



Ease of Moving Index

India Report 2022

April 2023



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OMI Foundation (OMI), a registered Trust, is a policy research and social innovation think tank operating at the intersection of mobility innovation, governance, and public good. Mobility is a cornerstone of inclusive growth providing the necessary medium and opportunities for every citizen to unlock their true potential. OMI endeavours to play a small but impactful role in ushering meaningful change as cities move towards sustainable, resilient, and equitable mobility systems which meet the needs of not just today or tomorrow, but the day after.

Centre for Future Mobility

OMI Foundation's Centre for Future Mobility envisions a future which meets the aspirations of all in a diverse world, anchored in the paradigms of active, shared, connected, clean, and AI-powered mobility.

Centre for Clean Mobility

OMI Foundation's Centre for Clean Mobility explores the diversity of near- and long-term pathways to clean mobility. It focuses on the use of electric, future fuels, and renewable energy alike within the mobility ecosystem.

Centre for Inclusive Mobility

OMI Foundation's Centre for Inclusive Mobility ensures the existing and emerging mobility paradigms are Safe, Accessible, Reliable, and Affordable for every user of mobility infra and services, including persons with disabilities, women, LGBTQIA+, children, and the elderly. It further paves the road to the future of mobility and platform economy fulfilling the modern promise of labour.



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SUGGESTED CITATION: OMI Foundation. (2023, April). *Ease of Moving Index - India Report 2022*.

REPORT DESIGN: Chromatic Design Studio

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FOREWORD



Shri Hardeep Singh Puri

Minister of Housing and Urban Affairs; and Petroleum and Natural Gas Government of India

हरदीप एस पुरी
HARDEEP S PURI



आवासन और शहरी कार्य मंत्री
पेट्रोलियम एवं प्राकृतिक गैस मंत्री
भारत सरकार
Minister of
Housing and Urban Affairs; and
Petroleum and Natural Gas
Government of India

I congratulate the OMI Foundation on launching the second edition of the 'Ease of Moving Index'. It is a timely and innovative intervention in an area of urban dynamics that is assuming greater significance as India continues to urbanise at a rapid pace. A comprehensive assessment of the performance of cities based on factors that determine the everyday experience of mobility will undoubtedly be helpful to policymakers, industry, and civil society in India.

Mobility is the limiting factor in the growth potential of a city and its productive capacity. For the vulnerable and marginalised sections of India's urban society, access to mobility means access to the varied socioeconomic benefits and luxuries of urban life that they otherwise would not have. Safe, reliable, affordable, financially viable, and environmentally sustainable mobility empowers an individual's access and helps unlock their potential to lead a full, dignified, and productive life.

This precept has been at the heart of the reforms that the Modi government has brought to India's urban landscape since 2014. Believing in the foundational tenet of 'moving people rather than vehicles', India's cities and towns have witnessed a paradigmatic shift in India's urban mobility agenda. Today, public transport options are being incentivised across the board. As of 16 March 2023, more than 845 kms of metro network is operational in India's cities and a network of 908 kms of metro network is under construction, thereby reducing traffic congestion and associated air quality and emissions concerns.

India's urban mobility programme embeds the ethos of sustainable development and ease of living in all its actions. Initiatives such as Cycle4Change and Transport4All under the Smart Cities Mission are just two of numerous projects initiated by the government to mainstream sustainable mobility. The Lifestyle for Environment (LiFE) campaign launched by the Honourable Prime Minister embodies the principles of active and shared mobility by enabling a shift to non-motorized transport (NMT). Technology has played a significant role in enabling a behavioural change in urban dwellers.

The commitment to promoting the Ease of Living in our cities is anchored in equitable and inclusive mobility. Insights from this Ease of Moving Index report go a long way in doing just that by conveying the lived experiences of more than 50,000 respondents in 40 cities. I commend the OMI Foundation for engaging with so many urban citizens to evaluate the performance of cities in India on various aspects of mobility. The results contained herein conform to the popular understanding of mobility that is lived anecdotally in India even as various facts—inconspicuous to the lay person—explain the reasoning behind the results.

My compliments to the OMI Foundation for conducting such an extensive study. I look forward to its various applications.


(Hardeep S Puri)

FOREWORD



Shri Nitin Gadkari

Minister of Road Transport and Highways
Government of India

नितिन गडकरी
NITIN GADKARI



मंत्री
सड़क परिवहन एवं राजमार्ग
भारत सरकार
Minister
Road Transport and Highways
Government of India

India today has embarked on a 25-year journey of Amrit Kaal with an aim to become a developed nation by 2047. The role of a sustainable and resilient transport and mobility infrastructure as a catalyst of development cannot be understated. If cities are the growth engines of an economy, a robust mobility system is the key enabler to the system.

The prerogatives I have laid for the Ministry of Road Transport and Highways, towards strengthening India's mobility system, are not just to improve connectivity across the country, but also promote the use of cleaner vehicles and more efficient mobility systems. The PM Gati-Shakti National Master Plan for Multi-modal Connectivity will reduce travel time for people through better last mile connectivity. In the last four years we have developed 'Pragati ki nayi gati' by building world class road infrastructure, greenfield expressways and highways at an unprecedented pace. We have taken the lead in reducing pollution by initiating scrapping of old unfit vehicles and replacing them with modern and new vehicles through the Scrapping Policy 2021. We continue to remain focused on improving road safety by upgrading the safety standards for vehicles and heavily penalizing road safety violations. Our government is committed to investing in ensuring the country's mobility system is safe, clean and inclusive. These are but a few examples of the work in this direction.

"Sabka Saath, Sabka Vikas" has been a governing principle of this administration. Accordingly, the citizen's voice is an indispensable component in policy making today. The Ease of Moving Index (EoMI) developed by OMI Foundation captures the citizen's voice on urban mobility. I commend OMI Foundation for its phenomenal effort to measure mobility in cities and devising a comprehensive index which is an effective tool for policymakers to identify, deliberate and aim to fix mobility challenges in Indian cities. I further congratulate the think tank for expanding the scale and scope of the latest version of Ease of Moving Index, covering 40 cities and multiple secondary data points in its endeavor to encapsulate a true picture of the on the ground situation.

Inclusive development has been a key focus of our government. It is heartening to see that the methodology followed in the study, encapsulates such a diverse populace, to try and capture the "Ease of Moving" for every section of society. The report has, therefore, managed to gather the needs and aspirations of India, from a post-pandemic mobility ecosystem.

I am sure the various stakeholders including policymakers, industry, academia and civil society will find the Index insightful and use the data and information to initiate reforms to transform mobility in our cities.


(Nitin Gadkari)

FOREWORD



Shri Kunal Kumar IAS

Joint Secretary and Mission Director

कुणाल कुमार, भा.प्र.से.
KUNAL KUMAR, IAS
संयुक्त सचिव एवं मिशन निदेशक
स्मार्ट सिटीज मिशन
Joint Secretary & Mission Director
Smart Cities Mission



India embarked on the Smart Cities Mission in 2015 with the goal to convert 100 cities into thriving agglomerations with robust core infrastructure which enables citizens to realise their true potential. Cities and towns spread across the country are epicentres of economic growth and sustainable development. The Mission is supporting cities to tap into their demographic dividend and ensure better quality of life and ease of doing business, through work on four fundamental pillars: social, economic, physical and institutional. A truly 'smart city' acts as a lighthouse for other aspiring urban settlements.

A 'smart' city has to be sustainable and ingrain the core principles of preservation of the environment, conservation, and inclusiveness. It dictates that the physical infrastructure be such that it can support a shared ecosystem while meeting the aspirations of those who depend on it. Governance at the local level also has to be tech-enabled, responsive, and entrepreneurial to meet the citizens' agenda. Therefore, it is imperative that decision making is community centric. It is equally important to prioritize and take informed decisions which are not based on ideology alone, but are rather backed by data-based evidence, capturing the holistic reality. The same applies to urban mobility, the wheel which drives economic growth.

OMI Foundation's flagship, Ease of Moving Index - India Report 2022, is a welcome study which aims to capture the needs and aspirations of citizens across 40 cities in the country. The citizen-centric approach adopted by the think tank, as reflected through the extensive primary survey, is a great starting point for local governments to assess the current state of active and shared mobility in these cities. While personal mobility choices have been on the rise in recent years, mass transit systems like buses and the metro continue to be the load bearers of mobility in Indian agglomerates. Such transit modes have to cater to the needs of all by being accessible and inclusive. There is also a need to promote active mobility choices in these cities. Non-motorised transport, especially for shorter distances, will not only help reduce pollution, but also lead to healthier lifestyles. Collectively, a thriving active and shared mobility ecosystem can unlock the true economic potential of each and every citizen of the country.

I am sure various stakeholders including policymakers, industry, academia and civil society will find the Index insightful and use the data and information to initiate reforms to transform mobility in our cities.

Lastly, I congratulate OMI Foundation for this initiative, and hope the Ease of Moving Index - India Report 2022, lays a strong foundation to unlock opportunities in mobility and build a 'smart', sustainable, and bright future for our cities.



(Kunal Kumar)

FOREWORD



Shombi Sharp

UN Resident Coordinator for India



UNITED NATIONS RESIDENT COORDINATOR INDIA

By 2050, India will add three megacities and over 350 million city dwellers, raising its urban population to over 876 million according to UN projections. How goods and people will move within and between these urban spaces is about far more than getting from A to B. Sustainable transport and mobility, which is linked to many of the Sustainable Development Goals (SDGs), cuts to the heart of the 2030 Agenda for Sustainable Development and is crucial to ensuring that India's growth story delivers economically dynamic, inclusive, safe, and sustainable cities for its young population.

Sustainable mobility means creating transport systems with universal access, emphasising accessibility for persons with disabilities; enhanced safety, especially for women and girls; low-carbon and low-pollution solutions; and resilient transport systems that can withstand natural disasters and other shocks.

As vital as transport is for the economic and social fabric of our interlinked world, significant gaps in sustainability, efficiency, and safety remain. Up to a quarter of global greenhouse gas emissions come from transport, while vehicular emissions are the leading source of the hazardous air pollution impacting many Indian cities. Traffic congestion costs cities in India billions of dollars in lost productivity. And on average, every day 422 lives are lost on India's roads.

The good news is that India's extensive investments and rapid expansion of transport infrastructure are enabling access to markets and jobs, essential services, and accelerating inclusive economic growth. The New Urban Agenda and flagship programmes like Smart Cities Mission and the Atal Mission for Rejuvenation and Urban Transformation are driving green transportation, accessible urban spaces, and the creation of walkable communities, while India's private sector rapidly increases investments in renewable energy, electric vehicles, and other innovations. The UN in India is privileged to partner with the Ministry of Housing and Urban Affairs, the private sector, and civil society in many sustainable urbanization and mobility initiatives.

The Ease of Moving Index 2022 provides a wealth of valuable insights for the public, policymakers, and other stakeholders on how to make mobility in India better and safer. Its set of comparable data and indicators has the potential to share best practices and solutions between cities across the country.

On behalf of the United Nations Country Team, I warmly congratulate OMI Foundation for developing this report and for its contribution to accelerating progress on the greener and more sustainable transportation we need to achieve the 2030 Agenda.



Shombi Sharp
UN Resident Coordinator

FOREWORD



Hitesh Vaidya

Director, National Institute of Urban Affairs



राष्ट्रीय नगर कार्य संस्थान
NATIONAL INSTITUTE OF URBAN AFFAIRS

Cities have always been the drivers of economic growth across the world and it is no different in India. In fact, with cities contributing to 65 percent of the Gross Domestic Product (GDP) they play a major role in India's growth story. As hubs of trade, commerce, education and culture attract people in search of opportunities and a better life. Today, 35 percent of the Indian population reside in cities, and this number is projected to grow to 60 percent by 2050. 70 percent of global CO2 emissions are produced by cities, stressing on the urgency to become incubators that pilot change. The dramatic pace of urbanisation makes it imperative to pay heed to planned urban development, one which enables cities to strike a balance between meeting the aspirations of its inhabitants on the one hand and sustainable and inclusive growth on the other.

The National Institute of Urban Affairs (NIUA), under the aegis of Ministry of Housing and Urban Affairs, champions the cause of sustainable and inclusive urban development. Enabling data-driven decision-making has been a prime focus of NIUA through initiatives such as the Ease of Living Index (EoLI). In addition, the Institute has also adopted a collaborative approach in partnering with organisations pioneering work in different facets of urban development.

OMI Foundation (OMI) is a close ally, working at the intersection of mobility innovation, governance, and public good. The Ease of Moving Index 2022 (EoMI), conceptualised and developed by OMI, combines primary data with secondary research to present a comprehensive assessment of mobility in 40 cities spread across the country. EoMI quantifies mobility perceptions of over 50 thousand respondents consisting of 40 percent women and girls, 5 percent persons with disabilities and 2 percent trans/ non-binary individuals, making its insights representative and reliable for urban planners and policymakers alike.

As India strides to become a global super power over the Amrit Kal, the robustness, resilience, and inclusivity of urban infrastructure becomes essential. At the same time, investments in infrastructure need to be dovetailed with India's goal to achieving net zero carbon emission by 2070. The data and insights from EoMI will empower city authorities to strengthen the urban mobility infrastructure making it sustainable, equitable and a catalyst for steering economic growth.

I congratulate OMI for the EoMI initiative and encourage cities, policymakers, urban planners, academicians, students, and the industry to wield its potential in strengthening the country's urban ecosystem.


(Hitesh Vaidya)

FOREWORD



Bhavish Aggarwal
CEO and Founder, Ola

OLA

Mobility is undergoing one of the most transformational social, technological and economic shifts in the 21st century. It is exciting to see the speed and scale at which innovation is redefining the mobility ecosystem and creating new possibilities for commuters in cities.

We, at Ola, understand that meeting the growing aspirations for mobility has the potential to improve the lives and livelihoods of billions of people and minimise the effects of climate change. If there's one thing that drives us, it's the pursuit of making clean mobility services accessible and affordable for all. And it just doesn't end with our product offerings but focuses on leveraging the disruptive potential of mobility as an engine for growth for India's economy. That's where OMI Foundation's Ease of Moving Index comes in.

The Ease of Moving Index evaluates 40+ indicators grouped under the nine mobility parameters. For the second edition, 50,000+ citizens spread across 40 cities were interviewed, offering valuable insights on commuter experience, city infrastructure and how people move in Urban India. The Index also enables cities to benchmark against each other and map opportunities to refine specific mobility aspects in the city.

The findings of the study aim to improve city mobility governance and strengthen their public transport systems. The Index also enables cities to benchmark against their peers and assess opportunities for improving specific mobility aspects in the city.

There can be no denying that safe, accessible, reliable and affordable public transport will form the backbone of a sustainable world. And I congratulate the OMI team for coming out with a comprehensive study that is contributing to this vision.

I believe and hope this study will inform policymakers, industry, urban practitioners and consumers alike on mobility requirements of a city and enable them to shape thriving mobility systems in a post-covid world.

FOREWORD



Ambassador (Retd.) Gautam Bambawale

Managing Trustee, OMI Foundation

India's emergence as one of the fastest growing economies in the world, is not by chance, but by design. And neither has it been easy. Multiple generations have toiled to build a country that citizens can be proud of. What has also held it together, despite the arduous journey, is our resolve to build a truly vibrant, inclusive and holistic development model.

The resolve needs to be bolstered further, as we work towards our goal of becoming a \$10 trillion economy and beyond. If the previous legs of the journey were fuelled by the advent of industrialisation, the next legs will be fuelled by technology and green fuels. The same holds true for mobility, which is imperative for economic growth.

OMI Foundation has been working on policy recommendations which will harness the potential of mobility and digital platforms to help cities transition towards a sustainable, resilient, and equitable future.



Harish Abichandani

First Trustee, OMI Foundation

It is in the same spirit that we have decided to expand the scope of one of our flagship studies titled the Ease of Moving Index. The comprehensive index is an effective tool for policymakers to identify, deliberate and aim to fix mobility challenges in Indian cities. The first edition, released in 2018 was very well received by all quarters, enthusing us to expand the scale and scope of the 2022 version to cover 40 cities and multiple secondary data points in its endeavor to encapsulate a true picture of the ground situation.

We are extremely proud of the team at OMI Foundation for working tirelessly in bolstering and enhancing the robustness of the framework, which will help policymakers, industry and civil society to assess, formulate and implement data-driven solutions to some of the most pressing challenges we face today. The path to net zero chosen by India may be arduous, but past experience shows that if there's one nation that can work towards equitable growth, it's ours.

MESSAGES



The mobility system of a city is akin to the circulatory system in the human body. Just like the smooth flow of blood is a measure of the well-being of the human body, a measure of how smoothly people and goods are able to move in a city is indicative of its social well-being and economic efficiency. The Ease of Moving Index is therefore a very important tool to assess how well a city is performing. It allows for ranking cities and creating competition among them to improve themselves. My compliments to the OMI Foundation for developing this, and add yet another feather in their cap.

- Dr. O.P. Agarwal, IAS (Retd.), Former CEO, World Resources Institute (WRI) India; Former Executive Director, Indian School of Business; Former Senior Urban Transport Specialist, The World Bank



Data has been heralded as the 'new form of oil' for some time now, and rightfully so. Data-driven information-based planning is significant for planning sustainable cities and urban systems. With regard to mobility, data is critical for the integration of existing transport systems, optimising transit options to users' needs, and enabling spatial planning of cities to match mobility patterns. The Ease of Moving Index (EoMI) by OMI Foundation sets precedence for institutionalising the mobility data ecosystem. It attempts to identify rapidly evolving mobility needs in 40 cities and ranks the cities based on a survey of users of public transport, intermediary public transport and private vehicles. I hope cities adopt the findings of this survey to curate their mobility systems to respond to the perception of users.

- Ms. Sarika Chakravarty, Senior Sector Coordinator, National Institute of Urban Affairs (NIUA)



Transport sector is key for India's low-carbon transition. Clean Mobility will therefore be critical to support this transition. As cities begin to consider ease of access to alternative modes of transportation, OMI Foundation's work makes a significant contribution towards supporting such policy thinking.

- Dr. Suranjali Tandon, Assistant Professor, National Institute of Public Finance and Policy (NIPFP)



Mobility is a necessity for every individual, as it contributes to the betterment of their quality of life. As urban congestion in India grows, there is an urgent need to develop a multipronged approach towards arresting such a trend. To develop solutions, one has to first identify the issues. A very important step in this direction is the Ease of Moving Index (EoMI), a scientifically developed comprehensive measure, that attempts to capture the users' travel behaviour in various cities across India. The Index is helpful in identifying the mobility bottlenecks, and comparing how the cities are faring when it comes to enabling their residents' mobility needs. This index is likely to assist policymakers in strengthening evidence-based urban transport policymaking.

- Dr. Arkopal Kishore Goswami, Assistant Professor and Lead- Multimodal Urban Sustainable Transport (MUST) Laboratory, Ranbir and Chitra Gupta School of Infrastructure Design and Management, Indian Institute of Technology (IIT), Kharagpur

MESSAGES



It is heartening to see such large-scale efforts at gathering a wide variety of data to quantify the various dimensions of the ease of moving in many cities of the country. I congratulate the OMI team for this initiative. And I hope that such efforts will be sustained over the years, with more data and improved methods feeding into the process every year.

- Dr. Abdul Rawoof Pinjari, Associate Professor and the Chairperson of the Centre for infrastructure, Sustainable Transportation and Urban Planning (CiSTUP), Indian Institute of Science (IISc)



Ease of movement remains a critical dimension of ease of living. The attempt of creating an Ease of Moving Index can enable a parametric way of assessing mobility at various levels. What eventually gets measured well gets improvised too. Enhancing mobility and access to mobility at the end remain a common goal. The Index by OMI Foundation offers a way forward.

- Dr. Gaurav Raheja, Professor and Head of Department, Architecture and Planning and Co-coordinator of the Design Innovation Centre (DIC), IIT Roorkee



Ease of Moving Index by OMI Foundation is a welcome step towards enabling cities to monitor their progress towards sustainable mobility. The framework provides many useful policy levers which can guide policymakers to plan a roadmap for achieving sustainable mobility. We hope that the young researchers at OMI Foundation will develop this further in the coming years as the framework is used and feedback is received from various stakeholders

- Prof. Geetam Tiwari, TRIPP Centre Head and Chair Professor, Transportation Research and Injury Prevention Centre, Indian Institute of Technology (IIT) Delhi



While cities have been investing in infrastructure and service improvements in mobility, it is important to have metrics for monitoring the system performance against set goals. These can help cities in assessing the efficacy of investments and identifying action areas.

- Dr. Shalini Sinha, Sr. Associate Professor at Faculty of Planning and Centre Head and Principal Researcher of the Centre of Excellence in Urban Transport (CoE-UT), CRDF, CEPT University



Putting together 9 parameters and 41 indicators to rank 40 different Indian cities, balancing the voices of people on one hand and secondary data on the other, is no mean task! For us at the Gender and Policy Lab, the Ease of Moving Index holds a lot of meaning especially when we look at safe and inclusive urban and public transport planning for women, persons with disability, and other minority groups. Ultimately, as we all know, without ease of moving, there wouldn't be equal access to all the myriad opportunities cities hold for their people!

- Meera Sundarajan, Team Lead and Gender and M&E Expert, Gender and Policy Lab, Greater Chennai Corporation



ACKNOWLEDGEMENTS

This report is the culmination of a multi-stakeholder, multi-disciplinary endeavour spanning over 18 months, geared towards measuring mobility scenarios in cities. This report brought out in March 2023 evaluates the changing mobility paradigm of 40 cities in India, measuring a host of primary and secondary data, uniquely blended into a framework titled the 'Ease of Moving Index'.

The 'Ease of Moving Index - India Report 2022' would not be possible without the invaluable feedback of our expert advisors: **Dr. Abdul Rawoof Pinjari**, Associate Professor and the Chairperson of the Centre for infrastructure, Sustainable Transportation and Urban Planning (CiSTUP), Indian Institute of Science (IISc); **Dr. Arkopal Kishore Goswami**, Assistant Professor and Lead- Multimodal Urban Sustainable Transport (MUST) Laboratory, Ranbir and Chitra Gupta School of Infrastructure Design and Management, Indian Institute of Technology Kharagpur; **Dr. Gaurav Raheja**, Professor and Head of Department, Architecture and Planning and Co-coordinator of the Design Innovation Centre (DIC), IIT Roorkee; **Prof. Geetam Tiwari**, TRIPP Centre Head and Chair Professor, Transportation Research and Injury Prevention Centre, Indian Institute of Technology (IIT) Delhi; **Dr. Karthik K. Srinivasan**, Professor - Transportation Engineering, Department of Civil Engineering, IIT Madras; **Dr. O.P Agarwal (IAS, Retd.)**; **Ms. Sarika Chakravarty**, Senior Sector Coordinator, National Institute of Urban Affairs (NIUA); **Dr. Shalini Sinha**, Sr. Associate Professor at Faculty of Planning and Centre Head and Principal Researcher of the Centre of Excellence in Urban Transport (CoE-UT), CRDF, CEPT University; **Dr. Suranjali Tandon**, Assistant Professor, National Institute of Public Finance and Policy (NIPFP); and the Directorate of Urban Land Transport (DULT), Government of Karnataka.

Additionally, the research team benefited immensely from the inputs of Mr. Prashant Kumar, Former Executive Director, OMI Foundation; Mr. Arjun Chowdhuri, Former Associate Director, OMI Foundation; Mr. Abhimanyu S, Head, Strategic Engagements and Communications, OMI Foundation; Mr. Gerald Ollivier, Lead Transport Specialist, India, and his team at the World Bank; Mr. Eeshan Bhaduri, Doctoral student, IIT Kharagpur; Ms. Meera Sundararajan, Team Lead and Gender and M&E, and team, Chennai Gender and Policy Lab at the Greater Chennai Corporation. We would also like to appreciate the contributions of Sayani Mandal, our former Research Consultant.

We are grateful to the 50,488 individuals across India who patiently responded to our survey questionnaire, the 226 individuals who participated in our Focus Group Discussion, the 58 surveyors from BRIEF India for their efforts in collecting primary data, and the Keshav Suri Foundation for connecting us with diverse groups of people. We also gained from the expert opinion provided by a host of urban mobility experts, service providers, et. al. during the course of this study.

Finally, the team would like to acknowledge and express gratitude for the support of the Ministry of Housing and Urban Affairs (MoHUA), National Institute of Urban Affairs (NIUA), the Ministry of Road Transport and Highways (MoRTH), and the Transport departments of 24 States and 3 Union Territories. We would also like to thank the officials of the Urban Local Body, Traffic Police Department, Transport Undertakings, Metro Agencies, and Smart City Offices, among others, of the 40 cities, in which primary research was conducted, for providing us with the data and insights required to build this robust framework.

SARDAR MARKET GIRDIKOT





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01 EXECUTIVE SUMMARY



If cities are the growth engines of an economy, mobility sets the pace. Each urban agglomeration also has unique characteristics reflecting its fabric and built space which determines mobility choices. The transition to sustainable mobility has to be weaved around these traits, while being anchored in the foundational commons of accessibility, affordability, inclusivity, innovation, safety, seamlessness, and reliability. The Ease of Moving Index is an effort to document policies, infrastructure, and above all, the impetus for behavioural change which seeks to serve the goal of “Mobility for All.”

Sustainability is an imperative virtue for cities to survive and thrive. Every actor has a role to play, with policies setting the stage for industry to innovate and citizens to adopt sustainable mobility choices which are active, shared, connected, electric and autonomous. The new paradigm dictates that mobility reduces its carbon footprint, while meeting the needs and aspirations of all it serves. It can't be achieved in isolation, but only through collaboration which can thereby support the vision of a truly inclusive and equitable society.

Towards this end, technological advancement is the disruptor which can assist cities to improve efficiency. Its adoption provides an opportunity to build a new mobility ecosystem, reinvigorating the legacy and enthusing innovation to meet the needs of commuters and the collective ambitions of cities. As ‘policy drag force’ reduces, a new and improved mobility system will emerge. The Ease of Moving Index is a measure of the present mobility condition to envision a better tomorrow.

The Index aims to support policymakers, planners and practitioners, industry and citizens alike to identify mobility requirements of cities in India, challenges faced by the public, and aspirations of the citizens. The Index helps promote sustainable mobility through emerging technologies and business models, and enables cities to benchmark their performance with other comparable cities on various predetermined mobility parameters and indicators. The Index provides for an overall score cum ranking of each city, with OMI Foundation aspiring to release periodic Ease of Moving Index rankings for cities to benchmark improvements achieved on each of the parameters, and foster a competitive spirit amongst the cities to improve mobility holistically and in a sustainable fashion.

Mobility touches our daily lives and the commute experience leaves an impression on the human psyche impacting productivity. The Ease of Moving Index is an attempt to assimilate these impressions of commuters by quantifying their experience of the infrastructure and service quality of public transport in the city.

The Ease of Moving Index is a framework developed by OMI Foundation to help cities evaluate their mobility scenarios on

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02 INTRODUCTION



WHAT IS THE EASE OF MOVING INDEX

Ease of Moving Index (EoMI)¹ 2022 is a framework conceptualised by the OMI Foundation^a enabling cities to evaluate their mobility paradigm across specific parameters. The Index also enables cities to benchmark against their peers and assess opportunities for improving specific mobility aspects in the city.

The 'Ease of Moving' is based on the globally-recognised concepts of 'sustainable development' and the 'ease of living' as propounded by the United Nations and the Ministry of Housing and Urban Affairs, Government of India, respectively.

WHY THE EASE OF MOVING INDEX

Rapid urbanisation, unfettered motorisation, ubiquity of smartphones and affordable data, innovative business models, sustainable vehicle technologies, evolving consumer preferences, and concerted policy-regulatory efforts are all transforming mobility around the world, and more so in the fast-growing economy of India. The 21st century has ushered in a new era of mobility marked by the paradigms of shared, connected, zero-emission, and autonomous mobility. Even as mobility has significantly evolved in the past two decades, the Covid-19 pandemic has had varying impacts on the mobility needs, aspirations, and challenges of cities and citizens (both individuals and businesses) alike.

Against this backdrop, EoMI empowers cities to assess mobility needs and aspirations in the new normal, and fosters the spirit of competition among cities, thereby, resulting in improvements to mobility, and ultimately benefiting people and businesses calling the city their home. In other words, EoMI catalyses data-driven decision-making in mobility.

Mobility indices have traditionally looked at a handful of mobility parameters, not offering the necessary localised nuance to make concrete policy decisions. As a precursor to mobility indices, the erstwhile Ministry of Urban Development^b created Service Level Benchmarks for urban transport in 2008². The Ministry also commissioned a study on traffic and transportation policies and strategies in urban areas in India in May 2008³, evaluating mobility across 30 cities. Notably, 20 out of the 30 cities studied by the Ministry feature in this report, EoMI 2022. In the 2010s, a few more efforts were undertaken by different organisations to measure and compare mobility scenarios in cities. These include Sustainability Cities Mobility Index 2017⁴ and Deloitte City Mobility Index 2020⁵, among others. In 2018, OMI Foundation's Ease of Moving Index became a first-of-its-kind comprehensive mobility index encompassing both primary and secondary data. In a departure from past efforts in this direction, EoMI 2018 was built using primary data generated from India's hitherto largest mobility survey involving 43,500 individuals across 20 cities of varying population sizes.

Ease of Moving Index (EoMI) 2022 - BIGGER AND BETTER



40

Cities



50,000+

Citizens as Survey
Respondents



220+

Citizens as Participants of
Focus Group Discussions



09

Parameters



41

Indicators

a. Previously known as 'Ola Mobility Institute'
b. Now called the 'Ministry of Housing and Urban Affairs'

APPLICATIONS OF THE EASE OF MOVING INDEX

The Index can catalyse actions at various levels, some of which are outlined below.



For the city: EoMI is a measure to compare various aspects of mobility across cities of similar sizes, with an aim to assist decision-making pertaining to holistic planning and implementation to enhance the mobility experience. Just like India’s Livability Index, for the city, the Ease of Moving Index can:

1. Institutionalise periodic data collection mechanism on all aspects of mobility by focusing on the quality and comparability;
2. Support a city’s decision-making in the efficient allocation of resources and bridging mobility gaps;
3. Measure readiness for changing mobility paradigms;
4. Document and share best practices from across the country over time;
5. Enable enhanced cooperation among city authorities of various departments and improved interaction between city authorities and citizens;
6. Encourage cities to create an enabling environment for investment in mobility.



For industry: The Ease of Moving Index would encourage industry to make important decisions. Among other objectives, the Index can:

1. Encourage potential investors to explore opportunities for new products and market;
2. Explore innovative digital products and services for mobility;
3. Provide insights on electric vehicle adoption to accelerate transition;
4. Opportunity to improve offering of mobility services based on insights from commuter feedback.



For citizens: The Ease of Moving Index can encourage citizens:

1. As an empowering tool to demand data-driven interventions to improve mobility;
2. Enable aspirations for a better tomorrow;
3. Promulgate active community participation to improve accountability.

03 STAGES OF DEVELOPING EoMI



Framework Development

1. Developing the evaluation framework comprising parameters and indicators to measure and benchmark



STAGE 01

City Selection

1. Selection of cities based on geographical spread and diversity;
2. State capitals, select Union Territories and smart cities were prioritised



STAGE 02

Data Collection

1. Primary data:
 - A. India's largest mobility survey
 - I. Conducted one-on-one and geotagged
 - II. Stratified random sampling technique adopted
 - B. Focus Group Discussions
2. Secondary data from public sources including city authorities



STAGE 03

Report Development

1. India Report
2. City Profiles



STAGE 06

Index Development

1. Scoring and ranking of cities



STAGE 05

Data Analysis

1. Analysis and synthesis of primary and secondary data



STAGE 04

METHODOLOGY



DIFFERENCE BETWEEN MOBILITY AND TRANSPORTATION

Before detailing the Ease of Moving Index, it is helpful to distinguish mobility from transportation. Mobility can be understood as the goal of transportation. While transportation refers to the physical act of moving persons or goods, mobility is the quality of the transportation service defined by time, cost, levels of accessibility and safety, and more. Mobility is not synonymous with transportation.



To have mobility is to have access. Getting to places necessary for living a healthy life – your job, school, doctor's offices, community centres, parks – is possible. But living by a bus that comes once an hour isn't mobility. And owning a car in a city with congested highways isn't mobility, either. So mobility isn't just having access to one mode of transportation. Mobility is having transportation options, and (refers to) the quality of those options."

MobilityLab, 2018⁶.

ETHOS OF THE EASE OF MOVING INDEX

The 'Ease of Moving' as outlined in this document is based on the globally-recognised concepts of 'sustainable development' and the 'ease of living' as propounded by the United Nations and the Ministry of Housing and Urban Affairs, Government of India, respectively. The UN recognises that mobility is central to sustainable development, and helps achieve "better integration of the economy while respecting the environment, improving social equity, health, resilience of cities, urban-rural linkages"⁷ and productivity of urban and rural areas.

Urban agglomerates have anchored economic growth for time immemorial. Mobility being the cornerstone of any thriving city needs to be reimagined to make it sustainable, inclusive, active and shared to provide "Mobility for All".

A City's Mobility Objectives

The Ease of Moving Index framework is derived from the mobility objectives a city could aspire to achieve. What are these mobility objectives?

The United Nations notes that sustainable transport is one which is *safe, affordable, accessible, efficient, resilient, and minimises carbon and other emissions and environmental impact*⁸. Therefore, safety, affordability, accessibility, efficiency, resilience, and climate action could well be a city's mobility goals.

Closer home in India, the Prime Minister's vision for the future of mobility is based on 7 Cs - *Common, Connected, Convenient, Congestion-free, Charged, Clean and Cutting-edge*⁹.



Common: Public transport is the cornerstone of all our mobility initiatives; new businesses driven by digitisation and big data for smarter decision-making are reinventing the existing paradigms; the focus should shift away from personal mobility options to all forms of transportation from non-motorised to motorised forms - cycles, rickshaws, two-wheelers, auto-rickshaws, mini buses, buses, and more.



Connected: Mobility enables the integration of geographies as well as modes of transport.



Convenient: Mobility is safe, affordable, and accessible to all sections of society.



Congestion-free: Sustainable mobility should help minimise environmental and economic impact of congestion; it will also lead to greater efficiency in logistics and freight movement.



Charged: Mobility can help drive investments across the value chain from batteries to smart charging to electric vehicle manufacturing.



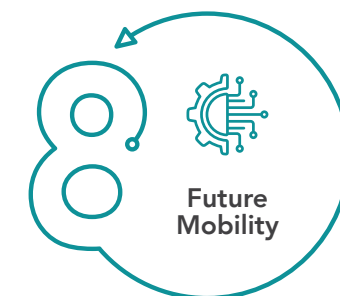
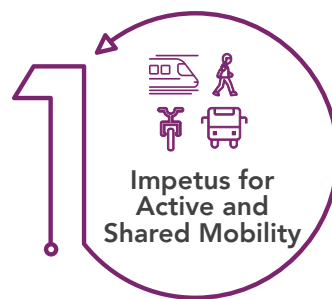
Clean: Mobility powered by clean energy leads to better living standards for both - present and future generations.



Cutting-edge: Mobility provides immense opportunity for innovation and growth.

The 7 Cs of mobility and the mobility goals themselves need to be viewed in the backdrop of a) the existing challenges of rapid urbanisation and unfettered motorisation, and b) the changing mobility paradigms of shared, connected, emission-free, and autonomous.

Based on the aforementioned, we can crystallise the mobility objectives of a city as follows. Thus, a city should catalyse and ensure:



THE FRAMEWORK

These city mobility objectives become the parameters for mobility scenario evaluation. Thus, the Ease of Moving Index is a framework comprising 9 parameters measured across numerous indicators.



IMPETUS TO ACTIVE AND SHARED MOBILITY: ADOPTION OF ACTIVE AND SHARED MOBILITY SOLUTIONS TO ENSURE INCLUSIVE AND HEALTHY CITIES



Personal Mobility: Number of personalised motorised two- and four-wheelers per lakh population. Lower the number of personal vehicles, higher the reliance on shared mobility



24X7 Mobility: Commuter perception on ease of access to public transport at all times



Power of Pedals: Cycle ownership amongst respondents in the city, seen as an impetus for active mobility



Adoption of Public Transport: Share of commuters stating regular usage of public transport



Public Mobility: Sufficient number of buses per lakh population encourages commuters to adopt shared mobility



Adoption of Active & Shared Mobility: Stated usage of active and shared mobility



Mass Transit: Length of Bus Rapid Transit and rail-based mass transit infrastructure per lakh population



SEAMLESS MOBILITY: INTERMODAL CONNECTIVITY IMPROVES ACCESS TO PUBLIC TRANSIT



Active First - and Last-mile Connectivity: Percentage of regular public transport users choosing to walk/cycle to access mass transit



Reasonable Access Time: Commuter response on the average time taken to reach a transit stop



Intermediate Public Transport First- and Last-Mile Connectivity: Percentage of regular public transport users choosing intermediate public transport to access mass transit



Reasonable Wait Time: Commuter response on the average wait time for public transit



Ease of Parking: Adequate parking facility at transit stops for motorised vehicles and bicycles



Presence of UMTA: Presence of a Unified Metropolitan Transport Authority is crucial to ensure that all mobility modes work in synchronisation



TOWARDS VISION ZERO:

GAUGING MEASURES ADOPTED TO ACHIEVE ZERO ROAD ACCIDENTS IN THE CITY



Ease of Walking: Perception on width and maintenance of footpaths



Well-Lit Roads: Perception on availability of well-lit roads



Ease of Cycling: Perception on presence of dedicated cycle tracks



Well-Lit Footpaths: Perception on availability of well-lit footpaths



Ease of Riding: Perception on maintenance of roads



Road Incidents: Derived from road fatalities, fatality rate of vulnerable road users and injuries per lakh population



Ease of Crossing: Perception on adequacy of foot over bridges/subways at major junctions



MOBILITY FOR ALL:

PERCEPTION OF INCLUSIVITY, ESPECIALLY FOR WOMEN, PERSONS LIVING WITH FUNCTIONAL DIFFICULTIES AND TRANS/ NON-BINARY INDIVIDUALS



Safe Mobility: Citizen perception about safety from gender and petty crime while commuting



Gender Inclusivity: Percentage of women and trans/ non-binary community using public transport



Accessible Mobility: Perception of persons with disabilities on accessibility of public transport



AFFORDABLE MOBILITY: MOBILITY CHOICES GOVERNED BY COST OF COMMUTE



Mobility spend: Percentage of total household income spent on individual commute



Economical Transit: Percentage of respondents agreeing Public Transport is affordable between any 2 points



EFFICIENT AND RELIABLE MOBILITY: EASE OF ACCESS AND ON-TIME PUBLIC TRANSPORT



Ease of Information: Easy access to accurate information of public transport and fare



Ease of Access (Active Mobility): Percentage of respondents reaching transit stop in less than 10 minutes by walking/cycling



Ease of Access (Shared Mobility): Percentage of respondents reaching transit stop in less than 10 minutes using shared mobility modes



Reasonable Travel Time: Percentage of respondents reaching work place in less than 30 minutes



Road Width: Percentage of respondents agreeing roads are adequately wide



Ease of Parking: Presence of a parking policy and public parking inventory



CLEAN MOBILITY: SHIFT TO CLEANER AND GREEN MOBILITY



Air-pollution Related Deaths: Number of deaths caused due to $PM_{2.5}$ per lakh population



Annual $PM_{2.5}$ Level: Highest $PM_{2.5}$ level recorded in 2021, as per air quality monitors



Incentivising EV Adoption: Presence of an electric vehicle policy in the State/Union Territory



Adoption of Personal Electric Mobility: Percentage of respondents willing to buy an electric vehicle



Shift to Electric Buses: Percentage of electric buses in the city (ordered & deployed)



Spruced/ Neat Mobility: Percentage of respondents agreeing public transport is clean, hygienic and well maintained



FUTURE MOBILITY: UNLOCKING THE POWER OF TECHNOLOGY AND INNOVATION TO ENHANCE MOBILITY EXPERIENCE



Going Cashless: Percentage of respondents using digital payment modes



Mobility at Fingertips: Number of respondents using 3 or more apps for mobility



Delivery at Fingertips: Number of respondents using 3 or more apps for hyperlocal delivery



INVESTMENT IN CITY: ANNUAL PER CAPITA OF MUNICIPAL BUDGET^c

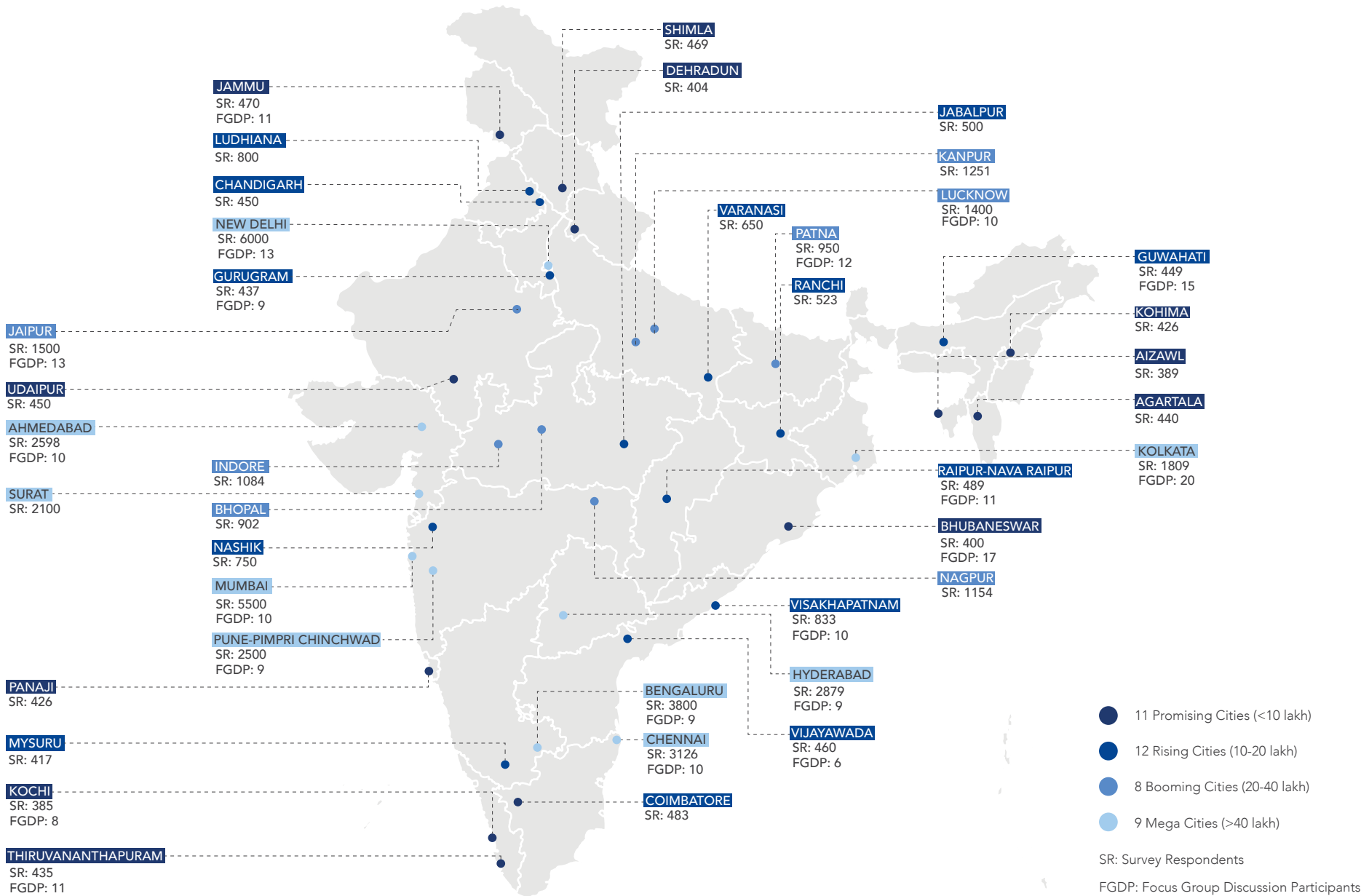


City Budget per Capita: Based on municipal budgets towards infrastructure

c. For 34 cities, Municipal budgets of 2020-21 have been used. In absence of 2020-21 budgets, for six cities, last available budgets have been used: Dehradun [BE 2018-19], Guwahati [BE 2019-20], Jabalpur [BE 2019-20], Jammu [BE 2016-17], Kohima [as given in Kohima Municipal Corporation website] and Ludhiana [BE 2019-20]

CITY SELECTION

For the Ease of Moving Index 2022, cities have been chosen based on their population, geographical significance, and status as smart city.



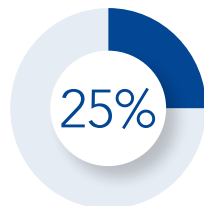
Total sample size:

50,488

Projected population of 40 cities:

12.30 crore

The 40 cities represent over



of India's urban population



20 Focus Group Discussions
involving 226 participants



4 Clusters based on their population for a robust
comparison and benchmarking

DATA COLLECTION

Data for the Ease of Moving Index was collected from primary intercept surveys, Focus Group Discussions, and secondary data sources across the 40 cities. Generalisation of the results is dependent on the representativeness of the sample chosen for the survey. The study, hence, has included a sample size of more than 50,000 respondents randomly selected across the 40 cities identified, and stratified by gender, disability, and household income as follows. A statistically significant sample size was determined for each city, with a confidence level of 95 percent and a margin of error of 5 percent. A minimum of 385 respondents for the first 10 lakh people were chosen across all cities, and additional 360 samples per 10 lakh population were added thereafter.

ANALYSIS

The Ease of Moving Index is an adaptation of the Human Development Index (HDI)¹⁰ widely used for over 30 years now to assess and compare countries on development indicators. The HDI has been conceptualised as a metric that summarises three dimensions thought to contribute towards human development – long and healthy life; knowledge; and a decent standard of living (United Nations Development Program, 2021). The HDI is calculated as the geometric mean of normalised indices for each of the three dimensions. Normalisation is undertaken using the 'min-max' technique, such that all normalised values lie within a range of 0 to 1.

Like the HDI, the EoMI 2022 is a composite index comprising 9 parameters measured across 41 indicators. Analytically, each parameter sub-index has been obtained as the geometric mean of its corresponding indicators. The overall composite index is, further, an aggregation of the sub-indices as a geometric mean. Conceptually, a city's Ease of Moving has been understood as being tied to its size. This is because city size decisively influences level of transport infrastructure supply, access to opportunities, and number of options available for intra-city commute, among others. Thus, the 40 cities have been grouped under four clusters based on population:

Promising Cities

<10 LAKH

Rising Cities

10 - 20 LAKH

Booming Cities

20 - 40 LAKH

Mega Cities

>40 LAKH

The cumulative scores of each city have been presented along with the individual composite scores for each parameter. The overall score is the geometric mean of the nine parameters. A city can score a maximum of 100.

NOTES

1. These intercept surveys were conducted at public places like railway stations, Inter State Bus Terminals (ISBTs), markets, office complexes, educational institutions, residential colonies/ hubs/ housing board apartments, etc.
2. The stratifications were based on gender, disability, and household income. The survey agency has endeavoured to capture the diversity in the primary respondents to the extent that such real-world surveys permit the same.
3. Overall sample stratification was met but not for every city. The variations were based on the willingness of the respondents to participate in the survey, the average time for each response was a little over 20 minutes.
4. About 15 percent of the respondents were gig and platform workers some of whom are mobility service providers. Their responses influence the mode share results of the cities.
5. The population projected for 2021 for almost all cities was based on the averages of projections made using state growth rate as suggested by the Ministry of Statistics and Programme Implementation (MoSPI), and geometric increase method projection based on the decadal growth rate of two decades between 1991 -2001 and 2001- 2011 census. Chandigarh was an exception as its growth rate was not specified by MoSPI, and hence the state growth rates and the average decadal growth rate were used to project the population. In the case of Chennai, the municipal boundaries were extended post the 2011 census. Accordingly, the population for the extended areas was calibrated and the projected population of Chennai was suitably adjusted.
6. The survey responses collected by the surveyors were checked randomly for accuracy and authenticity.
7. Some instances of clerical errors on survey responses were noted. Subsequently, such entries have been omitted in the final assessment.
8. Where secondary data could not be sourced from government agencies, the same has been taken from reliable sources and cross verified with newspaper articles, reputed blogs, expert inputs, etc. on a best effort basis.
9. The normalisation of some indicators such as buses, mass transit, fatalities per lakh population were arrived at by dividing the latest available data by the projected population for 2021.
10. Except Vijayawada, responses pertaining to service quality of public transport were sought from all respondents, irrespective of public transport usage.
11. Except for the cities of Ahmedabad, Bhubaneswar, Chennai, Dehradun, Delhi, Guwahati, Jammu, Kochi, Mysore, Raipur, Ranchi, Vijayawada and Visakhapatnam, all respondents who reported driving/riding their vehicle were administered questions on the mode of payment for parking.
12. The number of buses per lakh population for Panaji was taken as the total number of buses operated by Kadamba Transport Corporation Limited (KTCL) divided by the projected population of Goa for 2021. There is no exclusive intra-city bus transport in the city.
13. The exact number of intra-city buses plying in Shimla was unavailable.
14. The number of registered two and four wheelers for Hyderabad for the composite vehicle ownership was taken as per the Road Transport Year Book 2018-19.
15. The annual average PM_{2.5} levels for 2021 in Bhubaneswar, Coimbatore, Dehradun, Kohima, Nagpur, Panaji were not available. Hence the highest level between October and November 2022 for these cities were compiled and documented^d.
16. Data on number of electric buses plying or tendered was not available for Agartala, Aizawl, Bhopal, Chennai, Coimbatore, Jabalpur, Jaipur, Kochi, Kohima, Ludhiana, Mysuru, Panaji, Ranchi, Thiruvananthapuram, Udaipur, Vijayawada and Visakhapatnam.
17. To facilitate comparability, we have referred to the Municipal Corporation Budget of cities for FY 2020-21. The same could not be sourced for Dehradun, Guwahati, Jabalpur, Jammu, Kohima and Ludhiana. The latest publicly available data points have been cited for these cities. Furthermore, in absence of a detailed break-up of budgets to indicate allocations towards transport and mobility systems for several cities, the overall municipal budgets have been considered.
18. The accident data for Pune in NCRB 2021 does not include Pimpri-Chinchwad. The data from the last updated accident data for the cities was available in Motor Transport Statistics of Maharashtra 2018-19.

05 PARTICIPANT PROFILE



Data for the Ease of Moving Index was collected from citizen participants through primary surveys, Focus Group Discussions, and secondary data sources across 40 cities. Generalisation of the results is dependent on the representativeness of the sample chosen for the survey. The study, hence, has included a sample size of more than 50,000 survey respondents spread across the 40 cities identified. Additionally, FGDs were organised across 20 cities wherein more than 226 individuals participated.

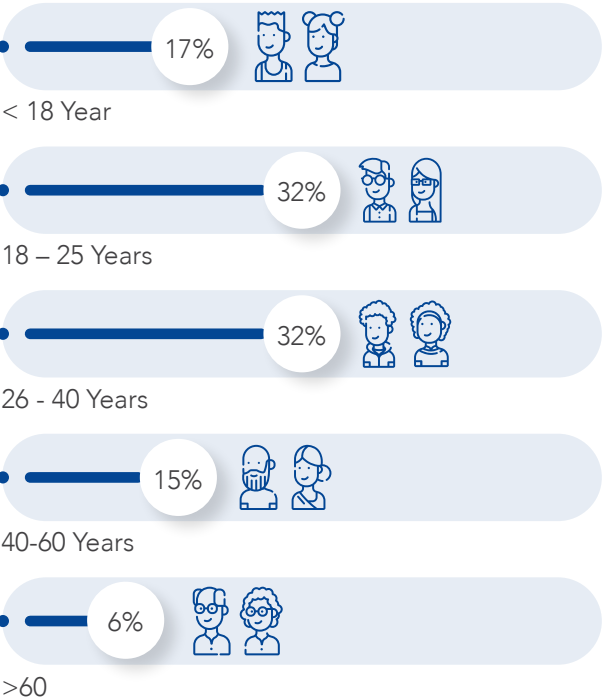
PROFILE OF SURVEY RESPONDENTS

Survey respondents: 50,488

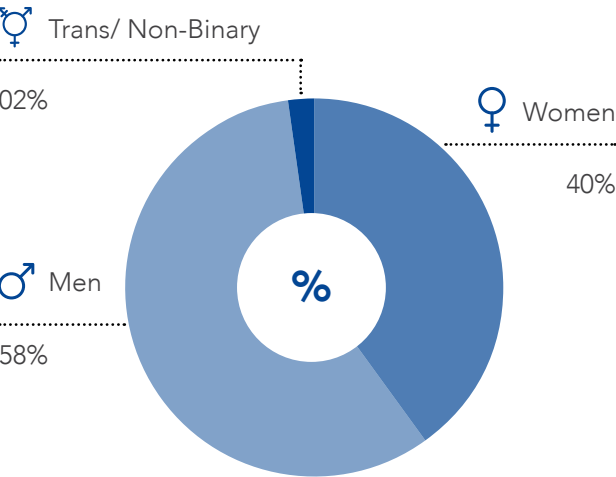
Minutes of interaction: 10,22,352

Data points: 31,00,000+

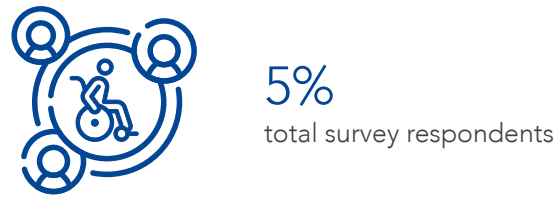
Age



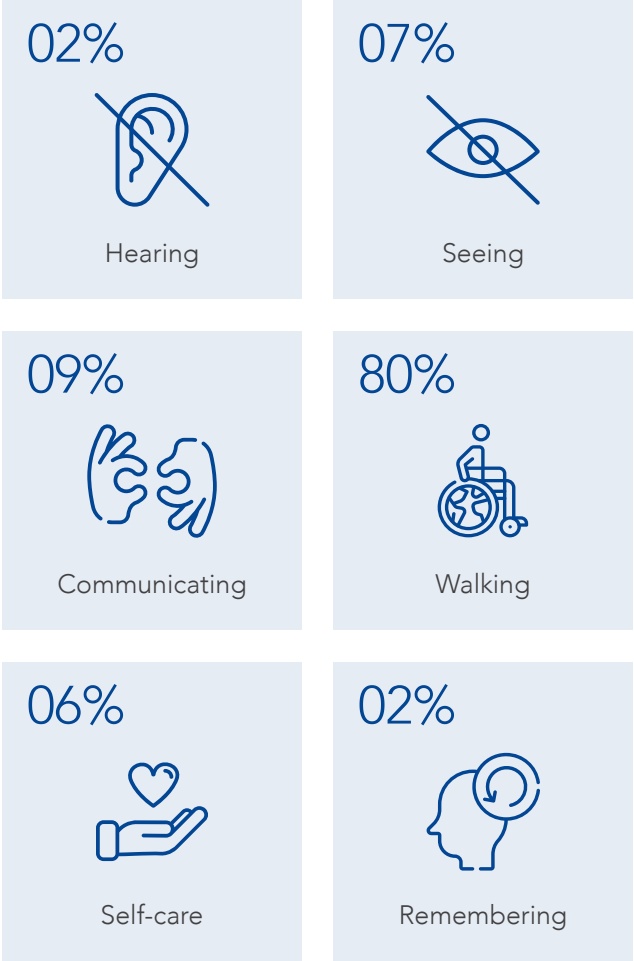
Gender



Persons with Disabilities^e



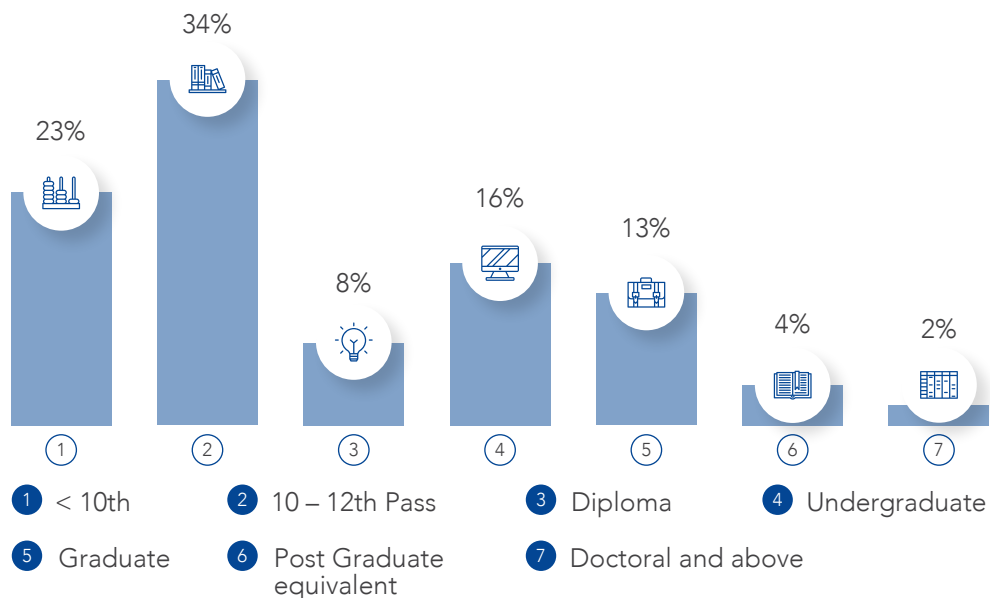
Distribution of Disabilities^f (Percentage of respondents)



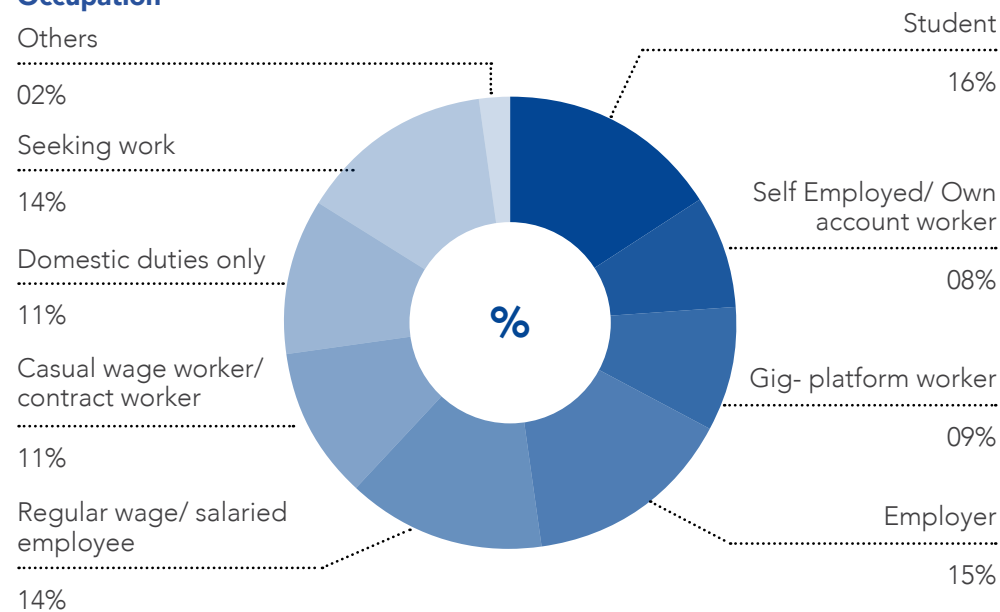
38

e. Disabilities include temporary or permanent difficulty or impairment experienced by a person due to physical or mental health conditions, injury or ageing.
f. Total will exceed 100% as a survey respondent may have multiple difficulties

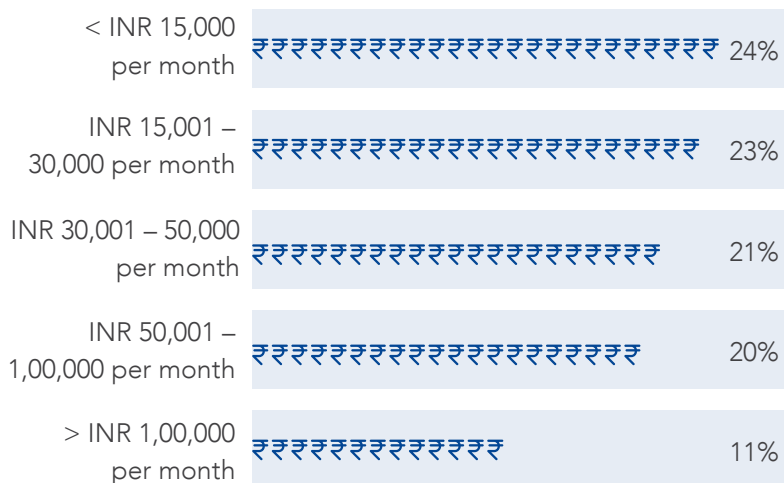
Educational Qualification



Occupation

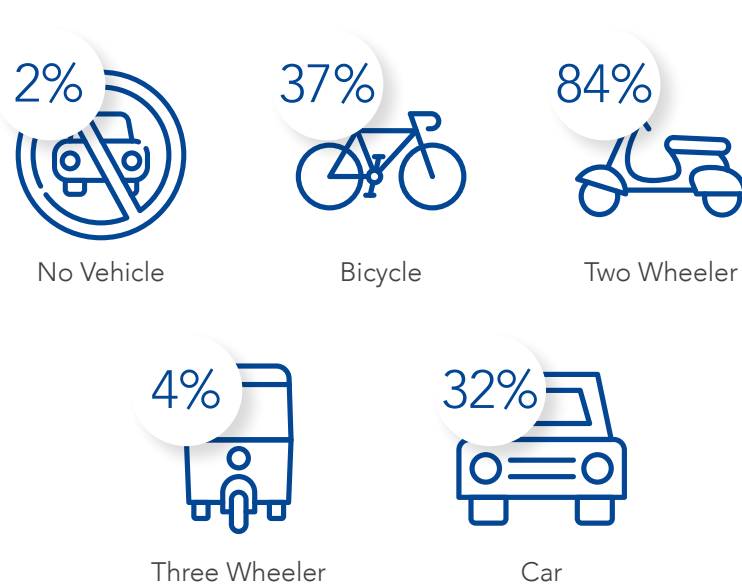


Income

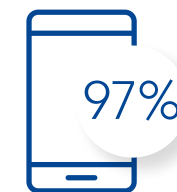


*As captured in the primary survey based on self declaration

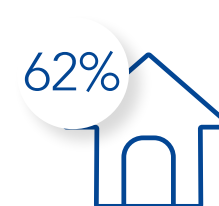
Vehicle Ownership^g



Smartphone Ownership



House Ownership



Residing in own house

g. Total will exceed 100% as a survey respondent can own more than one vehicle type

PROFILE OF THE FGD PARTICIPANTS

FGD participants: 226

Total FGD duration: 1200 minutes

Age Range



Age range of FGD participants
18 - 50 years

Persons with Disabilities

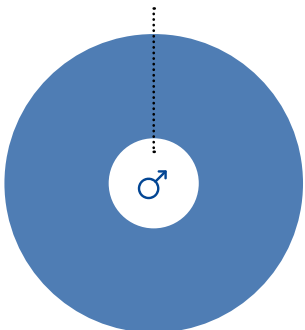


5%
total FGD participants

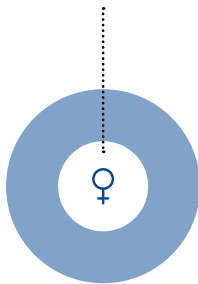
Gender

65%

35%



Men



Women



Snapshots of surveys and Focus Group Discussions held across India

CITYZEN PULSE



CITYZEN PULSE*



AGARTALA has the best walking infrastructure



AHMEDABAD has the highest willingness to adopt electric vehicles



AIZAWL scores the highest on clean mobility



BHUBANESWAR has the most seamless mobility system



CHANDIGARH has the highest ease of parking at major transit hubs



COIMBATORE has the shortest access time to transit stops



Most commuters in **DEHRADUN** can access public transit hubs within 10 minutes using Intermediate Public Transport (IPT)



GUWAHATI has the lowest instances of petty crimes, such as pickpocketing, in public transport



Mobility spend is lowest in **JABALPUR**



Most people walk and cycle to access public transport in **JAMMU**



KANPUR is the safest city to travel on public transport



KOCHI has the highest potential for active and shared mobility adoption



Almost every one in
KOHIMA has a bicycle



KOLKATA has the
highest adoption of
shared mobility



Public transport usage
among women and the
trans/ non-binary is the
highest in **LUDHIANA**



MYSURU has the easiest
availability of public
transport information



NAGPUR has the most
efficient and reliable public
transport system



PANAJI has the highest
usage of apps for
delivery services



PUNE has the most inclusive
mobility ecosystem



Almost everyone in
RAIPUR-NAVA RAIPUR
uses public transport on a
regular basis



SURAT is perceived to
have the safest roads



VIJAYAWADA has the
most well-lit roads



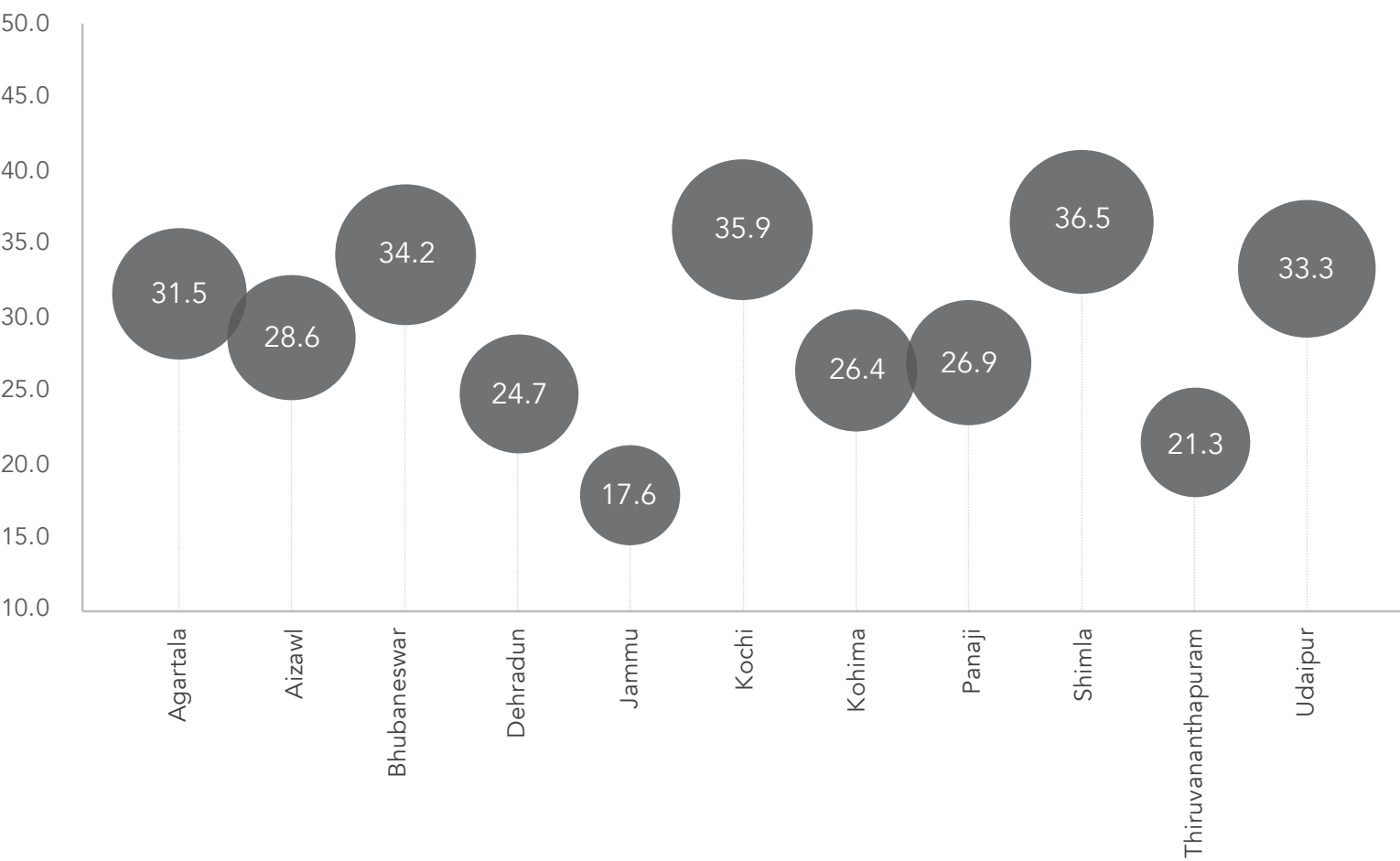
EASE OF MOVING INDEX 2022 RESULTS



OVERALL RESULTS

The cumulative score of each city is based on a comprehensive study of the multiple levers necessary to promote active and shared mobility adoption. The parameters capture myriad factors, from policy formulation to physical infrastructure, commuter perception on existing mode choices and willingness to adopt sustainable mobility.

Overall Score: Promising Cities



Cluster Rank

- 01 Shimla
- 02 Kochi
- 03 Bhubaneswar
- 04 Udaipur
- 05 Agartala
- 06 Aizawl
- 07 Panaji
- 08 Kohima
- 09 Dehradun
- 10 Thiruvananthapuram
- 11 Jammu



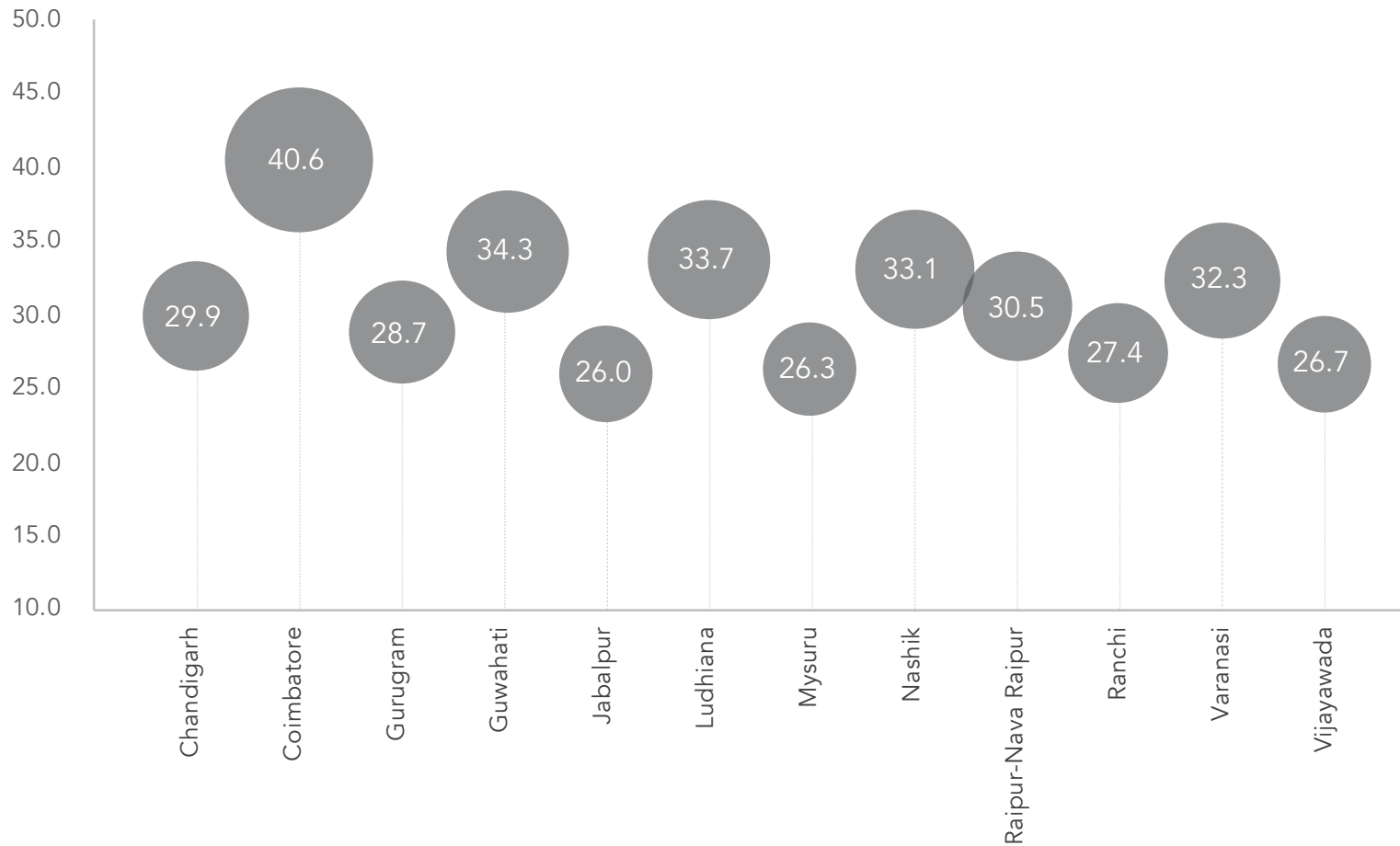
Promising Cities

The 'Promising Cities' comprises cities with a projected population of up to 10 lakh. The smallest city by population and size is Panaji, the capital of Goa, while the largest in terms of population is Bhubaneswar, the capital of Odisha. Jammu is the largest city in terms of the municipal area. All cities in this cluster are smart cities.

The cities chosen in the cluster are spread across India, with distinct terrain, weather/climate, and diverse mobility needs. Four cities (Bhubaneswar, Jammu, Kochi and Kohima) of the eleven cities in the cluster were also a part of the EoMI 2018. Except Kochi and Udaipur, all the cities in the cluster are administrative capitals of respective states.

- Impetus for Active & Shared Mobility
- Seamless Mobility
- Towards Vision Zero
- Mobility for All
- Affordable Mobility
- Efficient & Reliable Mobility
- Clean Mobility
- Future Mobility
- Investment in City

Overall Score: Rising Cities



Cluster Rank

- 01 Coimbatore
- 02 Guwahati
- 03 Ludhiana
- 04 Nashik
- 05 Varanasi
- 06 Raipur-Nava Raipur
- 07 Chandigarh
- 08 Gurugram
- 09 Ranchi
- 10 Vijayawada
- 11 Mysuru
- 12 Jabalpur



Rising Cities

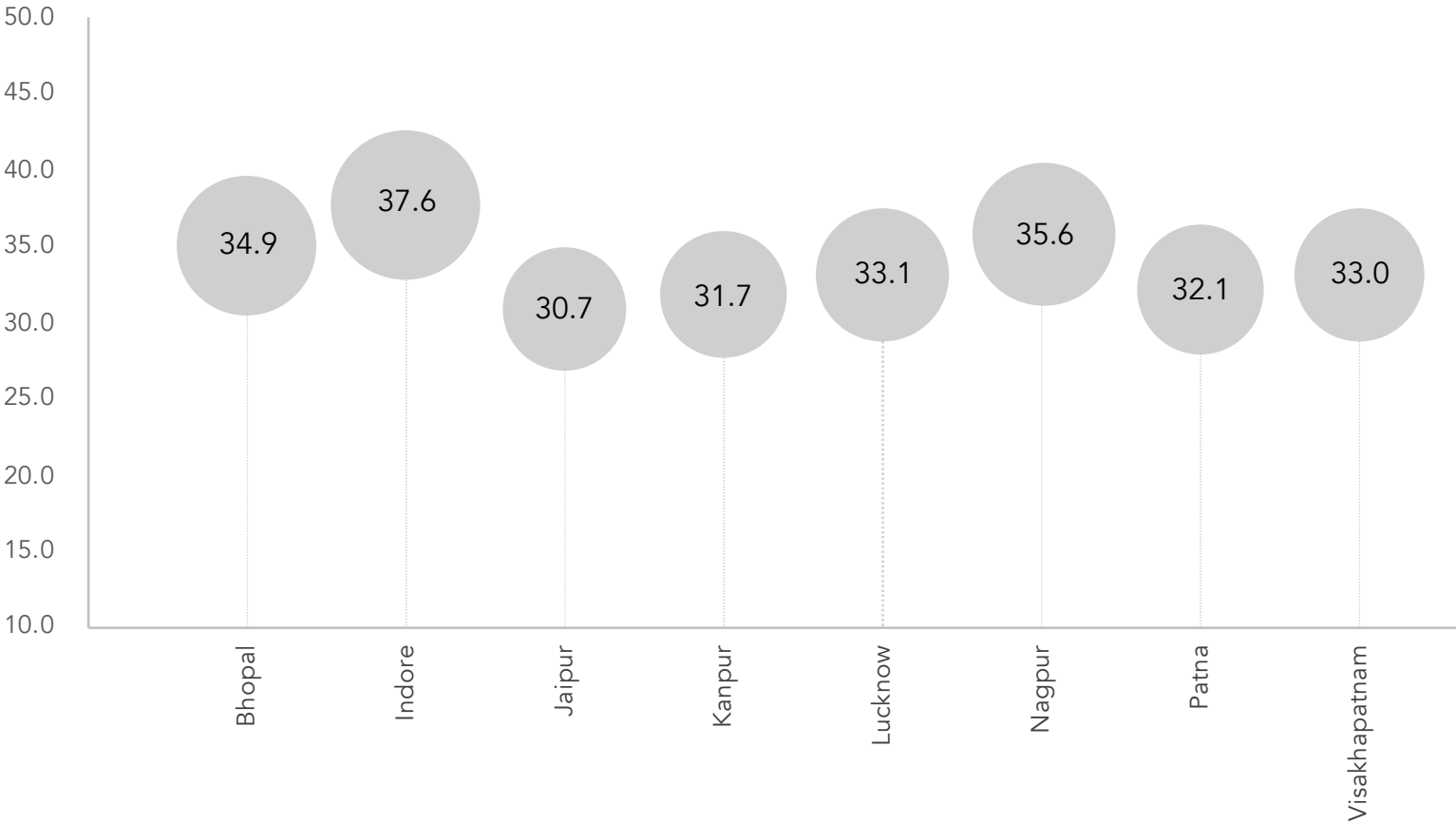
The 'Rising Cities' comprises cities with a projected population between 10 lakh to 20 lakh.

The smallest city by population is the planned city of Chandigarh, while the largest is the wine capital of India, Nashik.

Among the twelve cities mentioned in this cluster, three cities (Jabalpur, Mysuru, and Vijayawada) were also part of EoMI 2018. Four (Chandigarh, Raipur-Nava Raipur, Guwahati and Ranchi) are administrative capitals and nine are smart cities (except Gurugram, Mysuru and Vijayawada). The other cities have distinct attributes and are strategically significant.

- Impetus for Active & Shared Mobility
- Seamless Mobility
- Towards Vision Zero
- Mobility for All
- Affordable Mobility
- Efficient & Reliable Mobility
- Clean Mobility
- Future Mobility
- Investment in City

Overall Score: Booming Cities



Cluster Rank

- 01 Indore
- 02 Nagpur
- 03 Bhopal
- 04 Lucknow
- 05 Visakhapatnam
- 06 Patna
- 07 Kanpur
- 08 Jaipur



Booming Cities

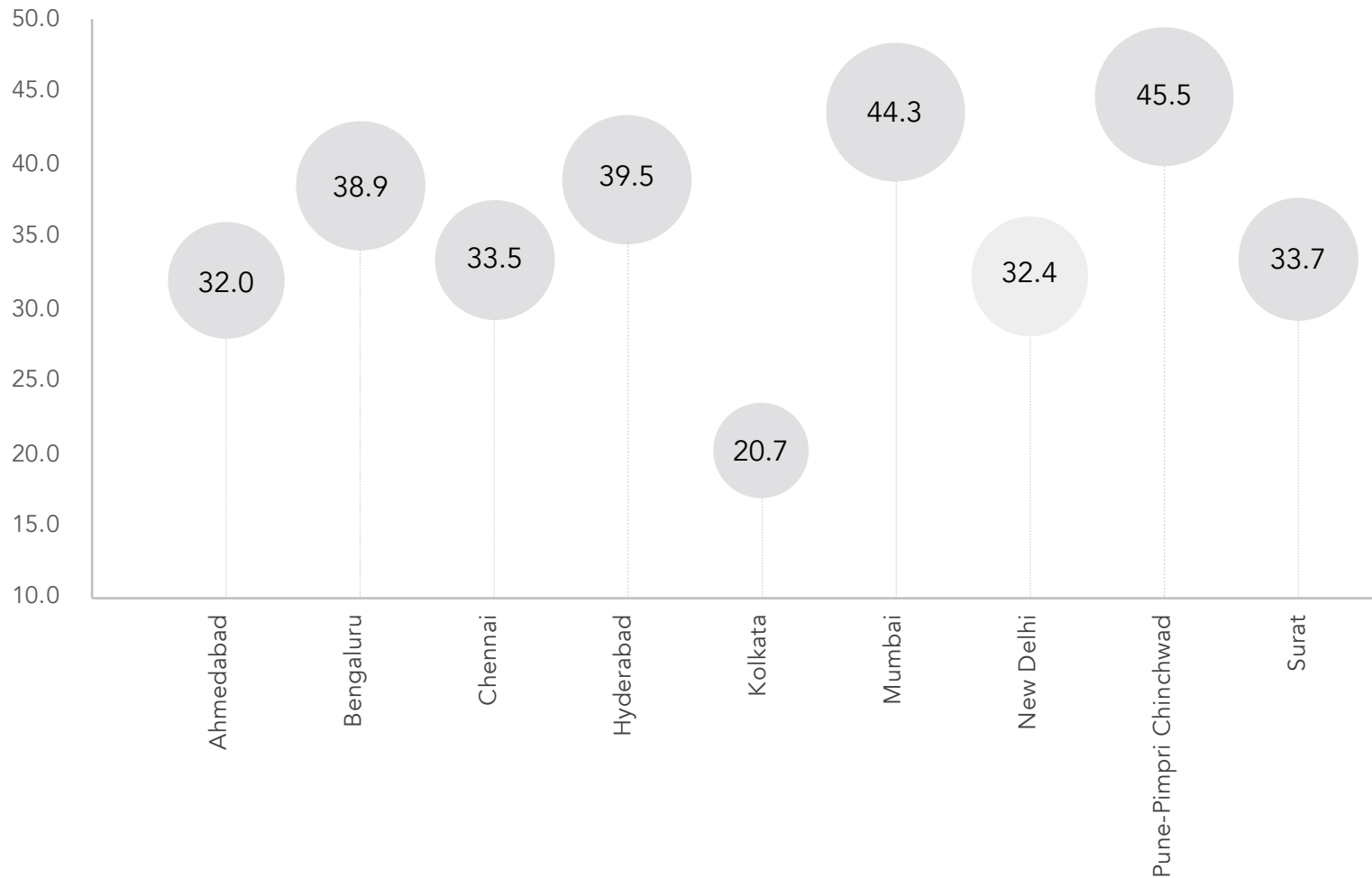
The 'Booming Cities' comprises cities with a projected population between 20 lakh and 40 lakh.

The smallest city in this cluster by virtue of population is Visakhapatnam, while the largest is Jaipur, the capital of Rajasthan.

Four of the eight 'Booming Cities' (Bhopal, Indore, Jaipur and Patna) were part of EoMI 2018. Except Visakhapatnam, all cities in the cluster are in the north and central part of the country and four cities (Bhopal, Jaipur, Lucknow and Patna) are also administrative capitals of respective states. All cities in this cluster are smart cities.

- Impetus for Active & Shared Mobility
- Seamless Mobility
- Towards Vision Zero
- Mobility for All
- Affordable Mobility
- Efficient & Reliable Mobility
- Clean Mobility
- Future Mobility
- Investment in City

Overall Score: Mega Cities



Cluster Rank

- 01 Pune-Pimpri Chinchwad
- 02 Mumbai
- 03 Hyderabad
- 04 Bengaluru
- 05 Surat
- 06 Chennai
- 07 New Delhi
- 08 Ahmedabad
- 09 Kolkata



Mega Cities

The 'Mega Cities' comprises the nine metropolitan areas with a projected population of over 40 lakh.

All except the twin cities of Pune-Pimpri Chinchwad were part of EoMI 2018.

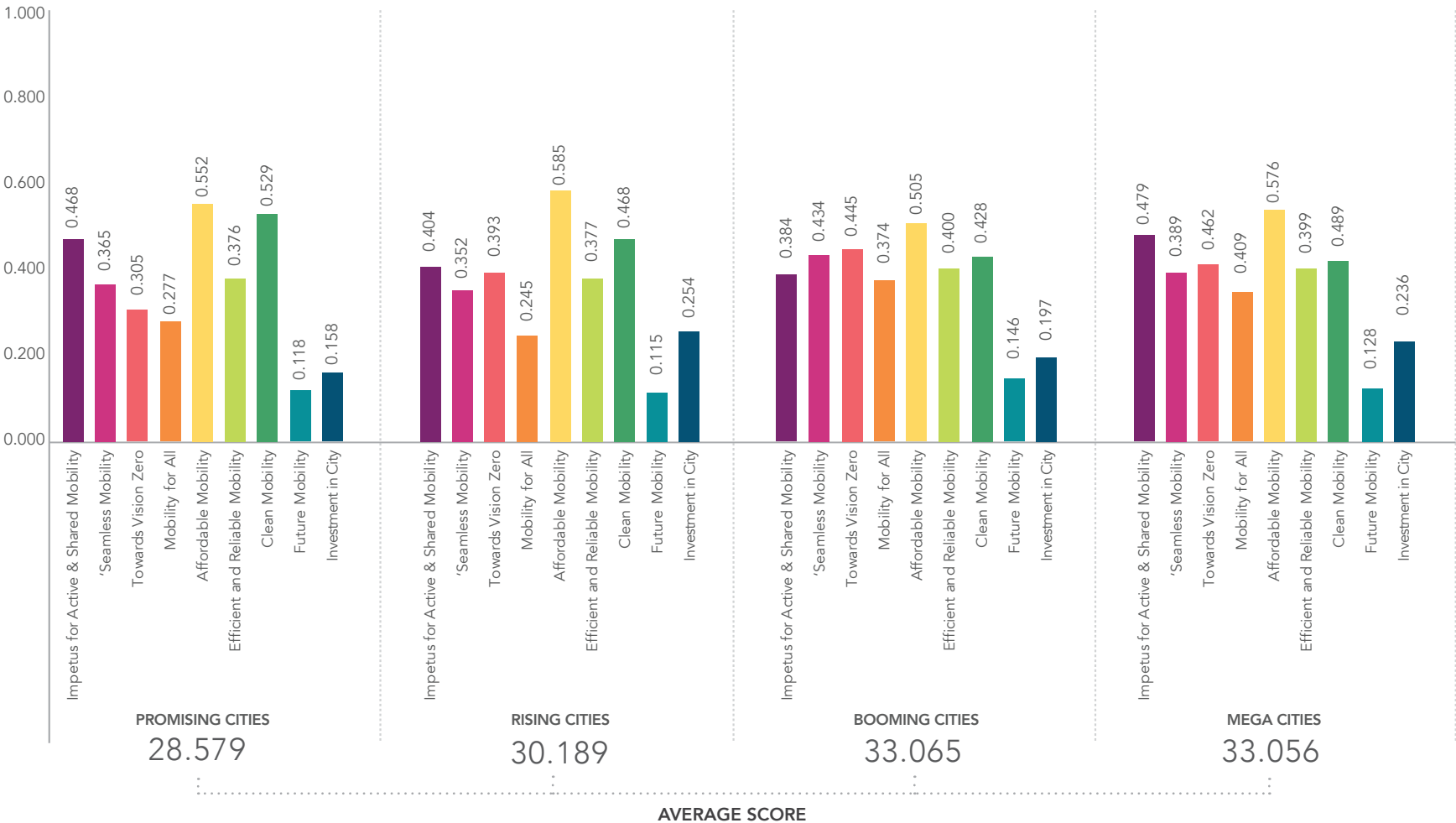
Delhi and Mumbai are the most populated cities in the cluster while the diamond city - Surat, is the smallest. This cluster also has six smart cities (except Kolkata, Hyderabad and Mumbai).

- Impetus for Active & Shared Mobility
- Seamless Mobility
- Towards Vision Zero
- Mobility for All
- Affordable Mobility
- Efficient & Reliable Mobility
- Clean Mobility
- Future Mobility
- Investment in City

While cities with under 10 lakh projected population lead on clean mobility, they lack adequate budgets for investments. Cities with a projected population between 10 to 20 lakh have the most affordable commute but needs to improve accessibility. Cities with a projected population between 20 to 40 lakh emerge safer but the cost of commute is the highest among clusters. Cities with a projected population over 40 lakh have better active and shared mobility systems which are more efficient and reliable as compared to cities in other clusters.

Though the cities have been divided into 4 clusters based on population for ease of comparison, each city has distinct characteristics which determine its mobility paradigm patterns. The median of all nine parameters have been represented to show a comparison across the four clusters.

Cluster assessment

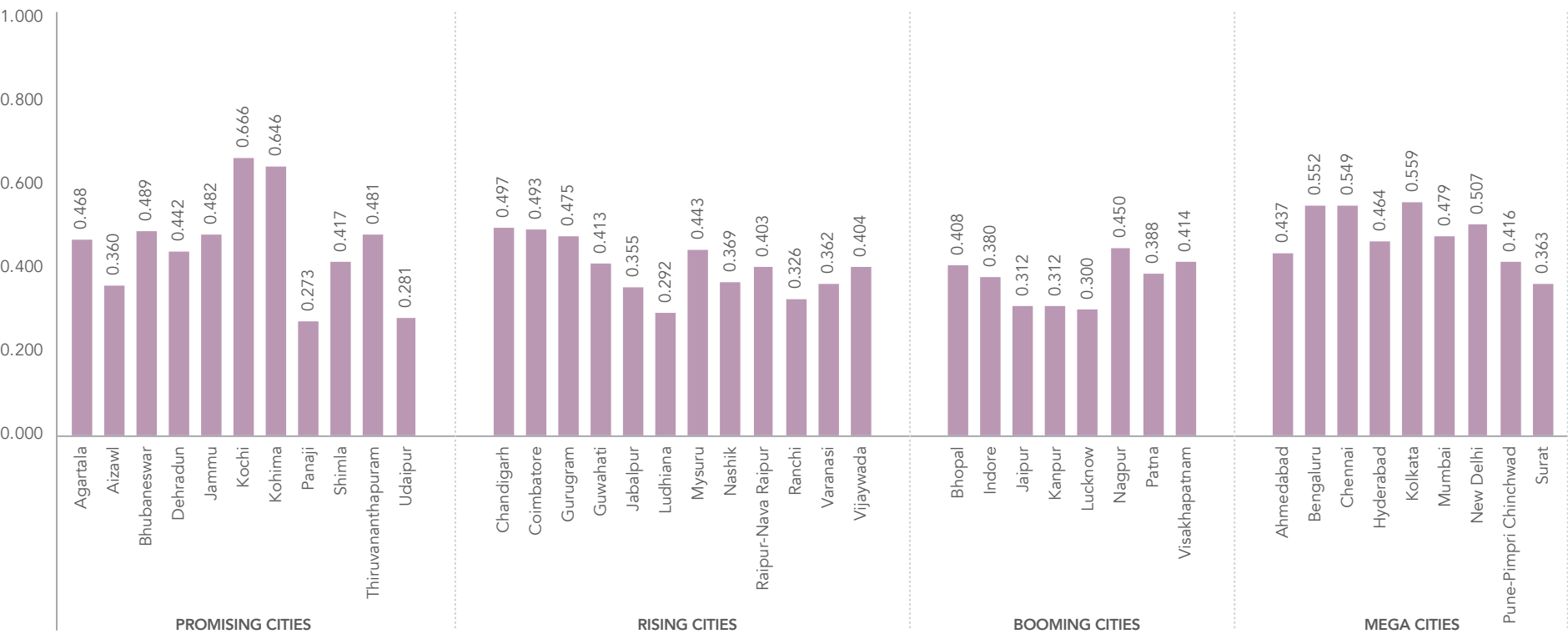






IMPETUS FOR ACTIVE & SHARED MOBILITY

Adoption of active and shared mobility can collectively reduce emission and congestion. A robust and modern public transport system catering to the needs of all commuters forms the backbone of a functioning shared mobility system. It has to be complemented with seamless first- and last-mile connectivity through walking and cycling (Active Mobility). Investment in active mobility infrastructure can also encourage people to lead a healthier lifestyle. The parameter aims to assimilate critical indicators to measure adoption of active and shared mobility in cities.



HOW TO READ THE NUMBERS

PROMISING CITIES

Panaji has the highest per capita personal vehicle ownership amongst all cities, yet it has the second highest mode share of active and shared mobility in this cluster after Kohima.

Udaipur has one of the lowest number of buses per lakh population leading to a relatively high per capita ownership of personal vehicles.

Kohima has the highest share of active mobility, with almost every household owning a bicycle.

A high number of buses per lakh population in **Jammu** facilitates shared mobility adoption, despite having limited intermediate public transport services.

Kochi is the only city with an operational metro, while **Thiruvananthapuram** has recently received approval to build one. Both cities have robust public bus systems.

RIISING CITIES

The first planned city of Independent India, **Chandigarh**, leads the way in providing impetus to active and shared mobility. Investment made in building a 210 km dedicated cycle track and a thriving public bicycle sharing system across the city reflects in the healthy adoption of active and shared mobility within the city. Planned cycling infrastructure also acts as an impetus for citizens to own and ride bicycles.

Likewise the 'cultural capital of Karnataka', **Mysuru**, has also invested in a public bicycle sharing system on a

public-private partnership model, which is expected to further improve the share of active mobility in the city.

Gurugram is the only city in the cluster that has an operational metro well connected with Delhi NCR and has the highest adoption of active and shared mobility in the cluster.

The twin cities of **Raipur-Nava Raipur** are the only urban agglomerations to have an operational bus rapid transit system in the cluster, leading to the highest patronage of public transport among peers, despite having fewer buses per lakh population.

Ludhiana and **Ranchi** have the lowest number of buses across all cities and therefore have low impetus for active and shared mobility.

While **Coimbatore** has the highest number of buses per lakh population among its peers, **Vijayawada** leads the way on availability of public transport across the city throughout the day.

BOOMING CITIES

Nagpur has the longest operational metro and lower per capita personal vehicle ownership among the eight cities in this cluster resulting in the highest adoption of active and shared mobility.

Visakhapatnam has a 32 km bus rapid transit system and also the highest number of buses per lakh population among its peers with an extensive network across the city, thus providing an impetus for active and shared mobility. Visakhapatnam is the only city among the 'Booming Cities' which does not have an operational or proposed rail-based mass transit system.

Indore, the 'cleanest city in India' and **Bhopal**, the capital of Madhya Pradesh have a bus rapid transit system, and metro is under construction. Though Bhopal has better availability of public transport across the city, the adoption in Indore is better.

The 'City of Nawabs', **Lucknow**, and Bihar's capital, **Patna**, have the highest bicycle ownership amongst peers, but adoption of active and shared mobility is amongst the lowest.

MEGA CITIES

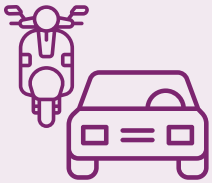
All the 'Mega Cities' have higher adoption of active and shared mobility and a high percentage of regular public transport users.

Kolkata has the highest buses per lakh population thereby leading the impetus to active and shared mobility amongst 'Mega Cities'.

The 'maximum city', **Mumbai**, has the highest public transport patronage with adequate availability spanning the city including at night. Both **Kolkata** and **Mumbai** have the highest bicycle ownership in this cluster followed by **Pune-Pimpri Chinchwad**.

The 'Oxford of the east', **Pune**, has proposed to build a robust bicycle infrastructure in the city and across **Pimpri Chinchwad**, which could lead to higher share of active mobility.

Though the 'diamond city' of **Surat** already has a 100+ km bus rapid transit system network, fewer buses per lakh population has impacted adoption of active and shared mobility.



PERSONAL MOBILITY

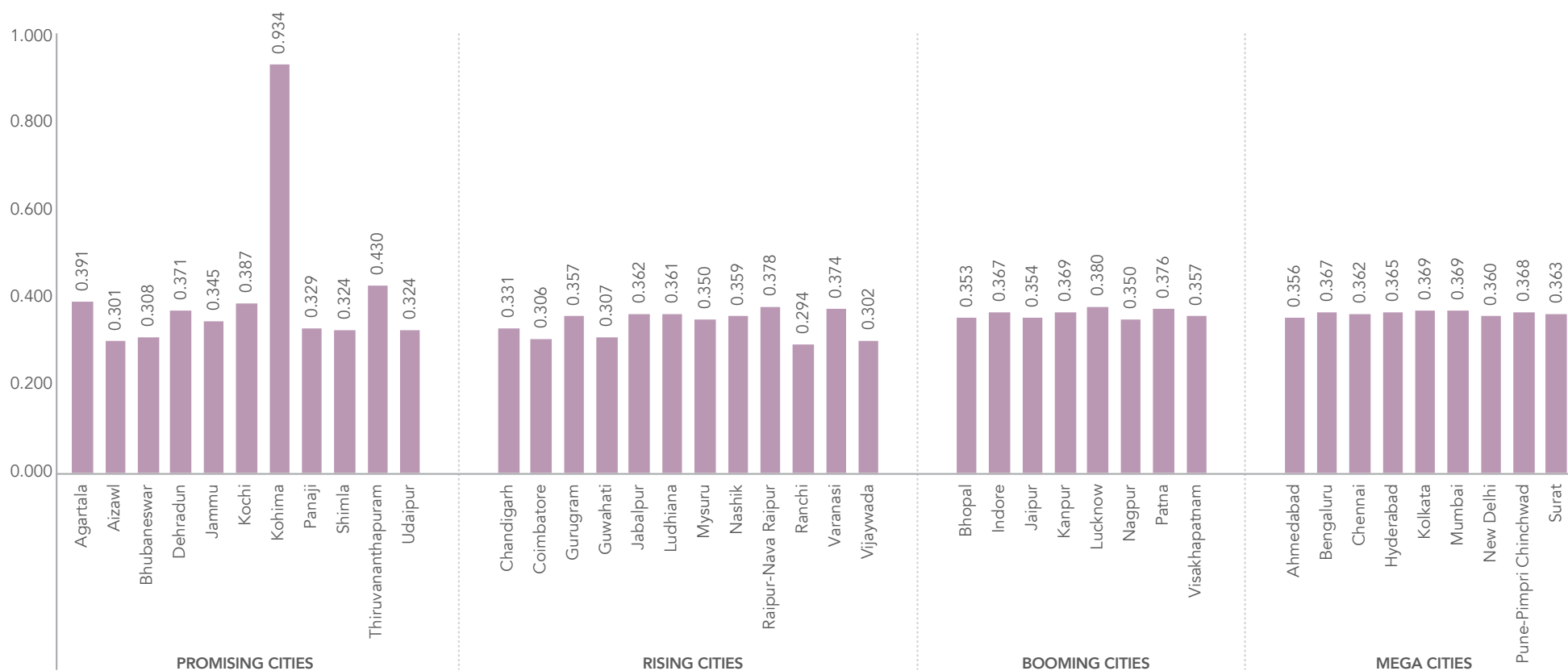
Number of personalised motorised two- and four-wheelers per lakh population.
Lower the number of personal vehicles, higher the reliance on shared mobility.





POWER OF PEDALS

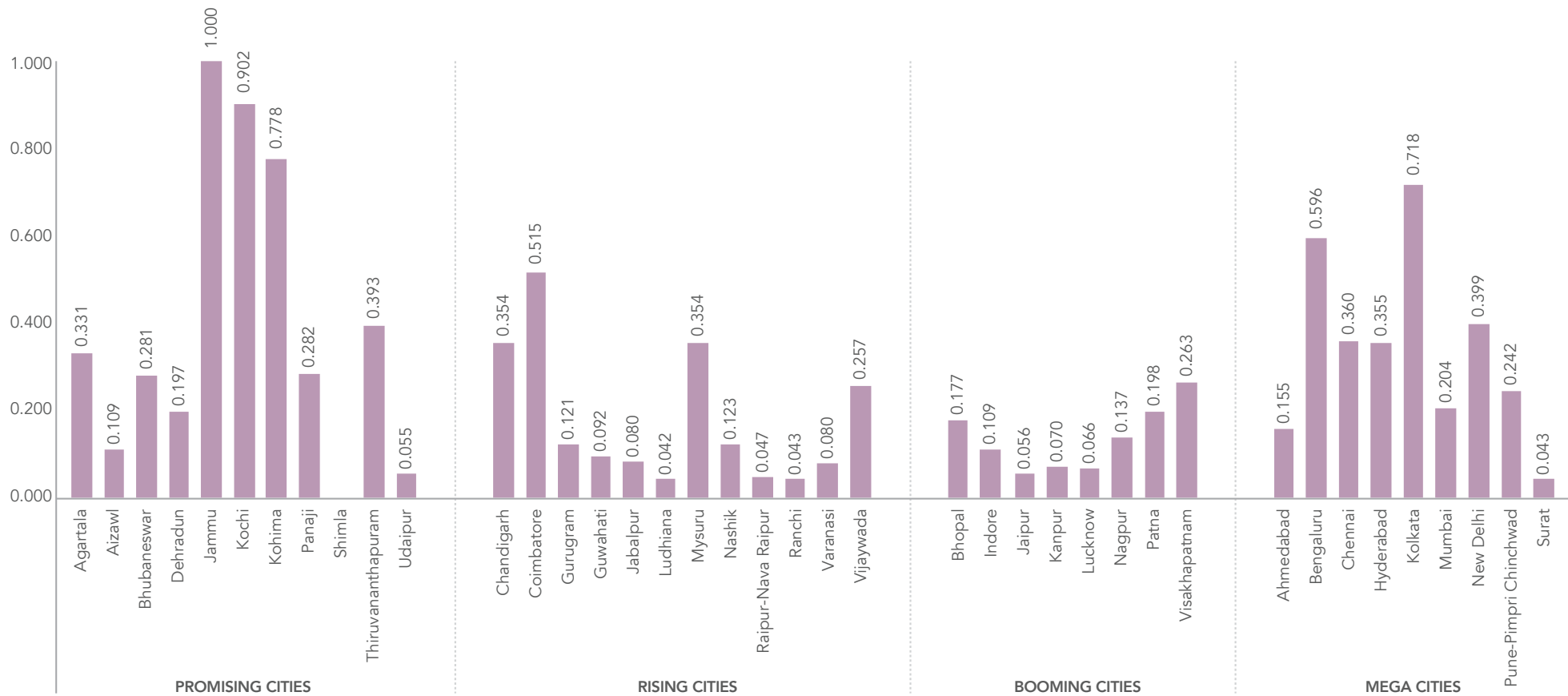
Cycle ownership amongst respondents in the city, seen as an impetus for active mobility





PUBLIC MOBILITY

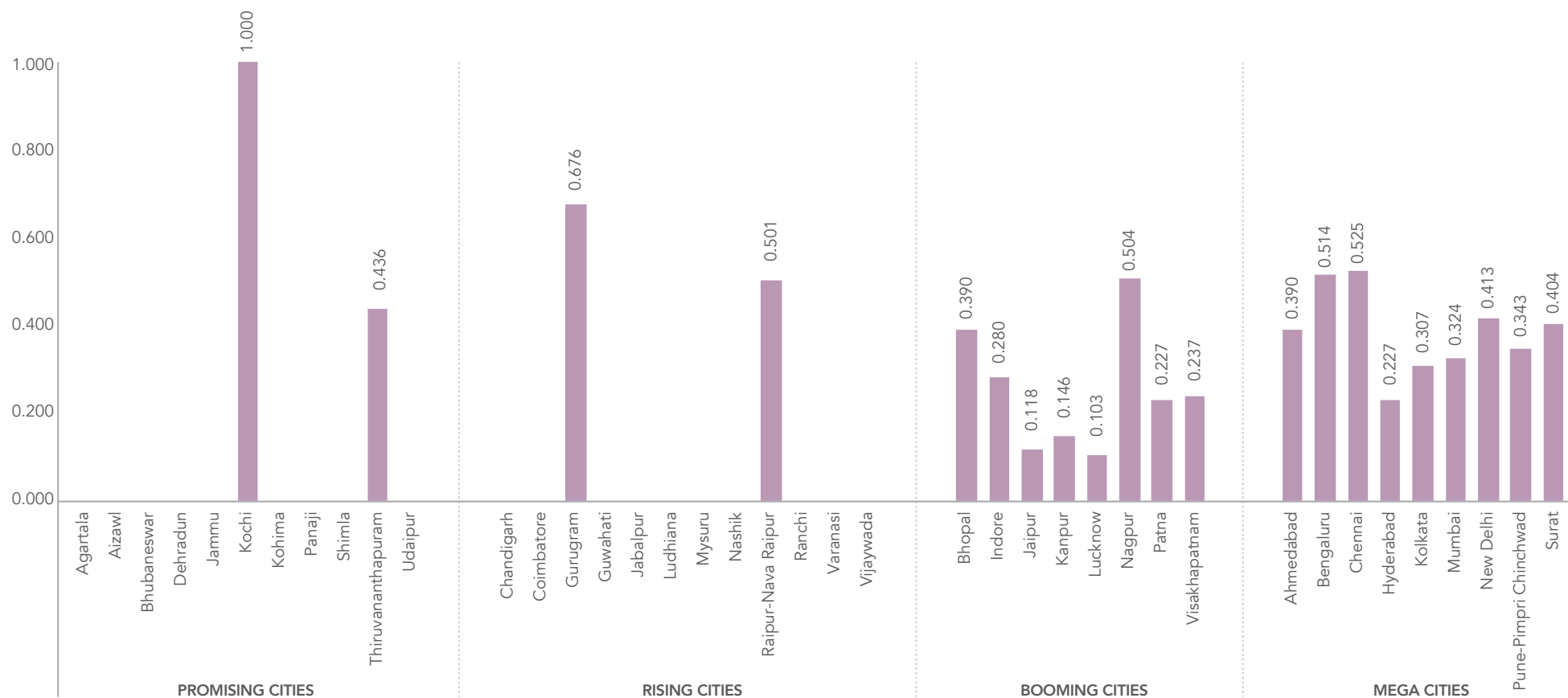
Sufficient number of buses per lakh population encourages commuters to adopt shared mobility





MASS TRANSIT

Length of Bus Rapid Transit and rail-based mass transit infrastructure per lakh population



*The blank values on the graph indicate data not available or data not applicable



24X7 MOBILITY

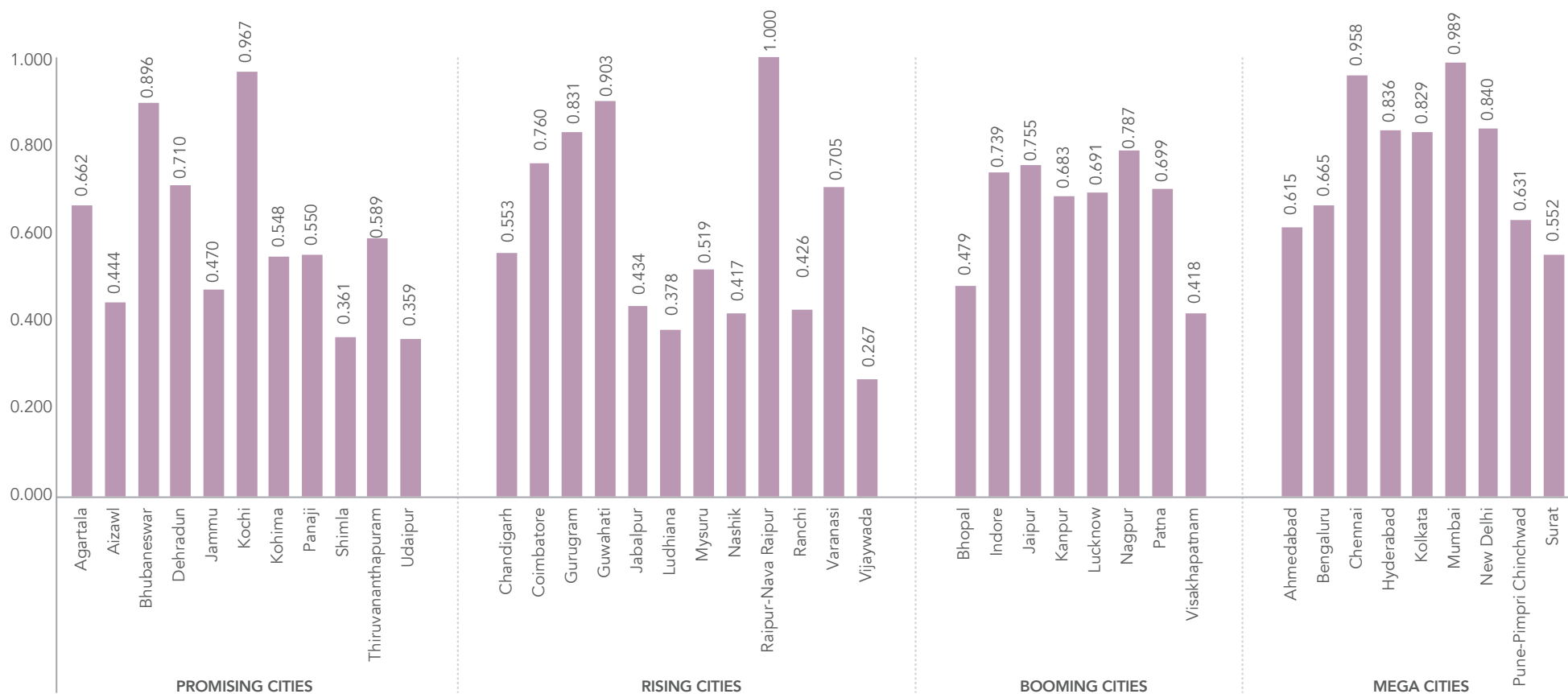
Commuter perception on ease of access to public transport at all times





ADOPTION OF PUBLIC TRANSPORT

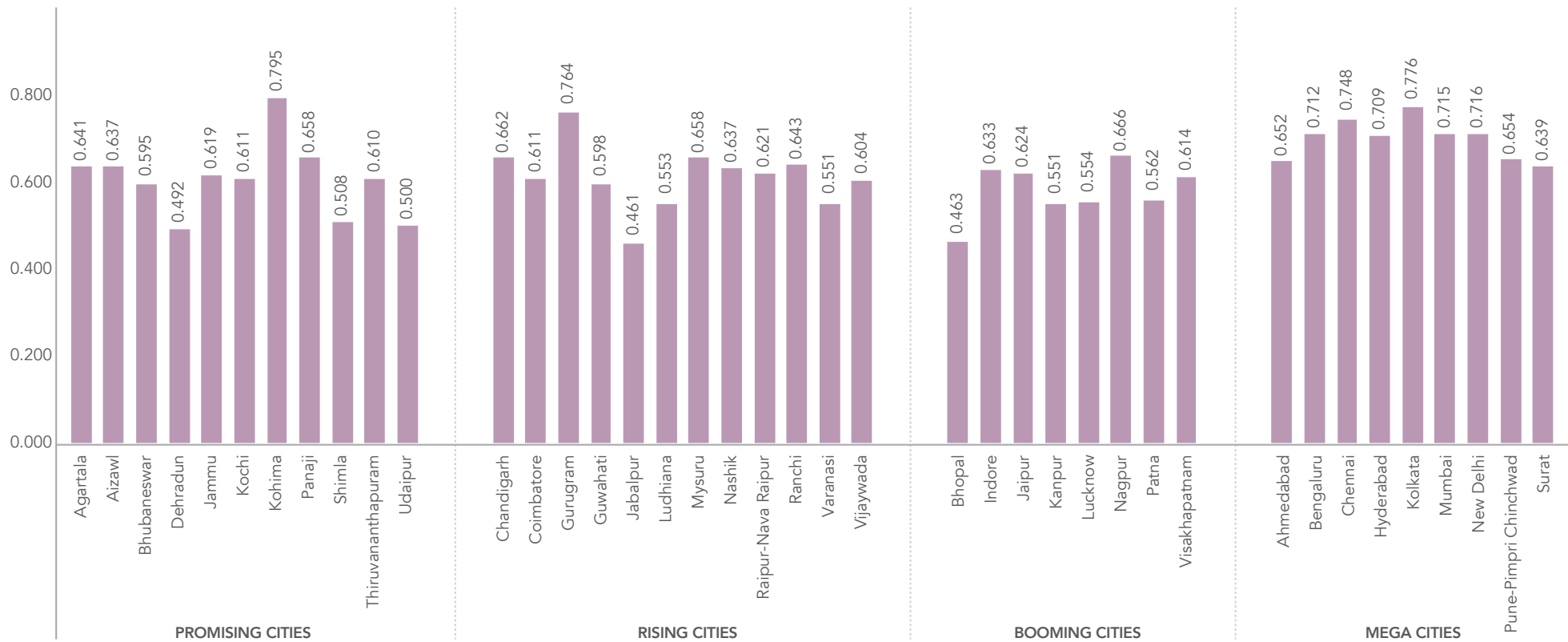
Share of commuters stating regular usage of public transport



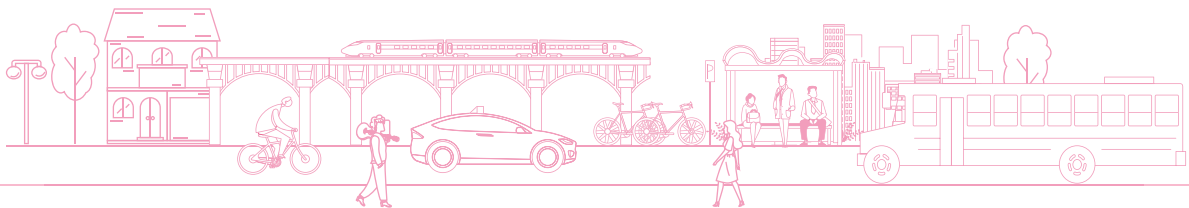


ADOPTION OF ACTIVE & SHARED MOBILITY

Stated usage of active and shared mobility







SEAMLESS MOBILITY

A robust mobility system needs seamless integration of public transport with walking and micro-mobility modes. The building blocks of multi-modal integration are physical infrastructure, information disbursement, fare integration across all modes and an institutional framework. This enables seamless connectivity across modes and ensures better commuter experience. The parameter measures commuter perception on parking, average access and wait time and mode choices for first-and last-mile connectivity. A robust intermediate public transport system which complements mass transit modes enhances adoption of shared mobility as demonstrated across cities in all four clusters. It also documents the status of the Unified Metropolitan Transport Authority. The focus is on physical and institutional integration alone.



HOW TO READ THE NUMBERS

PROMISING CITIES

Bhubaneswar has the shortest perceived access and wait time among its peers which is indicative of the extensive mass transit coverage with adequate transit stops at regular intervals in the city.

Thiruvananthapuram has the highest perceived average wait and access time of over 12 and 10 minutes respectively. However, Kerala State Road Transport Corporation has reorganised the intra-city public bus routes and begun circular routes with the aim to reduce the wait time to less than 10 minutes.

The formation and functioning of a Unified Metropolitan Transport Authority in **Kochi** and **Thiruvananthapuram** should act as an enabler. Incidentally, the only other two urban conglomerates to have a functioning Unified Metropolitan Transport Authority in the cluster are the 'temple cities' of **Jammu** and **Bhubaneswar**.

While most commuters walk to the nearest transit hub in **Jammu** given limited choices, commuters in **Dehradun** access these stops using intermediate public transport modes.

RISING CITIES

Majority of the citizens in **Nashik** either walk or cycle to access transit in the city, while intermediate public transport is the preferred mode to access transit hubs in **Raipur-Nava Raipur**.

Perceived average wait time to access public transport in **Coimbatore** and **Guwahati** is the shortest in this cluster, indicating high frequency of public transport.

The planned city of **Chandigarh** scores higher on perception of parking availability at major transit hubs for both bicycles and motor vehicles, compared to other cities in the cluster.

Mysuru scores the lowest on average access and wait time indicating an opportunity to improve coverage and frequency of buses in the city.

Guwahati and **Gurugram** are the only cities among the 'Rising Cities' to have a functional Unified Metropolitan Transport Authority.

BOOMING CITIES

Kanpur leads the way amongst 'Booming cities' in Seamless Mobility, while **Nagpur** has the lowest perceived access and wait time compared to other cities in the cluster.

Both **Nagpur** and **Jaipur** score high on perception of parking availability at major transit hubs for both bicycle and motor vehicles.

Except **Visakhapatnam**, all cities in the cluster either have a draft legislation for Unified Metropolitan Transport Authority or are in process of creating one.

Visakhapatnam and **Bhopal** have the highest perceived average access and waiting time for public transport in the cluster indicating an

opportunity to improve their first- and last-mile connectivity network.

MEGA CITIES

The 'maximum city', **Mumbai**, has the perceived shortest access and wait time in the cluster, and the Unified Mumbai Metropolitan Transport Authority will enable the city to coordinate better with different service providers, and prioritise investments in building the necessary infrastructure.

Surat and **Hyderabad** have the highest number of respondents who are satisfied with parking facilities for bicycles and motor vehicles at all major transit hubs respectively.

Commuters in **Chennai** on the other hand, feel parking facilities at the transit hubs are inadequate. Metropolitan Transport Corporation (Chennai) is addressing this by redeveloping terminus and depots to increase park and ride facility. Almost all metro stations in Chennai have a two-wheeler parking facility, while 19 out of the 26 stations currently operational have four-wheeler parking.

A functioning Unified Metropolitan Transport Authority is mandatory for cities with an operational or upcoming metro project, as per the Metro Rail Policy 2017, but cities like **Kolkata**, **Surat** and **Ahmedabad** are yet to propose the formation of an authority, despite an operational/ approved metro system while **New Delhi** is in the process of forming one¹¹.



ACTIVE FIRST - AND LAST-MILE CONNECTIVITY

Percentage of regular public transport users choosing to walk/cycle to access mass transit





INTERMEDIATE PUBLIC TRANSPORT FIRST- AND LAST-MILE CONNECTIVITY

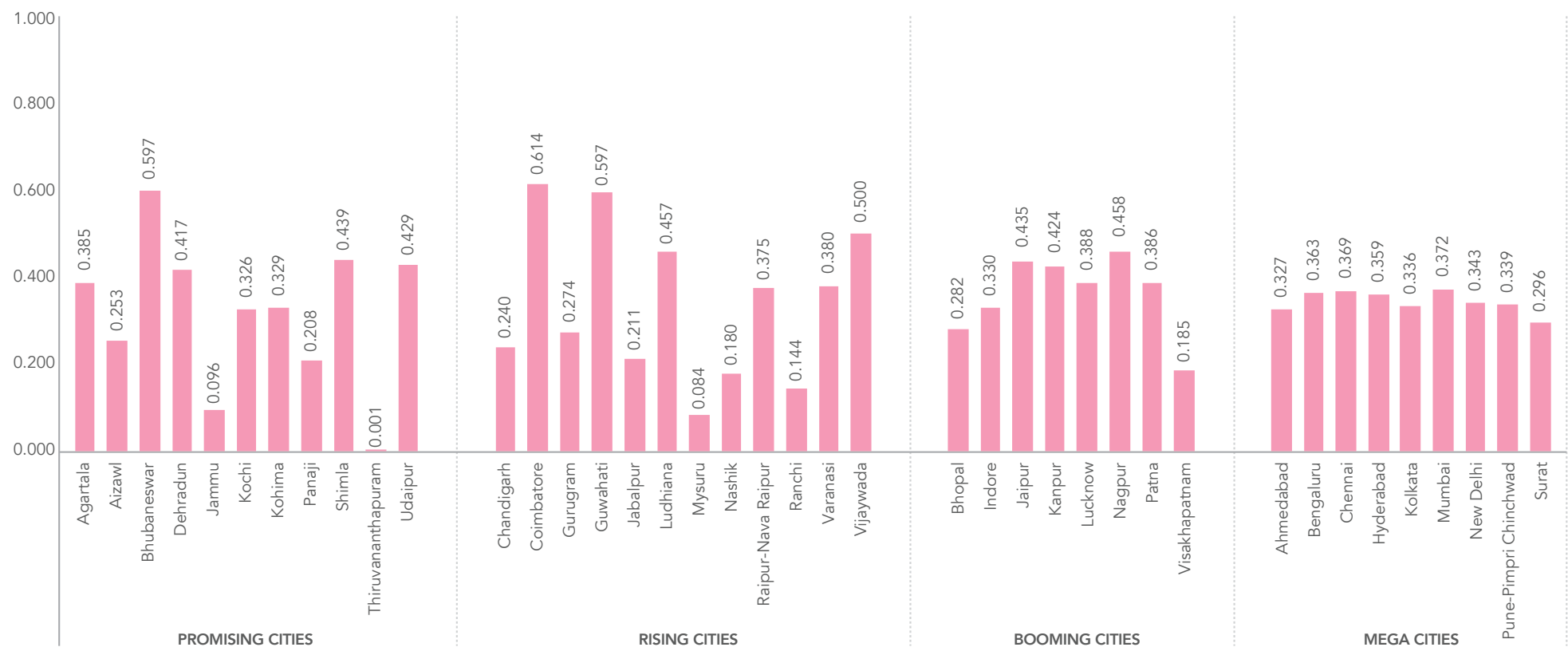
Percentage of regular public transport users choosing intermediate public transport to access mass transit





REASONABLE ACCESS TIME

Commuter response on the average time taken to reach a transit stop





REASONABLE WAIT TIME

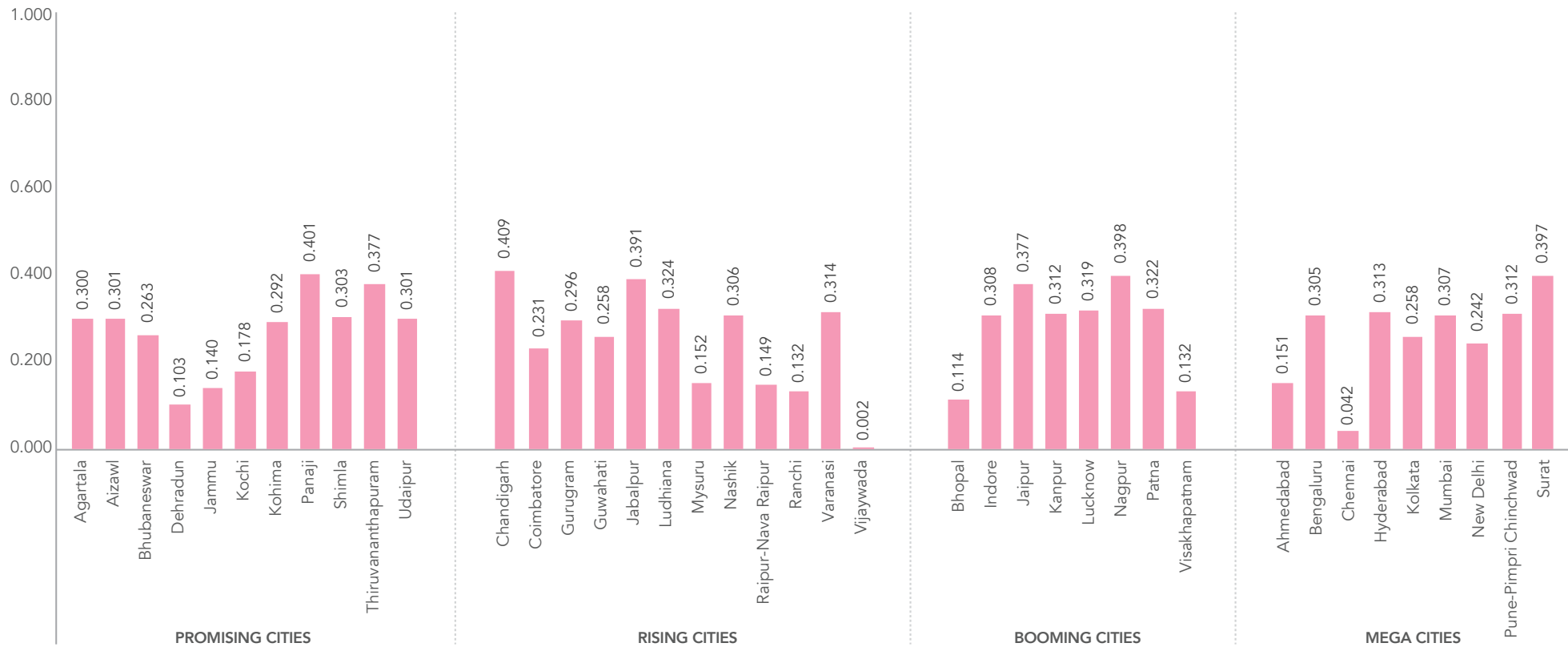
Commuter response on the average wait time for public transit





EASE OF PARKING

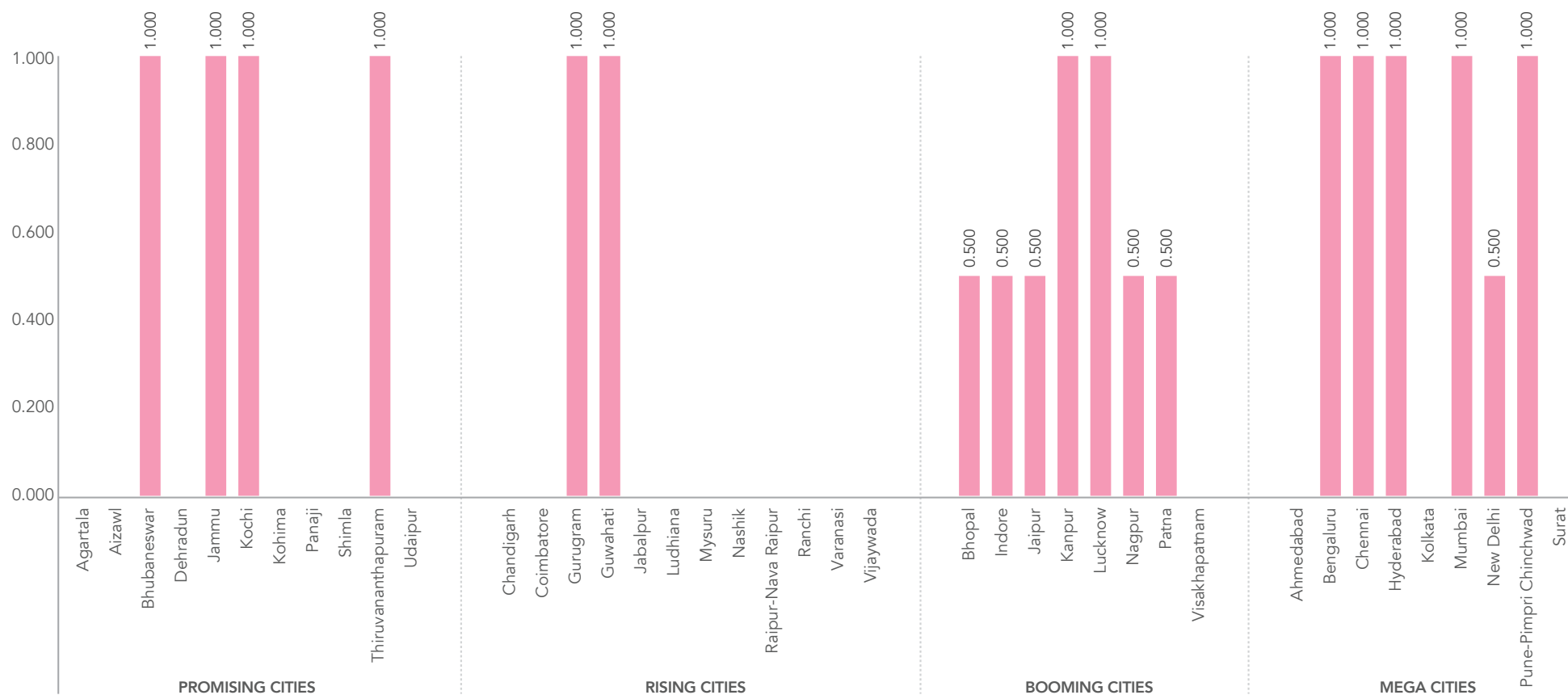
Adequate parking facility at transit stops for motorised vehicles and bicycles





PRESENCE OF UMTA

Presence of an Unified Metropolitan Transport Authority is crucial to ensure that all mobility modes work in synchronisation

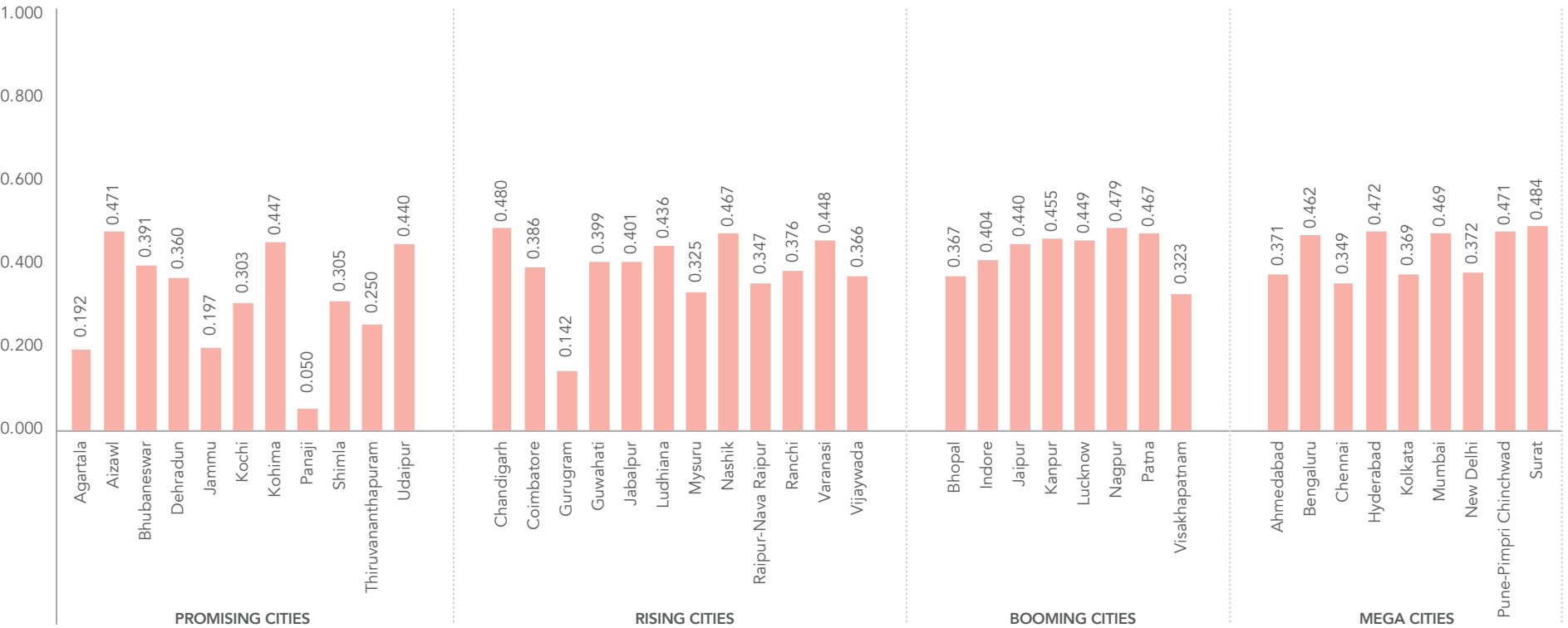


*The blank values on the graph indicate data not available or data not applicable



TOWARDS VISION ZERO

India has among the highest road fatalities in the world, making it imperative for civic authorities, citizen groups and society at large to work together towards ensuring zero road incidents and fatalities. The parameter aims to document some of the essential indicators necessary to reduce road accidents in the country. While speeding and reckless driving are the two major causes, bad road surface, no or limited illumination and the absence of proper lanes for pedestrian and non-motorised movement also lead to accidents. The parameter aims to capture a mix of commuter perception and road fatality numbers in a bid to move towards the ultimate goal of zero road accidents.



HOW TO READ THE NUMBERS

PROMISING CITIES

Kohima and **Aizawl** recorded the lowest number of road incidents (injuries and fatalities) in 2021, among their peers, thereby scoring high on the indicator of road incidents.

Panaji which has relatively high vehicle ownership has a higher intensity of recorded road accidents despite having well-lit footpaths.

Commuters in **Shimla** and **Agartala** agree that the cities have good pedestrian infrastructure, but road incidents per lakh population were higher than peers.

With over 40 km of bicycle lane, most cyclists feel **Bhubaneswar** has adequate cycling infrastructure. The Public Bicycle Sharing (PBS) system in Bhubaneswar was successfully launched with three operators in 2018 but is now facing operational challenges.

RISING CITIES

Chandigarh leads the 'Rising Cities' on the overall road safety parameter as it has well-lit footpaths and adequate cycling infrastructure throughout the city.

Nashik, which has the lowest number of road incidents per lakh in the cluster, has scored the second highest in the cluster.

While **Varanasi** scored better than its peers on pedestrian infrastructure and road quality, respondents

in **Guwahati** felt there was adequate cycling infrastructure, prompting safe use of active mobility in the city.

Gurugram has the highest road incidents per lakh population and high pedestrian deaths due to absence of crossing across highways. It is imperative to create grade separators for vulnerable road users in the city as the New Delhi - Jaipur highway splits the city into two.

The pedestrian and cycling infrastructure in **Vijayawada** was found to be inadequate as compared to its peers impacting the number of road crashes affecting the vulnerable road users.

BOOMING CITIES

The 'Orange capital' of India, **Nagpur**, leads in the overall road safety parameter and is perceived to have the most well-lit roads amongst the 'Booming Cities'.

Patna recorded lower road incidents compared to peers, with pedestrian infrastructure like adequate crossing and well-lit footpaths rated high by respondents. The city can improve road illumination, as per the survey.

Fewer respondents in **Bhopal** and **Visakhapatnam** agreed on adequacy of pedestrian and cycling infrastructure in the city. Visakhapatnam also witnessed the highest number of reported road incidents per lakh as per the National Crime Records Bureau 2021, among the 'Booming Cities'. The challenge can be addressed by improving pedestrian infrastructure and illumination, among others.

MEGA CITIES

While **Surat** scored the highest in the parameter across all clusters, **Mumbai** recorded the lowest number of road incidents per lakh population in 2021 across cities.

Delhi has the highest number of road fatalities among all urban centres, and has a tremendous opportunity to improve its pedestrian, cycling, and overall road safety infrastructure.

Although more cyclists agreed there was adequate cycling infrastructure in the city compared to its peers, **Chennai** recorded the second highest number of road fatalities among all urban centres in the country as per National Crime Records Bureau, 2021. The city has a Non-motorised Transport Policy focussing on building active mobility infrastructure.

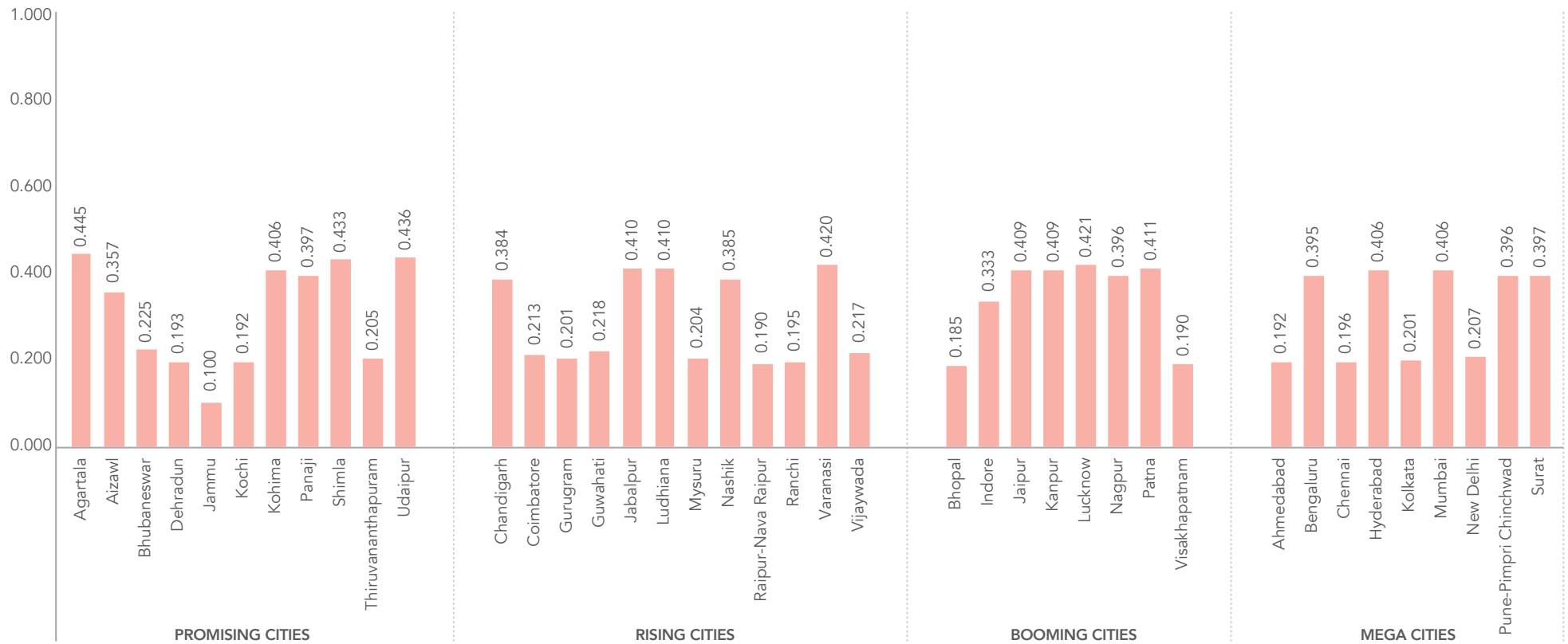
While more respondents in **Mumbai** and **Hyderabad** agreed that footpaths in the city are wide and in good condition, more cyclists in **Surat** agree there is adequate cycling infrastructure in the city compared to peers. Thus, cities with good active mobility infrastructure improves safety for all and also encourages better adoption of shared mobility.

Fewer commuters in **Ahmedabad**, **Kolkata**, and **Delhi** expressed satisfaction with the existing pedestrian and cycling infrastructure impacting the overall safety score.



EASE OF WALKING

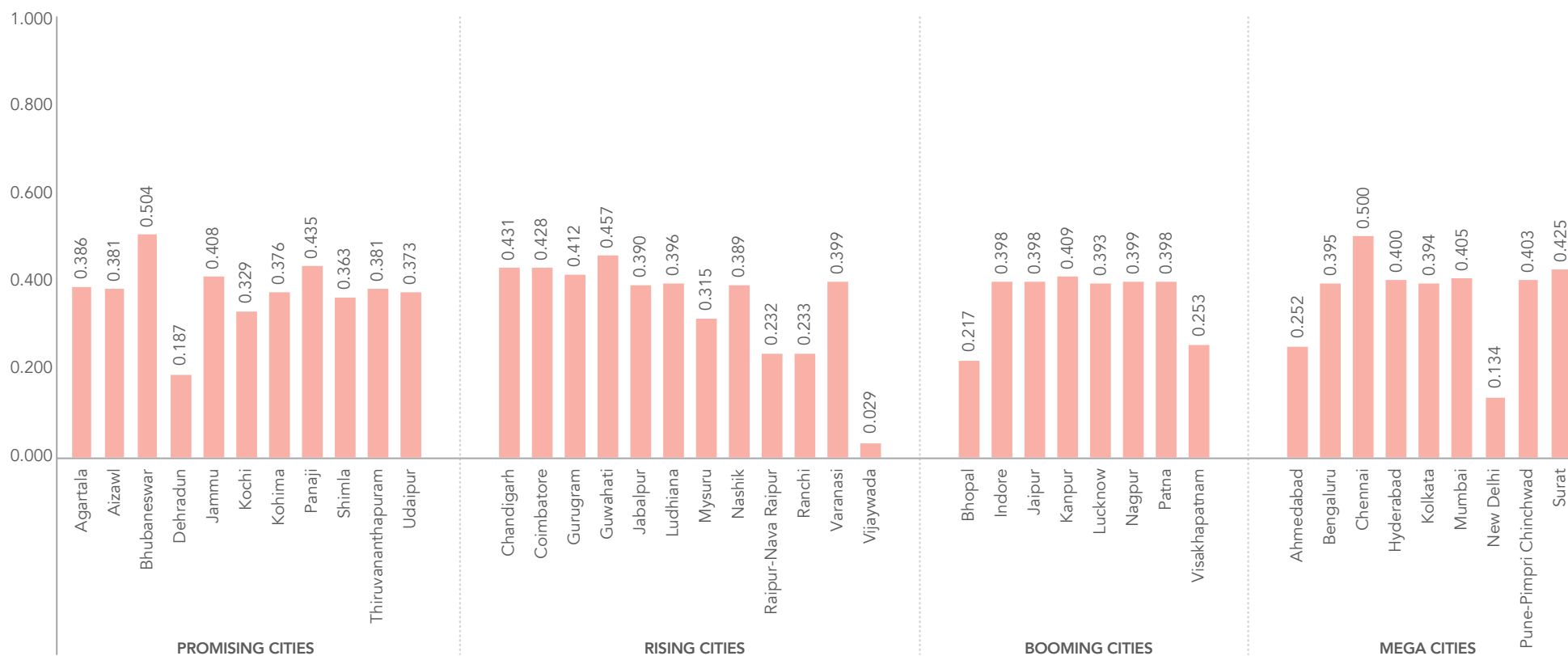
Perception on width and maintenance of footpaths





EASE OF CYCLING

Perception on presence of dedicated cycle tracks





EASE OF RIDING

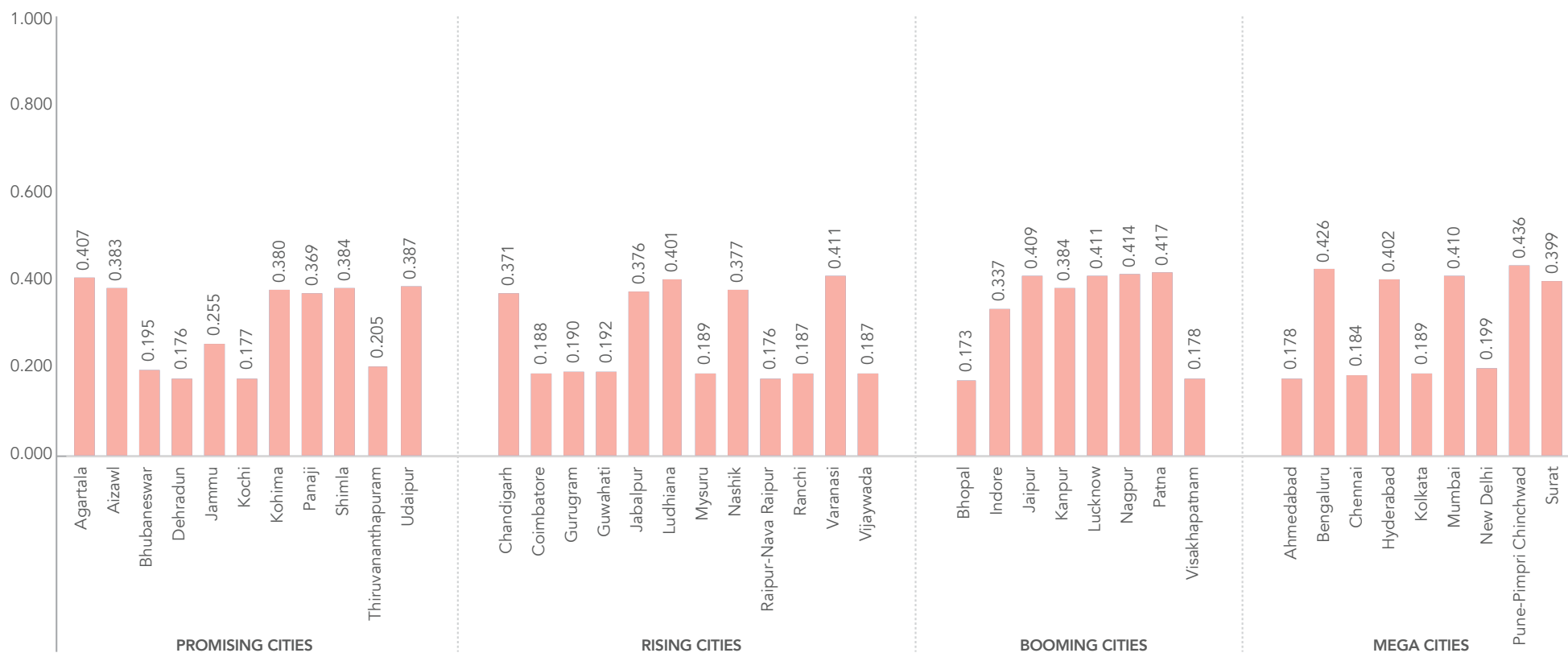
Perception on maintenance of roads

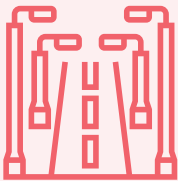




EASE OF CROSSING

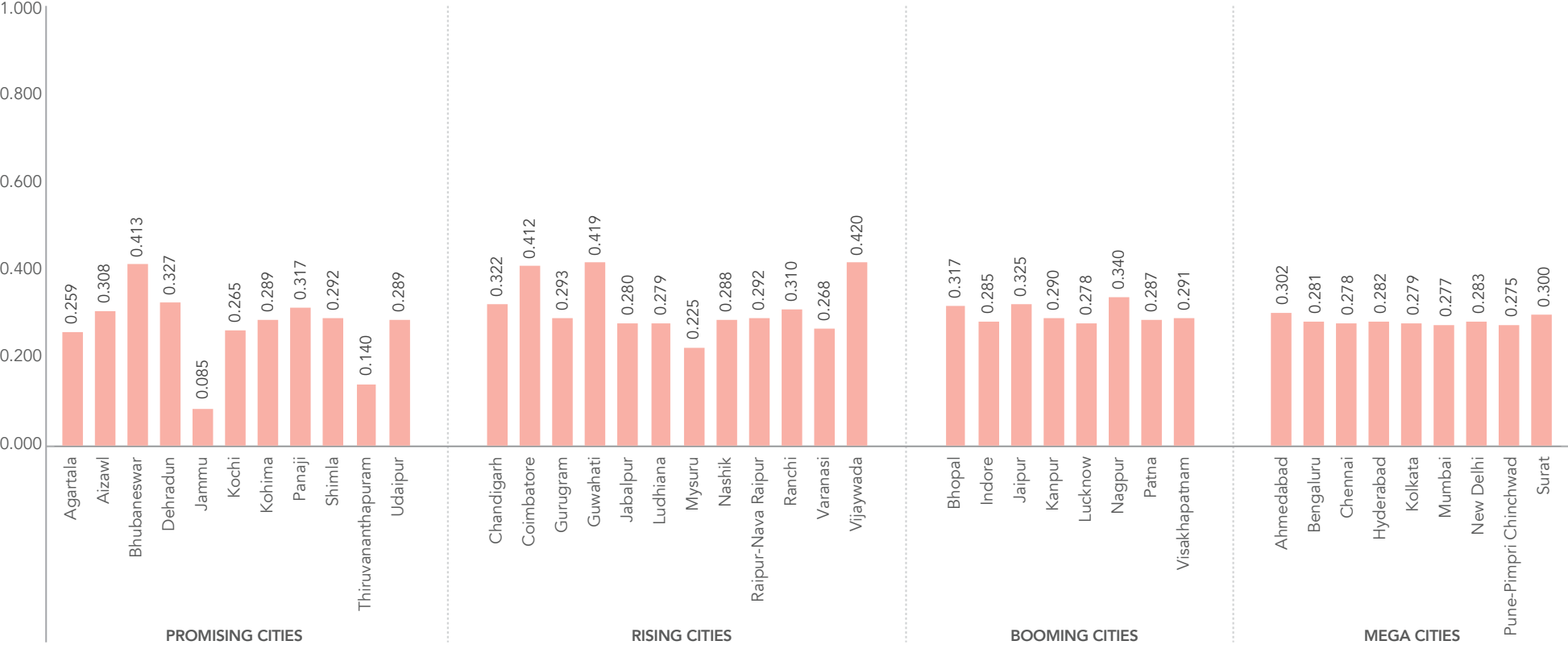
Perception on adequacy of foot over bridges/subways at major junctions

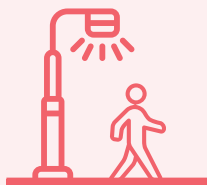




WELL-LIT ROADS

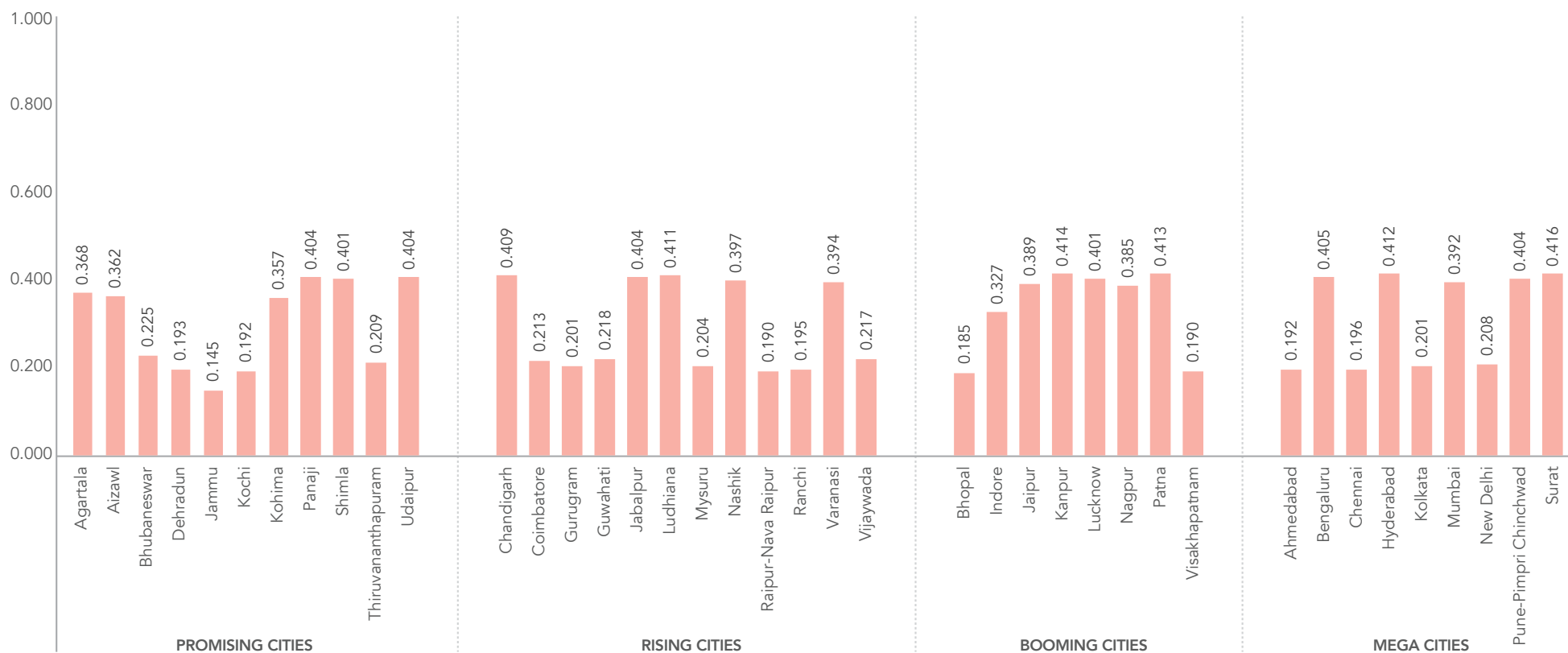
Perception on availability of well-lit roads





WELL-LIT FOOTPATHS

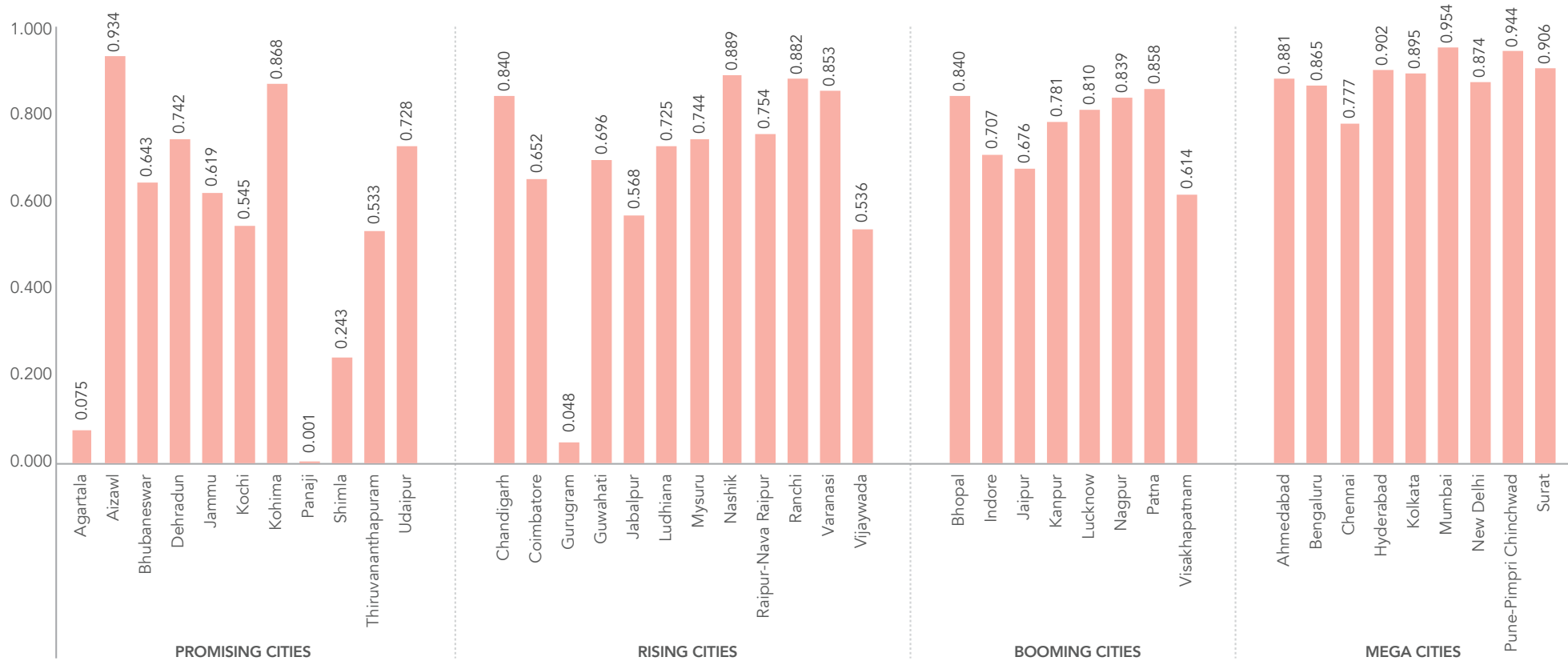
Perception on availability of well-lit footpaths





ROAD INCIDENTS

Derived from road fatalities, fatality rate of vulnerable road users and injuries per lakh population







MOBILITY FOR ALL

The parameter underscores the attributes of inclusive mobility systems. Mobility systems are the life-arteries of an economy. A system which meets the needs of diverse population groups empowers them to access various socio-economic opportunities. Often, the needs of different minority groups, such as women, trans/ non-binary, children, the elderly, persons with disabilities, et. al., have often been ignored. Lack of safe, accessible and inclusive mobility options often lead to curtailment of economic liberty and well being of disadvantaged groups. The parameter aims to gauge commuter perception on important attributes which often determine the life and mobility choices of these groups and their caregivers. The indicators under this parameter represent a holistic view of respondents cutting across gender, ability, age, and income.



HOW TO READ THE NUMBERS

PROMISING CITIES

While public transport in **Udaipur** and **Shimla** were perceived to be most accessible by persons with functional difficulties, commuting in **Bhubaneswar** was considered safest amongst the 'Promising Cities', hence all the three cities scored highest in this parameter.

Usage of public transport by women and trans/non-binary is the highest in **Thiruvananthapuram** and **Jammu**. However, respondents with functional difficulties in both the cities feel public transport could be made more accessible.

Jammu scored the lowest on safety amongst its peers as few patrons find public transport safe from gender-related and petty crimes.

RISING CITIES

Coimbatore and **Ludhiana** scored the highest in

this parameter amongst the 'Rising Cities'. While public transport in Ludhiana is perceived to be most accessible among its peers, resulting in the highest patronage from women and Trans/ Non-Binary amongst all cities.

Most commuters agree public transport is safe in the planned city of **Chandigarh** and the cultural capital of Karnataka, **Mysuru**. However, respondents with functional difficulties in both these cities and **Vijayawada** feel public transport could be made more accessible.

BOOMING CITIES

Kanpur leads the 'Mobility for All' parameter amongst the 'Booming Cities', as mobility is perceived to be safest in the commercial capital of Uttar Pradesh amongst all cities.

Lucknow, the city of Nawabs, scores the second highest in this parameter as most people with functional difficulties find public transport to be most accessible.

Though public transport in **Visakhapatnam** has the highest patronage from women and Trans/ Non-Binary community in this cluster, most commuters with functional difficulties find it inaccessible, impacting its overall score in this parameter.

MEGA CITIES

While **Pune** has the highest cumulative score on the "Mobility for All" parameter, most respondents with functional difficulties have agreed public transport is most accessible across all cities.

The cultural capital of Maharashtra is also the safest and shares the distinction with **Surat** on having the highest patronage of women and trans/non-binary using public transport regularly amongst the 'Mega Cities'.

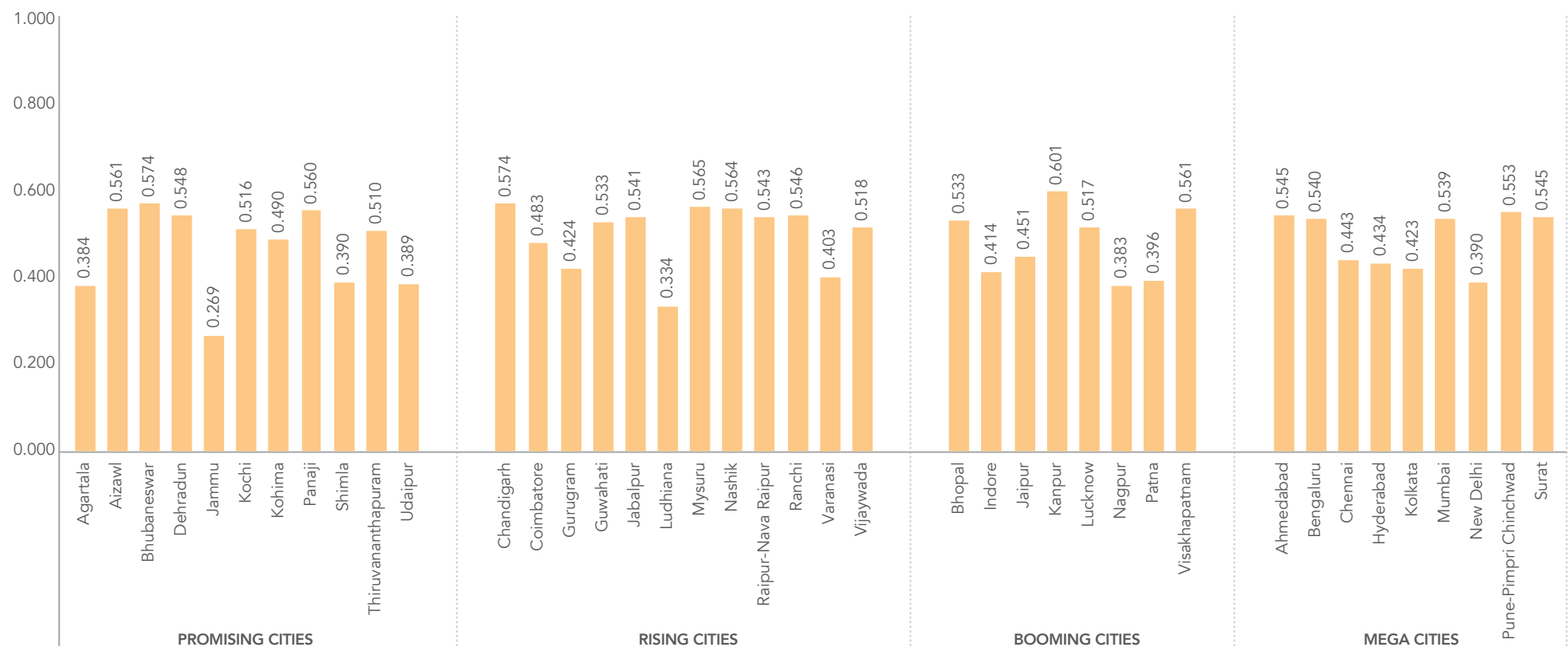
Kolkata and **Chennai** score the lowest in this parameter amongst peers. Most persons with functional difficulties in the City of Joy have perceived public transport to be inaccessible.





SAFE MOBILITY

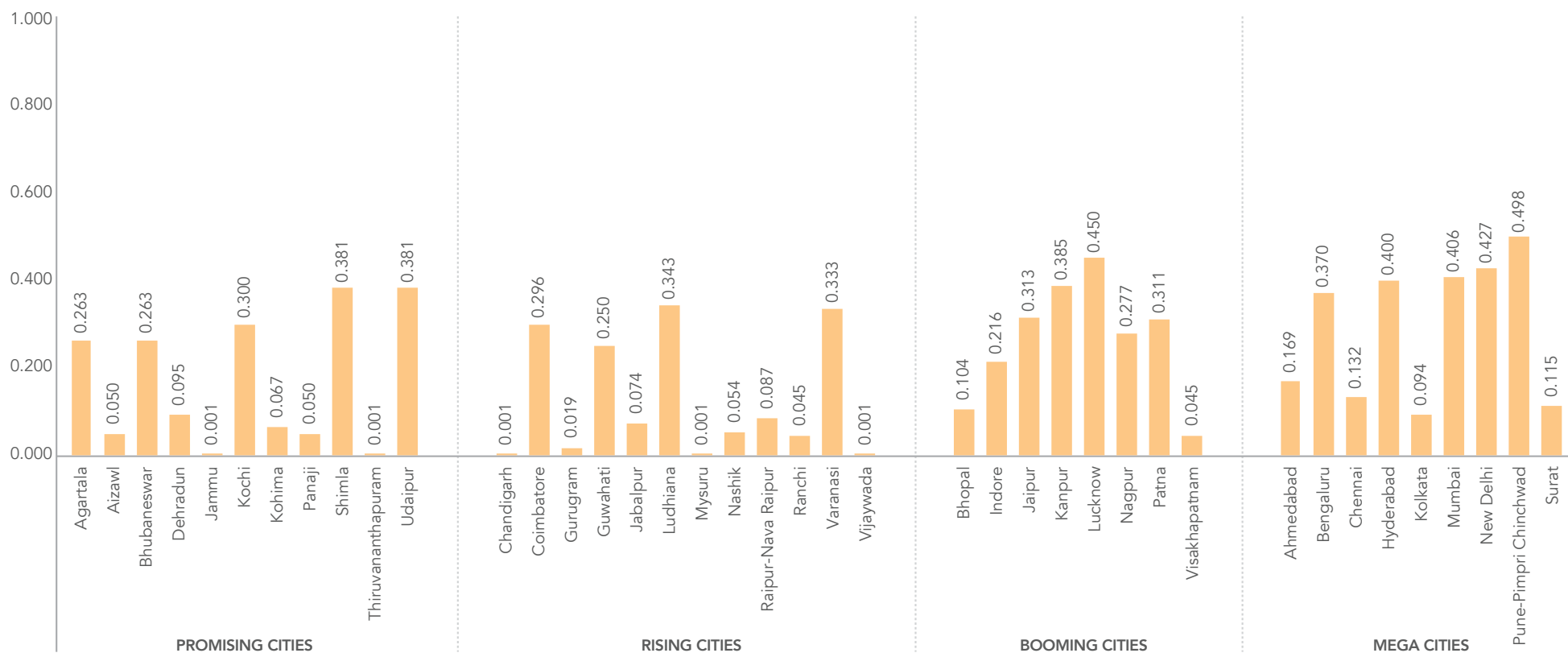
Citizen perception about safety from gender and petty crime while commuting

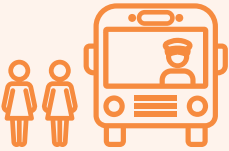




ACCESSIBLE MOBILITY

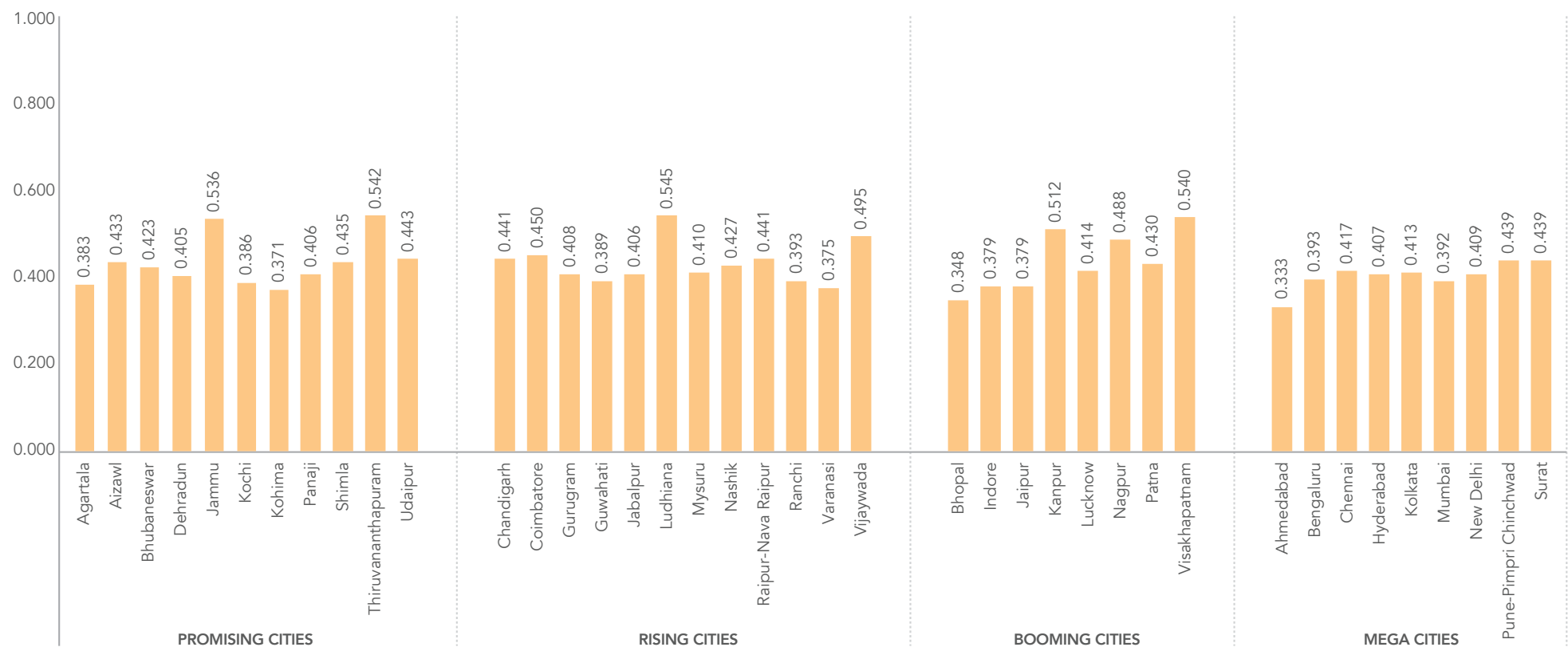
Perception of people with functional limitations on accessibility of public transport





GENDER INCLUSIVITY

Percentage of women and trans/ non-binary community using public transport





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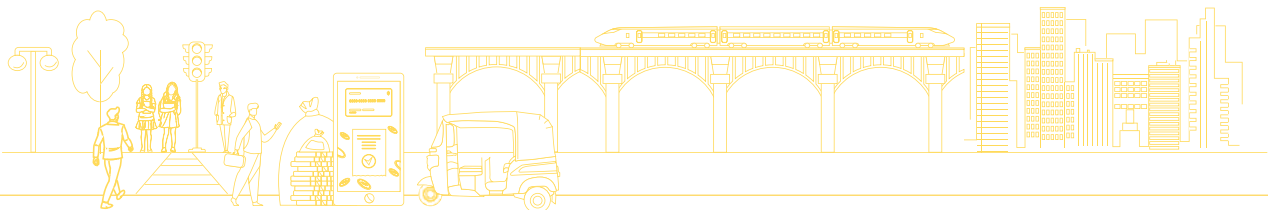


निर्गमन
Exit

लिफ्ट
Lift

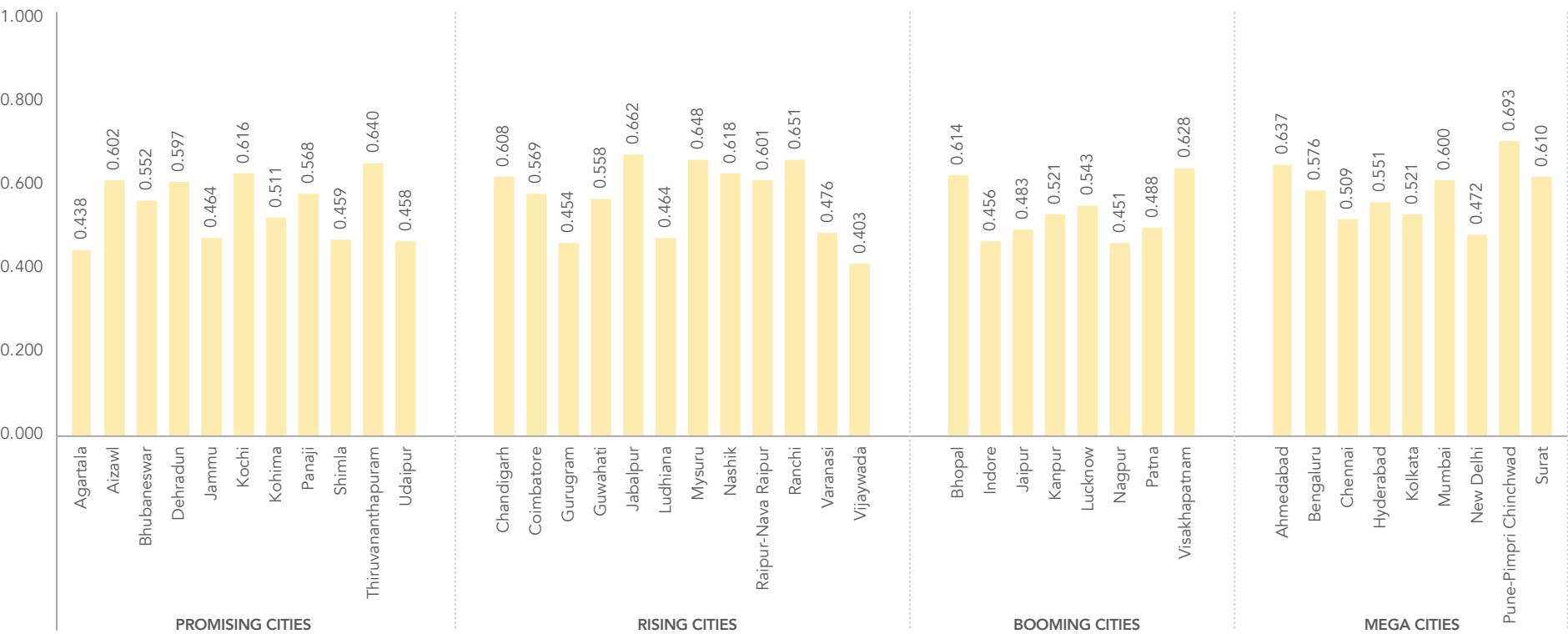


आपातकालीन नल
Emergency Exit



AFFORDABLE MOBILITY

A robust mobility system has to be affordable for it to serve the aspirations of all commuters. An extensive public transport network can be left under-utilised if it is not affordable for a large section of society. This parameter aims to measure the proportion of household income spent on travel by respondents with monthly household income of up to INR 30,000. At the same time, their perception towards affordability of public transport between any two points in the city is indicative of their willingness and ability to incur the same. A large number of cities scoring high in this parameter have bus-based public transport systems, which costs lower to procure and operate as compared to other mass transit systems.



HOW TO READ THE NUMBERS

PROMISING CITIES

The southern cities of **Thiruvananthapuram** and **Kochi** rank as the most affordable cities in this cluster. An operational metro in Kochi, which connects different parts of the city, adds to the affordability factor. The Kerala State Road Transport Corporation has introduced the city circle bus in Thiruvananthapuram which has an option of an INR 50 day pass¹², allowing for unlimited intra-city trips on state-run buses within a 24-hour period.

In addition to Kochi, commuters in **Dehradun** and **Aizawl** with a monthly household income of up to INR 30,000, spend a lower proportion of income to commute.

Commuters in **Bhubaneswar** with a monthly household income of up to INR 30,000 spend on an average almost 26 percent of their income towards commuting - the highest across all cities. Despite this, over 40 percent of these commuters found public transport affordable between any two points in the city.

RISING CITIES

Jabalpur and **Ranchi** offer the most affordable commute in this cluster. Over 45 percent of public transport users with a household income of up to INR 30,000 per month in both the cities, agree that transit is affordable across any two points in the city. In both these cities commuters spend about 7 percent of their household income on transportation.

While commuters in **Coimbatore** and **Guwahati**, with a household income of up to INR 30,000 per month, spend almost 25 percent of their income on transport, yet over 41 percent agree public transport is affordable between any two points in the city.

BOOMING CITIES

Visakhapatnam and **Bhopal** have the most affordable mobility solution in this cluster. While over 41 percent of the public transport users with a household income of up to INR 30,000 per month agree public transport is affordable between any two points in the cities, their expenditure on commute is only about 8 percent of their monthly household income.

Commuters in the coastal city of **Visakhapatnam** perceive transit to be more affordable as compared to **Vijayawada**, despite public transport tariff being the

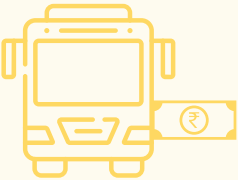
same in both cities. A possible explanation for it could be that average commute distance in Visakhapatnam is longer, negating the impact of a higher minimum fare.

Nagpur and **Indore** score lowest on affordable mobility in this cluster as less than 25 percent public transport users agree transit is affordable between any two points in the city.

MEGA CITIES

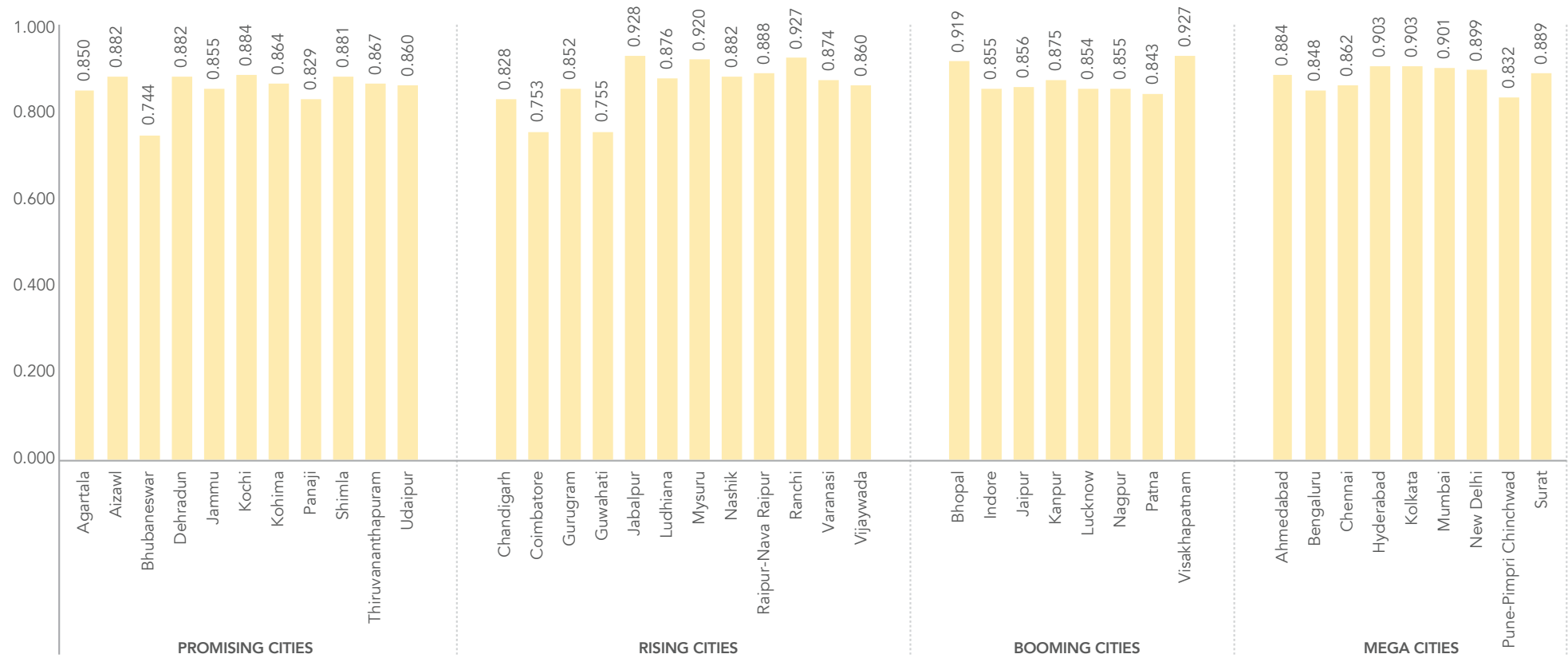
The twin cities of **Pune-Pimpri Chinchwad** are perceived to have the most affordable mobility system across all clusters, with 58 percent of the respondents agreeing that public transport is affordable. However, the respondents with household income of up to INR 30,000 per month spend almost 17 percent on commuting which is highest across all 'Mega Cities'.

Although respondents in **New Delhi** with household income of up to INR 30,000 a month spend on an average a little over 10 percent of their monthly income on commute, less than 25 percent public transport users agree public transport is affordable between any two points in the city. Similarly, in **Kolkata** respondents with household income of up to INR 30,000 a month spend 9.7 percent on transport, but only 30 percent agree that public transport is affordable between any two points in the city.



MOBILITY SPEND

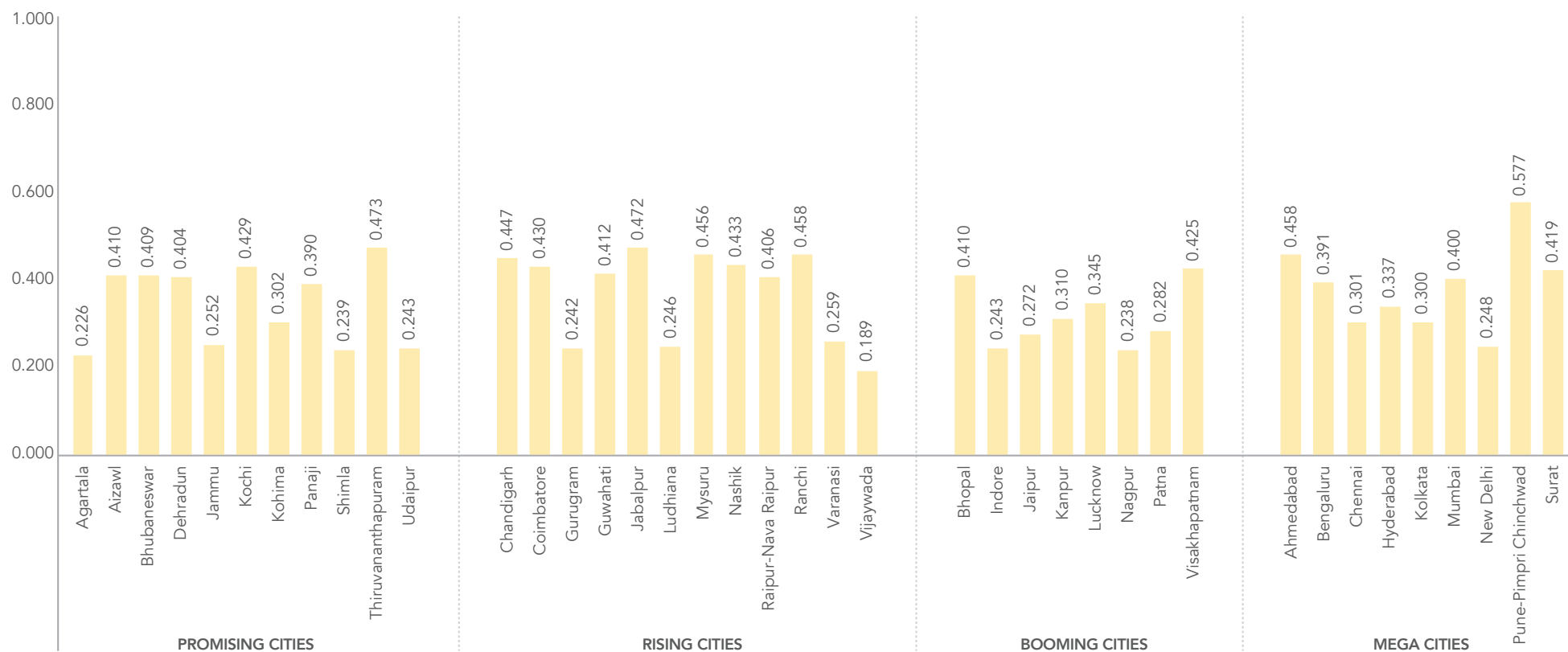
Percentage of total household income spent on individual commute

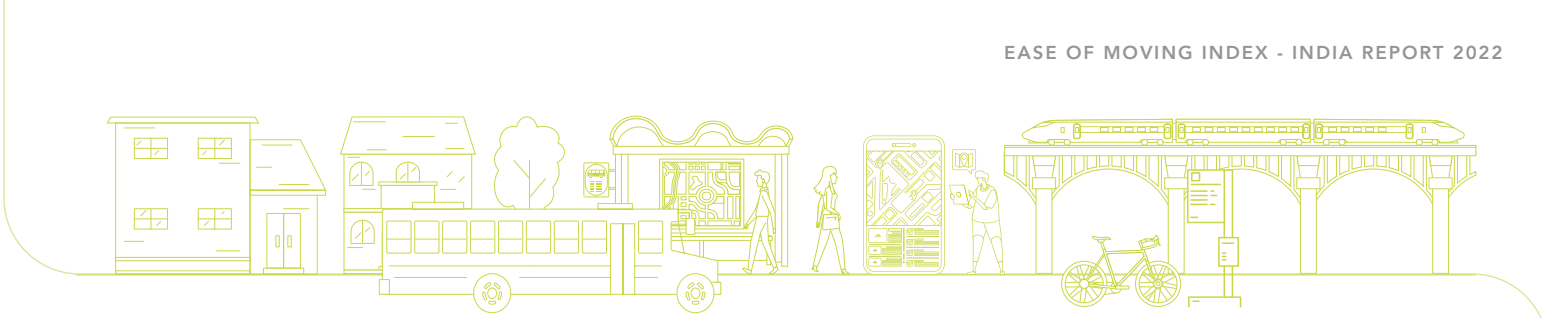




ECONOMICAL TRANSIT

Percentage of respondents agreeing public transport is affordable between any 2 points





EFFICIENT AND RELIABLE MOBILITY

The purpose of a mobility system, at its core, is to enable movement of people and goods safely from one place to another, in the shortest possible time. Time spent travelling has an opportunity cost which could otherwise be used to generate value by engaging in productive activities. This parameter aims to capture the efficiency of a city’s mobility infrastructure measuring access to public transport, perception on access to relevant information, policy and reliability of infrastructure to commute. For an individual, several factors including the time spent on travelling influences decisions around when to travel and how to travel (mode choice). As sensitivity towards climate issues increases, efficiency and reliability of shared mobility options will encourage modal shift.



HOW TO READ THE NUMBERS

PROMISING CITIES

Bhubaneswar scores the highest amongst 'Promising Cities' on efficient and reliable mobility. Over 41 percent respondents in the 'temple city' agree that the roads are adequately wide and therefore have less traffic with over 78 percent respondents commuting less than 30 minutes to reach their place of work. Almost 26 percent of public transport users can access the nearest transit stop within ten minutes by walk or cycle. Capital Region Urban Transport, Bhubaneswar's public bus transport operator, has made strides in enabling access to necessary information through multiple mediums as over 64 percent commuters agree information about public transport is easily available.

Jammu scores the lowest in efficient and reliable mobility despite over 76 percent respondents being able to access their workplace within 30 minutes. The reason could be attributed to narrow roads and congestion as only 13 percent agree that they are adequately wide.

Seventy percent of commuters using public transport in **Dehradun**, access the nearest transit stop within 10 minutes through intermediate public transport modes, which is the highest across all cities.

In **Panaji**, nearly 70 percent of the respondents agree that necessary information pertaining to fare, schedule etc. on public transport is easily available.

RISING CITIES

Guwahati scores the highest amongst 'Rising Cities' on efficient and reliable mobility. Over 78 percent of the respondents who regularly travel to work reach their workplace within 30 minutes owing to adequately wide roads as perceived by all respondents. Similarly, in **Coimbatore** over 41 percent respondents agree that the road is adequately wide and over 77 percent respondents take less than 30 minutes to reach their workplace. In addition, over 26 percent public transport users can access the nearest transit stop by walking or cycling within 10 minutes, the highest amongst all cities in this cluster.

Although more than 72 percent (highest in the cluster) of public transport users in **Mysuru** agree that necessary information such as fare and schedule are easily available, accessing the nearest transit stop within 10 minutes remains a challenge. Hence a fewer number of respondents manage to reach their workplace within 30 minutes. Comparatively, quick access by active modes to nearest transit stops is a challenge in the twin cities of **Raipur-Nava Raipur**. However, over 66 percent are able to access transit stops within 10 minutes using shared mobility modes such as intermediate public transport. Consequently, more than 64 percent of respondents are able to reach their workplace within 30 minutes.

BOOMING CITIES

Nagpur scores the highest amongst all cities on efficient and reliable mobility, with over 70 percent

respondents being able to access their workplace within 30 minutes. Almost 40 percent respondents think the roads in the city are adequately wide and over 32 percent public transport users can access the nearest transit stop within 10 minutes by walking or cycling. Similarly, the pink city of **Jaipur**, with wide roads and over 65 percent respondents accessing work trips within 30 minutes, scores the second highest on providing efficient and reliable mobility amongst the 'Booming Cities'.

Although over 66 percent of public transport users in both **Bhopal** and **Visakhapatnam** agree that information pertaining to public transport is easily available, barely 18 percent commuters can access the nearest transit stops within 10 minutes by walk or cycle.

MEGA CITIES

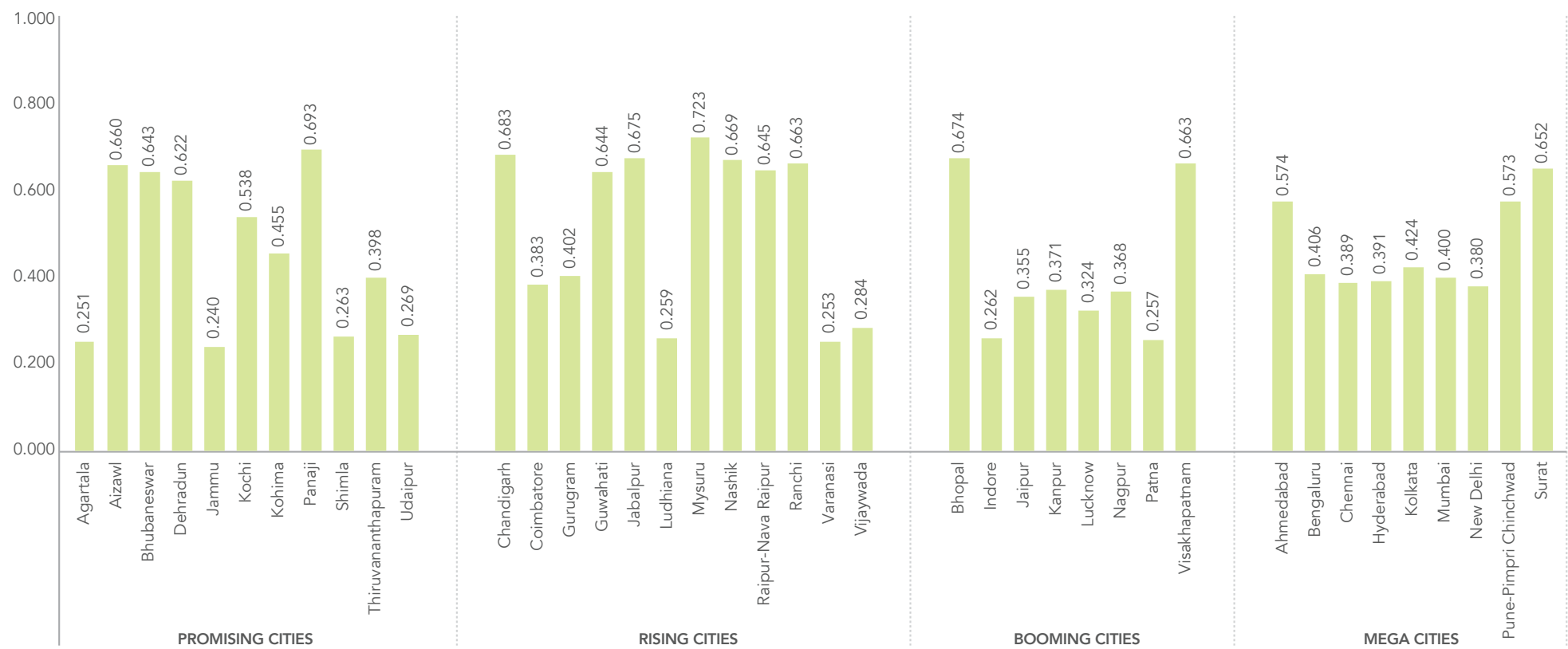
Among the 'Mega Cities', **Chennai** scores marginally higher on efficient and reliable mobility. The adoption of the draft parking policy is expected to further reduce congestion on roads and will thereby increase its score in this parameter.

Though **Surat** scores the lowest amongst 'Mega Cities', over 65 percent public transport users agree there is easy availability of necessary information on public transport. Both **Surat** and **Ahmedabad** are the only cities in the cluster where over 61 percent of respondents can access their workplace within 30 minutes owing to the adequately wide roads. However, less than 16 percent can access the nearest transit stop by walk or cycle in both the cities.



EASE OF INFORMATION

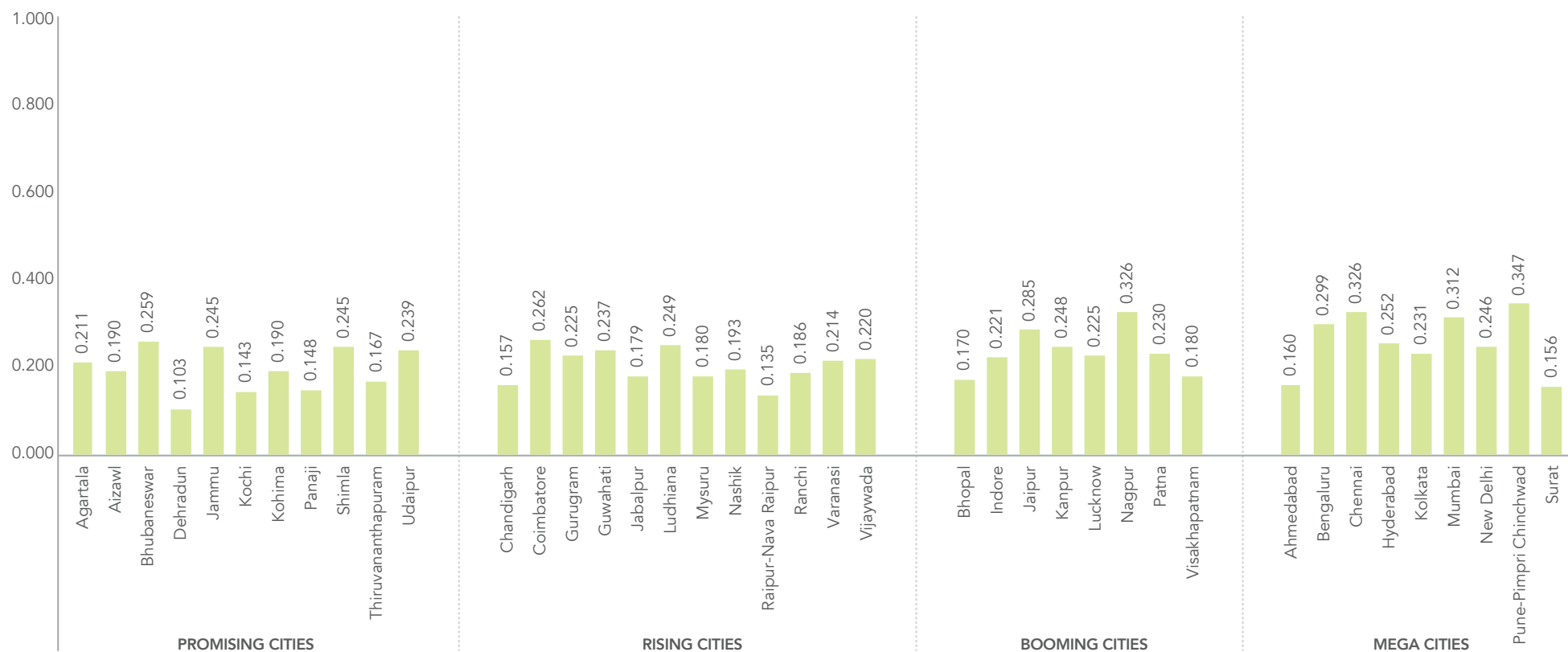
Easy access to accurate information of public transport and fare





EASE OF ACCESS (ACTIVE MOBILITY)

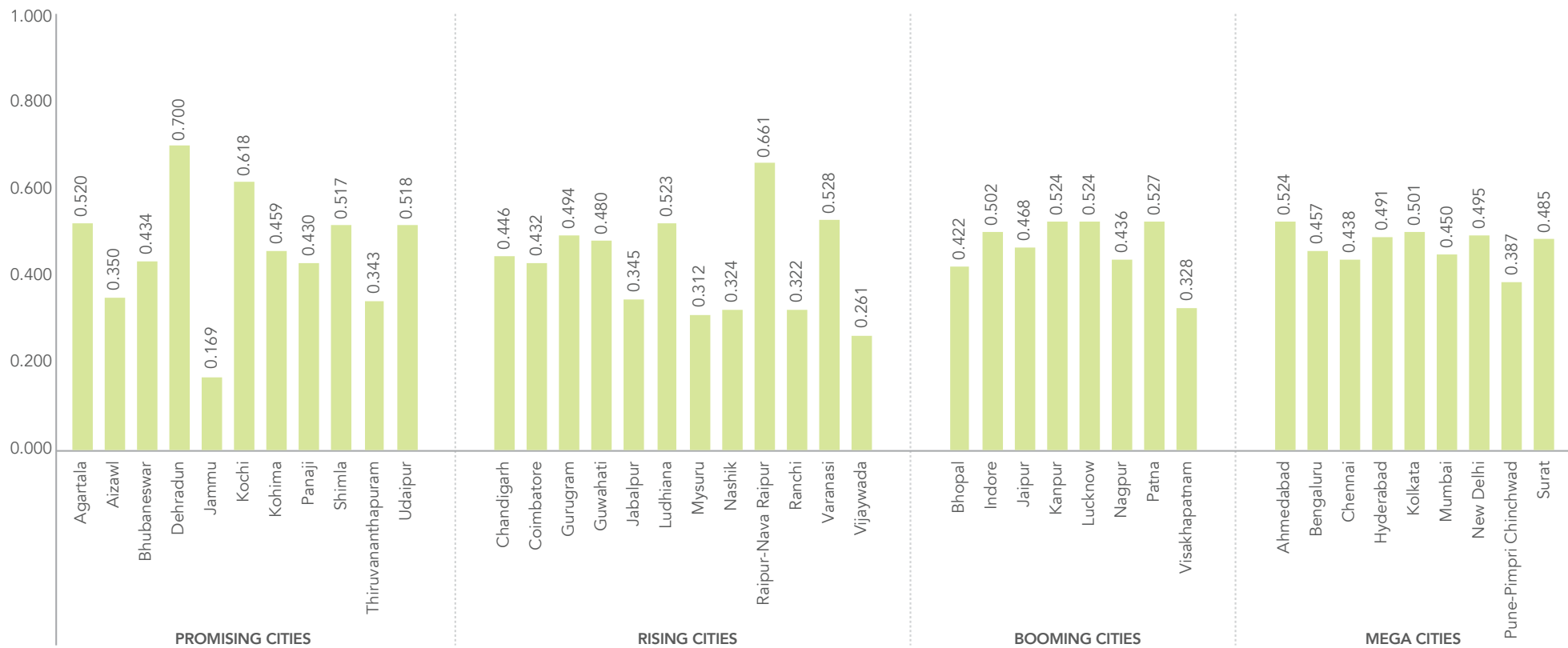
Percentage of respondents reaching transit stop in less than 10 minutes by walking/cycling





EASE OF ACCESS (SHARED MOBILITY)

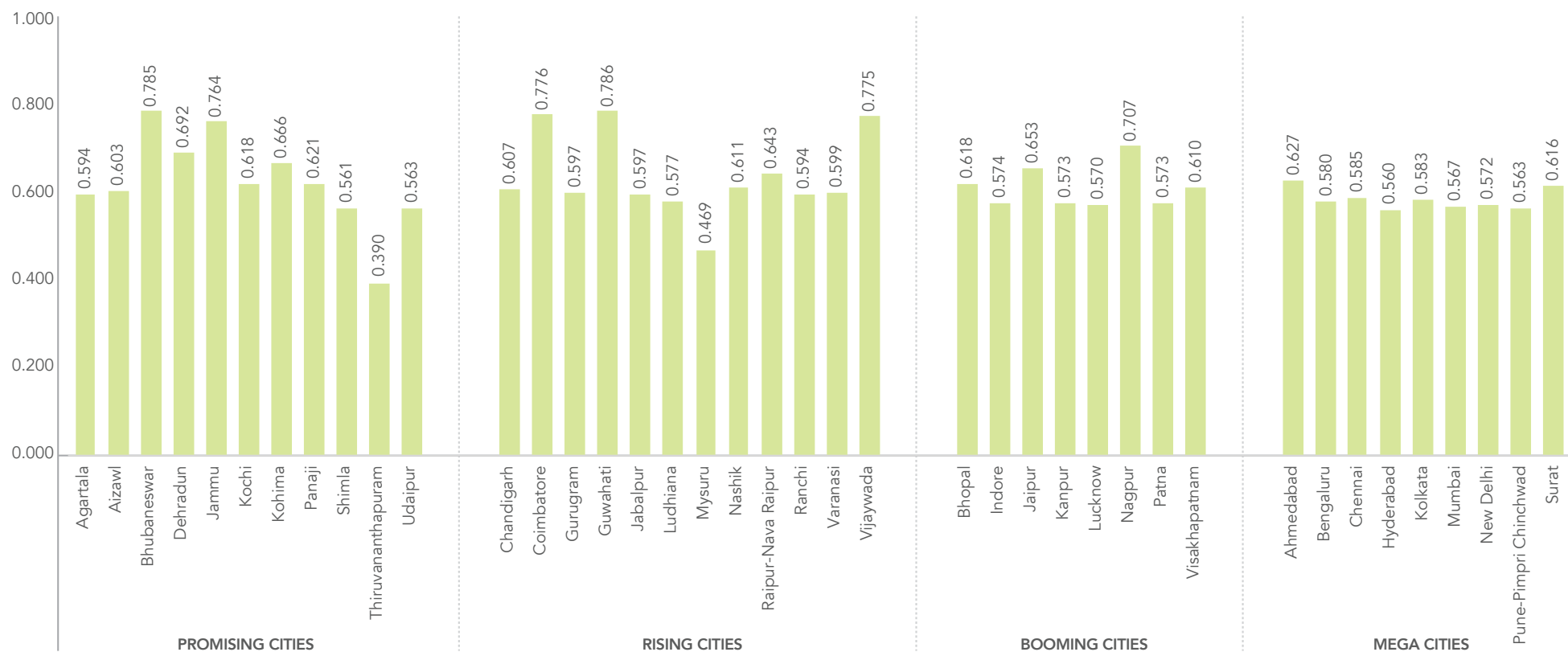
Percentage of respondents reaching transit stop in less than 10 minutes using shared mobility modes

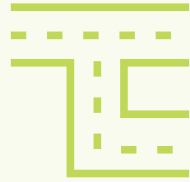




REASONABLE TRAVEL TIME

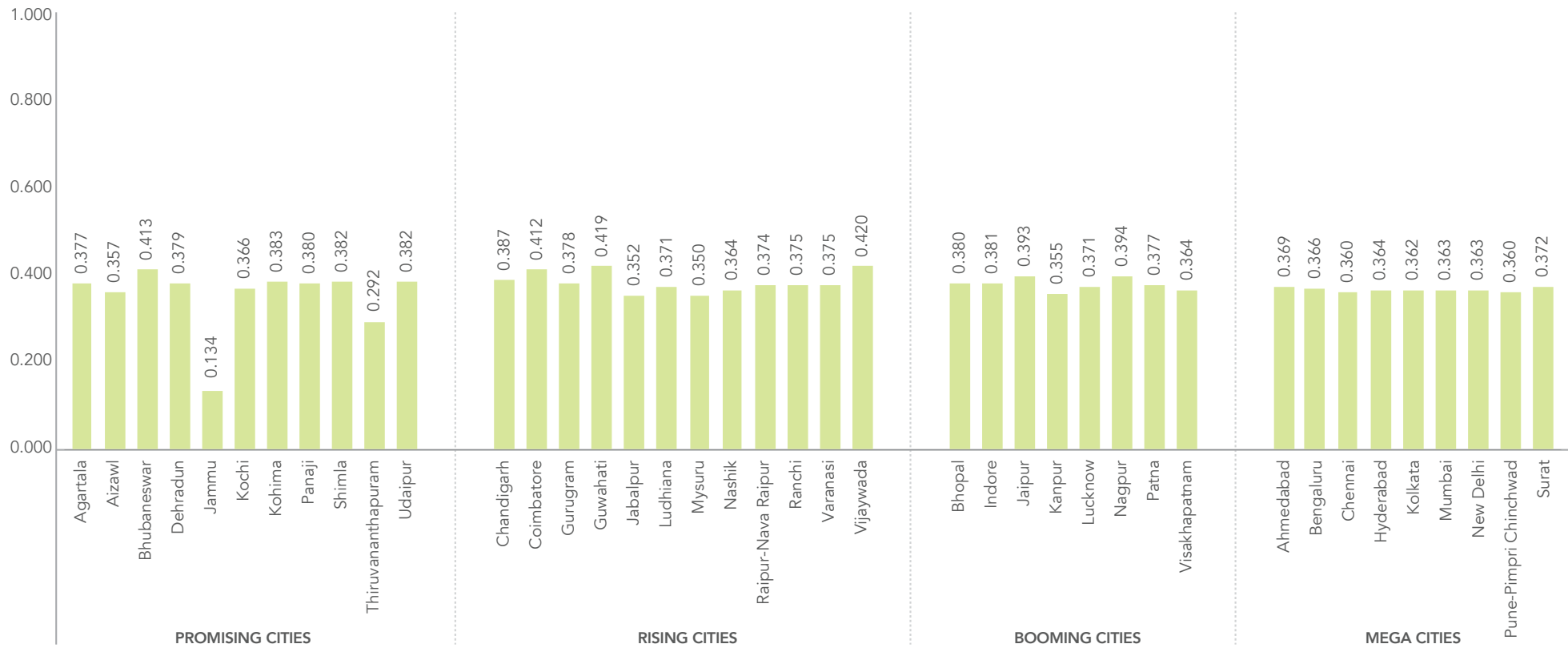
Percentage of respondents reaching work place in less than 30 minutes





ROAD WIDTH

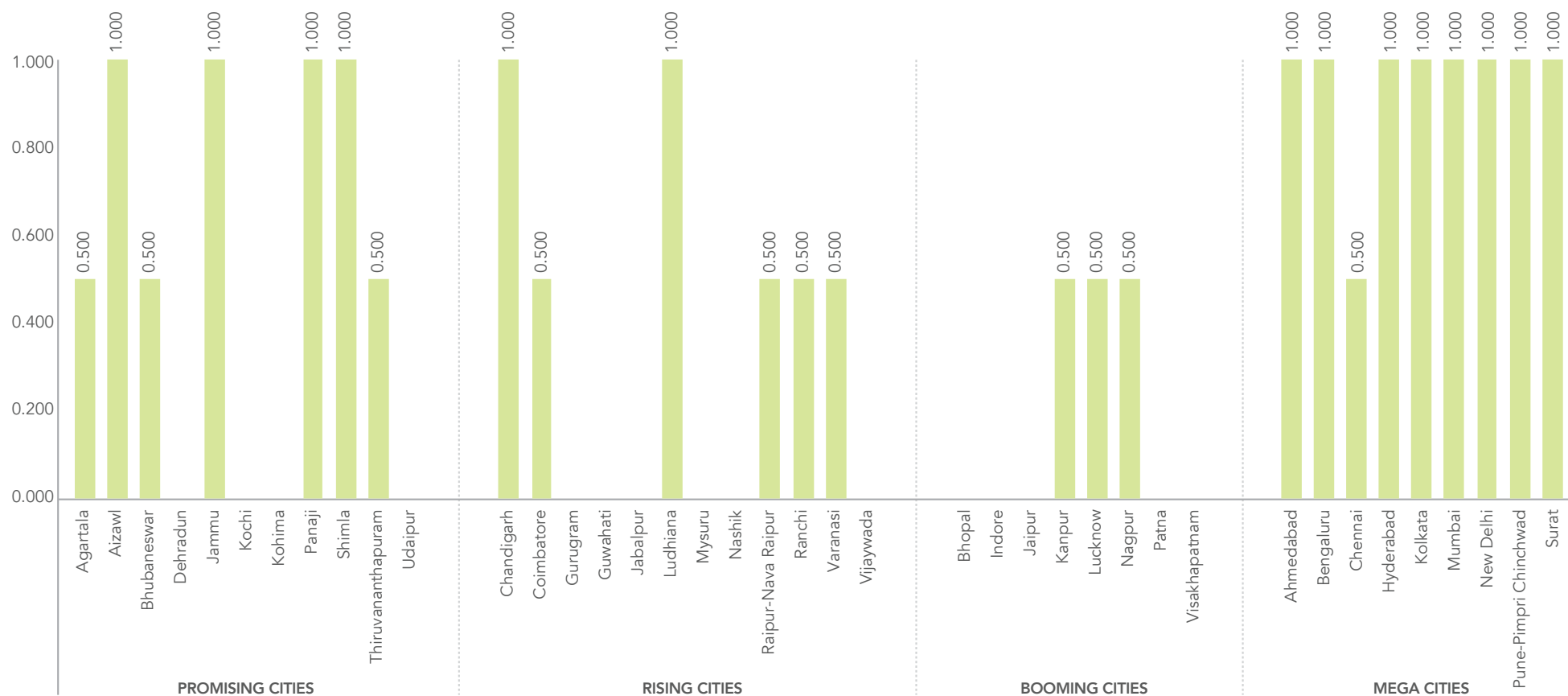
Percentage of respondents agreeing roads are adequately wide





EASE OF PARKING

Presence of a parking policy and public parking inventory

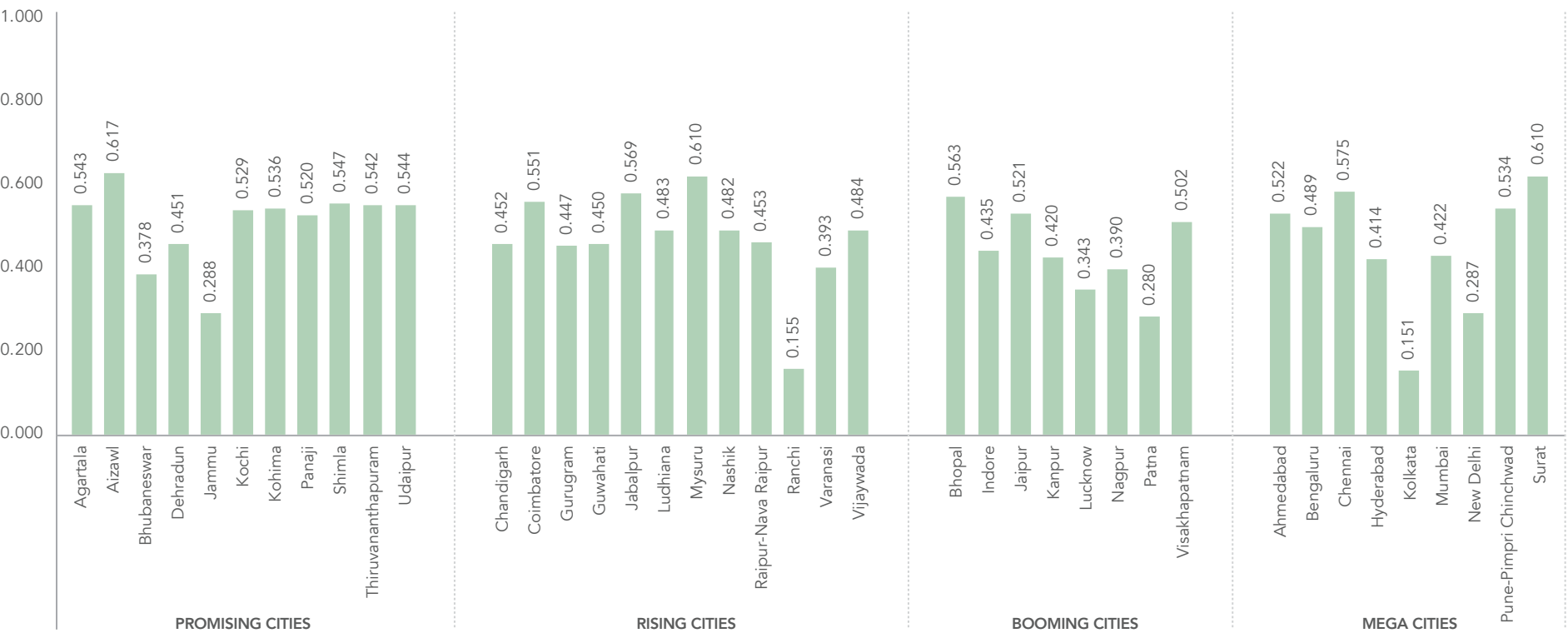


*The blank values on the graph indicate data not available or data not applicable



CLEAN MOBILITY

Evolving demographics and rapid urbanisation necessitate an urgent redesign of cities. With the impending climate emergency, the need to accelerate shift towards cleaner and sustainable transport modes is urgent. Mitigation through active and clean mobility is one of the solutions to combat climate change. While India has made an earnest effort to adopt Electric Mobility, having a long term vision with a focus on sustainability will define the future of mobility. A lot more needs to be done to ensure that the mobility ecosystem takes concrete steps to reduce its carbon footprint. This parameter documents the adverse impact of air pollution, calling for policymakers to incentivise quicker uptake of clean mobility. Respondents’ willingness to adopt electric mobility, has also been captured to showcase the increased awareness among commuters to shift to clean mobility modes.



HOW TO READ THE NUMBERS

PROMISING CITIES

Aizawl had one of the lowest fatality per lakh population due to air pollution in 2019 and had among the cleanest air sheds in 2021. It leads cities across clusters in this parameter. The city is also in the process of developing a Comprehensive Mobility Plan (CMP) that outlines strategies and builds synergies for clean mobility.

The concentration of PM_{2.5} in **Bhubaneswar** and **Jammu** were the highest amongst 'Promising Cities'^h.

More than 52 percent of respondents are willing to buy electric vehicles in **Jammu**. While Jammu had procured electric buses under FAME-I scheme, **Bhubaneswar** has procured 50 buses under FAME-II scheme.

RISING CITIES

Mysuru, the 'cultural capital of Karnataka', scores the highest in clean mobility parameters in this cluster owing to better air quality and lower air pollution-related deaths per lakh population. It also has the cleanest and most hygienic public transport infrastructure as perceived by public transport users.

Jharkhand's capital Ranchi which scores the lowest amongst cities in this cluster, had recorded the highest PM_{2.5} content in 2021.

Varanasi recorded the highest air pollution-related deaths per lakh in 2019 amongst the 'Rising Cities'. The city also recorded one of the highest concentrations of PM_{2.5} in 2021 impacting its overall clean mobility scores. The city is augmenting 50 new electric buses which will mitigate some transit related emissions.

BOOMING CITIES

Bhopal leads the way on clean mobility amongst 'Booming Cities', with one of the lowest concentration of PM_{2.5} levels and hence lower air pollution-related deaths.

The two cities located in the Gangetic plains, **Patna** and **Lucknow**, recorded the highest air pollution-related deaths per lakh population in this cluster.

While over 52 percent public transport users agree that the public transport in **Kanpur** is clean, hygienic and well maintained, the number of air pollution-related deaths and concentration of PM_{2.5} levels were among the worst in the cluster.

Nagpur scores the lowest in air quality due to emissions attributed to the thermal power plants located in close proximity to the city. The willingness to adopt personal electric mobility and the introduction of 144 electric buses could provide some relief through reduction in tailpipe emissions in the city.

MEGA CITIES

Surat leads the clean mobility parameter with the lowest PM_{2.5} levels in its cluster. Comparatively higher number of respondents in the city are willing to adopt electric mobility and are second only to **Kolkata**. The 'diamond city' is also augmenting a higher percentage of electric buses in its fleet as compared to the other 'Mega Cities'.

Ahmedabad leads the way for accelerating adoption of electric vehicles with almost 80 percent respondents willing to purchase electric vehicles as the state offers the highest demand incentive in the country. The deteriorating air shed and the growing air pollution related deaths could be mitigated as the city shifts to clean mobility options. Almost 53 percent public transport users rated the services clean, hygienic and well maintained. The city administration has procured 150 electric buses in a bid to transition towards clean mobility.

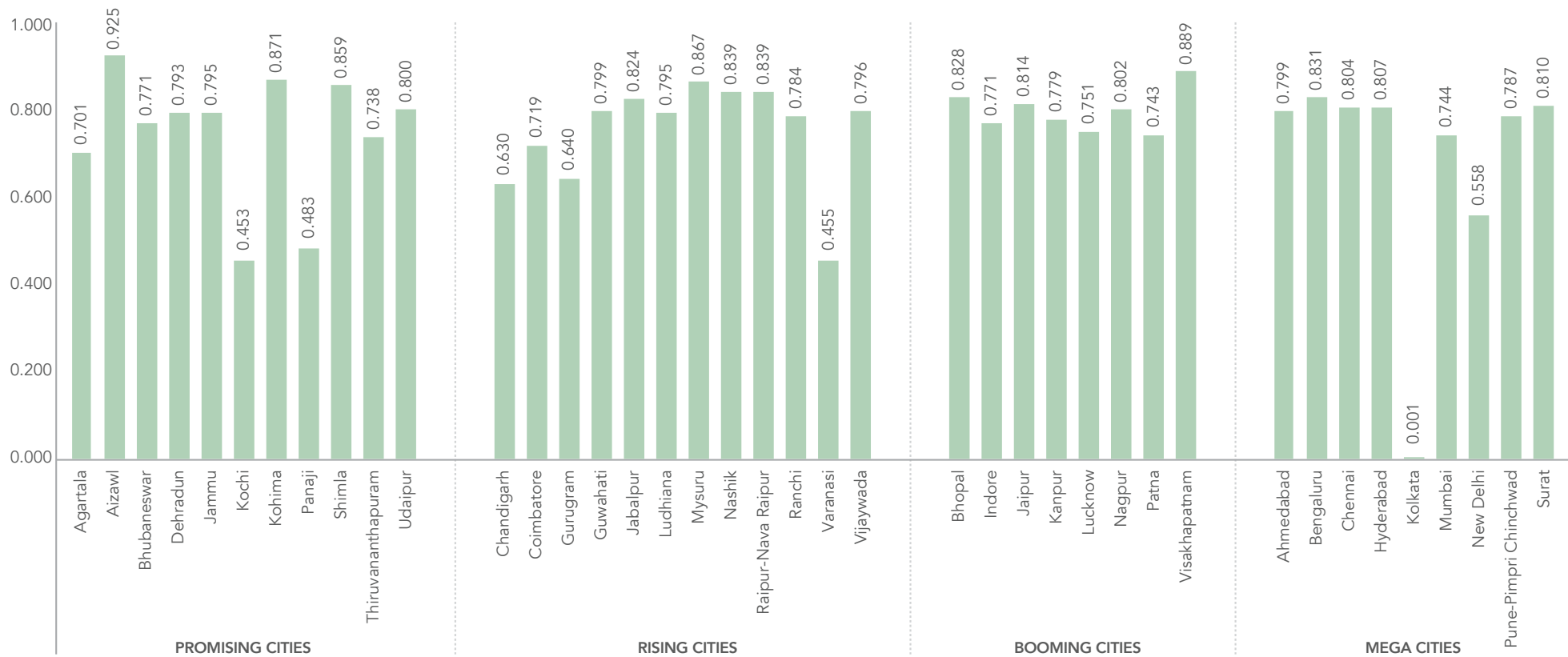
Kolkata has recorded the highest air pollution-related deaths per lakh population across all urban centres. In the recent past, **Delhi** experiences an airpocalypse every winter, and the high PM_{2.5} concentration has impacted the health of citizens. Both cities are on the cusp of revolutionising public bus transport by accelerating the augmentation of electric buses to mitigate transport-related emission.

h. As the annual average concentration of PM_{2.5} data for Bhubaneswar and Jammu were not available for 2021, the highest concentration between October and November 2022 was taken for computation



AIR-POLLUTION RELATED DEATHS¹³

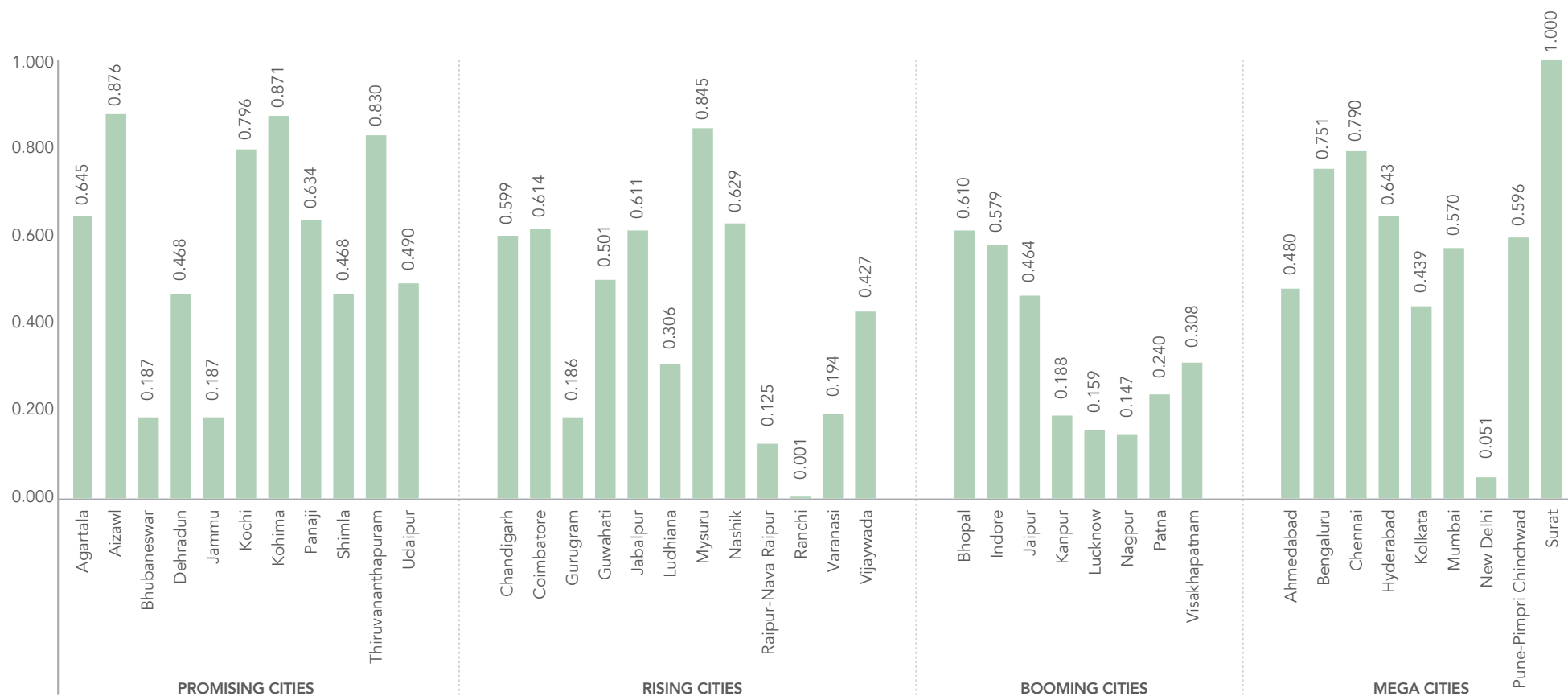
Number of deaths caused due to PM_{2.5} per lakh population

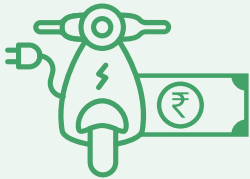




ANNUAL PM_{2.5} LEVEL

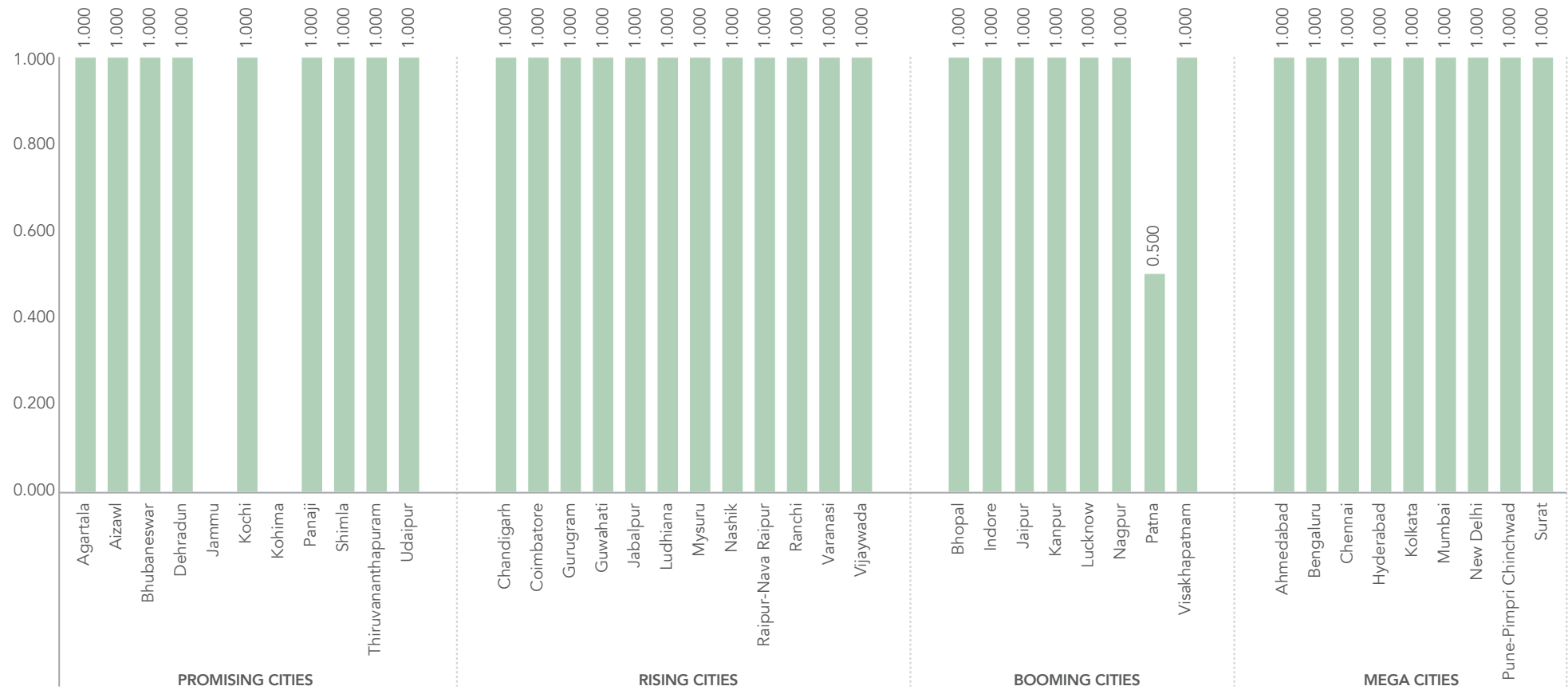
Highest PM_{2.5} level recorded in 2021, as per air quality monitors

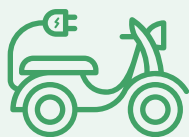




INCENTIVISING EV ADOPTION

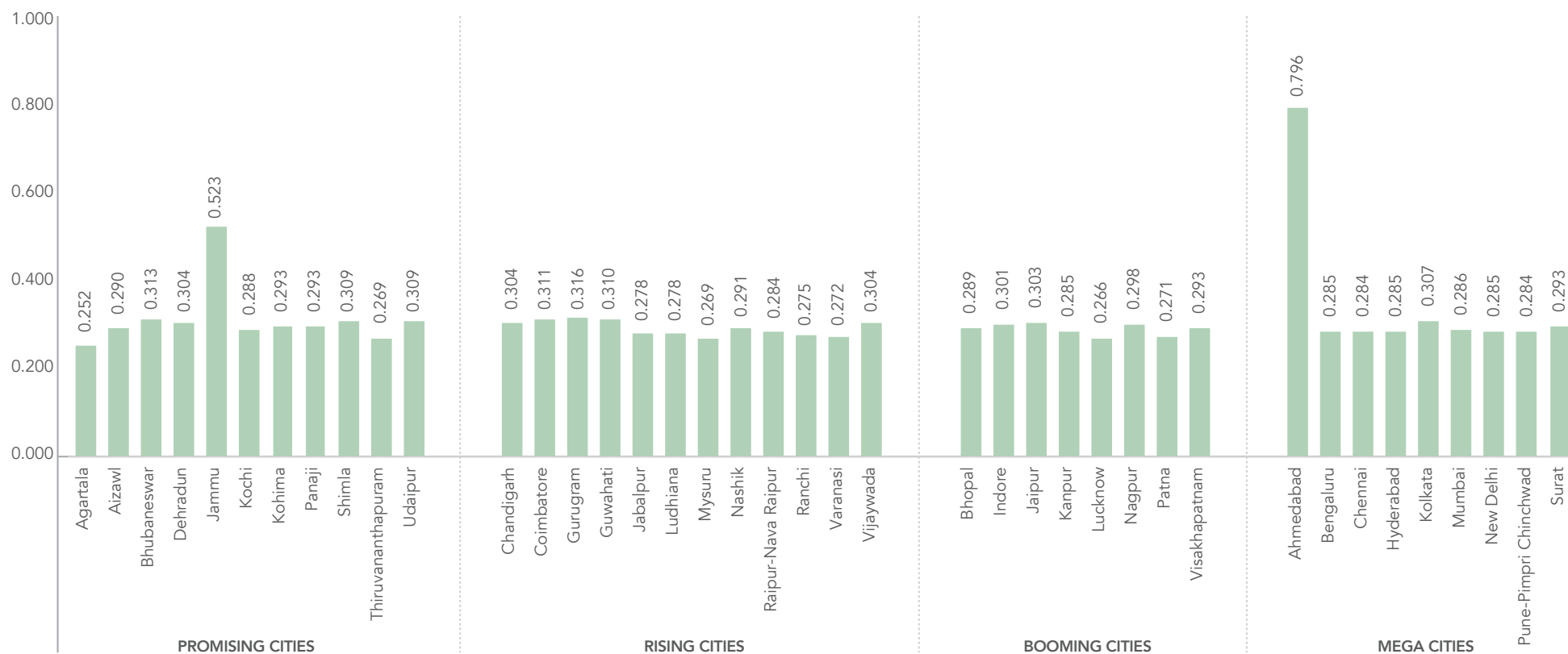
Presence of an electric vehicle policy in the State/Union Territory





ADOPTION OF PERSONAL ELECTRIC MOBILITY

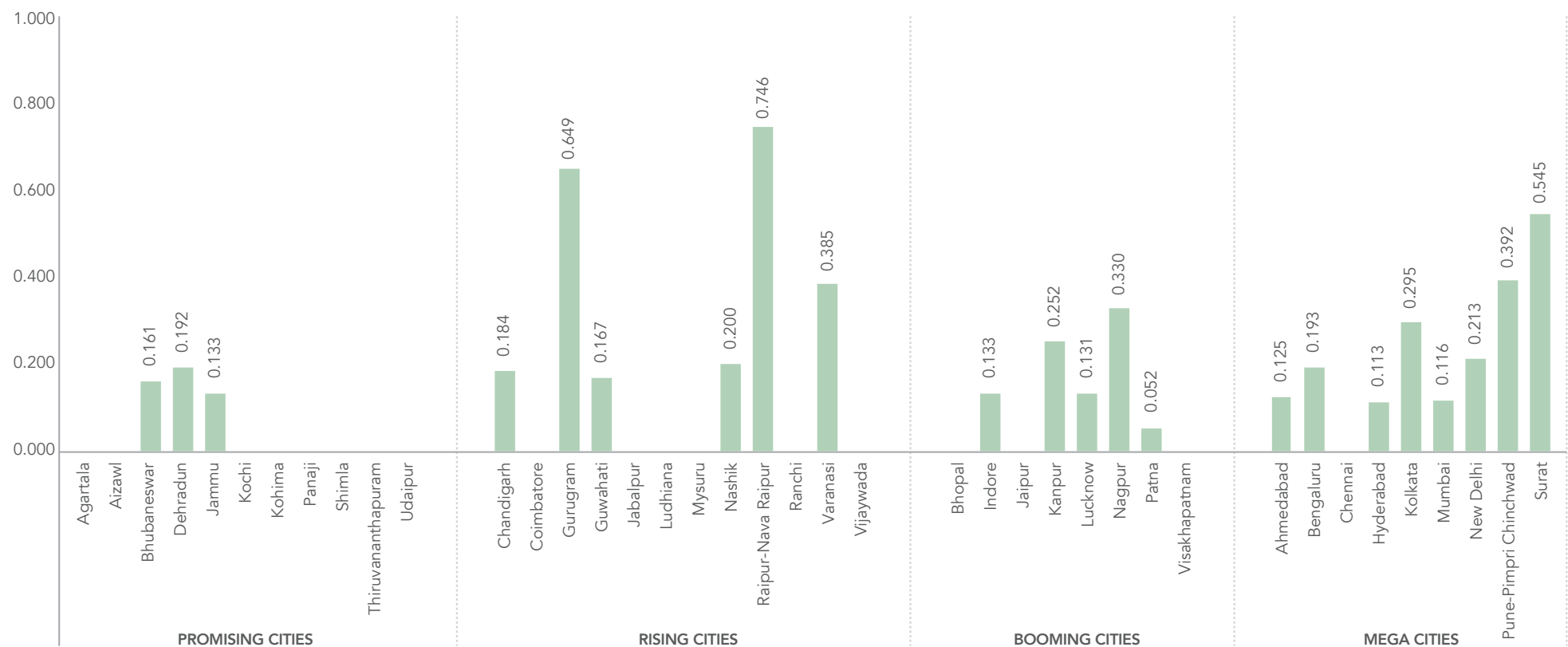
Percentage of respondents willing to buy an electric vehicle





SHIFT TO ELECTRIC BUSES

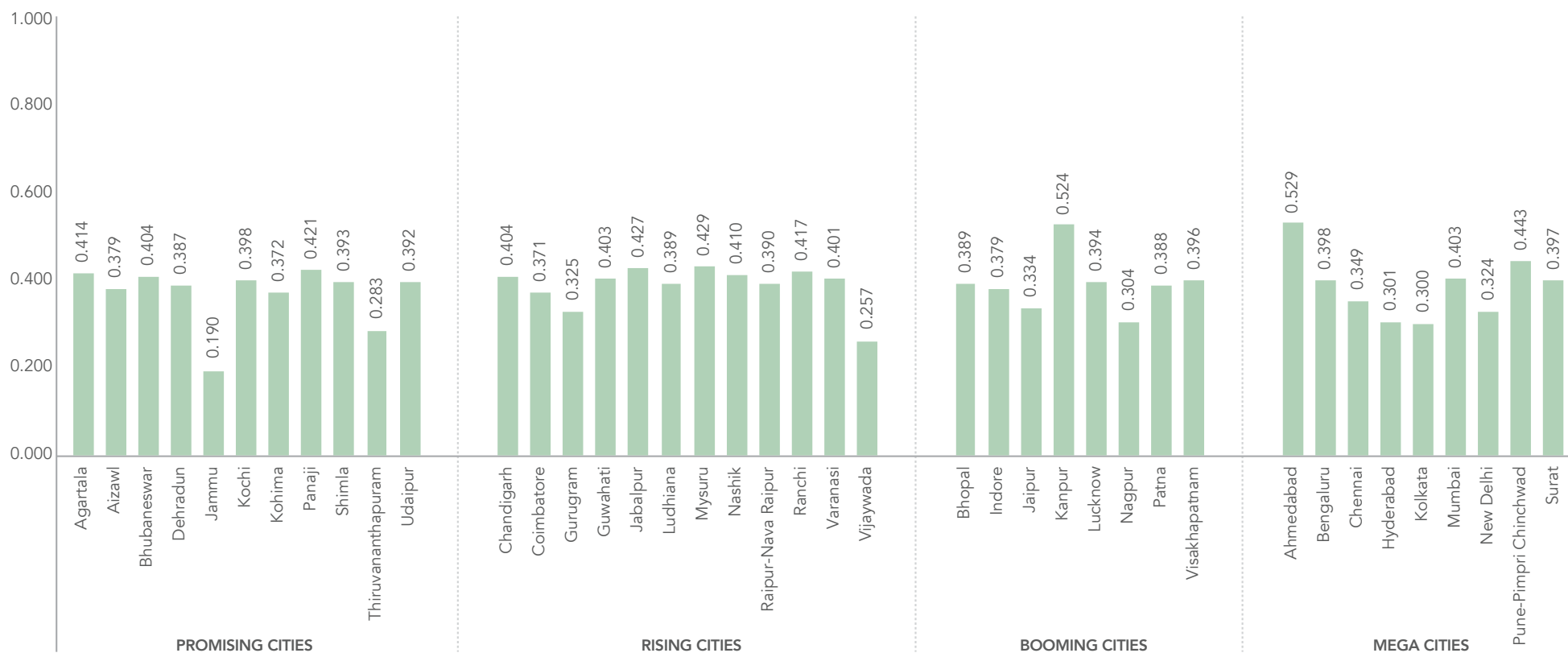
Percentage of electric buses in the city (ordered & deployed)

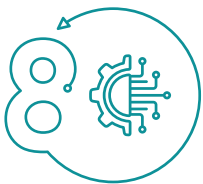




SPRUCED/ NEAT MOBILITY

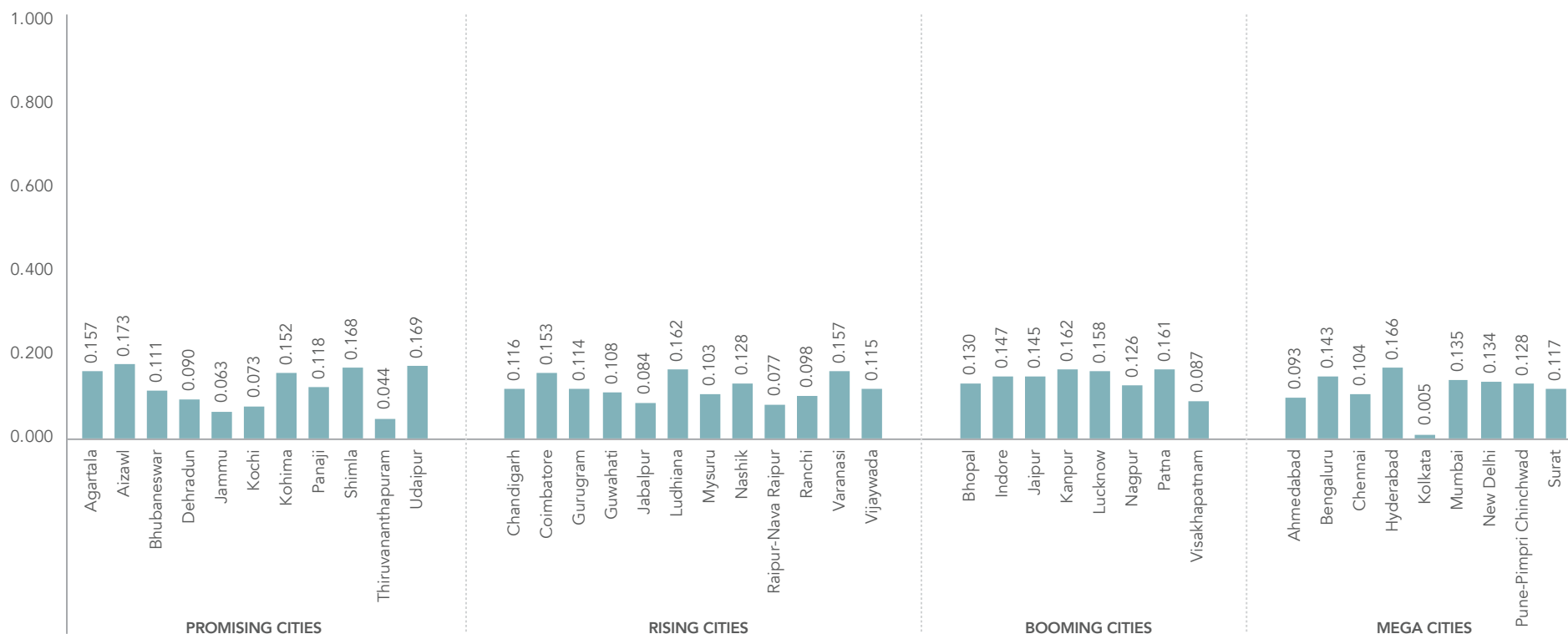
Percentage of respondents agreeing public transport is clean, hygienic and well-maintained





FUTURE MOBILITY

The new era of mobility is defined by the paradigms of shared, connected, electric, and autonomous modes. Technology is the enabler aiding the creation of new mobility services catering to the diversely changing needs of India's urban population. Digital tools such as smartphone applications for passenger mobility, apps to streamline parking or charging electric vehicles, fintech solutions for cashless payments, and social media platforms to network and buy services, etc. are the innovations revolutionising how cities move, work, and grow. The emergence of hyperlocal delivery has also led to both convenience and induced mobility. Thus, a city's propensity to embrace innovations and improve services is an important gauge of the ever-evolving mobility system. The parameter has three key indicators, measuring cashless payments for mobility services, composite number of users using three or more smartphone applications for specific mobility services, and percentage of users using three or more applications for delivery of goods. Most cities score low in this parameter, prompting the need to incentivise and promote innovation.



HOW TO READ THE NUMBERS

PROMISING CITIES

Digital adoption has been limited in **Jammu** primarily due to the disruptions in internet and mobile network, and absence of digital mobility services. While respondents in **Aizawl** had the highest adoption of cashless payments for mobility across cities in all clusters, respondents in the other hill cities of **Shimla** and **Kohima** also use digital technology for delivery and payments extensively.

While a higher percentage of respondents use three or more on-demand delivery applications in **Panaji**, more respondents in **Bhubaneswar** use three or more applications to commute, among all cities in this cluster.

The Mo Bus application by Capital Region Urban Transport, **Bhubaneswar's** public transport authority, enables commuters to plan their journey, provide real time updates on bus locations and also allows purchase of tickets and passes digitally. Such applications can aid faster adoption of digital mobility in public transport. **Thiruvananthapuram**

and **Kochi** are laggards in adoption of digital usage for mobility. However, the Kochi Open Mobility Network is expected to stimulate the ecosystem and drive innovation.

RISING CITIES

Ludhiana followed by **Varanasi** lead the future mobility parameter amongst the 'Rising Cities' as both have among the highest adoption of cashless payments for different mobility services.

Adoption of on-demand delivery is the highest in **Chandigarh** with 26 percent respondents using three or more applications to avail delivery services. **Coimbatore** on the other hand has the highest adoption of mobility applications among the 'Rising Cities'.

BOOMING CITIES

Kanpur followed by **Patna** and **Lucknow** have the highest adoption of cashless payments for different mobility services and are leading the future mobility parameter amongst 'Booming Cities'. Except **Visakhapatnam**, all cities in this cluster have a presence of a common service provider disseminating

real time public bus information, enabling journey planning and cashless ticket payment through a mobile application.

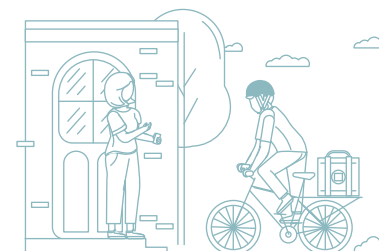
Nagpur has a higher percentage of respondents using smartphones using three or more applications for different mobility and on-demand delivery services as compared to its peers in the cluster.

MEGA CITIES

Hyderabad leads the future of mobility among 'Mega Cities' as it has the highest adoption of cashless payments for different mobility services. While **Kolkata** has the second highest adoption of cashless payments for different mobility services, no respondents using smartphones in the city use three or more applications for either mobility or delivery services in the city.

Surat has the highest adoption of three or more applications for mobility and delivery services across the 'Mega Cities'.

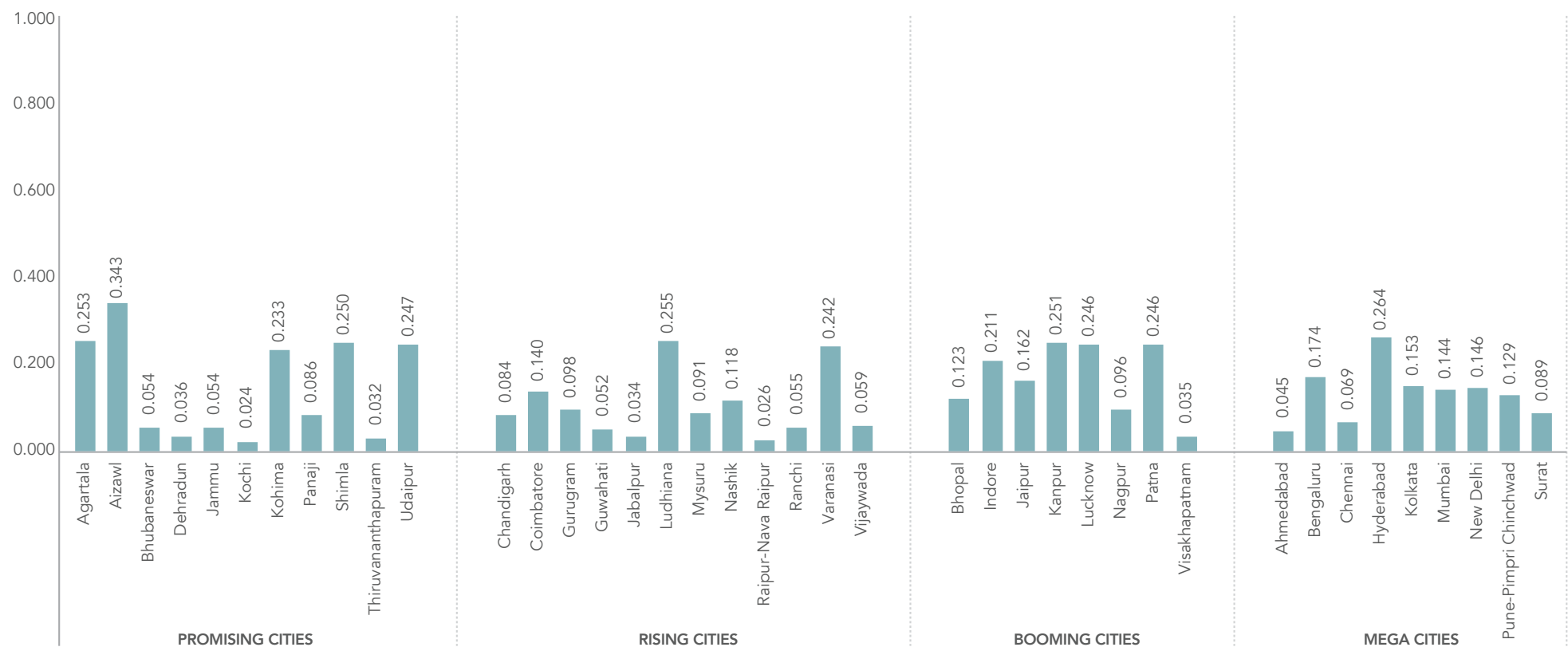
The **Delhi** administration's efforts to create the 'One Delhi App' will prompt use of digital interfaces for accessing different mobility services in the city.





GOING CASHLESS

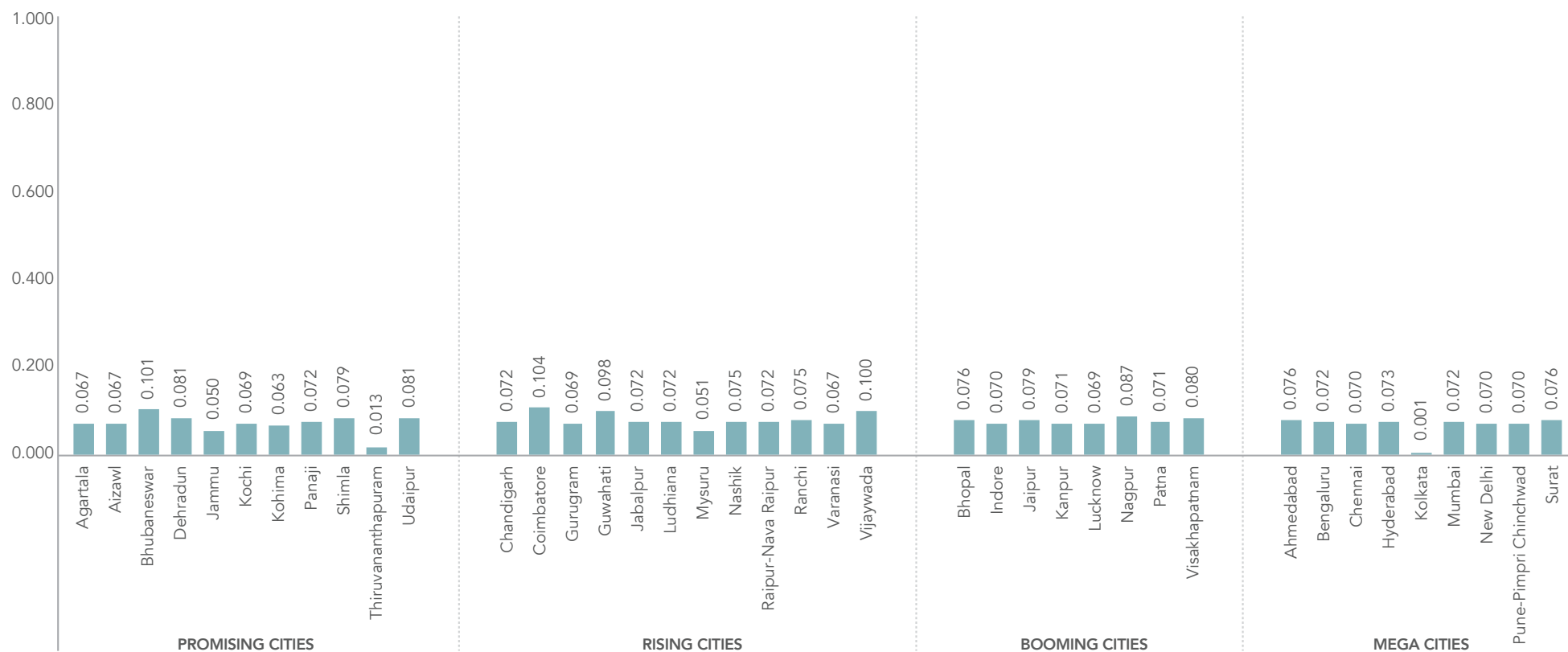
Percentage of respondents using digital payment modes





MOBILITY AT FINGERTIPS

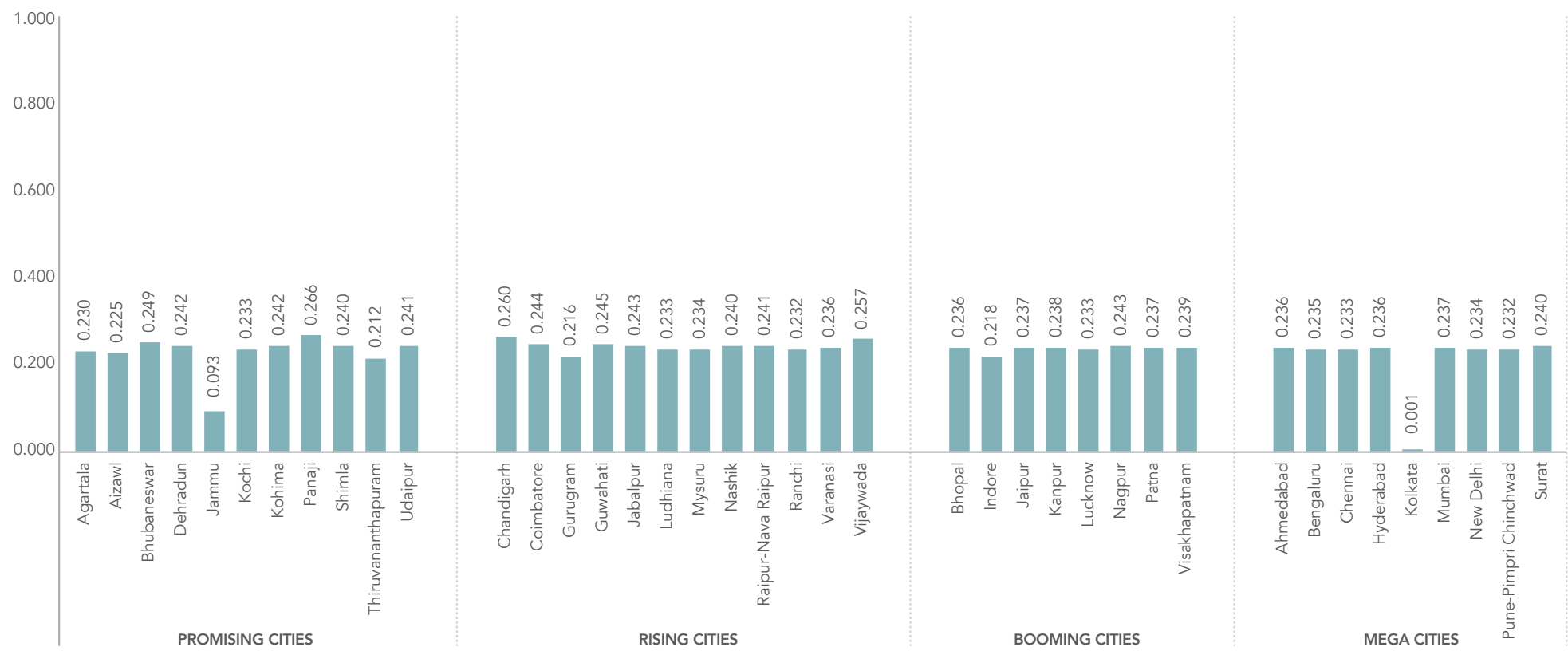
Number of respondents using 3 or more apps for mobility





DELIVERY AT FINGERTIPS

Number of respondents using 3 or more apps for hyperlocal delivery

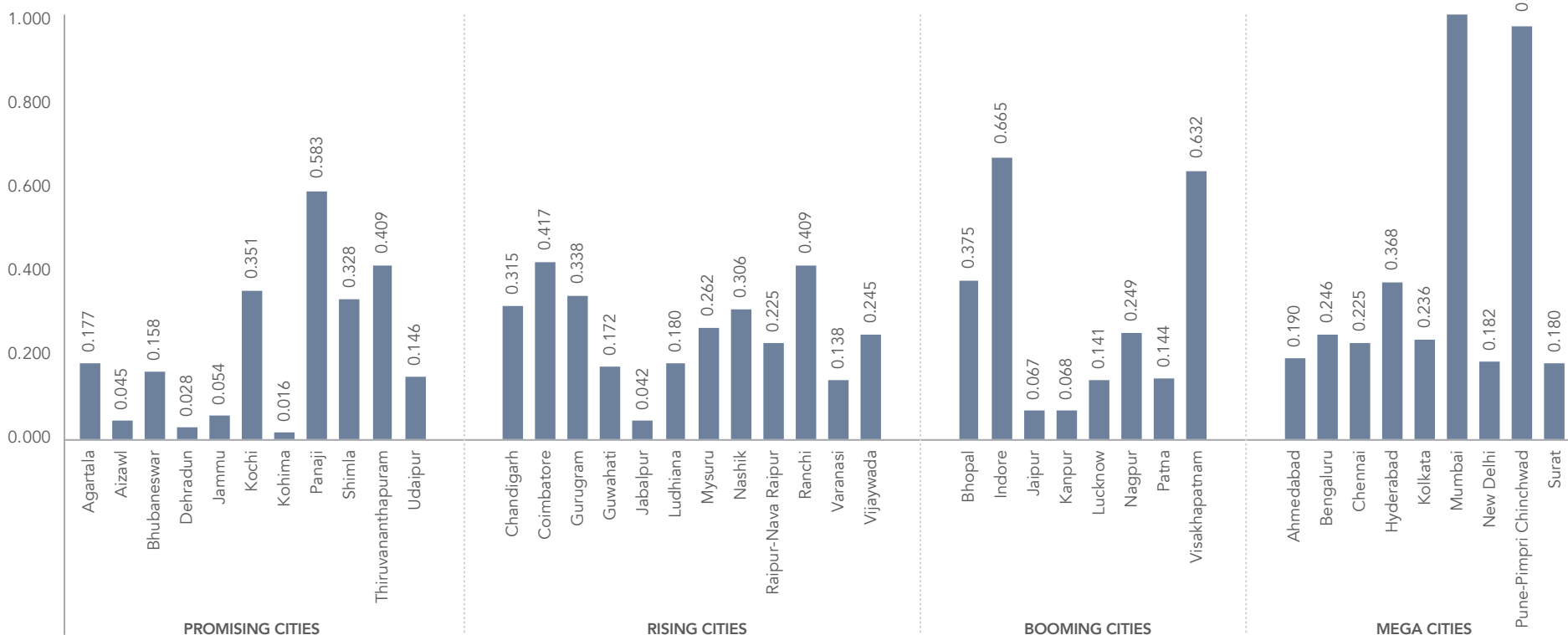






INVESTMENT IN CITY

Mobility needs are evolving, and so are the solutions. What remains constant is the backbone of any mobility system - physical and digital infrastructure. The Constitution of India empowers the national, state and local authorities to construct, maintain, and eventually nurture mobility assets like roads, footpaths, public transport, illumination, and other mobility assets. These critical assets have to be equitable, sustainable, and accessible to all by construct and practice. It also enhances the role of the government to promote innovation and catalyse investments in mobility to ensure that no one is left behind. This parameter takes the first step towards measuring and benchmarking investments in mobility made by the city authorities. As a starting point, the overall city budget is considered for our analysis, due to paucity of reliable granular break-up on mobility spend. While the budget for road, footpath, street light, public transport etc. may form a subset of the total city budget under consideration, we recognise that additional investments in mobility could take the shape of purchase subsidies for low- or zero-emission vehicles, other fiscal measures such as interest and tax subventions, permit waivers, etc. The latter have not been categorically included in the analysis.



HOW TO READ THE NUMBERS

PROMISING CITIES

The city of **Panaji** has the highest per capita expenditure for FY 2020-21 amongst the 'Promising Cities' despite being the smallest municipal corporation.

Thiruvananthapuram is the only city in the cluster with a budget of over INR 1,000 crore.

Kochi is the only city in the cluster to have an operational metro, while significant investments have been made to improve connectivity using rail and waterways (water metro) to enhance mobility in the commercial capital of Kerala.

The hill cities of **Kohima**, **Dehradun**, **Aizawl**, and **Jammu** have very low per capita budgets.

RISING CITIES

In FY 2021-22, the Municipal Corporation of **Gurugram** had a budget of INR 2,538 crore, highest amongst all cities in the cluster.

Coimbatore had the highest per capita budget amongst the 'Rising Cities'.

BOOMING CITIES

Indore Municipal Corporation with a budget of over INR 5,000 crore has the highest per capita budget amongst the 'Booming Cities'. In addition the city has also invested in public bus service run by Atal Indore City Transport Services Limited (AICTSL), and a network of over 30 km of metro is under construction.

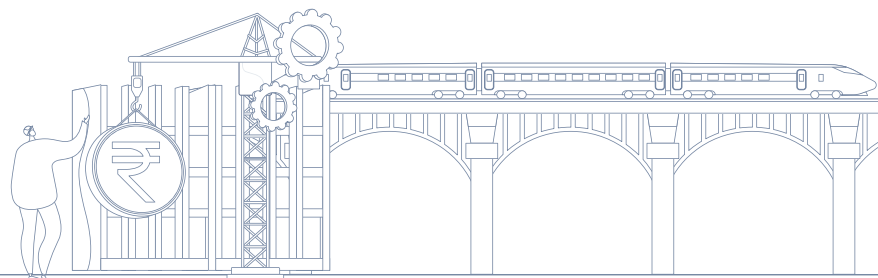
The budgets of **Jaipur** Nagar Nigam (Jaipur Municipal Corporation) and the **Kanpur** Municipal Corporation

are less than one fifth that of **Indore**, and hence the cities lack adequate funds to invest in improving mobility infrastructure.

MEGA CITIES

The Municipal Corporation Greater **Mumbai** has the highest per capita budget across all cities in the country. In addition to this, the city has the most affordable suburban rail services colloquially known as local trains. The Mumbai Metropolitan Regional Development Authority is developing over 180 km¹⁴ long metro network and the Comprehensive Mobility Plan, 2016, envisages a budget of INR 1.67 Lakh crore over 20 years to improve the city's mobility¹⁵.

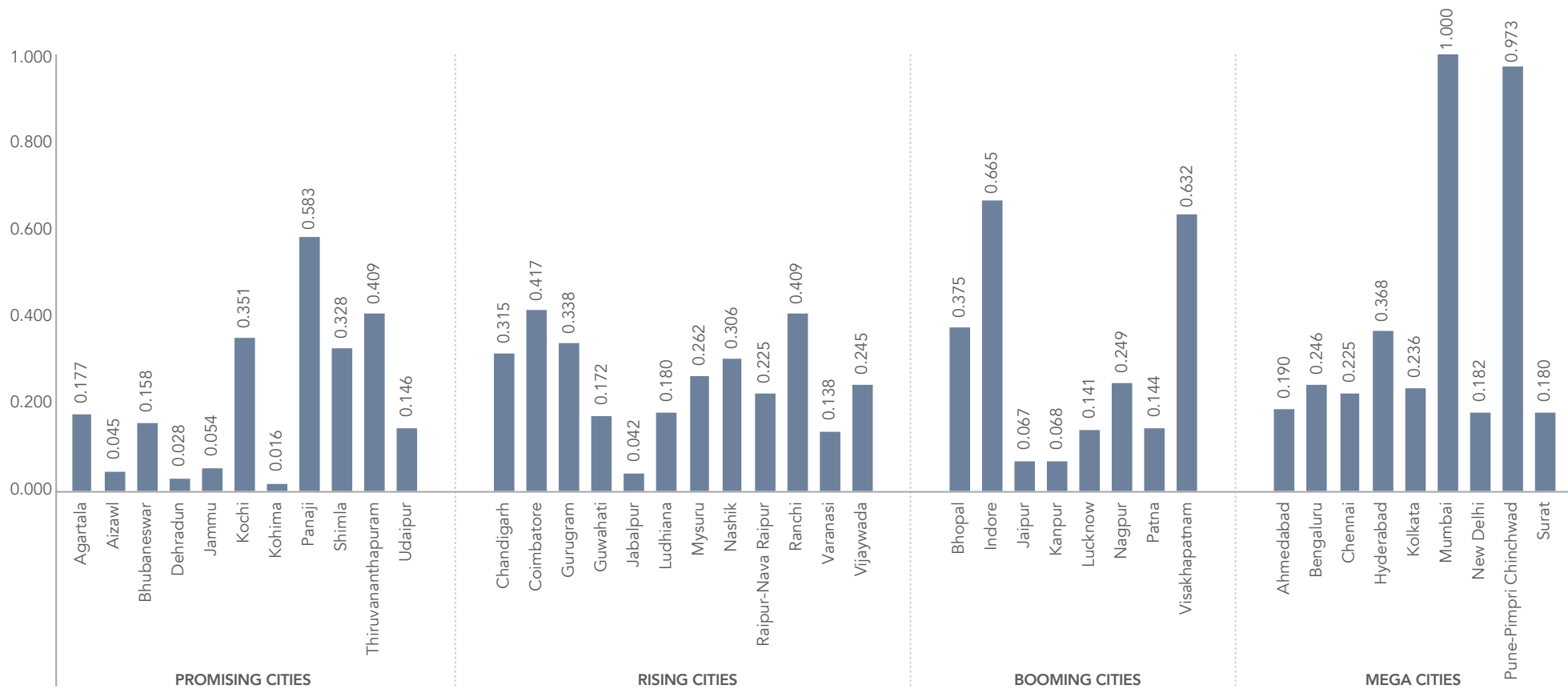
The twin cities of **Pune** and **Pimpri-Chinchwad** have the second highest per capita budget. All 'Mega Cities' are making significant investments on upgrading their mobility infrastructure.





CITY BUDGET PER CAPITA

Based on municipal budgets towards infrastructure



ROAD AHEAD



The journey towards sustainable mobility crosses several milestones on the way, as cities move towards the destination of becoming carbon neutral. If infrastructure sets the pace, technological advancements and behavioural changes ensure that the ride is seamless. While the cornerstones of accessibility, affordability and inclusivity forms the foundation for a thriving mobility ecosystem, it also has to reflect the fabric of the city it serves.

There are multiple causations affecting mobility, as it should be for something as encompassing. The Ease of Moving Index is an attempt to quantify, measure and establish these correlations, and prompt interventions which serve the larger goals of any city.

Universal goals cannot be achieved in isolation. Few cities have distinct advantages of a matured infrastructure and a vibrant mobility ecosystem, while others have an opportunity to emulate the success and also learn from past experiences. The inferences encapsulated in the study aim to highlight the opportunities ahead, and assist policy makers towards a data-driven decision-making process.

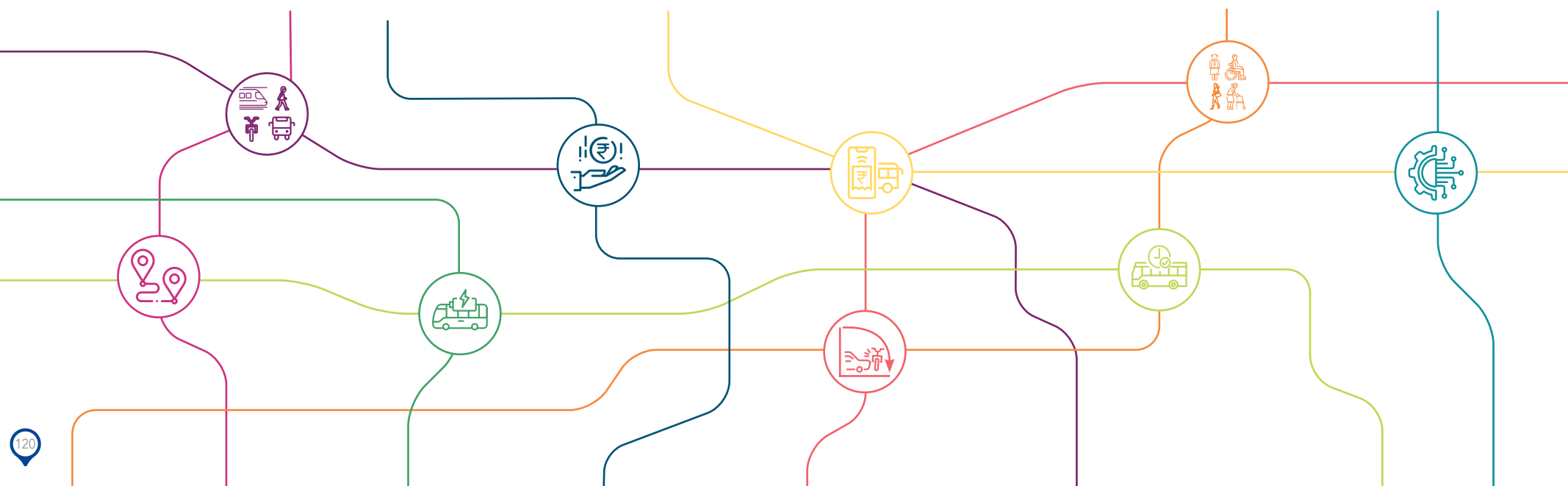
While the Index is the foundation to determine priorities, investment in a robust mobility ecosystem is a non-negotiable common attribute for cities as they continue

to grow. The Index is a compilation of several indicators comparing cities of different sizes in India to nudge them for results, such that good becomes better.

As India strives to become a US \$5 trillion economy by 2025¹⁶ and US \$10 trillion by 2035¹⁷, our lighthouse cities need to demonstrate mobility traits which are second to none and beyond.

Thus, documentation of the present mobility landscape is to prepare for a steep growth path for cities as OMI Foundation continues to engage with all stakeholders to improve mobility in urban India. The research and thought leadership in this report will be supplemented using a detailed commentary for individual cities in addition to a knowledge product on measures to aid cities attain mobility goals. Based on the primary survey, reports using disaggregated data of gender and persons living with functional difficulty will be released to enhance inclusive and accessible mobility in these 40 cities.

We urge all stakeholders to join us on this journey of improved and enhanced mobility across the country through various engagement channels.



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APPENDIX



HOW INDIA MOVES: 2018 VS 2022



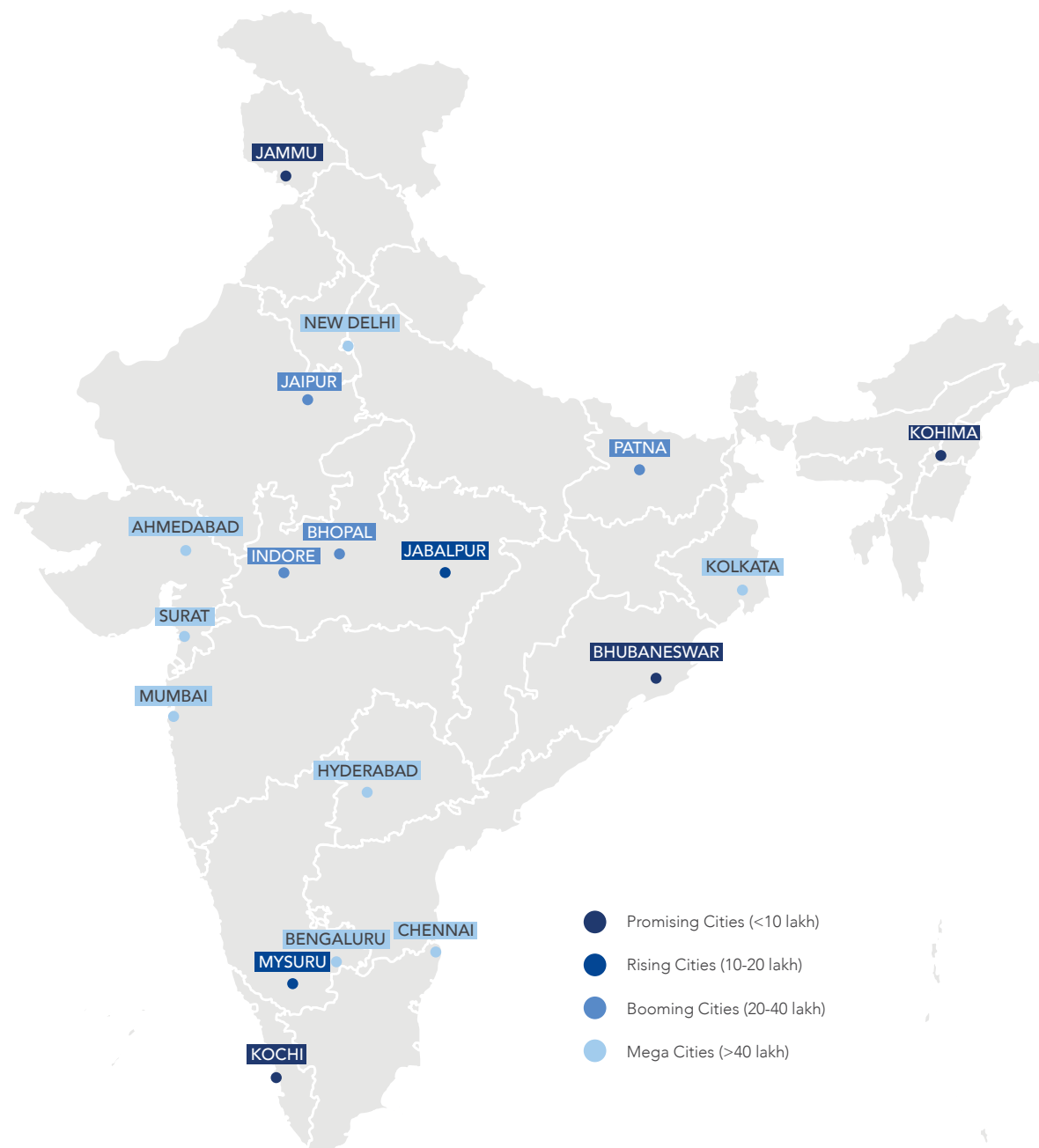
A COMPARISON OF THE RESULTS OF EASE OF MOVING INDEX 2018 AND 2022

Background

The Ease of Moving Index is a framework by OMI Foundation to measure and benchmark mobility scenarios in cities. The first edition of **Ease of Moving Index 2018**¹ - measured 50 indicators grouped under the three pillars of People, Infrastructure, and Sustainability. Ease of Moving Index 2018¹ analysed secondary data from authorities and primary data from approximately 43,500 respondents across 20 cities.

The second edition of the Ease of Moving Index 2022 measures 9 parameters and 41 indicators forming a part of the composite index. Ease of Moving Index 2022 analysed secondary data from authorities and primary data from over 50,000 respondents across 40 cities. In both editions, intercept surveys were conducted in public places. In the second edition the random samples were stratified based on gender, ability and income. The emphasis of the Index in both editions was to evaluate mobility scenarios including travel pattern, service quality of infrastructure and public transport, perception about technology etc in the heterogeneous and diverse urban centres of the country. OMI endeavours to empower city authorities with this information to help take the right decisions towards sustainable mobility.

Against this backdrop, key insights from a comparison of citizens' reported mobility patterns and perceptions between 2018 and 2022 are presented here.

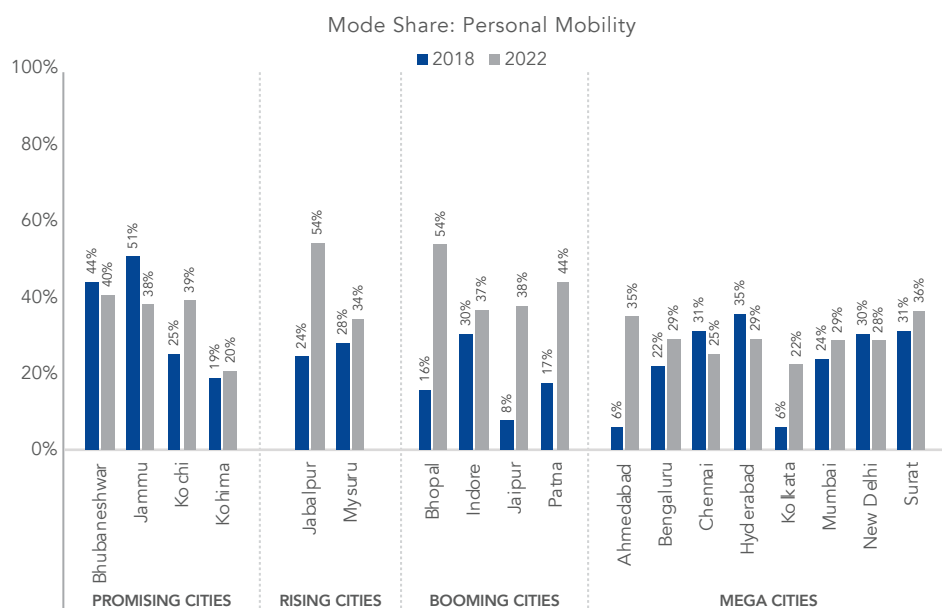


¹For the detailed report, Ease of Moving Index - India Report 2018, please visit <https://omifoundation.org/>

PERSONAL MOBILITY

Personal Mobility

Personal mobility adoption has picked up pace in India over the past two decades, even a cursory look at the Vahaan portal - hosted by the Ministry of Road Transport and Highways providing almost real time vehicle registrations updates from Road Transport Offices spread across the country, will reflect this. A comparison of mode share of personal vehicles among respondents between 2018 and 2022 shows a similar trend.



LEADERBOARD

2018
VS
2022

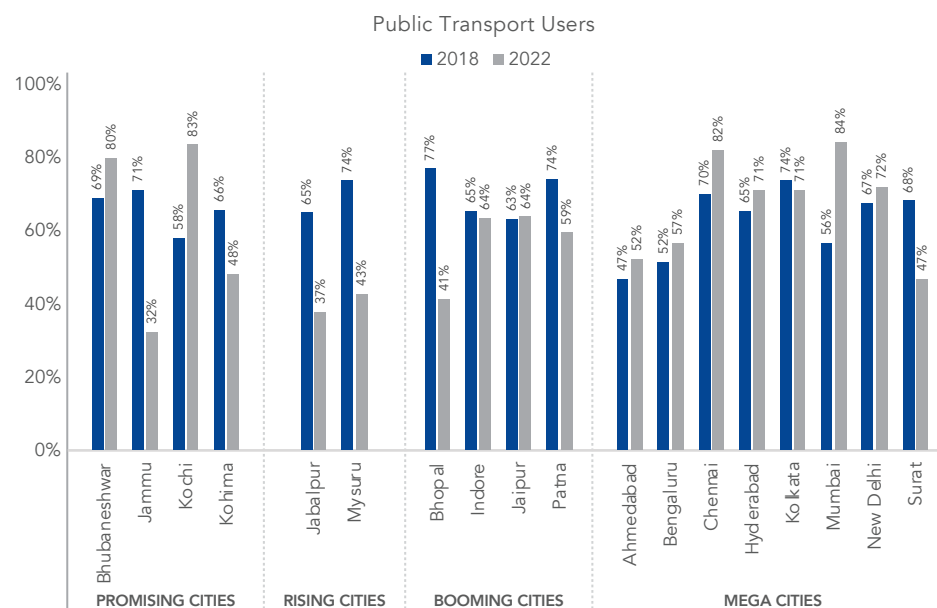
Ahmedabad
Kolkata
Jaipur
Bhopal
Patna

Kohima
Kolkata
Chennai
New Delhi
Mumbai

PUBLIC TRANSPORT

Public Transport Users

What is heartening to note here is public transport adoption has also risen over the last four years, despite popular belief that the pandemic would have prompted commuters to prefer personal transport. 9 out of the 18 cities covered in the two editions have recorded an increase in public transport usage.



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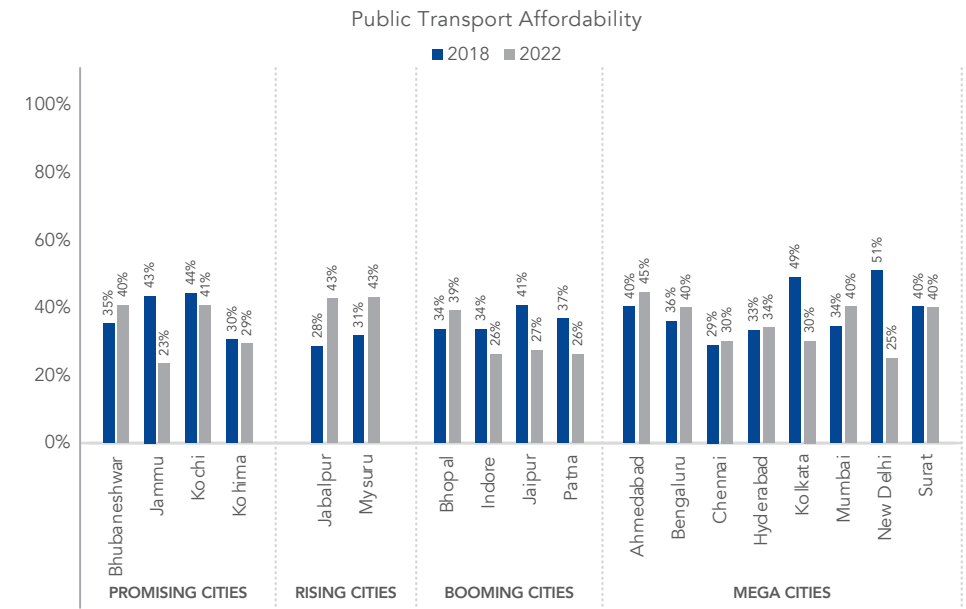
2018
VS
2022

Bhopal
Patna
Mysuru
Kolkata
Jammu

Mumbai
Kochi
Chennai
Bhubaneswar
New Delhi

Public Transport Affordability

Perception of public transport being affordable has reduced though. There are a number of factors which influence public transport fares like the cost of fuel, and higher tariff for newer mass transit modes such as the metro. The average travel distance also varies in each city.

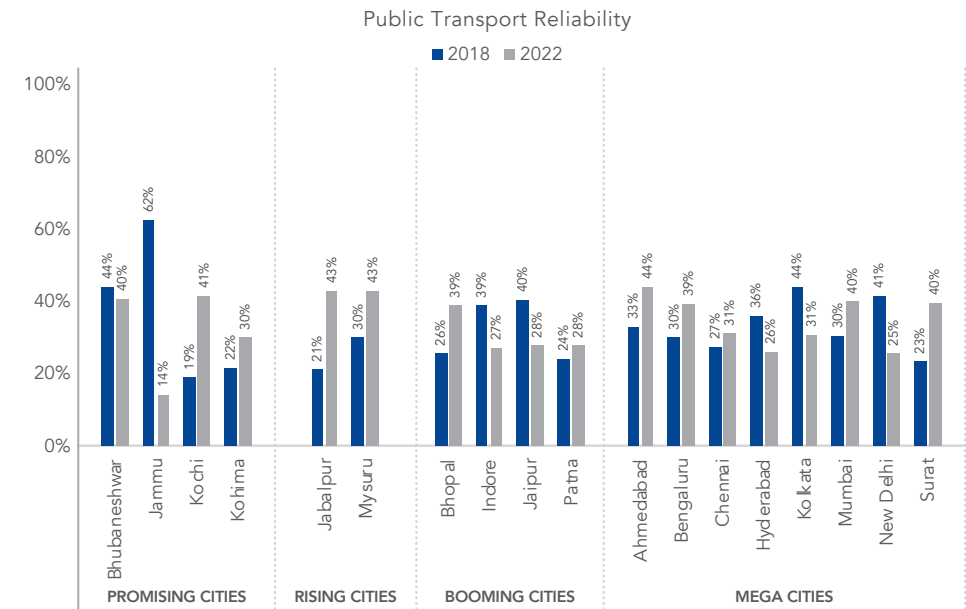


LEADERBOARD

2018	VS	2022
New Delhi		Ahmedabad
Kolkata		Mysuru
Kochi		Jabalpur
Jammu		Kochi
Jaipur		Bhubaneswar

Public Transport Reliability

Reliability is a mixed bag, perhaps due to inadequate number of public buses since 2018. While the rail based mass transit has increased, in many cities it is still under construction and only part of the network is open. Real time information and adequate buses for frequent service will enable better adoption of public transport.



LEADERBOARD

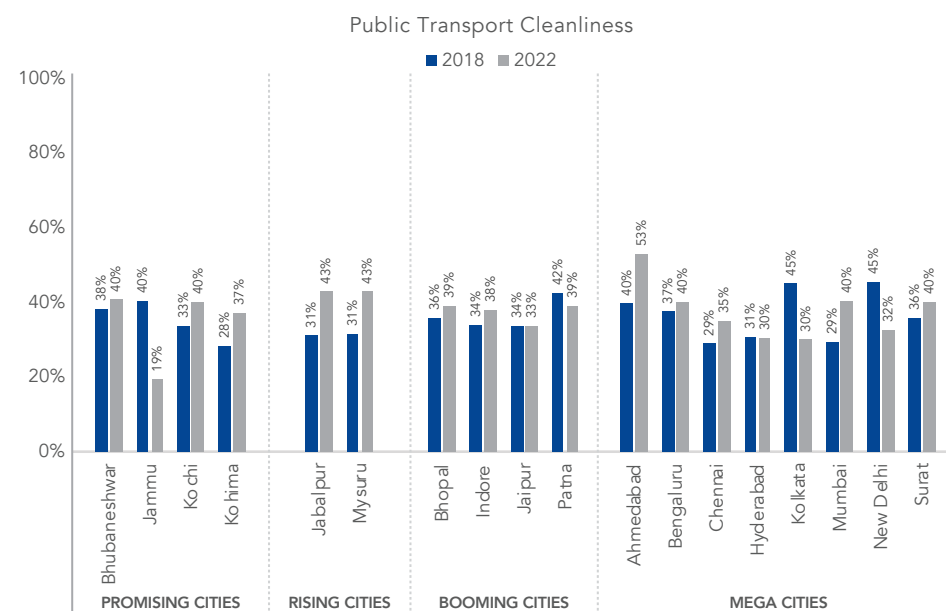
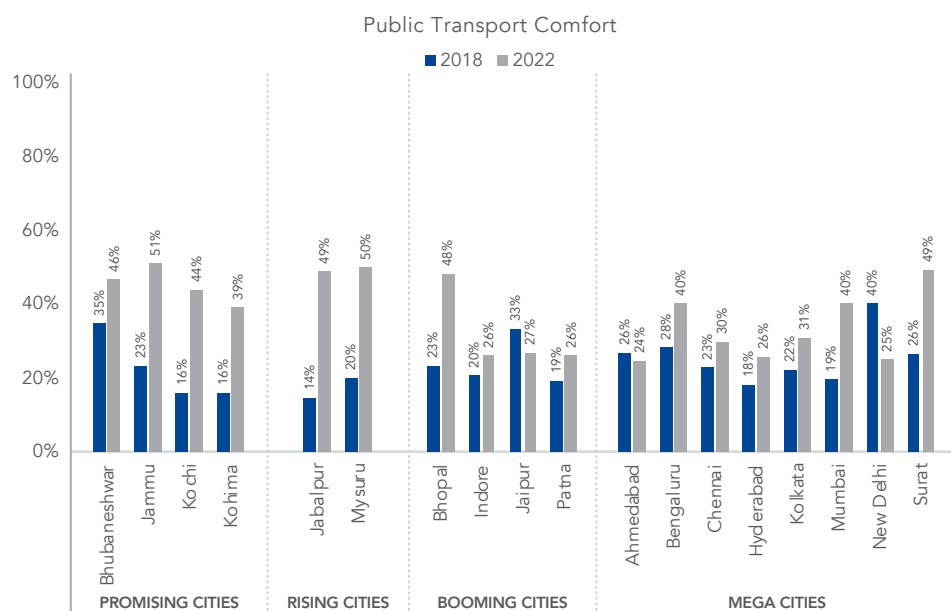
2018	VS	2022
Jammu		Ahmedabad
Bhubaneswar		Mysuru
Kolkata		Jabalpur
New Delhi		Kochi
Jaipur		Bhubaneswar

Public Transport Comfort

Comfort of a seat, or standing without being pushed in an overcrowded bus will nudge more commuters to shift from personal vehicles. The perception about the comfort levels has improved in 15 cities from 2018. For public transport to be viable and nudge commuters to shift away from personal vehicles, comfort is an important factor.

Public Transport Cleanliness

Comparison of the changing perception of respondents on public transport in their city being clean is presented here. Cleanliness is Godliness and with 12 cities having a higher rating of cleanliness from 2018 indicates that perception among public transport users about its cleanliness is improving.



LEADERBOARD

2018	VS	2022
New Delhi		Jammu
Bhubaneshwar		Mysuru
Jaipur		Surat
Bengaluru		Jabalpur
Ahmedabad		Bhopal

LEADERBOARD

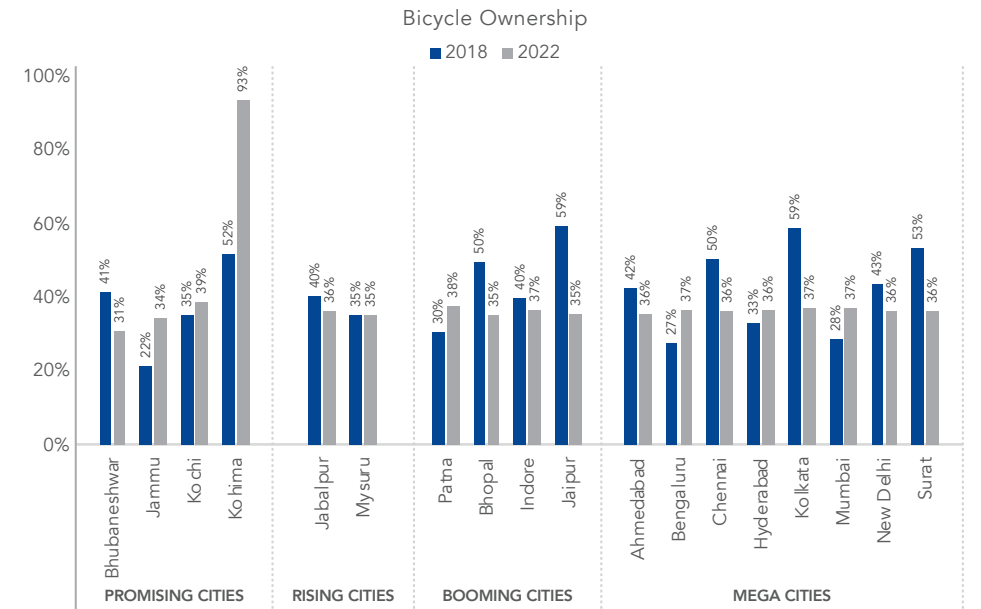
2018	VS	2022
New Delhi		Ahmedabad
Kolkata		Mysuru
Patna		Jabalpur
Jammu		Bhubaneshwar
Ahmedabad		Mumbai

ACTIVE AND SHARED MOBILITY

Active mobility has emerged as one of the cornerstones of sustainable mobility. Non-motorised transport is perhaps the most critical mode of transport to reduce carbon emissions from the mobility sector. Cities in India have a great opportunity to promote use of active mobility by investing in walking and cycling infrastructure and improving public transport services. The perception on walking and cycling infrastructure comparison between 2018 and 2022 survey indicates significant change from cycle ownership and adequacy of cycling infrastructure to condition of footpaths.

Bicycle ownership

Cycle ownership, a good sign of willingness to use cycles for commuting, has reduced across 14 cities. Walking and cycling are ideal for first- and last-mile connectivity especially for shorter distances and are often linked to availability of safe infrastructure.

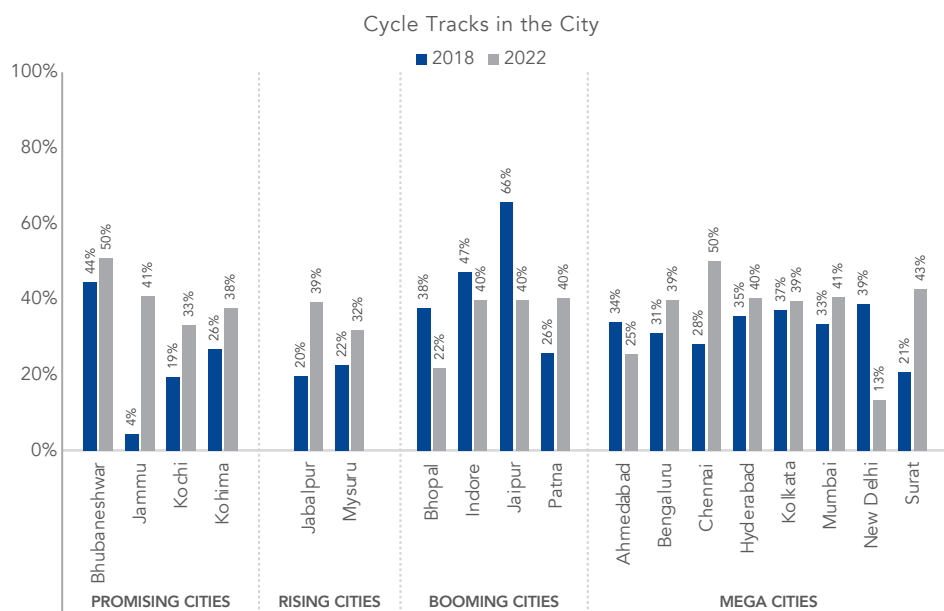


LEADERBOARD

2018	VS	2022
Jaipur		Kohima
Kolkata		Kochi
Surat		Patna
Kohima		Mumbai
Chennai		Kolkata

Cycle Tracks in the City

Perception of respondents about the adequacy of cycle tracks shows that it has improved in 14 cities. Walking often becomes the dominant mode for short trips during the day. Cycle tracks make it safer for both the cyclists and the road users. Cycling infrastructure may address congestion and as more people are encouraged to adopt active mobility they benefit cities to attain their climate goals.



LEADERBOARD

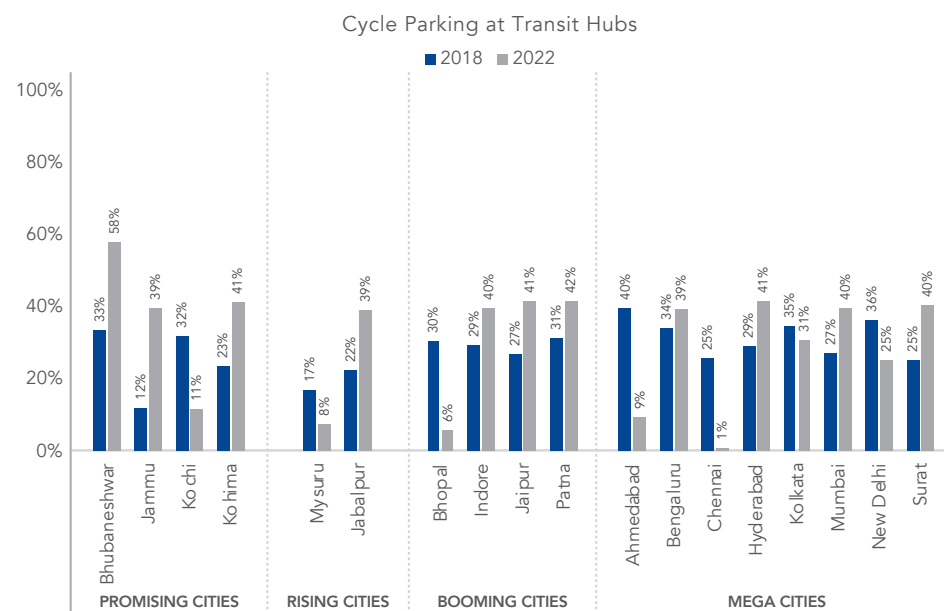
2018
VS
2022

Jaipur
Indore
Bhubaneswar
New Delhi
Bhopal

Bhubaneswar
Chennai
Surat
Jammu
Mumbai

Cycle Parking at Transit Hubs

Creating adequate parking spaces for bicycles will aid in seamless connectivity with public transport and provide impetus to active and shared mobility. For 11 cities the perception is higher compared to 2018 on adequacy of cycle parking at transit hubs.



LEADERBOARD

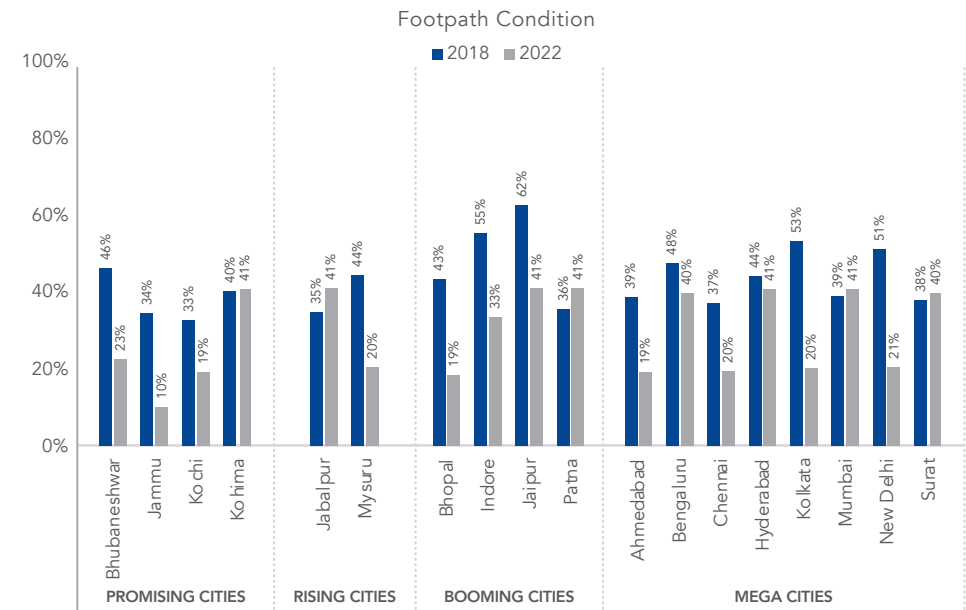
2018
VS
2022

Ahmedabad
New Delhi
Kolkata
Bengaluru
Bhubaneswar

Bhubaneswar
Patna
Hyderabad
Jaipur
Kohima

Footpath Condition

Perception of respondents on adequacy of footpaths in their respective cities is presented here. Footpaths in cities need to be obstacle free. Well planned footpaths provide continuous space for walking and are essential for pedestrian safety and adoption of active mobility in cities.

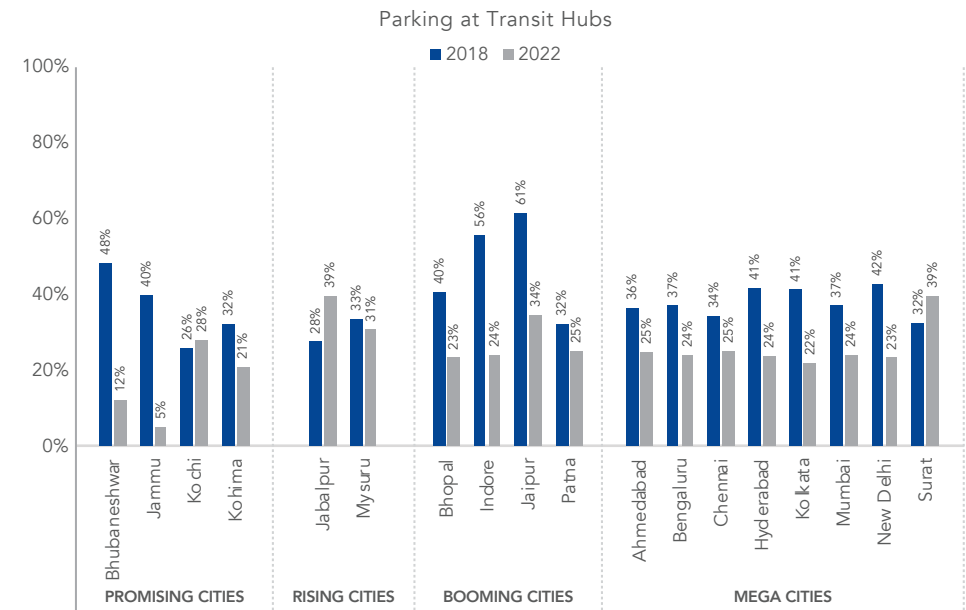


LEADERBOARD

2018	VS	2022
Jaipur		Patna
Indore		Jabalpur
Kolkata		Jaipur
New Delhi		Hyderabad
Bengaluru		Kohima

Parking at Transit Hubs

Perception of respondents on availability of parking at transit hubs is presented here. Parking at interchanges and important transit hubs are necessary to improve connectivity.



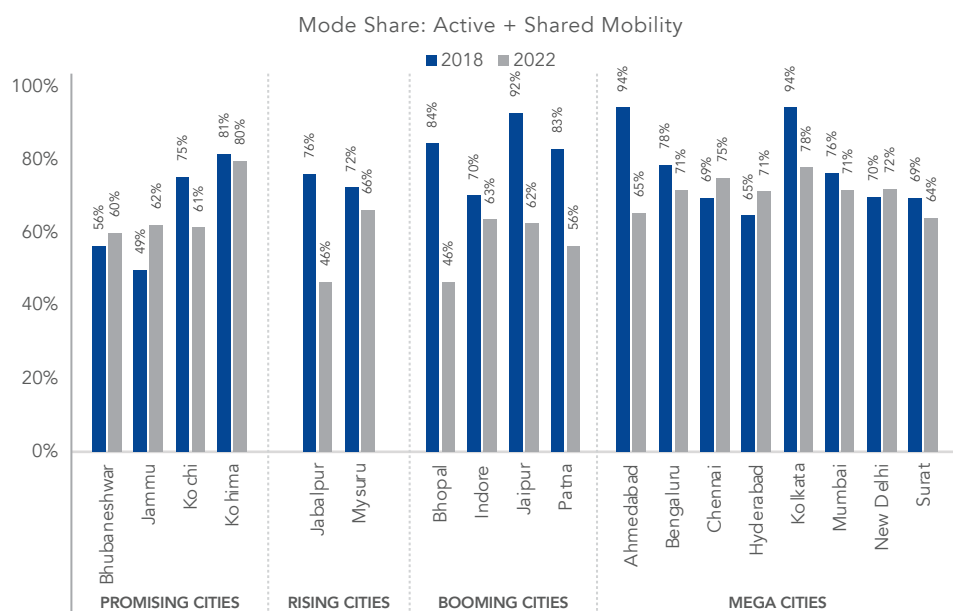
LEADERBOARD

2018	VS	2022
Jaipur		Jabalpur
Indore		Surat
Bhubaneswar		Jaipur
New Delhi		Mysuru
Hyderabad		Kochi

MODE SHARE

Active and Shared Mobility

The adoption of active and shared mobility mode shares across most cities based on the primary survey results is represented here.



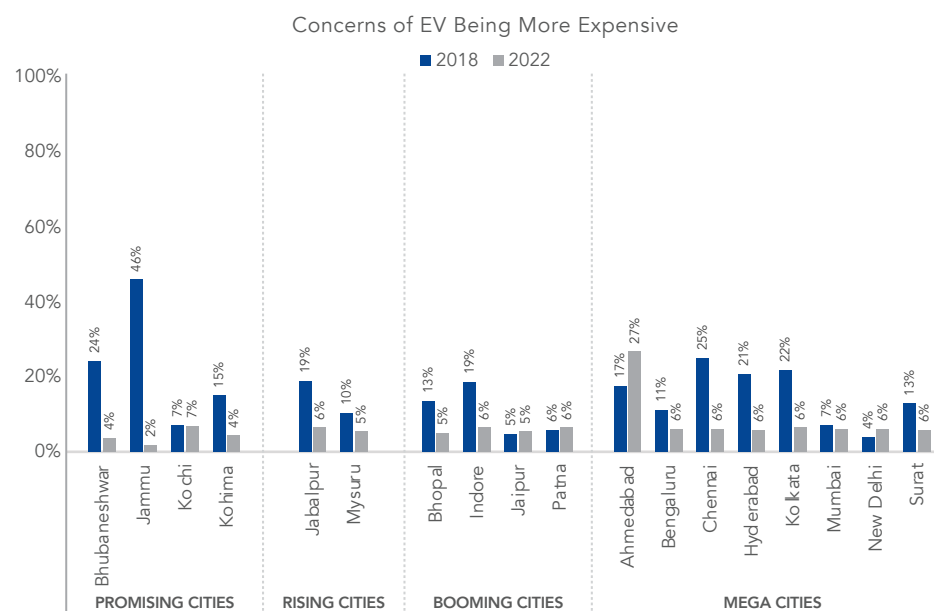
LEADERBOARD

2018	VS	2022
Ahmedabad		Kohima
Kolkata		Kolkata
Jaipur		Chennai
Bhopal		New Delhi
Patna		Mumbai

ELECTRIC MOBILITY

Electric mobility adoption has increased over the last four years. Increasing price parity and more choices especially among small form factors is influencing choice with respondents citing inadequate charging infrastructure as a bigger deterrent than cost of vehicle in 2022.

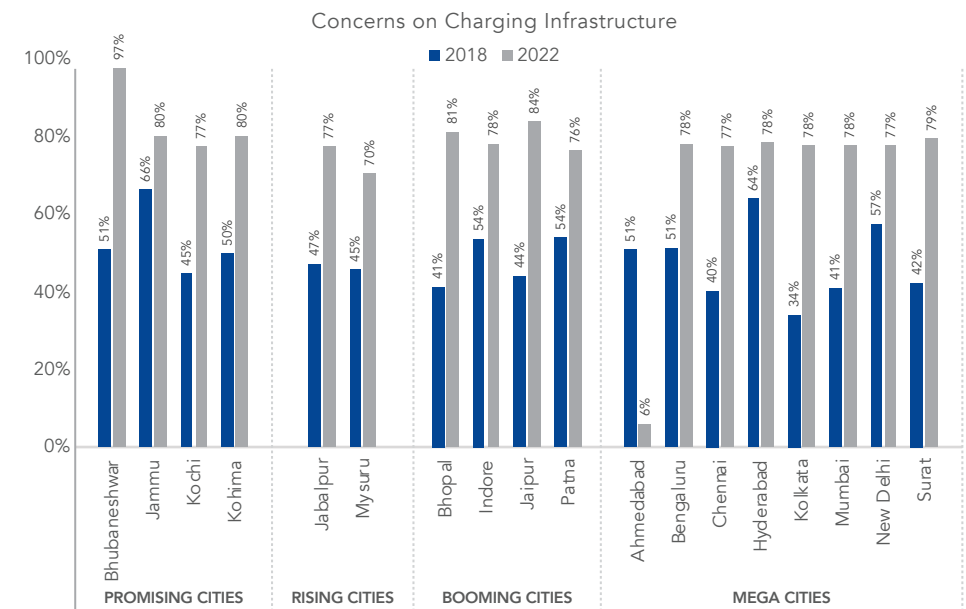
Cost of electric vehicle as a deterrent to shift to electric mobility



LEADERBOARD

2018	VS	2022
New Delhi		Jammu
Jaipur		Bhubaneswar
Patna		Kohima
Mumbai		Bhopal
Kochi		Mysuru

Electric vehicle public charging infrastructure as a deterrent to shift to electric mobility



LEADERBOARD

2018	VS	2022
Kolkata		Ahmedabad
Chennai		Mysuru
Mumbai		Patna
Bhopal		Kochi
Surat		Chennai

EASE OF MOVING INDEX 2022 - CITIZEN SURVEY

Start time, End time, and Lat-Long of the survey to be captured automatically.

Section 1: Information from Surveyor

1. City: <dropdown list of 40 cities> (select one)
2. Location - Lat/ Long
3. Survey Number:

Section 2: Know the Respondent

4. What is your gender? (select one)

- a. Woman
- b. Man
- c. Trans/ Non-Binary

5. What is your age group? (select one)

- a. < 18 Year
- b. 18 – 25 Years
- c. 25 - 40 Years
- d. 40-60 Years
- e. >60

6. What is your highest qualification? (select one)

- a. < 10th
- b. 10 – 12th Pass
- c. Diploma
- d. Undergraduate
- e. Graduate
- f. Post Graduate equivalent
- g. Doctoral and above

7. What is your current occupation? (select all that is applicable)

- a. Student
- b. Self Employed/ Own account worker
- c. Gig- platform worker
- d. Employer
- e. Regular wage/ salaried employee
- f. Casual wage worker/ contract worker
- g. Domestic duties only
- h. Seeking Work
- i. Others

8. Is the current house you reside in..

- a. Owned
- b. Rented/leased

9. How many people are there in your household

- a. 1
- b. 2
- c. 3
- d. 4
- e. 5
- f. >5

10. What is your monthly household income (INR)?

- a. < 15,000 per month
- b. 15,001 – 30,000 per month
- c. 30,001 – 50,000 per month
- d. 50,001 – 1,00,000 per month
- e. > 1,00,000 per month

11. What is your individual monthly expenditure (INR)?

- a. <5000
- b. 5000-10000
- c. 10000-20000
- d. 20000-40000
- e. >40000

12. What is your average individual monthly expenditure on transportation (INR)?

- a. <1,000
- b. 1,000 - 3,000
- c. 3,000 - 5,000
- d. 5,000 - 10,000
- e. >10,000
- f. No Response

13. Do you have any difficulty / disability?

- a. Yes
- b. No
- c. Refused to answer

14. If Yes, how best would you describe the difficulty (select one level of difficulty per category)

Mild	Moderate	Severe	Refused to answer	Don't know
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	Option
Seeing (Do you have difficulty seeing, even if wearing glasses?)	
Hearing (have difficulty hearing, even if using a hearing aid)	
Walking (Do you have difficulty walking or climbing steps)	
Remembering (Do you have difficulty remembering or concentrating)	
Self-care (have difficulty with self-care, such as washing all over or dressing)	

	Option
Communicating: (Using your usual language, do you have difficulty communicating, for example understanding or being understood?)	

15. What is the number of vehicles in your household?

Type	Number
Bicycle	
Two Wheeler	
Three Wheeler	
Car	

16. Do you use/ride/drive any of the vehicles in your house?

- a. Yes
- b. No

16.1 If No, why

- a. High cost of vehicle ownership
- b. Mobility needs do not require a personal vehicle
- c. Reliable options of Public Transport and Intermediate Public Transport
- d. Fear of unsafe roads/too many accidents/rash driving causing me to not drive/ use a personal vehicle
- e. I find traffic levels/congestion in my city to be prohibitively high
- f. I prefer to use environmental friendly modes of transportation

17. What type of bicycle do you use? (if Yes to Q16, select all that is applicable)

- a. Regular
- b. Pedal Assisted
- c. Electric

18. What fuel does your 2W run on? (if Yes to Q16, select all that is applicable)

Type	Number (drop down)
Petrol	
Diesel	
CNG/LPG	
Electric	

19. What fuel type does your 3W run on? (if Yes to Q16, select all that is applicable)

Type	Number (drop down)
Petrol	
Diesel	
CNG/LPG	
Electric	

20. What fuel type does your car run on? (if Yes to Q16, select all that is applicable)

Type	Number (drop down)
Petrol	
Diesel	
CNG/LPG	
Electric	

21. Do you travel with a companion? (multiple)

- a. Young Child (up to 6 years older)
- b. Older child (7-15 years older)
- c. Senior Citizens (60 years+)
- d. Caretaker
- e. Same age (such as friends, colleagues, spouse, etc.)
- f. No companion

22. What is the number of trips made per week based on purpose?

Purpose of trip	No. of trips (drop down)
1. Work	1. NA
2. Education	2. 1-2
3. Shopping (How many times do you visit malls and shopping markets)	3. 3-4
4. Care-related	4. 5-10
5. Recreation	5. 11-14
6. Livelihood	6. 15-20
	7. >20

23. What is the distance covered for different trips made per week based on purpose?

Purpose of trip	What is your average distance you travel (to and fro) (drop down)
1. Work	1. <2km
2. Education	2. 2-5km
3. Shopping (How many times do you visit malls and shopping markets)	3. 5-10km
4. Care-related	4. 10-15km
5. Recreation	5. 15-20km
	6. >20km

24. What are the modes covered for different trips made per week based on purpose?

Purpose of trip	Mode chosen for the longest distance (drop down)
1. Work 2. Education 3. Shopping (How many times do you visit malls and shopping markets) 4. Care-related 5. Recreation	1. Walking 2. Cycling 3. Public Bicycle Sharing 4. Public Bus 5. Metro 6. Train 7. Inland waterway ferry 8. Cab 9. Auto 10. Shared cab/auto 11. Personal car 12. Personal Two wheeler 13. Rented car/bike 14. Employee Transport (car/ bus)

*If livelihood as an option

25. What is the average km you travel in a day?

- 1-50km
- 51-100km
- 101-150km
- 151-200km
- Above 200km

26. What is the average working hours/duty time?

- 0-4 hours
- 4-8 hours
- 8-12 hours
- Above 12 hours

27. What mode do you use for your service? (multiple)

- Push-kart
- Cycle
- E-cycle
- E-loader/ Rickshaw
- Bike
- Car
- Truck
- Auto/3W
- Others specify: ____

28. Do you use your own vehicle for service?

- Yes
- No

29. Where do you travel? (highest based on Q22)

- From-
- To-

30. What time of the day do you commute? (highest based on Q22)

	5-8am	8-11 am	11-4 pm	4-8 pm	8pm-12am	12-5 am
Onward						
Return						

31. How long do you take to commute? (highest based on Q22)

	<10 min	10-30 min	30-45min	45-60 min	60-90 min	>90 min
Onward						
Return						

Section 2: Public Transport and Intermediate Public Transport

32. Do you use public transport regularly?

- a. Yes
- b. No

33. What modes of transport do you use to access public transport? (only if Yes in Q32) ?

	Walk	Cycle	Personal vehicle	IPT - Auto, taxi, e-rickshaw, shared auto/ cab etc.	Others:	>90 min
First Mile (Home to Transit stop)						
Last Mile (Transit stop to destination)						

34. How accessible is your nearest transit stop? (only if Yes is chosen in Q32)

- a. < 5 minutes
- b. 5-10 minutes
- c. 10-15 minutes
- d. 15-20 minutes
- e. 20 minutes and above

35. What is the average waiting time for public transit (bus, metro, local train, inland waterways etc.) in your city? (only if Yes is chosen in Q32)

- a. < 5 minutes
- b. 5-10 minutes
- c. 10-15 minutes
- d. 15-20 minutes
- e. 20 minutes and above

36. What is the mode of payment you use for the following? (only if Yes is chosen in Q32)

	Cash	Credit/ Debit Card	Smart Card	Pass	UPI/ Mobile Application	Free of cost
Public transport						
IPT						

37. Do you have access to information (fare, time-table, transit stops) on public transit? (select one-common)

- a. No information
- b. Static information
- c. Some information available but not coherent
- d. Most information available and accessible for all PT modes
- e. All information available and accessible for all PT modes

38. If public transit information is available, how do you access this information? (select one-common, if (a) in Q37 skip this question)

- a. Website of the public transit agency
- b. Public transit application (mobile app)
- c. Other websites or Social media
- d. At transit stops
- e. Print media
- f. Word of mouth (friends, family, colleagues, etc.)
- g. Others

39. Have you ever said no to an opportunity (educational/work related) due to difficulty in commuting? (common)

- a. Yes
b. No

If yes, Why? (Drop Down, select all applicable)

1. Availability- lack of adequate public transport in your area.
2. Safety concerns related to pickpockets and petty crimes
3. Gender based Safety concerns due to gender- based violence like eve teasing, molestations
4. Affordability - high cost of travel
5. Travel time - long time to travel to destination
6. Accessibility - inaccessible for use
7. Reliability - irregular schedules
8. Comfort - overcrowded, difficult to find a seat, inadequate ventilation
9. Others

40. Rate the following services in your city across various attributes according to your level of agreement or disagreement (provide a score in each cell-common)

Please ask the below statements addressing the respondent, and elicit response on a 5-point scale.

- 1 – Strongly disagree 2 – Disagree 3 – Neutral/Not sure 4 – Agree
5 – Strongly agree

a. Your city's public transport is safe from pickpockets and other petty crimes

Mode	Option
Bus	
Metro	
Local Train	
Water Metro/ Ferry	

b. Your city's public transport system is safe from gender related crime events such as eve teasing and molestation

Mode	Option
Bus	
Metro	
Local Train	
Water Metro/ Ferry	

c. Your city's Public transport is easily accessible by the differently abled & Persons with disabilities (linked to Q13)

Mode	Option
Bus	
Metro	
Local Train	
Water Metro/ Ferry	

d. Public transportation in your city is easily available across the city

Mode	Option
Bus	
Metro	
Local Train	
Water Metro/ Ferry	

e. There are long waiting periods to board public transport in your city

Mode	Option
Bus	
Metro	
Local Train	
Water Metro/ Ferry	

f. Reaching your frequently used destinations is significantly faster by your own vehicle than public transport

Mode	Option
Bus	
Metro	
Local Train	
Water Metro/ Ferry	

g. Information on time table, fares, etc. are easily available to you

Mode	Option
Bus	
Metro	
Local Train	
Water Metro/ Ferry	

h. Public transport is overcrowded and it is difficult to find a space or to even stand

Mode	Option
Bus	
Metro	
Local Train	
Water Metro/ Ferry	

i. Public transport in your city is clean, hygienic, and well maintained

Mode	Option
Bus	
Metro	
Local Train	
Water Metro/ Ferry	

j. Public transport is affordable between any two points in your city

Mode	Option
Bus	
Metro	
Local Train	
Water Metro/ Ferry	

41. Do you have restrictions from your spouse/parents/others from using public transport?

- a. Yes
b. No

If Yes, why? (drop down, select all applicable)

1. Safety concerns related to pickpockets and petty crimes
2. Safety concerns due to gender- based violence like eve teasing, molestations

3. Availability- lack of adequate public transport in your area.
4. Affordability - high cost of travel
5. Travel time - long time to travel to destination
6. Accessibility - inaccessible for use
7. Reliability - irregular schedules
8. Comfort - overcrowded, difficult to find a seat, inadequate ventilation
9. Others

42. Do you prefer taking public transportation at night?

- a. Yes
- b. No

If No, why? (Drop Down, select all applicable)

1. Availability- lack of adequate public transport in your area.
2. Safety concerns related to pickpockets and petty crimes
3. Safety concerns due to gender- based violence like eve teasing, molestations
4. Travel time - long time to travel to destination
5. Accessibility - inaccessible for use
6. Reliability - irregular schedules
7. Comfort - overcrowded, difficult to find a seat, inadequate ventilation
8. Others

Section 3: Parking

43. What is the mode of payment you use for dedicated parking? (linked to Q16, select one in each column)

Cash	Credit/Debit Card	Free of cost	UPI/ Mobile Application
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Q44-47: Rate the question based on the following scale

- 1 – Strongly disagree 2 – Disagree 3 – Neutral/Not sure 4 – Agree
5 – Strongly agree

44. Rate the parking infrastructure for vehicles (4W and/or 2W) on a scale from 1-5 across various attributes; E.g.: 5 on availability would mean the said service in your city is easily available) (linked to Q16, select one in each column)

Parking infrastructure in your city	Option
Dedicated Parking is available in all parts of the city	
Dedicated Parking is available at all major transit hubs	

Section 4: Road (common)

45. Rate the road conditions for the following attributes.

Condition of Road	Option
Roads in your city are adequately wide	
Roads in your city are not congested	
Roads in your city do not have potholes	
Roads in your city are well-illuminated	

Section 5: Pedestrian Infrastructure (common)

46. Rate the pedestrian infrastructure conditions for the following attributes.

Condition of pavements	Option
Footpaths in your city are wide and in good condition	
Adequate FOBs and subways are available at major junctions	
Footpath in your city are well illuminated	

Section 6: Cycle Infrastructure

47. Rate the bicycle infrastructure conditions for the following attributes (linked to Q16, select one in each column)

Condition of cycle tracks	Option
Adequate cycle tracks/lanes are available throughout the city	
Adequate cycle parking provisions are available at all transit hubs	

Section 7: Electric Vehicle

48. Would you consider buying an EV?

- a. Yes
- b. No
- c. Not sure

49. If No or Not sure, what is primarily stopping you? (select top 3)

- a. Electric vehicle are more expensive than ICE (petrol/ diesel) vehicles
- b. Limited finance options (not many banks, NBFCs giving loans for EVs)
- c. High cost of finance (rate of interest on loans is high)
- d. Safety concerns
- e. Not enough EV options in the market to choose from
- f. Inadequate charging infrastructure
- g. No clarity on resale/ resale value of EVs
- h. Concerned about technology and reliability of existing EVs
- i. Lack of service centres/ skilled mechanics
- j. I'm not aware of the EV technology
- k. I own a car /recently purchased personal vehicle so not planning to buy one in the next few years
- l. Others; specify _____

Section 8: Use of Mobile Application

50. Do you use a smartphone?

- a. Yes
- b. No

51. If Yes, do you use the following services and how many applications do you use for each? (select all that apply)

Services	Number of apps
Booking a ride on digital platforms for taxi-cabs, auto-rickshaws, bike-taxis, etc	
Rental vehicle Application - PBS/Bike/ Cars	
Ticketing on bus, metro, other public transport etc.	
Journey planning, information on routes and timetables and fares	
Delivery of food, groceries, medicines, packages etc.	
Payments/Recharge of smart cards	
Booking parking slots	
Charging Locations for EVs	

Section 9: Gender Safety

52. Have you faced harassment while commuting in your city?

- a. Yes
- b. No

53. Are you comfortable sharing this kind of harassment?

Type of harassment (Drop Down)

Verbal

(sexual comments on clothes person etc , whistling etc).

Non-verbal

(Stalking, indecent exposure, suggestive expressions, sexual gestures)

Physical

(groping, playing with hair, kissing,hugging sexual assault, Rape)


No response



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