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2020

Perception Study on  
**SUSTAINABLE  
MOBILITY**  
in Bengaluru



# Transport Profile - Bengaluru

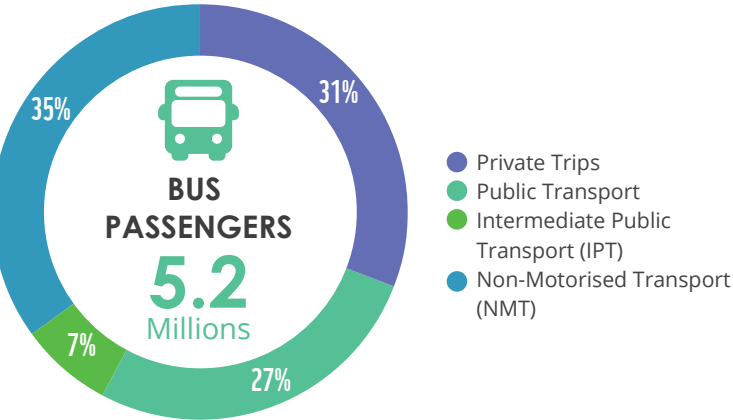
Bengaluru, the Silicon Valley of India, is one of the fastest growing cities in the nation. The city has also witnessed a rapid growth of vehicles in the past two decades resulting in higher levels of vehicular traffic. According to the Bengaluru Traffic Police, there is one vehicle for every two people on the roads of the city. This has led to high vehicular traffic even on narrow roads. As per the Dutch real-time traffic information and services company, TomTom's Traffic Index of 2019, Bengaluru emerged as the worst traffic congested city globally.



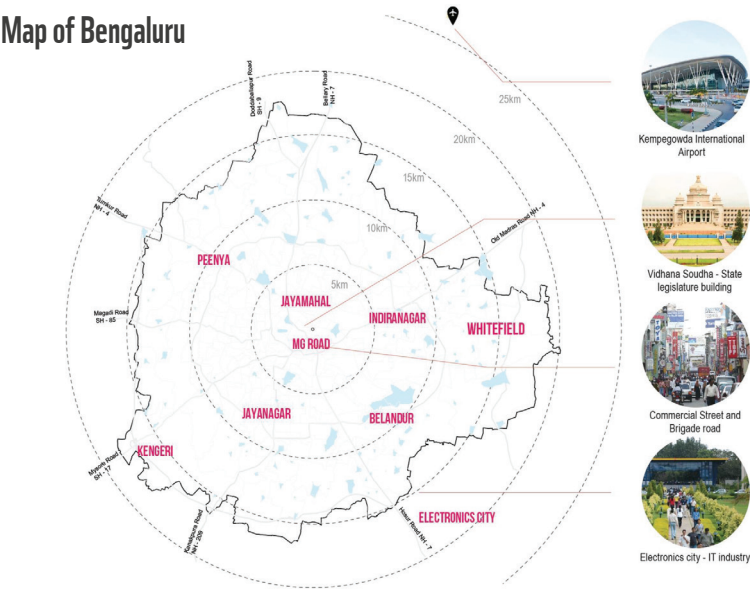
## Transport Coverage



## Daily Trips



## Map of Bengaluru



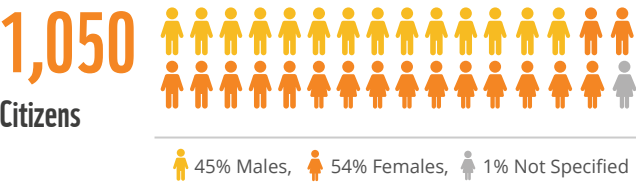
Source: Smart City Proposal, Bengaluru | Directorate of Urban Land Transport (DULT), Govt. of Karnataka

# About the Survey

The survey was intended to understand the perception of people in Bengaluru on the role of sustainable mobility in addressing climate change at the city-level.

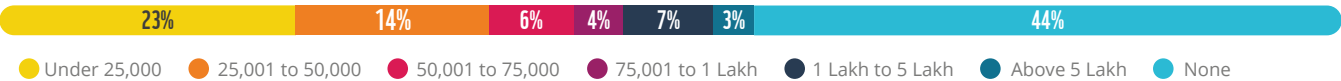
In December 2019, various stakeholders in the city including citizens, government officials (from transport-related departments), and civil society organizations were surveyed through online surveys and face-to-face interviews. The respondents were asked a common set of questions regarding the current scenario of mobility in Bengaluru, challenges and opportunities for promoting sustainable mobility in the city, and understanding of the linkage between sustainable mobility and climate action. This booklet aims to summarize the key findings of the multi-stakeholder perception survey on the role of sustainable mobility in addressing climate change.

## Participants' Profile

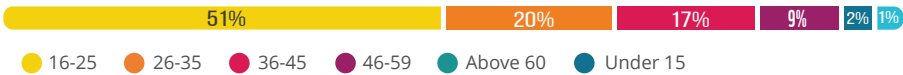


- 7 Government Departments (transport-related)**
- Bengaluru Traffic Police
  - Bangalore Metro Rail Corporation Limited (BMRCL)
  - Bengaluru Metropolitan Transport Corporation (BMTCL)
  - Bruhat Bengaluru Mahanagara Palike (BBMP)
  - Directorate of Urban Land Transport (DULT)
  - Karnataka State Road Transport Corporation (KSRTC)
  - Regional Transport Office (RTO)
- & Local CSOs/NGOs**

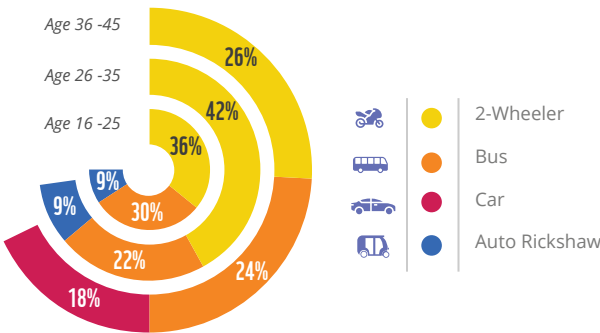
## Monthly Income



## Age Group (Years)



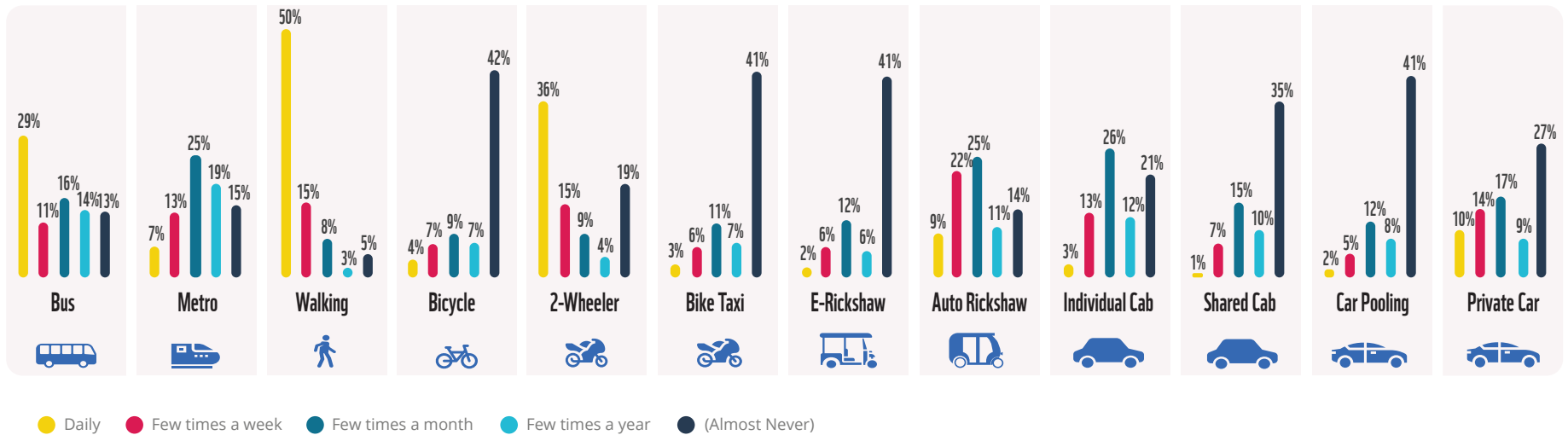
## How different age groups travel



- » More than 50% households own at least one car or a 2-Wheeler.
- » On a daily basis, more than 50% citizens walk, while 36% use 2-Wheelers.

# How citizens travel in the city

## Frequency of use for different transport modes



41%

Women use public transport on a daily or weekly basis



53%

Respondents walk on a daily basis



66%

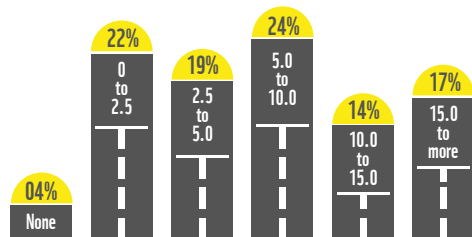
Households own one or more 2-Wheelers



54%

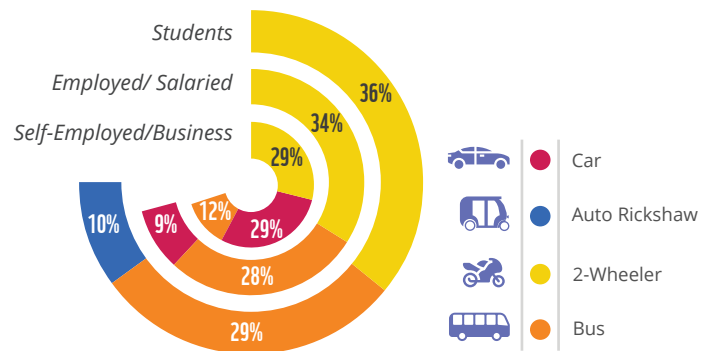
Households own one or more cars

## Commute Distance

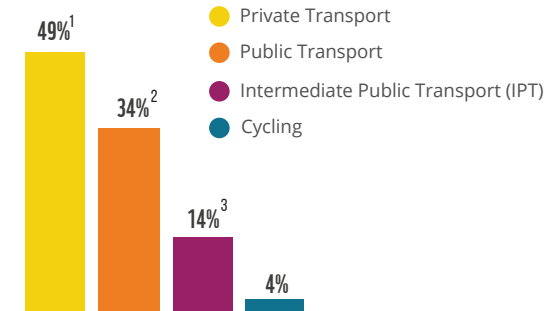


\*One-way, in Kms

## How different occupation groups travel



## Preferred mode of transport



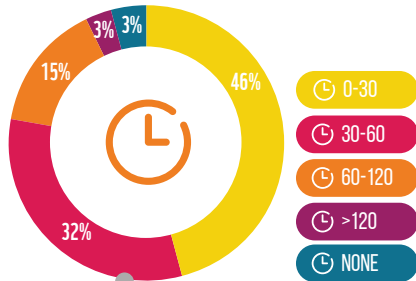
# How citizens travel in the city

Even for around 30 minutes of travel time, people face around 15 minutes of traffic congestion on road.

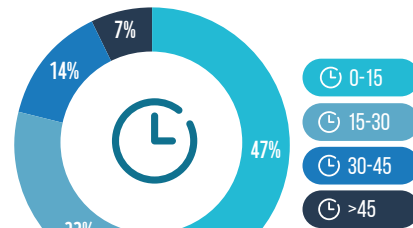
On an average, cars & 2-wheelers spend 24 minutes in traffic congestion everyday.

Mobile-based apps (e.g. Google Maps, MyBMTc, Bangalore Metro etc.) are the prime sources of travel information.

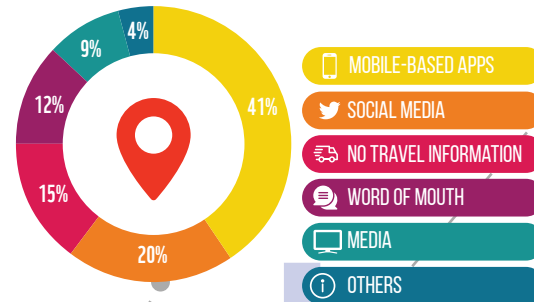
## Travel time (minutes)



## Time spent in traffic jam (minutes)



## Source of travel-related information

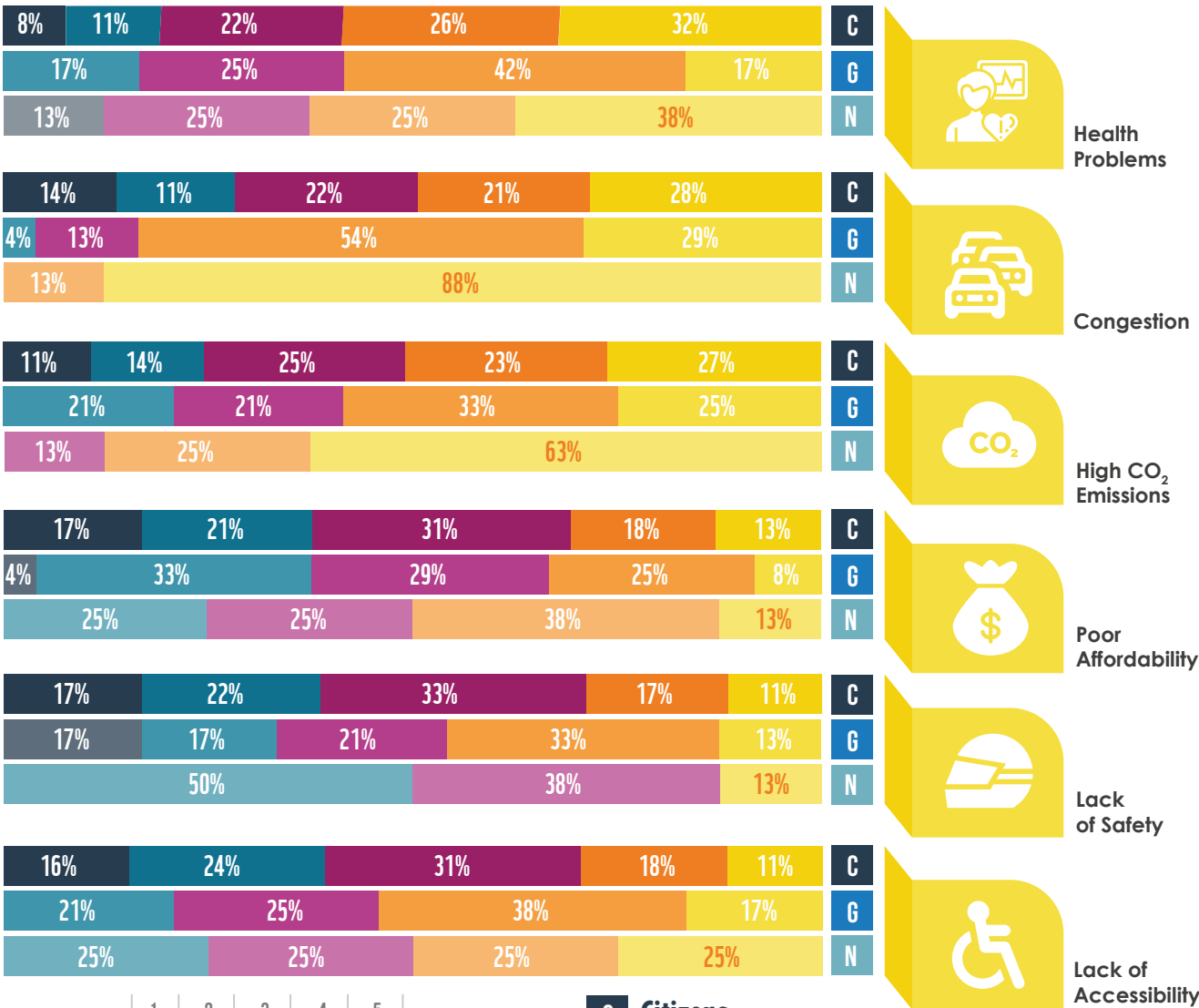


## Average time spent by cars and 2-wheelers in traffic congestion on a daily basis (minutes)



# Perception towards mobility

## Severity of the transport-related issues



Air pollution related health problems, Traffic congestion & High levels of emissions were seen as the biggest issues faced by all stakeholders (citizens, government officials, civil society).

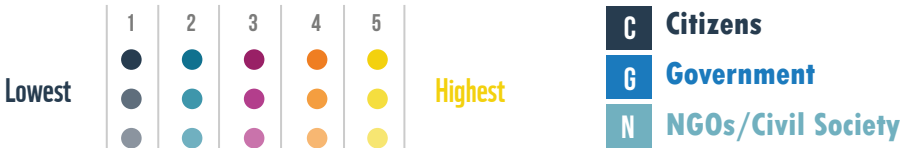
Citizens in general seem to be neutral towards issues like Poor Affordability, Lack of Safety, Lack of Accessibility.



Only

34%

of the surveyed citizens use public transport



# Perception towards mobility

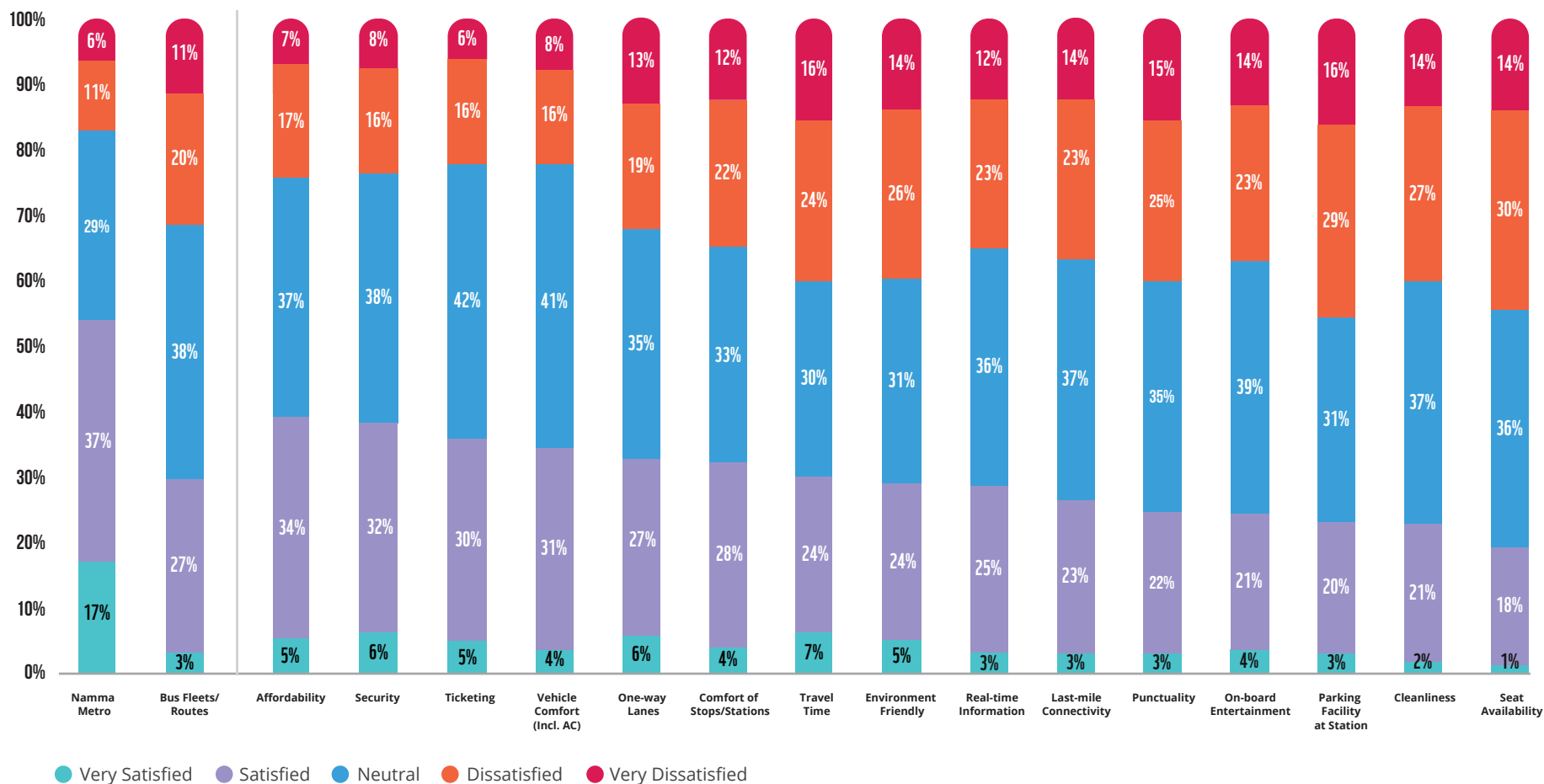
## Citizens' level of satisfaction with public transport facilities



Citizens were more satisfied with Namma Metro as compared to the existing bus network.



In terms of the public transport facilities in the city, citizens were more concerned about Parking facility at stations, Seat availability, Cleanliness, Travel time, Punctuality, Environment friendliness, and Last-mile connectivity.



# Perception towards mobility

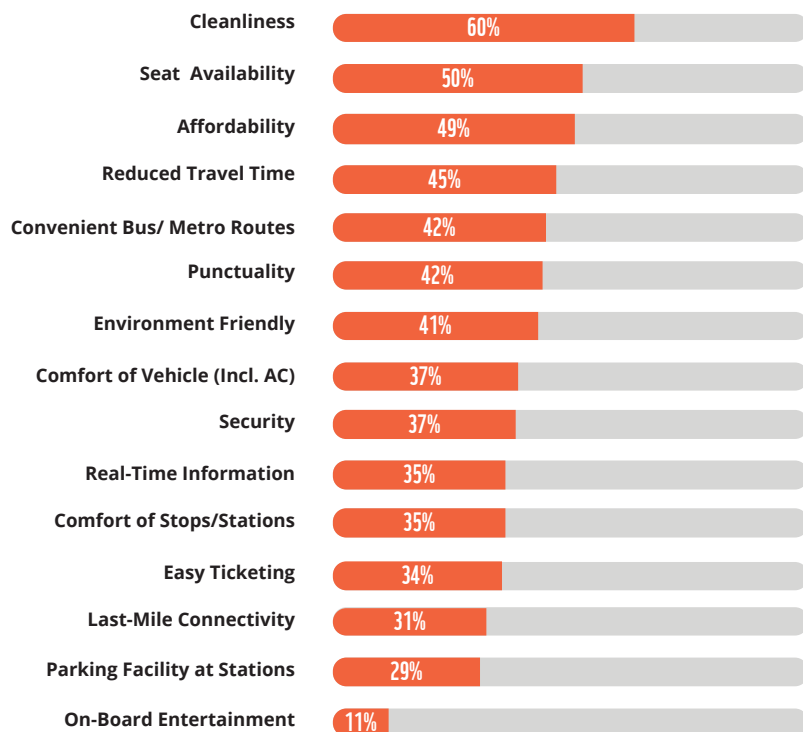
## Factors that would encourage public transport

Citizens perceived Cleanliness, Availability of seats, Affordability and Reduced travel time as motivations towards using public transport.

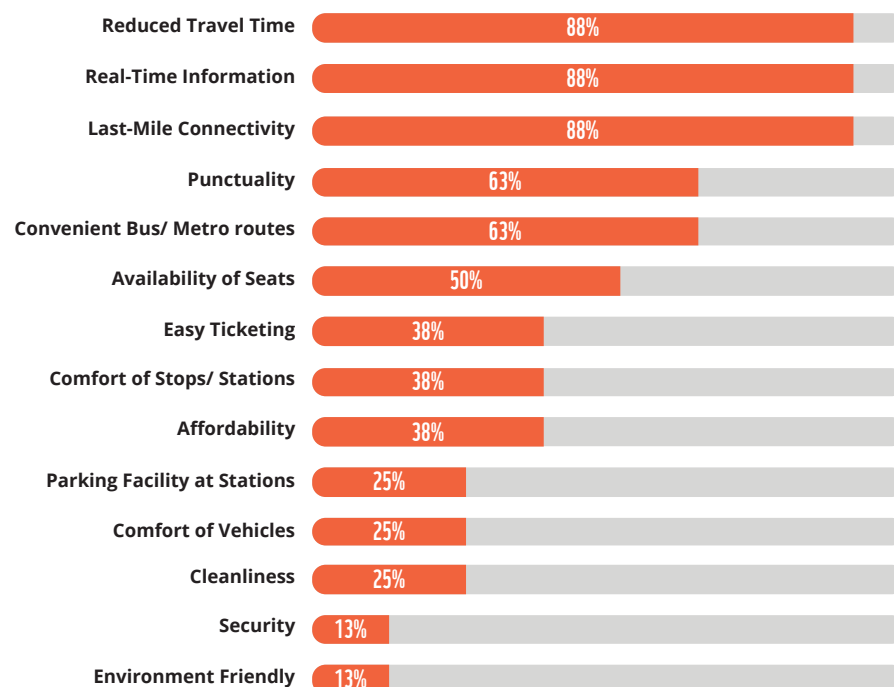
While civil society felt that along with Reduced travel time; parameters like Real-time information, Last-mile connectivity & Punctuality would encourage people to use public transport more often.



### Citizens



### Civil Society

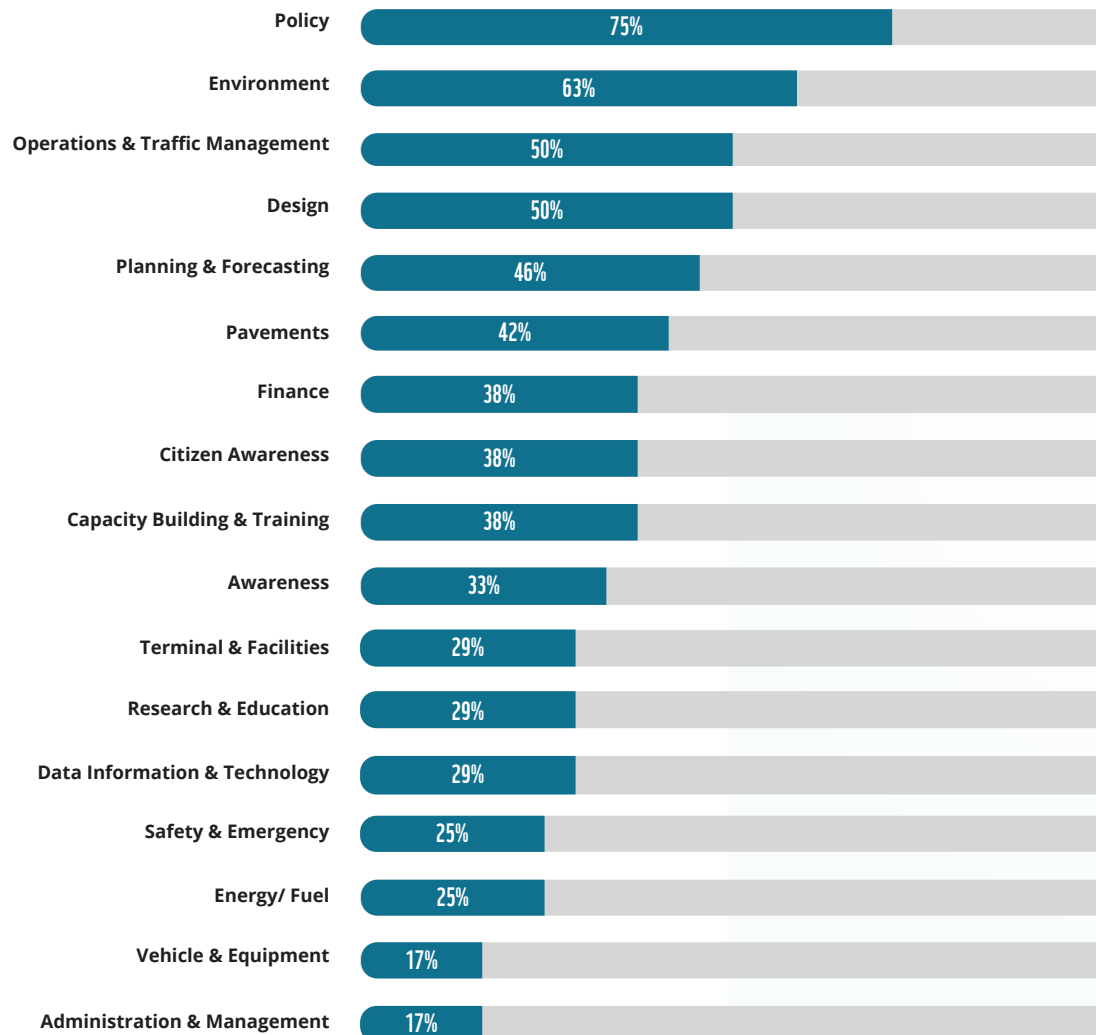


# Perception towards mobility

Most government officials believed that better Policies, focus on Environmental Concerns, and strengthened Operations & Traffic Management would encourage people towards using public transport.

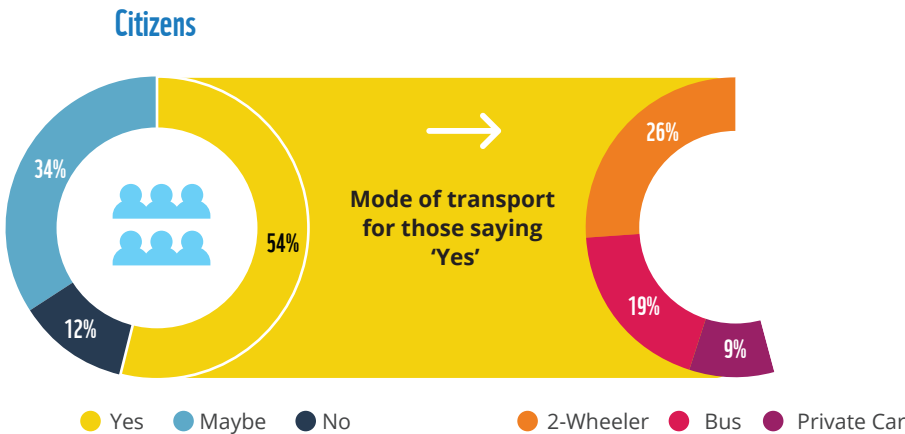


## Government

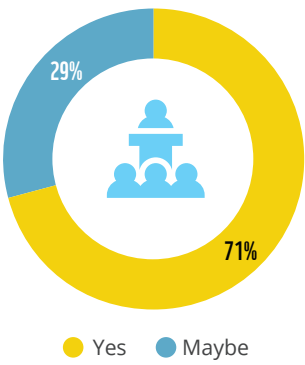


# Awareness about sustainable mobility

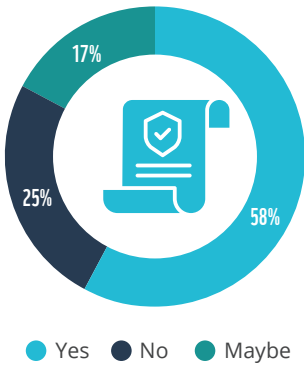
## Awareness regarding the term ‘Sustainable Mobility’



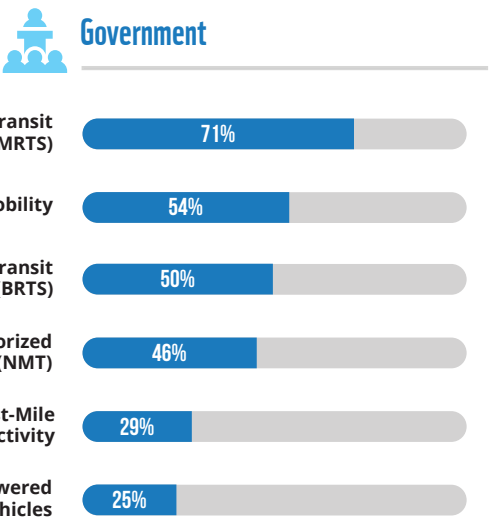
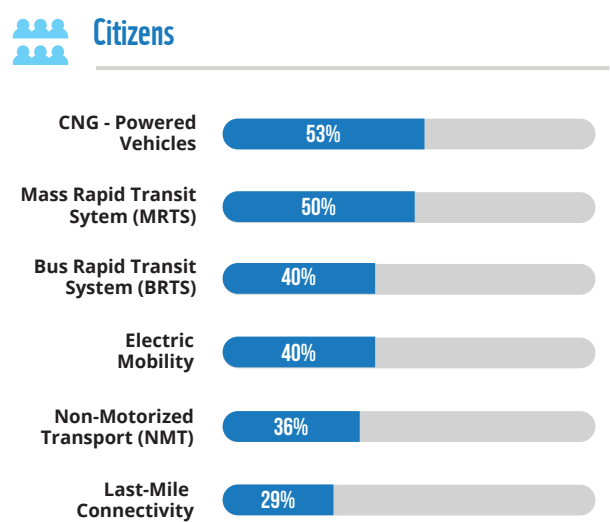
## Government Officials



## Awareness among Government officials regarding policies/ plans related to sustainable mobility



## Awareness regarding ‘Sustainable Mobility’ options



While citizens were able to identify sustainable mobility options in the city, however most still preferred to use private transportation on a regular basis.

Most citizens recognized CNG-powered vehicles, MRTS, BRTS as sustainable mobility options.

Most government officials recognized Mass Rapid Transit System (MRTS), Electric mobility, and Bus Rapid Transit System (BRTS) as common sustainable mobility options. Officials were also aware of the city level policies and plans promoting sustainable mobility.

# Sustainable mobility initiatives undertaken in Bengaluru



As perceived by  
Civil Society



Namma Metro

Promotion of NMT



Dedicated Bus Priority Lane



Last-Mile  
Connectivity



Park  
& Ride



Improving Urban  
Roads & Sidewalks



Encouraging Mobile  
Startup Ecosystem



Shared E-Mobility



As perceived by  
Government Officials



Expanding Namma Metro

Green Links Project



Dedicated Bus Priority Lane



Integrating Metro  
with Last-Mile  
Connectivity



Parking  
Policy



Pedestrian & Road  
Safety Guidelines



State Urban Transport  
Fund



Proposed Action Plan  
for Control of Air  
Pollution

# Civil Society perspective on measures for faster transition towards sustainable mobility



## Public Transport



Rapid expansion of BRTS & Metro networks, bus priority lanes



Route rationalization including feeder service network



## Last-Mile Connectivity



Enhance last mile connectivity



## Low Carbon Mobility



Faster transition to low carbon mobility



Promote electric vehicles & strengthen battery charging infrastructure



## Air Pollution



Move towards cleaner fuels such as CNG and bio-fuels, as well as promote electric mobility



## Partnerships



Encourage & promote shared mobility



Invite participation of private organizations for solving mobility issues



## Internet of Things



Use IoT for enhanced real-time information & common ticketing



## Policy



Dis-incentivize private transport (e.g. levy congestion charges, introduce ultra low emission zone)



Manage on-street & off-street parking



Develop climate resilient transportation infrastructure



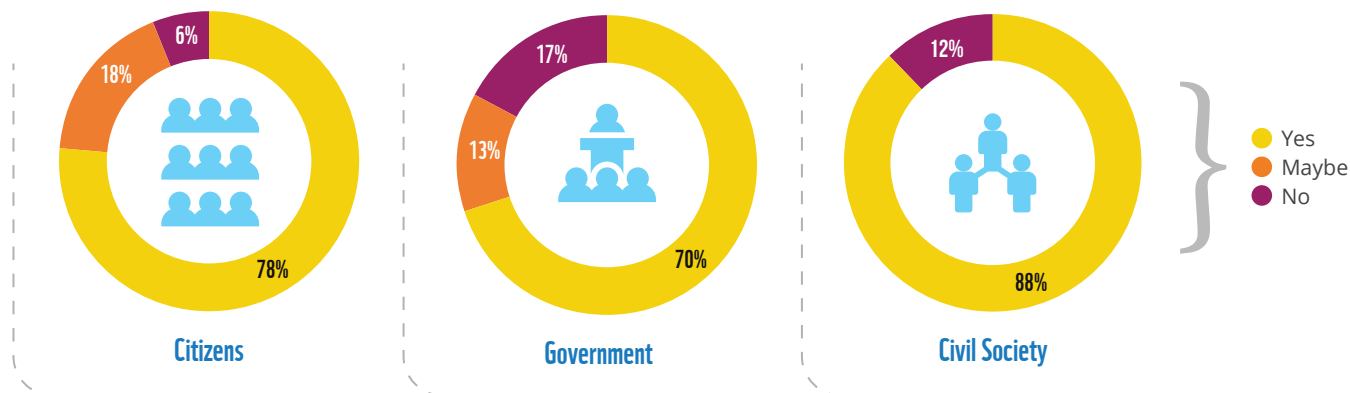
## Institutional Framework



Operationalize Unified Metropolitan Transport Authority (UMTA)

# Perception on air pollution

## Is transport sector a major contributor to air pollution?

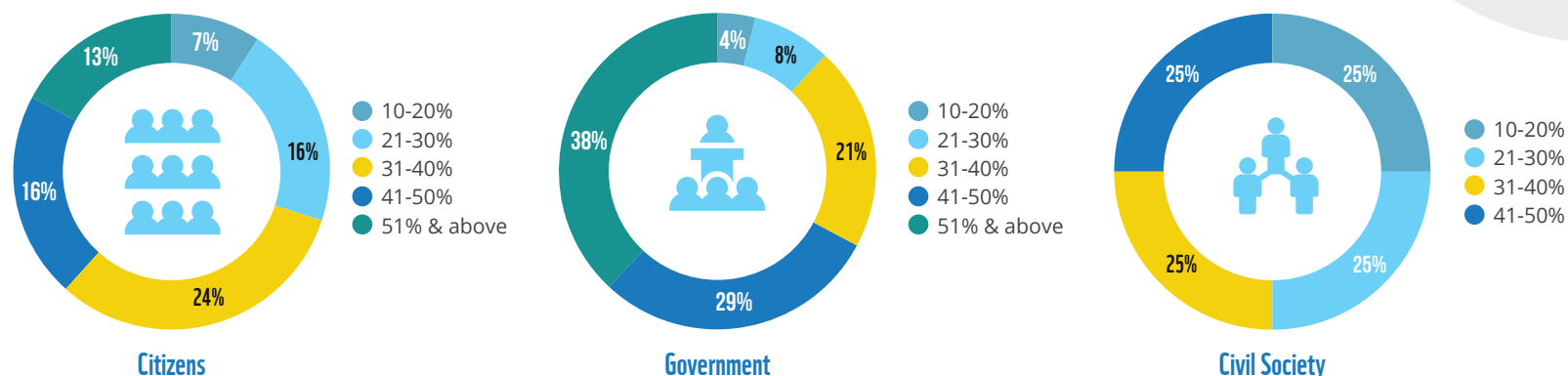


Most of the respondents (including citizens, government officials & civil society) agreed that transport sector contributes to air pollution, however there were varying perceptions about the percentage contribution.

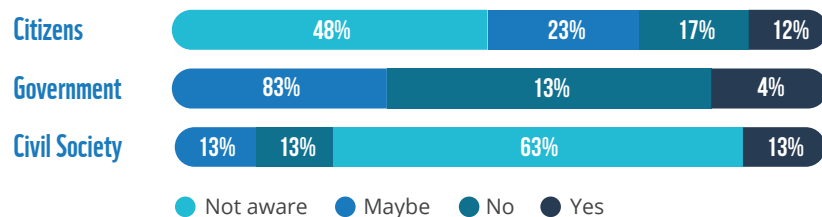
**40.1%**

**Actual contribution of transport sector to PM 2.5 for the year 2015<sup>1</sup>**

## Transport sector contribution to air pollution?



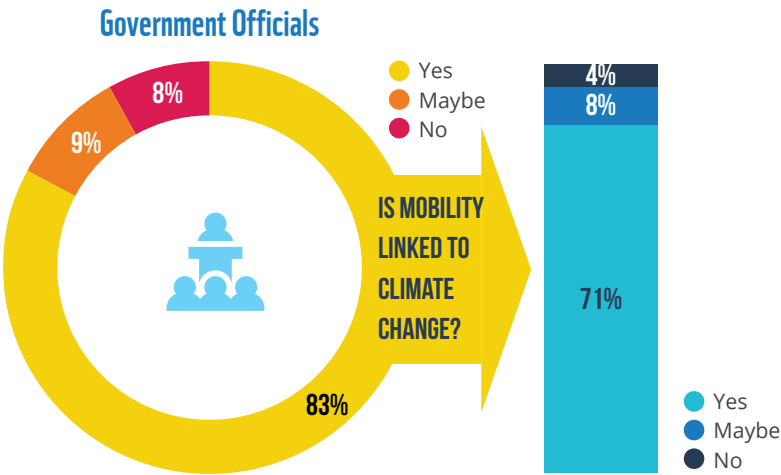
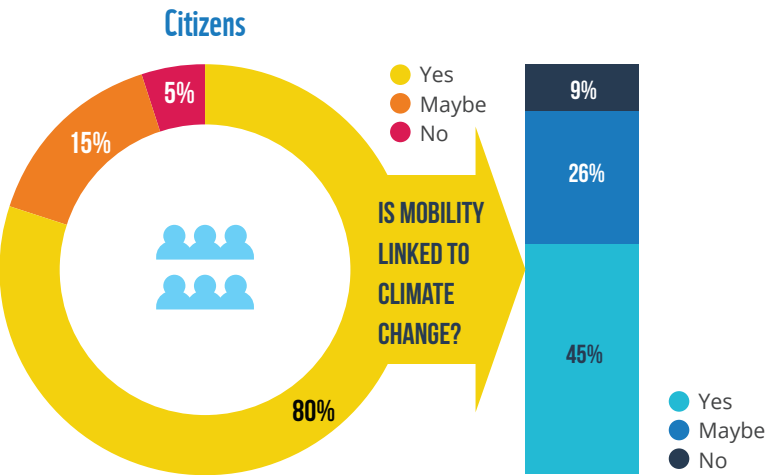
## Has Bengaluru formulated any city-specific action plan under the National Clean Air Program (NCAP)?



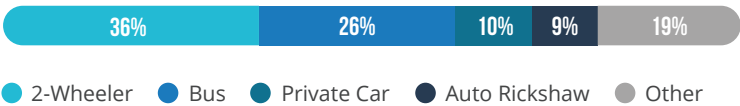
<sup>1</sup> - Air quality, emissions, and source contributions analysis for the Greater Bengaluru region of India (Article in Atmospheric Pollution Research · May 2019) Urban Emissions, New Delhi, India; Division of Atmospheric Sciences, Desert Research Institute, Reno, USA; Center for Study of Science, Technology & Policy, Bengaluru, India)

# Perception on climate change and sustainable mobility linkages

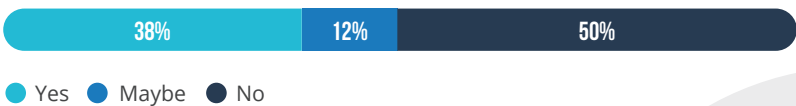
## Is climate change real?



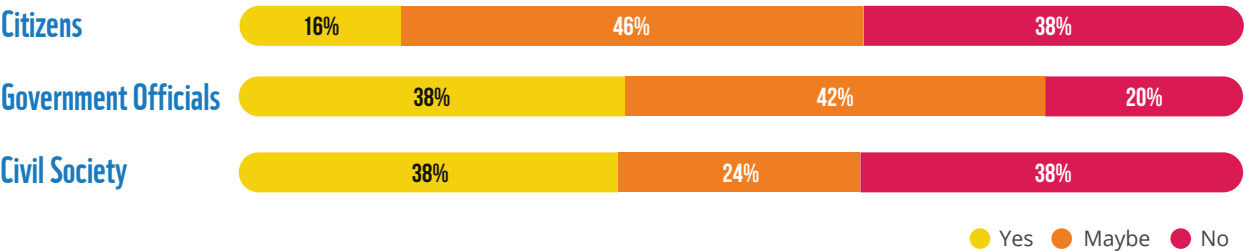
## Preferred mode of transport of citizens believing in climate change



## Are government officials aware of India's climate goals under the Nationally Determined Contributions (NDC) submitted to UNFCCC?



## Is climate change perspective incorporated in city's transportation planning initiatives?

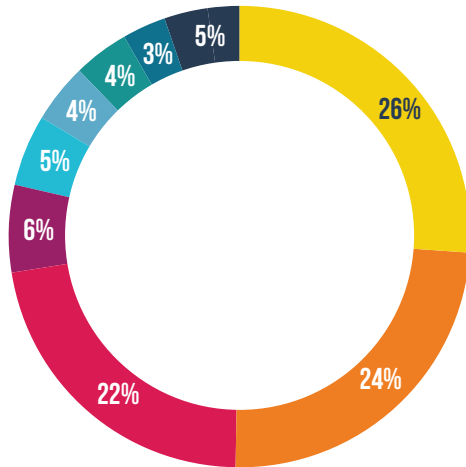


82%

Respondents agreed that vehicular emissions are responsible for global warming

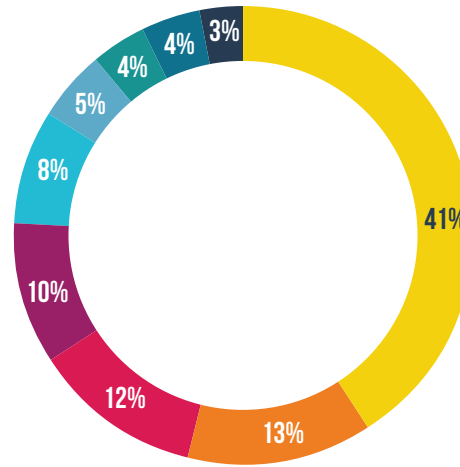
# Citizens' perception on transport-related climate actions in Bengaluru

## Incorporation of climate change perspective in city's transportation planning



- Starting Namma Metro
- Strengthening public transport
- Encouraging electric vehicles
- Encouraging NMT
- Better governance & legislations
- Replacement of old vehicles
- Switching to cleaner fuels
- Regulating rules or laws
- Others

## Suggestions by citizens towards reducing the impact of present modes of transport



- Using more public transport
- Use NMT
- Using electric vehicles
- Car pooling/ Sharing vehicles
- By switching to cleaner fuels
- Have better transportation planning
- Have better legislations
- Limit vehicle purchases
- Others

Most of the citizens said that Namma Metro, Public Transport and Electric Vehicles are key examples of incorporation of climate change perspective in Bengaluru's transportation related planning.

In order to reduce their carbon footprint, 41% of the citizens want to use public transport. Other preferred low-carbon actions were Non-motorized transport (NMT) options (such as walking and cycling), electric vehicles, and car pooling.

### For more information, please contact:

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