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DEL07 Data compilation and evaluation report

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List of abbreviations

| | |
|-------|--|
| AMB | Barcelona Metropolitan Area |
| IERMB | Barcelona Institute of Regional and Metropolitan Studies |

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1. Introduction

The Inclusify project envisaged a pilot test based on the launch of an app to create a virtual community that could collect experiences, concerns, and suggestions for improving the Barcelona metropolitan bus network. In addition, the project included the design and the implementation of a face-to-face survey to collect similar aspects among passengers who do not usually use smart tools.

This report, developed and written in December 2022, contains the main results gathered through the pilot (from both app and survey data), as well as the impact of the communication actions conducted to inform citizens about the pilot. Apart from the main results, the report assesses the main contributions and advantages of each of these tools, and the principal difficulties and limitations encountered. On this basis, strategies for improvement are proposed.

This Deliverable contributes to the Output 04 (Action Plan for women inclusion), since the information obtained has made it possible to identify those areas of special interest in terms of inclusive mobility for women and to advance the strategic orientations for the implementation of the action plan. The coincidence of this project with other metropolitan project to address inclusive mobility among women, has allowed to work for a common metropolitan strategy.

The main results of this report are:

- Survey results have pointed that overall, travel experience of passengers is positive. However, there are some issues of potential for improvement. Bus-stops are the environment that generates the least satisfaction and night lines, and night passengers require special attention.
- The biggest concern among respondents is safety, and the lack of accessibility can also be an important barrier to inclusivity in the public transport. Comfort is a cross-cutting issue that can have a direct or indirect impact on safety. In a similar way, some aspects of comfort are directly related to accessibility. Safety concerns especially in young women, while accessibility is more of a concern for elderly and people with special mobility needs.
- Survey results indicate that there is a significant number of people who would not be engaged to participate or who a priori would not be able to contribute through an application such as the one tested in the pilot phase of the Inclusify project, especially elderly.
- These results are consistent with the ones obtained through the pilot app. The number of interactions of app users has been very low. This implies that no conclusions can be drawn at this stage in relation to the objective of the project.
- Some difficulties encountered in the pilot app are related to the impact communication campaign, the confusion between the app and the usual channels to report incidents and complaints, or the lack of understanding about its objectives.
- Overall, the triangulation and improvement of survey methods, qualitative approaches and smart tools could be a useful strategy to better achieve citizen participation in the co-creation of mobility inclusive politics and practices

2. Results of piloting phase: Survey on Women's experiences of travelling on the Barcelona metropolitan bus service

One of the actions carried out during the pilot phase was the launching of a survey aimed at obtaining information from social and demographic profiles that do not use a smartphone to travel; providing information to triangulate with the results registered from the app (in the pilot phase); improve the app design and contents if necessary.

To meet these objectives, the survey *Women's experiences of travelling on the Barcelona metropolitan bus service* addresses the following topics:

- Journey perceptions around comfort, accessibility, and safety among women passengers.
- Use of the app “AMB Mobilitat” and willingness of sharing travel experiences and concerns through the app.
- Sociodemographic and mobility profile

The main characteristics and findings of the survey are presented below.

2.1.Survey methodology

The survey was addressed to female passengers from 16 years old that use the metropolitan bus service, in particular the bus lines of Besòs and Llobregat areas. The field work has been carried out during two weeks between September and October, from Tuesdays to Thursdays from 6 a.m. to 10 p.m. (daytime bus lines) and Thursdays from 11 p.m. to 6 a.m. (night-time bus lines).

It is worth mentioning that the survey follows the CAPI methodology (Computer Assisted Personal Interviews). The respondents haven been selected randomly at bus-stops and inside the bus, and the interviews were conducted both at bus stops and/or inside the vehicles.

The final sample obtained comprises 752 people.

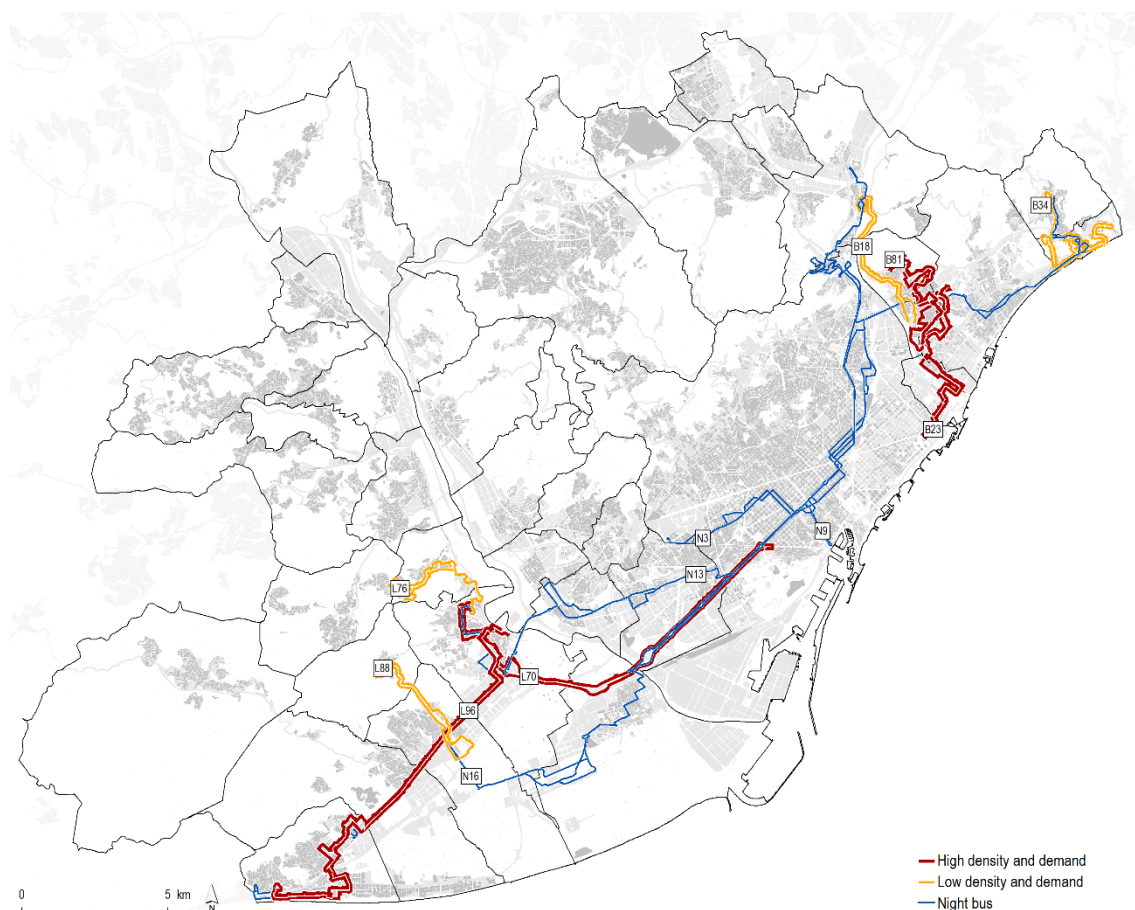
In the table below, the principal methodological characteristics of the survey are detailed.

| SURVEY METHODOLOGY | |
|--|---|
| DATA COLLECTION | Face-to-face survey (CAPI). Random selection of respondents at bus-stops and buses (distribution of interviewers along the line), interviews at bus-stops and inside the buses. |
| STUDY AREA | Bus stops and bus lines of the Metropolitan area of Barcelona, Besòs and Llobregat areas. |
| TARGET POPULATION | Female users of AMB buses from 16 years old |
| SAMPLE SIZE | 752 interviews (750 considered themselves to be women and 2 considered non-binary person). |
| SAMPLING METHOD | Mixed. Convenience selection of lines. Minimum affixation for each type of line. Proportional distribution per lines. Stratification by timetables and lines. Minimum quotas by age group in the total sample. |
| QUESTIONNAIRE | Similar structure and topics from the app. <ul style="list-style-type: none"> ✓ Block 0. INTRODUCTION (presentation of the survey and control of the quotas). ✓ Block I. USER MOBILITY PROFILE (reason, days and times of use of the bus). ✓ Block II. PERCEPTIONS AND CONCERNS (worries and discomfort in relation to safety, accessibility, and comfort). ✓ Block III. CHALLENGES / PROPOSALS (rating of possible improvements). ✓ Block IV. APP (use of the app “AMB Mobilitat”). ✓ Block V. PERSONAL DATA (classification data). |
| FIELD WORK | From the 26 th of September to the 7 th of October 2022 (2 weeks). Interviews in daytime bus lines Tuesdays to Thursdays from 6 a.m. to 10 p.m. and night-time bus lines on Thursdays from 11 p.m. to 6 a.m. |
| <p><i>Figure 1. Survey methodology. Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).</i></p> | |

Bus line selection

To carry out the survey, several metropolitan bus lines were strategically selected, considering three main types of bus lines: high-demand and high-density, low-demand and low-density, and night-time. The criteria for the selection of each line were based on several factors such as the management of the line, the type of bus line (day or night), the route (length, location, surface area, type of urban fabric), annual passengers and the availability of data for the sample design.

The metropolitan area of Barcelona map below illustrates the route followed by each bus line. The red colour represents the high-demand and density lines, which are located both in the Llobregat and the Besòs areas. The low demand and density lines, identified by the yellow colour, follow the same distribution in both areas. Finally, the blue colour, which represents the night bus lines, extends throughout the whole metropolitan area, crossing the city of Barcelona from one end to the other.



Map 1. Routes of the bus lines selected for the survey. Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

Overall, 12 bus lines have been selected:

- ✓ 4 daytime bus lines with high demand which run through high density areas
- ✓ 4 daytime bus lines with low demand which cover some low-density area
- ✓ 4 night-time lines: 2 conventional lines and 2 lines with on demand bus-stop service.

To make the proportional distributions in the sample, the annual passengers of each line have been considered, as shows the table below.

| | Line | Annual passengers | OD Matrix and time distribution (recounts) |
|--|------------|-------------------|--|
| Day bus with high demand, Llobregat area, high and mid-density urban fabric | L70 | 1,212,081 (2019) | Available (2019) |
| | L96 | 2,913,080 (2019) | Available (2019) |
| | B23 | 1,562,272 (2019) | Available (2019) |
| | B81 | 658,042 (2019) | Available (2019) |
| Day bus with low demand, Llobregat area, low density urban fabric | L76 | 129,693 (2019) | Available (2019) |
| | L88 | 189,975 (2019) | Available (2019) |
| | B34 | 159,526 (2019) | Available (2019) |
| Day bus with low demand, Besòs area, low and mid-density urban fabric | B18 | 134,186 (2019) | Available (2019) |
| Night bus with on demand bus- stop service Route in different areas and types of urban fabric. Barcelona and Llobregat area | N13 | 378,388 (2019) | Available (2018) |
| | N9 | 521,410 (2019) | Available (2018) |
| Conventional night bus Route in different areas and types of urban fabric. Barcelona and Llobregat area. | N16 | 512,981 (2019) | Available (2019) |
| Conventional night bus Route in different areas and types of urban fabric. Airport and industrial areas. Barcelona and Llobregat area. | N17 | 417,229 (2019) | Available (2019) |

Figure 2. Selected bus line's characteristics. Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

Sample description

The number of interviewed passengers has been proportionally distributed along each bus line according to its annual passengers. Eventually, the total amount of the sample stands at 752 people with a global sampling error of 3.57% (for $p=q=0.5$ and IC 95%). The sampling error for each type of line can be consulted in the table below.

| Type of line | Sample | Sampling error |
|----------------------------|------------|----------------|
| Bus lines with high demand | 452 | 4.6% |
| Bus lines with low demand | 152 | 7.9% |
| Night buses | 148 | 8.1% |
| Total | 752 | 3.6% |

Figure 3. Distribution of the sample according to type of line. Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

2.2. Main results

This chapter presents the core results obtained by the survey on the travel experience of women users of the metropolitan bus service. The chapter is structured in the following sections:

- a) Socio-demographic profile of respondents
- b) Mobility profile of respondents
- c) Travel experience rating
- d) Travel concerns
- e) Priority of improvement measures

Socio-demographic profile of respondents

The following is a basic description of the persons interviewed (752) based on: gender, age group, place of residence, place of birth, professional status, level of education and special mobility needs to cover on the bus service.

- **Gender:** The survey was targeted to women. However, a question was addressed to confirm the gender self-identification of each person; if the answer was male, the survey was finished and if it was female or non-binary person, the survey was continued. 750 considered themselves as women and 2 considered themselves as a non-binary person. This small number of non-binary people does not allow us to analyse any data for these people specifically, but they are considered for all the whole analysis, who, as commented before, comprises mainly women.
- **Age:** The distribution of respondents according to age is shown in the following graph. The youngest group, from 16 to 29 years of age, represents 36.4% of the total; people over 64 years of age represent the lowest proportion. If we compare these results with population registers, in the metropolitan area of Barcelona the young female population has a lower weight, representing 15% of the total number of metropolitan women in 2021. Older women, on the other hand, have a greater weight, representing 22.5% of the total number of women.
- **Place of residence:** According to the municipality of residence, 14% of the people surveyed live in the city of Barcelona and 84% in other municipalities of the metropolitan area. In the metropolitan area, the population is distributed equally between the city of Barcelona and the rest of the metropolis, with approximately 50% of the population in each territory. Hence, in the sample we have people living outside the city of Barcelona over-represented. However, this representation responds to the survey objectives, yet the main users of metropolitan lines are people who lives in the metropolitan area (not in the central city).
- **Place of birth:** most respondents, 51%, were born in Catalonia. In the metropolitan area, the percentage of the population born outside Catalonia and Spain is almost 24%. Among the people surveyed, this percentage is 36%.
- **Professional status:** the majority, 74%, are in the labour market, i.e., working, or unemployed, or actively looking for a job. The remaining 25% are retired, engaged in housework or students (13.3%). According to the 2011 census (the most up to date available at the present time) 39.0% of women are employed, 13.2% are unemployed (unemployed or looking for the first job), and 47.8% are inactive (students, housework, retired). Therefore, women in the labour market are over-represented.

- **Level of education:** 45% of the people surveyed have a secondary education. This is followed by 34% with higher education. Among metropolitan women, 40% have completed higher education.
- **Special needs to cover on the bus service:** 6% of the people surveyed claimed to have special needs concerning sensory, physical, or reduced mobility difficulties.

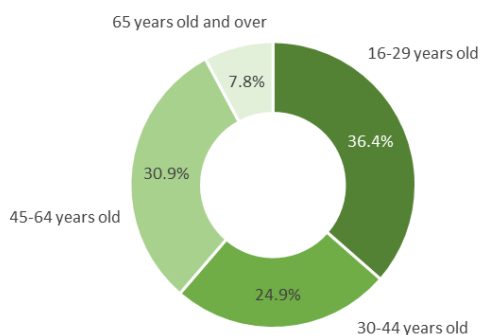


Figure 4. Distribution of respondents by age group, 2022. Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

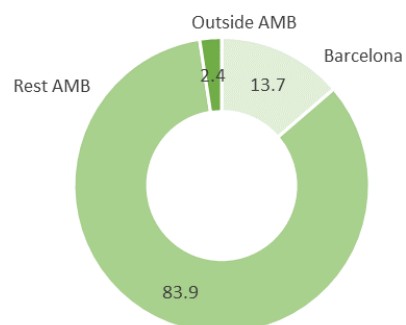


Figure 5. Distribution of respondents by place of residence, 2022. Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

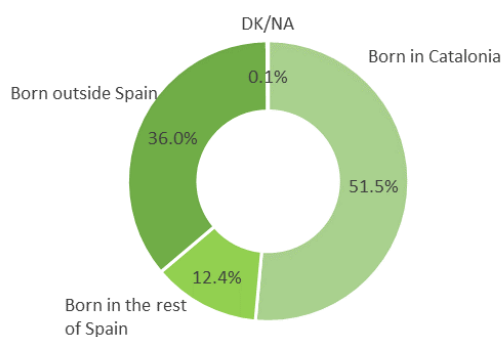


Figure 6. Distribution of respondents by place of birth, 2022. Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

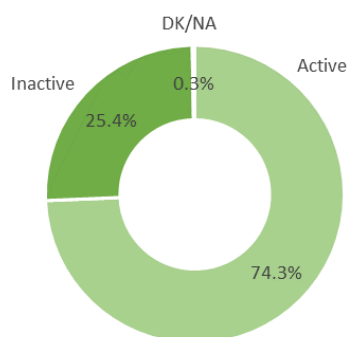


Figure 7. Distribution of respondents by professional status, 2022. Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

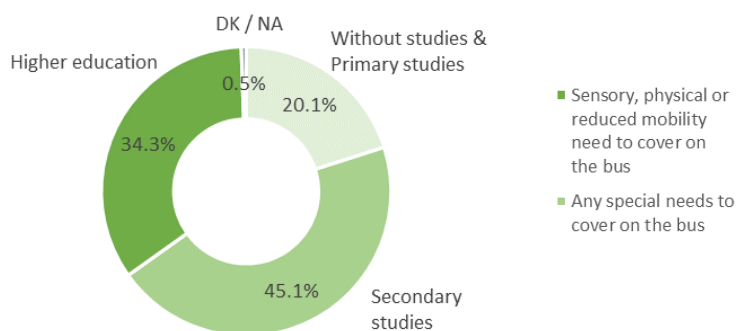


Figure 8. Distribution of respondents by level of education completed, 2022. Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

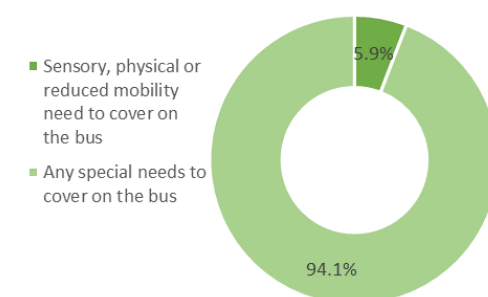


Figure 9. Distribution of respondents by special needs to cover on the bus, 2022. Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

Mobility profile of respondents

The second part of the questionnaire was aimed at finding out the respondents' bus mobility habits, to find out whether these habits had an impact on their assessment of the concerns and proposals for intervention. The description of this mobility habits is presented below.

Most of respondents (60%) are users of the high-density-high demand bus lines. The remaining 40% are almost equally distributed between users of low-density and low-demand bus lines and night bus lines. These results reflect the sample distribution, designed according to the mobility patterns of bus passengers in the metropolitan area.

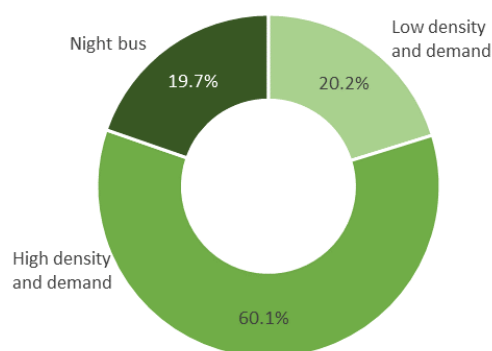


Figure 10. Distribution of respondents according to type of bus line, 2022. Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

Respondents were asked also about their regular use of the bus according to the type of day and their usual time of travel.

Regarding the day of travel, 82.3% of those surveyed consider themselves to be regular users of the metropolitan bus service. On weekdays, 80.5% of those surveyed use the bus regularly. This percentage decreases at weekends when regular users represent the 36.6%.

In relation to the usual time of travel, most respondents are daytime users only (66%); evening/night-time users account for 13.6%. Almost 20% of people use public transport at any time of the day.

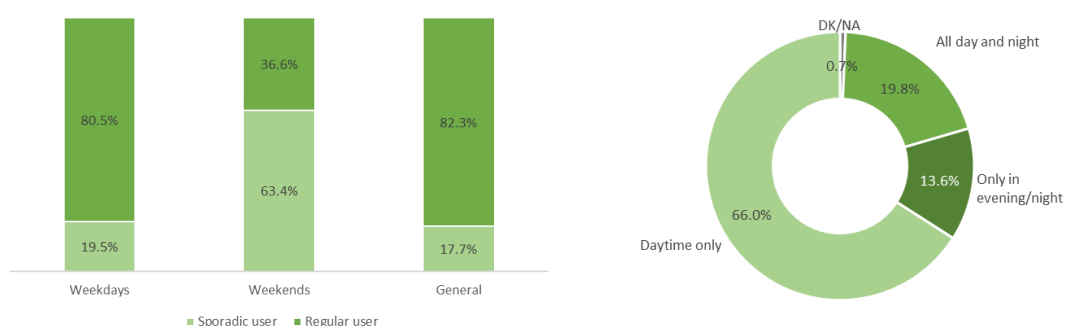
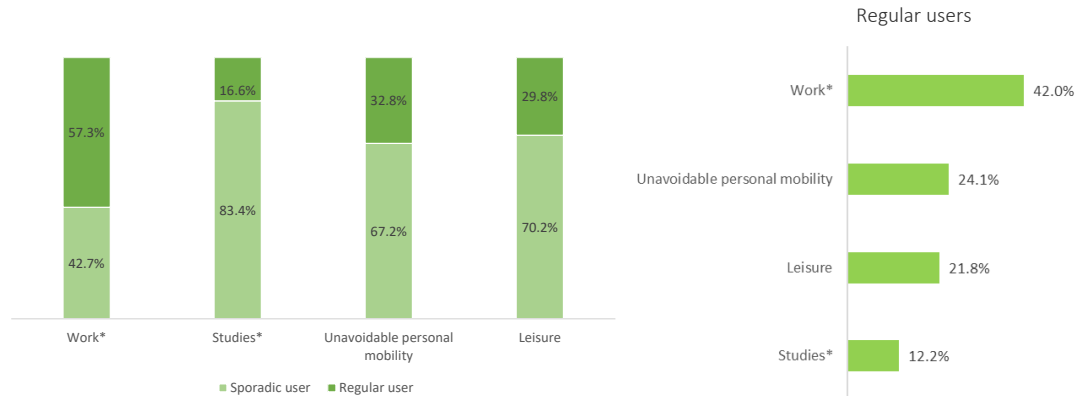


Figure 11. Distribution of respondents according to usual day and time of travel. Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

We also asked about the purpose of the trip. The results show that work is the reason for the highest proportion of regular users of the bus (57.3%), followed by those who travel for unavoidable personal tasks (32,8%), which include care, accompanying persons, purchasing essential goods, etc. Around 30% of the regular travellers use the bus for leisure purposes (walking, going to the cinema, going shopping, etc).

If we consider only regular users, results show that work is the most stated purpose for travelling by bus, followed by unavoidable personal reasons and leisure. It should be noted that a person can travel for more than one reason.



*includes commuting home

Figure 12. Type of public transport user by purpose of travel. Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

Travel experience rating

The second block of the questionnaire addressed respondents' perceptions and concerns around their bus travel experience.

Firstly, taking into a whole journey approach, the respondents were asked to rate their bus travel experience in three settings:

- On the way to or from the bus stop
- On the bus, during the journey inside the vehicle
- At the bus stop, waiting for the bus

Generally, travel **experience of passengers is positive**. In a rating from 0 to 10, bus-stops receive 6.9 points of average, the journey inside buses is rated by 7.8 points and the way from or to the stop receives 7.9 points. If an **average of the journey experience** is analysed for the three items analysed (waiting time, journey, and journey to and from the stop), the **global average is 7.5**.

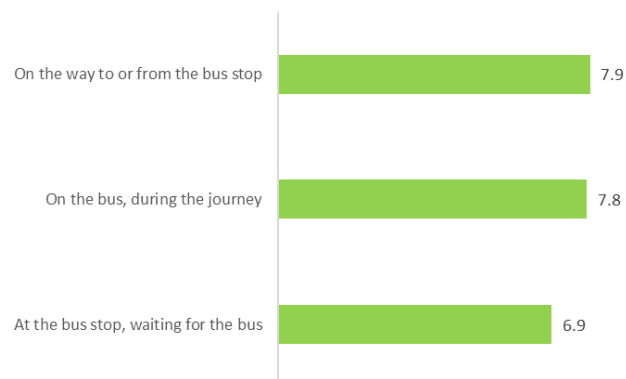


Figure 13. Respondents' rating of the bus travel experience (scale 0 to 10). Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

Travel concerns

The second topic addressed in the block II was the **level of concern** around safety, comfort, and accessibility. Respondents were asked to rate their concerns according to the following categories: not worried, slightly worried, quite worried, very worried.

The **biggest concern among respondents is safety: 46.9% are very worried about it**. Accessibility is of great concern to 25.1% of respondents and comfort to 21.3%. The results are logical considering that safety-related issues can have more serious consequences than those related to comfort or accessibility. However, it should be noted that lack of accessibility can also be an important barrier to inclusivity in the public transport.



Figure 14. Users' comfort, accessibility, and safety concerns. Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

To offer a more detailed approach, we asked about the **degree of concern** about different aspects of **accessibility and safety**, on a scale from 0 (no concern) to 10 (highest concern).

Overall, **safety items are generally rated as being of greater concern** than the accessibility aspects, since, as mentioned above, the personal repercussions of these events can be greater and therefore, they are perceived as being of greater concern. The highest concern around safety are sexual harassment and assaults, followed by aggressions and falls or accidents. Thefts, which do not always involve violence, are of lesser concern among respondents, although, on average, they rate them with almost 7 points.

Among the aspects related to accessibility, lack of information on accessibility is the most worrying issue, with a score of 5.1. The other elements, related to the difficulty of access to the bus, to seats or to elements such as buttons, validation machines, etc. receive ratings between 4.5 and 4.7.

| ASEPCTS ABOUT ACCESSIBILITY | Total |
|--|-------|
| The lack of information on accessibility | 5.1 |
| To have difficulties getting on or off the bus | 4.7 |
| Not reaching the elements | 4.5 |
| To have difficulties getting to the seats | 4.5 |
| ASEPCTS ABOUT SAFETY | Total |
| Sexual harassment and assaults | 7.3 |
| Aggressions (physical or verbal) | 7.2 |
| Falls or accidents | 7.2 |
| Thefts | 6.9 |

Figure 15. User's concern about aspects for accessibility, and safety scale from 0 (not worried) to 10 (very worried).

Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

Comfort aspects were rated according to how pleasant or unpleasant were during the journey, with 0 meaning no discomfort and 10 meaning a lot of discomfort.

In this case, there are three aspects with a score of 7.9, which are the most discomforting: when seats and spaces reserved on the bus are not respected, the low frequency of the service, and when the bus stop is dark or poor lighting. This is followed by travelling with a lot of people or crowds with 7.8.

It should be **borne in mind that comfort is a cross-cutting issue that can have a direct or indirect impact on the perception of safety** (for example, crowding can facilitate thefts and unwanted touching, while waiting a lot of time in dark or solitary bus-stops can increase the fear of being assaulted). **In a similar way, some aspects of comfort are directly related to accessibility**, such as the fact that the bus ramp does not work or that reserved seats are not respected.

| ASEPCTS ABOUT COMFORT | Total |
|--|-------|
| Seats and spaces reserved at the bus not being respected | 7.9 |
| Very low frequency of buses | 7.9 |
| Dark or poor lighting at the bus stop | 7.9 |
| Overcrowded, overloaded buses | 7.8 |
| Dirty bus or bus stop | 7.6 |
| Inappropriate treatment of the driver | 7.0 |
| Non-functioning or missing ramp on bus | 6.6 |
| Bus stop is too far away from destination | 6.1 |
| Waiting at uncrowded bus stops | 5.2 |

Figure 16. User's concern about aspects for comfort scale from 0 (no discomfort) to 10 (a lot of discomfort).
Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

Priority of improvement measures

The third block of the questionnaire was addressed to the **coproduction of improvement measures**. The respondents were asked about their priorities for action to improve the metropolitan bus service, on a scale from 0 (no priority) to 10 (very high priority). After this rating, an open field was offered to suggest other measures.

Frequency is the element considered to be the highest priority for improving the bus service, with a score of 8.3. It is followed at a greater distance with 7.3 and 7.2 by **improved information and driver training**. The design of buses and bus stops is considered the lowest priority (6 and 6.2), suggesting that these elements are currently well resolved in the metropolitan bus service.

In addition to improving the general service, **the elements considered to be a priority for the respondents can be related to safety**: a higher frequency of service means a reduction in waiting time at bus stops, avoiding crowds of people at peak times (which offer a greater risk of being touched or robbed), while at solitary stops or at night, they make the wait more insecure. Also, better information, such as on waiting times, makes it possible to decide whether to take an alternative when the waiting time is too long. Driver's training, both related to kindness and safe driving, **can impact in safety travelling, perception of security and accessibility** to get on the bus and moving around or sitting inside the bus (because of the confidence that the driver can be counted on if there is a problem.) Overall, all these measures can contribute to **a more comfortable journey**.

Finally, only the 16.2% of respondents suggested proposals in the open field. Among the suggestions registered, mostly were related to the items asked in the rating (general references to safety, comfort, information, frequency), therefore no new intervention suggestion was submitted).

| PROPOSALS TO IMPROVE METROPOLITAN BUSES | Total |
|---|-------|
| The frequency | 8.3 |
| Improvement of information | 7.3 |
| Drivers' training | 7.2 |
| The improvement of service channels | 6.8 |
| The location of the stops | 6.6 |
| The improvement of the environment of the stops | 6.3 |
| The design of the stops | 6.2 |
| The design of the buses | 6.0 |

Figure 17. User's concern about aspects to improve metropolitan buses. Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

2.3.Travel experience, concerns, and proposals according to the profile of the respondents

This section analyses perceptions of the bus travel experience, challenges, and proposals for improving the metropolitan bus service according to the socio-demographic profile of respondents and the mobility profile where the results are significative. The chapter is structured in the following sections:

- Travel experience rating in three settings (bus-stop, on the way and inside buses), according to socio-demographic and mobility profile.
- Travel concerns: accessibility and safety and comfort general concerns and specific rating of items related. The results are crossed by socio-demographic profile, and, only for safety issues, by mobility patterns.
- Priority of improvement measures, according to socio-demographic and mobility profile.

Travel experience rating

Sociodemographic profile

The perception of the experience of regular metropolitan bus travel in the three settings (on the way from or to the bus; on the bus, during the journey; at the bus stop) is analysed according to the socio-demographic profile of the people interviewed. It is worth noting **that there are no major differences in the evaluation of the three environments asked according to the profile. The general trend is rating the journey to or from the bus stop most positively**, followed by the journey inside the bus and finally the bus stop. Overall, bus stops obtain the lower punctuations among all the groups.

Although there are no major differences, it must be pointed out that the **most negative evaluations are given by younger people in relation to the bus stop, while older people rate the journey on the bus more negatively**. On the other hand, **people with special needs rate the trip to or from the bus stop more negatively** than people who do not have special needs.

| Travel experience by sociodemographic profile | | On the way to or from the bus stop | On the bus, during the journey | At the bus stop, waiting for the bus |
|---|---|------------------------------------|--------------------------------|--------------------------------------|
| Age | 16-29 years old | 7.9 | 7.9 | 6.8 |
| | 30-44 years old | 7.9 | 7.8 | 6.7 |
| | 45-64 years old | 7.8 | 7.6 | 7.0 |
| | 65 years old and over | 8.0 | 7.6 | 7.4 |
| Place of birth | Born in Catalonia | 7.7 | 7.6 | 6.7 |
| | Born in the rest of Spain | 7.9 | 7.4 | 7.1 |
| | Born outside Spain | 8.1 | 8.2 | 7.0 |
| Employment situation | Active | 7.9 | 7.8 | 6.8 |
| | Inactive | 7.8 | 7.8 | 7.2 |
| Level of education completed | Without studies & Primary studies | 7.8 | 7.6 | 6.9 |
| | Secondary studies | 7.9 | 7.8 | 6.8 |
| | Higher education | 7.8 | 7.9 | 7.0 |
| Special needs | Sensory, physical, or reduced mobility need to cover on the bus | 7.4 | 7.8 | 7.2 |
| | No special needs to cover on the bus | 7.9 | 7.8 | 6.9 |
| Total | | 7.9 | 7.8 | 6.9 |

Figure 18. Travel experience about sociodemographic profile (scale 0 to 10). Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

Mobility profile and type of line

The perception of the travel experience has also been analysed in relation to the mobility profile and the type of bus line used. The results show few differences among groups. In general, the journey to or from the bus stop is rated most positively, followed by the journey inside the bus and finally waiting at the bus stop receives the lowest rating.

Some differences can be found regarding **nit bus users: this group give the lowest rating to the journey on the bus**. Also, **waiting at bus stops is lower rated by those who both travel by day and during night**. Regular users for study purposes give the lowest rating to the bus stop. The fact that most of these users are younger may explain this fact.

| Travel experience by mobility profile and type of line | | On the way to or from the bus stop | On the bus, during the journey | At the bus stop, waiting for the bus |
|--|-------------------------------|------------------------------------|--------------------------------|--------------------------------------|
| Type of user | Sporadic User | 7.7 | 7.6 | 6.9 |
| | Regular User | 7.9 | 7.8 | 6.9 |
| Regular user by reason | Work* | 7.9 | 7.8 | 6,8 |
| | Studies* | 7.6 | 7.6 | 6.6 |
| | Unavoidable personal mobility | 8.0 | 8.2 | 7.0 |
| | Leisure | 7.9 | 7.9 | 7,1 |
| Time of travelling | Daytime only | 7.9 | 7.8 | 7,0 |
| | Only in evening/night | 7.6 | 7.9 | 6,8 |
| | All day and night | 7.7 | 7.7 | 6.4 |
| Type of bus line | Daytime bus | 7.8 | 6.9 | 7.9 |
| | Night bus | 7.9 | 6.7 | 7.6 |
| Total | | 7.9 | 7.8 | 6.9 |

*Includes commuting home

Figure 19. Travel experience about mobility profile and type of line (scale 0 to 10). Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

Travel concerns

To analyse the level of concern regarding safety, accessibility, and comfort, we have opted to aggregate the responses into two categories (very or fairly concerned and not very or not at all concerned). This aggregation facilitates interpretation of the results.

Accessibility assessment

Accessibility concerns have been analysed according to the socio-demographic profile of the respondents. According to age, **people between 45 and 64 years of age are the most concerned about these issues, as well as people with a higher level of education and people with special needs**, who show higher percentages of concern.

These results are logical if we consider that people with physical or sensory difficulties have more mobility difficulties and are therefore concerned about these issues. It is an unexpected result that elderly people interviewed are less concerned about accessibility than the ones between 45 and 64 years. In relation to the level of education, in general, the higher the level of education, the more critical people are.

| Travel concerns about accessibility by sociodemographic profile | | High concern | Low concern | DK/NA | Total |
|---|---|--------------|-------------|-------|-------|
| Age | 16-29 years old | 56.6% | 43.4% | 0.0% | 100% |
| | 30-44 years old | 52.4% | 47.1% | 0.5% | 100% |
| | 45-64 years old | 65.9% | 33.6% | 0.4% | 100% |
| | 65 years old and over | 54.2% | 45.8% | 0.0% | 100% |
| Place of birth | Born in Catalonia | 60.7% | 39.0% | 0.3% | 100% |
| | Born in the rest of Spain | 61.3% | 38.7% | 0.0% | 100% |
| | Born outside Spain | 53.9% | 45.8% | 0.4% | 100% |
| Employment situation | Active | 58.1% | 41.5% | 0.4% | 100% |
| | Inactive | 58.1% | 41.9% | 0.0% | 100% |
| Level of education completed | Without studies & Primary studies | 52.3% | 46.4% | 1.3% | 100% |
| | Secondary studies | 56.3% | 43.7% | 0.0% | 100% |
| | Higher education | 64.3% | 35.7% | 0.0% | 100% |
| Special needs | Sensory, physical, or reduced mobility need to cover on the bus | 61.4% | 38.6% | 0.0% | 100% |
| | No special needs to cover on the bus | 58.1% | 41.7% | 0.3% | 100% |
| Total | | 58.2% | 41.5% | 0.3% | 100% |

Figure 20. Travel concerns about accessibility by sociodemographic profile. Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

The rating of specific concerns around accessibility, on a scale from 0 I am not concerned at all to 10 I am very concerned, **shows how the level of concern in all items, except information related to accessibility, increases with increasing age**. Thus, having difficulties getting on or off the bus, not being able to reach elements such as the validation machines or having difficulties getting to the seats are issues that the older the person is, the more worrying they become.

The highest level of concern according to educational level follows the usual trend, with people with higher education being the most concerned about different aspects of accessibility.

According to the special needs of the respondents, **all aspects related to accessibility are perceived to be of much greater concern to respondents with physical or sensory needs**.

| Aspects about accessibility by sociodemographic profile | | The lack of information on accessibility (adapted lines. operation of the ramp. etc.) | To have difficulties getting on or off the bus | Not reaching the elements (validating machine. buttons. handles...) | To have difficulties getting to the seats |
|---|---|---|--|---|---|
| Age | 16-29 years old | 4.9 | 4.3 | 4.3 | 4.1 |
| | 30-44 years old | 5.0 | 4.5 | 4.2 | 4.2 |
| | 45-64 years old | 5.4 | 5.2 | 4.9 | 5.0 |
| | 65 years old and over | 5.0 | 5.6 | 5.0 | 5.0 |
| Place of birth | Born in Catalonia | 5.1 | 4.6 | 4.6 | 4.6 |
| | Born in the rest of Spain | 5.4 | 5.6 | 4.9 | 5.5 |
| | Born outside Spain | 5.0 | 4.5 | 4.3 | 4.0 |
| Employment situation | Active | 5.1 | 4.7 | 4.4 | 4.4 |
| | Inactive | 5.0 | 4.8 | 4.8 | 4.6 |
| Level of education completed | Without studies & Primary studies | 4.6 | 4.6 | 4.0 | 4.5 |
| | Secondary studies | 5.0 | 4.6 | 4.4 | 4.3 |
| | Higher education | 5.5 | 4.9 | 4.9 | 4.7 |
| Special needs | Sensory, physical, or reduced mobility need to cover on the bus | 4.9 | 5.8 | 4.9 | 5.6 |
| | No special need to cover on the bus | 5.1 | 4.6 | 4.5 | 4.4 |
| Total | | 5.1 | 4.7 | 4.5 | 4.5 |

Figure 21. Rating of the accessibility aspects according to sociodemographic profile scale from 0 (not worried) to 10 (very worried). Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

Safety assessment

The level of concern for the different safety situations asked safety shows a clear relation to the age: **young women surveyed are the most concerned about these issues.**

In relation to the mobility profile, the **sporadic users of the bus service are more concerned about safety than the regular users.** Likewise, regular users for studies or leisure purposes also show a higher percentage of concern than the rest, a matter related to age. Regarding the type of line, **those who use the night bus are the most concerned.**

| Travel concerns about safety by sociodemographic profile | | High concern | Low concern | DK/NA | Total |
|---|---|--------------|-------------|-------|-------|
| Age | 16-29 years old | 77.4% | 22.6% | 0.0% | 100% |
| | 30-44 years old | 65.8% | 34.2% | 0.0% | 100% |
| | 45-64 years old | 72.8% | 26.7% | 0.4% | 100% |
| | 65 years old and over | 62.7% | 37.3% | 0.0% | 100% |
| Place of birth | Born in Catalonia | 75.2% | 24.8% | 0.0% | 100% |
| | Born in the rest of Spain | 77.4% | 22.6% | 0.0% | 100% |
| | Born outside Spain | 65.7% | 33.9% | 0.4% | 100% |
| Employment situation | Active | 71.6% | 28.3% | 0.2% | 100% |
| | Inactive | 72.8% | 27.2% | 0.0% | 100% |
| Level of education completed | Without studies & Primary studies | 68.2% | 31.8% | 0.0% | 100% |
| | Secondary studies | 69.3% | 30.7% | 0.0% | 100% |
| | Higher education | 77.1% | 22.5% | 0.4% | 100% |
| Special needs | Sensory, physical, or reduced mobility need to cover on the bus | 75.0% | 25.0% | 0.0% | 100% |
| | No special needs to cover on the bus | 71.8% | 28.1% | 0.1% | 100% |
| Total | | 71.9% | 27.9% | 0.1% | 100% |
| Travel concerns about safety by mobility profile and type of line | | High concern | Low concern | DK/NA | Total |
| Type of user | Sporadic User | 74.4% | 24.8% | 0.8% | 100% |
| | Regular User | 71.4% | 28.6% | 0.0% | 100% |
| Regular user by reason | Work* | 69.6% | 30.4% | 0.0% | 100% |
| | Studies* | 74.4% | 25.6% | 0.0% | 100% |
| | Unavoidable personal mobility | 68.4% | 31.6% | 0.0% | 100% |
| | Leisure | 74.6% | 25.4% | 0.0% | 100% |
| Daytime only | | 72.0% | 27.8% | 0.2% | 100% |

| | | | | | |
|--------------------|-----------------------|--------------|--------------|-------------|-------------|
| Time of travelling | Only in evening/night | 70.6% | 29.4% | 0.0% | 100% |
| | All day and night | 73.2% | 26.8% | 0.0% | 100% |
| Type of bus line | Daytime bus | 71.4% | 28.5% | 0.2% | 100% |
| | Night bus | 74.3% | 25.7% | 0.0% | 100% |
| Total | | 71.9% | 27.9% | 0.1% | 100% |

**Includes commuting home*

Figure 22. Travel concerns about safety by sociodemographic profile, and mobility profile, and type of line. Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

If we analyse the specific issues valued in relation to safety according to the age of the people surveyed, we see that **items related to sexual harassment, sexual, physical, or verbal aggressions and robberies are of much greater concern to young women, who declare the greatest concern of all the groups analysed, reaching 8.1 in terms of sexual harassment and aggressions.**

On the other way, **falls or accidents are of greater concern to older people or those with physical or sensory needs.** In this group of people, physical or verbal aggressions are also of greater concern, perhaps because of discrimination.

Sporadic users are more concerned about sexual harassment and sexual assaults than regular users, perhaps because they are not as familiar with the bus environment and have perceptions that are not necessarily real, or perhaps they do not use the bus precisely because of these fears.

Among the regular users, those who travel for study and leisure purposes are the ones who are more concerned about sexual harassment and sexual aggressions, since they are mostly young women. Finally, **among the users of the night bus lines, these issues are of much greater concern than the rest of the users,** as is also logical, due to the fear among women of traveling at night.

| Aspects about safety by sociodemographic profile | | Sexual harassment and assaults | Aggressions (physical or verbal) | Falls or accidents | Thefts |
|---|---|--------------------------------|----------------------------------|--------------------|------------|
| Age | 16-29 years old | 8.1 | 7.8 | 7.1 | 7.4 |
| | 30-44 years old | 6.9 | 6.9 | 6.6 | 6.3 |
| | 45-64 years old | 7.0 | 6.9 | 7.7 | 6.8 |
| | 65 years old and over | 6.2 | 6.7 | 7.5 | 6.9 |
| Place of birth | Born in Catalonia | 7.5 | 7.4 | 7.5 | 7.0 |
| | Born in the rest of Spain | 7.7 | 7.7 | 7.7 | 7.3 |
| | Born outside Spain | 6.8 | 6.7 | 6.6 | 6.6 |
| Employment situation | Active | 7.2 | 7.1 | 7.1 | 6.7 |
| | Inactive | 7.4 | 7.5 | 7.3 | 7.4 |
| Level of education completed | Without studies & Primary studies | 7.0 | 7.0 | 7.4 | 6.7 |
| | Secondary studies | 7.1 | 7.1 | 7.3 | 6.8 |
| | Higher education | 7.7 | 7.5 | 7.0 | 7.1 |
| Special needs | Sensory, physical, or reduced mobility need to cover on the bus | 7.2 | 7.6 | 8.0 | 7.0 |
| | No special needs to cover on the bus | 7.3 | 7.2 | 7.1 | 6.9 |
| Total | | 7.3 | 7.2 | 7.2 | 6.9 |
| Aspects about safety by mobility profile and type of bus line | | Sexual harassment and assaults | Aggressions (physical or verbal) | Falls or accidents | Thefts |
| Type of user | Sporadic User | 7.6 | 7.4 | 7.3 | 7.0 |
| | Regular User | 7.2 | 7.1 | 7.2 | 6.9 |
| Regular user by reason | Work* | 7.0 | 6.9 | 7.0 | 6.7 |
| | Studies* | 7.4 | 7.3 | 6.7 | 7.0 |
| | Unavoidable personal mobility | 7.3 | 7.4 | 7.5 | 7.2 |
| | Leisure | 7.5 | 7.4 | 7.3 | 7.1 |
| Time of travelling | Daytime only | 7.1 | 7.2 | 7.4 | 6.9 |
| | Only in evening/night | 7.4 | 7.0 | 6.2 | 6.7 |
| | All day and night | 7.7 | 7.3 | 7.1 | 6.8 |
| Type of bus line | Daytime bus | 7.2 | 7.2 | 7.4 | 6.9 |
| | Night bus | 7.6 | 7.3 | 6.4 | 6.9 |
| Total | | 7.3 | 7.2 | 7.2 | 6.9 |

*Includes commuting home

Figure 23. Rating of the safety aspects according to sociodemographic profile, and mobility profile, and type of bus line to scale from 0 (not worried) to 10 (very worried). Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

Comfort assessment

Comfort is an aspect of greater concern for those of 45 years and more and among people with special needs. Similarly, people with higher levels of education are also more concerned about these issues.

| Travel concerns about comfort by sociodemographic profile | | High concern | Low concern | DK/NA | Total |
|---|---|--------------|-------------|-------|-------|
| Age | 16-29 years old | 47.8% | 51.5% | 0.7% | 100% |
| | 30-44 years old | 49.7% | 50.3% | 0.0% | 100% |
| | 45-64 years old | 64.2% | 35.3% | 0.4% | 100% |
| | 65 years old and over | 57.6% | 42.4% | 0.0% | 100% |
| Place of birth | Born in Catalonia | 55.8% | 43.4% | 0.8% | 100% |
| | Born in the rest of Spain | 58.1% | 41.9% | 0.0% | 100% |
| | Born outside Spain | 50.6% | 49.4% | 0.0% | 100% |
| Employment situation | Active | 54.7% | 44.9% | 0.4% | 100% |
| | Inactive | 51.8% | 47.6% | 0.5% | 100% |
| Level of education completed | Without studies & Primary studies | 53.6% | 45.0% | 1.3% | 100% |
| | Secondary studies | 49.0% | 51.0% | 0.0% | 100% |
| | Higher education | 60.9% | 38.8% | 0.4% | 100% |
| Special needs | Sensory, physical, or reduced mobility need to cover on the bus | 65.9% | 34.1% | 0.0% | 100% |
| | No special needs to cover on the bus | 53.4% | 46.2% | 0.4% | 100% |
| Total | | 54.1% | 45.5% | 0.4% | 100% |

Figure 24. Travel concerns about comfort by sociodemographic profile. Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

The rating of the specific items on a scale from 0 (no discomfort) to 10 (very discomfort) show that **not respecting reserved seats and spaces on the bus generates more discomfort among the people who precisely need these seats**: elderly and people with special physical or sensory needs.

On the other hand, the **low frequency of bus service generates more discomfort among young people** (perhaps also related to the waiting times in insecure environments) and among those with a higher level of education.

The crowds inside the bus are especially annoying for people with special needs, and inappropriate treatment by the driver bothers both young people and those with a higher level of education.

| Aspects about comfort by sociodemographic profile | | Seats and spaces reserved at the bus not being respected | Very low frequency of buses | Dark or poor lighting at the bus stop | Overcrowded, overloaded buses | Dirty bus or bus stop | Inappropriate treatment of the driver | Non-functioning or missing ramp on bus | Bus stop is too far away from destination | Waiting at uncrowded bus stops |
|---|---|--|-----------------------------|---------------------------------------|-------------------------------|-----------------------|---------------------------------------|--|---|--------------------------------|
| Age | 16-29 years old | 7.7 | 8.0 | 7.9 | 7.9 | 7.2 | 7.4 | 6.1 | 6.2 | 5.3 |
| | 30-44 years old | 7.9 | 7.9 | 7.6 | 7.6 | 7.3 | 7.1 | 6.4 | 5.9 | 5.2 |
| | 45-64 years old | 8.1 | 8.1 | 8.2 | 7.9 | 8.4 | 6.8 | 7.4 | 6.3 | 5.1 |
| | 65 years old and over | 8.2 | 6.8 | 7.2 | 7.5 | 7.6 | 5.8 | 6.0 | 5.5 | 4.8 |
| Place of birth | Born in Catalonia | 8.0 | 8.1 | 8.0 | 8.1 | 7.8 | 7.1 | 6.8 | 6.4 | 5.1 |
| | Born in the rest of Spain | 8.2 | 7.5 | 8.1 | 8.0 | 7.9 | 6.9 | 6.7 | 5.8 | 5.1 |
| | Born outside Spain | 7.7 | 7.7 | 7.6 | 7.2 | 7.4 | 6.9 | 6.3 | 5.8 | 5.2 |
| Employment situation | Active | 7.9 | 8.0 | 7.9 | 7.8 | 7.7 | 7.0 | 6.8 | 6.0 | 5.2 |
| | Inactive | 7.9 | 7.5 | 7.8 | 7.8 | 7.5 | 7.0 | 6.0 | 6.4 | 5.0 |
| Level of education completed | Without studies & Primary studies | 8.1 | 7.1 | 7.6 | 7.7 | 7.7 | 6.4 | 6.5 | 5.7 | 4.6 |
| | Secondary studies | 8.0 | 7.8 | 7.8 | 7.8 | 7.6 | 7.0 | 6.7 | 6.0 | 5.1 |
| | Higher education | 7.8 | 8.5 | 8.1 | 7.8 | 7.7 | 7.4 | 6.5 | 6.4 | 5.6 |
| Special needs | Sensory, physical, or reduced mobility need to cover on the bus | 8.2 | 7.7 | 8.2 | 8.6 | 8.0 | 6.8 | 6.5 | 7.1 | 6.1 |
| | No special needs to cover on the bus | 7.9 | 7.9 | 7.8 | 7.7 | 7.6 | 7.0 | 6.6 | 6.0 | 5.1 |
| Total | | 7.9 | 7.9 | 7.9 | 7.8 | 7.6 | 7.0 | 6.6 | 6.1 | 5.2 |

Figure 25. Rating of the comfort aspects according to sociodemographic profile scale from 0 (no discomfort) to 10 (a lot of discomfort). Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

Priority of improvement measures

Sociodemographic profile

The priority rating for different bus service improvements was also analysed according to the socio-demographic profile of respondents.

Results show no major differences between the groups, following the general trend of greater ratings for aspects of the service such as frequency of service or improvement of information, especially among the younger ones. Driver training, the third more rated actuation, is an issue of little concern to older people, but important to the other groups.

It should be noted that the design and improvement of the environment at bus stops and the locations of them is of much greater concern to people with special needs than to other users of the bus service. This is a logical question, since if these issues are not well addressed, it could mean that these people will not be able to use the service.

| Rate the priority/need to act on the following aspects by sociodemographic profile | | The frequency | Improvement of information | Drivers' training | The improvement of attention channels | The location of the stops | The improvement of the environment of the stops | The design of the stops | The design of the buses |
|--|---|---------------|----------------------------|-------------------|---------------------------------------|---------------------------|---|-------------------------|-------------------------|
| Age | 16-29 years old | 8.5 | 7.4 | 7.3 | 6.6 | 6.6 | 5.9 | 5.7 | 5.6 |
| | 30-44 years old | 8.5 | 7.2 | 7.4 | 6.7 | 6.2 | 6.3 | 6.1 | 5.7 |
| | 45-64 years old | 8.1 | 7.4 | 7.3 | 7.2 | 6.8 | 6.7 | 6.7 | 6.7 |
| | 65 years old and over | 7.8 | 6.7 | 6.4 | 6.2 | 6.9 | 6.4 | 6.8 | 6.0 |
| Place of birth | Born in Catalonia | 8.4 | 7.3 | 7.4 | 6.8 | 6.6 | 6.1 | 6.0 | 5.9 |
| | Born in the rest of Spain | 8.1 | 7.1 | 6.8 | 7.3 | 6.6 | 6.7 | 7.1 | 6.4 |
| | Born outside Spain | 8.3 | 7.4 | 7.2 | 6.7 | 6.5 | 6.3 | 6.3 | 5.9 |
| Employment situation | Active | 8.4 | 7.4 | 7.2 | 6.8 | 6.5 | 6.2 | 6.2 | 6.0 |
| | Inactive | 8.1 | 7.1 | 7.2 | 6.6 | 6.7 | 6.4 | 6.4 | 6.0 |
| Level of education completed | Without studies & Primary studies | 8.3 | 7.1 | 7.1 | 6.0 | 6.4 | 5.8 | 6.1 | 5.9 |
| | Secondary studies | 8.3 | 7.3 | 7.4 | 7.0 | 6.6 | 6.4 | 6.3 | 6.0 |
| | Higher education | 8.3 | 7.4 | 7.1 | 7.0 | 6.6 | 6.4 | 6.3 | 6.0 |
| Special needs | Sensory, physical, or reduced mobility need to cover on the bus | 7.8 | 7.2 | 7.3 | 7.2 | 7.5 | 6.9 | 6.9 | 7.1 |
| | No special needs to cover on the bus | 8.3 | 7.3 | 7.2 | 6.8 | 6.5 | 6.2 | 6.2 | 5.9 |
| TOTAL | | 8.3 | 7.3 | 7.2 | 6.8 | 6.6 | 6.3 | 6.2 | 6.0 |

Figure 26.. Priority of improvement measures by sociodemographic profile (scale 0 to 10). Source: IERMB. based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service. 2022 (Inclusify).

Mobility profile and type of line

According to the mobility profile, **generally, we observe that regular users are the ones who most value the priority of all the measures.** Also noteworthy is the priority given to improving frequency by those who commute for work and those who travel both during the day and at night.

One result that stands out, and is perhaps unexpected, is that the lowest ratings for the priority of the different measures are given by women who travel only at night. However, **those who travel both during the day and at night give higher priority to increase frequency and to consider the location of the bus-stops than the rest.**

| Rate the priority/need to act on the following aspects by mobility profile and type of line | | The frequency | Improvement of information | Drivers' training | The improvement of attention channels | The location of the stops | The improvement of the environment of the stops | The design of the stops | The design of the buses |
|---|-------------------------------|---------------|----------------------------|-------------------|---------------------------------------|---------------------------|---|-------------------------|-------------------------|
| Type of user | Sporadic User | 8.0 | 7.2 | 6.8 | 6.7 | 6.2 | 6.1 | 6.2 | 5.9 |
| | Regular User | 8.4 | 7.3 | 7.3 | 6.8 | 6.7 | 6.3 | 6.2 | 6.0 |
| Regular user by reason | Work* | 8.6 | 7.5 | 7.4 | 6.9 | 6.6 | 6.3 | 6.2 | 6.1 |
| | Studies* | 8.2 | 7.2 | 7.1 | 6.4 | 6.5 | 5.9 | 5.6 | 5.2 |
| | Unavoidable personal mobility | 8.4 | 7.4 | 7.5 | 7.0 | 7.0 | 6.7 | 6.5 | 6.2 |
| | Leisure | 8.4 | 7.5 | 7.7 | 7.0 | 6.8 | 6.4 | 6.4 | 6.1 |
| Time of travelling | Daytime only | 8.3 | 7.4 | 7.4 | 6.9 | 6.6 | 6.4 | 6.4 | 6.1 |
| | Only in evening/night | 7.6 | 6.8 | 6.4 | 6.1 | 6.1 | 5.8 | 5.8 | 5.2 |
| | All day and night | 9.0 | 7.4 | 7.3 | 6.8 | 6.8 | 6.1 | 5.9 | 6.0 |
| Type of bus line | Daytime bus | 8.4 | 7.4 | 7.4 | 6.9 | 6.6 | 6.3 | 6.4 | 6.1 |
| | Night bus | 7.9 | 6.9 | 6.7 | 6.2 | 6.5 | 6.0 | 5.6 | 5.3 |
| Total | | 8.3 | 7.3 | 7.2 | 6.8 | 6.6 | 6.3 | 6.2 | 6.0 |

*Includes commuting home

Figure 27. Priority of improvement measures by mobility profile and type of line (scale 0 to 10). Source: IERMB. based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

2.4. Use of the “AMB MOBILITAT” app

The last section of the questionnaire was addressed to the use of the "AMB MOBILITAT". Specifically, respondents were asked:

- a) If they used the app to plan their bus journeys (the app offers information about bus-stop location, real time bus tracking, routes, etc.).
- b) The willingness of using the app for reporting incidents or explaining concerns.
- c) The predisposition to use the app to communicate and share ideas for improvement.
- d) Privacy issues (willingness to provide and share locations of incidents, give personal data, etc.)

Regarding the app use, 57.3% of those surveyed answered that they are habitual users of the app, while 42.6% state that they do not use this tool. The app use decreases significantly with the age of the users: the older they are, the less they use the app. We can also find a lineal association between use of the app and level of education: app usage increases in line with educational level. Other results show how people born in Catalonia are greater users of the app than those born in other places. Finally, the percentage of app use is slightly higher among those who have a sensory, physical, or reduced mobility need to cover on the bus.

| Use app "AMB MOBILITAT" to plan the trip | | Yes | No | DK/NA | Total |
|--|---|--------------|--------------|-------------|-------------|
| Age | 16-29 years old | 66.1% | 33.9% | 0.0% | 100% |
| | 30-44 years old | 60.4% | 39.0% | 0.5% | 100% |
| | 45-64 years old | 52.6% | 47.4% | 0.0% | 100% |
| | 65 years old and over | 25.4% | 74.6% | 0.0% | 100% |
| Place of birth | Born in Catalonia | 62.8% | 37.2% | 0.0% | 100% |
| | Born in the rest of Spain | 45.2% | 54.8% | 0.0% | 100% |
| | Born outside Spain | 53.5% | 46.1% | 0.4% | 100% |
| Employment situation | Active | 59.4% | 40.4% | 0.2% | 100% |
| | Inactive | 51.3% | 48.7% | 0.0% | 100% |
| Level of education completed | Without studies & Primary studies | 49.0% | 51.0% | 0.0% | 100% |
| | Secondary studies | 58.1% | 41.6% | 0.3% | 100% |
| | Higher education | 61.6% | 38.4% | 0.0% | 100% |
| Special needs | Sensory, physical, or reduced mobility need to cover on the bus | 61.4% | 38.6% | 0.0% | 100% |
| | No special needs to cover on the bus | 57.1% | 42.8% | 0.1% | 100% |
| Total | | 57.3% | 42.6% | 0.1% | 100% |

Figure 28. Use of the app “AMB MOBILITAT” by sociodemographic profile. Source: IERMB. based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service. 2022 (Inclusify).

The use of the "AMB MOBILITAT" application according mobility profile and type of line of the people surveyed shows, logically, greater use among regular users of the service. Regarding the purpose of travelling among regular users, it is those who travel for study purposes who report greater a use. This is

logical because, as we have seen, the youngest women are the greater users. In contrast to those who use the night bus lines, daytime bus users are more likely to use the application.

| Use app "AMB MOBILITAT" to plan the trip | | Yes | No | DK/NA | Total |
|--|-------------------------------|--------------|--------------|-------------|-------------|
| Type of user | Sporadic User | 42.1% | 57.9% | 0.0% | 100% |
| | Regular User | 60.6% | 39.3% | 0.2% | 100% |
| Regular user by reason | Work* | 65.2% | 34.6% | 0.2% | 100% |
| | Studies* | 73.6% | 26.4% | 0.0% | 100% |
| | Unavoidable personal mobility | 61.5% | 38.5% | 0.0% | 100% |
| | Leisure | 56.4% | 43.4% | 0.2% | 100% |
| Time of travelling | Daytime only | 59.7% | 40.1% | 0.2% | 100% |
| | Only in evening/night | 38.2% | 61.8% | 0.0% | 100% |
| | All day and night | 62.4% | 37.6% | 0.0% | 100% |
| Type of bus line | Daytime bus | 60.6% | 39.2% | 0.2% | 100% |
| | Night bus | 43.9% | 56.1% | 0.0% | 100% |
| Total | | 57.3% | 42.6% | 0.1% | 100% |

*Includes commuting home

Figure 29. Use of the app "AMB MOBILITAT" by mobility profile and type of line. Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

Other questions asked around the app were the willingness of using it for reporting incidents or explaining concerns, and the predisposition to communicate and share ideas for improvement through this tool. Results show that:

- Around **7 from 10 respondents affirmed that she would be disposed to use the app to report concerns or incidents during the trip or related to the trip (70.7%).**
- The 66,9% of respondents pointed that they would use the app to communicate ideas for improvement.
- A lower proportion (59,2%) asked that they would share its comments to other users of the virtual community.

If we compare the data between users and non-users of app, **about 50% of non-users would use it** for reporting problems, communicating ideas, and sharing proposals. Hence, **there exist some potential users** that could be engaged if communications campaigns were endorsed and, possibly if app functionalities were adjusted. **However, this is not the case among older people**, where more than 50% of older people who do not currently use the app would not use it for these communications either. We must remember here that **certain profiles are more reluctant and have a lower access to smart tools** due to their difficulties for using this tool or their lower access to smart phones.

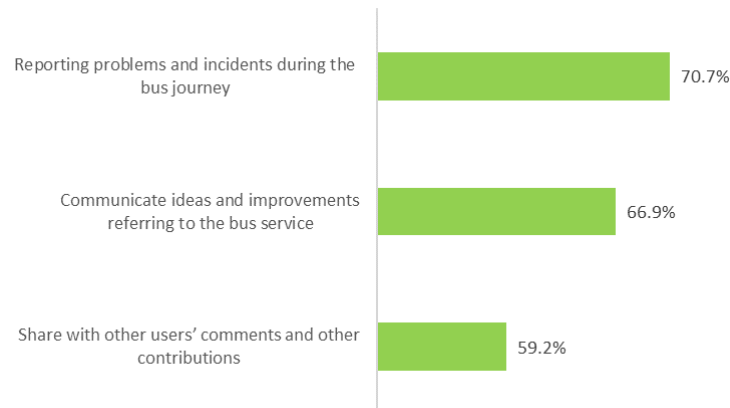


Figure 30. Would you like to use the app...? Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

Finally, we asked about **privacy** issues in the use of the app.

- a) **72% of respondents would be willing to share the location of incidents.** Note here that **this not refers to a real time location of the traveller**, but to the possibility to ubicate the incident in a map or write the specific location in an open field.
- b) The percentage of people willing to share personal data (such as age. municipality...) drops to 50.9%. This result is relevant in terms **of the possible barrier that the mandatory request for personal data in the register may pose.** It should also be noted that some of these responses may also reflect an unwillingness to register in the app as a compulsory step to use it.
- c) Also related to privacy, 5% of respondents said that they would not report some type of issues to the app. Among them, **they mostly referred that they would not share sexual harassment or, especially sexual assaults.** A lower proportion explained that they would not use the app to report incidents or discomfort about the attitude of the driver.

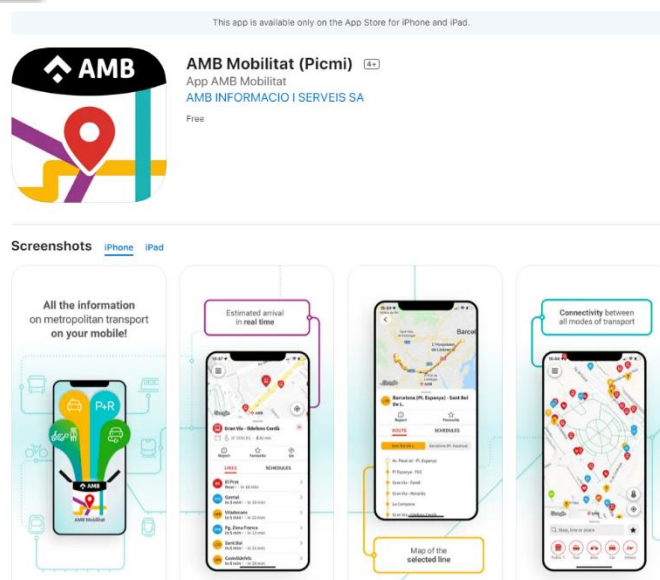
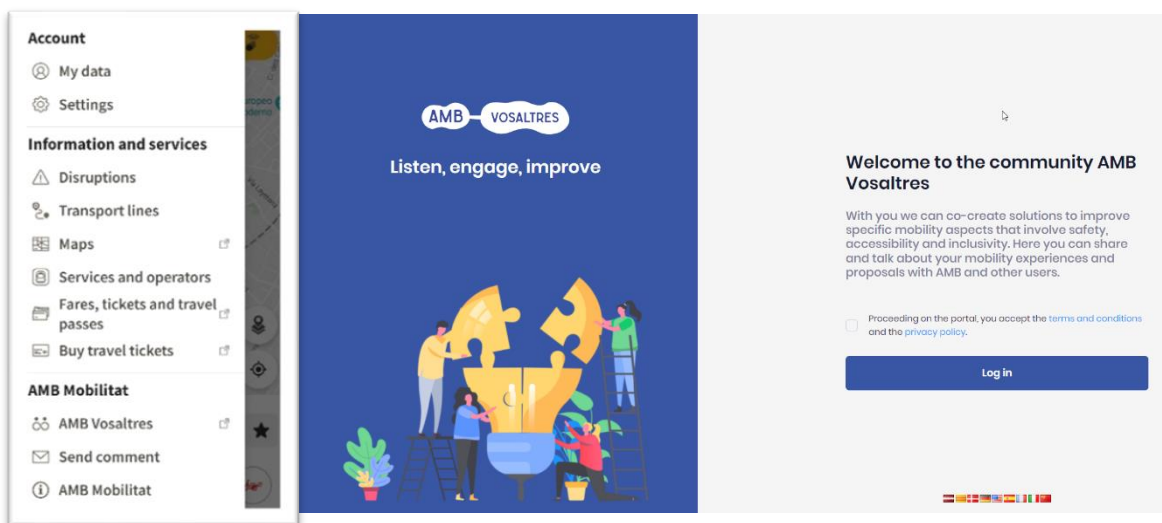


Figure 31. Privacy in the app. Source: IERMB. based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

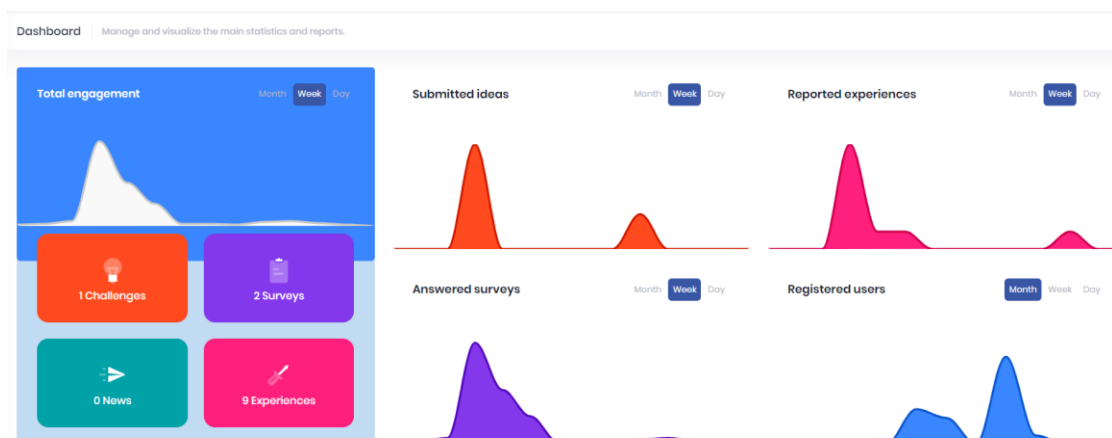
3. Results of piloting phase: “AMB Vosaltres” app

The “AMB Vosaltres” community was finally published as an option as a trial without publicity in **August 2022**. The main access to the community is through an option “AMB Vosaltres” in the main menu of AMB Mobilitat app but is also accessible via web.

AMB Mobility app is a mobile application developed by AMB Informació i Serveis that provides information of all mobility services in the Barcelona metropolitan Area. In November 2022 this application had more than 170.000 active users.



On 19th of Desember the total number of registered users of AMB Vosaltres Community is **644**. Most of these were registered in October responding to the AMB Mobilitat app campaign.



Screenshot from Dashboard of Management Panel

Although there are many non-responses, there is a balance between male and female. Regarding the age group, most of the registered users are included in the group between 45-54 years old.

| Gender | N | % |
|--------------|------------|---------------|
| Female | 158 | 25% |
| Male | 145 | 23% |
| Non-binary | 2 | 0% |
| DK/NA | 339 | 53% |
| Total | 644 | 100% |
| Age | N | % |
| <18 | 17 | 2.6% |
| 18-24 | 29 | 4.5% |
| 25-34 | 44 | 6.8% |
| 35-44 | 56 | 8.7% |
| 45-54 | 71 | 11.0% |
| 55-64 | 34 | 5.3% |
| 65+ | 14 | 2.2% |
| DK/NA | 379 | 58.9% |
| Total | 644 | 100.0% |

Figure 32. Registered users in the app "AMB Vosaltres" by gender and age group.

Experiences

The idea of this section is to share positive or negative experiences related with the perception of safety, security, accessibility and confortability of bus lines.

Share your experience

Help us understand the opinions and needs of women travelling with the bus in the metropolitan area of Barcelona. Let's work together for a more inclusive, accessible and safe bus travels.

Share experience

See experiences shared by others

You can tell us about your experiences regardless whether they are positive or negative. Your thoughts are highly valued and help us understand current problems better and come up with the best decisions.

Silvia
Dec 10, 2022

Many bus drivers do not control the use of masks on

User
Oct 14, 2022

Line B5 Badalona, santo cristo. The line ends at 10:30

User
Oct 11, 2022

It is very frustrating that it can only be accessed

The next screenshoot shows the fields that collects the information about Experiences. Particularly: name (optional), experience category (safety, accessibility, confortability, and gender inclusivity), experience description, picture of the experience (optional), experience location (optional), experience address (opcional).

Share in a few quick steps

Keep your name hidden (optional) ☒

Please select a category

What was the severity of the experience?

Share your experience

Tell us about your experience

Would you like to provide a picture? (optional)

Add a photo

Share your location (optional) ☒

or

Address

Bus stop number or bus line

Submit

Up to December 8 experiences have been reported with no interaction between users (no replies or likes):

Experiences | View and manage all reported experiences. + Create experience

8 All | 4 Approved | 4 Not approved | All categories

| Experience | Category | Comments | Likes | Severity | User | Approved | Status |
|---|----------------|------------|-------|----------|----------|----------|-----------------------------|
| Many bus drivers do not control the use of masks on the bus. It doesn't matter if people go up with... Read more | Safety | 0 COMMENTS | 0 | 🔴 | Silvia | 🔴 | In progress Solved Rejected |
| I find it amazing that at a rush hour like 8 a.m., a fairly large group of high schools are allowed ... Read more | Comfortability | 0 COMMENTS | 0 | 🔴 | CRISTINA | 🔴 | In progress Solved Rejected |
| Hello! At the Gran Via - Fanell bus stop (0421) the E70 never passes at the time the AMB app says. Read more | No category | 0 COMMENTS | 0 | 🟡 | User | 🔴 | In progress Solved Rejected |
| The transport infrastructures of the outskirts of Barcelona are deficient at all levels, with non-co... Read more | Comfortability | 1 COMMENTS | 0 | 🟡 | User | 🔴 | In progress Solved Rejected |
| Line 85 Badalona, santo cristo. The line ends at 10:30 pm and Sundays at 9:30 pm. We are many people... Read more | Comfortability | 0 COMMENTS | 0 | 🟡 | User | 🔴 | In progress Solved Rejected |
| The L78 never passes on time and many times the buses do not pass and I am very tired of always wait... Read more | Accessibility | 1 COMMENTS | 0 | 🔴 | User | 🔴 | In progress Solved Rejected |
| Almost every day is the same, it says that the M75 at the Carles Martí i Vilà Miguel de Cervantes st... Read more | No category | 1 COMMENTS | 0 | 🔴 | User | 🔴 | In progress Solved Rejected |
| It is very frustrating that it can only be accessed through the front door of the bus. That forces a... Read more | Accessibility | 1 COMMENTS | 0 | 🔴 | User | 🔴 | In progress Solved Rejected |

Total: 8 << 1 >> 10

The main experiences mentioned are:

- Crowding problems:
 - At the bus access doors. This involves excessive body contact. It is proposed to access the bus through other doors (apart from the first door).
 - Overcrowded buses that do not allow passengers to access the bus. Overcrowding by groups of passengers (e.g. students) every day at the same time.
- Service does not operate at the scheduled times.
- Not enough frequency of service
- Timetables with little timetable, especially in the evenings (involves walking at night and with children).

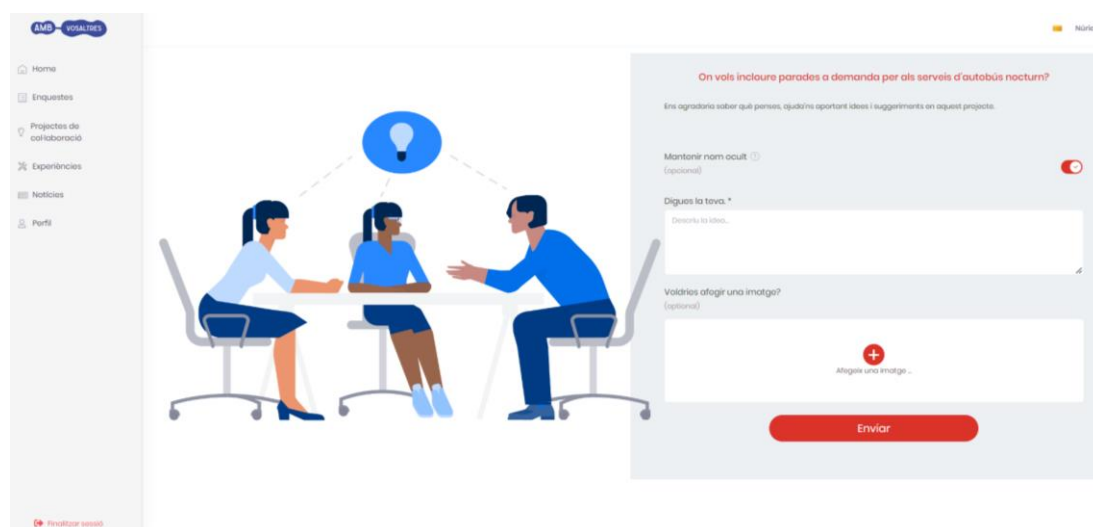
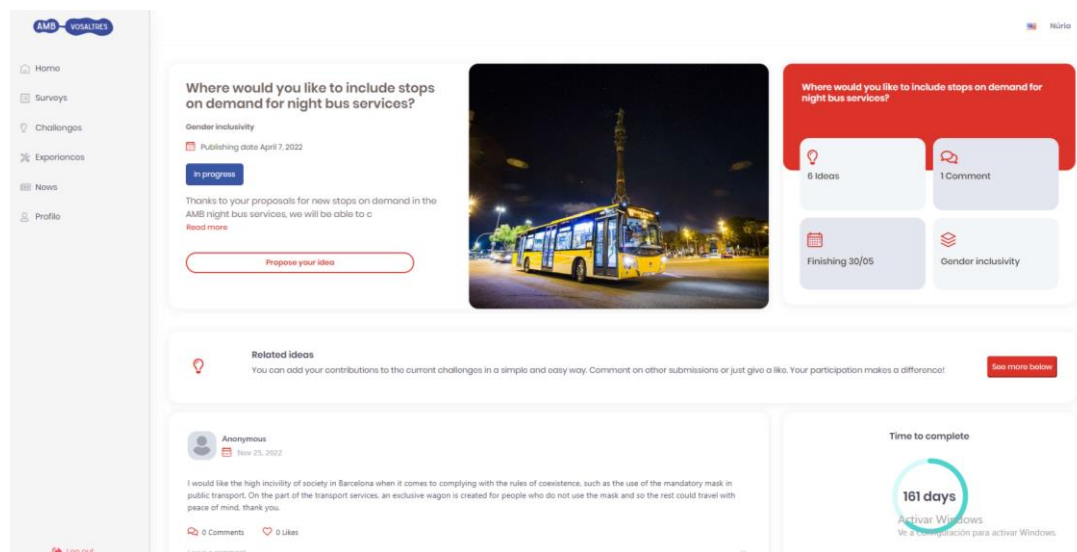
"It is very frustrating that it can only be accessed through the front door of the bus. That forces all passengers to be in a steady flow from the front to the rear. In addition, it favors that there is friction in unwanted or violent body areas between passengers. If the loading and unloading of passengers through all doors is enabled: 1. The maneuver would be more agile 2. Buses would have higher commercial speed 3. The phrase "sisplau, circuleu cap al fons" would not be necessary 4. Buses would be more accessible".

Figure 33. Example of one open experience registered in the app "AMB Vosaltres"

Collaborative projects

This part includes open information linked to challenges or collaborative projects proposed by AMB. The aim is for users to propose ideas for shared projects and contribute to building a community with a collaborative and proactive approach.

On **August 2022 the first call for collaborative projects was opened**. We were consulting users on areas where they would like the night buses to stop on demand.



6 ideas were reported with no interaction between users. The main ideas mentioned are:

- It is proposed that on-demand stops on the night bus be located in residential areas of low population density or where there are no other bus stops or train stations.
- It is proposed that on-demand stand services also operate on some day service lines.
- Some people use this opportunity to complain about the bus service (masks, unsocial behaviour, etc.).

It would be very positive if the sections with an on-demand stop to go down were concentrated in residential areas away from crowded areas or stops/stations of other modes of transport. In addition, there should be more information channels on the possibility of requesting this service inside the vehicle and that the passenger who requests to get off a regular stop must sit in a seat closest to the bus driver.

Figure XX. Example of one open idea registered in the app “AMB Vosaltres”

Surveys

The “AMB Vosaltres” app allows to make small surveys among the users registered.

A small onboarding survey was implemented optional to all users registered with some demographic questions. The results are the following:

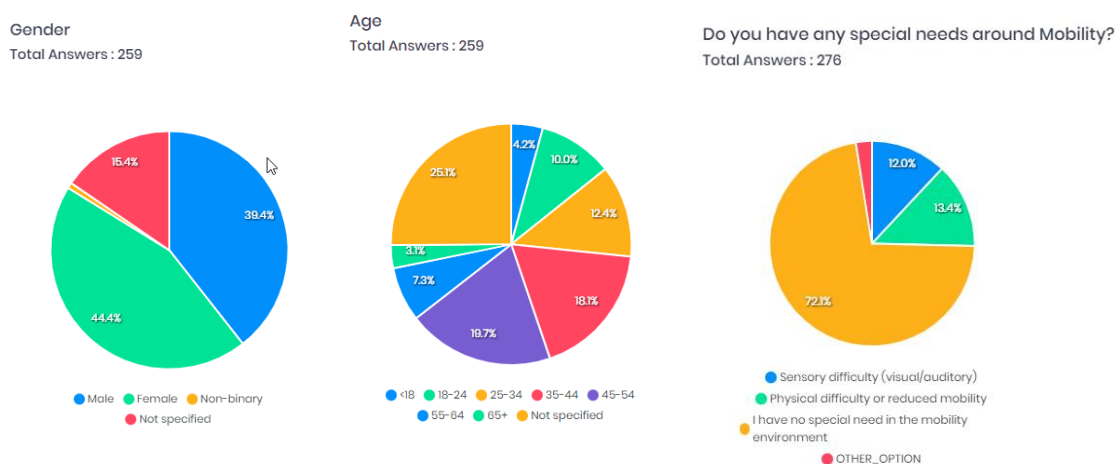



Figure 34. Results of the first survey included in the app “AMB Vosaltres”

On **December 2022** a survey has been published in the “AMB Vosaltres” community with 5 questions on the perception of metropolitan buses. It includes some questions regarding the experience in the metropolitan bus service, some of that are similar questions included in the face-to-face survey.

1. How often do you travel by bus?
 - Usually during weekdays
 - Sporadically during weekdays
 - Usually during the weekends
 - Wait until the weekends
2. In what context do you think it is a priority to intervene to improve your travel experience?
 - On the bus, during the journey
 - At the bus stop
 - On the way to or from the stop
3. What topic do you think is the most important thing to improve when you access, wait or travel by bus?
 - Safety
 - Accessibility
 - Comfort
4. When you travel by bus, do you have any of the following concerns?
 - Sexual harassment or assault (physical or verbal)
 - Falls or accidents
 - Reserved places are not respected
 - Insufficient lighting at the stops
 - Obstacles to access with wheelchairs or pushchairs for children
5. Can you tell us specific aspects that you would like to improve your experience?

Inclusivity on metropolitan buses

Gender inclusivity


 Publishing date December 11, 2022

In progress





Survey aimed at knowing the perception and experience of users of metropolitan buses as part of the

[Read more](#)

You have already answered



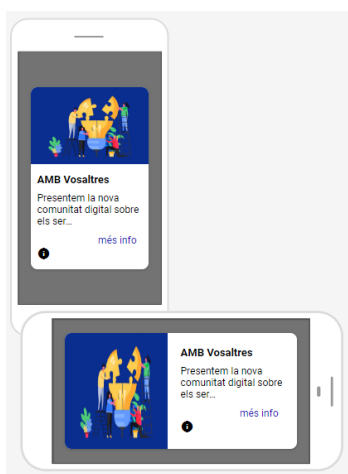
Inclusivity on metropolitan buses

-  2 Minutes
-  5 Questions
-  Finishing 30/08
-  Gender inclusivity

4. Impacts of communication actions

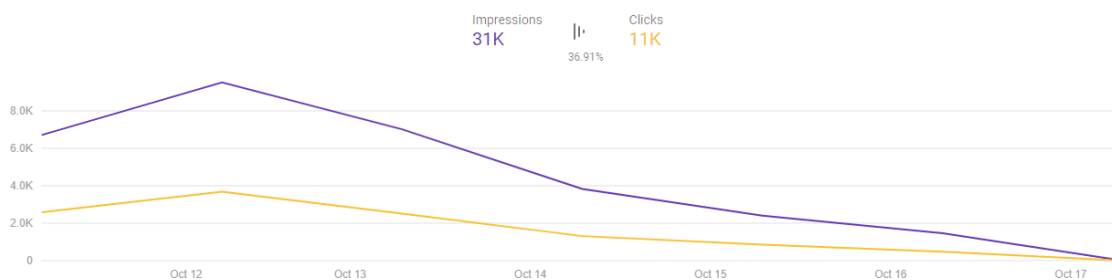
Communication through the app

The 11th of October a publicity campaign was made to introduce the “AMB Vosaltres” community to the app users. Through a pop-up message all users of the app were informed and could visit the community.



Results of this action were very positive with more **84.000 people made aware** and more than **27.000** people accessing to the platform.

iOS:



Android:

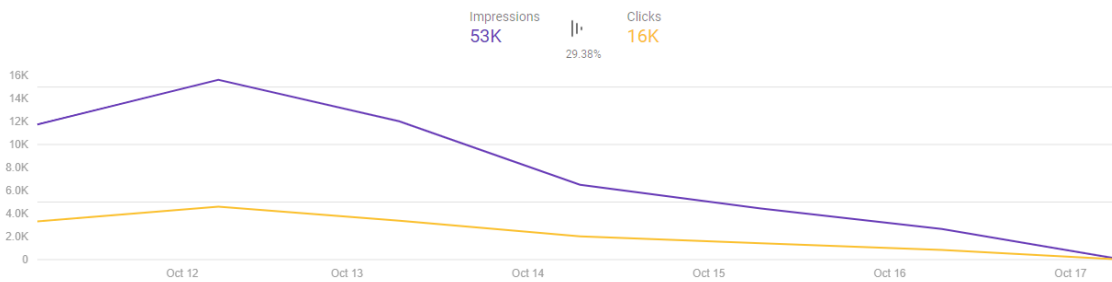





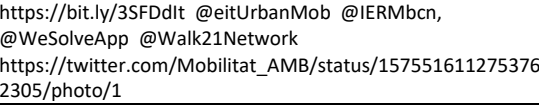
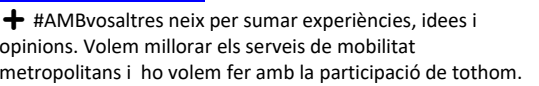
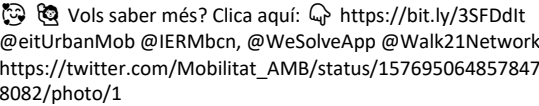




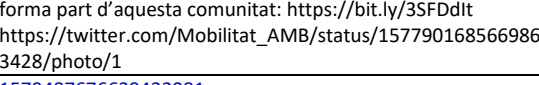


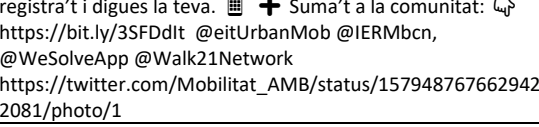
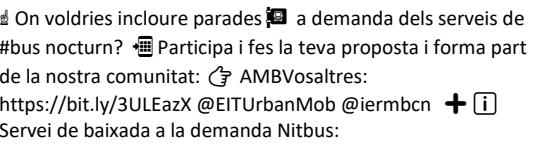
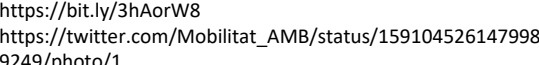


Figure 35. Results of publicity campaign to “AMB Vosaltres” by iOS and Android

Communication through social media

Social media was used for dissemination purpose and for getting feedback from external experts. The communication was made primarily by **Twitter**, using the **AMB Mobilitat** account. Overall, the impact on social media was quite limited.



| Post Message | Detail expands | Link clicks | Hashtag clicks | Profile clicks | Impressions | Engagements | Likes | Engagement Rate | Replies | Retweets | Quote tweets |
|--|----------------|-------------|----------------|----------------|-------------|-------------|-------|-----------------|---------|----------|--------------|
| 1573226969281744896  Neix #AMBvosaltres, el projecte participatiu de l'AMB per intercanviar idees i experiències sobre la mobilitat a l'àrea metropolitana de Barcelona.  Si vols formar part d'aquesta comunitat, suma't-hi: | 24 | 13 | 0 | 0 | 482 | 49 | 6 | 10,2% | 1 | 1 | |
| 1575516112753762305  #AMBvosaltres millorem la mobilitat de l'àrea metropolitana de Barcelona.  Com? Compartint experiències, sumant idees i recollint suggeriments a l'app de l'AMB.  No ho dubtis, connecta aquí:  | 2 | 1 | 0 | 0 | 214 | 4 | 1 | 1,9% | 0 | 0 | 0 |
| 1576950648578478082  #AMBvosaltres neix per sumar experiències, idees i opinions. Volem millorar els serveis de mobilitat metropolitana i ho volem fer amb la participació de tothom.  | 2 | 6 | 0 | 0 | 331 | 12 | 3 | 3,6% | 0 | 1 | 0 |
| 1577901685669863428  Què volem fer #AMBvosaltres?  Millorar l'experiència de la mobilitat urbana escoltant-vos.  Com es pot participar?  Proposant idees, opinant i responent enquestes dins de l'app de l'AMB.  | 3 | 1 | 0 | 2 | 251 | 7 | 1 | 2,8% | 0 | 0 | 0 |
| 1579487676629422081  Volem compartir l'experiència al transport públic #AMBvosaltres.  Com? Entra a l'app de l'AMB, registra't i digues la teva.  | 4 | 0 | 0 | 0 | 272 | 9 | 3 | 3,3% | 0 | 1 | 0 |
| 1591045261479989249  On voldries incloure parades a demanda dels serveis de #bus nocturn?  | 7 | 4 | 0 | 2 | 287 | 20 | 2 | 7,0% | 0 | 1 | 1 |

| | | | | | | | | | | | |
|--|---|----|---|---|-----|----|---|------|---|---|---|
| 1592412174084980739 # On voldries incloure parades a demanda dels serveis de bus nocturn? Participa i fes la teva proposta i forma part de la nostra comunitat: AMBVosaltres: https://bit.ly/3ULEazX + Servei de baixada a la demanda Nitbus: https://bit.ly/3hAorW8 @EITUrbanMob @iermbcn https://twitter.com/Mobilitat_AMB/status/1592412174084980739/photo/1 | 1 | 1 | 0 | 0 | 215 | 4 | 2 | 1,9% | 0 | 0 | 0 |
| 1593137004220399616 # On voldries incloure parades a demanda dels serveis de bus nocturn? Participa i fes la teva proposta i forma part de la nostra comunitat: AMBVosaltres: https://bit.ly/3ULEazX + Servei de baixada a la demanda Nitbus: https://bit.ly/3hAorW8 @EITUrbanMob @iermbcn https://twitter.com/Mobilitat_AMB/status/1593137004220399616/photo/1 | 6 | 11 | 0 | 2 | 853 | 32 | 5 | 3,8% | 1 | 4 | 2 |

Figure 36. Impact to social media by AMB

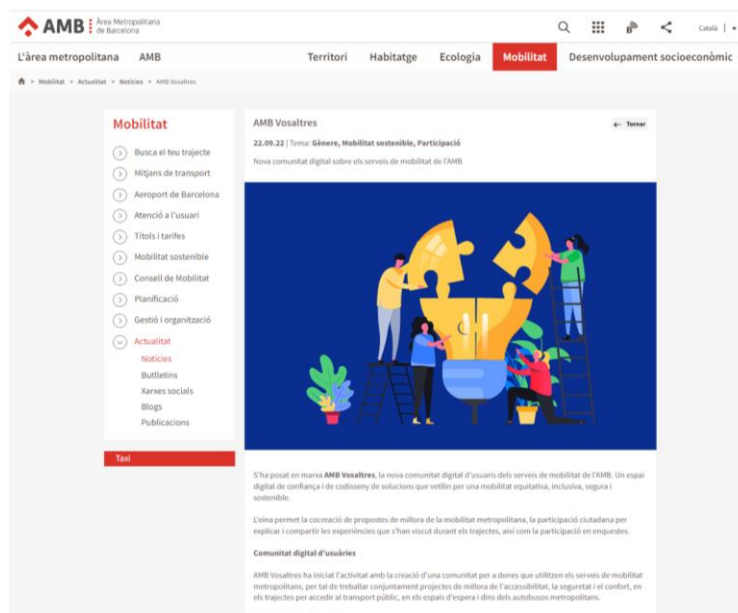
In addition, the IERMB also communicated the project via **Twitter** (@iermbcn).

| | | Clicks a link | Clicks al perfil | Impressions | Engagements | Likes | Ràtio Engagement | Respostes | Retuits |
|------------|---|---------------|------------------|-------------|-------------|-------|------------------|-----------|---------|
| 27/9/2022 | Avui comencem a entrevistar a dones usuàries del servei d'autobús metropolità per conèixer la seva experiència de viatge. També per recollir propostes de millora. Parlarem amb un total de 750 dones, en el marc del projecte Inclusify. Obriu fil | 18 | 8 | 4.818 | 135 | 34 | 2,8% | 1 | 17 |
| 27/9/2022 | L'enquesta té una durada aproximada de 8 minuts i es farà entre el 23 de setembre i el 23 d'octubre de 2022. Les entrevistes es duran a terme dins dels vehicles de la xarxa d'autobusos metropolitans amb suport digital, amb l'ajuda de tauletes. | 0 | 0 | 163 | 5 | 4 | 3,1% | 1 | 0 |
| 27/9/2022 | S'emmarca en el projecte internacional "Inclusify: Women empowerment for inclusive mobility" q vol implicar de forma proactiva les dones x compartir reptes i preocupacions relatius al sistema de transport. | 0 | 0 | 188 | 5 | 4 | 2,7% | 1 | 0 |
| 27/9/2022 | Coincidint amb l'enquesta, s'ha dut a terme tb el llançament d'#AMBVosaltres, la nova comunitat digital d'usuaris dels serveis de @Mobilitat_AMB. L'eina permet la cocreació de propostes de millora, la participació ciutadana en enquestes | 7 | 4 | 375 | 26 | 7 | 6,9% | 0 | 1 |
| 21/10/2022 | Seguim parlant amb dones usuàries del servei d'autobús #metropolità per conèixer la seva experiència de viatge. L'enquesta, en el marc del projecte europeu Inclusify, vol implicar de manera proactiva les dones @Mobilitat_AMB | 15 | 6 | 1.832 | 49 | 17 | 2,7% | 0 | 6 |

Figure 37. Impact to social media by IERMB

Other communication actions

The **22nd of September** a new was published in AMB web page and the mobility newsletter. This news had impact in other channels: <https://elfar.cat/art/41946/lamb-posa-en-marxa-una-nova-comunitat-digital-dusuaris-dels-serveis-de-mobilitat>



<https://www.amb.cat/ca/web/mobilitat/actualitat/noticies/detall/-/noticia/amb-vosaltres/14232230/11704>

Additionally, IERMB published an article explaining the project and informing that the face-to-face survey was launched.

<https://iermb.uab.cat/ca/noticias/enquesta-dones-bus-inclusify/>

5. Conclusions and Lessons learnt

The main conclusions regarding the pilot experience (survey and app) and the impact of the project's communication are summarized below.

Pilot conclusions

Survey conclusions

- Generally, the travel experience of passengers is positive. In a rating from 0 to 10, bus-stops receive 6.9 points of average, the journey inside buses is rated by 7.8 points and the way from or to the stop receives 7.9 points. The global average is rated by 7.5 points.
- However, there are some identified areas with potential for improvement:
 - Bus-stops are the environment that generates the least satisfaction.
 - The biggest concern among respondents is safety: 46.9% are very worried about it. The results are logical considering that safety-related issues can have more serious consequences than those related to comfort or accessibility.
 - However, it should be noted that lack of accessibility can also be an important barrier to inclusivity in public transport.
 - Comfort is a cross-cutting issue that can have a direct or indirect impact on safety. Similarly, some aspects of comfort are directly related to accessibility.
- If top 5 of the most highly rated concerns were to be ranked, the major problems would be: Seats and spaces reserved at the bus not being respected; very low frequency of buses; dark or poor lighting at the bus stop; overcrowded, overloaded buses; dirty bus or bus stop.
- The top 5 priorities for intervention show that users ask above all for: more frequency, better information, drivers training, improvement of service channels and location of stops.
- Generally, the results do not differ significantly according to the profile of the respondents, but some interesting specificities can be identified:
 - Safety concerns young women, especially sexual violence.
 - Accessibility is more of a concern for the elderly and people with special mobility needs.
 - Night lines and night users require special attention.

| Trip satisfaction (scale 0 negative to 10 positive) | General concerns |
|--|---|
| <ul style="list-style-type: none"> ✓ The way to or from the bus stop - 7.9 ✓ On the bus - 7.8 ✓ At the bus stop - 6.9 | <ul style="list-style-type: none"> ✓ Safety – 47% very worried ✓ Accessibility - 25% very worried ✓ Comfort - 21% very worried |
| 5 top concerns (scale 0 to 10) | |
| <ul style="list-style-type: none"> ✓ Seats and spaces reserved at the bus not being respected - 7.9 ✓ Very low frequency of buses – 7.9 ✓ Dark or poor lighting at the bus stop – 7.9 ✓ Overcrowded, overloaded buses – 7.8 ✓ Dirty bus or bus stop - 7.6 | |
| 5 top proposals (scale 0 to 10) | |
| <ul style="list-style-type: none"> ✓ The frequency – 8.3 ✓ Improvement of information - 7.3 ✓ Drivers' training - 7.2 ✓ The improvement of service channels - 6.8 ✓ The location of the stops – 6.6 | |

Figure 38. Most rated items summary. Source: IERMB, based on the Survey on Women's experiences of travelling on the Barcelona metropolitan bus service, 2022 (Inclusify).

- Regarding the use of the app (AMB Mobilitat): the survey shows that 57.3% of respondents state that they are habitual users of the app, while 42.6% state that they do not use this tool. The app use decreases significantly with the age of the users and increases with the level of education. These results indicate that, probably, to encourage more people to use the app, the contents and functionalities of it should be revised. In addition, it would be advisable to improve communication about the App's existence as well as its usefulness.
- The information collected through the survey has been richer than that the information obtained from the app. This can be explained because the survey has been targeted for a specific objective, designed specifically for the study of opinions and perceptions, and addressed to a minimum and representative sample of the population. However, the pilot survey has also had limitations:
 - Generally, a survey usually involves high budgets for fieldwork development. Budget limitations have not allowed to obtain a larger sample to achieve more representative results of the lines, especially the night lines.
 - The sample design and the fieldwork methodology could be improved to reach more successfully hard-to-reach population and better achieve inclusivity (people with special needs, non-binary people, racialized persons, etc.).
 - The questionnaire can be improved, which is usually the case when a questionnaire is designed for the first time. It would be necessary to be more specific in some questions, e.g., when asking the questions concerning, to limit them to a specific period and frequency (in the last 3 months, how often do you feel worried about...).
- In conclusion, we would recommend establishing the survey as a periodic instrument to monitor those general issues that are of interest. However, quantitative information should always be accompanied by qualitative methods (focus groups, exploratory walks at the bus network) that allow focusing on specific concerns, some problematic bus lines, or groups of interest (young, women, people with special needs, etc.). The app could become a third contribution to the provision of information if communication about it could be improved and some of its contents and functionalities were revised.

“AMB Vosaltres” app conclusions

- At present time (December 2022), the number of interactions of app users is very low (both in experiences and collaborative projects). This implies that no conclusions can be drawn at this stage in relation to the objective of the project. Since AMB is going to maintain this app, it is expected that as the app improves (formulation of questions, contents, functionalities, etc.) and its communication is endorsed, the number of registered users will progressively increase. This will make it possible to better evaluate its use as a channel for citizen co-creation of public policies for inclusive mobility.
- To access the “AMB Vosaltres” community users must be registered. Once they are registered the login can be remembered. We believe this is an important barrier to interaction and the proposal for 2023 is to have the content of the community public and only must be registered to interact adding experiences, comments, or ideas. However, it should be noted that if registration is mandatory, some citizens may never use the app.
- Naming the community functionalities is important for user experience. It is important to be clear and concise on what can be done in each section. Initially the section “Collaborative Projects” was named “Propose ideas” but users were expecting to be able to propose new ideas not to collaborate on existing challenges. Hence, attention must be paid to the use of clear language and messages.
- The integration of “AMB Vosaltres” as a part of the AMB Mobilitat app has led to some confusion among users, who in some cases have used “AMB Vosaltres” as another channel for reporting incidents. Most of the interactions were related with complains about delays in bus lines that are already registered through other ticket Management platform. The app must be designed in such a way that the citizens can distinguish it from other communication channels. Maybe it could be considered to emancipate “AMB Vosaltres” from “AMB Mobilitat” app to avoid this confusion.
- An app is unlikely to be fully inclusive. Even if its functionality can be improved for use by people with different abilities or older people, there will always be a group of people who will not engage in the app, either because they do not know about it, do not know how to use it, or simply do not want to participate. Therefore, the information collected will never be representative of the total passengers.
- Nevertheless, the app is useful tool that can be added to other channels of participation for the co-production of mobility inclusive policies, detect emerging problems and concerns, create a participatory community, facilitate the interaction between citizens and decision-makers and therefore contribute to a good governance.

Communication actions

- More communication is needed to increase the interaction of users, especially direct contact in specific settings (for example bus-stops). In this sense, a campaign on street close to university areas is expected in January. This will make it possible to communicate the tool among young people, who, as we have seen in the survey, are the main users of the app, along with the 30-49 age group. Moreover, as we have seen, they are the group that is most concerned about safety.
- Communication and publicity messages must be more explicit on what to expect from the community and the specific interactions that are required.

6. Next steps

Action Plan for women inclusion

One of the outputs (OUT04) of the Inclusify project was an **Action Plan for Women Inclusion**, that translates the needs of women when travelling actively and on public transport into investment opportunities by the administration and mobility service provider.

As we have concluded, in December of 2022, the “AMB Vosaltres” Community has achieved 644 users registered and, at this moment, the information collected is too much poor to have conclusions regarding safety, accessibility, and comfort in terms of gender perspective at the Barcelona metropolitan bus service. On their side, as we’ve concluded, the face-to-face survey has allowed us to know the main concerns about travel experience in metropolitan bus services (Figure 38). Consequently, **the survey gives us an overall situation about gender inclusivity**, and it also **has confirmed some of the results of the focus groups** carried out in the first phase of the project.


Inclusive mobility with a gender perspective is an issue that is already on the metropolitan public agenda. For this reason, over 2022 Barcelona Metropolitan Area (AMB), in collaboration with IERMB and Col·lectiu Punt 6, has developed a project called *“The bus is ours. A look at the journey of passengers on metropolitan bus services: safety, comfort, and sense of belonging”*. The main objective of the project is to improve women's safety, belonging and comfort on the metropolitan bus network, to contribute to a stronger sense of belonging and empowerment of women in their daily mobility.

El bus és nostre | IERMB | AMB

EL BUS ÉS NOSTRE

Una mirada sobre el viatge d'usuaris dels serveis d'autobús urbà de l'AMB: seguretat, confort i pertinença

Novembre 2022



EL BUS ÉS NOSTRE

col·lectiu punt6 **iermb** **AMB** Àrea Metropolitana de Barcelona

B23: Maresme Fòrum - Badalona

EL BUS ÉS NOSTRE


Viatgem juntes i compartim experiències

Rua B23 Barcelona - Santa Clotilde de Gramenet

14 juny


De 19:30 a 21:30h

Inici i final:
Parada d'autobús Metro Maresme Forum (fins a Av. Carlet)



RECORREGUT | PARADES:

1. Inici i final: El Maresme i Forum
2. Sant Adrià del Besòs
3. Llefià
4. La Salut
5. Lloreda



B23

Col·lectiu Punt 6 | punt6.org | info@punt6.org

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Considering that these two projects have coincided in time, **this will allow to define an overall long-term strategy for action and priorities key interventions or projects in the short and long term.** In fact, both projects have been managed by "La Mirada Feminista" ("The Feminist View") which is a group of women working on mobility and transport within AMB. This group aims to make all mobility services provided by AMB more inclusive and equally from the gender perspective.

In this regard, it should be added that the "*The bus is ours*" project has already defined some preliminary strategic priorities. Consequently, based on these first strategic priorities, as well as the results of the face-to-face survey, the continuity of the "AMB Vosaltres" community and other available data sources (qualitative and quantitative), it will be possible to draw up an action plan to design inclusive mobility policies.

Communication actions

Final meeting with stakeholders

The Inclusify project included a final meeting with stakeholders to conclude and an action plan to deal with issues, challenges and suggestions encountered during the pilot experience, identifying those areas in which they can act.

Finally, the AMB according with La Mirada group, has decided match both presentation projects and consequently, this workshop will be done simultaneously. The aim of the workshop will be:

- To present both projects and their main contributions.
- Present strategic lines of action and a preliminary action plan.
 - Identify strategic priorities and difficulties for the implementation of actions.
 - Knowledge and monitoring: improvement of information sources, system of metropolitan indicators, etc.
 - Challenges of the "AMB Vosaltres" app: proposals for improvement for its continuity.

Actions for engagement passengers at "AMB Vosaltres" Community

AMB is currently finalizing the design of a leaflet to disseminate the "AMB Vosaltres" community in a street campaign (Palau Reial, Maria Cristina, and Hospital de Bellvitge). The campaign will take place the week of January 16, 2023.

7. Acknowledgement

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The authors wish to acknowledge the significant contribution that the participants of the focus groups: members of associations, institutions, transport operators and AMB and, especially, the female bus users that attended to the face-to-face groups. Their thoughts, concerns, and proposals are on step more in advancing the understanding of gender issues in transport. Also, thanks to the Institut Opinòmetre team to develop the survey with great professionalism.

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Annex I: Face-to-face survey questionnaire

SURVEY ON WOMEN'S EXPERIENCES OF TRAVELLING ON THE BARCELONA METROPOLITAN BUS SERVICE

BLOCK 0. INTRODUCTION

F01. DATE AND TIME OF THE INTERVIEW (dd.mm.yyy): |__| |__| |

Time slots are coded according to the time and automatically assigned to your quota.

1. Morning: 06:00-9:59 (Day buses)
2. Midday: 10:00-15:59 (Day buses)
3. Afternoon/evening: 16:00-22:00 (Day buses)
4. Night: 22:59:02:59 (Night bus)
5. Early morning: 3:00-5:59 (Night bus)

F02. (Only when the interview starts at the bus stop) Good morning/good afternoon ARE YOU A USER OF THE BUS LINE <bus line name>?

1. Yes "THANK YOU FOR YOUR COLLABORATION"
2. No "THANK YOU VERY MUCH" -----> End of the interview

Lines drop-down, tick the appropriate one, and automatically allocate a quota. If the survey is initiated inside the bus, mark directly without asking.

| High density and demand | | Low density and demand | | Night bus | |
|-------------------------|-----|------------------------|-----|-----------|-----|
| 1. | L70 | 5. | L76 | 9. | N13 |
| 2. | L96 | 6. | L88 | 10. | N9 |
| 3. | B23 | 7. | B34 | 11. | N16 |
| 4. | B81 | 8. | B18 | 12. | N3 |

MY NAME IS <interviewer's name> AND I COLLABORATE WITH <company name> OPINION RESEARCH COMPANY. WE ARE CONDUCTING A SURVEY FOR THE METROPOLITAN AREA OF BARCELONA ON WOMEN'S TRAVEL EXPERIENCE ON THE METROPOLITAN BUS CONCERNING SAFETY, ACCESSIBILITY AND COMFORT.

F03. WOULD YOU BE SO KIND TO ANSWER A FEW QUESTIONS? IT WILL ONLY TAKE A FEW MINUTES.

1. Yes "THANK YOU FOR YOUR COLLABORATION"
2. No "THANK YOU VERY MUCH" -----> [End of the interview](#)

IN COMPLIANCE WITH THE GENERAL DATA PROTECTION REGULATION, WE INFORM YOU THAT THIS SURVEY WILL BE TREATED CONFIDENTIALLY, ANONYMOUSLY AND ONLY FOR STATISTICAL PURPOSES.

F04. I WOULD ALSO LIKE TO INFORM YOU THAT THIS INTERVIEW WILL BE RECORDED TO ENSURE IT IS CONDUCTED CORRECTLY. ONCE THE QUALITY CONTROL CHECKS HAVE BEEN CARRIED OUT, IT WILL BE DELETED.

1. I authorise the recording
2. I do not authorise the recording

F05. YOU CONSIDER YOURSELF TO BE

1. Woman
2. Man -----> [End of interview](#)
3. Non-binary person

F06. WHAT YEAR WERE YOU BORN?

F07. IN WHICH LANGUAGE WOULD YOU LIKE ME TO CONDUCT THE SURVEY?

1. Catalan ([utilitzeu qüestionari català](#))
2. Spanish ([utilitzeu qüestionari castellà](#))

BLOCK 1. USER MOBILITY PROFILE

Q01. COULD YOU TELL ME HOW OFTEN DO YOU TAKE THE BUS ON WEEKDAYS? ([From Monday to Friday](#)) ...

| | Never or almost never | Sometimes | Often | Always | DK/NA |
|--|--------------------------------|-----------|-------|--------|-------|
| A. To go or return from work | 1 | 2 | 3 | 4 | 99 |
| B. To go or return from study centre | 1 | 2 | 3 | 4 | 99 |
| C. To do everyday shopping, accompanying/collecting people, going to the doctor, running personal errands, etc. | 1 | 2 | 3 | 4 | 99 |
| D. For leisure activities (going to the cinema, theatre, sport, walking, non-daily shopping, going to bars/restaurants/discotheques, etc.) | 1 | 2 | 3 | 4 | 99 |

Q02. AND AT THE WEEKEND, COULD YOU TELL ME HOW OFTEN DO YOU TAKE THE BUS... ([Saturdays and Sundays](#))

| | Never or almost never | Sometimes | Often | Always | DK/NA |
|--------------------------------------|--------------------------------|-----------|-------|--------|-------|
| A. To go or return from work | 1 | 2 | 3 | 4 | 99 |
| B. To go or return from study centre | 1 | 2 | 3 | 4 | 99 |

| | | | | | |
|---|---|---|---|---|----|
| C. To do everyday shopping, accompanying/collecting people, going to the doctor, running personal errands, etc. | 1 | 2 | 3 | 4 | 99 |
| D. For leisure activities (going to the cinema, theatre, sports, walking, non-daily shopping, going to bars/restaurants/discotheques, etc.) | 1 | 2 | 3 | 4 | 99 |

Q03. AT WHAT TIMES DO YOU NORMALLY TAKE THE BUS? (MAXIMUM 3 RESPONSES)

1. Morning
2. Midday
3. Afternoon
4. Evening
5. Night/Early morning
99. dk/na

BLOCK II. PERCEPTIONS AROUND THE EXPERIENCE OF TRAVELLING WITH BUS

Q04. HOW WOULD YOU RATE YOUR TRAVEL EXPERIENCE IN THESE THREE ENVIRONMENTS ON A SCALE FROM 0 (very negative) TO 10 (very positive)?

- | | |
|--|----------------------|
| A. Inside the bus, during the journey | <input type="text"/> |
| B. At the bus stop, waiting for the bus | <input type="text"/> |
| C. On the way to or back to the bus stop | <input type="text"/> |

Q05. WHEN TRAVELLING BY BUS, TO WHAT EXTENT DO YOU WORRY ABOUT:

| | Not worried | Slightly worried | Quite worried | Very worried | Dk/Na |
|--|-------------|------------------|---------------|--------------|-------|
| A. The safety (for instance, accidents, thefts, aggressions, disease transmissions, etc) | 1 | 2 | 3 | 4 | 99 |
| B. The accessibility (being able to get on and off the bus, moving around inside the bus, getting to the seats, validating machines, buttons, handles, etc.) | 1 | 2 | 3 | 4 | 99 |
| C. The comfort (temperature, seating comfort, comfort of bus stops, cleaning, etc.). | 1 | 2 | 3 | 4 | 99 |

Q06. AND MORE SPECIFICALLY, COULD YOU INDICATE YOUR LEVEL OF CONCERN WHEN TRAVELLING BY BUS ABOUT THE FOLLOWING ASPECTS ON A SCALE FROM 0 (not worried) TO 10 (very worried)?

ACCESSIBILITY

- | | |
|--|----------------------|
| A. To have difficulties getting on or off the bus | <input type="text"/> |
| B. To have difficulties getting to the seats | <input type="text"/> |
| C. Not reaching the elements (validating machine, buttons, handles...) | <input type="text"/> |
| D. The lack of information on accessibility (adapted lines, operation of the ramp, etc.) | <input type="text"/> |

SAFETY

- | | |
|-------------------------------------|----------------------|
| A. Thefts | <input type="text"/> |
| B. Aggressions (physical or verbal) | <input type="text"/> |

- C. Sexual harassment and assaults
 (Sexual looks and comments, whistling, excessive approaches, touching...)
- D. Falls or accidents

Q07. AND TO WHAT EXTENT DO THE FOLLOWING SITUATIONS MAKE YOUR BUS JOURNEY UNCOMFORTABLE? RATE IT ON A SCALE FROM 0 (no discomfort) TO 10 (a lot of discomfort).

- | | |
|--|--|
| A. The bus ramp does not work or there is no ramp at all | <input type="text"/> <input type="text"/> <input type="text"/> |
| B. Travel with many people, agglomerations | <input type="text"/> <input type="text"/> <input type="text"/> |
| C. Waiting at bus stops without people | <input type="text"/> <input type="text"/> <input type="text"/> |
| D. Darkness at the bus stop or poor lightning | <input type="text"/> <input type="text"/> <input type="text"/> |
| E. Dirty bus or bus stop | <input type="text"/> <input type="text"/> <input type="text"/> |
| F. Inappropriate treatment of the driver | <input type="text"/> <input type="text"/> <input type="text"/> |
| G. Seats and spaces reserved at the bus not being respected | <input type="text"/> <input type="text"/> <input type="text"/> |
| H. Bus stop is too far away from home, from the place where I go, etc. | <input type="text"/> <input type="text"/> <input type="text"/> |
| I. Very low frequency of buses (busses pass infrequently) | <input type="text"/> <input type="text"/> <input type="text"/> |

Q08. IS THERE ANY OTHER ASPECT WE HAVEN'T ASKED YOU THAT CONCERNS YOU OR MAKES YOUR BUS TRIP LESS PLEASANT?

1. Yes,
 Which? _____
2. No ([next question](#))

BLOCK III. CHALLENGES/PROPOSALS

Q09. AND HOW DO YOU THINK THE BUS SERVICE COULD BE IMPROVED? RATE THE PRIORITY/NEED TO ACT ON THE FOLLOWING ASPECTS (0, NOT A PRIORITY AT ALL, 10 VERY HIGH PRIORITY)

- A. The design of the stops (lighting and visibility in the stops, information displays, etc.)
- B. The improvement of the environment of the stops (streets, pavements, access to the stops, etc.)
- C. The location of the stops (proximity/connection with workplace, home, studies or with other ways of transport, etc.)
- D. The design of the buses (design of seats, to be spacious, to not have steps, to be able to reach easily to buttons and machines, etc.)
- E. The frequency
- F. Drivers' training (kindness, safe driving, etc.)
- G. Improvement of information (information of the lines at the stops, displays with real waiting times, posters, web, etc.)
- H. The improvement of service channels (telephones, webs, access to staff workers, possibility to communicate unpleasant situations, etc.)

Q10. DO YOU HAVE ANY OTHER PROPOSAL TO IMPROVE YOUR BUS JOURNEY?

1. Yes.
 Which? _____
2. No ([next question](#))

BLOCK IV. APP

Q11. DO YOU USE THE APP “AMB MOBILITAT” FOR PLANNING YOUR BUS TRIPS (bus schedule, routes, stops, times, etc.? [\(show “AMB Mobilitat” app\)](#)

- 1. Yes
- 2. No
- 99. DK/NA

Q12. WOULD YOU LIKE TO USE IT TO...?

- A. Reporting problems and incidents during the bus journey
 - 1. Yes
 - 2. No
 - 99. DK/NA
- B. Communicate ideas and improvements referring to the bus service (bus schedule, routes, stops, etc.)
 - 1. Yes
 - 2. No
 - 99. DK/NA
- C. Share with other users’ comments and other contributions
 - 1. Yes
 - 2. No
 - 99. DK/NA

Q13. ABOUT THE PRIVACY IN THE APP “AMB MOBILITAT”, COULD YOU INDICATE US IF YOU WOULD BE WILLING TO...

- A. Share the location of the incidences?
 - 1. Yes
 - 2. No
 - 99. DK/NA
- B. Give personal details to register (age, municipality, mobility difficulties, etc.)
 - 1. Yes
 - 2. No
 - 99. DK/NA
- C. Is there any type of incident or problem that you would not report through the App?
 - 1. Yes What incident or problem? _____
 - 2. No. I would be willing to report any type of incident or problem.
 - 99. DK/NA

BLOCK IV. PERSONAL AND CLASIFICATION DATA

Q14. WHAT IS YOUR USUAL MUNICIPALITY OF RESIDENCE?

Q15. AND YOUR NEIGHBOURHOOD?

Q16. WHAT IS YOUR PLACE OF BIRTH?

- 1. Catalunya
- 2. Rest of Spain
- 98. Others. Specify COUNTRY: _____
- 99. DK/NA

Q17. WHAT IS THE PLACE OF BIRTH OF YOUR PARENTS? (multi response)

1. Catalunya
2. Rest of Spain
98. Others. Specify: _____
99. DK/NA

Q18. DO YOU HAVE ANY SPECIAL NEEDS TO COVER ON THE BUS?

1. Sensory difficulty (visual/auditory)
2. Physical difficulty or reduced mobility
3. I don't have any special needs to cover on the bus
98. Others. Specify: _____
99. DK/NA

Q19. WHAT IS YOUR LEVEL OF EDUCATION COMPLETED?

1. Without studies
2. Primary studies (EGB, comerç, ESO, graduat escolar)
3. Secondary studies (Preu, Batxillerat actual, FPI, FPII, BUP, COU, cicles formatius de grau mitjà)
4. Higher education (university, cicles formatius de grau superior)
98. Others. Specify: _____
99. DK/NA

P20. WHAT IS YOUR EMPLOYMENT SITUATION? (multi response)

1. Employed
2. Unemployed
3. Retired
4. Pre-retired
5. Houseworker
6. Student
7. Others. Specify _____
99. DK/NA

P21. COULD YOU TELL ME YOUR NAME_____ (Only if necessary for contact to verify)

P22. COULD YOU TELL ME YOUR TELEPHONE NUMBER (IN A FEW DAYS YOU MAY RECEIVE A CALL FROM A SUPERVISOR TO ENSURE THAT I HAVE INTERVIEWED YOU AS INSTRUCTED)?

THANK YOU VERY MUCH FOR YOUR KINDNESS WHEN ANSWERING THE SURVEY.

F08. DAY AND TIME END OF INTERVIEW (dd.mm.yyy): |__| |__| |__|

F09. LENGTH OF THE INTERVIEW (dd.mm.yyy): |__| |__| |__|

