



Unlocking the potential of bike-taxis in India

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Date: Jan. 12, 2024

Foreword

We are happy to collaborate with KPMG for the special report on "Unlocking the potential of bike-taxis in India". In view of increasing traffic congestion across major Indian cities and the need for greater personal mobility as well as last-mile connectivity, this report comprehensively presents bike-taxis as an economical and workable solution to this problem. Two-wheelers have been an integral part of India's growth story and the report highlights the quintessential role that bike taxis can play in an emerging nation like India which is the fourth-largest automotive and second-largest two-wheeler market in the world. It has been witnessed that two-wheelers have been instrumental in bringing economic benefits for both consumers and the government. The Report, through its interesting insights, assesses the crucial role that bike taxis play in uplifting the gig economy and busts myths related to bike taxis. This report is interdisciplinary and brings together various stakeholders' points of view, including customers as well as bike-taxi drivers. I sincerely hope that the in-depth analysis in this Report will provide important inputs and insights for policy-making with regard to bike-taxis in India.


12/01/2024

Head and Dean

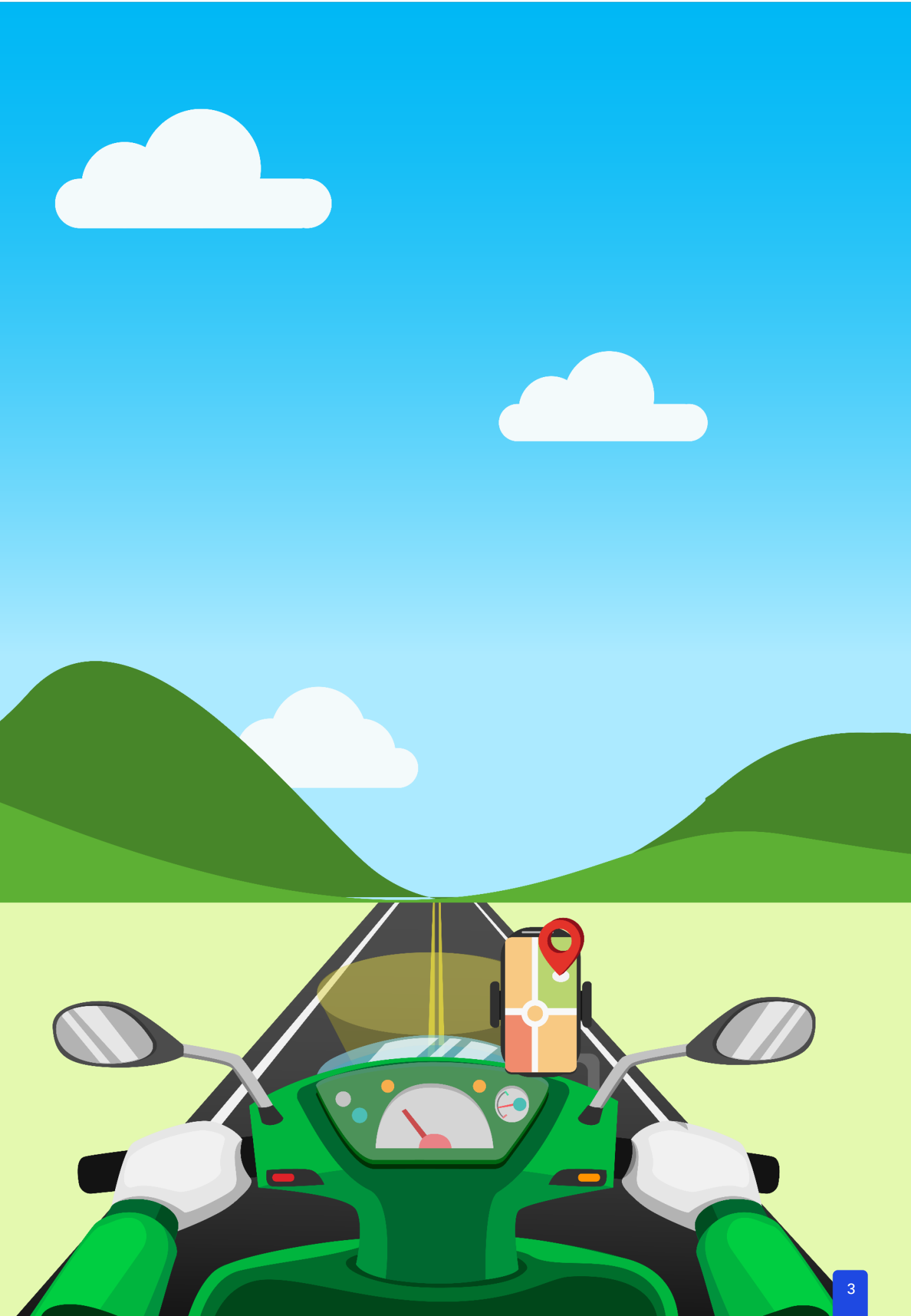




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Unlocking the Potential of Bike-Taxis in India: A Review



Unlocking the potential of bike-taxis in India

The global attention towards transportation has risen over the years as ‘Goal 11 of the SDGs’ emphasises making cities and human settlements inclusive, safe, resilient, and sustainable. Sustainable transportation and mobility have been classified as quintessential to sustainable development (United Nations, 2023). For the same, mobilising resources through appropriate policies is one of the key priorities for any government. The government focuses on adopting sustainable ways of commuting on intra-city travel whilst ensuring last-mile connectivity and affordability (Niti Aayog, 2018). The comprehensive report “Unlocking the Potential of Bike-Taxis in India” provides insights into policy regulations and the functioning of bike-taxis in India and reflects how they are instrumental in reducing greenhouse emissions. The Report is succinct and coherent in approach to understanding the nuances of the bike-taxi market in India.

The Report begins by explaining the relevance of bike-taxis in a market like India, where two-wheelers are the highest-penetrated vehicle segment. Demonstrating the growth of the two-wheeler industry over time, it builds up a compelling case for bike-taxis being an affordable and efficient option for last-mile connectivity, which has become necessary given the increasing traffic congestion across major Indian cities.

While India is the fourth-largest automotive and second-largest two-wheeler market in the world, the two-wheeler penetration per thousand population has lagged behind several ASEAN nations including Thailand, Indonesia, and Malaysia. This is evident from the statistics given in this Report concerning two-wheeler penetration per thousand population for ASEAN nations. A compendious study on the Indian market shows that there will be a surge in EV adoption by 2030 (Confederation of Indian Industry, 2023) and two-wheelers will play a significant role in this adoption.

In view of the rapid growth of gig workers in India over the last decade, the next segment of the study highlights the increasing role of two-

wheelers in promoting the gig economy. With the increasing adoption of digital platforms and the consequent formalisation of the gig sector, this segment of the Report focuses on the role of bike-taxis in providing a boost to the gig economy. It reflects the association between gig workers and various aggregator platforms and how the low-cost EV two-wheeler model is a perfect fit for gig delivery work. Two-wheelers have been key in connecting the service providers to the recipient. As the gig economy gets more formalised and is becoming an important source of employment to a larger section of society, this insight becomes pertinent.

Increasing urbanisation coupled with growing transport demand has led to severe congestion in many cities of India, which are unable to leverage their public transportation systems completely and effectively (Verma et al., 2021). As highlighted in the report, metros are significantly underutilised, with utilisation lower than 50 percent for majority of the cities, which can be attributed to poor first and last-mile connectivity hampering the metro network’s capability to provide door-to-door mobility. The Report presents bike-taxis as an effective aid to the public transportation system. For many countries such as Brazil, bike-taxis have become a way of life as they have been using them for years now for reasons such as efficient first mile and last mile connectivity, opportunity to circumvent growing traffic congestion in urban areas and affordability. In addition to these benefits, bike taxis provide the convenience of point-to-point travel.

The Report further elaborates on the importance of bike-taxis in the Indian economy and demonstrates how bike taxis are now a key component of the mobility ecosystem in the cities of India. For the same, excerpts representing the point of view of the users have also been showcased. The primary study represents how bike-taxis have been instrumental in improving their daily commute.

This Report also focuses on the legitimacy challenges on the road to operationalisation in full swing and the headwinds due to the absence of a uniform policy structure and concerning rules. Though timely interventions have been done by the Central government through amendments to the Motor Vehicles Act, 1988; autonomy to enforce the same is given to the state since the subject falls in the concurrent list. The analysis reveals that the majority of states in India allow bike-taxi operations. This indicates a favourable outlook towards bike-taxi operations. However, Centre-State coordination remains an issue. While there is a favourable central government policy, more needs to be done at the level of the state to bring out clearer regulations. For instance, in Brazil, while there are a number of regulations at the Federal level that have formalised the profession, the municipalities have been given enough freedom to regulate and maintain the app-based bike-taxis in their regions.

The Report also includes a segment focusing on the comparative analysis of the ten key states to promote bike-taxis by providing a policy

environment. For this purpose, it has considered five parameters: Regulations; Ease of plying; Withstand pressure from the union; Vehicle type allowed as per policy and Ease of conversion. The observations of the study indicate disparities among states in terms of the stated parameters.

To provide a complete understanding of the bike-taxi industry, a segment of the study focuses on the motivations and concerns of a typical bike-taxi driver by employing a primary survey of over 2,500 bike-taxi drivers. This analysis is pertinent as it needs to be understood that bike-taxi drivers are essentially gig workers and therefore their socio-economic profile along with challenges need to be analysed so that these can be kept in mind while drafting policies for bike-taxis.

The Report provides a holistic view of the bike-taxi industry in India. It delves deep into the potential, opportunities and challenges of the sector and provides pertinent insights which can be useful in formulating policy with regard to this sector in India.

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4. Niti Aayog (2018). Transforming India's Mobility, Accessed on 15 December 2023

1. India's passion for two-wheelers



Unlocking the potential of bike-taxis in India



Automobiles in India have always been an object of status, pride and excitement.

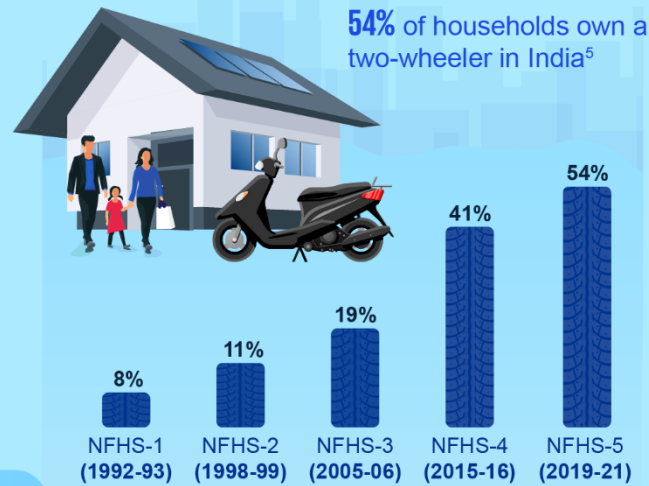
India is the fourth largest automotive and second largest two-wheeler market in the world¹. The country recorded total vehicle sales of 22.2 million units in 2022-23² with consumer preference heavily skewed towards two-wheelers (74 per cent).

Two-wheelers are the highest penetrated vehicle segment in the country. Over the last three decades, their penetration has grown at the fastest pace compared to any other mode of transportation. India's love for two-wheelers, cutting through all economic classes, symbolises empowerment for the working class and passion for the elite.

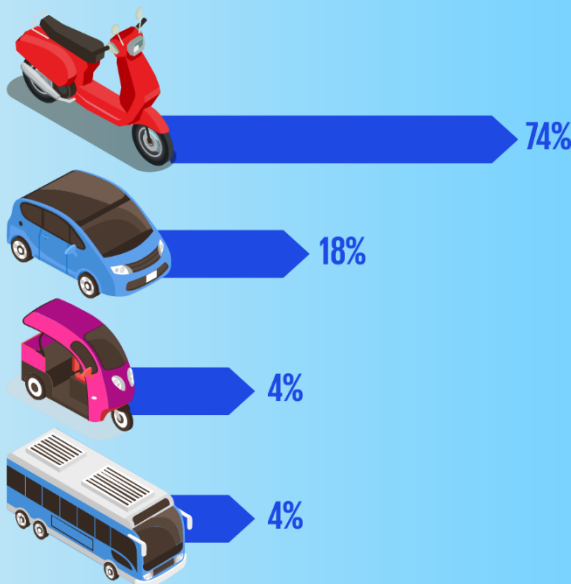
India is the **second largest** two-wheeler market in annual sales registration, 2022 (Units)^{2,3,4}



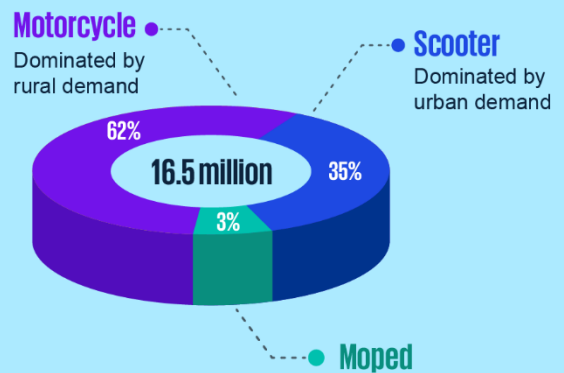
54% of households own a two-wheeler in India⁵



Two-wheelers **contribute the highest** to annual automobile registrations²



Scoters have made a **come-back with the urban market*** and now constitute **-35% of two-wheeler sales²**



*Scooter held a c.50% market share in 1995, which fell to c.12% in 2007²

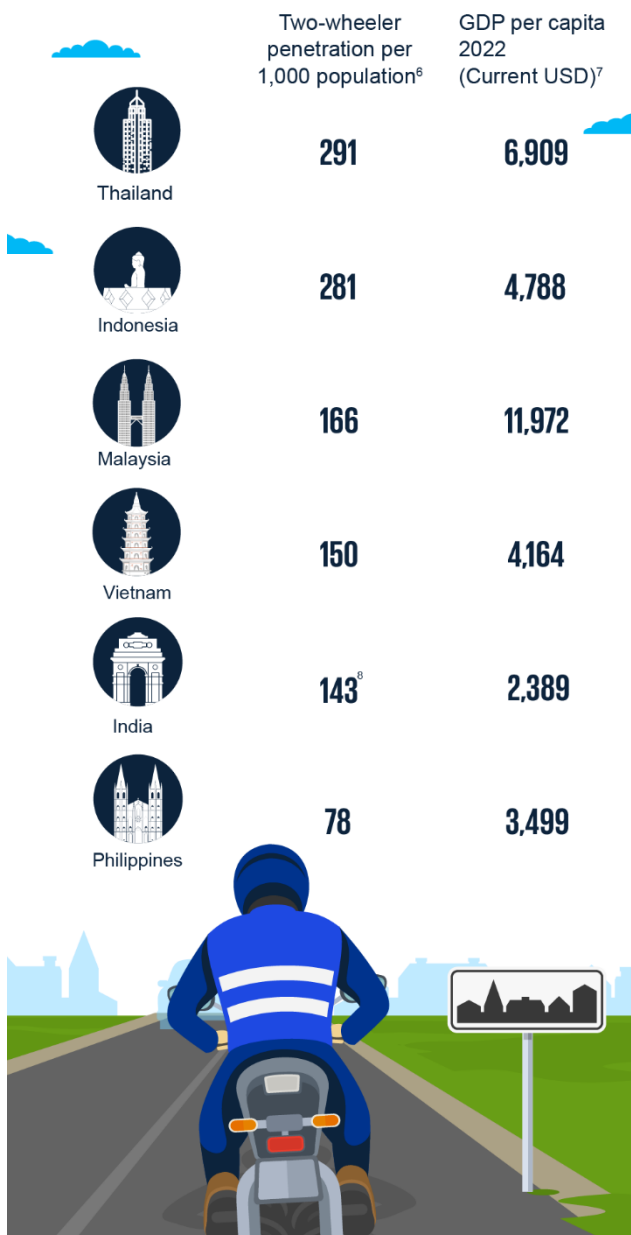
¹ Production statistics 2022, International Organisation of Motor Vehicle Manufacturers, accessed on 27 June 2023; ² Monthly Flash Report of March 2023, Society of Indian Automobile Manufacturers, April 2023; ³ National Bureau of Statistics of China, accessed on 6 July 2023; ⁴ 2022 Statistics, ASEAN Automotive Federation, accessed on 6 July 2023; ⁵ National Family Health Survey NFHS-5, The Print, Nikhil Rampal, 27 May 2022

1.1 Affection for two-wheelers

India’s affection for two-wheelers, deeply influenced by the country’s transportation landscape and income levels, is driven by their affordability, accessibility, fuel efficiency, maneuverability and versatility.

Two-wheelers in India are often associated with freedom and youthful spirit. The vehicle segmentations available in India are unique to the country with scooters (a category specific to India) evoking a feeling of nostalgia and comfort. On the other hand, motorcycles evoke a feeling of thrill and adventure.

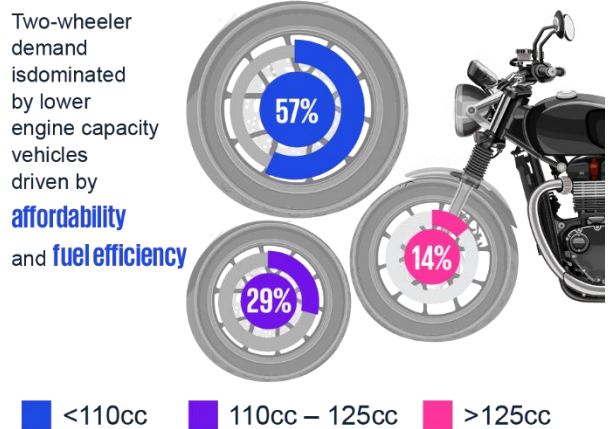
Figure 1: Two-wheeler penetration in ASEAN^{6,7}



Despite being the second largest two-wheeler market in the world with their positive impact on enabling people transportation and indirectly boosting the economy, two-wheeler penetration per 1,000 population has lagged comparable to several ASEAN nations.

The two-wheeler penetration in India (143 vehicles per 1,000 population) and GDP per capita (USD 2,389) lags several ASEAN nations, including Thailand and Indonesia by a factor of two. Increasing GDP per capita and disposable household income is expected to improve buying power presents an immense potential for the growth of two-wheelers in the country.

Figure 2: Split by engine capacity (%)²



The numbers (Figure 2) clearly show that two-wheelers with a lower engine capacity dominate the market. This can be attributed to the growing income levels which influences purchase behavior.

- Factors such as cost effectiveness, lower maintenance, and durability take precedence for customers in the lower income groups. Hence, they opt for budget friendly options (two-wheelers with engine capacity of <125 cc) that focus more on fuel efficiency rather than performance
- Customers with higher disposable incomes prefer higher engine capacity (>125cc) and performance-oriented vehicles with aggressive styling. Brand association is also a key purchase criteria for this customer segment.

⁶ Hero World 2020, Investor Day, BSE Filing, Hero MotoCorp Ltd., 19 February 2020; ⁷ GDP per Capita (Current USD), World Bank, accessed on 29 June 2023; ⁸ SIAM - International Transport Forum, Workshop on Motorcyclists Safety: Riding in a Safe System, 10 June 2021

1.2 Growth of the two-wheeler industry

Two-wheeler industry saw a steady growth from the turn of the 21st century till 2018-19 (FY19), with an annual growth of c. 10 per cent⁹. This growth was supported by the increase in overall economic activity in urban and rural India.

After achieving an all-time peak in 2018 (FY19), the industry saw a slump 2019 (FY20) onwards, owing to multiple factors such as slowdown in the overall economic activity, Non-Banking Financial Company (NBFC) liquidity crisis due to payment default by Infrastructure Leasing & Financial Services Limited (IL&FS), weak rural sentiments, inventory and price adjustment on account of Bharat Stage Emission Standards 6 (BS-VI) transition, increase in insurance premium and implementation of new safety norms. The entry level motorcycles, that were the growth engine of the industry, witnessed a steep decline in demand after the price hike due to BS-VI^{2,11}.

The COVID-19 pandemic further slowed the industry due to strict nationwide lockdowns and loss of income for a large portion of the population.

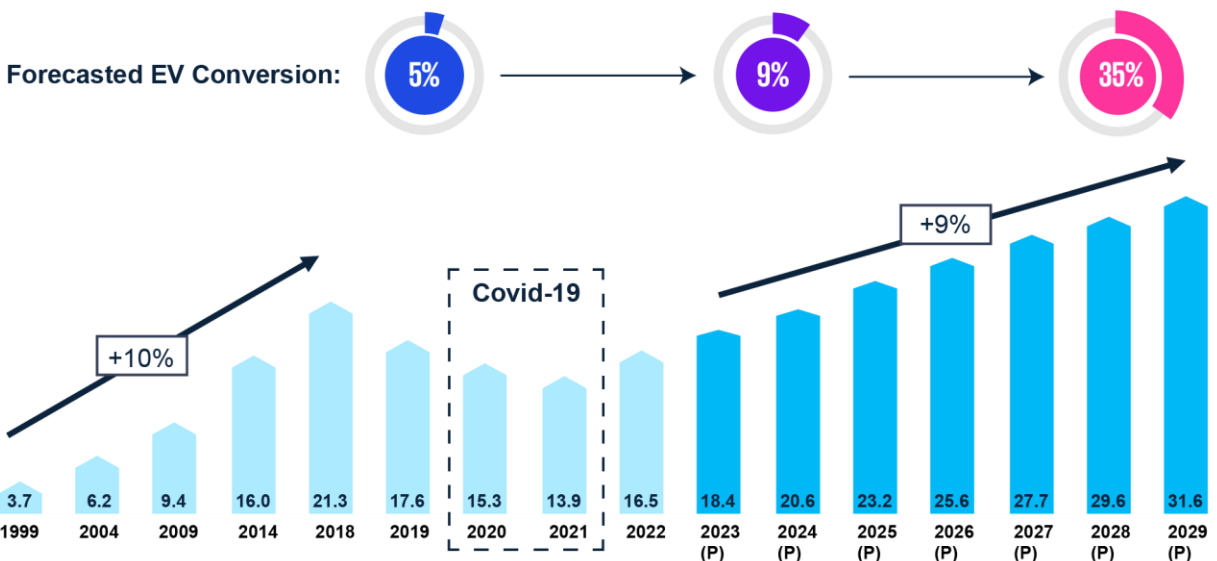
The industry showed signs of improvement in 2022 (FY23) due to uptick in economic activity and favorable agricultural income, however, the sales have not yet recovered to the previous highs.

Further recovery is expected till 2024 (FY25) on account of rapid urbanisation, Government's focus on raising per capita incomes, increase in infrastructure spending¹² and rural road development programs (e.g., 125,000 km of rural roads sanctioned under Pradhan Mantri Gram Sadak Yojana (PMGSY) - III¹³).

Medium to long-term growth drivers, including improving economic activity, growing private consumption, better access to financial services and push for vehicle electrification are expected to provide a fillip to two-wheeler demand, with volumes expected to reach c. 32 million by 2029 (FY30)¹¹.

In addition to the industry growth, two-wheeler industry is expected to lead the way in EV adoption on account of increasing economic viability (driven by constantly improving total cost of ownership), favorable government policies to boost demand through Faster Adoption and Manufacturing of Electric vehicles (FAME) and state subsidies, and growing charging infrastructure. To improve the EV supply chain, Government also introduced the Performance Linked Incentive (PLI) schemes to localise manufacturing and decrease cost of ownership.

Figure 3: Two-wheeler volume, 1999-2029 (million units)^{2,9,10,11}



Based on an analysis of key enablers for EVs such as daily running, route predictability, charging requirement and economic viability, KPMG in India expects 30 to 35 per cent electric two-wheeler penetration by 2029-30 (FY30)¹¹

⁹ Road transport yearbook of FY19, Ministry of road transport and highways, accessed in August 2023; ¹⁰ Vahaan dashboard, accessed in August 2023; ¹¹ KPMG in India analysis, 2023/24 based on primary and secondary research; ¹² National Infrastructure Pipeline (NIP) for FY 2019-25; ¹³ Pradhan Mantri Gram Sadak Yojana-III (PMGSY-III), Ministry of Rural development, Release ID: 1811556, Press Information Bureau, 30 March 2022

1.3 Reasons driving two-wheeler preference



Affordability and accessibility:

- Two-wheelers are relatively cheaper to purchase, maintain, and operate than cars. This makes them a viable mode of transportation for a large section of the Indian population, i.e., lower and middle-class families, young professional and students
- Easy availability of financing options has further enhanced the accessibility of two-wheelers for buyers.

Maneuverability:

- Indian cities rank higher on the Traffic Density Index, with Bengaluru, Pune, Mumbai and Delhi in the top 50 cities¹⁴
- Narrow congested roads and chaotic traffic conditions present a viable use case for two-wheelers, their size, flexibility and agility allows riders to navigate cities with ease. Hence, a two-wheeler is the preferred choice for daily commuting, especially in densely populated cities.

Empowerment and mobility:

- Two-wheelers have empowered individuals in India by providing them with increased mobility and independence
- Improving ease of mobility has increased women's participation in the work force, and there is further scope of improvement cost efficient, convenient and safe transportation¹⁵.

Fuel efficiency:

- Rising fuel prices is a significant consideration for value conscious Indian consumers
- Two-wheeler models with high fuel efficiency are a preferred choice for economical everyday travel
- Fuel efficient entry level (<= 110 cc engine capacity) motorcycles and scooters account for >50 per cent of all two-wheeler sales in India annually².

Versatility and utility:

- Two-wheelers serve a range of utilitarian purposes. Other than being used for mobility/transportation needs of the people, they are also utilised for commercial activities by small-scale business to deliver goods, as well as by traditional and new-age platform gig works to earn a livelihood.

Last-mile connectivity:

- Two-wheelers play a crucial role in bridging the last-mile gap by providing a convenient connectivity option to the unserved or under-served areas
- Whether it's travelling to office (65 – 70 per cent of Indians travel less than five km daily to work¹⁶), college, or to the local market, two-wheelers offer flexibility and convenience in areas with limited public transport options.

Under penetration of public transportation:

- Dependence on cost-effective public transportation is high due to low-per-capita income. However, quality of infrastructure, frequency of service, time and speed are a few challenges faced which makes people prefer personal motorcycles over public transportation
- A 2019 survey highlights that 51 per cent of respondents use personal motorcycles compared to 37 per cent respondents who use public transportation. This trend is more pronounced in Tier 1 and Tier 2 cities than in metros, where public transportation has not been sufficiently developed¹⁶.

¹⁴ Tomtom Traffic Index 2022, TomTom, accessed in July 2023; ¹⁵ Economic survey 2022-23, Ministry of Finance, , ReleaseID: 1894913 Press information Bureau, 31 January 2023; ¹⁶ How Urban India Moves: Sustainable Mobility and Citizen Preferences, Council on Energy, Environment and Water (CEEW), Soman et. al., October 2019

1.4 Role of two-wheelers in India's growth story

Two-wheelers have had a significant impact on the country's economy. It not only generates direct livelihood from manufacturing, sales and service, but also indirect livelihood opportunities through Gig Economy in Fast-Moving Consumer Goods (FMCG) and e-commerce sectors.

Beyond convenience, owning a two-wheeler and association with leading brands, is considered a status symbol and a reflection of one's style and personality. India has witnessed a growing riding culture with the emergence of motorcycle clubs where enthusiasts gather for rides, fostering a sense of camaraderie and shared passion.

Two-wheelers are an integral part of India's growth story. They are not only central to personal mobility but have played a pivotal role in livelihood generation across the country. A two-wheeler is a mode of entry into micro-entrepreneurship and has traditionally been used for last-mile goods delivery of daily use items such as milk and groceries. Rentals at tourist destinations is another income-generating opportunity for local communities e.g., Goa.

Several research in the public domain has highlighted how two-wheelers, particularly scooters, have transformed the lives of women in beyond metro cities, in tier 2 and tier 3 cities as well. The ease of mobility achieved with gearless scooters has opened opportunities for women at malls, call centers and gig jobs with internet-based aggregators, among others. Several social ventures, providing driving/two-wheeler riding course curated for women have also started across the country. These initiatives are expected to increase women participation in the work force and their contribution to the economy. By improving gender parity in the work force, India could add USD 770 billion to annual GDP by 2025—18 per cent above business-as-usual¹⁷.

Two-wheeler mobility is expected to have a significant role to play in this growth. Tapping into the growing Gig Economy, internet-based aggregators have created several livelihood avenues such as last-mile parcel delivery, hyper-local food delivery, direct-to-home services and opportunity to move people to and from public transportation hubs, which help bridge the last-mile transportation gap.



Image 1: Two-wheeler being utilised by a small-scale milk vendor for live hood generation



Image 2: Traditional Gig jobs: An FMCG distributor delivering goods to Kirana stores in the hinterland



Image 3: Internet-based platform Gig jobs



Image 4: Internet-based platform Gig jobs



¹⁷ The Power of parity: Advancing women's equality in Asia Pacific, McKinsey Global Institute, Woetzel et. al., May 2018

2. Two-wheelers lighting up the gig economy

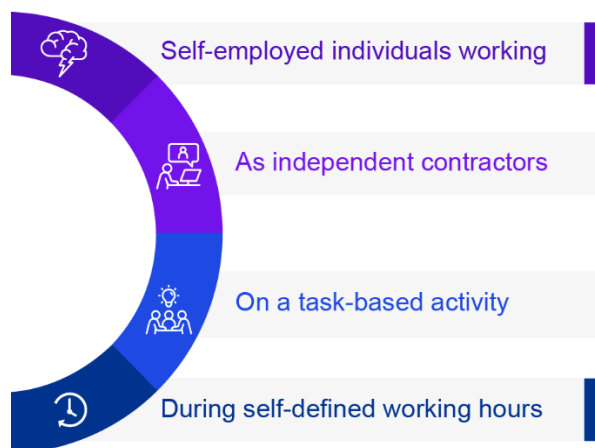


Unlocking the potential of bike-taxis in India

'Gig Economy' is one of the most popular buzz words of the twenty first century across the globe. A globally rising phenomenon with strong adoption in western markets, gig work has gained rapid prominence in India over the last decade. India has quickly emerged as one of the largest markets for gig work driven by mass adoption of e-commerce and online retailing¹.

Though there is no standard definition of gig work, it is typically associated with certain key characteristics, defined below.

What is gig work?



Gig work, however, is not a new concept in India. Casual workers employed in temporary contractual work have been a part of India's informal economy for several decades across urban and rural hinterland as domestic staff, daily wage construction labourer's or farm workers

With the advent of platform-based aggregators, the traditionally unorganised gig economy has rapidly adopted digital and technological interventions. From using personal networks and word-of-mouth to find a reliable on-demand service provider, the society has now adopted app-based companies for mobility needs, food delivery, local transportation as well as for personal and home services.

2.1 Growth in the global gig economy

Gig economy is an 'independent working model' that aims to bring together people offering their services at a certain fee as per their availability and customers who are looking to avail such services.

With the rapid adoption of smartphones globally, digital economy has grown at a strong pace over the last decade. Global smartphone penetration has increased from 18.6 per cent in 2010² to 68 per cent in 2022³, leading to digital economy accounting for 15 per cent of the global GDP, having grown 2.5 times faster than the GDP of the physical world over the previous ten years⁴.

In addition, the pandemic has resulted in a major shift in work preferences with workers increasingly asking for remote work, flexible working hours and better work life balance. A key outcome was the 'great resignation' witnessed more profoundly in the western geographies. In U.S., over 47 million workers quit their jobs in 2021, and 11.3 million jobs were left empty at the end of February 2022⁵. The impact of the 'great resignation' was felt in India as well with attrition rates elevated at 20.3 per cent in 2022 and 21 per cent in 2021⁶. The resulting labour shortages have caused businesses to look for additional methods of meeting their labour needs.

Global supply chain disruptions post the pandemic too have played a key role in prompting people to look for additional work with global inflation reaching 8.7 per cent in 2022 from three to four per cent average over the past decade⁷.

These factors have resulted in the number of people employed in gig work rising year on year across the globe. As per an estimation, about 85 per cent of the employment increase between 2005 and 2013 is due to the gig economy⁸. World Bank states that six per cent of the world's labour force is part of the gig economy⁹, and as high as 36 per cent of the workers in U.S. are involved in the gig economy¹⁰. The adoption of the gig culture has been staggering in India, as well.

¹ Economic Survey 2020-21: India's Gig economy now among largest in the world, Economic Times, 29 January 2021; ² Mobile Computing Sector Report 2011, Page 8, Clear water international, December 2011; ³ The Mobile Economy 2023, The GSMA, Okeleke et. al., February 2023; ⁴ Digital trust: How to unleash the trillion-dollar opportunity for our global economy, World Economic Forum, Hayat, 17 August 2022; ⁵ 3 Reasons Businesses Are Tapping Into The Gig Economy, Forbes, Gibbons, July 2022; ⁶ Great resignation impact being felt in India as attrition rate remains elevated at 20% in 2022, Business Insider, Kapoor, 26 September 2022; ⁷ International Monetary Fund. 2023. World Economic Outlook: A Rocky Recovery, April 2023; ⁸ Fueling the Gig Economy: A Case Study Evaluation of Upwork.com. Management and Economics Research Journal, Green et. al., February 2018; ⁹ World Development Report 2019: The Changing Nature of Work; ¹⁰ Press reports, Projections based on US Bureau of labour Statistics data, October 2021

2.2 Gig economy landscape in India

India currently has 10 to 15 million gig workers across several sectors, as per estimates^{11,12}.

The number of gig workers in India has grown at a rapid pace over the last decade. As per a Niti Aayog report, the number of gig workers are estimated at c. 10 million in FY23, up from c. 2.5 million in FY12. The workforce involved in the gig economy has grown at a staggering 13 per cent CAGR.

Majority of this growth can be attributed to the increasing adoption of digital platforms. The proportion of gig workers finding opportunities through such platform-based service providers is continuously on the rise leading to the gradual formalisation of the sector¹².

Figure 4: Gig workers in India, FY12-23 (million #)¹²

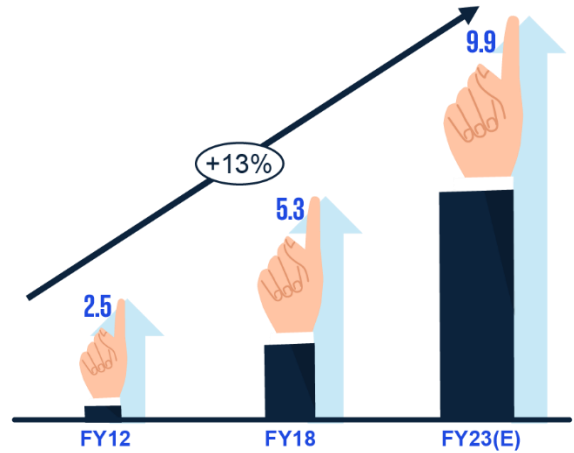


Figure 5: Share of gig workers in organised v/s unorganised sectors, FY12 and FY20 (%)¹²

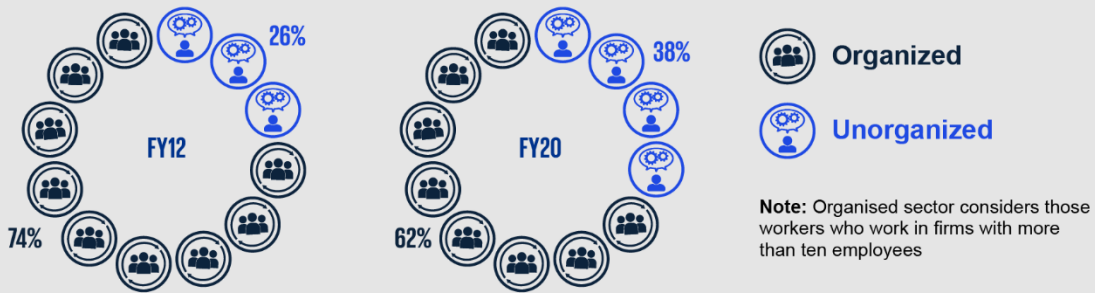
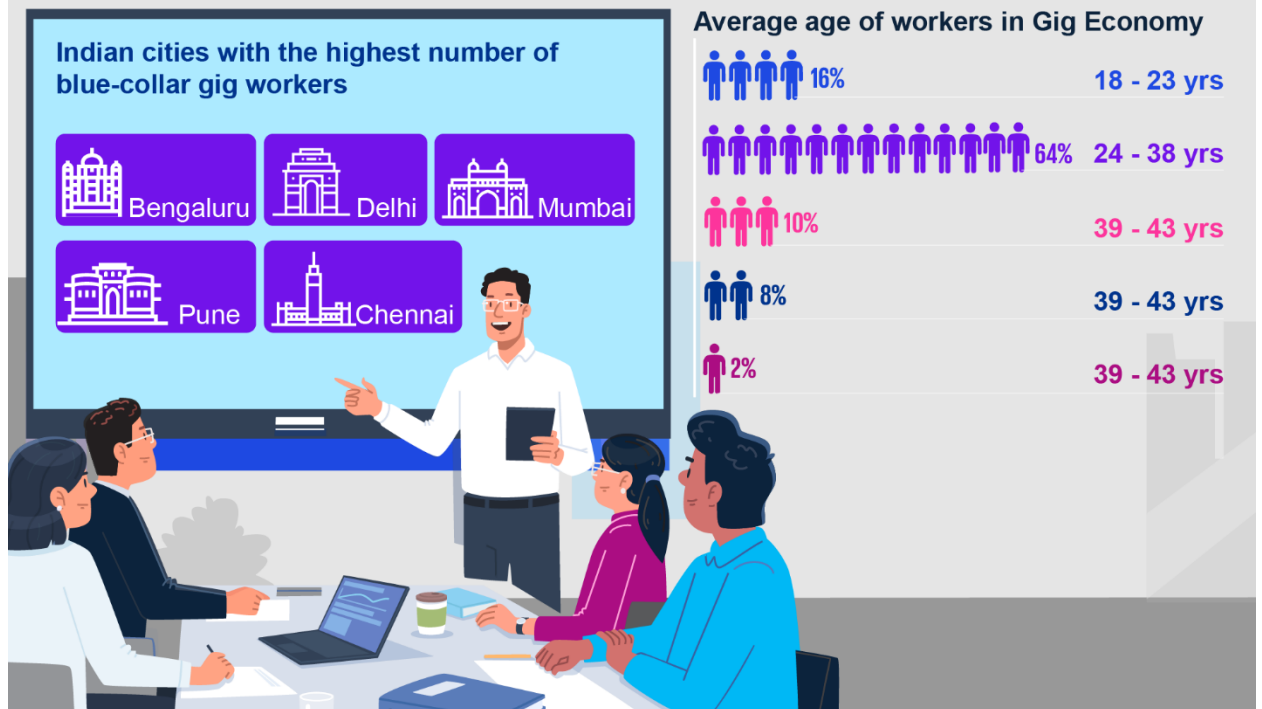


Figure 6: Snapshot of the Indian gig economy¹¹



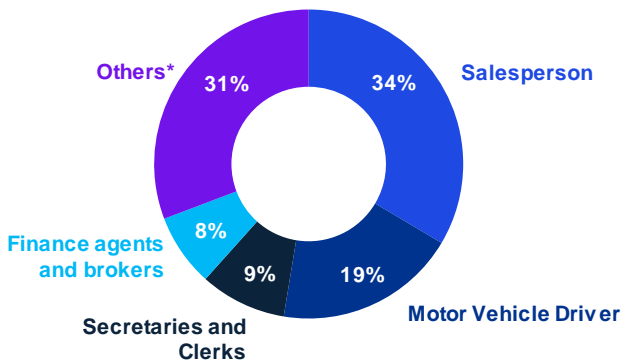
¹¹ The rising Gig Economy of India, ASSOCHAM and Primus Partners; February 2021 ¹² India's Booming Gig and Platform Economy: Perspectives and Recommendations on the Future of Work, Niti Aayog, June 2022

Note: (E) : Estimated

2.3 Types of gig workers in India

Motor vehicle drivers are the second largest segment of gig workers in the country, accounting for c.20 per cent of the total gig workers, behind salespersons at c.35 per cent in FY20¹².

Figure 7: Split by occupation, FY21 (%)¹²



Others includes Housekeeping and Restaurant Services Workers & Personal Care Workers, Business Professionals, Computing Professionals, Street Vendors, Cashiers & Tellers, etc.

As of 2023, there are an estimated 1.5 million to two million gig motor vehicle drivers in India associated with leading aggregator platforms¹³.

Motor vehicle driven gig work primarily consists of those driving two-wheelers for commercial purposes in sectors across mobility, food delivery, e-commerce delivery, hyperlocal delivery and local courier delivery. Industry discussions suggest that majority of these drivers are present across multiple platforms.

Today, any individual with access to a two-wheeler, with or without a commercial permit, can deliver packages, food, groceries, medicines etc., in the digital hyperlocal economy. Such individuals are different from the traditional motor vehicle drivers who drive vehicles with commercial permits alone¹².

Majority of the two-wheeler gig workers in the mobility space are using internal combustion engine (ICE) vehicles driven by higher daily-run and weight of the load being transported. On the other hand, gig workers in the delivery space (courier and food) have started adopting electric vehicles primarily due to savings on petrol costs. Lower daily-run coupled with start-ups offering public charging docks and battery swapping make delivery gig work the ideal target segment for EV adoption^{13,14}.

2.4 Gig work using motor vehicles


Gig Workers working as drivers across these platforms are primarily involved in the following commercial activities:

Last-mile delivery of goods



Online Food Delivery

- Delivery of freshly prepared food from Restaurant Partners to Customers for Food Ordering and Delivery Platforms



Online Grocery Delivery

- Delivery of fruits, vegetables and other daily essentials to the Customers for Online Grocers



E-commerce Logistics

- Delivery of packages from the Local Delivery Hub in an area/city to the Customer for E-commerce players



Hyperlocal Delivery


- Delivery of medicines, grocery and other household items from local Supermarkets, Chemists or Kirana stores to the Customer



Local courier pick-up/delivery

- Last-mile delivery of inter-city/state couriers or local pick and drop services within the city

Last-mile transportation of passengers



Bike-Taxis

- Short distance travel and connecting customers to local public transportation hubs such as a bus stand, metro station, or taxi stand

¹³ KPMG in India analysis, 2023/24 based on primary and secondary research; ¹⁴ Over 75% gig delivery workers have ditched petrol two-wheelers in favor of EVs: Here's why, The Times of India, Kukreja, 24 June 2023

2.5 Increasing role of two-wheelers in gig work

Type of Gig	Two-Wheeler	Three-Wheeler	Passenger Cars
Delivery of Goods			
Online Food Delivery	✓	✗	✗
Online Grocery Delivery	✓	✓	✗
E-commerce (logistics)	✓	✓	✓
Hyper local delivery (FMCG, Pharma)	✓	✗	✗
Local courier pick-up/delivery	✓	✓	✓
Transportation of Passengers			
Mobility	✓	✓	✓

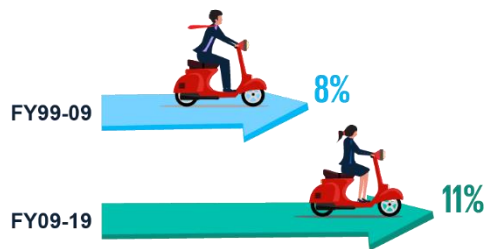
Due to their inherent form factor, two-wheelers are the most versatile and convenient vehicle for all commercial applications across the board.

With the advent of aggregator companies – platform and app-based service providers – and India's strong digital adoption over the last decade and a half, two-wheelers have played a critical role in connecting the service/product provider to the recipient.

From food delivery from our favorite restaurants to last minute grocery orders, from access to critical medicines during the Covid-19 pandemic to navigating the rush hour traffic to quickly reach the metro station, two-wheelers are a foundation of our nation's last-mile connectivity.

Leading aggregator platforms in India today were launched towards the end of 2000s and early 2010s and have become pioneers in commercializing two-wheelers. Over the last 5 years, India saw mobility aggregators launch their affordable products such as bike-taxis across the nation. Enabled by new delivery-driven business models, two-wheeler sales in India witnessed faster growth in the decade ending FY19, compared to the previous decade (FY20-22 not included due to impact of the pandemic).

Figure 8: Two-wheeler growth, FY99-09 and FY09-19 (%)¹⁵



Rapid rise of end-use sectors provided a fillip to two-wheeler demand, particularly in the EV space (aided by government subsidies), giving rise to new business models (such as leasing and aggregation) where players are trying to plug the gap between demand-supply mismatch faced by the delivery platforms.

On the delivery front, online food and grocery delivery market grew at 34 per cent and 55 per cent CAGR, respectively, between 2017-23¹⁶. On the passenger mobility, bike-taxis have shown tremendous promise. The industry started picking up from 2019 onwards, and grew 2.5-3x between 2020 and 2022, signaling a promising future¹⁷.

¹⁵ SIAM Annual report 2009 – 2022, Society of Indian Automobile Manufacturers, accessed in July 2023; ¹⁶ Statista's Online Food Delivery database, accessed in July 2023; ¹⁷ Unstoppable, Business Today, Paul et. al., 18 May 2023

3. Bike-taxi – Aiding the public transport system?



Unlocking the potential of bike-taxis in India

3.1 Rising congestion in India

Growing transport demand coupled with rapid urbanisation, and a shift towards personal mobility has started to burden urban infrastructure, leading to increasing traffic congestion in cities and towns.

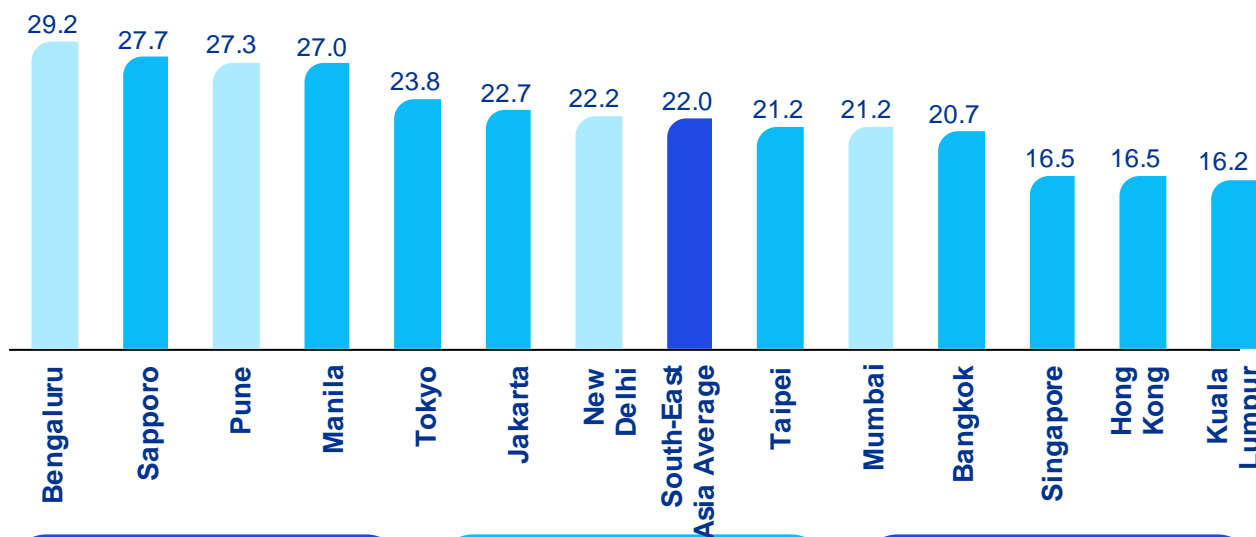
Indian cities are some of the most severely congested in the world. The four most congested Indian cities – Bengaluru, Pune, New Delhi and Mumbai – have average rush hour speeds as low as 20 to 25 kilometer per hour, as compared to global average of 35 to 40 kilometer per hour¹.

Increasing congestion also gives rise to several economic and environmental concerns. High congestion results in longer driving time, leading to lower economic efficiency. As per a leading traffic index provider, an average commuter,

across the top four most congested cities in India, spends 571 to 782 hours driving per year for a 30-kilometer return journey, of which 45-50 per cent is spent in congestion. A recent report by University of Calcutta estimates that traffic congestion is expected to cost the economy USD 22 billion per year across just Delhi, Mumbai, Bengaluru and Kolkata².

India also held the worst pollution record in 2022, with 39 out of the 50 most polluted cities in the world³. Pollution is further exacerbated by traffic congestion, with road transport accounting for 14 per cent of green house gas emissions in the country⁴. With this context, it is imperative to look at newer mobility options.

Figure 9: Average time required to travel 10km, 2022 (mins)²

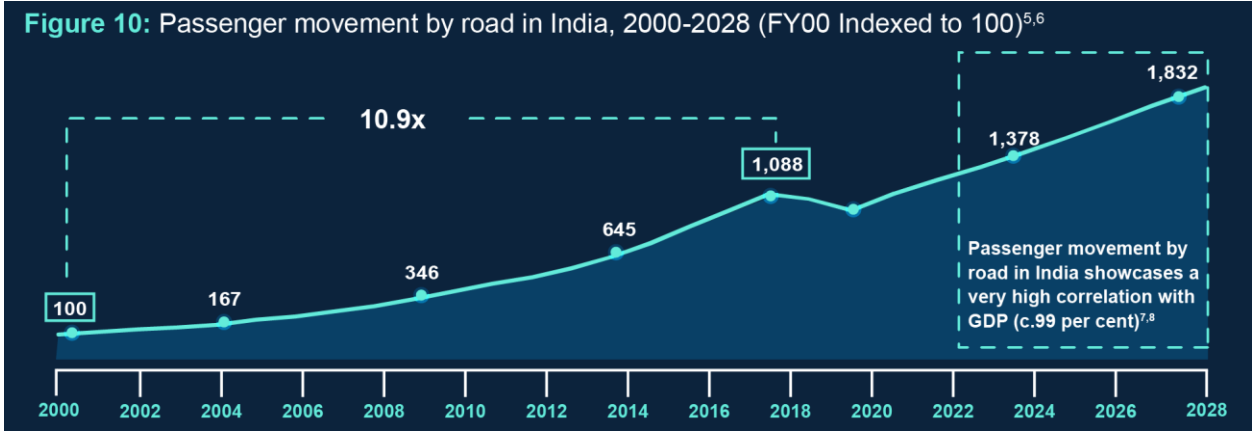


World's most polluted cities in India ³
39 out of 50

Expected cost of congestion ²
USD 22 billion per annum

GHG emission by transport ⁴
14 per cent of CO₂ Emission

¹ TOMTOM traffic Index 2022, accessed in August 2023; ² Unlocking Cities: The Impact of Ride-sharing across India, BCG and Centre for Urban Economic Studies, Department of Economics, University of Calcutta, Kolkata, India, Chin et al., April 2018; ³ IQ Air, World's most polluted cities, accessed on 31 July 2023; ⁴ Decarbonizing transport: redefining mobility policies in India, Niti Aayog, Sinha et al. June 2021;



Based on an analysis of key enablers for EVs such as daily running, route predictability, charging requirement and economic viability, KPMG in India expects 30 to 35 per cent electric two-wheeler penetration by 2029-30 (FY30)¹¹

Mobility in India has doubled each decade since independence till 2000 and tripled each decade thereafter⁵. It is expected to grow by an additional 1.5x over the next five years⁶. This burgeoning mobility will be driven by population growth, urbanisation and growing economic activity.

The share of the country’s urban population has increased from 18 per cent in the year 1960 to 36 per cent in the year 2022⁹. The 2001–11 decade marked the first instance when the country’s urban population grew faster than rural population¹⁰. Owing to a shift from rural to urban centers for better opportunities and higher standard of living, along with expansion of urban congregations, urbanisation in India is expected to reach 50 per cent by 2050⁹.

In parallel, improved economic activity in the country over the last two decades has boosted average household’s spending power. Average GDP per household has increased from USD 1,216 in 1991 to USD 9,556 in 2022¹¹. Higher disposable incomes coupled with the post-liberalisation entry of several global automobile manufacturers, and availability of credit at low interest rates have collectively increased the sales of private vehicles. Four and two-wheelers today account for c.99 per cent of passenger transport vehicle parc in the country¹².

While mobility will continue to grow along with economic prosperity, most of India’s passenger movement demand is being met through personal vehicles instead of public transportation. If this trend continues, road congestion is expected to further worsen going ahead.

Figure 11: Vehicle parc, 1951-2019 (%)¹²

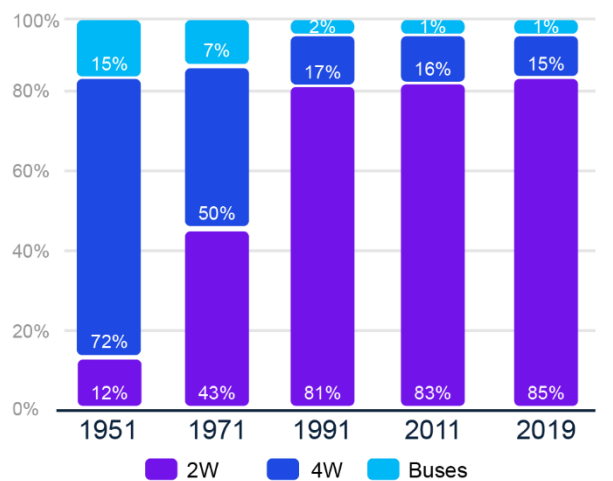
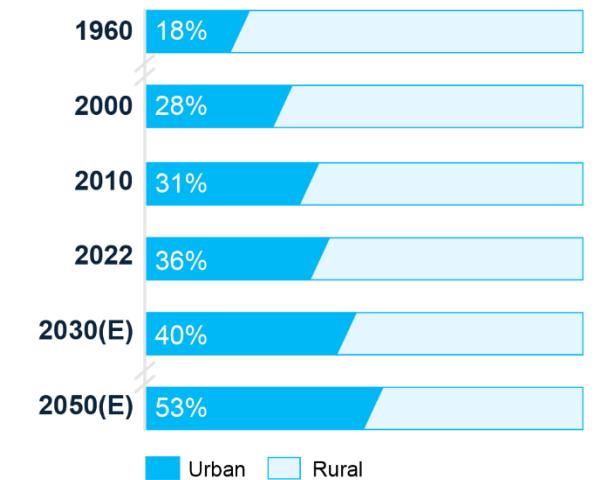
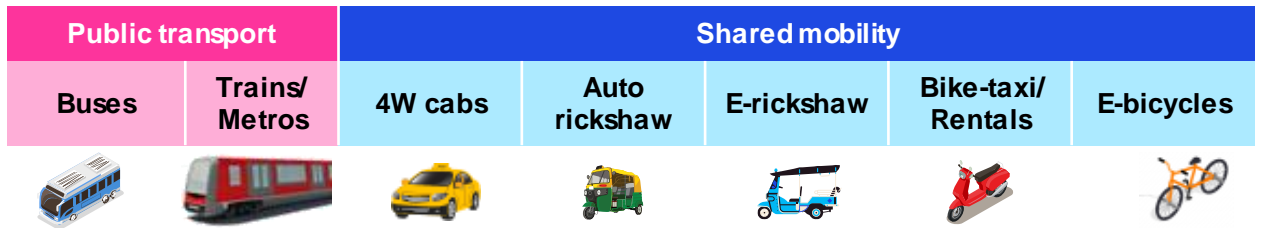


Figure 12: Urbanizing India, 1960-2050(%)⁹



⁵ Transport Yearbook 2019, Ministry of Road Transport and Highways (India); ⁶ KPMG in India analysis, 2023/24 based on primary and secondary research; ⁷ World Bank, India GDP constant prices, accessed in August 2023; ⁸ World Economic Outlook: A Rocky Recovery, International Monetary Fund, April 2023; ⁹ World Bank, Global Urbanisation; ¹⁰ India’s Urban demographic transition, the 2011 census result, National Institute of Urban Affairs, 4 November 2021; ¹¹ World bank - GDP per Capita (Current USD), 7 July 2023; ¹² Road Transport Yearbook, MoRTH, 2019; ¹³ India has 22 cars per 1,000 individuals: Amitabh Kant, ET Auto, 12 December 2018

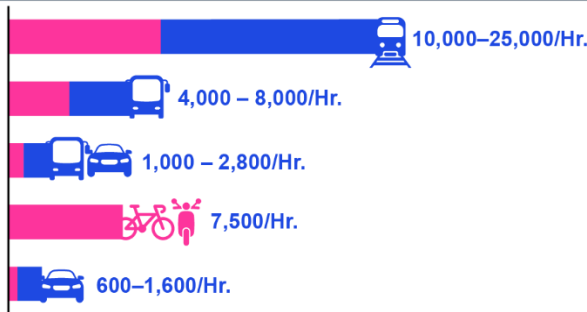
3.2 Lack of ideal first and last-mile connectivity



A strategic push towards public and shared mobility is critical to combat India’s increasing traffic congestion.

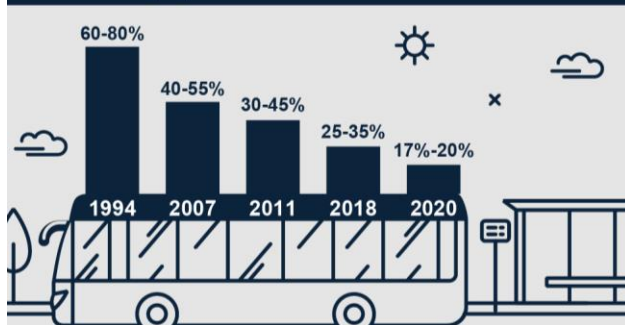
Metro and buses are the most efficient and affordable urban public transportation options offering the highest passenger throughput capacities.

Figure 13: Capacity throughput (%)¹⁴



However, with increase in personal mobility, adoption of public transportation is continuously declining, with its share in urban trips falling from 60-80 per cent in 1994 to 17-20 per cent in 2020¹⁵.

Figure 14: Share of public transportation, 1994-2020(%)¹⁵

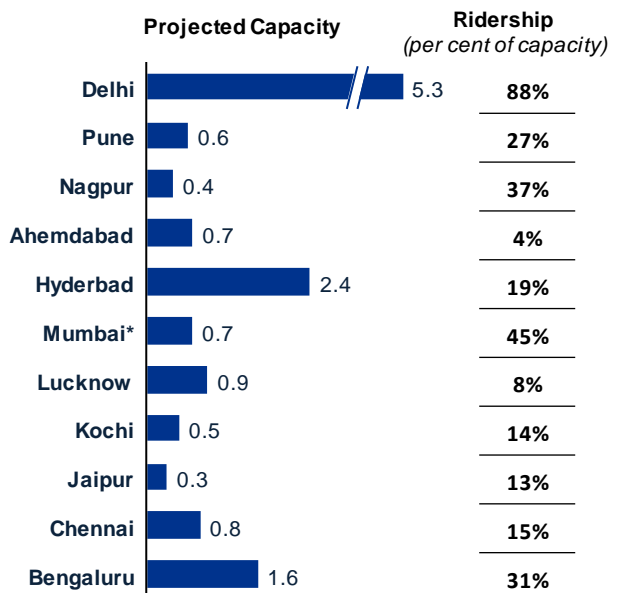


While the stagnation (and fall in some cities) in bus ridership can be attributed to largely stagnant fleet sizes and poorly maintained buses¹⁶, the under utilisation of metros can be largely attributed to poor first and last-mile connectivity, which significantly reduces the networks’ capability to provide door-to-door mobility¹⁷. The importance of last-mile connectivity for metro rail usage as well

as the lack thereof acting as a key bottleneck has been well documented across several surveys, briefs and academic papers (CSE 2017; Singh 2020; Irani 2022; Chidambara 2012; Kumar 2015; Kanuri et al. 2019)

Focus on providing the ideal first and last-mile mobility solution can play a pivotal role in improving metro ridership. This solution must be affordable, available at the commuter’s doorstep, reliable, fast and safe. To compensate for the lack of a feeder network and inadequacies of the current first and last-mile options, attention needs to be diverted towards acceptance and improvement of feasible shared mobility options. Shared mobility offers the flexibility of point-to-point travel at an affordable price and serves as a feeder network to public transport systems as well.

Figure 15: Metro ridership in key cities in India, 2022 (million, %)¹⁷



* Ghatkopar to Versova line has been considered

¹⁴ Designing to Move People, National Association of City Transportation Officials; ¹⁵ Booming sale of cars, bikes, slams, brake on public transport system, Dipak Dash, 3 September 2018; ¹⁶ India’s public transport challenge, The Mint, Devulapalli, 13 September 2019; ¹⁷ Improving metro access in India: Evidence from three cities, WRI and Toyota Mobility Foundation, Mukherjee et al., July 2023

3.3 What is the ideal solution?

The monthly household income of a typical metro user is less than INR 40,000 (as shown in Figure 16, with at least 70 percent of the surveyed sample in the study falling in this income bracket) with a limited budget to spend on last-mile connectivity¹⁷.

There are several first and last-mile connectivity options available for a commuter, across vehicle categories, ranging from motorised modes such as cabs, auto-rickshaws and feeder buses to non-motorised modes such as cycles, cycle-rickshaws and walking.

However, despite these options, metro ridership across several Indian cities remains lower than the expected volumes.

Pedestrian and cycling infrastructure is usually inadequate across Indian cities, whereas preferred motorised modes (including feeder buses and shared or on-demand paratransit) are infrequent, unsafe, uncomfortable, or unaffordable. This discourages commuters from taking the metro¹⁷.

Based on a research, commuters are drawn to a particular metro station based on its access time (wait and travel time) and not distance¹⁷. As per their survey, the median time commuters prefer to access the metro station from their home is 10-12 minutes¹⁷. The survey also says that if accessing the metro takes longer than 20 minutes, then very few users consider taking it. Hence, many feeder bus services, which did not meet the target service time have failed due to lack of ridership (Bengaluru Mirror Bureau 2017; Gandhiok 2022; G. Sharma 2022)¹⁷.

Currently, walking and shared modes contribute to over 75 per cent of first and last-mile connectivity modes across Delhi, Bengaluru and Nagpur. Shared auto-rickshaw is the most preferred mode in Delhi and Nagpur, followed by bus and regular auto-rickshaw. Shared autos are relatively less preferred in Bengaluru due to absence of an extensive network, while shared buses do not provide frequent and convenient first and last-mile connectivity at several metro stations. Hence, high income commuters using the metro in Bengaluru tend to choose the costlier on-demand options such as regular auto-rickshaws and cabs¹⁷.

The preference for walking and shared auto-rickshaw is primarily driven by their affordability and flexibility, but not by their comfort or safety.

Figure 17: Last-mile modes, 2022-2023 (%)¹⁷

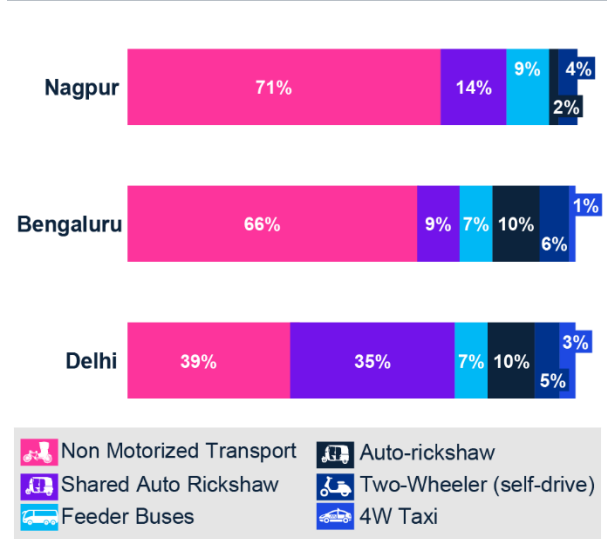


Figure 16: Monthly household income of people surveyed, 2022-2023¹⁷

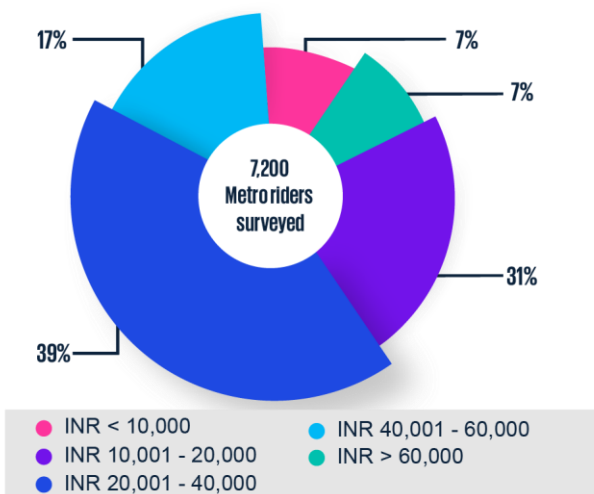
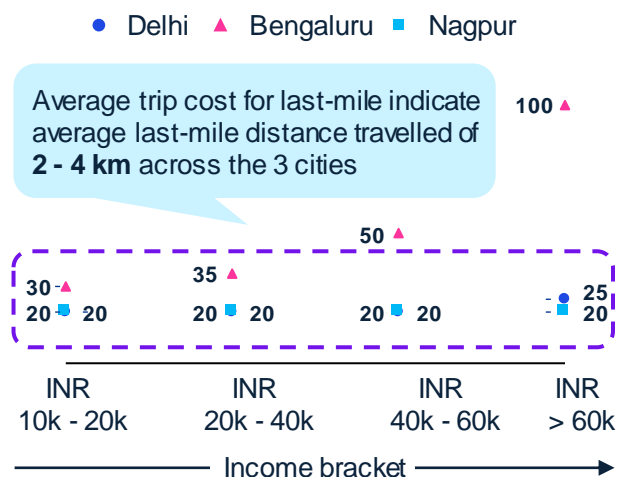


Figure 18: Last-mile trip cost, 2022-2023 (INR)¹⁷



¹⁷ Improving metro access in India: Evidence from three cities, WRI and Toyota Mobility Foundation, Mukherjee et al., July 2023

The affordability of a shared auto, however, comes with several sets of challenges^{6,17}.

- **Inefficient:** Shared autos typically wait to get a certain number of customers before they depart
- **Unsafe:** Shared autos and e-rickshaws are known to carry more passengers than their capacity
- **Slow:** Due to over-loading and inadequate engine capacity, they operate at lower speed
- **Fixed route (not on-demand):** Typically operate on fixed route, which is rarely door-to-door.

All these factors emphasise the need for an on-demand low-cost shared paratransit option that has the ability to operate at efficient speeds, frequency (to take a customer to the closest metro station in 10-12 minutes), offers more convenience and better comfort than the current alternatives.

Bike-taxis provide an affordable form of transportation for metro commuters’ daily needs. Fares charged by bike-taxi aggregators (INR 8-10/km) are far lower than that of a regular taxi (INR 22-25/km) and a regular auto-rickshaw (INR 15-18/km). These fares are comparable to that of a shared auto-rickshaw (INR 7-8/km), however without the associated challenges. This stems from the low operating expenses to run a two-wheeler as compared to the alternatives. This is specifically important for price-sensitive lower and

middle-income groups, for whom the on-demand first and last-mile modes such as taxis/cabs and regular auto are unviable, and hence are forced to resort to over-crowded and uncomfortable shared paratransit^{6,17}.

In addition to affordability, efficiency and speed form an ideal value proposition for customers. Bikes are easy to manoeuvre in traffic due their nimble form factor, ability to enter narrow lanes and shorter turning radius enabling them to reach the destination in a shorter time.

Lastly, bike-taxis provide a door-to-door service which significantly reduces wait and journey time and provides higher convenience to customers than the current alternatives.

Figure 19: Fares by mobility modes, 2022-2023 (INR/km)^{6,17}

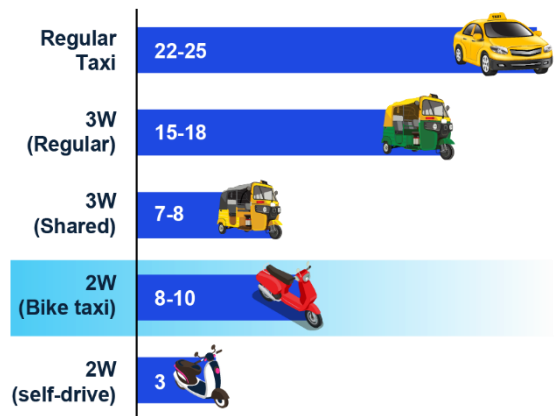


Table 2: Bike-taxi are the ideal last-mile connectivity mode^{6,17}

	Vehicle type	Affordability (Higher the better)	Journey Time (Faster the better)	Ease of Hailing (Higher the better)	Doorstep pick-up (Higher the better)	Comfort (Higher the better)
Shared Mobility	4W Cabs	○	◐	●	●	●
	4W Cabs (Shared Taxi)	◐	◐	◐	◐	◐
	Auto Rickshaw	◐	◐	●	◐	◐
	Auto Rickshaw (Shared)	●	◐	◐	○	◐
	Shared e-rickshaw	●	◐	◐	○	◐
	Bike-taxis	◐	●	●	●	●

Bike-taxis offers the best of all shared mobility modes

Legend

● High/Fast ○ Low/Slow

⁶ KPMG in India analysis, 2023/24 based on primary and secondary research; ¹⁷ Improving metro access in India: Evidence from three cities, WRI and Toyota Mobility Foundation, Mukherjee et al., July 2023

3.4 Landscape of the bike-taxi industry in India

Bike-taxis are not a new concept in India. The first use case of commercial two-wheelers can be traced back to 1981 in Goa, where it became a popular mode of transportation among the tourists. The state was the first to provide legitimacy to bike-taxis by including it in the Goa Motor Vehicle Rules, 1991 and issued permits to motorcycles to operate as commercial vehicles by notifying 64 motorcycle taxi stands across the state¹⁸.

However, it was not until 2015-16, when various online aggregator start-ups stepped in to streamline and expand access to end users at the push of a button, what was hitherto a fragmented and unorganised play. As many as 40 aggregators were estimated to have started operations during that period¹⁹, but recently the industry has seen consolidation.

Though the Central Government allowed motorcycles to be used as 'transport vehicle' in 2004²⁰, it was not until 2015, with the influx of organised operators, that state governments started accepting bike-taxis as a valid mode for commercial passenger mobility. State acceptance of bike-taxi has been highly dependent on their interpretation of The Motor Vehicles Act, 1988. While several states have tackled the subjectivity by taking a progressive view, the legal contours of the act are a subject of continuous debate, which have produced multiple perspectives on the legality of bike-taxis.

In 2015, Haryana was the second state after Goa to permit the use of commercial two-wheelers as 'contract carriage' in the city. Andhra Pradesh, Gujarat, Telangana, Mizoram and Uttar Pradesh followed soon in 2016. However, several states such as Tamil Nadu (2019), Kerala (2019), Karnataka (2021), Delhi (2023) and Maharashtra (2023) have banned bike-taxi operations driven by strong resistance and oppositions from existing first and last-mile (F&LM) providers such as auto-rickshaw unions, shared taxis, etc., who have complained of loss of livelihood⁶.

The National Urban Transport Policy, 2014, which prioritises people mobility over vehicular mobility through affordable and convenient transportation modes, highlights the importance of seamless multi-modal transport system where private two-wheelers are expected to play a pivotal role.

Bike-Taxi Demand in India

Despite opposition and bans in various states across the country, bike-taxi demand has been steadily on the rise since 2016. It is estimated that the three aggregators have collectively completed approximately 280 million rides in 2022.

Figure 20: Bike-taxi market, 2019-2023 (million rides)⁶

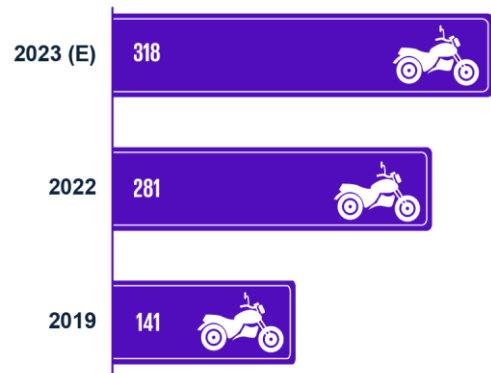
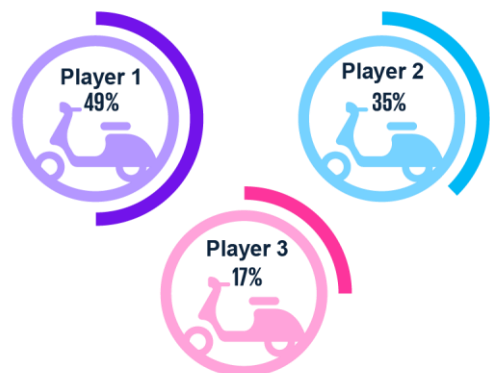


Figure 21: Bike-taxi market share, 2022 (%)⁶

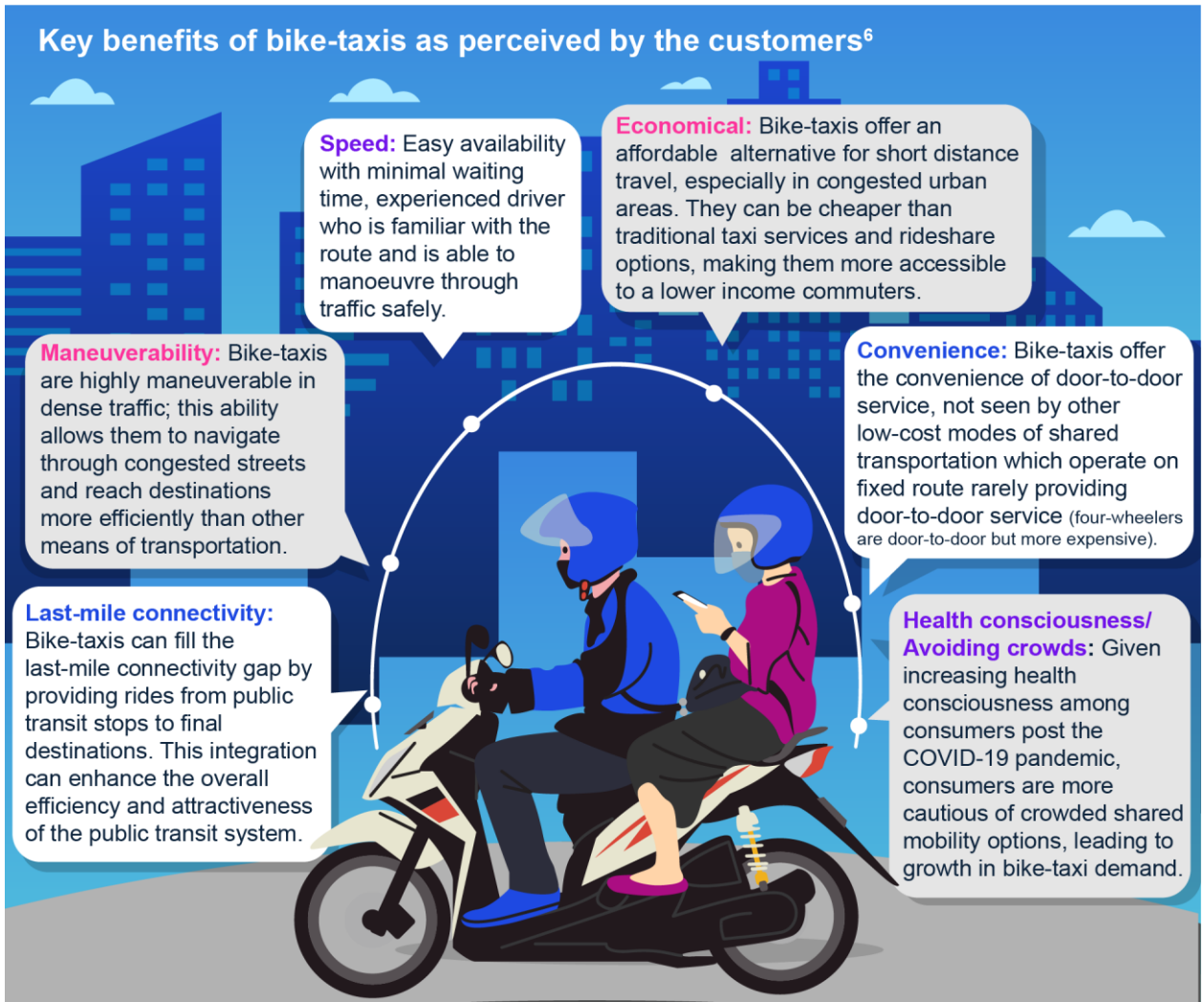


*Aggregator names masked for confidentiality

Player 1, with the highest market share in the bike taxi industry, has over 1.5 million driver partners with operations in more than 100 cities²¹.

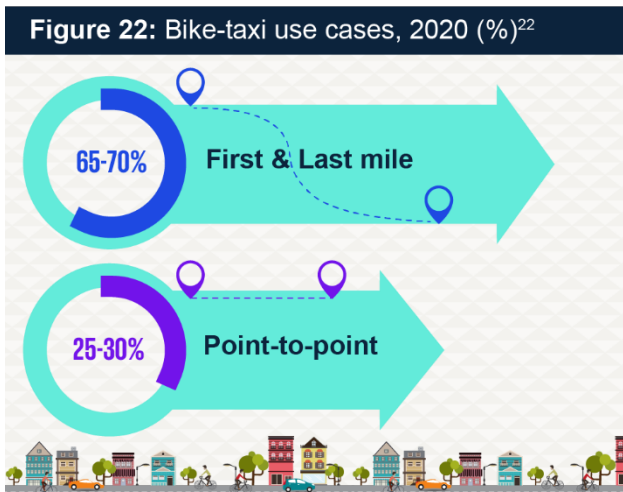
The rapid growth in the bike-taxi demand is a testament to its advantages in providing fast, affordable and convenient transportation to the masses.

⁶ KPMG in India analysis, 2023/24 based on primary and secondary research; ¹⁸ Motorcycle pilots: Riders in a storm?, Times of India, 21 February 2013; ¹⁹ Bike-taxi operator Rapido rebrands rider app to ramp up network, Binu Paul, 21 January 2017; ²⁰ Ministry of Road Transport & Highways notification S.O. 1248(E), dated 5 November 2004; ²¹ Rapido raises \$180 million in latest round from Swiggy, TVS Motor, Aparna B. Business Today, 15 April 2022



Bike-taxi demand has taken off over the last 5 years and even more so post the Covid-19 pandemic driven by several core benefits that have delighted the customers. These benefits have resulted into certain key use cases for bike taxis⁶.

However, first and last-mile connectivity has emerged as the most prominent use case of bike taxis. A study and survey conducted in 2020 on the emerging role of bike-taxis in urban mobility, highlighted that 65-70 per cent users were using bike-taxi services for first and last-mile connectivity²².



3.5 Growing popularity of point-to-point travel

In addition to first and last-mile connectivity, bike taxis are well suited for instant, short distance travel needs such as running daily errands – going to the market, gym, bank, etc. This service is increasingly being used for point-to-point for the convenience it offers with doorstep service.

Bike-taxis are typically not considered for long distance travel as they tend to get uncomfortable and tiring.

⁶ KPMG in India analysis, 2023/24 based on primary and secondary research; ²² Emerging Role of Bike (Motorcycle) Taxis in Urban Mobility, TERI, New Delhi, Sundar et. al., January 2020:

Key use cases of point-to-point travel

Daily commute	Informal social occasions	Everyday travel
<ul style="list-style-type: none"> To office, school and colleges (if the distance is up to 10 km or takes less than 30 minutes). 	<ul style="list-style-type: none"> To meet friends in and around the neighborhood. Casual outing to a friend's house for a get-together/catch-up. Going to a mall/restaurant. 	<ul style="list-style-type: none"> Running everyday personal errands— Bank work, bill payments, etc. To go to the park/to go to the gym.

KPMG in India conducted a sample survey of bike-taxi riders to understand how bike-taxis have improved their daily commute. Consumers primarily cited three reasons for preferring bike-taxis for point-to-point travel over other modes⁶:

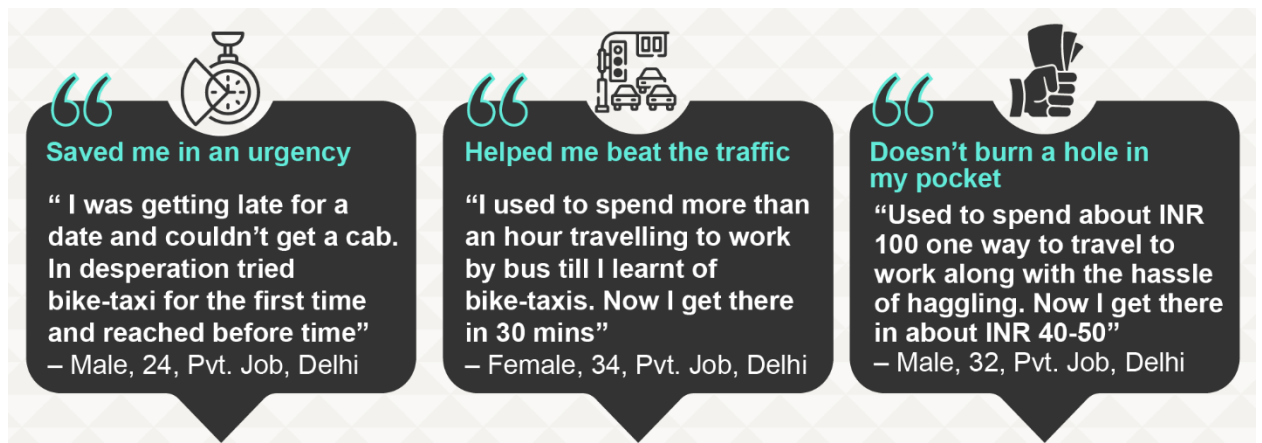





Figure 23: Affordability v/s Route Flexibility⁶



⁶ KPMG in India analysis, 2023/24 based on primary and secondary research

The use of private two-wheelers as bike-taxis on aggregator platforms presents several tangible and perceivable benefits to all the key stakeholders involved.

	Tangible	Perceivable
 Asset Owners	<p>Income</p> <ul style="list-style-type: none"> Bike-taxi drivers earn approximately INR 25,000 - 30,000/month⁶ after all expenses (incl. fuel, maintenance and aggregator commissions). 	<p>Asset-usage</p> <ul style="list-style-type: none"> Private vehicles have a very low asset utilisation - private cars today have a utilisation of just five per cent²³ Potential to earn a livelihood from an under-utilised asset.
 Commuters	<p>Affordability:</p> <ul style="list-style-type: none"> Bike-taxis provide an affordable form of transportation for daily needs Bike-taxi fares range between INR 8-10/km⁶, which is far lower than regular taxis (INR 22-25/km) and auto-rickshaws (INR 10-11/km)¹⁷. <p>Transparent pricing:</p> <ul style="list-style-type: none"> Commuters often complain of over-charging by first- and last-mile service providers (auto-rickshaw and taxi)¹⁷ Online aggregators provide greater transparency with upfront fares. 	<p>Convenience:</p> <ul style="list-style-type: none"> Commuters receive a door-to-door service from home to public transport/office and vice-versa. <p>Quicker/Time-saved:</p> <ul style="list-style-type: none"> Two-wheelers are faster than other modes of transportation such as 4W, 3W due to nimble form factor and higher manoeuvrability in traffic Bike-taxis door-to-door convenience, saves time spent on public transportation interchange. <p>Safety:</p> <ul style="list-style-type: none"> Aggregator rides are tracked continuously and live locations can easily be shared with emergency contacts.
 Government	<p>Taxes</p> <ul style="list-style-type: none"> Since bike-taxi industry is an organised sector in the country dominated by app-based platforms, the government stands to gain taxes in the form of GST collections instead of just licence fees. <p>Net-employment generation</p> <ul style="list-style-type: none"> Bike-taxis industry has the potential to generate up to 5.4 million jobs by 2030⁶. <p>Congestion</p> <ul style="list-style-type: none"> Potential to reduce 115,000 vehicles from the road in 2023⁶. <p>Carbon emission</p> <ul style="list-style-type: none"> Bike-taxis emits 12 per cent and 60 per cent less emission than shared CNG and Diesel auto-rickshaws respectively⁶. 	<p>Better utilisation of public assets</p> <ul style="list-style-type: none"> Shared mobility is the key to decongest Indian roads and better utilisation of public assets such as road, highway, metros, sub-urban rails and buses^{17,24}. <p>Decrease in crude oil bill</p> <ul style="list-style-type: none"> Shared mobility can also enable the government to reduce our crude import expenditure which stood at USD 119 billion in 2021-22²⁵.

⁶ KPMG in India analysis, 2023/24 based on primary and secondary research; ¹⁴ Designing to Move People, National Association of City Transportation Officials; ¹⁷ Improving metro access in India: Evidence from three cities, WRI and Toyota Mobility Foundation, Mukherjee et al., July 2023; ²³ Unlocking Cities: The Impact of Ride-sharing across India, BCG and Centre for Urban Economic Studies, Department of Economics, University of Calcutta, Kolkata, India, Chin et. al., April 2018; ²⁴ Shared mobility holds the key to decongest Indian roads, Financial express, Aishwarya et. al., May 2019; ²⁵ India's oil import bill doubles to \$119 billion in FY22, The Economic times, 24 April 2022

3.6 Tailwinds and headwinds for bike-taxis

The bike-taxi industry is at a critical juncture where the future of the industry hangs in a balance.

The Central Government has recognised the significance of two-wheelers for commercial passenger mobility through their notification in 2004 allowing registration of motorcycles as 'transport vehicle', MoRTH's report in 2016 identified bike-taxis for last-mile connectivity, along with Niti Aayog's 2018 report highlighting the need for bike-taxi in last-mile connectivity. In addition, the value proposition of bike-taxis in terms of affordability, convenience and their strong

complementarity to the public transport infrastructure are well-established.

However, despite several tailwinds, the onus of a permit which has been left on the states as per the Motor Vehicles Act, 1988 is the biggest headwind to the industry. Absence of clear state-wise regulations have resulted in bans in some states and strong opposition from auto-rickshaws and cabs in others.

The next section will further dive into the bike-taxi regulations across India.



¹⁷ Improving metro access in India: Evidence from three cities, WRI and Toyota Mobility Foundation, Mukherjee et al., July 2023; ²⁶ Lucknow Metro ties up with Rapido bike for convenient last-mile connectivity, Metro rail news, Rai, October 2020; ²⁷ Hyderabad Metro Rai Partners with Rapido, Hans India, Sagay a, December 2021; ²⁸ Auto union blocks roads, stages protest against illegal bike-taxis in Pune, India Today, Khelkar, November 2022; ²⁹ Karnataka auto union seeks ban on bike-taxis, accuses govt of neglect, Hindustan Times, July 2023

4. Regulatory framework for bike-taxis in India



Unlocking the potential of bike-taxis in India

As discussed in the previous chapter, bike-taxis are one of the most convenient paratransit options in the country driven by ease of booking through user-friendly applications, doorstep pick and drop, transparent and attractive fares, better mobility and maneuverability during peak traffic hours.

Unsurprisingly, leading bike-taxi operators have done exceedingly well since their introduction in 2015-16, driven by ever increasing demand for their services. Within a year of its launch, a global aggregator's bike-taxi offering completed two million trips in India¹. A bike-taxi focused Indian startup founded in 2015, has operations in over 100 cities today with more than 10 million customers and 100 million+ rides completed. An Indian multinational ride-sharing company's offering in the bike-taxi segment started services in three cities in 2016 and had grown to over 200 cities and 300,000 driver partners by 2019².

However, despite such a strong customer response, the bike-taxi market in India has faced its share of challenges over the last 12-18 months due to absence of uniform and enabling country-wide regulations. Unlike cab taxis, bike-taxis are yet to be accepted as a key part of our nation's transit ecosystem, which emphasises the immediate need for a comprehensive, well thought and clearly articulated regulatory framework to ensure the livelihood of thousands of bike-taxi drivers does not hang in the balance.

This chapter presents an overview of the current regulatory landscape for bike-taxis in India. However, before diving into bike-taxis, it is essential to understand the central government's regulatory framework for the aggregator/ride-hailing businesses.

This will be followed up with the central government's regulations on bike-taxis, along with the regulations across certain key Indian states.

By the end of this chapter, the reader will get a strong understanding of the state-wise regulatory landscape and a detailed framework to identify states which have taken positive steps towards adoption of bike-taxis.

4.1 Motor Vehicle Aggregator Guidelines - 2020

The Motor Vehicles Act, 1988 ('the Act') had no reference to the term 'Aggregator' till 2019. Through The Motor Vehicles (Amendment) Act, Section 36, the Ministry of Road Transport and Highways (MoRTH) amended Section 2 to define an 'Aggregator' as a digital intermediary or marketplace for a passenger to connect with a driver for the purpose of transportation³.

The amendment updated Section 93 to include that 'Aggregator', along with 'Agent or canvasser', are required to obtain licence from state government provided that while issuing the licence the state government may follow guidelines issued by the Central Government.

Soon after the amendment, the Central Government issued the Motor Vehicle Aggregator Guidelines - 2020. This provides a guiding framework to the states for issuance of licences to transport aggregators and is currently non-enforceable, unless adopted by the state governments.

The key objectives of the guidelines are as follows⁴:

- To regulate shared mobility and reducing traffic congestion and pollution
- To provide a regulatory framework for Aggregator
- To provide customer safety and driver welfare.

Key areas covered under the guidelines are⁵:

- Applicable Vehicles – All Motor Vehicles
- Conditions for granting and renewal of licences
- Eligibility criteria for an Aggregator
- Compliances regarding driver, vehicles, aggregator's application, website and safety
- Regulation of fare
- Cancellation of rides
- Suspension and cancellation of licence
- Fee and security deposit.

¹ UberMOTO talks to state governments for a licence to ride", The Economic Times, 25 July 2017; ² "Ola makes inroads into India's hinterlands with bike taxi service", Business Standard, 25 November 2019; ³ The Motor Vehicles Act, 1988, Section 2 (sub-section 1A); ⁴ Motor Vehicle Aggregator Guidelines issued to regulate shared mobility and reducing traffic congestion and pollution, Ministry of Road Transport & Highways, November 2020 (<https://pib.gov.in/Pressreleaseshare.aspx?PRID=1676403>); ⁵ Motor Vehicle Aggregator Guidelines, Ministry of Road Transport & Highways, November 2020

Taking a closer look at the key areas covered under the Motor Vehicle Aggregator Guidelines⁵:

Applicable vehicles

- All motor vehicles including motorcycles.



Conditions for granting and renewal of licences

- Validity: Five years from date of its issuance
- Aggregator to commence operations within six months.



Eligibility criteria for aggregators

- Aggregator to have a registered office in India.



Regulation of fare

- Base fare – For a minimum of three kilometers
- Base fare to be equal to city taxi fare indexed by WPI (wholesale price index)
- Maximum surge pricing of 1.5 times
- Driver to receive >=80 per cent fare.



Drivers

- Valid proof of identity and driving licence, Know Your Customer (KYC) compliant bank account, complete police verification and medical examination.



Vehicles

- Valid registration, permit, fitness certificate, third-party insurance, PUC and emission norm compliance, payment of taxes and clearance of pending e-challans.



Aggregator's app and website

- Website comprising details of the ownership, address, fare structure etc.; 24x7 operational control room.



Cancellation of ride



Penalty:

10 per cent of the total fare not exceeding INR 100.



Safety

- GPS installed vehicles, route mapping, safety for women employees/drivers, identity mapping of the driver and regular spot checks of vehicles.

Suspension and cancellation of aggregator licence

- Failure by the aggregator to ensure safety of the rider and/or the driver
- Repetitions of failure to comply with obligations, financial inconsistencies, and severity of financial swindling
- >three suspensions in one year.



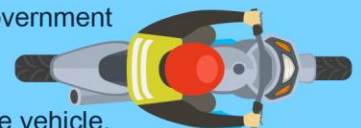
Fees and security deposit

- **Fee Structure:** Grant of licence: INR 500,000; Renewal, duplicate licence and noting change of address of licensee: INR 2,500 each
- **Security Deposit:** Up to 1,000 vehicles: INR 100,000; Up to 10,000 vehicles: INR 250,000; More than 10,000 vehicles: INR 500,000.



Aggregation of 'non-transport vehicle' by aggregators

- 'Non-transport vehicle' pooling is allowed, unless prohibited by the state government
- **Additional compliance requirement:** Maximum four intra-city trips per day, and two inter-city per week
- Vehicle integrated to have insurance of INR five lakhs for ride-sharers in the vehicle.



⁵ Motor Vehicle Aggregator Guidelines, Ministry of Road Transport & Highways, 27 November 2020

4.2 Bike-taxis in the Motor Vehicles Act, 1988

The legality of bike-taxis have always been open to interpretation as several sections of the Act need to be read comprehensively to understand what the Act allows (and doesn't allow), and the decisions it leaves to the prerogative of the state governments.

In order to understand the legality of bike-taxis in India, it is imperative to understand the inclusions and exclusions of certain key definitions, and clauses defined in the Act.

The Act defines a '**Contract Carriage**' as: a **motor vehicle** which carries a passenger or passengers for hire or reward and is engaged under a contract, whether expressed or implied, for the use of such vehicle as a whole for the carriage of passengers mentioned therein and entered into by a person with a holder of a **permit** in relation to such vehicle or any person authorised by him on his behalf on a fixed or an agreed rate or sum:

- (a) on a time basis, whether or not with reference to any route or distance; or
- (b) from one point to another, and in either case, without stopping to pick-up or set down passengers not included in the contract anywhere during the journey⁶.

The 2 most important terms in the above definition are '**motor vehicle**' and '**permit**'.

The Act defines a '**Motor Vehicle**' as any mechanically propelled vehicle adapted for use upon roads whether the power of propulsion is transmitted thereto from an external or internal source and includes a chassis to which a body has not been attached and a trailer; but does not include a vehicle running upon fixed rails or a vehicle of a special type adapted for use only in a factory or in any other enclosed premises or a vehicle having less than four wheels fitted with engine capacity of not exceeding twenty-five cubic centimeters⁷.

As per the above definition, and S.O.1248(E), dated 5 November 2004 which covers "Motorcycle used for hire to carry one passenger on pillion", **a motorcycle with greater than twenty-five cubic centimeters (cc) engine capacity will be considered as a motor vehicle and hence is eligible for 'contract carriage'**.

Coming to the next critical definition, as per the Act a '**Permit**' means a permit issued by a state or Regional Transport Authority or an authority prescribed in this behalf under this Act authorizing

the use of a motor vehicle as a 'transport vehicle'⁸.

Section 73 and 74 of the Act provide provisions for application and grant of 'contract carriage' permit by the Regional Transport Authorities, subject to certain terms and conditions stipulated therein. However, Act 32 of 2019, s. 33 provides the Regional Transport Authority to waive any such condition in respect of any such types of vehicles as may be specified by the Central Government in the interests of last-mile connectivity.

Hence, as per the Act, motorcycles (with greater than twenty-five cubic centimeters engine capacity) can operate as a 'contract carriage' if they adhere to the necessary permit requirements, as defined by the respective Regional Transport Authority.

The Central Government, through amendments to the Act and several studies, have tried to provide legitimacy to bike-taxis. However, the necessity (or not) of permits has been left to the determination of state governments.

The first steps to legalise bike-taxis by the Central Government can be traced back to 2004, when it allowed the registration of motorcycles as 'transport vehicle', where they can be used on hire to carry one passenger on pillion⁹.

Then in 2016, a Report by the Committee Constituted to Propose Taxi Policy Guideline to Promote Urban Mobility, submitted to MoRTH, encourages new forms of urban mobility such as bike sharing and e-rickshaws through online grant of permits in the interest of last-mile connectivity.

Further, a 2018 report on shared mobility by Niti Aayog stated the importance of bike sharing for last mile connectivity as an affordable paratransit¹⁰.

Further, as Transport sector falls under the category of 'Concurrent List'¹¹, it allows full autonomy to state governments to frame and enforce their own rules and regulations on transport, deviating from the Act.

This has led to wide differences in interpretation of the Act, and wide variations amongst states in regulating bike-taxis.

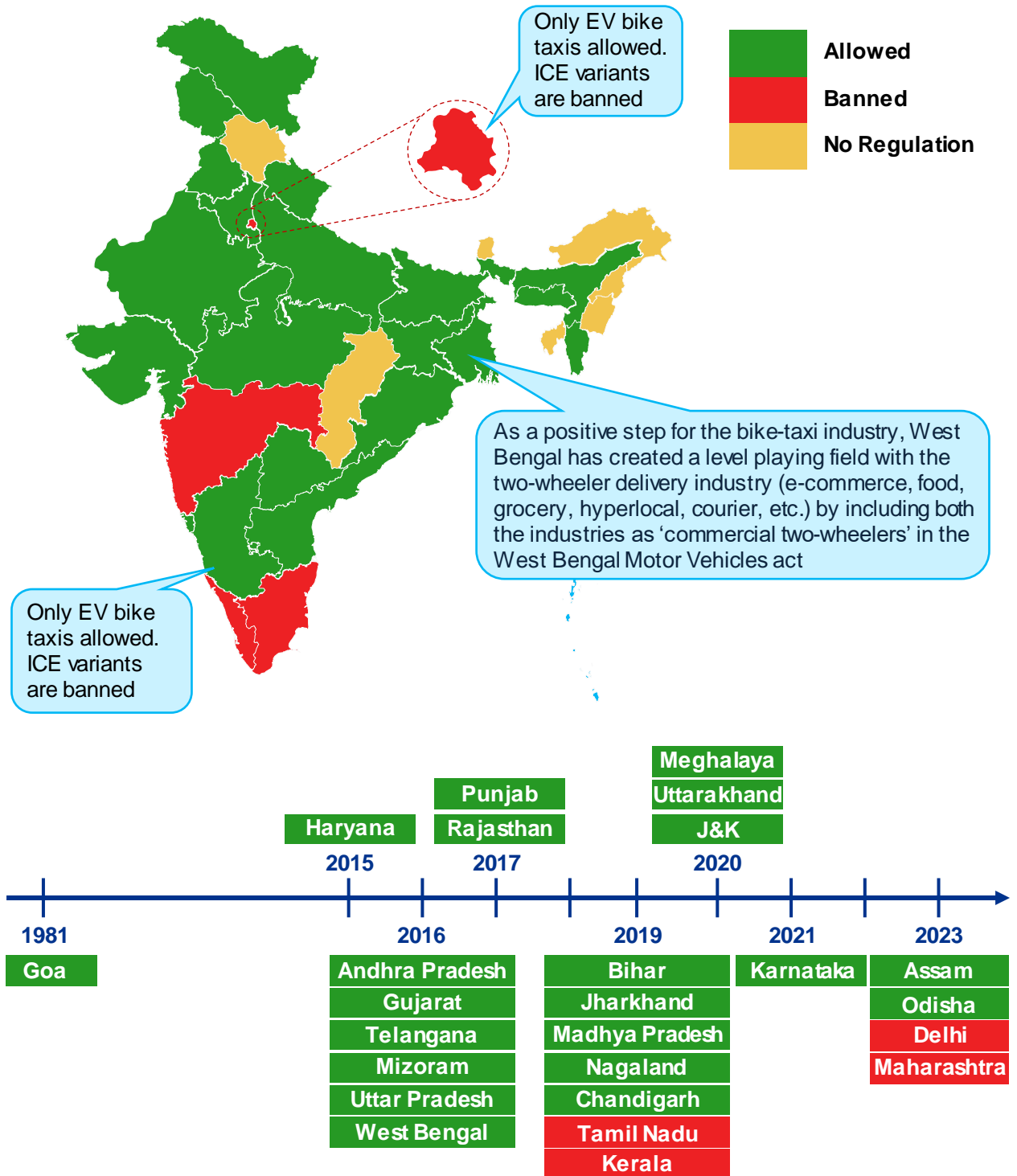
Citing the above-mentioned clauses, the MoRTH issued an advisory to all states and union territories to accept and process the application for contract carriage permits for motorcycles on 22nd January 2024.

⁶ The Motor Vehicles Act, 1988, Section 2 (sub-section 7); ⁷ The Motor Vehicles Act, 1988, Section 2 (sub-section 28); ⁸ The Motor Vehicles Act, 1988, Section 2 (sub-section 31); ⁹ Ministry of Road Transport & Highways notification S.O. 1248(E), dated 5-11-2004; ¹⁰ Moving Forward Together – NITI Aayog, Rocky Mountain Institute, and Observer Research Foundation, Bhandari et. al. 2018; ¹¹ Constitution of India, Seventh Schedule, List III - Concurrent List

4.3 Bike-taxis' road to legitimacy in India

As of September 2023, 21 states and union territories in India have recognised bike-taxis and have permitted them to operate either through a dedicated bike-taxi policy or under the aggregator policy or through a special government notification¹².

The road to legitimacy



¹² KPMG in India analysis, 2023/24 based on primary and secondary research

Table 3: Status of bike-taxi operations across all Indian states and union territories, October 2023¹²

S. No.	Year	State	Status	Are Bike-Taxis Plying?
1	1981	Goa	Allow ed	Yes
2	2015	Haryana	Allow ed	Yes
3	2016	Andhra Pradesh	Allow ed	Yes
4	2016	Gujarat	Allow ed	Yes
5	2016	Telangana	Allow ed	Yes
6	2016	Mizoram	Allow ed	Yes
7	2016	Uttar Pradesh	Allow ed	Yes
8	2016	West Bengal	Allow ed	Yes
9	2017	Punjab	Allow ed	Yes
10	2017	Rajasthan	Allow ed	Yes
11	2019	Bihar	Allow ed	Yes
12	2019	Jharkhand	Allow ed	Yes
13	2019	Madhya Pradesh	Allow ed	Yes
14	2019	Nagaland	Allow ed	Yes
15	2019	Chandigarh	Allow ed	Yes
16	2020	Meghalaya	Allow ed	Yes
17	2020	Uttarakhand	Allow ed	Yes
18	2020	Jammu and Kashmir	Allow ed	No
19	2023	Assam	Allow ed	Yes
20	2023	Odisha	Allow ed	Yes
21	2019	Tamil Nadu	Banned	Yes (Stay on ban by high court)
22	2019	Kerala	Banned	No
23	2023	Maharashtra	Banned	No
24	2024	Karnataka	Banned	Yes (Stay on ICE ban by high court)
25	2023	Delhi	Regulated	Yes
26	-	Arunachal Pradesh	No regulation	Yes
27	-	Chhattisgarh	No regulation	Yes
28	-	Manipur	No regulation	Yes
29	-	Tripura	No regulation	Yes
30	-	Dadra and Nagar Haveli & Daman and Diu	No regulation	Yes
31	-	Himachal Pradesh	No regulation	No
32	-	Sikkim	No regulation	No
33	-	Andaman & Nicobar Islands	No regulation	No
34	-	Ladakh	No regulation	No
35	-	Lakshadw eep	No regulation	No
36	-	Puducherry	No regulation	No

¹² KPMG in India analy sis, 2023/24 based on primary and secondary research

Bike-taxi policies across focus states

Ranking methodology

For the 10 focus states under consideration, a compressive framework has been developed by KPMG in India to rank them based on the policy environment to promote bike-taxis. The states have been ranked on five parameters, as listed below:

Parameters used in the framework	
1	Regulations (Officially Allowed/Banned/No Regulation)
2	Ease of plying
3	Withstand pressure from unions
4	Vehicle type allowed as per policy
5	Ease of conversion

Regulation: This parameter highlights the states with an active regulatory framework to regulate bike taxis. Regulation or registration of bike-taxis in these states are either under a common aggregator policy e.g., Assam, or a dedicated bike-taxi policy e.g., West Bengal and Rajasthan.

Higher ranking (5 denoted by ●) has been given to states that have allowed bike-taxis to operate under a regulation, while a lower ranking (1 denoted by ○) has been given to states that have placed an outright ban on their operations.

Exception to the above rule is the state of Telangana. Though the state does not have a regulation in place, Hyderabad Metro Rail, a state government enterprise, has signed a Memorandum of Understanding (MoU) with online aggregators to provide last-mile motor bike-taxi connectivity across Hyderabad Metro Rail stations^{13,14}.

Ease of plying: This metric highlights the stance of various stakeholders such as the State Transport Department, state government, State Police, State High Court and the Supreme Court.

Higher ranking has been given to states where bike taxis operate without any opposition from the

state machinery, whereas a lower ranking has been given to states where bike-taxis are not operational.

Exception to the above rule are the states of Karnataka and Tamil Nadu where bike-taxis continue to operate, despite the ban, due to stay orders on the bans from the high court.

Withstand pressure from unions: In various states, bike-taxis have faced stiff opposition from auto-rickshaw unions on the pretext that bike-taxi services are a direct threat to their livelihood. Various auto unions have staged protest, strikes and have also man-handled bike-taxi drivers.

Alternatively, West Bengal through regulation and efforts to minimise territorial overlap, has brought harmony to bike-taxi operations within the state.

Higher ranking has been given to states which have been able to withstand the pressure from unions to ban bike-taxis, while a lower ranking has been given to states which have banned bike-taxis because of such union pressure.

Vehicle type allowed as per policy: States such as Delhi and Karnataka, have indicated their preference towards a fleet of electric bike-taxis only. While the aim is to reduce pollution, the move impedes the industry's ability to unlock its full potential.

Higher ranking has been given to states where bike taxi operation are allowed for all fuel types. A medium ranking has been given to states which have allowed only electric vehicles. States with a complete ban have been given a low-ranking.

Ease of Conversion: Certain States Transport Departments have come out with a well-defined conversion process from private to commercial registration i.e., white to yellow number plate.

Higher ranking have been given to states where a conversion process exists (e.g., West Bengal and Rajasthan), whereas a lower ranking has been given to states which currently do not have a conversion process in place.

¹³ Hyderabad Metro, Rapido join hands; bike taxi service from all metro stations, News meter Network, 30 December 2021; ¹⁴ Hyderabad Metro Rail Announces Winners of Metro Swarna Monthly Lucky Draw Offer for November 21; Rolls Out Collaboration with Rapido for Last-Mile Connectivity, L&T Metro Rail Press Release, 29 December 2021;

Bike-taxi policies across focus states

The key commercial, operational and safety initiative, which the low-ranking states can implement to increase the adoption of bike-taxi have been discussed in Chapter 6

Focus states	Regulations (Officially allowed/ Banned/ no regulation)	Ease of plying on the road	Withstand pressure from unions	Vehicle type allowed as per policy	Ease of conversion	Key features of state policies
Weightage (%)	40%	20%	20%	10%	10%	
West Bengal	●	●	●	●	●	<ul style="list-style-type: none"> Favorable policies and environment for registering commercial two-wheelers Parity between bike-taxi and two-wheeler delivery operations.
Rajasthan	●	●	●	●	◐	<ul style="list-style-type: none"> One of the first states to introduce a bike-taxi policy No disturbances by unions.
Assam	●	●	●	●	◑	<ul style="list-style-type: none"> Aggregator Rules allow bike-taxi operations and registration Limited operations allowed on white number plate.
Gujarat	●	◑	◐	●	◒	<ul style="list-style-type: none"> One of the first states to introduce a bike-taxi policy Adopted Central Motor Aggregator Guidelines in 2022.
Chandigarh	●	◑	◑	●	◑	<ul style="list-style-type: none"> Allowed bike-taxi operations in 2019 Adopted Motor Vehicle Aggregator Guidelines in 2023.
Telangana	◑	◑	◑	●	◑	<ul style="list-style-type: none"> Aggregators have signed MOUs with Hyderabad Metro Rail Limited to provide last-mile connectivity.
Delhi	◐	◑	◑	◑	○	<ul style="list-style-type: none"> Released Delhi Motor Vehicle Aggregator and Delivery Service Provider Scheme, 2023.
Tamil Nadu	○	●	●	●	○	<ul style="list-style-type: none"> In the process of drafting the regulatory framework in line with the Central Motor Aggregator Guidelines.
Karnataka	○	○	○	○	○	<ul style="list-style-type: none"> Banned the Karnataka Electric Bike-Taxi Scheme in 2024.
Maharashtra	○	○	○	○	○	<ul style="list-style-type: none"> State government constituted a 6-member committee to formulate aggregator guidelines, including a stance on bike-taxis.

Legend: ● High ◑ Medium ○ Low

5. Understanding a 'typical bike-taxi driver'



Unlocking the potential of bike-taxis in India

Bike-taxi driving is a temporary career option, and thus it becomes imperative to build a strong understanding of the characteristics that defines it. The regulations/rules that govern this industry must take into account the job profile, motivations and concerns of a typical bike-taxi driver.

Bike-taxi drivers are essentially gig workers who, as per The Code on Social Security 2020, are defined as “a person who performs work or participates in a work arrangement and earns from such activities outside of traditional employer-employee relationship”. Other vehicular options present in last-mile passenger transportation, such as cabs/taxis and auto-rickshaws, typically have individuals who are in it as a long-term career option, unlike bike-taxis which is predominantly a short-term part-time secondary gig picked up to sustain living expenses.

This chapter profiles a typical bike-taxi driver and how they differ from their peers.

To understand this, KPMG in India conducted a detailed survey of 2,500+ bike-taxi drivers through face-to-face interviews across nine Indian cities – Delhi NCR, Hyderabad, Bengaluru, Jaipur, Chennai, Ahmedabad, Kolkata, Guwahati and Chandigarh.

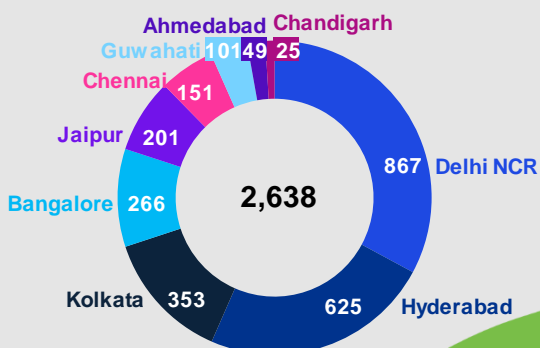
The purpose of the survey was six-fold:

1. To understand their demographics – Who are bike-taxi drivers? What is their age group?
2. To understand their work patterns – How long have they been driving bike-taxis? How long do they expect to continue driving? How many hours do they drive in a day? How many platforms are they working on?
3. To understand their ridership patterns – How long is a typical ride? What are the key use cases? What are their busiest hours?
4. To understand their earning patterns – How much does this gig contribute to their and their family's income?
5. To identify the key motivators and triggers for picking up bike-taxi driving is a gig work – Why did they pick-up bike-taxi? Are they able to achieve the expected targets/ambitions?
6. To understand their views on the constantly evolving regulatory space – What are their concerns/challenges? Why do these concerns arise? What can be done to address them?

We hope that the answer to these questions will throw light on a few critical aspects of a bike-taxi driver's profile, which should be taken into consideration by the state governments as they frame their respective policies.




















Following is a split of the survey participants across the nine focus cities¹:

(The sample size of the respondents is corresponding to the fleet sizes in the city)



¹ KPMG in India Bike-Taxi Driver Survey 2023 across 9 cities – Delhi NCR, Hyderabad, Bengaluru, Jaipur, Chennai, Ahmedabad, Kolkata, Guwahati and Chandigarh (n = 2,638)

Key highlights:

Demographics	Majority of the drivers have not completed college education	 55% in 21-30 years age group	 70% are not graduates			
	They are either in-between jobs or looking for supplementary income , and are active on 2+ platforms	 c.50-50% split between full and part-time	 55% on 2+ platforms			
Driving Experience	Most of them plan to be a bike-taxi driver for a maximum of 2 years	 >70% have experience of <12 months	 >75% to continue for 9-12 months			
	They usually drive for 6-10 effective hours in a day completing 7-14 trips on average	 c.55% drive for 6-10 hours daily	 c.50% complete 7-14 trips daily			
Ridership Pattern	Majority of the trips are for a short distance with a major portion used as paratransit to public transportation	 c.50% trips are 4-8 km. long	 c.50% used for first and last-mile connectivity			
	Drivers get rides throughout the day , and not just in morning and evening peak hours	 Only c.35% rides during peak hours				
Earning Ambitions	Full-time bike-taxi drivers target earnings of INR 800-1000 per day	 Average monthly net earning of INR 20,000				
	They are primary breadwinners and make a significant contribution to their household incomes	 Contribute c.60% to household income				
Motivators and Triggers	 Financing household expenses	 Financing emergency expenses	 Financial independence	 Work and income assurance	 Freedom of working hours	 Easy entry/exit with no capital impact
Regulatory Views	Drivers use their existing owned family motorcycles as bike-taxis. EVs limit their personal usage and flexibility with no viable OEM models in the market at present	Given the transient nature of the gig, they are averse to permanent regulations but are open to rule-based operations and paying a reasonable annual permit fee	They are averse to elaborate identification steps that may impact personal usage of the vehicle, however, are acceptable to discrete measures			

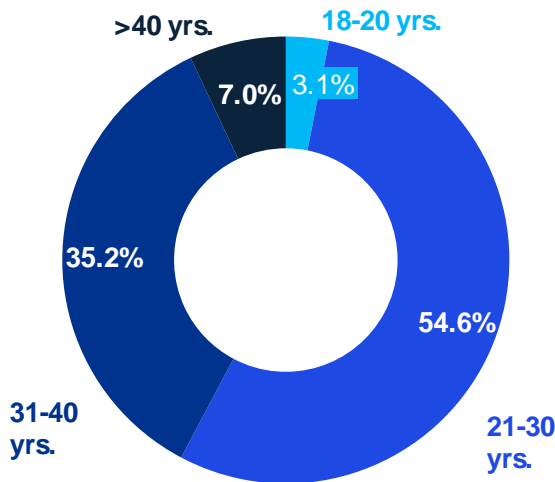
¹ KPMG in India Bike-Taxi Driver Survey 2023 across 9 cities – Delhi NCR, Hyderabad, Bengaluru, Jaipur, Chennai, Ahmedabad, Kolkata, Guwahati and Chandigarh (n = 2,638)

5.1 Demographic profile¹

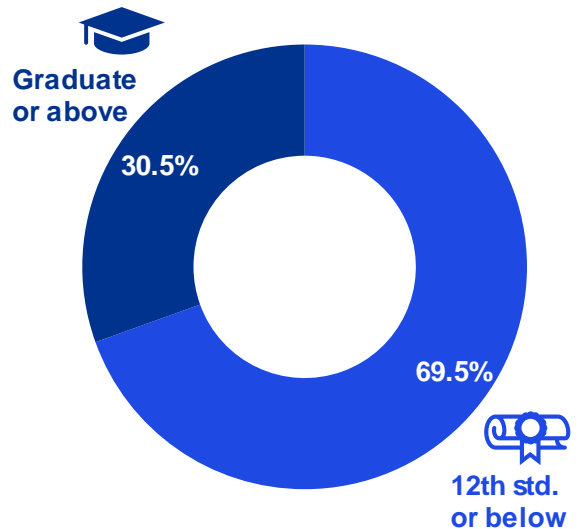
Majority of the bike-taxi drivers have not completed college education

Bike-taxi drivers are young individuals with close to **90 per cent in the 21-40 years** age group (55 per cent in the 21-30 years age group). **c.70 per cent** of the surveyed drivers are **non-graduates**. Since these gig workers do not have higher education, becoming a bike-taxi driver, at a low entry cost, provides them access to earning opportunities.

Age group of bike-taxi drivers



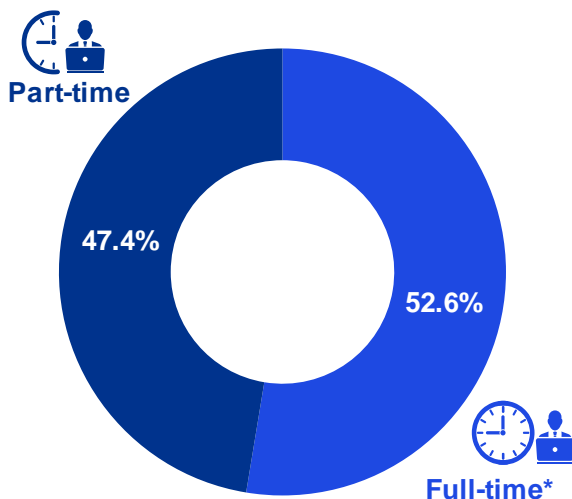
Educational qualification of bike-taxi drivers



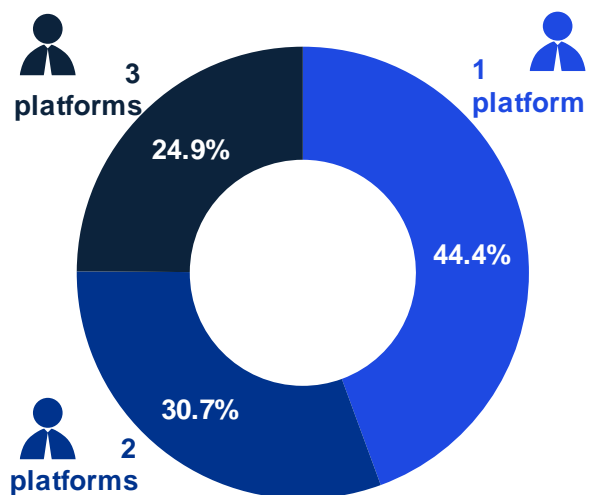
They are either in-between jobs or looking for supplementary income, and majority are active on multiple platforms

Bike-taxi has **evolved** from a part-time gig to a **short-term career option** with more than **50 per cent** of the drivers doing this as their **sole profession**. At the same time, there are **more than 55 per cent drivers** that **operate on 2 or more platforms**.

Full-time v/s part-time in bike-taxi driving



No. of active bike-taxi platforms



¹ KPMG in India Bike-Taxi Driver Survey 2023 across 9 cities – Delhi NCR, Hyderabad, Bengaluru, Jaipur, Chennai, Ahmedabad, Kolkata, Guwahati and Chandigarh (n = 2,638)

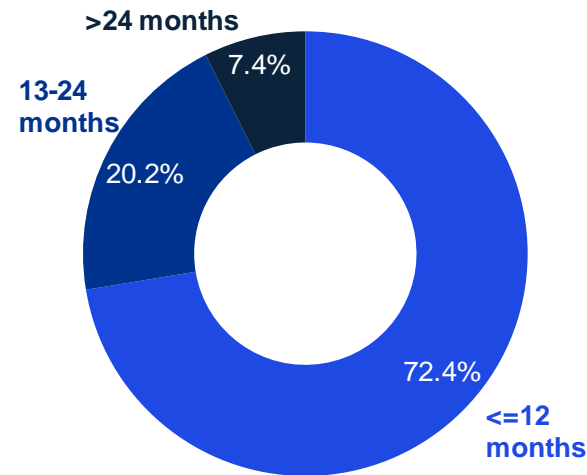
Note: * Since they are in-between jobs, they are temporarily driving full-time to meet their month expenditure and are expected to move on once they find a better opportunity

5.2 Bike-taxi driving experience ¹

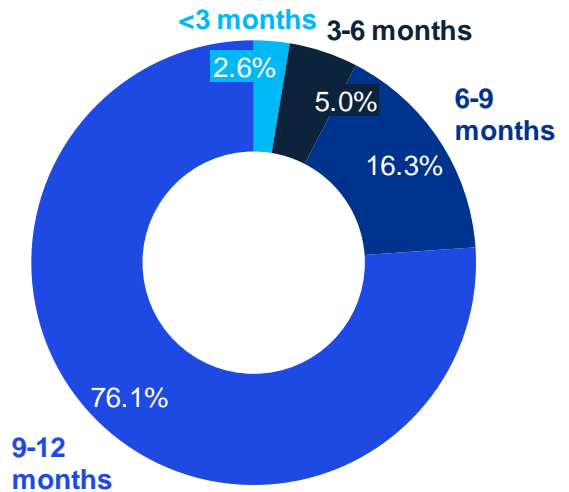
Most of them plan to be a bike-taxi driver for a maximum of 2 years

Nearly **three-fourth** of the surveyed drivers have been **driving bike-taxi for less than 12 months** and expect to **continue driving for less than a year**. It highlights the **short-term nature of this profession** and hence the **need for temporary regulatory measures** which would not impact them after they discontinue their platform work.

Bike-taxi driving experience



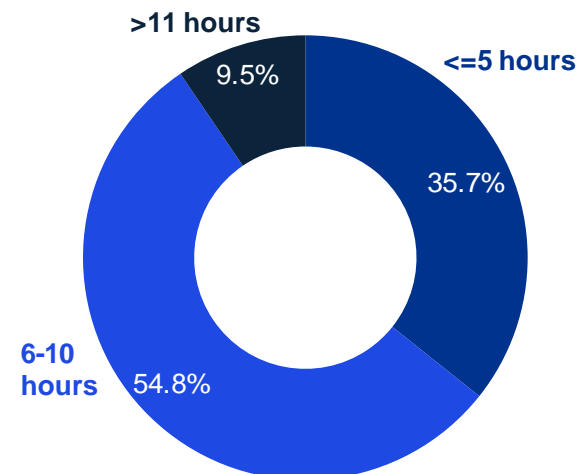
Expected longevity of bike-taxi profession



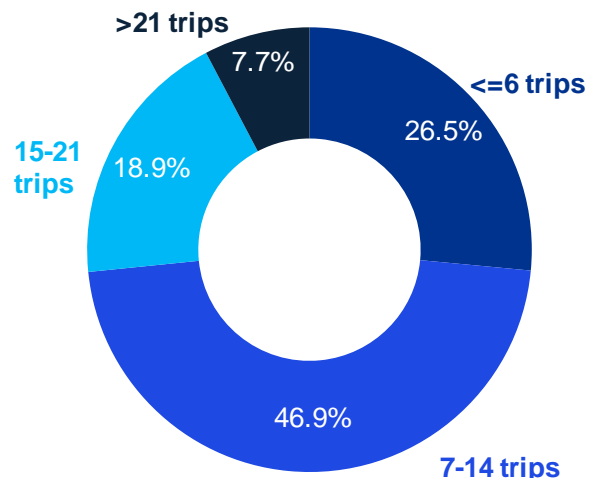
They usually drive for 6-10 effective hours* through the day completing 7-14 trips on average

c.55 per cent of the drivers drive for **6-10 hours a day**. Average daily **driving hours** is **higher** for **full-time** drivers at **8 hours** compared to **5.7 hours** for **part-time** drivers. During this time, they can **complete 7-14 trips** with a **full-time driver** completing **13 trips** on average against **8 for a part-time driver**.

Daily driving hours



Daily trip count



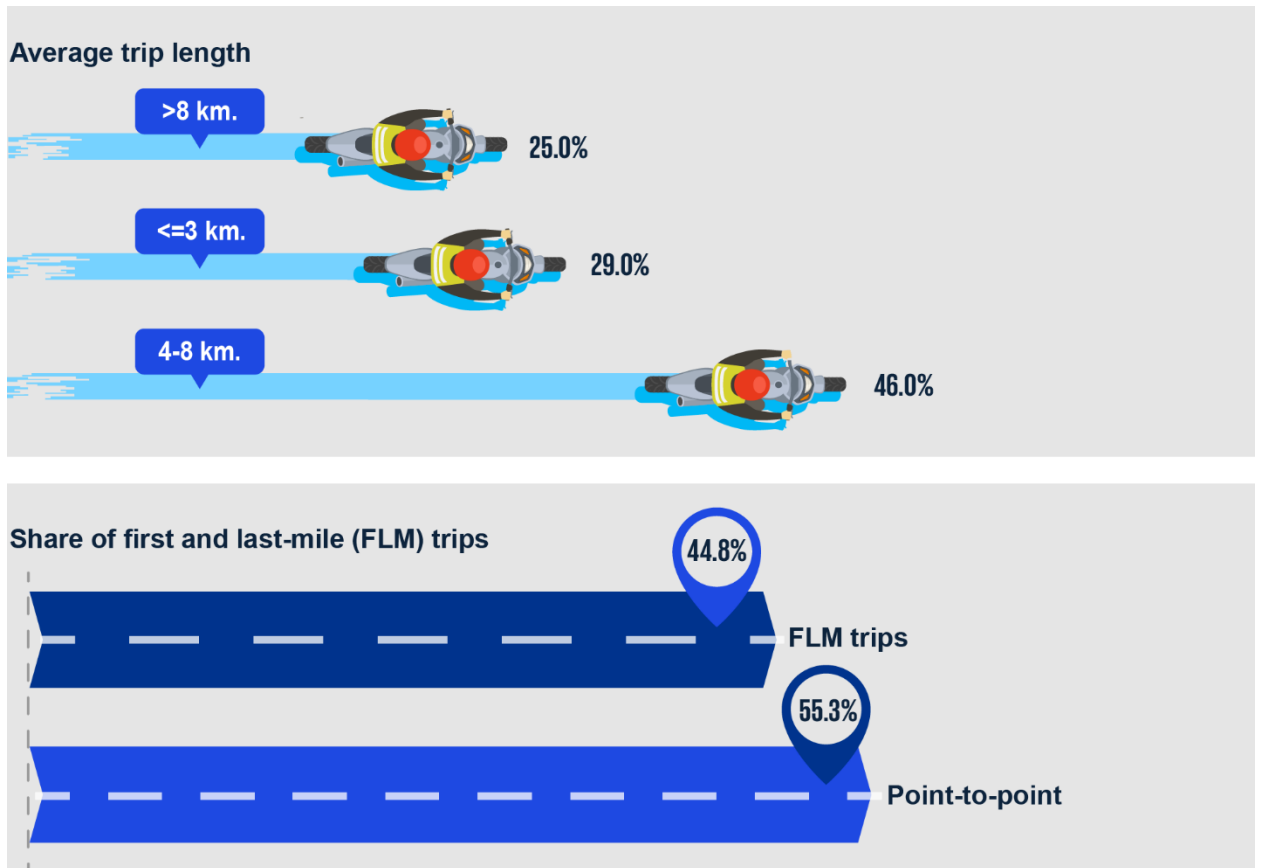
¹ KPMG in India Bike-Taxi Driver Survey 2023 across 9 cities – Delhi NCR, Hyderabad, Bengaluru, Jaipur, Chennai, Ahmedabad, Kolkata, Guwahati and Chandigarh (n = 2,638)

Note: *Effective hours exclude breaks taken during the day

5.3 Ridership pattern¹

Majority of the bike-taxi trips are short distance rides with a significant portion of the riders using them as paratransit to public transport systems

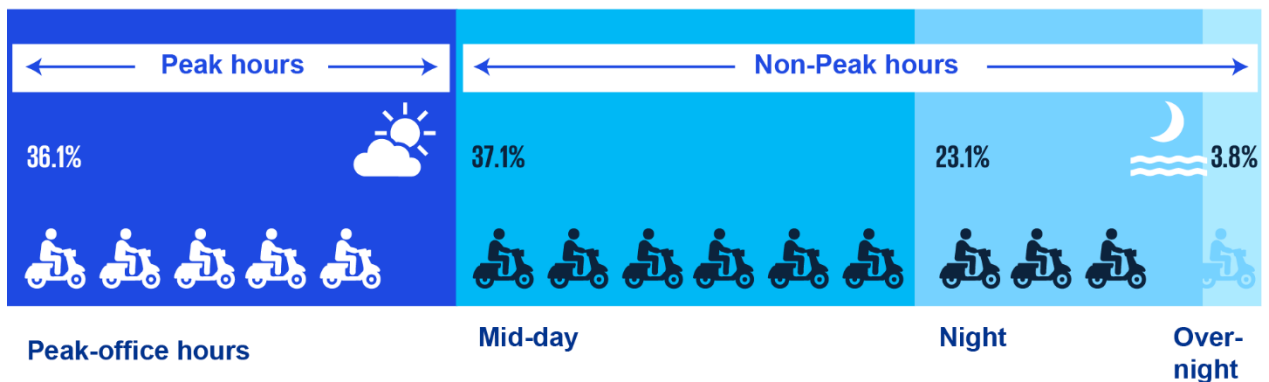
c.50 per cent of the trips are **4-8 km.**, with **average trip length** of **6 km.** Bike-taxi trips are frequently used for **first** and **last-mile connectivity**, highlighting their **complementarity** to our **public transport systems.**



Bike-taxi drivers get rides throughout the day

Only 36 per cent of the bike-taxi rides are **during morning and evening peak** office hours **indicating** they are **fairly spread throughout the day.**

Split of rides by time of day



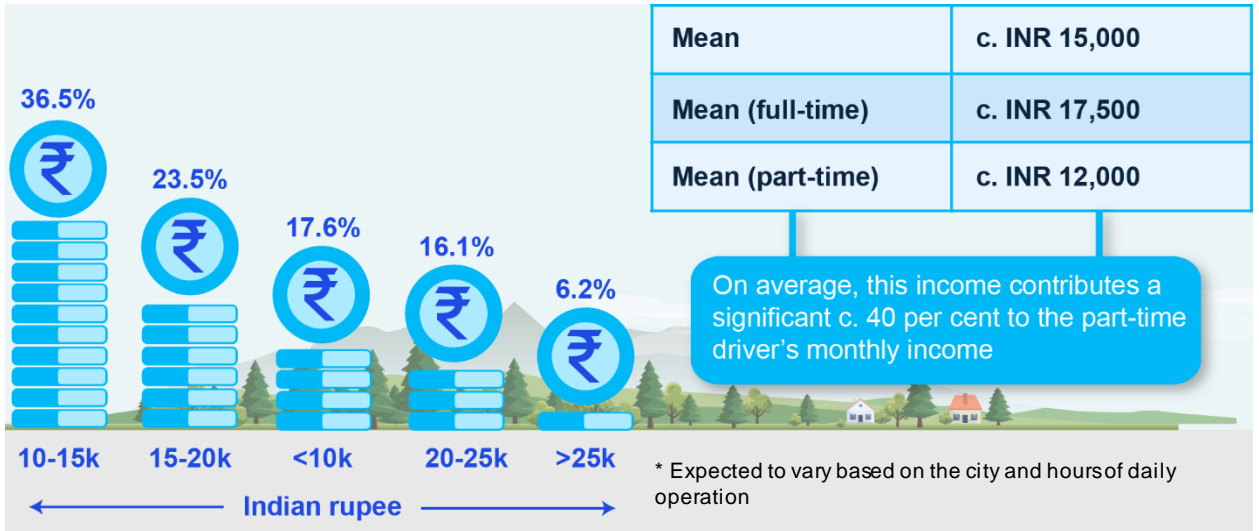
¹ KPMG in India Bike-Taxi Driver Survey 2023 across 9 cities – Delhi NCR, Hyderabad, Bengaluru, Jaipur, Chennai, Ahmedabad, Kolkata, Guwahati and Chandigarh (n = 2,638)

5.4 Earning ambitions¹

Full-time bike-taxi drivers target earnings of INR 800-1000 per day and stop working as soon as their targets are met

About **60 per cent** of the drivers are making a **net earnings** of **INR 10,000-20,000 per month** after deducting commissions of aggregator platforms, and fuel and maintenance expenses. These drivers typically have a **fixed earnings target for the day** and thus are **not too concerned about work hours**.

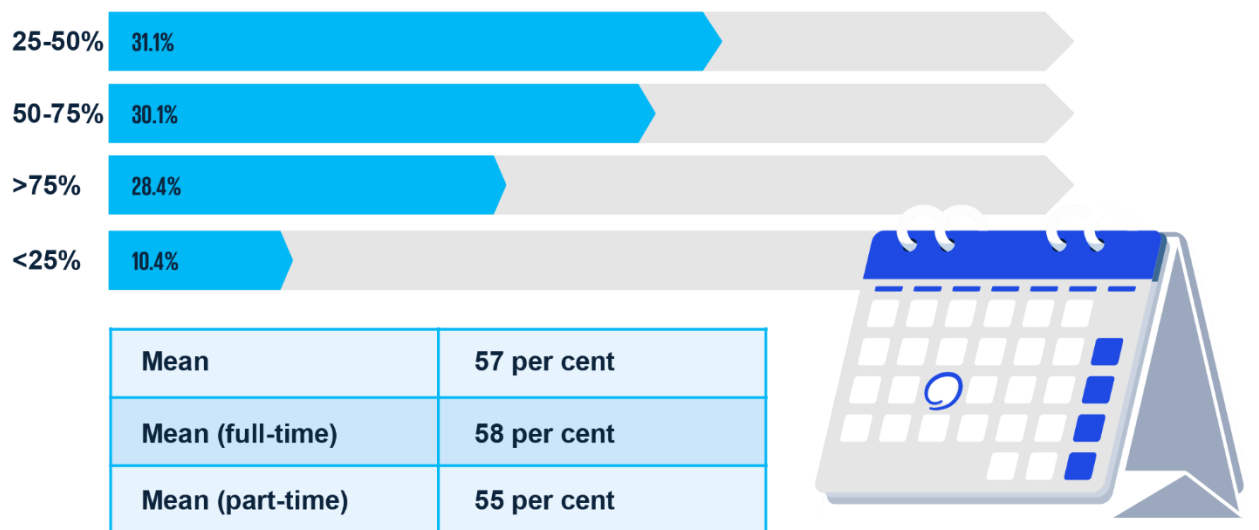
Average monthly income*



These drivers make a significant contribution to their household incomes and sustenance of their family's livelihood

On an average, bike-taxi drivers **contribute c. 60 per cent to their household incomes**, and thus **loss of this income** can **impact their household income** by **c.25 per cent** and **c.60 per cent** for part-time and full-time drivers, respectively.

Share of bike-taxi driver income to total household income



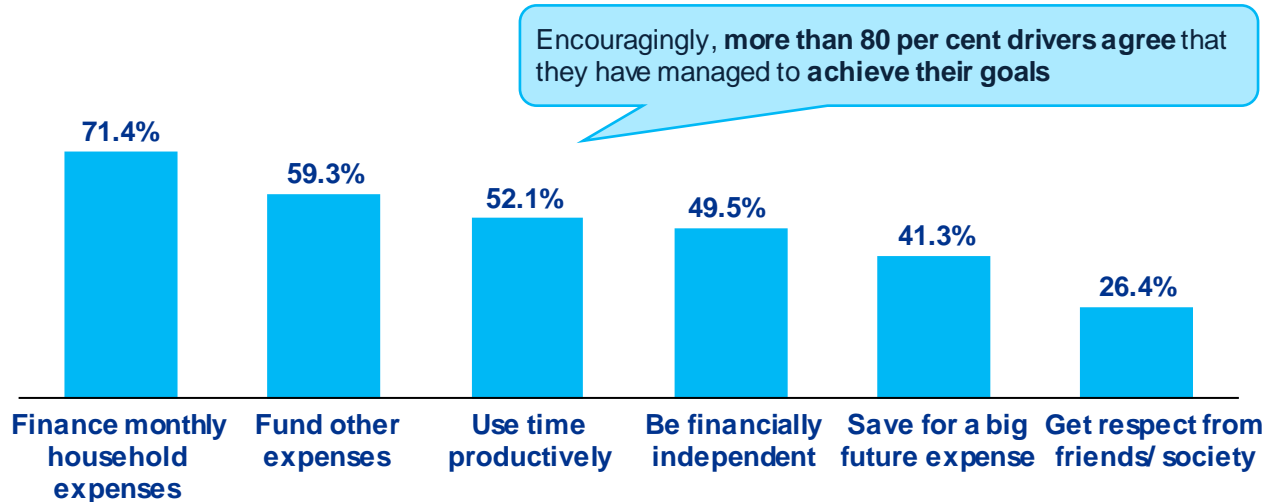
¹ KPMG in India Bike-Taxi Driver Survey 2023 across 9 cities – Delhi NCR, Hyderabad, Bengaluru, Jaipur, Chennai, Ahmedabad, Kolkata, Guwahati and Chandigarh (n = 2,638)

5.5 Motivators and triggers¹

The primary motivation for doing gig work is to finance household expenses. Other motivators include funding other expenses and using time productively

>70 per cent of the drivers started doing gig work to finance their household expenses. About 60 per cent of the drivers also cited funding other expenses such as a medical or a loan as a motivator. Another factor among part-time drivers was the intention to use their free time more productively.

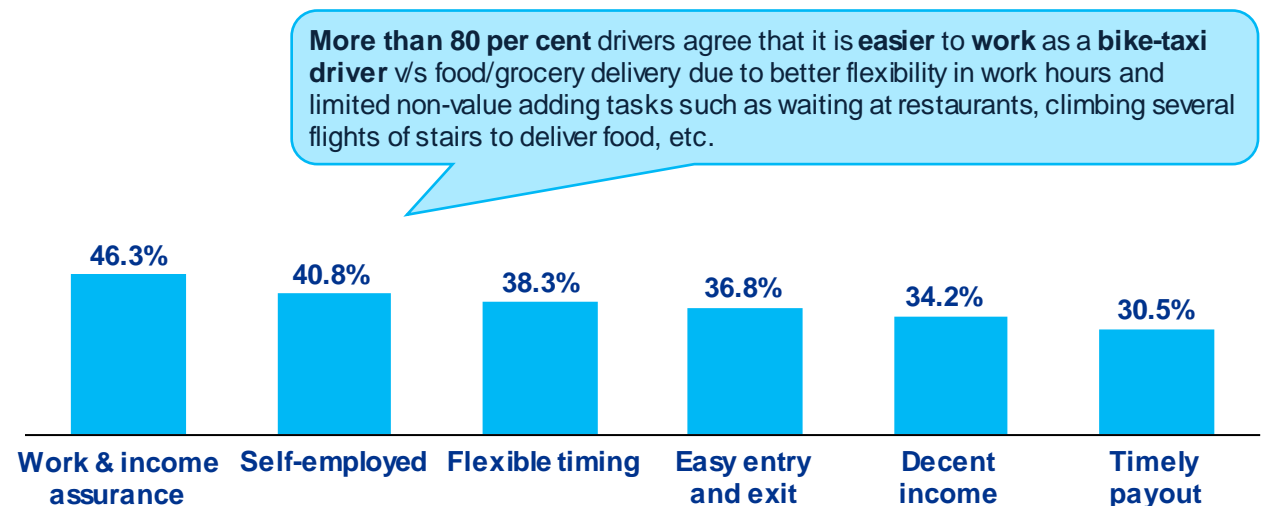
Top motivation to start gig work (% of respondents)



Assurance of daily work and earnings was the primary factor to select bike-taxi driving as the gig work. Other key factors include independence and freedom of working on their own terms

c.50 per cent of the drivers chose bike-taxi driving as gig work driven by the assurance of hitting their targeted daily earning. Bike-taxis, unlike food/grocery delivery, allows them to define their hours.

Top influencers to select bike-taxi driving as their choice (% of respondents)



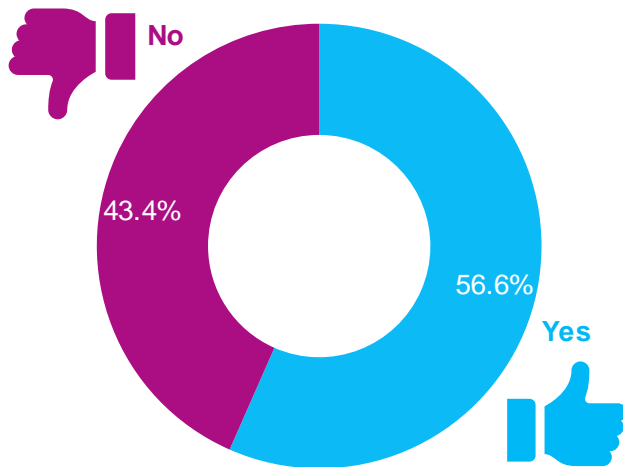
¹ KPMG in India Bike-Taxi Driver Survey 2023 across 9 cities – Delhi NCR, Hyderabad, Bengaluru, Jaipur, Chennai, Ahmedabad, Kolkata, Guwahati and Chandigarh (n = 2,638)

5.6 Regulatory views¹

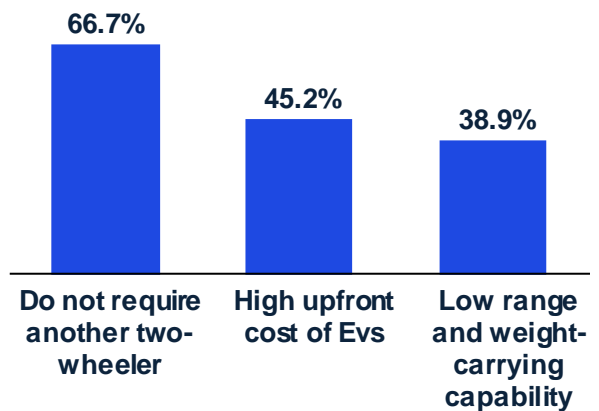
Drivers use their existing motorcycles as bike-taxi. Current Electric vehicle (EV) models and lack of battery-swap infrastructure risk limiting daily-run and movement

100 per cent of the drivers are using an existing assets for bike-taxi. Of them, c.60 per cent have recently upgraded their motorcycle. Hence, an EV only policy will require them to purchase another vehicle solely for this short-term opportunity, which has concerns of high cost and low range.

Upgraded motorcycle recently



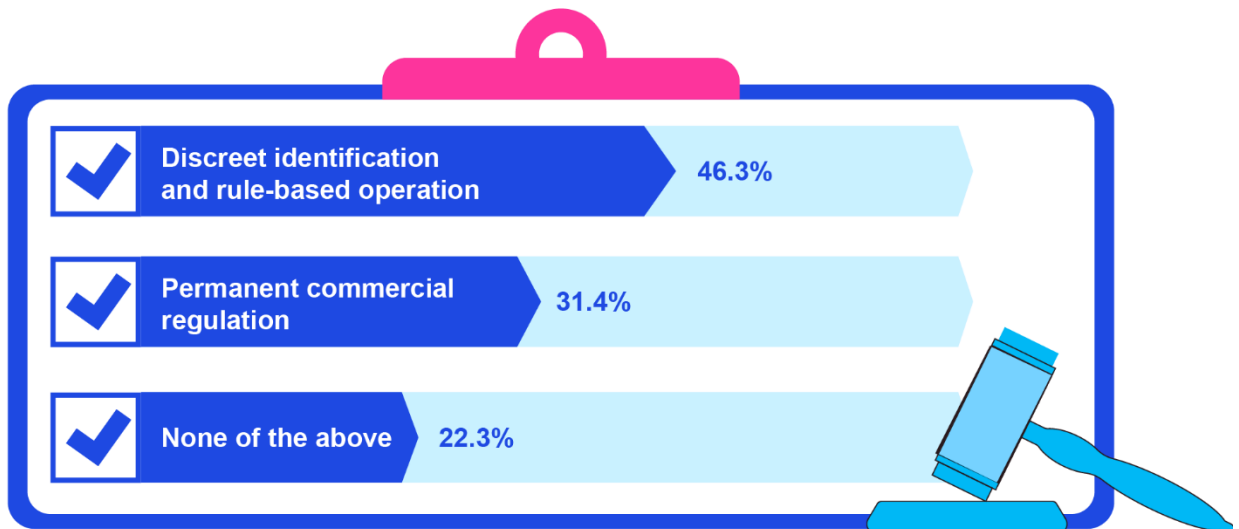
Concerns with an electric vehicle only policy (% of respondents)



Drivers are averse to permanent regulations. However, bike-taxi drivers have favorable opinions of discreet identification, as a form of regulation

As 75 per cent of the bike-taxi drivers expect to drive for another 9-12 months, they have shown high aversion towards permanent regulatory measures e.g., yellow number plates. However, a significant number of drivers (c.46 per cent) have favorable opinions of discreet identification, as a form of regulation.

Acceptance of commercial regulations (% of respondents)

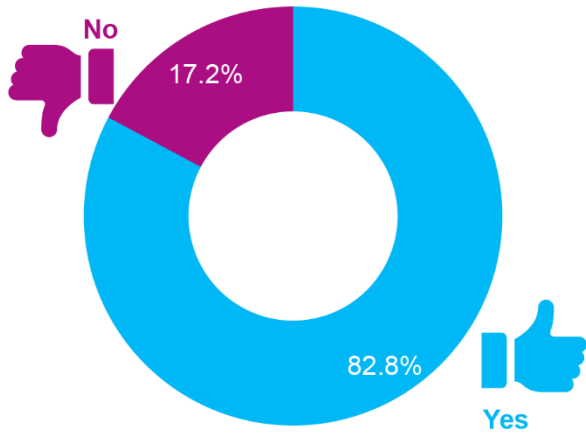


¹ KPMG in India Bike-Taxi Driver Survey 2023 across 9 cities – Delhi NCR, Hyderabad, Bengaluru, Jaipur, Chennai, Ahmedabad, Kolkata, Guwahati and Chandigarh (n = 2,638)

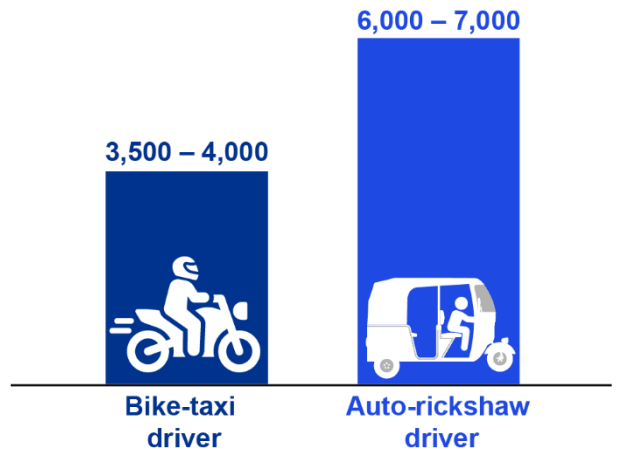
Drivers are open to paying a reasonable time-based short-duration permit fee which legally allows them to operate bike-taxis

About **83 per cent** of the drivers were **open** to paying an **annual permit fee** of **INR 1,000-1,200**. As per our survey, over a **5-year period**, this **amount is comparable** to what an **auto-rickshaw driver spends** to maintain his permit.

Acceptance to paying an annual permit fee



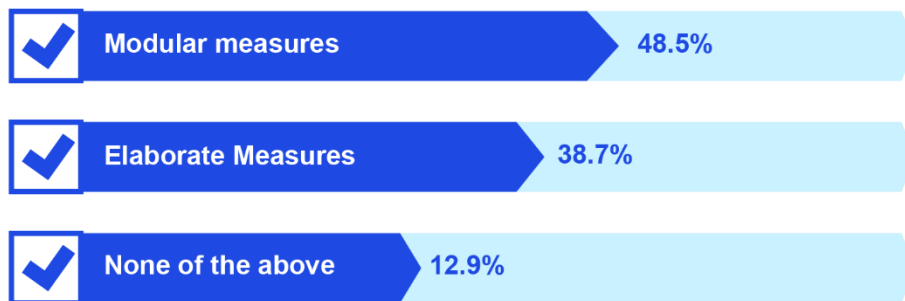
Amount bike-taxi drivers are willing to pay v/s approx. amount paid by auto-rickshaw drivers over 5 years (INR)^{1,2}



As personal vehicles are used here, drivers are averse to elaborate identification measures that impact personal usage, however, they are open to discrete measures

Modular measures such as ‘wearing jackets lined with reflective colours’ **received much higher acceptance (48.5 per cent) compared to elaborate measures** such as the ‘motorcycle painted in a particular colour’, ‘Bike-taxi painted on the motorcycle’ and ‘plate with Bike-taxi on front/rear’.

Acceptance of operational regulations (% of respondents)



Examples of modular and elaborate measures

Modular Measures
Wearing a jacket with reflective colours, which can be removed outside work hours

Elaborate Measures
Painting bike a particular colour, painting Bike-Taxi on fuel tank, affixing plate with Bike Taxi on front/rear of bike

¹ KPMG in India Bike-Taxi Driver Survey 2023 across 9 cities – Delhi NCR, Hyderabad, Bengaluru, Jaipur, Chennai, Ahmedabad, Kolkata, Guwahati and Chandigarh (n = 2,638); ² KPMG in India Auto-rickshaw Driver Survey 2023 across 7 cities – Delhi NCR, Hyderabad, Bengaluru, Jaipur, Chennai, Ahmedabad and Mumbai (n = 552)

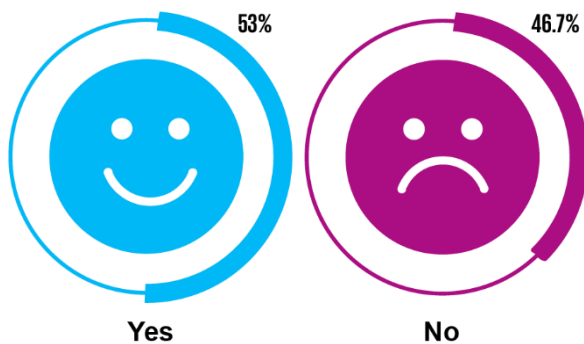
5.7 Views of auto-rickshaw drivers²

In addition to the bike-taxi driver survey, KPMG in India also conducted a survey of 500+ auto-rickshaw drivers to understand their point-of-view and concerns regarding bike-taxi operations in their cities. The purpose of this survey was to bring a holistic coverage to the analysis and ensure that views of all the involved parties are adequately covered. Key insights from the survey are discussed below.

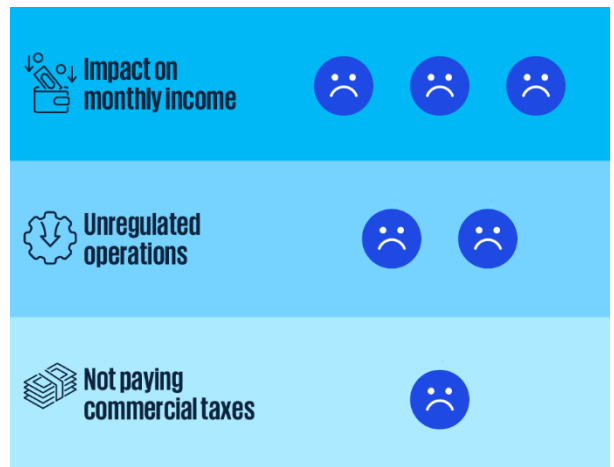
Auto-rickshaw drivers are opposed to bike-taxi drivers primarily due to perceived loss of livelihood and un/semi regulated nature of bike-taxi operations

c.47 per cent of the surveyed **auto-rickshaw drivers** have **no concerns** with **bike-taxi operations** in their city. For the **remaining 53 per cent**, **impact on livelihood** was expressed as a concern by **three out of four drivers**.

Concerns with bike-taxi operations



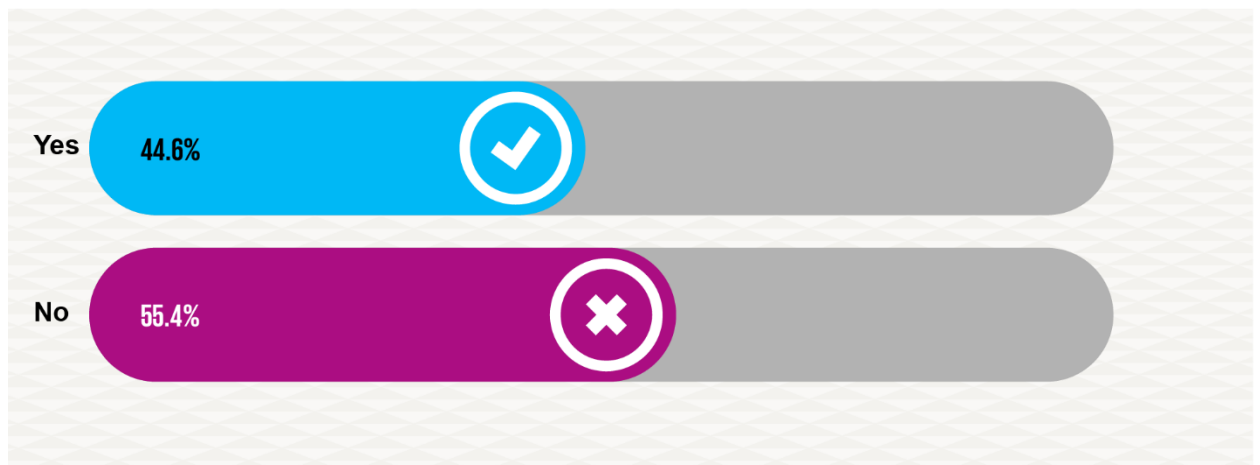
Key concerns



However, c. 45 per cent of those who had expressed concerns above are willing to ply with them if they too, like auto-rickshaws, are regulated with permits

c.45 per cent of the **auto-rickshaw drivers** that had raised concerns with regards to bike-taxi operations, stated they would be **open to accepting bike-taxis** subject there was some form of **regulations being placed on them**.

Acceptance with regulated bike-taxi operations (% of drivers who expressed concerns)



² KPMG in India Auto-rickshaw Driver Survey 2023 across 7 cities – Delhi NCR, Hyderabad, Bengaluru, Jaipur, Chennai, Ahmedabad and Mumbai (n = 552)

6. Breaking myths related to bike-taxis



Unlocking the potential of bike-taxis in India

So far, it has been discussed how bike-taxi services can be highly beneficial to all the riders, drivers, and cities involved – commuters or the end customer, asset-owners or the driver, peers or auto-rickshaw drivers and the Government – driven by their value proposition and use cases. These assertions were built through over 3,000 interviews with all the stakeholders.

However, the focus group discussions also highlighted a few misconceptions regarding bike-taxi operations. These myths often arise from personal opinions spread through word-of-mouth with limited or no empirical evidence.

Few of these myths are:

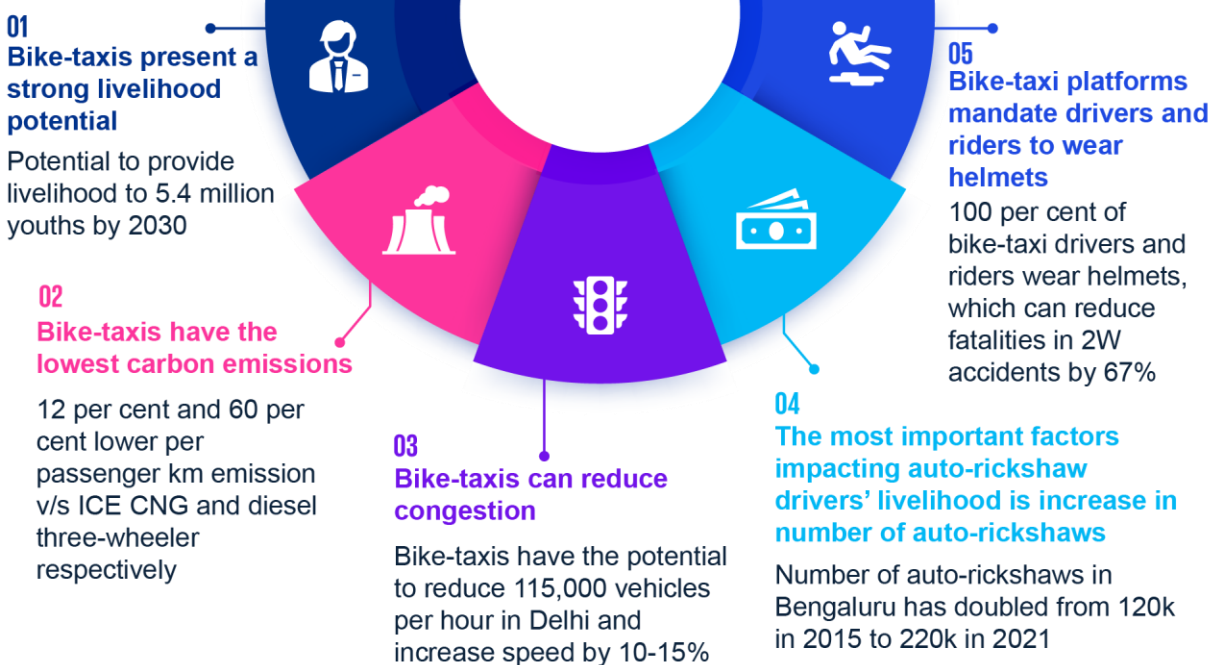
1. Bike-taxis are not a sustainable livelihood opportunity
2. Bike-taxis cause more pollution than their counterparts
3. Bike-taxis will further increase our country's congestion woes
4. The livelihood of auto-rickshaw drivers has been severely impacted by bike-taxi drivers

5. Two-wheelers are a big safety hazard.

This chapter aims to provide more context and nuance to these myths with relevant data. The resultant analysis has been further triangulated by primary surveys and available secondary research as stated below:

- Bottom-up estimation of livelihood potential with bike-taxis
- Analysis to estimate the total carbon emission per passenger per km travelled of two-wheelers, three-wheelers and four-wheelers
- Estimated reduction in congestion driven by increasing utilisation of public transport system aided by bike-taxis
- Commentary on potential reasons that could have impacted the livelihood of auto-rickshaw drivers in the recent few years
- Analysis of causes of two-wheeler accidents and fatalities.

Figure 24: Breaking the myths



6.1 Livelihood potential from bike-taxis

Based on industry reports, the Indian economy needs to generate a total of 90 million non-farm jobs between 2023 and 2030 to absorb the 60 million new workers and the additional 30 million workers who would pivot from farm jobs¹.

To absorb this emerging workforce within the decade, the country needs a sustained real growth rate (nominal growth – inflation) of 8.0 – 8.5 per cent to reach USD 5 Trillion by 2027². Though, there are significant efforts by the government to achieve this growth through heightened public sector investments and policy reforms, the developing and fast-growing gig economy can play a pivotal role.

As highlighted in Chapter Two, the gig and platform economy is a relatively new and emerging sector with immense potential for livelihood generation. The Economic Survey 2020-21³ noted that India has emerged as one of the world's largest flexible-staffing (i.e., gig and platform work) country across the globe. It is expected that this form of work will likely continue to grow with the increase in e-commerce and aggregator platforms.

This section will attempt to estimate the livelihood potential from bike-taxis as a sustainable gig work in 2023 and 2030. For this, we have conducted a

S-curve analysis of emerging Asian, African, and South American economies where bike-taxis are a preferred means of first and last-mile transportation.

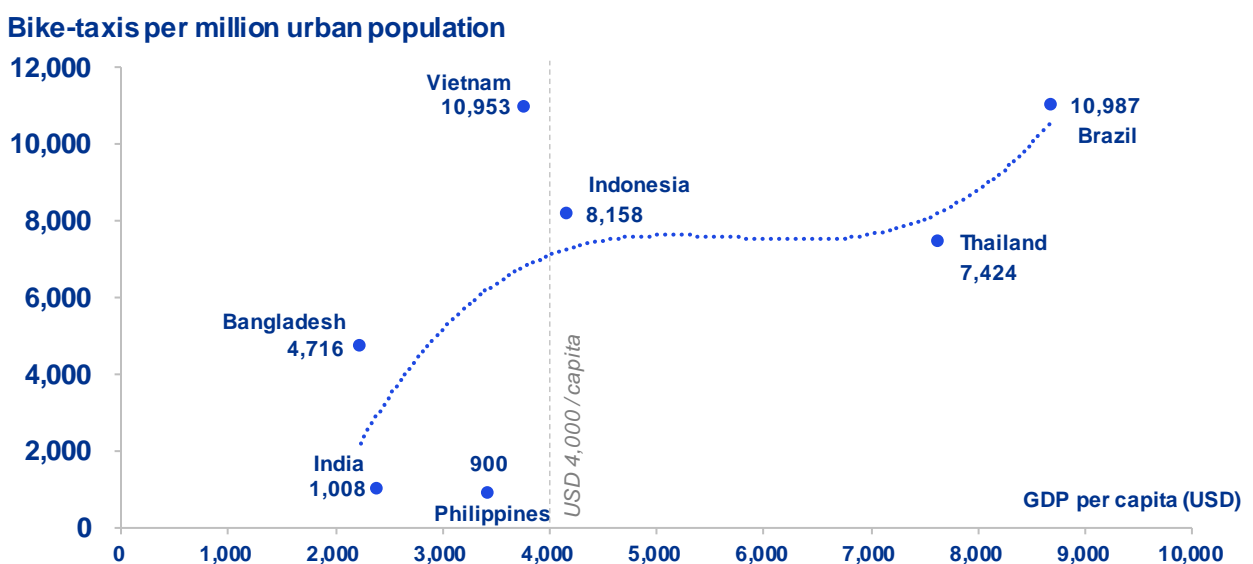
To estimate the livelihood opportunity in 2023, we need not look very far. Bangladesh's current GDP per capita of USD 2,233 is very similar to that of India's at USD 2,389⁴. However, the number of bike-taxis per million urban population is 4.7 times that of India, which presents an immense potential to reach 2.3 million bike-taxi drivers from the current industry estimates of 0.5 million⁵.

To estimate the potential in 2030, the analysis draws inspiration from other Southeast Asian countries where global aggregators have played a key role in organizing and growing the bike-taxi industry. With India's aim to reach a GDP per capita of c. USD 4,000 by 2030⁴, there exists a potential to add an additional 3.1 million drivers to reach 5.4 bike-taxi drivers by 2030⁵.

Hence, the bike-taxi industry has the potential to provide livelihood to approximately five per cent of the estimated 90 million non-farm jobs required by 2030. Strategic initiatives to grow this market can significantly reduce the burden on other industries to provide livelihood to millions of able youth expected to join the nation's workforce.

India has the potential to generate up to 2.3 million bike-taxi jobs in 2023, which is estimated to reach 5.4 million by 2030

Figure 25: Bike-taxi drivers per million urban population v/s GDP per capita, 2022 (#, USD)^{4,5,6,7,8,9}



¹ India's turning point: An economic agenda to spur growth and jobs, The McKinsey Institute, Sankhe et. al., August 2020; ² World Economic Outlook: A Rocky Recovery, International Monetary Fund, April 2023; ³ India's Booming Gig and Platform Economy: Perspectives and Recommendations on the Future of Work, Niti Aayog, June 2022; ⁴ World Bank Data on GDP per capita at current prices, accessed in August 2023; ⁵ KPMG in India analysis, 2023/24 based on primary and secondary research; ⁶ How is the Situation of Motorbike taxis in Thailand during the Disruption of Grab?, Seris, 19 May 2021; ⁷ Gojek Vietnam drives past a driver milestone, VN Express, 20 April 2021; ⁸ The transportation sector and the motorcycle taxi, Business Word, Oplas, 17 January 2022; ⁹ Emerging Role of Bike (Motorcycle) Taxis in Urban Mobility, TERI, Thakur et. al., January 2020;

6.2 Carbon emission across vehicle segments

Indian transport sector is the fourth largest contributor to India’s greenhouse gas (GHG) emissions, accounting for 10 per cent of the emissions in 2019. Emissions from the transport sector have grown five times since 1990⁹ with passenger transportation contributing approximately 80 per cent of the total¹⁰. It is anticipated that the vehicular emissions is expected to only increase as the economy further grows and the transportation demand increases, unless significant efforts are taken to reduce emissions through innovative methods such as shared mobility, improvements in emission norms, vehicle electrification and increasing efficiency of the existing infrastructure i.e., buses and metro¹¹.

Improvement in carbon emission norms, vehicle electrification, and the enhancement to the bus and metro infrastructure, while being key to reduction of vehicular emissions, are long-term efforts which require significant investments from various stakeholders. Further, a real shift towards electric vehicles requires significant investments in charging infrastructure using renewable energy.

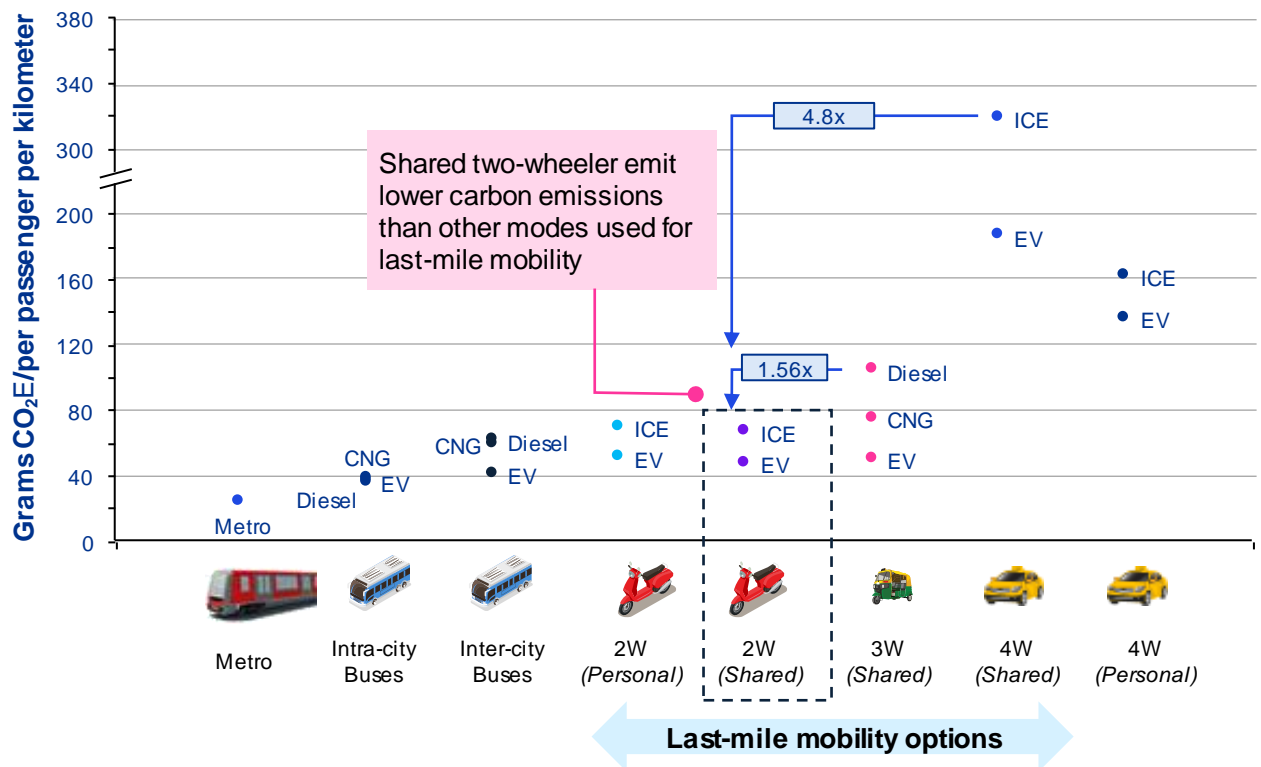
Conversely, sharing of existing assets presents a faster, economical and an efficient method to reduce vehicular emissions in the short to medium term, and help India achieve its Low Emission Development Strategy (LEDS) as declared at COP27¹².

Bike-taxis, a shared mobility solution, promote better utilisation of existing two-wheeler assets while providing last-mile connectivity to public transportation hubs.

Two-wheelers have a lower carbon emission as compared to comparable modes of transportation on account of better efficiency and higher mileage.

As shown in the figure below¹³, life-cycle GHG emission (on a per passenger per kilometer basis) of shared two-wheelers is higher only to metros and buses. Amongst all the last-mile mobility options available to a commuter, ICE shared two-wheelers are 12 per cent and 60 per cent more efficient than CNG and diesel three-wheelers, respectively. A similar comparison to four-wheelers shows an even higher efficiency of two-wheelers and a significant potential for reduction in carbon emissions.

Figure 26: Life-cycle GHG emissions, 2023 (Grams CO₂E/per passenger per kilometer)¹³



¹⁰ Emissions by sector, Our World in Data, Ritchie et. al. 2020; ¹¹ Decarbonizing India’s Road Transport: A meta-analysis of road transport emission models, International Council of Clean Transportation, Kumar et. al. 5 May 2022; ¹² Decarbonizing transport: Redefining mobility policies in India, Sinha et. al., 23 June 2021; ¹³ Life-Cycle Assessment of Passenger Transport, International Transport Forum, August 2023;

6.3 Reduced congestion from bike-taxis

The country's growing concern with rising traffic congestion has been discussed in Chapter Three. We have built a strong case for the role bike-taxis can play in first and last-mile connectivity to public transportation systems enabling higher utilisation.

In this section, we will estimate the potential reduction in traffic congestion in Delhi driven by a higher average daily ridership of the Delhi Metro, achieved by a high-quality feeder service such as bike-taxis. We have used the case of Delhi Metro as it is India's largest metro network¹⁴.

Rising traffic congestion is one of the key challenges plaguing Delhi. The number of motor vehicles has increased by almost 21 times between 1981 and 2021, however, the road length has just doubled from 15,487 km to 33,198 km¹⁵. As a result, road congestion in the city has already reached unsustainable levels, especially during peak traffic hours. As per a 2018 study, the average vehicle flow (vehicles/hour/ lane) across 12,000 major road links in Delhi is 3,000-4,000 Passenger Car Units (PCU) between the hours of 10:00 AM and 8:00 PM¹⁶. As per the Guidelines for Capacity of Urban Roads in Plain Areas, the maximum design capacity for a 6 Lane Divided (two way) sub-arterial road is 4,300 vehicles. This shows that vehicle flow of a typical major link road has reach 70-90 per cent of capacity at Level of Service category D suggesting "Approaching unstable flow"¹⁷.

Though Delhi Metro has played a significant role to reduce traffic congestion in Delhi over the last couple of decades, a quality last-mile connectivity option may further help improve the ridership levels.

The average daily ridership has reached 5.5-6.0 million in 2023¹⁸. Delhi Metro recorded its highest ever ridership of 6.8 million passenger journeys on 28th August 2023 surpassing the previous best of 6.6 million on 10th February 2020¹⁹.

The ridership potential, however, is significant. Delhi metro has a fleet of 336 train sets (across four, six and eight coaches) running estimated 5,100 trips daily. A capacity of 300 passengers per coach, brings the daily potential capacity of the Delhi Metro to 10.2 million passenger journeys⁵, which is expected to further increase with ongoing conversions of six to eight coach trains²⁰.

As per the Household and Metro users survey by the Transport Department, GNCTD in 2007:

- ❖ 97 per cent people will shift to public transport if there is a significant saving in travel time
- ❖ 72 per cent will shift if a quality feeder system is available
- ❖ For 93 per cent worker, acceptable walking distance to the nearest station is 200 meters.

The survey shows a high propensity to shift to the metro, however, a key requirement is a strong motorised feeder system, especially for distances greater than 200 meters. In addition, as discussed in Chapter Three, the median time commuters prefer to access the metro station from their home is 10-12 minutes to effectively reduce their total travel time.

Bike-taxi could be an ideal mode of transport to act as a feeder system to the metro stations. With several benefits of affordability, faster journey time, ease of hailing, doorstep pick-up and better ride comfort, bike-taxis fill several gaps which the current incumbents are not able to. With the projected increase in metro capacity over the next couple of years, bike-taxis hold great promise in enabling higher metro utilisation and in-turn reducing congestion on the roads of our nation's capital.

A 20 per cent increase in the current average daily ridership to estimated 7 million will lead to reduction of 100,000 – 120,000 cars per hour during peak traffic periods⁵. Research suggests that traffic congestion and average speeds are a non-linear function at high vehicle flow i.e., a 5 per cent reduction in traffic volumes can lead to 10-15 per cent increase in average vehicle speeds^{5,21}.

Table 4: Congestion reduction, 2023⁵

Parameter	Value	Remarks
Current ridership	5,750,000	
Growth in ridership	1,150,000	20% growth
Increase in ridership in peak hours	690,000	60% share of peak hours
Increase in ridership per peak hour	138,000	Five peak hours
Decrease in number of vehicles per hour	115,000	1.2-1.4 average occupancy per car
Increase in average speed	2.4-3.6 kmph	10-15% increase

⁵ KPMG in India analysis, 2023/24 based on primary and secondary research; ¹⁴ Delhi Metro Rail Corporation Ltd. Website, accessed on 1st September 2023; ¹⁵ Delhi Traffic Police Annual Report, 2022; ¹⁶ Spatially resolved hourly traffic emission over megacity Delhi using advanced traffic flow data, Earth Syst. Sci. Data, 15, 661–680, Biswal et al., 8 February 2023; ¹⁷ IRC 106:1990 – Guidelines for Capacity of Urban Roads in Plain area, 15 October 2020; ¹⁸ Delhi Metro ridership goes up after flooding, The Indian Express, 15 July 2023; ¹⁹ DMRC achieves historic milestone with highest ever passenger journeys, DMRC Press Release, 29 August 2023; ²⁰ Metro to convert remaining fleet to 8 coach trains, The Hindu, 05 April 2021; ²¹ Impact of Roadside Friction on Travel Speed and LOS of Rural Highways in India. Transp. in Dev. Econ. 2, Pal et. al., 28 April 2016

6.4 Impact on auto drivers' livelihood

As highlighted in Chapter Three, bike-taxis are essential for:

- Improving the utilisation of public infrastructure such as metros and buses
- Providing flexible short distance point-to-point mobility to people un- or under-served by other means of transportations.

However, due to a similar use case with auto-rickshaws, bike-taxis are often considered a threat to the livelihood of auto-rickshaws drivers. Auto unions in various cities have shown severe opposition to bike-taxi aggregators and drivers. In Chapter Four, we also highlighted cases from Maharashtra, Tamil Nadu, and Karnataka where auto unions had staged massive protests demanding a complete ban on bike taxi operations.

KPMG in India conducted a primary survey of 500+ auto-rickshaw drivers in seven cities, including metros of Delhi and Mumbai, to estimate the changes in monthly earnings of auto-rickshaw drivers before and after introducing bike-taxis. Forty-one per cent of respondents expressed concern that bike-taxi operations have impacted their monthly earnings. The total impact on earnings based on the response received was approximately 20 per cent²².

41 per cent of respondents surveyed expressed concerns with bike-taxi operations having impacted their monthly earnings²²

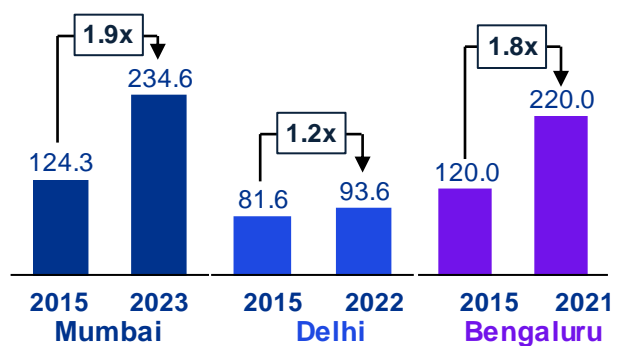
While the primary survey results pointed to a decrease in monthly earnings, further research on other economic factors shows that there are other factors also at play which have contributed to changes in an auto-rickshaw driver's earnings. The three key factors here are strong increase in the number of auto-rickshaw drivers within a city, rising prices of CNG fuel and a comparatively slow growth in auto-rickshaw tariffs.

Increase in number of auto-rickshaws drivers

Over the last few years, there has been a significant increase in the number of auto-rickshaws plying within metro cities. For instance, the number of auto-rickshaws plying in Mumbai

has increased by 1.9 times since 2015²³. A similar trend is seen in Delhi and Bengaluru, where the auto-rickshaw numbers have increased 1.2 times^{24,25} and 1.8 times^{26,27}, respectively. As demand has not grown at a similar pace, this increase in auto-rickshaw volumes has led to overcrowding in the market and has resulted in a reduction in the earnings of the drivers. An example is Mumbai, where the auto-rickshaw unions have requested the Transport Department to stop issuing new permits due to overcrowding and its potential impact on earnings²⁸.

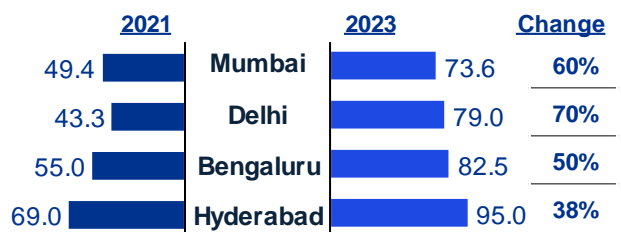
Figure 27: Auto-rickshaw volumes ('000 units)



Increase in prices of fuel

CNG prices have increased significantly between 2021 and 2023. This has resulted in an impact of INR 2,500 – 7,500 per month in a driver's operating expenses, depending on the city of operations^{5,29}.

Figure 28: CNG prices, 2021 vs 2023 (INR/kg)



Slower growth in tariffs

The increase in auto-rickshaw fares has not been at par with increase in fuel prices. Though Governments have raised auto-rickshaw tariffs in various cities in the range of 15 to 40 per cent since 2015, it is less than the growth in fuel prices. However, few cities such as Chennai, are yet to witness a fare increase since 2013^{30,31,32}.

⁵ KPMG in India analysis, 2023/24 based on primary and secondary research; ²² KPMG in India Auto-rickshaw Driver Survey 2023 across 7 cities – Delhi NCR, Hyderabad, Bengaluru, Jaipur, Chennai, Ahmedabad and Mumbai (n = 552); ²³ Economic Survey of Maharashtra, Directorate of Economics and Statistics, accessed in September 2023; ²⁴ Delhi road crash fatalities report- 2021, Transport Department, Govt. of NCT of Delhi, 2021; ²⁵ Economic survey of Delhi - 2022-23, Chapter 12 Transport, accessed in September 2023; ²⁶ Estimating vehicular emissions from autos plying in Bengaluru, Thakur, et. al., May 2018; ²⁷ Bengaluru's Auto are turning 70 And Here's All You Need To Know About Their History!, Whats Hot, Jacob, March 2021; ²⁸ Mumbai: Auto-rickshaw unions, asks govt to stop issuing permits for autos, Free Press Journal, February 2022; ²⁹ City wise CNG prices, mypetrolprices.com, accessed on 28 September 2023; ³⁰ Mumbai auto-rickshaw Rate Card July 2015; ³¹ Tariff Card for Auto-rickshaws, 31 May 2021, transport.maharashtra.gov.in; ³² Mumbai Taxi Tariff/Fare chart from 1-Oct-2022

6.5 Safety offered by bike-taxi platforms

According to the Helmets report by the World Health Organisation and the World Bank released in 2023, road crashes result in approximately 1.3 million fatalities annually and 28 per cent of these road fatalities involve a powered two and three-wheeler³³.

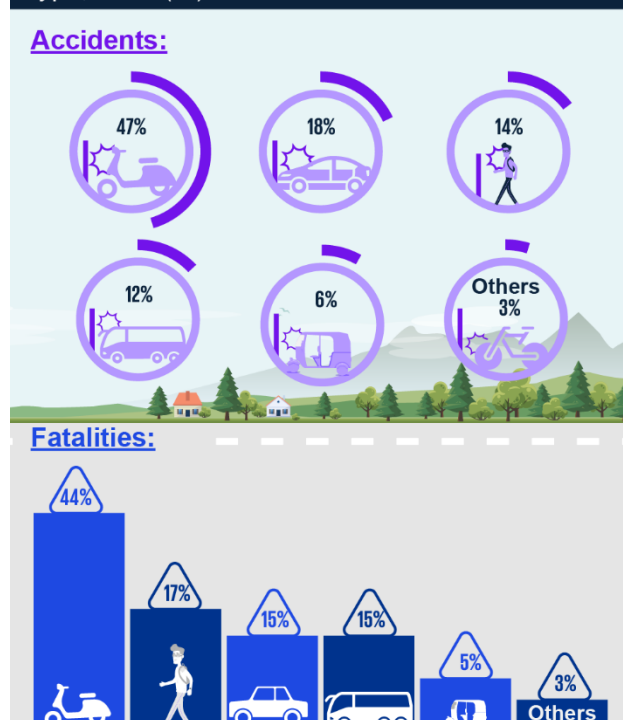
A similar trend can be seen in India, where two-wheelers account for 47 per cent of accidents³⁴.

It is important to note that the probability of two-wheeler accidents is higher as they:

- Share traffic lanes with fast-moving vehicles
- Are lightweight and thus can lose control more easily than other vehicles
- Are open-air vehicles without the protection of a metal frame like cars have
- Have a smaller road presence, making them easy to miss at blind spots.

In India, the share of two-wheeler fatalities is higher at 44 per cent compared to the global average of 28 per cent, due to non-usage of helmets, over speeding, jumping a red light, driving on wrong side of the road, etc.³⁵.

Figure 29: Accidents and fatalities by vehicle type, 2021 (%)³⁴



Non-compliance with helmets usage rules continue to be a major challenge responsible for 70 per cent of two-wheeler fatalities in 2021³⁶. According to WHO, correct helmet and its proper usage can reduce the risk of fatal injuries by 42 per cent and head injuries by 69 per cent³⁷.

Bike-taxi aggregators are almost completely organised vis-à-vis street hail auto-rickshaws and ensure high degree of compliance to safety norms, significantly increasing road safety of the commuters.

The driver is required to always carry two helmets and offer one to the commuter before start of the trip. Platforms have been proactive in addressing helmet driven safety by distributing free helmets to their drivers, as well as using artificial intelligence/machine learning tools to help ensure that both the driver and the passenger are wearing helmets properly^{38,39}.

Figure 30: How safe is your ride?⁴⁰

	Platform based apps	Street hail autos
SOS/Safety Tools	✓	✗
Auto-detour detection	✓	✗
Driver ID verification	✓	✗
Late night completion check	✓	✗
Trip insurance	✓	✗
Raise a complaint	✓	✗

Besides higher road safety, the aggregators also provide several application driven features and measures, which are not present in street hail auto-rickshaw rides.

The platform driven bike-taxis thus offer a significantly higher degree of safety while commuting for a rider than independent street hail auto-rickshaws.

³³ HELMETS: A road safety manual for decision-makers and practitioners, second edition, WHO and World Bank, 2023; ³⁴ The World Health Organisation Says Wear A Motorcycle Helmet – Please, Autoweek, White, 4 May 2023; ³⁵ Accidental deaths and Suicides in India, 2021, National Crime Records Bureau, Ministry of Home affairs, Page 157, accessed in August 2023; ³⁶ Road Accidents in India, 2021, Ministry of road transport and highways, December 2022; ³⁷ Road traffic injuries, World Health Organisation, 20 June 2022; ³⁸ Why am I being asked to take a photo of myself wearing a helmet?, Uber website; ³⁹ UP Police, Rapido distributes helmets in Noida to promote safe riding behavior, Financial Express, 06 August 2023; ⁴⁰ How safe is your ride?, The Ken, August 2023

7. Structural developments for adoption of bike-taxis



Unlocking the potential of bike-taxis in India

7.1 Global bike-taxi success stories

Over the past couple of decades, different geographies across the globe have been facing concerns around population growth, urbanisation and environment. This has led to escalating challenges in transportation systems and need for innovative solutions to alleviate congestion and reduce environmental issues. As a result, bike – taxis have emerged as a revolutionary and eco-friendly mode of urban mobility, providing an alternative to traditional transportation methods in congested cities worldwide.

Bike-taxis have a rich and diverse history. From a response to poor public transportation in some African countries to providing efficient and affordable transportation solutions in South – East Asian countries, bike-taxis have been in existence for many decades and can be dated back to as early as 1960s.

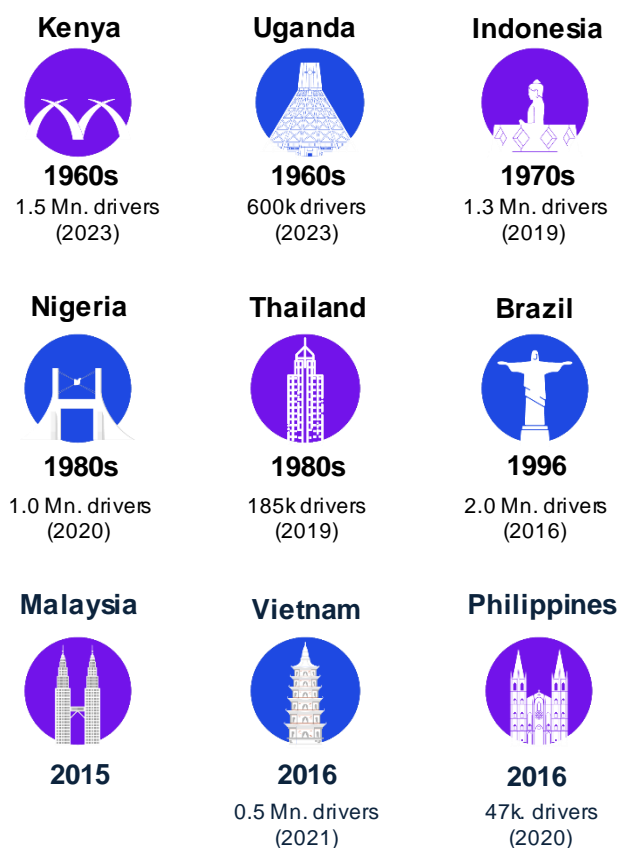
South – East Asian countries such as Thailand¹, Vietnam, Indonesia etc., and few African countries such as Nigeria, Kenya and Uganda witnessed the advent of bike-taxis between 1960 – 1990². Bike taxis have also found its way to Latin American countries, such as Mexico, Colombia, and Brazil.

In Western countries, however, bike-taxis as a concept has not evolved as much as they have in some of the Asian countries. Few reasons that can be attributed to non – existence of bike-taxis in these countries are lower traffic congestion than Asian cities and more stringent safety regulations for motorcycles, which makes it difficult for bike-taxi companies to operate. Additionally, in some western countries, there is a cultural stigma against riding motorcycles, which makes it difficult for bike-taxis to gain acceptance from the public³.

Widely known as ‘Okada’ and ‘Boda Boda’⁴ in African nations to ‘Ojek’ and ‘Motosai’ in Asian nations, bike-taxis have primarily been unorganised with independent operators providing rides on their two-wheelers. However, with

emergence of app-based ride-hailing platforms, South – East Asian countries have seen a significant rise in bike-taxi services over the last decade. Prominent ride-hailing applications have improved the access to bike-taxis in many Asian countries with some countries boasting presence of over 1 million registered drivers^{5,6}. The ride-hailing applications have leveraged the digital platforms and formalised the services to provide reliable transportation solutions to millions of users, in addition to contributing to the region’s economic growth.

Figure 31: Global emergence of bike-taxis^{1,2}



¹ Urban Mobility in Bangkok, Central European University, November 2022; ² Motorcycles Taxis in Indonesia, Penn Institute of Research, Palevsky, November 2019; ³ Cities vs Scooters, Last-Mile Transportation, Forbes, Templeton, November 2019; ⁴ Boda-Boda, Cambridge University; ⁵ The Story Behind 1 Million Go-Jek Drivers, The Medium, Noomega, August 2018; ⁶ How is the Situation of Motorbike Taxis in Thailand during the Disruption of Grab?, Sertis, May 2021;

Table 5: Key highlights from global bike-taxi success stories

Commercial initiatives		
	Bangladesh	<ul style="list-style-type: none"> The road transport authority implemented the ride-sharing service policy to combat congestion and establish regulations including motorcycles⁶.
	Indonesia	<ul style="list-style-type: none"> The government has not mandated commercial registration but has demarcated areas of operation along with limits on vehicles within each region.
	Thailand	<ul style="list-style-type: none"> In 2005, the Thai government formalised and regulated the bike-taxi sector The government issued official jackets to registered bike-taxi drivers, bringing a degree of organisation and safety to the bike-taxi industry⁶ Bike-taxi drivers were also mandated to use a specific yellow number plate⁶.
	Vietnam	<ul style="list-style-type: none"> The Government legalised the bike-taxi services across the country, brought tax regulations and passed a tax decree which classified ride-hailing companies as transportation companies⁹ The traffic department mandated all passenger transport vehicles to convert white licence plates to yellow ones with black letters and numbers¹⁰.
	Brazil	<ul style="list-style-type: none"> Municipalities provided a fillip to the industry with tax exemptions and incentives to drivers purchasing new two-wheelers¹¹.
	Kenya	<ul style="list-style-type: none"> In Kenya, the government aims to train 200,000 drivers on entrepreneurship, financial management and access to cooperative savings schemes¹².
Operational initiatives		
	Bangladesh	<ul style="list-style-type: none"> Policy provision includes a fare cap as per the Taxicab Services Guidelines⁷.
	Indonesia	<ul style="list-style-type: none"> Drivers are required to wear long trousers, shoes, gloves and jackets, and are also required to maintain cleanliness and hygiene standards⁸ Vehicles are required to undergo regular fitness checks.
	Thailand	<ul style="list-style-type: none"> Drivers are mandated to wear specific jackets and charge a fixed fare rate⁶.
	Vietnam	<ul style="list-style-type: none"> Drivers are required to undergo proper training Bikes must not be more than five years old since registration¹⁴.
	Brazil	<ul style="list-style-type: none"> Drivers are mandated to wear uniforms and vests with 'mototaxi' identification¹⁴.
Safety initiatives		

1. Thailand, Vietnam, Brazil, and Bangladesh have mandatory requirements for using helmets for drivers and riders.
2. The Indonesian government has mandated the installation of panic buttons for both drivers and passengers¹³.
3. In Kenya, the government programme also intends to train drivers on road safety, traffic regulations, accident management, etc¹².

⁶ How is the Situation of Motorbike Taxis in Thailand during the Disruption of Grab?, Sertis, May 2021; ⁷ Study On Motor Ride-Sharing Service in Dhaka, Advanced Research Journal in Science and Technology, June 2022; ⁸ Ride-Sharing Service Policy 2017; ⁹ Motorcycle Taxis in Indonesia, Penn Institute for Urban Research, November 2019; ¹⁰ App-based motorbike taxi driver, International Journal of Scientific & Engineering Research Volume 13, March 2022; ¹¹ Vehicles providing transport services will have yellow licence plates, Vietnam News, July 2020; ¹² Municipal Legislation Decree 62.144, January 2023; ¹³ Boda-Boda Formalisation, President of Kenya, June 2023; ¹⁴ Motorcycle Taxis in Indonesia, Penn Institute for Urban Research, November 2019; ¹⁵ KPMG in India analysis, 2023/24 based on primary and secondary research;

7.2 Key recommendations

By now, the reader would have realised the importance of bike-taxis in our nation's transport landscape, and the role that it can play in increasing the adoption of public transportation, while simultaneously tackling challenges of congestion, and vehicular emission.

The several use cases of bike-taxis across first and last-mile connectivity and point-to-point travel, along with the livelihood opportunity its offers for millions of Indian youths warrants the need for strategic structural developments that provide the industry an opportunity of growing multifold.

As discussed in the previous chapters, bike-taxis have been recognised as a valid 'transport vehicle' by the Central Government since 2004, however, the Motor Vehicle Act, 1988 puts the onus of deciding a permit requirement (or not) on the State Governments. Though several states have taken steps in the right direction, several others have put a hold on bike-taxi operations pending a dedicated regulation.

KPMG in India, realizing the potential of this industry and identifying the challenges it currently faces, has taken the initiative to recommend initiatives, over and above those already addressed in the Motor Vehicle Aggregator Guidelines 2020, that can unshackle the industry and provide it the wings it needs to grow.

These recommendations have been suggested based on extensive stakeholder consultation with academicians, bike-taxi service providers, bike-taxi drivers, auto-rickshaw drivers along with extensive secondary and primary research.

KPMG in India has also looked at several global case studies in countries where positive regulations led to a growth in the bike-taxi industry (e.g., Thailand, Indonesia, Vietnam, Bangladesh) to identify best practices that can be adopted in the country.

The biggest input, however, for these recommendations has been our focus group discussions with the real end users – bike-taxi drivers – across several states and survey of thousands of riders to understand the nuances of the industry and how it differs from auto-rickshaws and four-wheeler cabs.

Being a nascent industry, which is still finding its feet, it is crucial to understand the behavior of those impacted by the regulations while designing the regulation.

A deep analysis of the profile of a typical bike-taxi driver, as discussed earlier, brings the following key insights which are imperative to policy design:

- Bike-taxi driving is a temporary gig – Most plan to be a bike-taxi driver for a maximum of 2 years
- They are primary breadwinners and make a significant contribution to their household income
- Drivers use their existing owned family motorcycles as bike-taxis
- Given the transient nature of the gig, they are averse to permanent regulations but are open to rule-based operations and paying a reasonable annual permit fee
- They are averse to elaborate identification steps that may impact personal usage of the vehicle, however, are amenable to discrete measures.

Several of our recommendations have been suggested keeping in mind these key industry characteristics.

These recommendations also take into consideration the pain points of auto-rickshaw unions to ensure that to the extent possible, without burdening the bike-taxi industry, the policies remain uniform across all passenger transport modes.

The recommendations are split across three segments – Commercial, Operational and Safety – to ensure a holistic coverage.

Along with the recommendation that have been suggested to be implemented, we have also provided our take on policies that may act as headwinds for the industry by discouraging individuals to take up the bike-taxi gig.

7.2.1 Commercial initiatives

Initiative 1 – Legal recognition of bike-taxis as valid ‘transport vehicles’

There is consensus across policy stakeholders at Central level that bike-taxis are valid ‘transport vehicle’ and a potentially strong mode of last-mile connectivity for India’s public transport system.

Impact – This will create a robust last-mile connectivity for India’s public transport system.

Initiative 2 – Revocation of existing bans and refrainment from potential blanket bans

Bike-taxis are a key source of income for drivers and critical to livelihoods of their families accounting for 55-60 percent of their household income. Moreover, our research in Chapter Six also indicates several other potential reasons impacting the livelihood of auto-rickshaw drivers, other than bike-taxis.

Impact – De-banning bike-taxis will enable them to operate with minimised risk of disruption and will help drivers support their households with stable income.

Initiative 3 – Progressive steps towards introducing a commercial enlistment for driver

Bike-taxi drivers are not averse to being regulated and are open to rule-based operations. Our survey suggests that c.50 per cent of the drivers are accepting of being regulated, and c.80 per cent showed acceptance towards paying a time-based permit fee.

Impact – Introducing a commercial enlistment for bike-taxis will standardise oversight with all other vehicle categories. Introducing laws for bike-taxis that are uniform across all vehicle categories will also address concerns of auto-rickshaw unions and reduce animosity between the two groups.

Initiative 4 – Refrainment from introducing permanent commercial regulations (e.g., Yellow number plate)

Bike-taxi driving is predominantly gig work for the drivers. As per our survey, 70 per cent of drivers have been driving bike-taxis for less than a year, and more than 75 per cent drivers do not intend to continue driving beyond 24 months. In addition, drivers use their personal vehicles for bike-taxis operations. Hence, 70 per cent of surveyed drivers are not in favor of conversion to a yellow number plate.

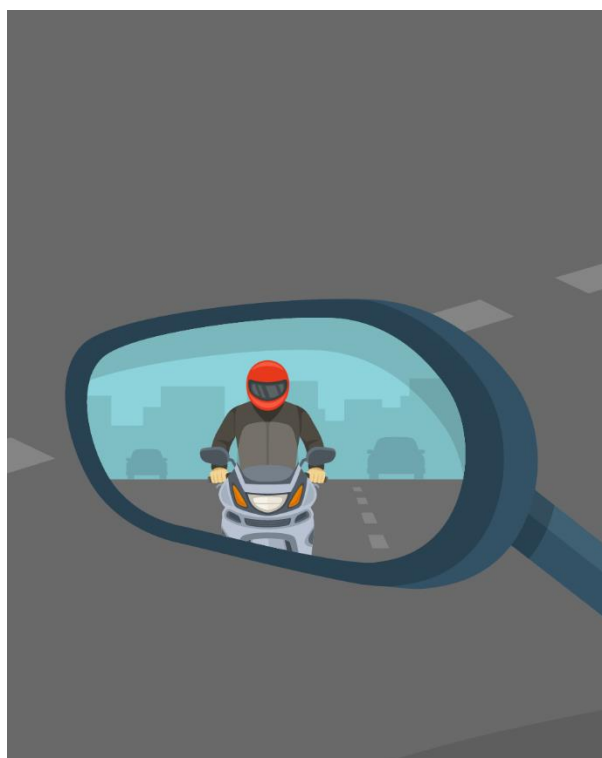
Impact – To ensure that the current dynamics of the bike-taxi industry remain conducive to the entry of potential drivers, it is essential to

recognise the transient nature of this work. Introducing non-permanent commercial regulations will align more closely with the dynamics of gig-oriented nature of the industry. It will sustain the flexibility that bike-taxi drivers currently have, which allows them to use their motorcycle for commercial as well personal purposes. Our discussions with government stakeholders suggests that the West Bengal government has been thinking in the right direction of allowing bike-taxi operations on white number plates, which is aligned with optimizing the socioeconomic conditions of the drivers.

Initiative 5 – Introduction of a new type of ‘Short duration bike-taxi registration’ with ‘concealed/discreet authorisation’

The West Bengal government is considering introducing short-duration (less than a year) special authorisation for bike-taxi operations¹⁵. Applicants can register online, pay a nominal fee, and are required to paste the authorisation on the mud-guard of the two-wheeler. An individual or the platform can apply to the competent authority for the authorisation.

Impact – A concealed/discreet and short-term regulatory mechanism will provide flexibility to bike-drivers to easily enter and exit this gig opportunity and use their two-wheeler for personal purposes after exiting this profession.



¹⁵ Memo no. 627/STA/SC dated 17.10.2023 by State Transport Authority, West Bengal

7.2.2 Operational initiatives

Initiative 1 – Integration of bike-taxis (as a first/last-mile connectivity option) with public transport infrastructure

Integration with public transport systems will allow the platform to leverage the potential of bike-taxis as a strong mode of first and last-mile connectivity.

Impact – Integrating bike-taxis with public transport will help provide seamless last-mile connectivity. Measures such as Mobility Cards, where customers can avail end-to-end journeys (including last-mile) through a single transaction and ride-hailing integration (i.e., ability to purchase public transportation tickets through the ride-hailing platforms) can increase adoption of public transportation systems such as the metros.

Initiative 2 – Introduction of modular identification measures

In addition to the gig-oriented, non-permanent nature of bike-taxi driving, drivers also experience a stigma associated with being recognised as bike-taxi drivers by their social groups. Hence, drivers are averse to identification steps that explicitly reveal them as bike-taxi drivers. Secondly, the drivers are using their personal/family vehicles as bike-taxis and hence elaborate measures, such as painting the two-wheeler in a particular colour or words 'bike-taxi' painted on both sides of fuel tank, impact the personal use of the vehicle.

Impact – Introducing modular identification measures allow drivers to function discreetly and avert any potential social stigma. In addition, opting for modular measures, such as the ideas listed below, will allow drivers to easily use the vehicle for personal purposes.

Modular identification ideas:

- QR codes pasted on the two-wheeler (as implemented in Dhaka)
- Uniforms such as jackets or helmets in a specific colour
- A e-card that electronically stores all the details such as driving licence or a vehicle's registration.

Initiative 3 – Phased approach to bike-taxi electrification

EV penetration in two-wheelers currently stands at 5-6 percent, primarily in scooters. The bike-taxi driver survey highlighted drivers' concerns with EVs including high upfront cost, limited charging

infrastructure, few OEM models suitable for bike-taxi operations and low range as compared to their daily runs. EVs are expected to take another 5-6 years to witness any mass adoption in the scooter segment, with motorcycles to lag 2-3 years. Hence, EV two-wheeler ecosystem in India is expected to mature only post FY28. An EV only policy, at present, will create a huge entry barrier for drivers given that the rest of the ecosystem faces no mandate to scale at an accelerated pace

A phased-out approach towards EV adoption over the next 8-10 years, when sufficient EV models meeting drivers' requirements are expected to be available, with no mandatory adoption levels for the next five year will have the following benefits:

Impact –

- Aggregators and drivers can gradually transition to electric bike-taxis
- No immediate and severe impact on the livelihood of the drivers
- No impact on last-mile connectivity options for daily public transport commuters.

Initiative 4 – Awareness and Camps

Due to its transient nature, the industry experiences continuous exit and entry of new drivers, many of whom do not have prior experience in commercial passenger transport.

Impact – Regular camps can be organised by state RTOs to facilitate and expedite the process for issuing bike-taxi authorisation. A digital first approach can further improve seamlessness of this process, and eventually make it 100 per cent online. These camps can also be leveraged for outreach to bike-taxi drivers to improve their awareness on traffic laws, impending changes and instill safe driving practices. Focusing on driver compliance with traffic laws will yield more productive results than heavy-handed crackdowns.

7.2.3 Safety initiatives

Initiative 1 – Safety trainings by service provider

Platforms can leverage the power of their digital outreach to enable regular digital/virtual/online safety trainings to their driver partners.

Impact – Continuous training helps drivers review important safety practices, thereby minimizing the probability of accidents.

Initiative 2 – Improving and enforcing helmet standards

As discussed in Chapter Six, absence of helmets were responsible for 67 per cent of two-wheeler fatalities in 2021. Bike-taxi aggregators can use digital tools to verify that both the driver and the rider are wearing helmets before the ride begins.

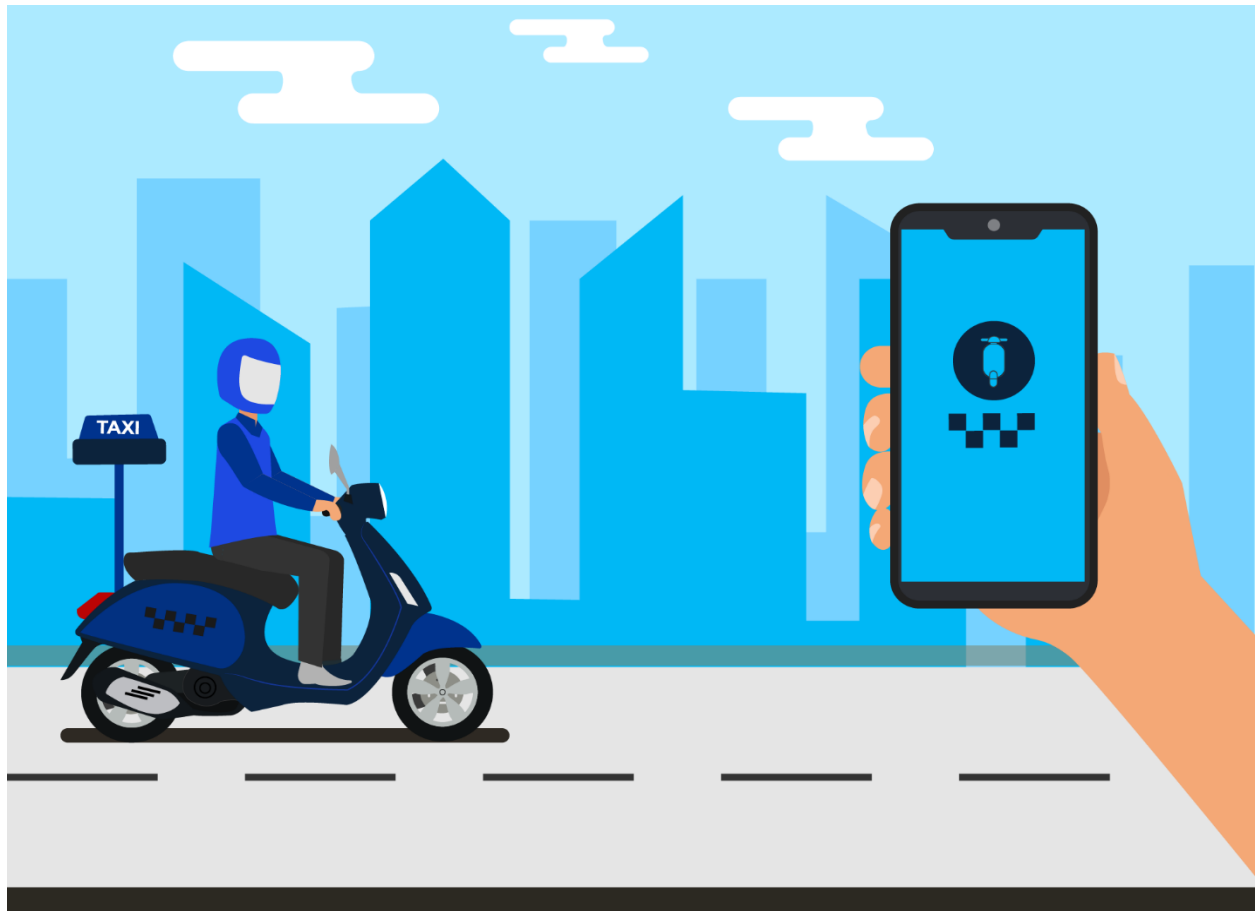
Impact – Mandating high-quality protective equipment such as helmets greatly minimises the likelihood fatalities.

Initiative 3 – Adopting the ‘Safe System Approach’

The Safe System approach recognises that road transport is complex, and that safety should be central. It acknowledges that people will make

mistakes and therefore aims to ensure that no one will be killed or seriously injured in the event of a crash. It can be summarised by the phrase ‘The whole is greater than the sum of the parts,’ i.e., by looking at users, vehicles, roads, speeds, and post-crash care together, through the development and implementation of coordinated policies. This will require several stakeholders including policy developers, regulators, OEMs, traffic police, urban developers, app-based digital platforms offering gig work, medical providers, etc. to coordinate and collaborate to build an approach which puts two-wheeler safety at the forefront.

Impact – Developing and implementing coordinated policies surrounding users, vehicles, roads, speeds, and post-crash care is very important for two-wheelers, who, due to lack of protection and potential for high speeds, are vulnerable to collisions, injuries, and death. As India is predominantly a two-wheeler country, they must be at the center of road infrastructure planning and design e.g., Dedicated two-wheeler lanes on highways, laws on safe carriage of loads on two-wheelers, improving and enforcing safety standards for two-wheelers, increasing quality standard for helmets and other protective gears, among others.



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