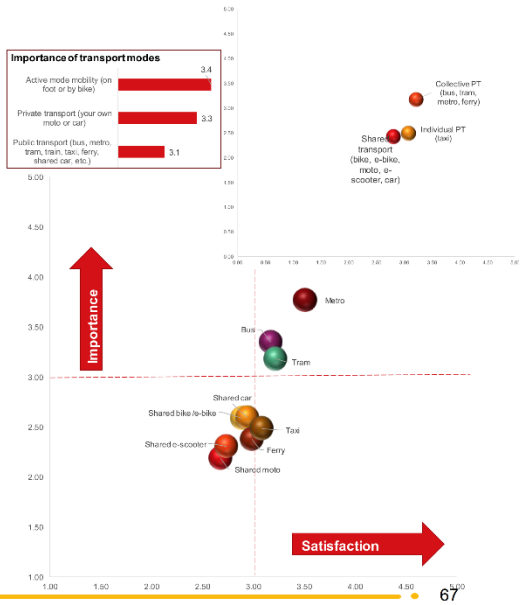
11. Conclusions (I)

General conclusions

Frequency, importance and satisfaction

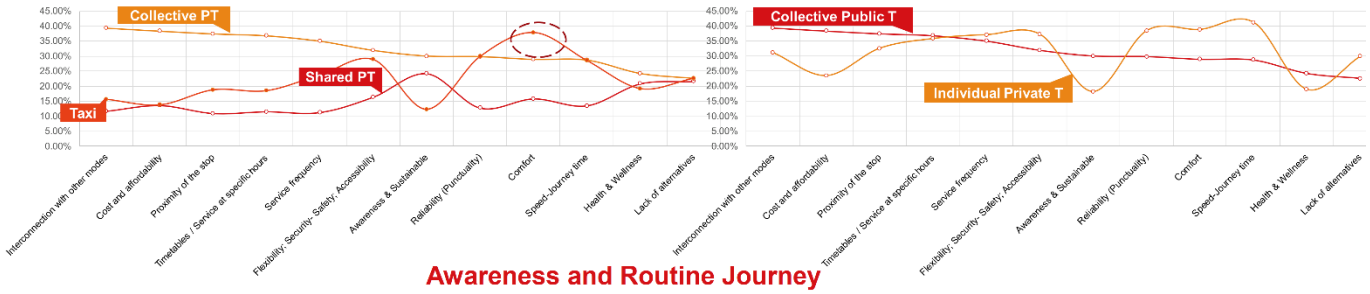
- Thanks to the screening question about the primary mode of transport used for daily journeys, we were able to gather data from 4.952 users. This data reveals that the modal split consists of **44.05% for public transport, 45.26% for private transport, and 10.7% for active transport**. These figures represent the average across the nine countries surveyed. However, when we analyze the data by gender, age, and country, the results vary.
- The key findings are as follows:
  - Women exhibit a higher preference for and usage of public transportation and active mobility compared to men. Conversely, men tend to rely more on private transportation.
  - Public transportation is more popular among younger individuals, while active mobility is favored by older individuals, particularly those aged 66 and above. Private transportation becomes more significant as people age.
  - It is worth noting that the countries with the lowest rates of public transport usage are Norway (28.16%) and Germany (28.62%), while Hungary (58.78%) and Spain (58.26%) lead in terms of public transport utilization.
- When asked about their individual frequency of use, the most commonly used modes of transportation are as follows: active mode of mobility scores an average of 3.5 out of 5, while private transport garners an average of 3.4 out of 5, and finally, public transport scores 3.1 on average
- Frequency of use by type of Public Transport:
  - Among the various modes of public transportation, it is evident that buses are the most extensively utilized. Buses offer a high level of accessibility, serving 88.2% of the population, closely followed by subways at 80.5%. Taxis are utilized by 67.6% of the population, while shared public transportation is selected by 33.21% of the population.
- If we analyze the importance and satisfaction in relation to them:
  - Active transportation and private transportation are the most important, with public transportation ranking last with a score of 3.1 out of 5
  - Within the realm of public transportation, collective transport is the most crucial and provides the highest level of satisfaction to users. There is a strong correlation indicating that the most important modes of transportation are being prioritized, and things are being done correctly.
  - In second place is the taxi (individual PT), and lastly, the least important and least satisfying mode is shared transportation.
  - Within collective transportation, the modes of least importance and lowest satisfaction rating are motorcycles and e-scooters



11. Conclusions (II)

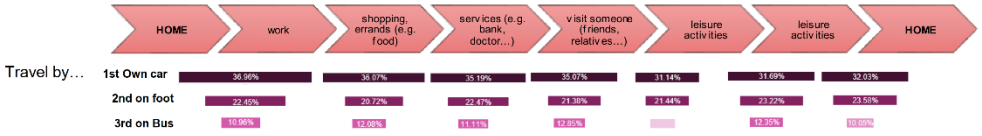
Reasons for Using different kind of Transports

- In line with the previous analysis, we observe that collective public transport better meets most needs, except for comfort, where it falls behind taxis and loses points to individual private transportation in aspects such as flexibility, security, accessibility, frequency, and, above all, reliability (punctuality), comfort, speed journey time, and the fact that there are no alternatives.



Awareness and Routine Journey

- The results regarding the level of awareness are promising. Only 24.5% state that they do not want to change their habits (i.e., they use their car or motorcycle and do not consider switching to another mode). Meanwhile, 30.94% are conscious and opt for public transportation or active mobility, and 43.4% express a willingness to embrace change.

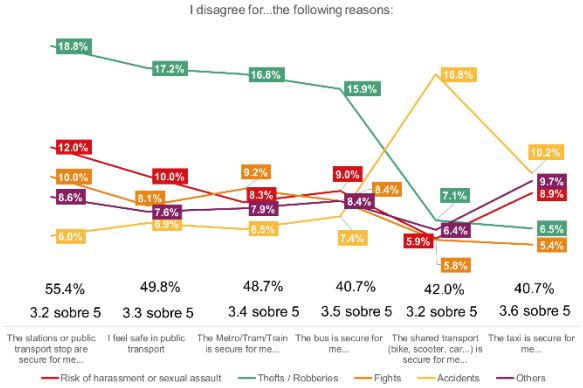


- Consistent with the previous conclusions, people still prefer and make their journeys in private transportation (own car), followed by walking (primary active transportation) or by bus (the most commonly used public transportation).

11. Conclusions (III)

Safety

- Taxis and buses are the safest modes of public transportation. Taxis experience minimal incidents of theft compared to subways, buses, and thefts at stations and stops. However, attention must be paid primarily to reduce the possibility of accidents and the feeling of insecurity due to the risk of harassment or sexual assault, which is predominantly experienced by young women.
- Shared transportation stands out as being less secure than the rest, primarily due to accidents involving e-scooters, bikes, etc., possibly caused by the severity of injuries.
- Buses and subways are primarily unsafe due to thefts and, secondarily, due to the risk of harassment or sexual assault on buses, which exclusively affects women, and the risk of fights in the subway, affecting young men.
- Finally, transportation stations and stops are the most insecure in terms of theft, harassment, and fights.



Improvements in PT

- Collective public transportation (bus, metro, tram, train) primarily requires the following: **frequency, punctuality, reliability, and robust connectivity.** In the case of the metro, there is also a need to "enhance security measures to prevent theft and address safety concerns for passengers," while for buses, there is a demand to "expand service hours, particularly for nighttime service.
- For taxi services, users primarily demand the following:
  - Diverse payment methods, ensuring transparency through fixed rates.
  - Promoting and encouraging friendly and professional behavior in drivers.
  - Delivering excellent customer service with prompt, adaptable, and courteous assistance.
- For shared transportation, users' primary demands include:
  - Ensuring that bikes, e-scooters, cars, etc., operate smoothly, are easy to drive, comfortable, well-maintained, and clean.
  - Providing an easy-to-use service.
  - Offering fast, responsive, and efficient customer service available 24/7.
  - Minimizing fines and charges resulting from service or system failures

11. Conclusions (IV)

By Gender

- Women place greater importance on and use active mobility modes and public transportation more frequently than men. Specifically, collective public transportation (bus, subway, tram) stands out.
- On the other hand, men tend to use private transportation, individual public transportation (taxis), as well as shared transportation. All of these modes share a more individualistic approach compared to the greater use of collective transportation by women (which is also healthier and more sustainable).
- It's noteworthy that women feel less secure in all types of public transportation and at stops/stations compared to men;
  - Women consistently feel more insecure due to the risk of harassment or sexual assault.
  - Additionally, women are more concerned about thefts/robberies in public transportation in general and on buses, as well as accidents on buses.
  - Conversely, men are more concerned about fights on public transport and buses
- In terms of awareness:
- Higher percentage of men state, "I primarily use the car or motorcycle and do not consider switching to another mode of transportation".
- Higher percentage of women state, "I use public transportation for the majority of my trips".
- Finally, women are focused on improvements in public transportation (bus and subway), specifically seeking enhancements in frequency, punctuality, and reliability, along with requests for extended operating hours and increased security measures
- Men, on the other hand, demand improvements in taxi and shared transport services related to customer service, efficiency, safety, and flexibility. They also seek enhancements in apps, transparent pricing, and payment methods, in addition to addressing maintenance and cleanliness concerns.

By Age

- Public transportation is used more by younger people, whereas active mobility is favored by older individuals (aged 66 and above). Those between 36 and 55 years old tend to rely more on private transportation. As age increases, the significance of private transportation grows.
- Young people predominantly rely on buses and metro/tram services, while the age group of 26 to 35 tends to favor taxi. Between 18 and 35, use shared bicycles, shared LEVs and shared cars more frequently.
- Younger individuals (women) feel more insecure in public transportation, on buses, subways/trams/trains, taxis, and at transportation stations and stops
- Individuals over the age of 65 feel more insecure in shared transportation due to accidents.
- Reasons for using Private and Active Transportation are:
- Walking: Those aged 75 and above typically do not engage in walking anymore. Individuals aged 18 to 25 tend to walk more frequently due to scheduling and service availability. In contrast, those between 46 and 65 often walk for the sake of their health and well-being
- Ownership of bicycles and motorcycles ceases around the age of 66, while personal car ownership diminishes at the age of 77. Skateboards and scooters, typically used by individuals aged 45 to 55 (the younger age group), decline in usage due to safety concerns and the risk of accidents..
- Reasons for using public transportation are as follows:
- Shared transportation becomes less popular starting at the age of 45 due to inconveniences with rental bikes, accidents, and other factors.
- Collective public transportation is more commonly used by the youngest age group, those aged 18 to 25.
- Younger individuals demonstrate a higher awareness of transportation choices (utilizing more public transportation and active modes), but as they age, they express less intention to change and rely more on private transportation,
- Lastly, younger individuals demand more improvements related to technology aspects (apps, real-time data, ticket purchasing systems), while older individuals prioritize increased stop accessibility, better pricing, and discounts, among other factors.