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RELYING ON BUS:

Studying the impacts of Bengaluru's bus lane on bus use

Greenpeace India

Authors: Mohini Singh & Nishant

Research Lead: Abel Thomas Paul

Research Team: Akanksha Singh, Keren Shalo. S, Martin J, Mary Louis, Remya B Sunny, Ritika Bannerjee, Stacy Robert, Vivian Evangeline Shiri

Design: Saagnik Paul





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HIGHLIGHTS

- Following up on our previous survey 'Bustling Through Bengaluru', we conducted an on-board survey of users of Bengaluru's exclusive bus priority lane (BPL) that runs along the Outer Ringer Road (ORR) connecting Central Silk Board to KR Puram, a stretch of about 18.5 km.
- A total of 979 bus users in Bengaluru were surveyed between May and July 2022. The survey was conducted onboard at multiple places spread on the whole stretch where the bus lane was implemented.
- The main objective of the survey was to understand and present the impact of bus lanes on bus users' travel experiences. We asked them how they perceived the changes in journey time, speed, waiting time, ease of boarding, crowding, staff behaviour and safety since the introduction of the bus lane.
- **28.1 percent of already existing bus** users experienced an improvement in travel time after the implementation of the bus lane. In terms of user perception, largest time gains have been experienced by those travelling longer distances. 54 percent of those with journey time of 60-90 minutes reported that their travel time had reduced to 30-60 minutes after bus lane.
- 3 percent respondents said that they did not travel by bus before the bus lane was introduced, and the majority (73 percent) of these 'new' bus users are women. Even if the share of new users may seem low, it is significant given that the bus lane was introduced on just one small stretch. Moreover, the genderpositive impact is also noteworthy.
- **31 percent** bus users have clearly experienced a reduction in travel time due to the bus lane, though a large majority (57.5 percent) has not experienced any significant change. Extension of bus lane to more corridors should be useful in extending the travel time benefits to more bus users.
- 50 percent of users said that speed had increased and waiting time had reduced since the introduction of the bus lane. The experience was largely consistent for both men and women.
- Perceptions of change in staff behaviour, safety and crowding were less obvious. Still, 35 percent users felt a positive change in staff response and safety since the introduction of bus lanes while 40 percent users thought that these remained unchanged. Crowding was the most downvoted parameter and nearly 16 percent of users felt that crowding onboard had worsened since the bus lane was started.

• User perceptions of changes in these parameters clearly suggest that bus lanes have improved the condition of travelling by bus with the majority of bus users observing clear improvement in speed and waiting time.

- 46 percent of bus users said they were daily bus users of which 8 percent had become daily bus users after the bus lane. About 15 percent of people reported using buses more frequently since the introduction of the bus lane. After the introduction of the bus lane, not only are more commuters using buses, but existing bus users are using buses more frequently.
- 82 percent respondents (across the age groups) reported that they found bus lanes useful.
- The most prominent reason cited for the usefulness of bus lanes was increased bus speed, particularly endorsed by women of all age groups but also men. 53 percent of all respondents cited this as the sole reason for considering bus lanes useful.
- 10 percent of users said they would stop using the bus if there will not be a bus lane while 23 percent were not sure about their decision.
- On being asked whether they wanted more bus lanes to be introduced in other parts of the city, there was a decisive support in favour with more than **86** percent people asking for more bus lanes.
- Bus users have suggested the following areas for priority implementation of bus lanes: Hebbal, Tin Factory, Silk Board, Marthahalli, Whitefield, Electronic City, BTM, Majestic and KR Puram.
- A significant number of people also asked for bus lanes to be implemented in **every** part of the city.
- Entry of other vehicles and lack of continuity of bus lanes were the two most cited factors reducing the effectiveness of the bus lane and users want those to be eradicated for improving the gains made.
- The most highly rated demand related to bus-based public transport in Bengaluru appeared 'reduced fare and/or free travel for women' which has been supported by more than 75 percent respondents. This is followed by the demand for 'more buses' (61 percent) and 'better bus stops with proper seats and shelter' (44 percent).

INTRODUCTION

Bengaluru, the capital of the Indian state of Karnataka, is a bustling city with a population of over 13 million people. Unfortunately, like many other rapidly growing cities, Bengaluru is struggling with a range of transport problems that are impacting the daily lives of its residents. The roads in Bengaluru are often gridlocked, with traffic jams and long travel times causing frustration and stress among commuters. The traffic congestion can largely be attributed to a lack of public transportation options as well as the growing number of private vehicles on the roads.

The city's bus network is often reported to be overcrowded and unreliable, with long wait times and frequent breakdowns. The lack of a reliable and efficient public transportation system means that many residents are forced to rely on private vehicles, which only exacerbates the problem of congestion.

Moreover, Bengaluru's transport problems are closely connected to the issue of air pollution in the city. Heavy traffic congestion on the city's roads is a major contributor to air pollution, with vehicles emitting harmful pollutants such as nitrogen oxide and particulate matter into the air.

Studies have shown that the air quality in Bengaluru is among the worst in India, with high levels of particulate matter and other pollutants posing a significant health risk to residents. This pollution is particularly dangerous for vulnerable populations such as children, the elderly, and those with respiratory or cardiovascular conditions.

Improving the public transportation system in Bengaluru and investing in infrastructure such as bus lanes, bicycle lanes and pedestrian walkways could help to reduce the number of private vehicles on the roads and lower pollution levels. By taking steps to reduce traffic congestion and promote more sustainable transportation options, it is possible to create a cleaner and healthier environment for all residents of the city.

Bus lanes in Bengaluru, or any city, can be highly useful in this regard as they provide the following benefits:

Faster travel time: Dedicated lanes for buses helps them avoid getting stuck in traffic congestion. This means that buses can travel faster and more efficiently, reducing travel time for commuters.

Improved public transportation: By reducing travel time and making buses a more attractive option, bus lanes can help encourage more people to use public transportation, which can help reduce congestion on roads and lower overall emissions.

Increased safety: Bus lanes can also increase safety on the roads by reducing

conflicts between buses and other vehicles. By providing a dedicated space for buses, bus lanes can help prevent accidents and improve overall safety for commuters.

Reduced carbon emissions: With improved public transportation, fewer people may rely on personal cars, which can reduce carbon emissions and improve air quality in the city.

In summary, bus lanes in Bengaluru can provide a range of benefits, including faster travel times, greater adoption of public transportation, increased safety and reduced carbon emissions.

In 2019, a bus priority lane was introduced on a corridor on Outer Ring Road in Bengaluru between KR Puram and Silk Board bus stations. With the aim of understanding whether, and to what extent, the intervention has benefitted bus users, Greenpeace India conducted a bus user survey across this stretch in 2022.

Finally, our analysis comes at a time when there have been major changes in the policy and political context of bus-based public transport in the metropolitan region. The foremost among these changes is the Shakti scheme which provides free travel for women in public buses. The remarkable increase in the number of women using buses in Bengaluru and other parts of Karnataka has been widely reported in the media ¹².

While the Shakti scheme is the result of one of the core demands of citizen campaigns for making public bus transport more affordable in Bengaluru³ (and similar demands that have been made elsewhere ⁴), two other facets of citizen demands warrant more attention, namely, making buses safer and more accessible for all citizens. Prioritising bus lanes as a policy agenda is likely to offer gains towards achieving these objectives.

4 Delhi Bus Yatri Union. (Aug 2021). Letter to the CM of Delhi. www.sumnet.in/letter-to-the-cm-of-delhi/

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¹ Karthik, A. (2023, June 17). After 'Shakti' launch, men's ridership too sees a jump in Karnataka. The New Indian Express. www.newindianexpress.com/states/karnataka/2023/jun/17/after-shakti-launch-mens-ridership-too-sees-a-jump-in-karnataka-2585803.html

² Siddique, M. (2023, June 13). RTCs' ridership sees 28% jump a day after Shakti scheme. Deccan Herald. www. deccanherald.com/state/top-karnataka-stories/rtcs-ridership-sees-28-jump-a-day-after-shakti-scheme-1227589.html

³ Bengaluru Bus Prayanikara Vedike. (Feb 2022). Public hearing organised by Bengaluru Bus Prayanikara Vedike (BBPV): Jury's Report. www.bbpvedike.wordpress.com/2022/02/24/ public-hearing-on-affordable-public-transport-jury-report/

ABOUT THE SURVEY

This survey of bus users in Bengaluru was the second in series as part of a campaign to seek feedback from commuters for the improvement of bus services in Bengaluru. Our previous survey⁵ had shown that buses remain a dominant mode of transport in Bengaluru across age, gender and income groups. This survey sought to capture the experiences, grievances and endorsement for the bus lane corridor that was introduced on Outer Ring Road in Bengaluru.

A total of 979 bus users in Bengaluru were surveyed between May and July 2022. The survey was conducted onboard at multiple places spread across the entire stretch where the bus lane is implemented. Members of the survey team randomly recruited informants at these locations according to the availability and consent of the bus users interviewed. Special attention was paid to ensuring the diversity of gender, age and physical ability while recruiting respondents. Respondents included private sector employees, daily wage workers, college and school students, and senior citizens.

The survey team followed all the COVID-19-related protocols keeping in view the public health concerns.

ABOUT THE PARTICIPANTS

⁵ https://www.greenpeace.org/static/planet4-india-stateless/2022/10/e2cb9b42-bengaluru-report-final-1.pdf



Figure 1: Age distribution of respondents

AGE

Most of the respondents (69.9 percent) were young people, particularly between 20-25 years of age (38.1 percent).

Age distribution of the survey participants has been shown in the figure above.





Figure 2: Share of men and women respondents in the selected Census Towns

SEX

Among the 979 respondents, there were 487 (49.7 percent) women and 488 (49.8 percent) men. The age distribution of men and women who took part in the survey is presented separately in the chart ⁶ above.

It is unfortunate that no bus user identifying as non-binary could be interviewed, primarily owing to the mobile method of data collection. A focus group discussion with social groups and their associations remains much warranted and should be taken up separately in future endeavours.

PHYSICAL DISABILITY

In the span of this on-board survey of bus passengers, we also interviewed 3 physically challenged persons of whom two identified as men and one as woman.

OCCUPATION

More than 50 percent of respondents were private sector employees and about one-third were students. Among students, about two-third were women. Other reported occupations were business/self-employment, homemaking and government service (in that order). Pensioners and unemployed comprised less than 5 percent.

⁶ Percentages, wherever present in the graphs, are percentage shares of **all** respondents, excluding non-responses.



VEHICLE OWNERSHIP

40 percent of respondents reported not having access to any vehicle (car, motorcycle and cycle were the options). Among the people not having access to any vehicle, 64 percent were women, indicating a significant gender divide. 43 percent of respondents, but only 31 percent women, had access to motorised two-wheelers, which again shows a large gender disparity in access to motorised two-wheelers. 17 percent bus users reported having a car while only 11 percent owned or had access to a bicycle- both of which were roughly gender-agnostic.



Bus Pass Holders

Figure 5: Bus Pass Holders

BUS PASS

29 percent of the respondents reported having a bus pass. 34 percent of women and 24 percent of men had bus passes. Very few respondents (2 percent) were unaware of bus passes.

DRIVING LICENCE

Much like ownership of a motorcycle, having a driving licence also shows a significant gender disparity. Only 17 percent of women bus users had a driving licence as compared to 27 percent men. The disparity is strongest in the age group 26-35 years in which 74 percent men had driving licences compared to 38 percent women.





Figure 6: Driving Licence

FREQUENTLY USED MODES

We asked the participants which modes of travel they used most frequently. 56 percent of bus users (56 percent of all women users and 55 percent of all male users) listed bus among their most frequently used modes. Moreover, 54 percent of bus users (57 percent of all women and 51 percent of all men) reported bus as the **only** frequently used mode. If the results are considered representative of bus users of Bengaluru, slightly more than half users of bus (and bus lanes) are **compulsive users**.

Other modes ⁷ which bus users reported using more frequently were motorised twowheelers (11 percent) and metro rail (10 percent). About 7 percent of bus users were found to be frequent car users.

⁷ The response category 'Multiple' was selected in case the respondent used more than one mode frequently but was not sure about which modes they frequently used. Only 2 such responses were received.



RELATION WITH GENDER

If we look at the differences in modes frequently used by men and women, we find that the largest disparity is in the use of motorised two-wheelers. While 14 percent men reported motorcycles as one of the frequently used modes, only 8 percent women used two-wheelers frequently. Thus, even though there is not much difference between men and women in terms of whether they frequently use buses or not, buses play a more critical role in women's mobility.



Figure 8: Modes of travel frequently used by male and female bus users

RELATION WITH AGE

Across the age groups, bus is the mode most frequently used by bus users. Metro is a distant third which is frequently used slightly more commonly by young bus users between 20 and 35 years.



Figure 9: Modes frequently used by bus lane users from different age groups

RELATION WITH VEHICLE OWNERSHIP

The survey was also aimed at understanding whether those who compulsorily use buses have access to personal vehicles of any type. If we look at those who reported buses in their only 'frequently used mode' and whether they owned any vehicle, it brings to light some important gender disparities.

17 percent of women said that they did not have any personal vehicles and they always used the bus while 11 percent of men reported so. Of all women who reported having no personal vehicle, 68 percent were compulsive bus users while 78 percent men without any personal vehicle were compulsive bus users. This means that the bus is a necessary medium for more women but it is also a critical support for people without access to personal vehicles- women and men alike.



Figure 10: Whether the compulsive bus users have access to personal vehicles

USUAL HOUR OF TRAVEL

Before 9 AM and 4-8 PM are the peak hours of travel reported by bus users, for women and men across age groups. 9 AM to noon is the third most usual period for travel. Noon to 4 PM is a slightly more common duration of the day for women as compared to men. Very few bus users (3 percent) reported their usual hours of travel after 8 PM, and women were even less inclined to travel after 8 PM.



Before 9 AM Noon to 4 PM 8 PM to 11 PM AM to Noon 4 PM After 11 PM

Figure 11: Usual Hours of Travel

CHANGES SINCE THE INTRODUCTION OF BUS LANE

The main objective of the survey was to understand and present the impact of the bus lane on bus users' travel experiences. We asked them how they perceived the changes in journey time, speed, waiting time, ease of boarding, crowding, staff behaviour and safety since the introduction of the bus lane. They were also asked whether the bus lane had been useful and whether the bus lane had made buses a preferred mode of travel.





Figure 12: Perception of change in journey time after bus lane

JOURNEY TIME

57.5 percent of bus users reported no change in their travel time on the same route since the introduction of the bus lane.

28.1 percent of bus users experienced an improvement in travel time after the implementation of the bus lane. In terms of user perception, largest time gains have been experienced by those travelling longer distances. 54 percent of those with journey time of 60-90 minutes reported that their travel time had reduced to 30-60 minutes after bus lane. Similarly, 36 percent of the users with journey time of more than 90 minutes reported reduction of journey time to 60-90 minutes.

11.4 percent users reported an increase in their travel since the bus lane but most (25.3 percent) users reported an increase only to the immediate higher time category (for example, 7.8 percent respondents reported travel time prior to bus lane and post-lane 15-30 min. and 30-60 min. respectively).

3 percent of respondents said that they did not travel by bus before the bus lane was introduced, and the majority (73 percent) of these 'new' bus users are women. Even if the share of new users may seem low, it is significant given that the bus lane

was introduced on just one small stretch. Moreover, the gender-positive impact is also noteworthy.

In a sense, it can be concluded that nearly **31 percent** bus users have clearly experienced a reduction in travel time due to bus lanes, though a large majority (57.5 percent) has not experienced any significant change. Extension of the bus lane to more corridors should be useful in extending the travel time benefits to more bus users.

PERCEIVED CHANGES IN KEY PARAMETERS OF PUBLIC TRANSPORT SYSTEM

The responses suggest that bus users find the improvement in speed and waiting time most significant among changes in all parameters. Nearly 50 percent of users said that speed had increased and waiting time had reduced since the introduction of the bus lane. The experience was largely consistent for both men and women.

Perceptions of change in staff behaviour, safety and crowding were less obvious. Nearly 35 percent of users felt a positive change in staff response and safety since the introduction of the bus lane while 40 percent users thought that these remained unchanged. Crowding was the most downvoted parameter with nearly 16 percent of users feeling that crowding onboard had worsened since the bus lane was started. Still, 29 percent users said that crowding on buses had reduced since bus lanes were introduced.



The only anomaly was the users' reaction to the question 'whether ease of boarding

and alighting had improved after bus lane'. 18 percent people thought that bus lanes made it easier to board a bus and an overwhelming share of 74 percent bus users either felt unsure about the change or experienced no change after bus lane.

Overall, the user perceptions of changes in these parameters clearly suggest that bus lanes have improved the condition of travelling by bus with the majority of bus users observing clear improvement in speed and waiting time.

📕 Worsened 📕 Remained same 🔳 Not sure about change 🔳 Improved





Figure 14: How frequently users opt for bus (before versus after bus lane)

OPTING BUS AS A PREFERRED MODE

Looking at clear gains that the bus lane has provided to bus users, has the bus lane actually made buses a preferred mode of travel? The responses suggest that following the introduction of the bus lane, not only are more commuters using buses, but existing bus users are using buses more frequently.

46 percent of bus users said they were daily bus users, of which 8 percent had become daily bus users after the bus lane. About 15 percent reported using buses more frequently since the introduction of the bus lane.

ARE BUS LANES USEFUL

82 percent of respondents (82 percent of all women and 83 percent of all men) across age groups found bus lanes useful. Clearly, the bus lane has positively impacted how people travel in the city and their usefulness has been substantially endorsed by men and women across all age groups.

The most prominent reason cited for the usefulness of bus lanes was increased bus speed, particularly endorsed by women of all age groups but also men. 53 percent of all respondents cited this as the sole reason for considering bus lanes useful. 26 percent of respondents considered all the reasons applicable. The least cited reason was that bus lanes make the city more livable and only 4 percent people cited this as the sole reason.











Will you continue using bus if the bus lane is removed?



EFFECT ON RIDERSHIP IF THE BUS LANE IS SCRAPPED

We also asked whether users would continue using buses if the bus lane is scrapped. 10 percent of users said they would stop using buses if there will not be a bus lane while 23 percent were not sure about their decision. Only 65 percent of people were confident that they would still (want to) use buses even if there is no bus lane. Women were slightly more determined to use buses even in the absence of bus lanes, indicating the critical importance of buses in their everyday mobility.

On being asked whether they wanted more bus lanes to be introduced in other parts of the city, there was a decisive support in favour with more than **86 percent people asking for more bus lanes.**

AREAS FOR NEW LANES

We also noted the users' suggestions for areas where new bus lanes should be implemented. Among the most commonly referred to areas by women were Hebbal, Tin Factory, Silk Board, Marthahalli and BTM while those by men were Hebbal, Silk Board, Whitefield, Electronic City, BTM, Majestic and KR Puram. A significant number of people also asked for bus lanes to be implemented in **every** part of the city.



Figure 18: Areas where bus users want new bus lanes



Figure 19: Issues affecting the bus lane

ISSUES RELATED TO BUS AND BUS LANES THAT NEED ATTENTION

To make the bus lane more effective, users suggest that the agencies and administration should work on eradication of these most critical issues:

- 1. Entry of other vehicles in the bus lane that interrupts the movement of bus (voted by 35 percent respondents)
- 2. Lack of continuity of bus lane (cited by 17 percent bus users) which makes it difficult for people travelling relatively longer distances or using other bus routes to fully realise the travel gains provided by bus lane
- 3. Buses getting stuck at intersections (cited by 14 percent bus users)
- 4. Lack of enforcement (cited by 13 percent users), and encroachment on bus lane (cited by 11 percent users)



Figure 20: Demands related to bus

OTHER ISSUES RELATED TO BUS AND ASSOCIATED DEMANDS

In this survey, the most highly rated demand related to bus-based public transport in Bengaluru appeared 'reduced fare and/or free travel for women' which has been supported by more than 75 percent respondents.

This was followed by the demand for 'more buses' (supported by 61 percent respondents) and 'better bus stops with proper seats and shelter' (supported by 44 percent respondents).

Other demands were (in the descending order of popularity): punctuality, new bus routes, electric and AC buses, end of sexual harassment and gender-based violence on buses, and providing universally accessible buses.

CONCLUSION

As we conclude our study focusing on the impact of the exclusive bus priority lane along the Outer Ringer Road (ORR), we express our heartfelt gratitude to the 979 bus users who participated in the onboard survey between May and July 2022. Their valuable insights have enabled us to understand the real impact of the bus lane on their daily journeys.

One of the most significant outcomes of the survey is the improvement in travel time experienced by 28.1 percent of bus users. Notably, those travelling longer distances have reported the most considerable time gains, with 54 percent of respondents witnessing a reduction in their journey time from 60-90 minutes to 30-60 minutes. This indicates that the bus lane has the potential to benefit a wide range of commuters.

It is also heartening to note that the introduction of the bus lane has encouraged new users, particularly women, to utilise public transport. The fact that 3 percent of respondents were previously non-bus users, and 73 percent of them were women, highlights the gender-positive impact of the bus lane. This increase in female bus users is a significant step towards fostering inclusive and sustainable transportation.

While 31 percent of bus users experienced a reduction in travel time, we acknowledge that there is room for improvement. Expanding bus lanes to more corridors is crucial to extend the benefits to a larger proportion of bus users. The positive feedback regarding increased bus speed and reduced waiting time substantiates the value of these dedicated lanes.

On the other hand, we recognize that some users have voiced concerns about crowding onboard and perceive that staff behaviour and safety have not seen significant changes. Addressing these issues is essential to further enhance the bus travel experience and encourage more people to choose public transport.

The enthusiasm expressed by the majority of bus users (82 percent) in support of bus lanes underscores the importance of investing in and expanding such initiatives. We have received overwhelming support from the public for introducing more bus lanes in other parts of the city, with specific areas like Hebbal, Tin Factory, Silk Board, Marthahalli, Whitefield, Electronic City, BTM, Majestic, and KR Puram being highlighted for priority implementation.

However, to make bus lanes even more effective, it is crucial to address concerns related to other vehicles entering the lane and ensuring continuity in their implementation throughout the city. Such measures will reinforce the benefits of bus lanes and encourage more citizens to embrace public transportation.

Lastly, we would like to draw attention to the highly rated demand of reduced fare and/or free travel for women, supported by more than 75 percent of respondents. This indicates a clear public desire for making public transport more accessible and

affordable for all segments of society. Additionally, respondents also emphasized the need for more buses and better bus stops with proper seating and shelter, which play a pivotal role in enhancing the overall commuting experience.

In conclusion, the implementation of bus lanes had already brought about positive changes in the travel experiences of many bus users in Bengaluru. Nevertheless, there is immense potential for further improvement, and we urge policy makers to heed the demands and recommendations voiced by citizens. By investing in efficient public transport systems, we can create a sustainable, inclusive, and greener Bengaluru for the benefit of all.



