Shared road mobility market in India

Growth drivers and underlying opportunities in India's shared mobility ecosystem

October 2020

Foreword

The shared mobility market in India is largely untapped. The huge population of the country coupled with a rapid increase in urbanization has led to more and more individuals adopting to various modes of transport, ranging from personal transport to public. The increase in mobile penetration and availability of cheap data has led to an advent of several ride-hailing and rental platforms in the country, with affordability as the central offering. Although the penetration of the latter is low, various socio-economic factors such as sustainability act as compelling reasons to make customers aware on shift from personally owned to shared transport.

This report is intended to provide various industry stakeholders including business leaders an overall perspective on the shared mobility ecosystem in India. In the section on "Consumer behaviour – use cases, frequency, spend, KYC", we have discussed how the customer persona is evolving, and how their needs are changing.

We also discuss how the current economic crisis is different from previous ones and India's likely recovery scenario. In the section on "Implications on shared mobility due to COVID-19 outbreak", we have covered how the intensity of impact will vary across Q1-Q4 for the year 2021, and how the employees of the shared mobility companies will be affected. We have examined the parameters of choice for local and outstation commuters, and how that varies with different modes of transportation. We have also highlighted how the advancements in technology – back-end operations, and route planning, ticketing are impacting customer acquisition. An overview of difference in offerings between organised and unorganised players gets a mention in the report as well. We have outlined some key emerging opportunities that the stakeholders can benefit from.

The situation is evolving rapidly, and some of the expected scenarios might have slight variations. This report reflects our perspectives as of 1st August 2020. Please contact us for latest updates.

We, at PGA Labs, look forward to continuing the discussion with our friends across sectors and exchanging notes as the situation evolves.

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Glossary

Term		Description
Industry related	Central Business District	Economic hubs in a city- usually the prime location for offices, factories, shopping complexes, educational institutions etc.
	# passenger kms	Number of kms travelled by a passenger on an annual basis
	# seats / ride	Number of passengers carried per ride
	# seats	Number of passenger rides
	Average fare / seat	Average fare per seat per ride per passenger
	Cab aggregator	Organization that connects people providing cab services or rentals (like OLA, Uber etc.) with people on an online platform
	Cost of congestion	Economic costs of congestion factoring in productivity loss, air pollution costs, cost due to accidents and cost of fuel wastage
	Direct revenue	Revenue earned from routine activities of the business
	MaaS	Mobility as a Service
	Organized	Organized sector is a sector where the employment terms are fixed and regular, and the employees get assured work
	Ride sharing	Refers to non-commercial services like carpooling and vanpooling
	Ride splitting	Refers to commercial services which enable users to connect with local drivers and share a common vehicle for commute
	Ride-hailing	Services that use online-enabled platforms to connect between passengers and local drivers using their personal vehicles.
	2W rental	2Ws rented on hourly / distance basis which are to be driven by self
	4W rental	4Ws as taxi service on hourly / rental basis which are chauffeur / driver driven
	Gross cost model	Privately owned, operated buses contracted by Urban Local Bodies (ULBs) and paid on kilometer basis; no private incentive
	Net cost model	Privately owned, operated buses contracted by Urban Local Bodies (ULBs) on a revenue sharing model
	Shuttle service	A transit service that happens between one point to another
	STU	State Transport Undertaking
	Unorganized	Refers to sector where the employment terms are not fixed and regular / are not registered with the government
Units	CAGR	Compounded Annual Growth Rate
	FY	Indian financial year starting April 1st of one year and ending on 31st March of the next year

Note(s):
Source(s):

Sources of input: We scoured through numerous institutional and company resources and validated our findings by gathering data from surveys, platforms

Institutional resources

- Population Census- 2011, India
- World Bank Reports
- Ministry of Road Transport & Highways, India (MORTA)
- International Association of Public Transport (UITP)
- Ministry of Urban Development, India
- Registrar of Companies (ROC)
- State Transport Undertaking (STU) websites
- Competition Commission of India (CCI)

Primary surveys

- Daily commute survey *(N = 301)* across metros *(N = 155)* and tier-1 cities *(N = 146)*
- Trip purpose and payment mode survey - Ola, Uber *(N = 518)*
- Customer sentiment - 2W rental players
- Primary conversations with private and public bus drivers *(N = 11)*

Data platforms

- Traxcn
- TOMTOM Traffic Index
- TechCrunch
- Crunchbase
- Pitchbook
- Statista
- Moody's Analytics
- World Bank database

Service providers- Company filings, website, mobile applications

- Bounce
- Yulu
- VOGO
- Onn
- Drivezy
- Rapido
- Ontrack
- Royal Brothers
- BikeGo!
- Wickedride
- ePoolers
- QuickRide
- Ola
- Uber
- Ola Electric
- Lithium Urban Tech
- Hippo Cabs
- Savaari
- Blu
- Chalo
- Shuttl
- Riddlr
- Cityflo
- Easy Commute
- Jugnoo

Executive summary [1/2]

Market overview and consumer behaviour	• Modes of transport for daily commute seen across India are 6 in number, in order of decreasing market size: buses (US$ 36B), auto-rickshaws (~US$ 20B), taxis(~US$ 20B), rickshaws (~US$ 7B), trains(~US$ 1B) and 2-wheelers (~US$ 0.15B)
	• 83% of daily commute market is public transport, 75% commute is intra-city with highest mobility seen in age group 20-29 years
	• Fares per ride across all modes lie between US$ 0.1- 0.4; 75% of market is unorganized, and ~6% ride bookings happen online
	• Daily commute market grew by CAGR 10% from FY16 to FY19 with highest growth rates across 2W, 4W taxi, auto segments
	• For distances up to 1 km, walking is the preferred form of commute and buses are chosen for distances >5 km. Personal 2W are highly popular across metro and tier-1 cities with use up to 10 km of distance. Dominant trip purposes are for education and work.
	• Price per ride is a critical KPC (key purchase criteria) and spend per trip is usually in range of INR 11- 20
2W taxis & rental	• Largest market share of 2W taxis (US$ 105M) followed by self-rentals which is led by unorganized players (US$ 26M), followed by on-demand instant rental players like Bounce, Vogo (US$ 23M) and mid-term hourly rental players (US$ 0.9M)
	• Segment is witnessing players like *Bounce* explore new business models like EV-led mobility solutions and local, kirana partnerships which can chart a route to sustainable unit economics
	• In terms of competition, *Vogo* offers the lowest price whereas *Bounce* has the widest geographical coverage & dockless parking
4W taxis	• Largest market share of maxi cabs (US$ 8B) followed by private cabs (~US$ 8B), ãggregators (~US$ 3B), public cabs (~US$ 4B)
	• Largest use case of aggregator apps Ola, Uber is recreation indicating arrangement of other modes for regular work / education
	• Emerging business models in electric segment like Lithium, Blu are becoming popular as private cab providers

Executive summary [2/2]

4W buses	• Intracity commute has grown at a CAGR of 7% for state buses and 10% for private players and is growing faster than intercity commute which is growing at 6% CAGR
	• The state is rapidly expanding fleet by PPP models of GCC and NCC; GCC has better customer satisfaction than NCC
	• Various tech players like Shuttl, Chalo are providing value-add services to bus operators and commuters but challenges abound
3W autos & rickshaws	• Auto segment with a market size of ~US$ 19B is dominated by 64% share of 3-seater autos and rest by 4-6 autos; rickshaws with a market size ~US$ 7B is dominated by cycle rickshaws constituting 86% share and rest is constituted by electric rickshaws
	• Market is highly unorganized; only 5% of autos (entirely in 3-seater) and 1% of rickshaws (entirely in electric) constituted by organized players
	• Market growth rate is high at 12-13% and current key players include Jugnoo, Oye Rickshaw, SmartE, Auto Walle
	• Ola Electric is an emerging player to watch out for in this segment which is planning to develop and launch a full-stack mobility solution led by 3W autos by 2021
Investment trends and COVID-9 impact	• Shared mobility in India attracted a total of US$ 4.4B in private equity funding during 2015-19 with 80% of funding received by cab aggregator companies, followed by 2W taxi and rental startups which received 13% of total investment
	Most crucial investments in the space were made in electric mobility companies like *Ola's Mission: Electric,* three leading 2W startups including *Bounce, Vogo, Rapido* and intra-city mass transit platforms like *Shuttl*
	• COVID-19 has greatly impacted the shared mobility market with companies like *Bounce, Yulu* recording 40-50% drop in rides before suspending operations; future investments and consumer favorability likely to be severely compromised

Barring 2W taxi, regulatory framework for other modes of shared mobility is well-defined and is enabling the growth of the segment

2W rental

- ✓ Usually, minimum number of vehicles registered as commercial vehicles required to apply for bike rental is 5
- ✓ Application for bike rental license needs to be submitted to the **state-level Regional Transport Office (RTO)**.
- ✓ **Section 75 of the Motor Vehicles Act 1988** states that **bike rentals are allowed** in India post receiving the required permissions from the regional authorities
- ✓ Under **motor Vehicle Act, 1988**, it is **legal** for the **states to issue taxi permits** for two wheelers

Regulations for cab aggregators

- ! **The Motor Vehicles Act, 1988, did not recognize cab aggregators** as separate entities thus leading to lack of clarity and (in some cases temporary bans)
- ✓ In October 2015, **Ministry of Road Transport and Highways issued guidelines for states to regulate cab aggregators** which identified themselves as “on-demand information technology-based transportation aggregators”
- ✓ **Motor Vehicles (Amendment) Bill, 2019 recognized aggregators as digital marketplaces** which can be used by passengers to connect with a driver for transportation

Regulations for buses

- ! There are no specific rules regarding bus aggregators or other operators of buses
- ✓ **Buses can either be registered under the 'City permit', 'State permit' or 'All India Tourist Permit (AITP)'** based on their intended region of operation
- ✓ **Initiative by Niti Aayog** has been introduced to provide **model concessionaire agreement (MCA)** for introduction of electric bus fleet in cities
- ✓ **Ministry of urban development has proposed INR 250 billion grant for development** of electric vehicles for public transportation

2W taxis

- ! **As per the Motor Vehicle Act, 1988, the states may issue permits for taxi including those for two wheelers**. Since states have the final authority, only **14 states have made bike taxi legal**
- ! **For other states, no regulations have been issued**. Hence, there is no clarity on legality of bike taxi

✓ **Positive regulation** ! **Unclear** ! **Prohibitive**

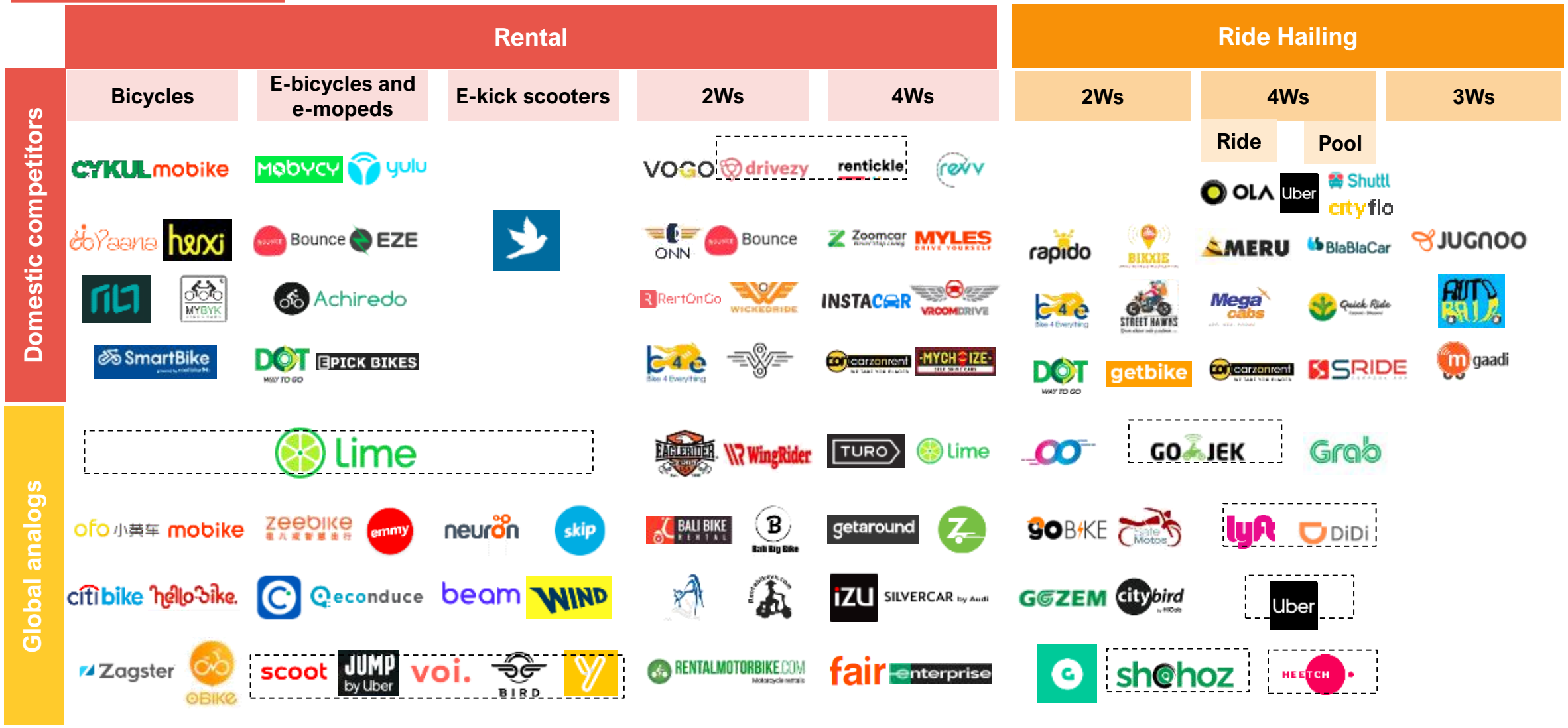
Source(s): PGA Labs analysis

There are multiple modes of transports used for daily commute in India with a total of ~13.6M vehicles plying for the same

Transportation type (# of vehicles)		 Bus (1,408K)	 Metro / local trains (~1K)	 4W (1,519K)	 Auto-rickshaw (4,435K)	 Rickshaw (6,075K)	 2W (75K)	 Bi-cycle (~3K)
Intra-city	Public	• Buses owned and operated 100% by STU's • Buses operated by private players under supervision of government STU's (NCC or GCC model)	• Local suburban trains (Mumbai, Chennai etc.) • Metro trains (Delhi, Bengaluru etc.)	Motor cabs (Kaali peeli / Phat Phat sewa) Maxi cabs Unorganized taxis	• 4-6 seater auto • 3 seater auto	• Cycle rickshaw • E-rickshaw	x	x
	Private	• School buses • Corporate owned buses • Buses leased to corporate players • Bus aggregators (shuttl)	x	• Organised players (radio cabs, Meru) • Unorganised taxis • Taxi by online cab aggregators	x	x	• Taxi by online aggregators • Bike rentals by private players	E-bicycle rentals by private players
Inter-city	Public	• Buses owned and operated 100% by STU's • Buses operated by private players under supervision of government STU's	• Local suburban trains (Delhi, Mumbai, Chennai etc.) • Metro trains (Delhi)	• Maxi cabs	x	x	x	x
	Private	• Buses owned and operated 100% by private players	x	Organised players (radio cabs, Meru)* • Unorganised taxis* • Taxi by online cab aggregators*	x	x	x	x

Note(s): *represents the cabs / taxis used in metro cities for transit from one city to another (Delhi NCR, Mumbai and Thane etc.)
Source(s): PGA Labs analysis

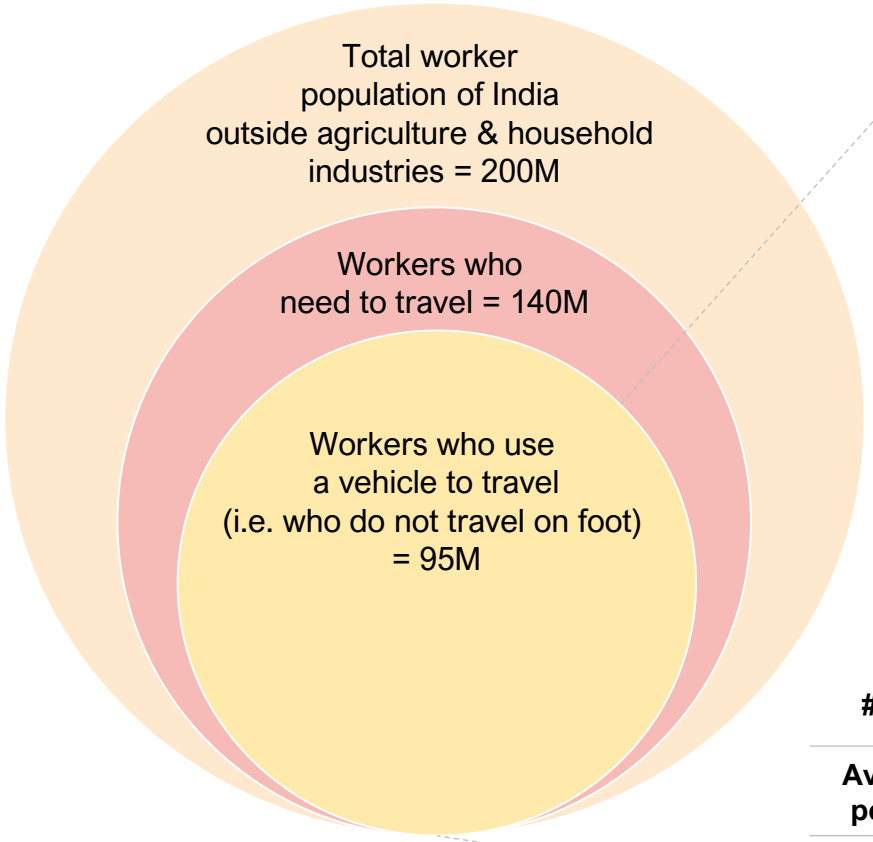
Apart from own transport and public transport, consumers now have several options for commuting through app-based ride hailing and rental



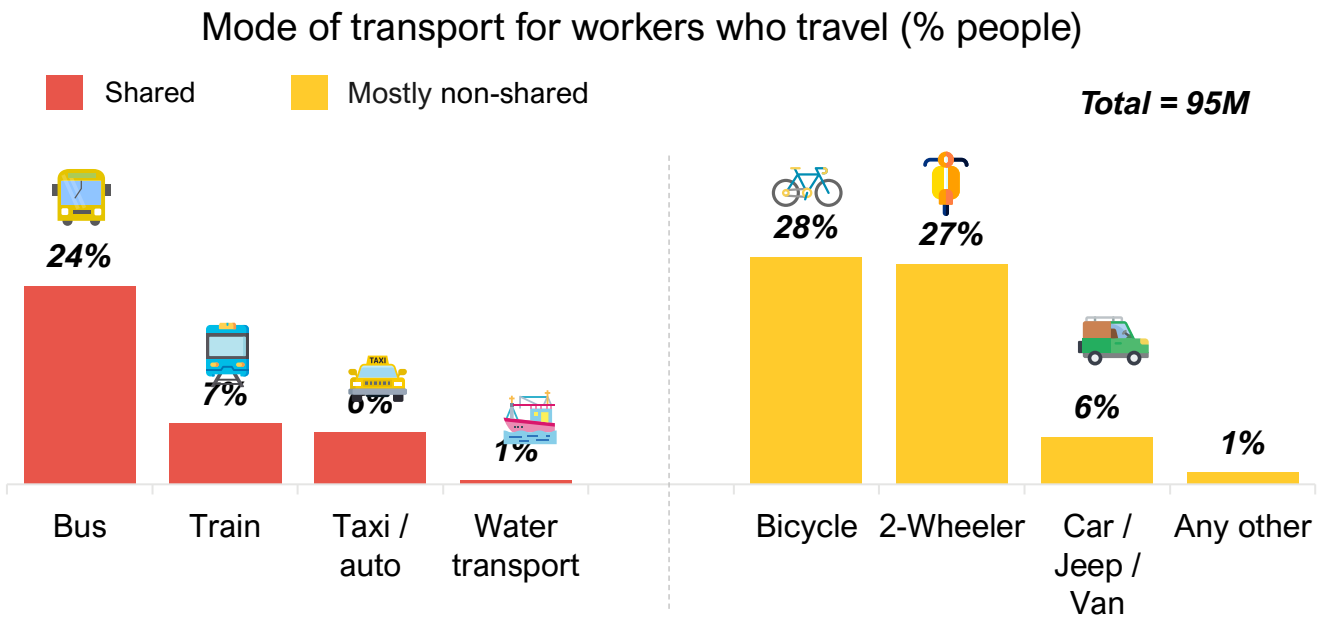
Source(s): Secondary research, Tracxn, Praxis analysis

Shared mobility accounts for a small share of travel by Indian worker population currently and presents a huge untapped opportunity

Of the total worker population, <50% uses a vehicle to travel to work



Use of shared transport modes is limited and within shared transport, most of the workers rely on buses



# people (M)	21	7	6	1	35	27	26	6	1	60
Average spend per ride (US$)	0.6	1.7	1.9	NA	4.2	0	0.3	1.9	NA	2.2
Total spend (US$ B)	3.8	3.4	3.2	NA	10.4	0	2.1	2.7	NA	4.8

Source(s): TOMTOM traffic index , Population census, PGA Labs analysis

There are inherent tailwinds in the market that will make shared mobility a way of road transportation in the future

Drivers for shared mobility market in India

Increasing trend of urbanization

- **# cities with population >1M has increased** from 35 in 2001 to 53 in 2011
- Overall share of **urban population estimated to increase** from 30% in 2011 to 40% in 2030

Growing younger population

- ~50% Indian (650M) population <25 years
- **Higher propensity to adopt technology and new trends** (e.g. moving away from asset ownership)

Govt initiatives

- **Govt. has plans to increase proportion of shared passenger kilometres** from **10%** in 2017 to **50%** by 2050

Environmental consciousness

- **Reduction** in number of vehicles used for **solo travel can reduce fuel consumption** as well as overall emission

Improved road infrastructure

- **Budget 2017-18 provides optimism for the roads and highways sector** with a total of **outlay of US$ 14B**.
- **NHDP** is being implemented NHAI, under which **~49,260 km** of roads are being **upgraded**

Technology adoption

- **Smartphone penetration increased** from 9% to 30% during **2013-18**
- **Internet penetration increased** from 15% to 35% during **2013-18**

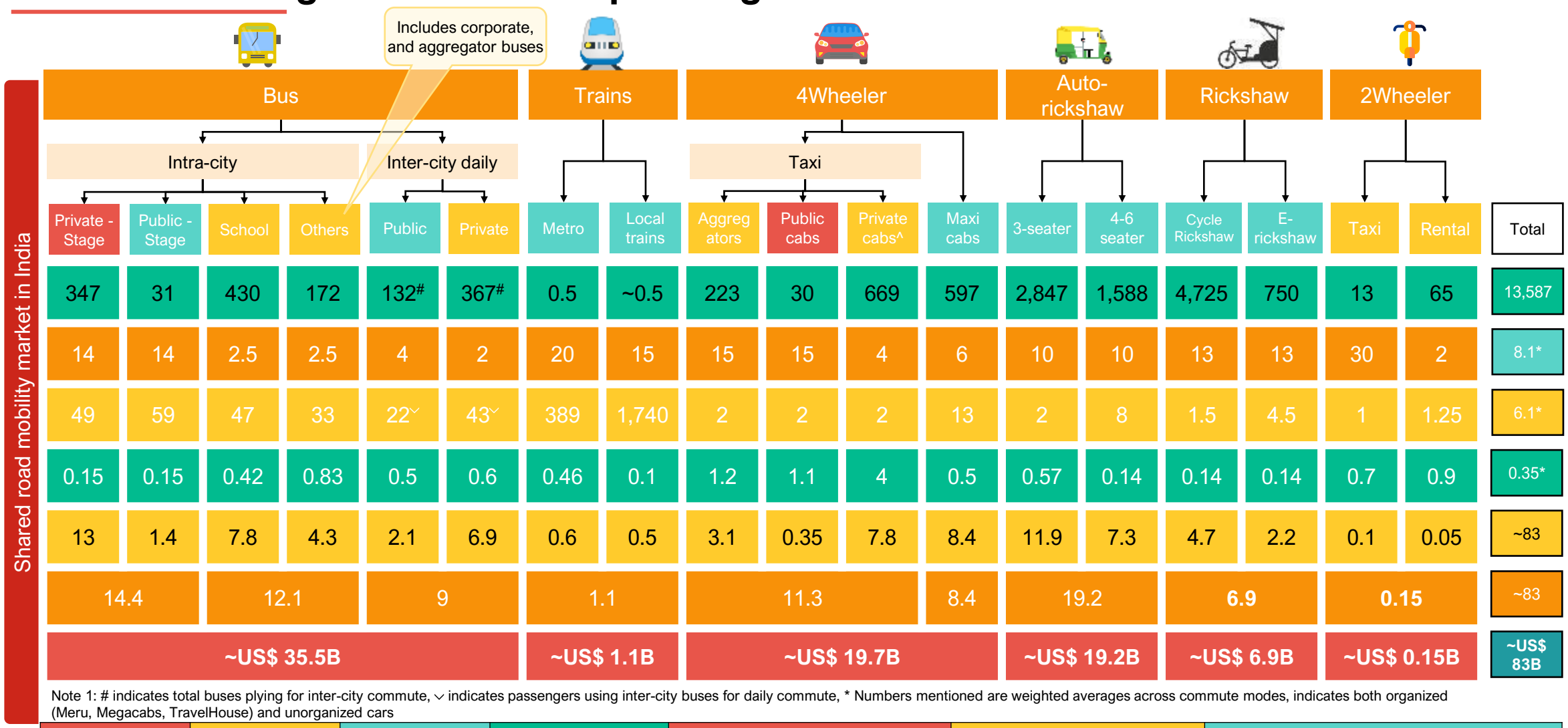
Source(s): Uber, Population Census, World Bank, PGA Labs analysis

Defining scope of daily commute market size

Market element	In market size	Not included in market size
Mode of vehicles	• Public – Bus • Private – Bus (8 – 50 seaters) • Metro train • Local trains • Auto (3 seaters) • Auto (4-6 seaters) • Rickshaw and e-rickshaw • Maxi cabs • Cab aggregators • 4W taxis • 4W rentals • 2W taxis • 2W rentals • E-bicycle – rentals	• Private cars • Private 2W • Flights • Helicopter • Cruise and boats • Walking • Private bicycle • Car pooling – private • Trains – Inter city
Operation type	• Public owned and operated • Private owned under public operation • Private owned and operated	• Personal
Geography of operations	• Intra-city • Inter-city for daily commute	• Inter-city for other purposes
Customer type	• Office / college commuters • Daily chores (grocery shopping etc.) • To and from railway / bus station, airport • Incidental travel within city (doctor visits etc.)	• Recreational activity and business trips outside city
Geography	• India	• Rest of the world

Source(s): PGA Labs analysis

Shared daily commute market in India is ~US$ 83B; private intra-city bus and rickshaw see highest number of passengers



Note 1: # indicates total buses plying for inter-city commute, ˅ indicates passengers using inter-city buses for daily commute, * Numbers mentioned are weighted averages across commute modes, indicates both organized (Meru, Megacabs, TravelHouse) and unorganized cars

Public Transport | Private transport | # vehicles ('000) | # trips / vehicle / day | # passenger / trip / vehicle / day | Fare / passenger / trip (US $) | Annual revenue by vehicle mode (US $ B)

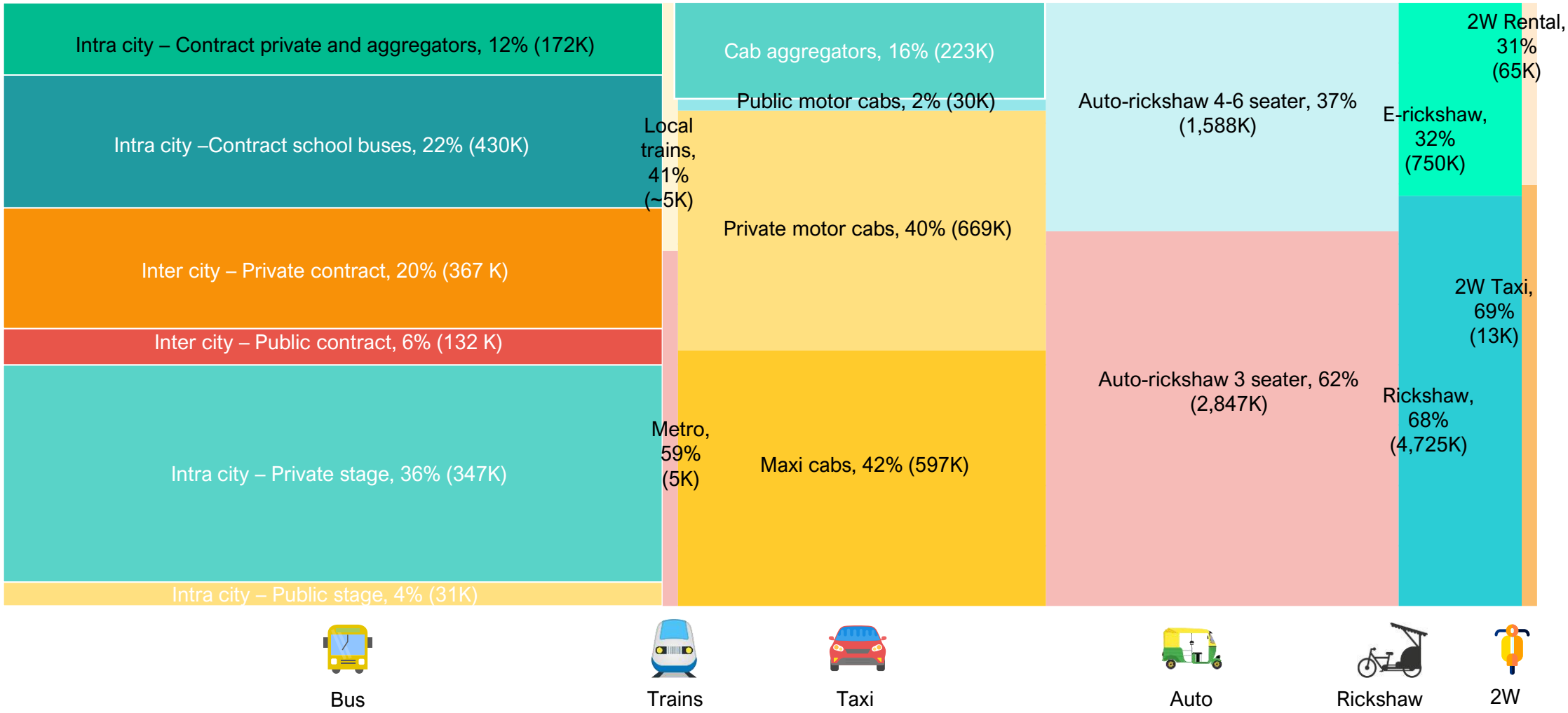
Revenue by sub-category (US$) | Revenue by vehicle

Source(s):MORTH, Census 2011, UIPT India, Ministry of urban development, PGA Labs Analysis

Shared daily commute is a US$ 83B market in India with buses comprising a whopping 43% followed by 4W taxis at 24%

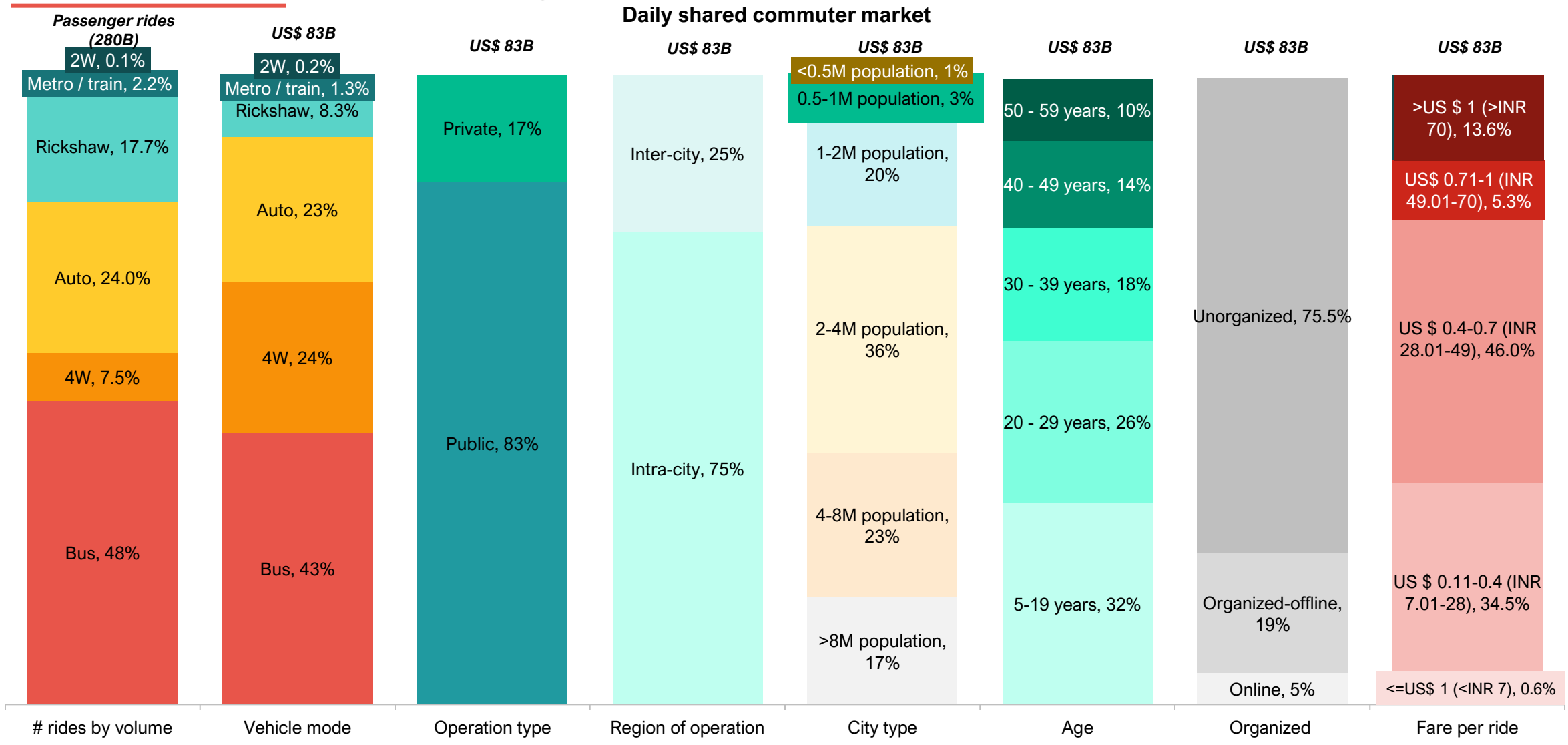
Market overview by revenue for different modes of transport in %
(# of vehicles, FY19)

Total ~US$ 83B



Source(s): MORTH, Census 2011, UIPT India, Ministry of urban development, PGA Labs analysis

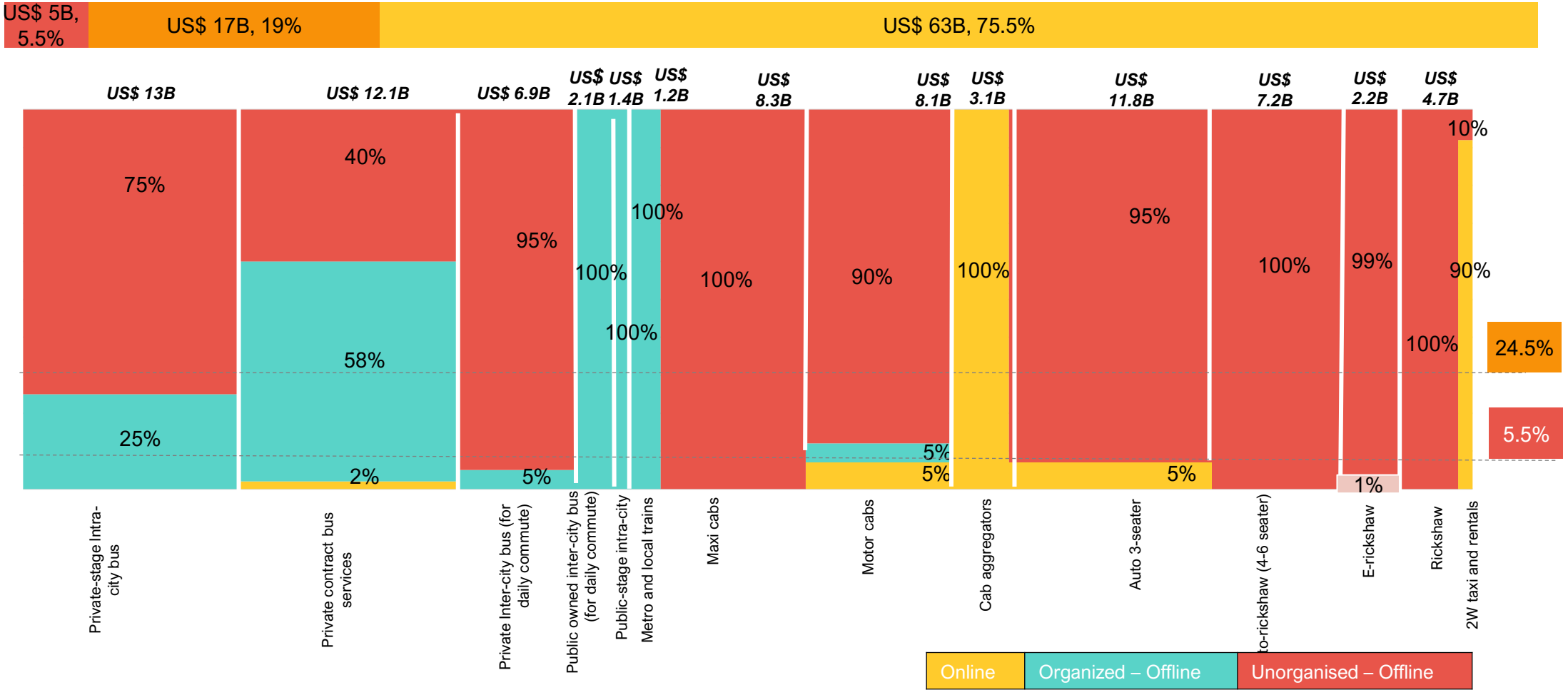
By revenue, daily commute market is ~75% intracity, ~24% organized and ~35% in US$ 0.1-0.4 per ride fare range



Source: MORTH, Census 2011, UIPT India, Ministry of urban development, Praxis analysis

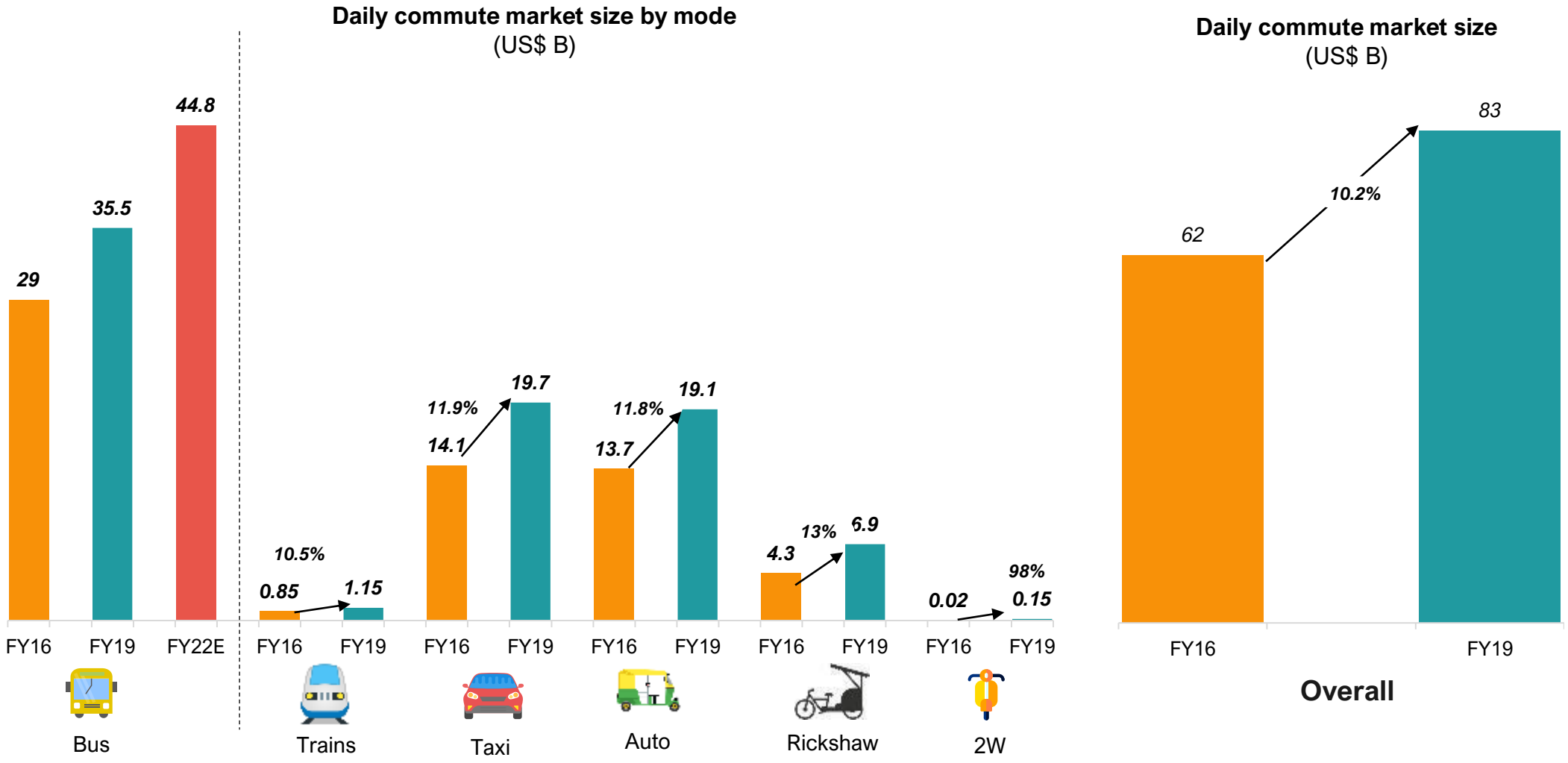
~6% of US$ 83B daily commute market is booked via online and additional ~19% of the market is organized

Market overview by online and organized play for daily commute in % (FY19)



Note1: Organized players would be players acting under supervision of a government body (STU etc.) or a private company / LLP
Note2: Private player is defined organized if fleet size is >25 vehicles and with infrastructure to oversee daily operations
Source(s): MORTH, Census 2011, UIPT India, Ministry of urban development, Praxis analysis

2W rentals and taxi has seen highest growth (98%) over the last 3 years

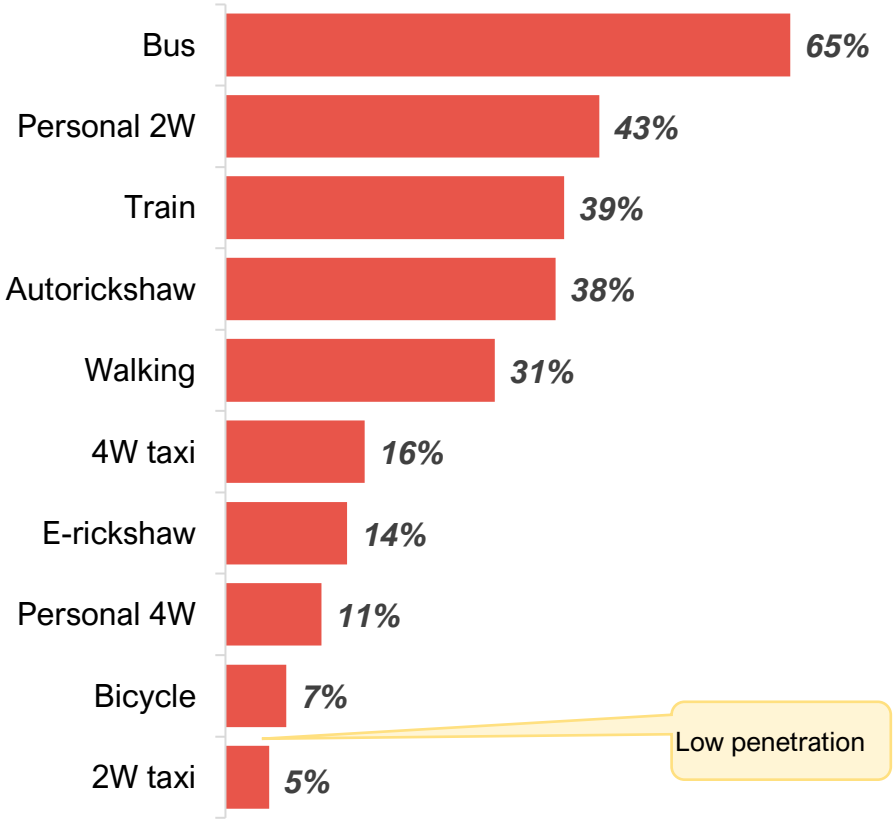


Source(s): MORTH, Census 2011, UIPT India, Ministry of urban development, PGA Labs analysis

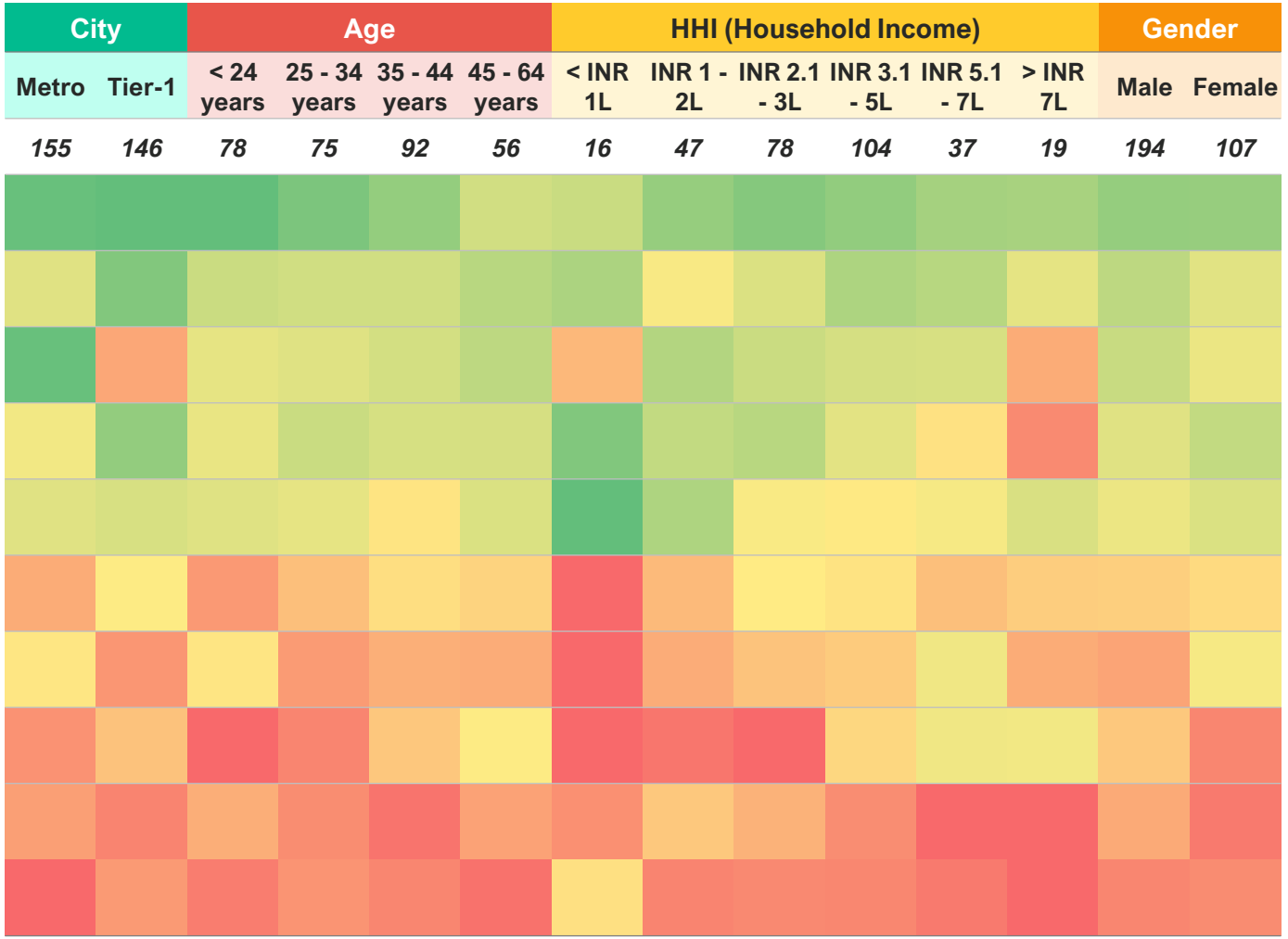
Daily commuters use multiple modes; buses enjoy the highest share of use across city affluence, age, income and gender; personal 2W takes up the second place

Bus (65%) is the most used mode, followed by 2Ws (43%) & trains (39%)

Modes used for daily commute
Overall (N = 301)

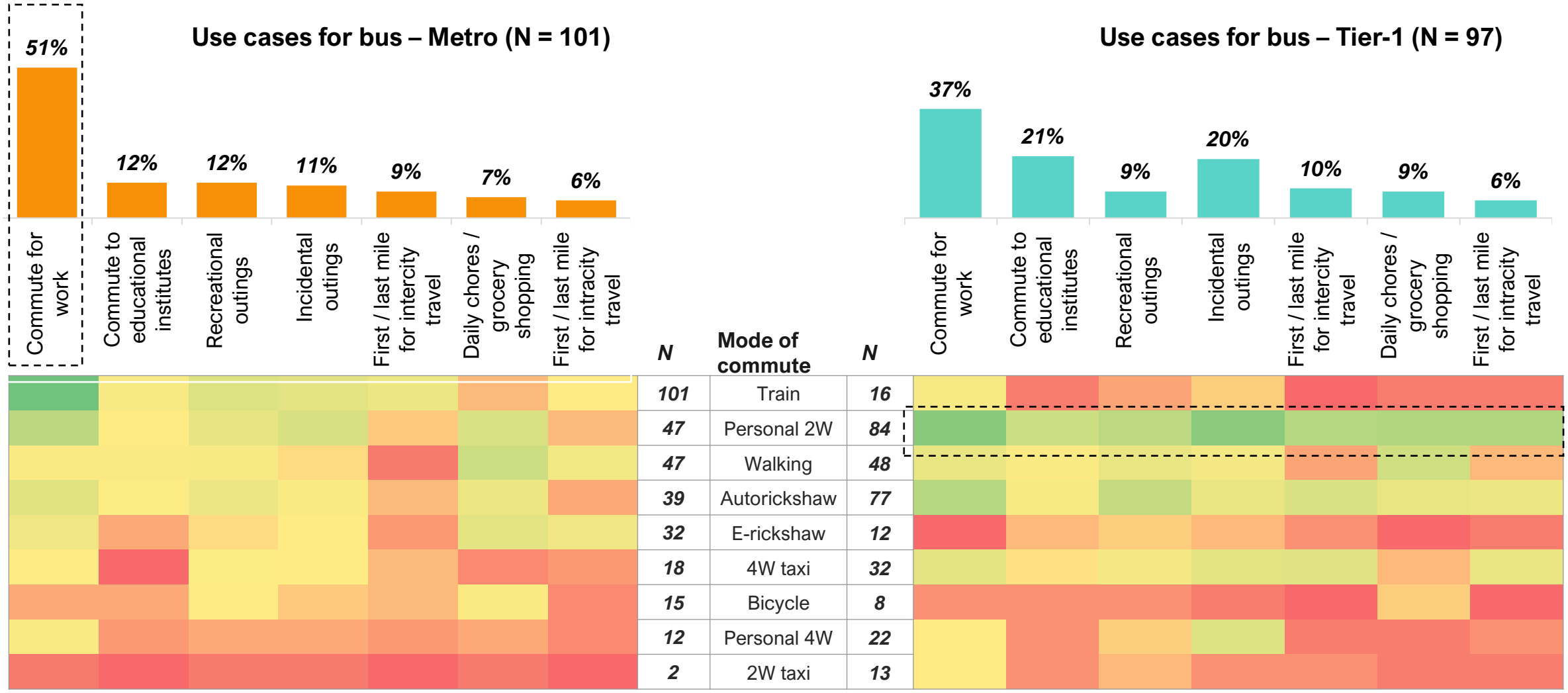


Majority of bus users fall in 18 – 34 years age and INR 1 - 5L income; Most metro commuters use bus & trains, 2W & autos are preferred in tier 1



Source(s): Daily commuter survey (N = 301), PGA Labs analysis

The most popular mode bus is used majorly for commute to work in metro, tier- 1 cities followed by trips for educational purposes; 2W is popular in tier- 1 cities

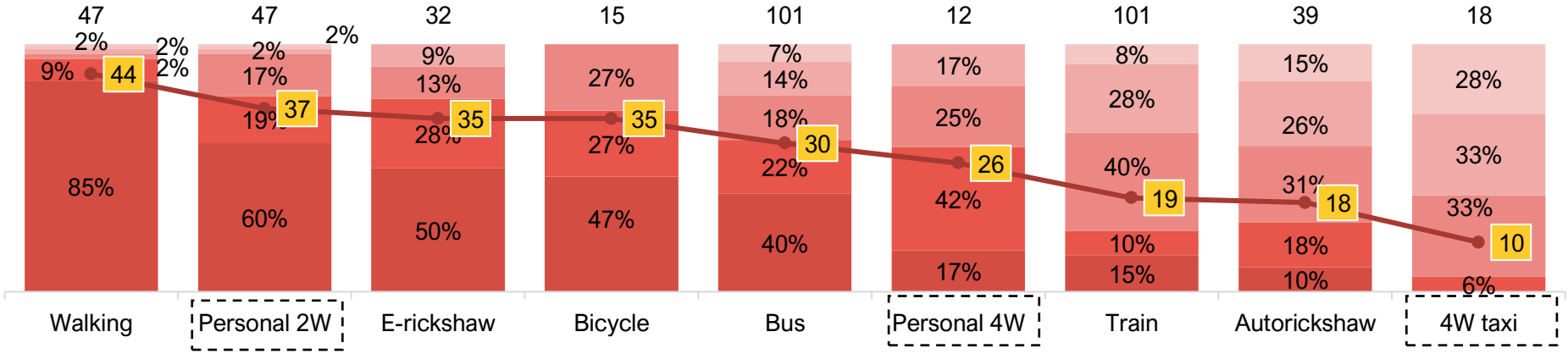


Note: Overall N for metros = 155; Overall N for tier-1 = 146
Source: Daily commuter survey (N = 301), PGA Labs analysis

Personal 2Ws are frequently used in metro cities; public modes- buses, trains are more famous in tier- 1 cities & 4W exhibit lower ridership in tier-1 than metro

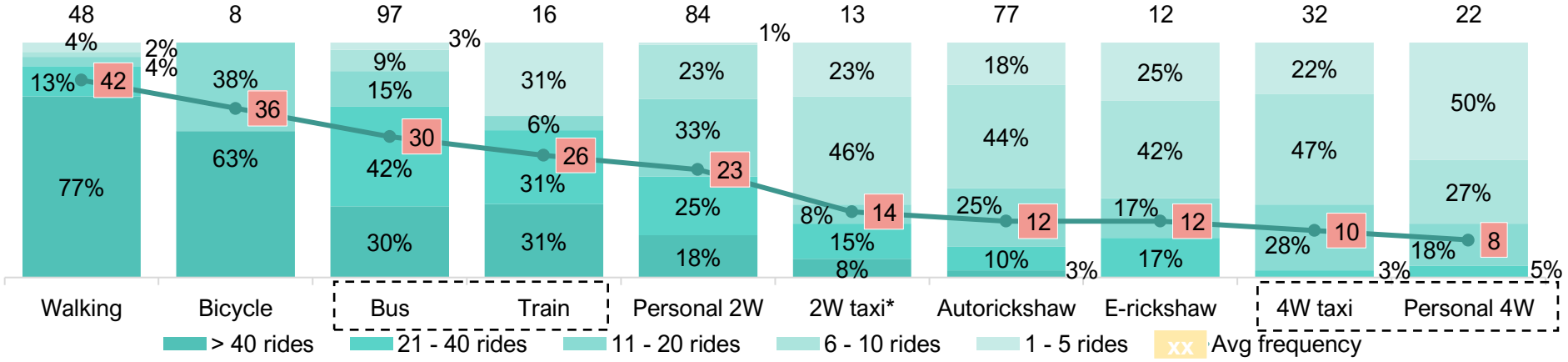
Frequency of commute mode use/month: Metro

(#, N = 155)



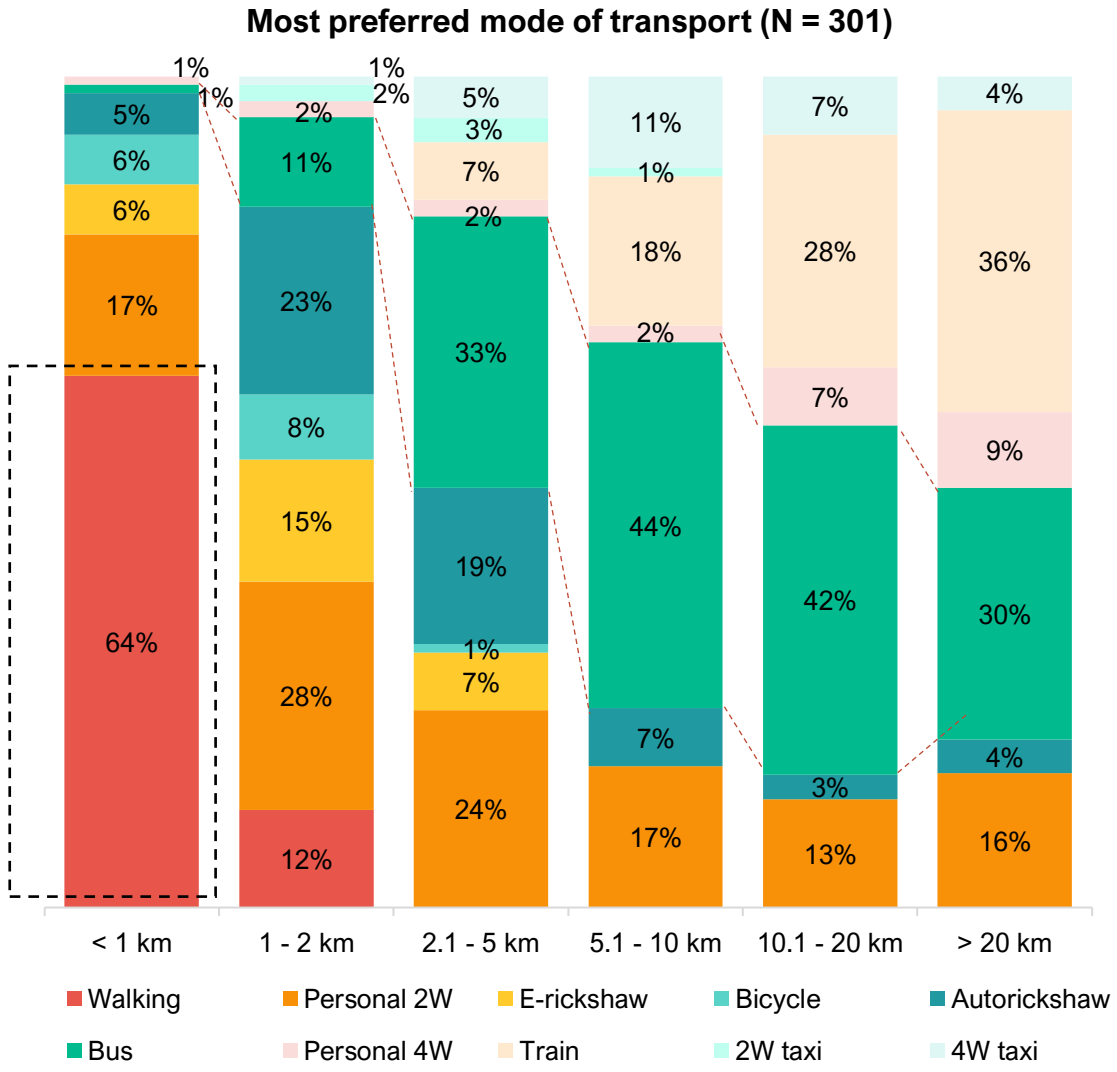
Frequency of commute mode use/month: Tier-1

(#, N = 146)



Note(s): *2W taxi N (=2) is unrepresentative; Walking includes first / last mile commute as well
Source(s): Daily commuter survey (N = 301), PGA Labs analysis

Walking is the most popular form of commute if trip distance <1 km; public form (train, bus) penetration increases as distance increases

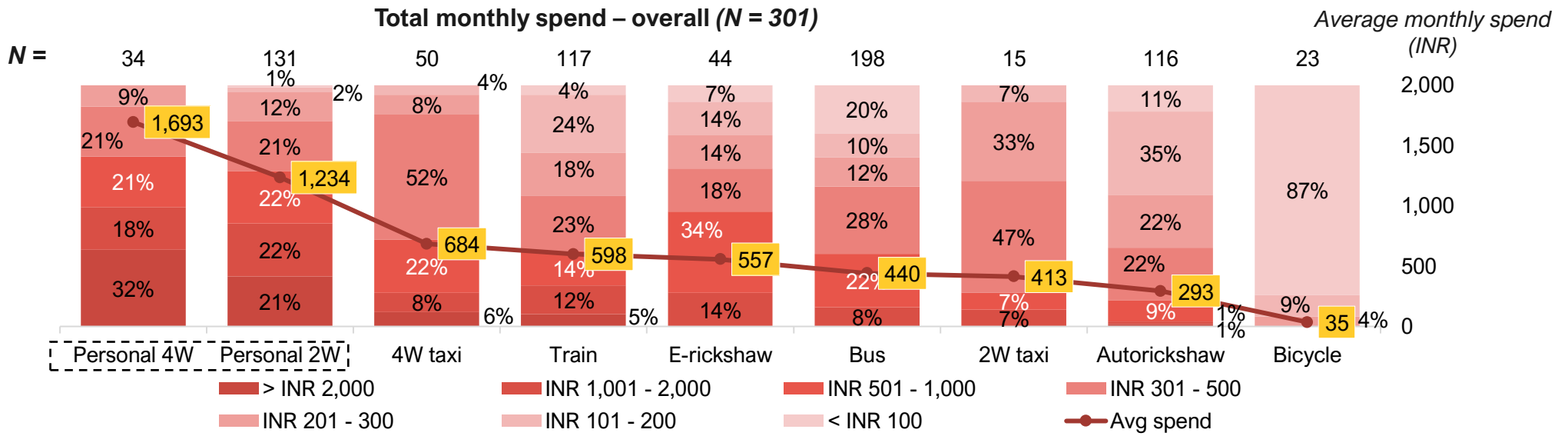


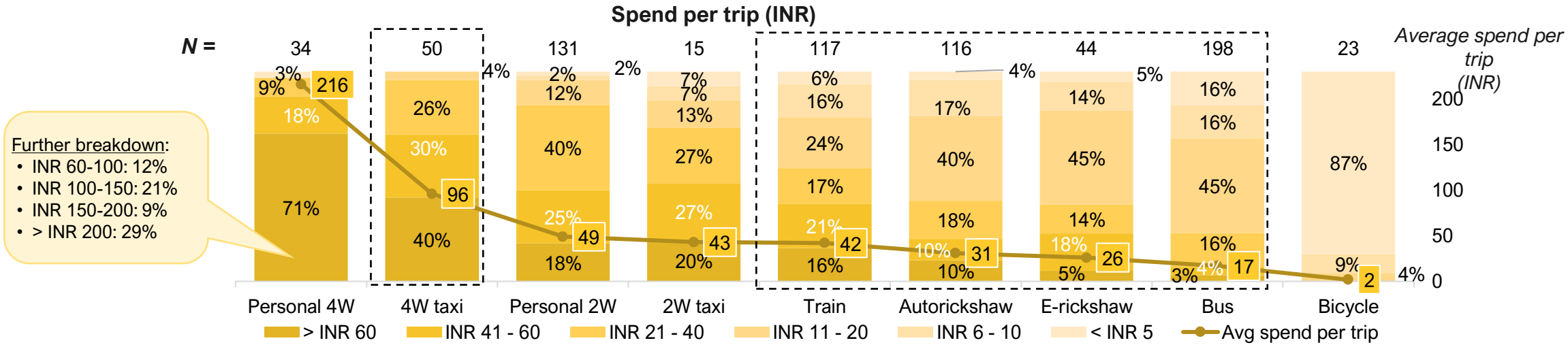
Distances	City		Household income						Gender	
	Metro	Tier-1	< INR 1L	INR 1.1 - 2L	INR 2.1 - 3L	INR 3.1 - 5L	INR 5.1 - 7L	> INR 7L	Male	Female
N	*155*	*146*	*16*	*47*	*78*	*104*	*37*	*19*	*194*	*107*
< 1 km										
1 - 2 km										
2.1 - 5 km										
5.1 - 10 km										
10.1 - 20 km										
> 20 km										

**Icons indicate preferred mode of transport*

Note: 66% percent of respondents are bus users
Source: Daily commuter survey (N = 301), PGA Labs analysis

Personal vehicles (4W, 2W) result maximum expense on monthly basis followed by 4W taxis; majority of population spends INR 20- 40 per trip

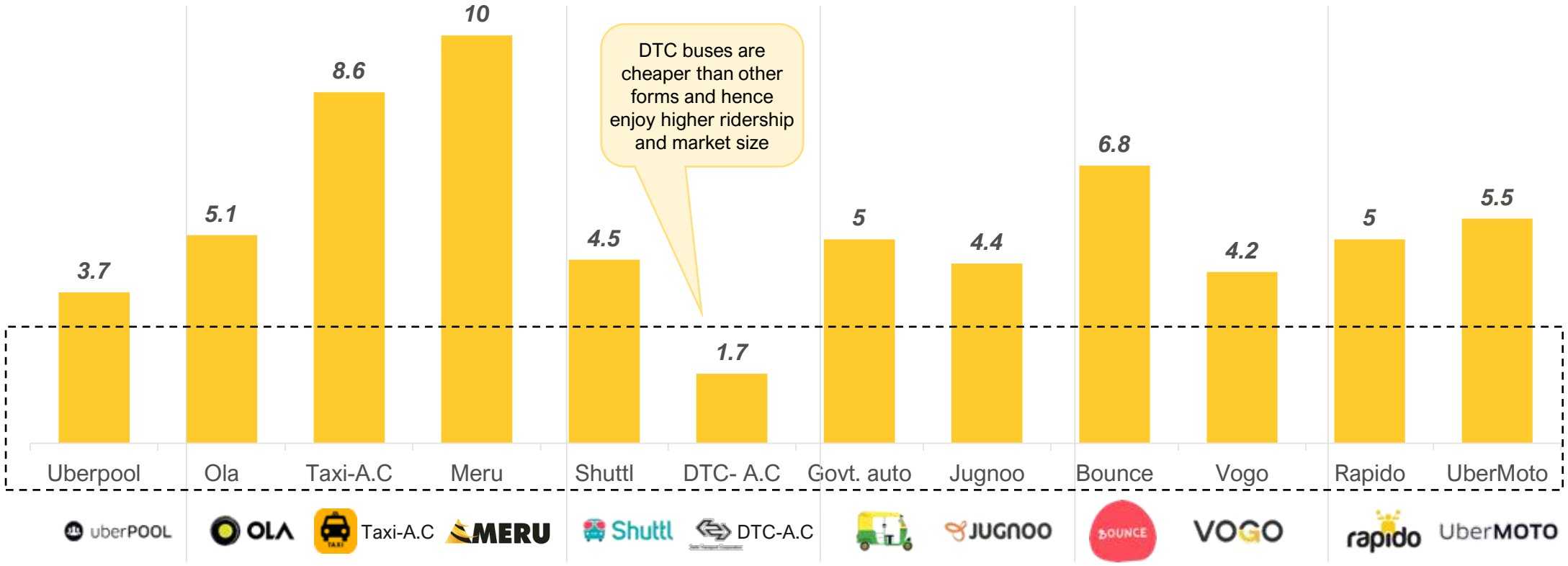




Note: Walking as a mode of transport has been excluded since monthly spend is 0
Source: Daily commuter survey (N = 301), PGA Labs analysis

We estimated the fare per km per trip charged by various service providers across all modes

Fare per km per seat in FY19 (INR)



	Taxi share	Taxi rental			Private bus		Auto		2W rental		2W taxi	
	Uberpool	Ola	Taxi-A.C	Meru	Shuttl	DTC- A.C	Govt. auto	Jugnoo	Bounce	Vogo	Rapido	UberMoto
Average distance per trip (KM)	4.5-5	13	13	13	20	15	7	7	10	20.5	5	3.5

Source: Company website, PGA Labs analysis

Bus is the most preferred & cheapest public commute mode for longer distances & immune to weather changes; trains & e-rickshaws are better to navigate traffic

Parameters	Bus	Train	Autorickshaw	E-rickshaw
Price / ride fare	55%	-31%	-11%	25%
Usability in bad weather	35%	10%	33%	14%
Usability for large travel distance	20%	31%	-38%	-25%
Ability to cross-utilize travel time	11%	4%	12%	11%
Access to transport	9%	1%	19%	7%
Effect of speed on travel time	9%	29%	-7%	-16%
Safety (proneness to accidents)	8%	17%	3%	11%
Number of payment failures	7%	-8%	4%	-2%
Availability of transport (wait time)	5%	-9%		
Customer service	4%	20%		
Ease of booking rides / tickets	3%	-10%		-7%
Effect of route on travel time	2%	14%	6%	5%
Availability of subscription plans / passes	1%	-17%	-22%	-18%
Comfort	1%	4%	7%	5%
Ease of identifying route / schedule	1%	-3%	-17%	-9%
Exposure to pollution			-27%	-34%
Reliability of transportation	-2%	1%	2%	2%
Safety (danger of pickpockets)	-3%	-17%	9%	-5%
Representative behavior	-6%	-1%	-10%	0%
Profile of co-riders	-8%	3%	-5%	-2%
Vehicle condition and quality	-8%	1%	2%	9%
Number of payment options	-10%	-11%	-5%	-11%
Availability at odd times	-29%	-29%	35%	25%
Privacy	-33%	-29%	-3%	0%
Availability of seats	-34%	-9%		
Ability to navigate through traffic	-35%	38%	13%	16%

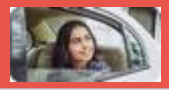
Source(s): Daily commuter survey (N = 301), PGA Labs analysis

Among smaller commute modes, 4W are better long distances & round the clock availability but are costly & parking is a concern for personal 4W

Parameters	4W taxi	Personal 4W	2W taxi	Personal 2W	Bicycle
Availability at odd times	30%	35%	27%	39%	17%
Customer service	26%		27%		
Usability in bad weather	24%	44%	-33%	-40%	-48%
Access to transport	18%		0%		
Privacy	16%	26%		31%	22%
Safety (danger of pickpockets)	12%	29%	0%	23%	17%
Representative behavior	12%		0%		
Vehicle condition and quality	10%	6%	0%	11%	9%
Usability for large travel distance	10%	50%	-27%	-35%	-83%
Ability to cross-utilize travel time	6%	-24%	0%	-11%	0%
Effect of speed on travel time	4%	26%	27%	24%	-48%
Safety (proneness to accidents)	2%	6%	-7%	-24%	-4%
Comfort	2%	9%	33%	16%	13%
Effect on fitness					43%
Exposure to pollution			-47%	-53%	-43%
Danger of theft of vehicle		-15%		-22%	-43%
Ease of parking		-76%		8%	48%
Ease of booking rides / tickets	-4%		-7%		
Effect of route on travel time	-4%	12%	20%	25%	9%
Ease of identifying route / schedule	-4%	-29%	47%	-27%	-4%
Number of payment options	-6%		0%		
Reliability of transportation	-6%	0%	-13%	0%	9%
Number of payment failures	-10%		0%		
Availability of transport (wait time)	-16%		7%		
Availability of subscription plans/passes	-26%		-27%		
Ability to navigate through traffic	-26%	-38%	27%	50%	22%
Willingness of driver to go destination	-34%		-33%		
Price / ride fare	-36%	-62%	-20%	-15%	65%

Source(s): Daily commuter survey (N = 301), PGA Labs analysis

Price, time and convenience are the top key parameters of choice for daily commuters; safety is a point of concern for outstation travelers

Personas / Parameters	Price conscious, time agnostic 	Price and time conscious 	Privileged 	Pleasure traveller 
Typical profile	• Blue, grey collar workers, students with low HHIs	• Grey-collar workers	• White collar workers, students with high HHIs	• Tourists
Trip purpose and frequency	• Work in Central Business District (CBD) areas, all weekdays	• Work in CBD areas, all weekdays; recreational activities on weekends	• Work in CBD areas; educational institutions on weekdays; recreation on weekends	• Tourism, irregular frequency depending on age group and purchasing power
Preferred mode of commute	• Bus, shared autos	• Metro, autos, pool cabs	• Private cabs	• Autos, taxis
Annual income (INR)	• 40K-2.5L	• 2.5-5L	• 8-20L	• 4-8L
Typical pain points	• Uncomfortable, insufficient seating • Lack of last mile connectivity	• Overcrowding in rush hours • Lack of last mile connectivity	• Congestion during peak hours	• Potential rip- off due to lack of awareness of local taxi fares • Lack of credible service providers causing safety concerns
Key purchase criteria (KPC)	• Pricing of ride • Reliability of supply	• Skipping traffic • Pricing of ride	• Convenience	• Driver amenability • Pricing of ride • Connectivity of travel mode
Extent of tech adoption	◔	◕	●	◑
Willingness to pay for pain point elimination	◔	◑	◕	◑

Source(s): Industry reports and press releases, PGA Labs analysis

Low ○ ◔ ◑ ◕ ● High

Indian 2W rental / taxis market faces strong short-term headwinds particularly that of achieving positive unit economics, but long-term growth prospects remain intact

Headwinds

Regulatory hurdles in bike taxi segment: Regulatory challenges including **lack of clear regulations at state level on bike taxi operations**, and **cumbersome process of getting commercial license for private two-wheelers** has created a regulatory grey zone for bike taxi operators. For e.g., in Haryana, only 2,000 yellow number plates have been issued for bike taxis till May 2019, often taking up to 6 months.

Challenge of achieving positive unit economics: While some players like *Bounce, Vogo,* and *Yulu* have seen tremendous growth in the last 2-3 years, segment continues to witness mounting losses with key players seeing **9-10x increase in losses during FY18-19**.

Rampant theft and vandalism: Bike rental companies like *Yulu* and *Bounce* face repeated instances of **fuel theft and asset vandalism** which cause severe losses for the companies. For Yulu, **300 of its bikes were vandalized, damaged or stolen between January 2018 and May 2019, amounting to losses of INR 40-50L.**

Tailwinds

Use of EV-led mobility solutions to lower operational costs: Bike rental companies like *Bounce* are experimenting with a fleet of electric vehicles to reduce operational costs. *Bounce* has launched 1,000 e-bikes in Bengaluru in 2020 and has seen **3x increase in net earnings of INR 2.5-3 per ride against INR 0.8 per ride on standard bikes**.

Partnership with mom-and-pop stores: Segment is witnessing players experiment with newer business models to lower operational costs and expand quickly. *Yulu* and *Bounce* have **partnered with multiple *kirana* stores (latter has 3,000 partnerships in tier-1 and tier-2 cities) which act as charging stations and battery changing spots**.

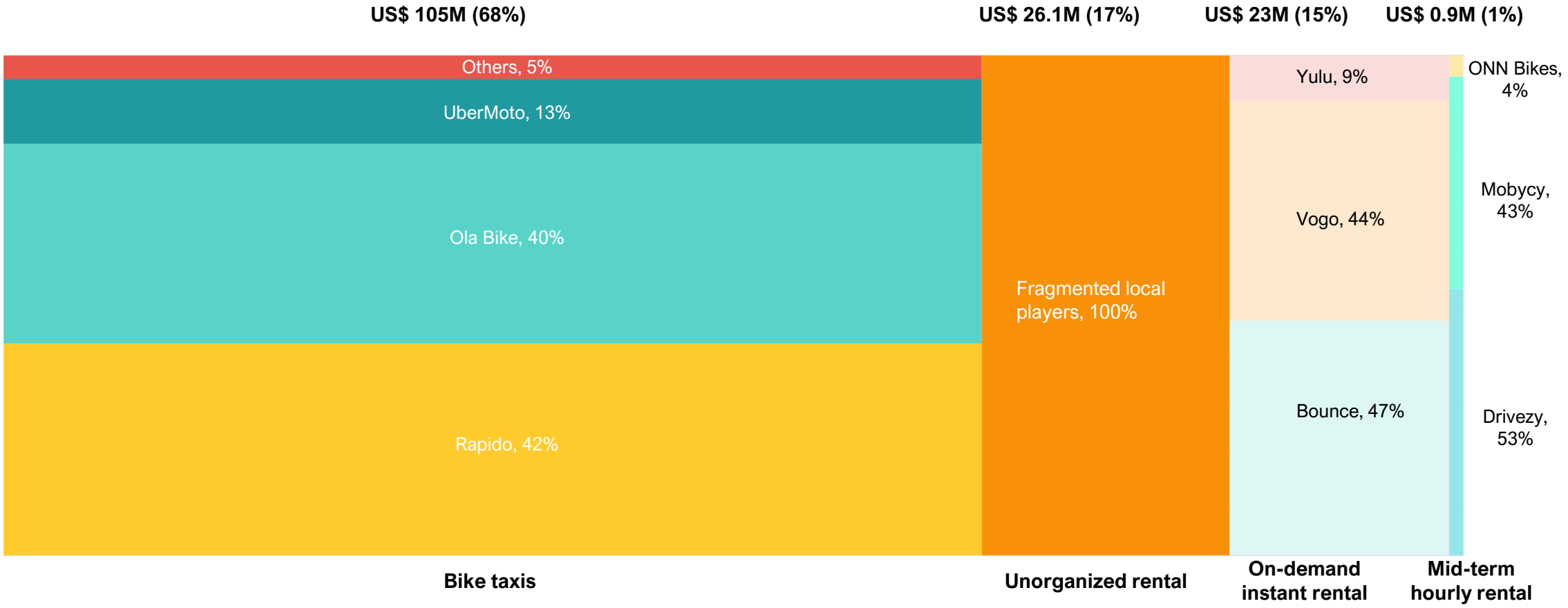
Influx of private equity capital: 2W rental space in India has seen substantial private equity investment in the last 2 years with a **total investment of US$ 366M made in 2017-19 against a mere US$ 5M investment in the preceding 3 years**. This is expected to give a strong boost to this asset-heavy business.

High user preference for 2W as mode of travel to work: A 2016 ICE survey revealed that **36% of Indians in big cities preferred to travel to work using two-wheelers**. Key reasons for this behavior include **affordability** with cost per km for a scooter / bike being ~US$ 0.06 (INR 4.5) and **easy manoeuvrability** through traffic congestion.

Source(s): Industry reports and press releases, Traxcn, PGA Labs analysis

Indian 2W rental and taxis was estimated to be a ~US$ 155M market in FY19 with bike taxis constituting a whopping 68% of the market

Motorized 2W taxis and rental market across different models,
(US$ M, FY19)



Note(s): Only motorized trips have been considered for Bounce; Others in bike taxis include players like Dunzo
Source(s): Primary conversations, Pres releases and company websites, PGA Labs analysis

Vogo offers the lowest price whereas Bounce has the widest geographical coverage & dockless parking; Drivezy offers option to rent both cars & 2Ws

Offerings	VOGO	Bounce	yulu	ONN	drivezy
Funding	US$ 26M	US$ 101M	US$ 6.85M	US$ 7.3M	US$ 40M
Vehicle types	Scooter	Scooter, motorcycle and 2W taxi	Bicycle (Move) and Moped (Miracle)	Motorcycle and scooter	Car, scooter & motorcycle
Geographical coverage	Bengaluru, Hyderabad, Chennai and Mysuru	Bengaluru, Hyderabad, Mysuru and 26 others	Bengaluru, Mumbai, Pune and Bhubaneswar	Bengaluru, Hyderabad, Pune, Jaipur, Udaipur and Mysuru	Bengaluru, Mumbai, Hyderabad, Pune, Mysuru and 4 others
Number of vehicles	10,000	8,500	11,000	3,500	7,500
# rides per day	28,000	35,000	35,000	200	2,000
Pricing	• INR 3.7 / km + INR 0.06 per min on weekdays & INR 0.6 per min on weekends	• Short rides: INR 15 + INR 5 per km + INR 0.5 per min • Long rides: INR 12.5 per hour	• Move: INR 10 for first 30 mins + INR 5 for every 30 mins • Miracle: INR 10 to unlock then INR 10 for every 10 mins	• INR 15-300 per hour (varies across choice of bikes) without fuel	• ~INR 300 – 500 per day rental with fuel for ~ 200 km + INR 2 per km beyond 200 km
Deposit	No deposit	No deposit	INR 100 – 500	No deposit	No deposit
Payment modes	Paytm	Paytm, UPI, Debit / Credit card, Net Banking and other e-wallets	Paytm, Debit / Credit card, Net Banking and other e-wallets	Debit / Credit card, e-wallets and cash at the hub	Drivezy wallet, Credit / Debit cards & Netbanking
Min. age for usage	18	18	16	18	18 for 2W & 21 for 4W
Speed limit	• 70-80 kpmh	• 110 cc scooters: 60 kmph • 110 cc+ scooters: 70 kmph	No speed limit	• Scooters: 75 kmph • Motorcycle: 90 – 110 kmph	• 2W: 80 kmph • Cars: 120 kmph
Hub timings	6am to 11pm / 24 hours	24 hours (dockless)	24 hours (dockless)	9am to 9pm	24 hours
Parking (pickup, return)	At the hub	Anywhere	At the hub	At the hub	At the hub
# riders allowed	2	2	1	2	2 / 5 (2W & car)
Need for helmet	✓	✓	✗	✓	✓
Pause ride option	✗	✓	✓	✗	✗

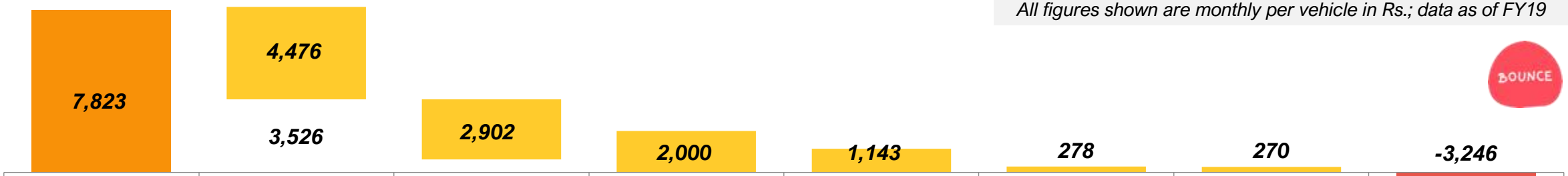
Favorable for customer **Not favorable for customer**

Source(s): Secondary research, PGA Labs analysis

2W rental players seem to operate at negative contribution margins

R&M costs forms the largest chunk of variable cost, closely followed by fuel & EMI costs; contribution margin of Bounce is estimated at -41%

All figures shown are monthly per vehicle in Rs.; data as of FY19

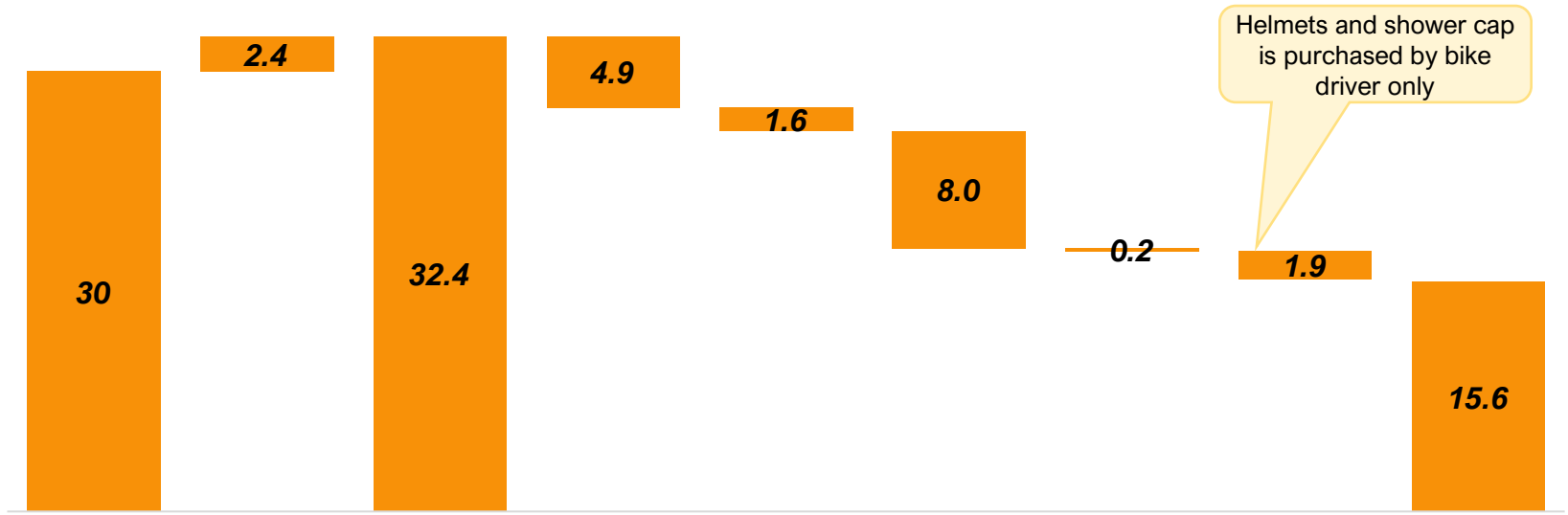


	GBV	R&M cost	Fuel cost / vehicle	EMI cost	Redistribution cost	Hub rental cost / vehicle	Booking cost / vehicle	Contribution margin
% GBV		*57%*	*37%*	*26%*	*15%*	*4%*	*4%*	*-41%*
Assumptions	• # rides per day for all vehicles: 32,500 • ABV: Rs 66 • # vehicles: 8,500 • Monthly GBV / vehicle: Rs 7,823	• Avg. cost of R&M in hubs: Rs 800 # repaired:540 • #trucks with capacity 10: 22 • Daily rental: Rs 4.5k per truck (capacity 5), 7.5k (capacity 10) • Utilization:69% • # On spot R&M by staff: 960/ day • Staff Distribution fuel cost / bike: Rs 11 • Cost of on-spot repair: Rs100/ vehicles	• Cost of fuel per litre: Rs 75.4 • Avg. day per rides 3.5 • Avg. distance travelled per ride: 8 km • Mileage of scooter:35 kmpl • # monthly refuelling:5.5 • Distance to fuel 1 vehicle:1.1 km • Junior and senior ground staff employed: 310 & 39 • Monthly salary of junior and ground staff: 20K & 25K	• Monthly EMI per scooter: Rs 2,000 • Vehicles / day: 450	• Total # vehicles moved for demand: 1105 • Moved by Fes: 861 • Moved by trucks: 244 • AVG. distance to reach the vehicle: 3.5 km • # trips to distribute: 2 • Distance vehicle moved: 1.5 km • Daily rental of type 1& 2 trucks: Rs. 4.5K & 7.5K • # Type 1 & 2 trucks: 5 & 22 • Trucks utilized: 43% • # staff: 287 (junior),36 (senior)	• Karugodi hub area: 13,000 sqft • Hub rental: Rs 45/sqft • Kormangla hub area: 10,000 sq. ft. • Penya hub area: 8000 sqft • Hub rental: Rs 50/sqft • Hebbal area: Rs 55/sqft • Hub 5 area: 7000 sqft • Hub 5 rental: Rs 53/sqft	• Fees paid by Bounce to Banglore Metro for installing Bounce stations at metro stations: Rs 2.75 Cr for 1 year	

Source(s): PGA Labs analysis

A bike(2W) taxi driver making 600 trips / month can typically make ~50% net profit

Monthly unit economics for a bike taxi driver (INR K)



	Direct revenue	Incentives	Revenue per bike	Commission to company	Mothly EMI	Fuel spend	Bike maintenance	Other cost	Profit
% to revenue	*93%*	*7%*	*100%*	*15%*	*5%*	*25%*	*1%*	*6%*	*52%*
Per ride	*50*	*4*	*54*	*8*	*3*	*13*	*0.3*	*3.2*	*26*

Assumptions

	Value	Unit
Per month ride (#)	600	#
Average booking value	50	INR
Bike monthly EMI	**Value**	**Unit**
Bike average cost	50,000	INR
loan tenure	36	month
Interest rate	1%	%
monthly EMI	1,661	INR
Monthly Fuel Cost	**Value**	**Unit**
Average distance traveled per ride	8	km
# rides per month	600	#
Additional unbilled travel	20%	%
total distance traveled in a month	5,760	km
Petrl price	70	INR/l
Mileage	50	km/l
Total monthly fuel cost	8,064	INR
Other costs	**Value**	**Unit**
Traffic rules mishandling monthly	500	INR
Bike minor repair & maintenance	200	INR
Shower cap	1,200	INR
Helmets	33	INR

Notes(s): Other cost includes traffic rule mishandling fines, minor bike repairs, shower caps, and 2 helmet cost
Source(s): Primary conversations, Pres releases and company websites, PGA Labs analysis

Players in the Indian 2W shared mobility segment are experimenting with different models; 'kirana' partnerships could be a key model to fuel expansion in tier-2 cities

	Model	Description	Key players
Conventional models	**B2C bike taxis**	• On-demand bike taxi services offered by companies operating with an aggregated fleet sourced from bike owners	rapido, UberMOTO, OLA
	B2C 2W rentals – owned fleet	• On-demand self-drive scooter and bike rental services offered by companies operating with a self-owned fleet	Bounce, VOGO, yulu
	B2C 2W rentals – aggregated fleet	• On-demand self-drive scooter and bike rental services offered by companies operating with an aggregated fleet sourced from bike owners	drivezy, WHEELSTREET, WICKEDRIDE
	B2B 2W rentals	• Mobility solutions offered to businesses and delivery agents typically on a weekly, monthly, quarterly subscription model or on a lease model	ONN, eBikeGo!
Emerging models	**Mom-and-pop shop partner model**	• Partnerships between bike rental companies and unorganized retailers to act as pick-up and drop points, facilitate battery swapping in EVs, and maintain upkeep of vehicles. Key examples include: - *Bounce* works with 3,000 kirana stores in tier-1 and tier-2 cities to charge swappable batteries and maintain upkeep of parked vehicles against a nominal fee; company sells 3-4 batteries to shop owners against a down payment of INR 1L and in return, shop owners are paid INR 20-25 per swap - *Yulu* works with 150 strategic kirana partners in Bengaluru to charge swappable batteries in its vehicles through proprietary battery charging boxes but retains ownership of batteries unlike *Bounce*	Bounce, yulu
	Subscription model	• Bike rental subscription services offered by two-wheeler mobility providers. Key examples include: - *ONN Bikes* and *Wheelstreet* offer monthly rental subscription packages starting at ~INR 3,000 per month besides hourly and instant rentals - Companies like *Ontrack* operate only on a monthly subscription model with additional benefits like zero security deposit, unlimited kms, pick up and delivery service, free maintenance, etc.	ONN, rapido, WHEELSTREET, ontrack
	Franchise model	• Partnerships between master franchisor company and independent franchise owners to run two-wheeler rental outlets. Key examples include: - *Royal Brothers* which currently operates on a semi-franchise model with joint investment in vehicle fleet by both franchisor and franchisee; servicing and maintenance borne by franchisor company	ROYAL BROTHERS
	C2C bike taxis	• Bike pooling services offered by companies that provides riders an option to travel with a co-passenger-cum-driver. Key use case includes pooling between corporate employees travelling along the same route.	ePoolers, Quick Ride

Source(s): Press releases and company websites, PGA Labs analysis

Case study: In India, 2W shared mobility services are growing rapidly with Rapido showing early success in taxi model

Started in 2015
HQ – Bengaluru, India

Total funding: US$ 82.2M

Business model
2W ride hailing platform

Reach
~90 cities including Bengaluru, Hyderabad, Gurgaon, Mysuru

Rapido journey

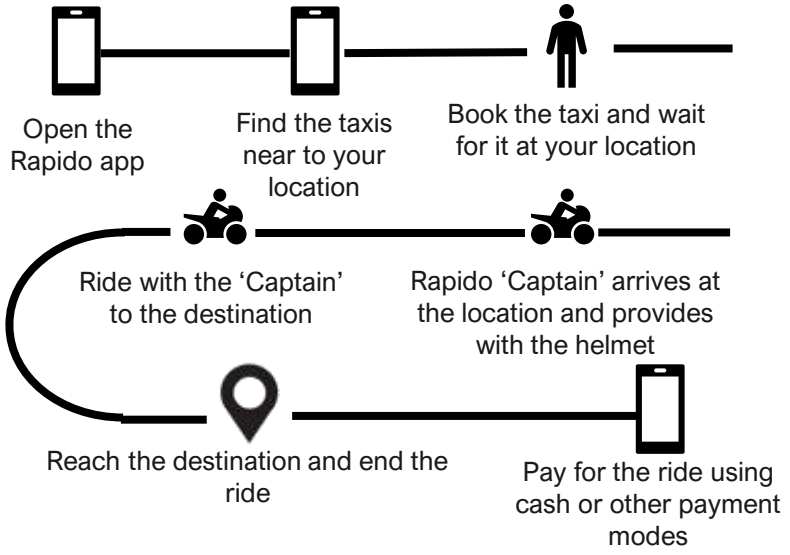
2015

- **May '15** – **Incorporation** of company
- **May '15** – **Seed funding, US$ 234K** by Sol Primero
- **Apr '16** – **Seed funding, US$ 1.05M** led by Astarc Ventures
- **Sep '17** – **Seed funding, US$ 1.21M**, led by Thompson Taraz
- **Mar '18** – **Series A: US$ 4.15M**, led by Merchants Capital
- **Jan '19** – **Series A: US$ 10M**, led by Integrated Capital and Astarc Ventures
- **Apr '19** – **Series A: US$ 11.2M**, led by Nexus Venture Partners
- **Aug '19** – **Series B: US$ 54.3M**, led by WestBridge Capital Partners

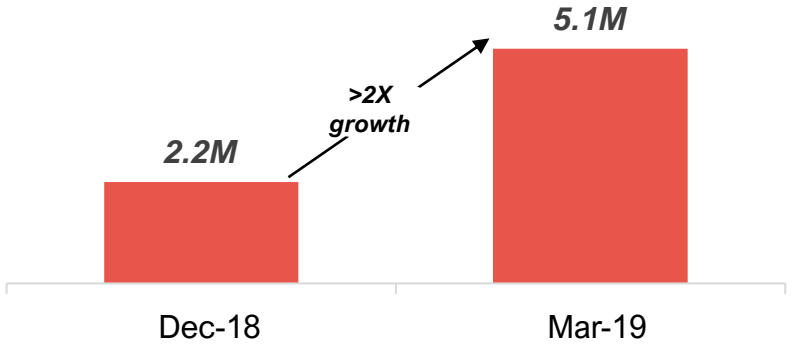
2019

Rapido journey

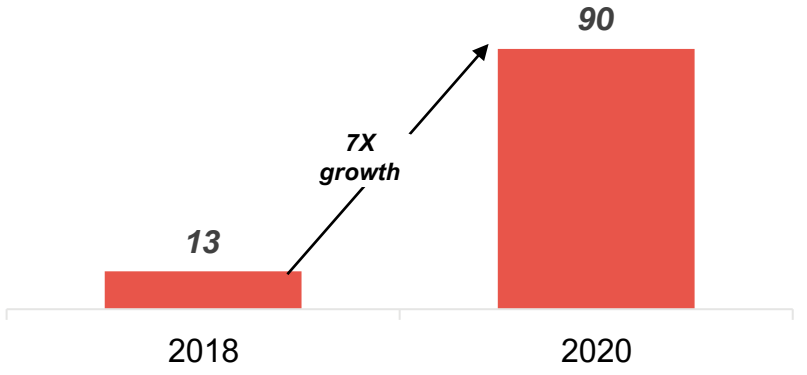
- Motorcycle-based **bike taxi aggregator**
- Charges **US$ 0.14 as base fare** and then **US$ 0.04 per km and US$ 0.01 per minute**
- Also, offers a **subscription package** modelled on the bus / metro pass system with **fare range between US$ 1.5-3 per mo**
- **20% margin** on each ride



Average monthly rides



of operating cities



Source(s): ROC, Crunchbase, Tracxn, Techcrunch, PGA Labs analysis

India's 4W taxi market is facing strong headwinds from the government's roadmap for electrification; several issues impacting sustainability of major aggregators

Headwinds

Electrification: The Government of India has its eyes set on **30% electrification across fleets by FY2030** to which intent policies like FAME (Faster Adoption and Manufacturing of Hybrid and Electric vehicles) and FAME- II have been launched. However between April to October 2019, **electric car sales comprised only 0.07% of total car sales.**

Lobbying by indigenous players for protectionist policies: Agencies like Indiatech.org comprising of founders of top Indian start-ups are cropping up to protect against the supposed 'undercutting' by well- funded foreign players like Uber

Decline in stock price of major player in India, Uber: Uber Technologies Inc., listed on NYSE in May'19 at a valuation of US$ 76B has witnessed a **sharp decline in its market capitalization to the current value of US$ 49B**. This trend had initiated before revenue plunged due to COVID-19 and unsustainable unit economics.

Driver churn from aggregator platforms: In order to hit positive unit economics, companies have tried to reduce driver incentives which has witnessed severe backlashes, strikes and log-outs from platforms which leads to reduction in supply

Allegations of sexual assault against drivers: Several incidents of drivers misbehaving with female passengers have cropped up since 2015. Since then, Uber has introduced a range of safety measures to attract women customers once more, such as SOS buttons in vehicles that directly link to police control rooms, and compulsory background screening for all drivers.

Rollout of BS- VI norms (intended in April-20): Taxi fleet not complying to BS-VI standards would need to be renewed or else will be rendered illegal to run

Tailwinds

Increasing cost of car ownership: Ride hailing especially on tech platforms like Ola, Uber and Meru has become popular due to **increasing cost of owning and maintaining a car**, especially for millennial workforce

Increasing mobile internet penetration in India: India has one of the largest base of internet using population at ~500M across the country. **In metro cities, the penetration shoots up to 90%** and coupled with one of the **cheapest Internet rates in the world (US$ 0.26),** it is evident that ride- hailing platforms are widely accessible

Rise of digital payment options : **Several UPI based payment options like Google Pay, Phone Pe and other e-wallets like Paytm** can ease the process of payment collection both for the rider as well as driver. This leads to **lowering of barrier to entry** due to cumbersome cash transactions.

Electrification: Although electrification poses a challenge for the existing fleet owners, the **favorable regulatory policies around ownership of electric cars** can offer opportunities for value creation to new players.

Boost in tourism industry in India:. **Tourism market in India (in pre-COVID- 19) state was slated to grow at a rate of 4-6%** annually representing lucrative opportunities for new entrants. The outbreak of COVID- 19 has severely impacted the sector and normalization timeline can extend up to 1-1.5 years after which public and investor interest in the space will rekindle.

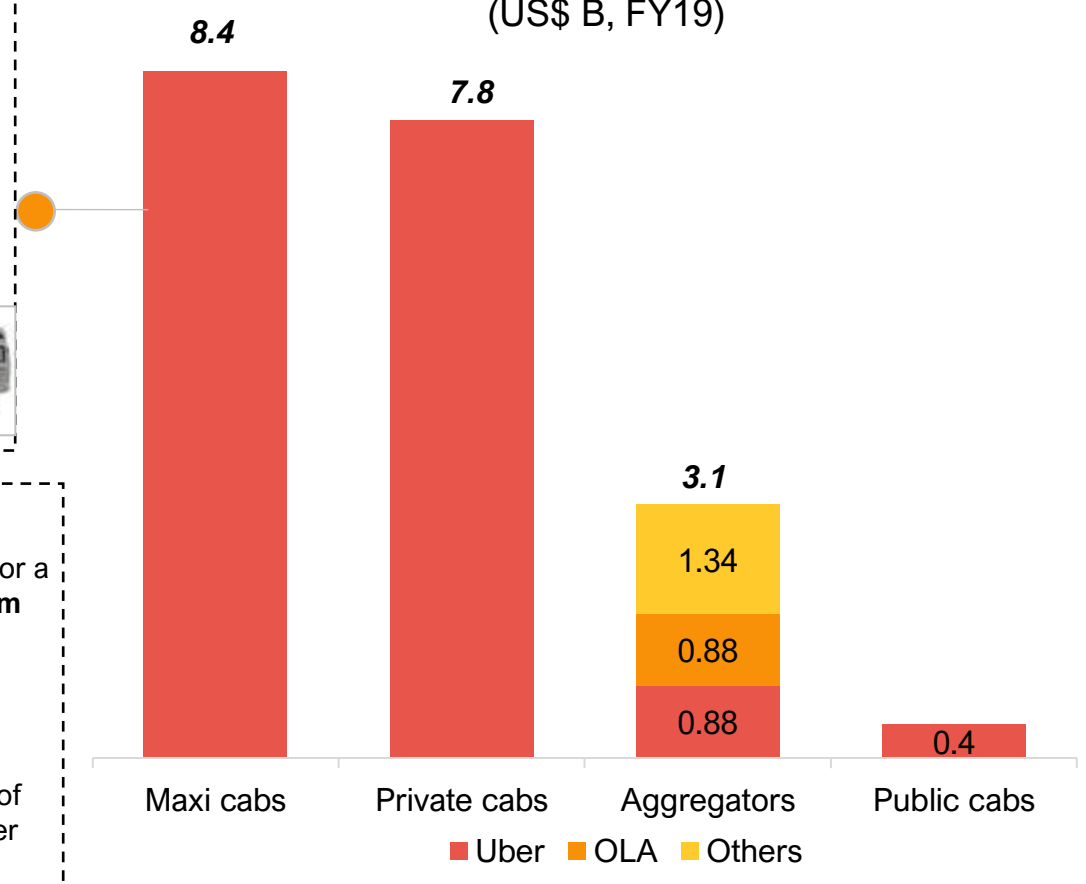
Source(s): MORTA, PGA Labs analysis

Private cabs and maxi cabs own large share of 4W taxi market in India which also show smaller extent of organization with ownership being largely fragmented

- **Maxi cabs** are popularly used for:
  - Tourist Travel
  - Corporate transfers
  - School Vans
- The ownership is largely fragmented with an owner owning 1- 2 vehicles

- Vehicles run as taxis by private owners
- Ownership could be at an individual level or a company level, for instance, **Meru, Lithium**
- Popularly used for:
  - Tourist travel
  - Personal Taxis
  - Corporate Travel
  - Intracity travel for instance, in case of Meru but smaller market due to higher prices
- **Key Tech Players:**

MERU Lithium BLU



- The most popular form of 4W taxis are those booked on- demand
- The segment is also under continuous scrutiny of regulators
- The market size is small due to presence of players in only Metro, Tier- 1 and some Tier-2 cities
- Popular due to heavy discounting, short wait-times, good supply and ease of payments

Key players:

Uber OLA Hippo SAVAARI CAR RENTALS

- Vehicles owned privately individually or by association / cooperative
- Tech penetration in the sector is low. Rides are booked by offline hailing and prices are either fixed by the association / local transport authorities or negotiated with the customer

Kolkata

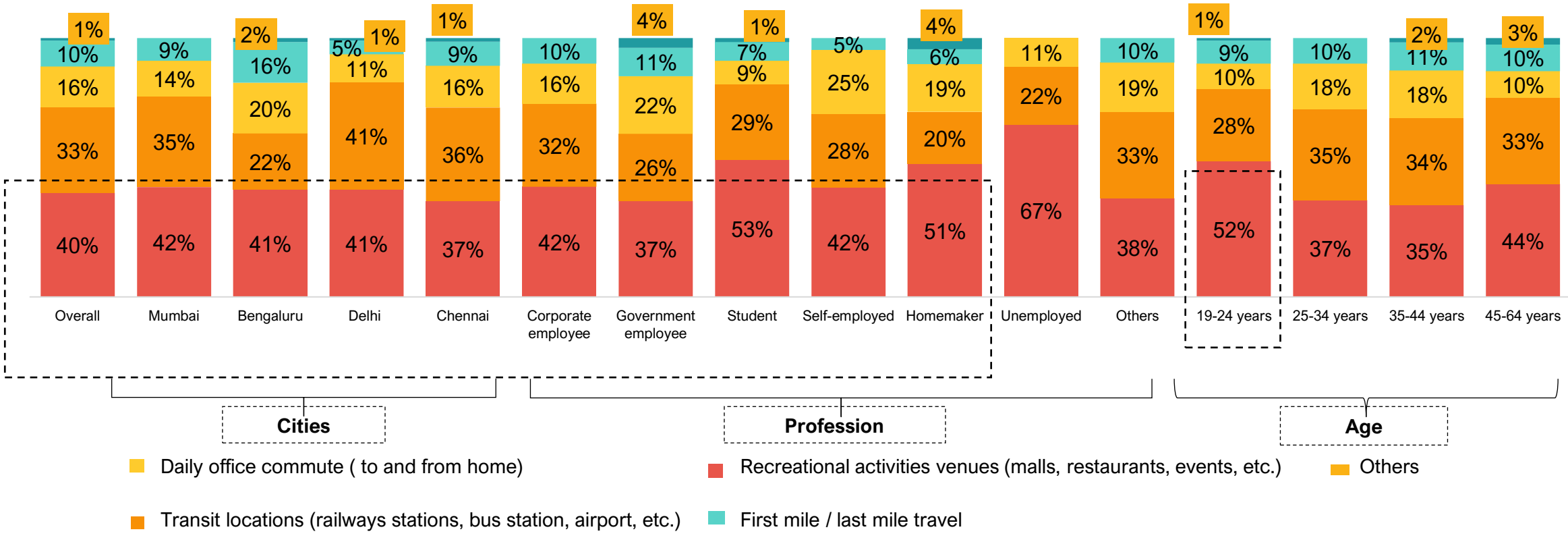
Mumbai (now discontinued)

Source(s): Transport Ministry Data, PGA Labs analysis

Services from app-based aggregators are largely used for recreational trips and commute to transit locations as first mile travel option

Corporate employees and unemployed customers prefer using cabs for transit locations rather than recreational activities

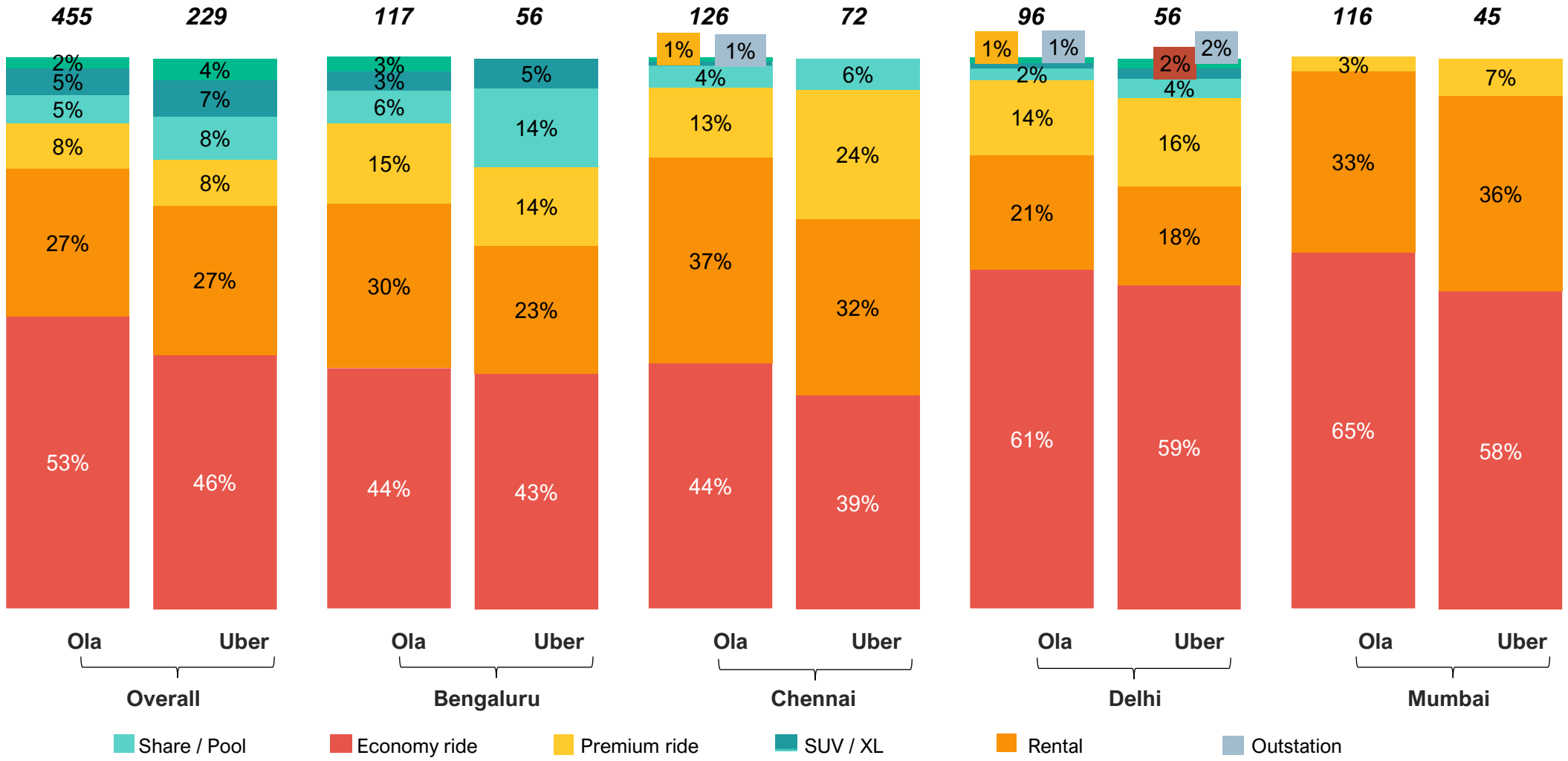
Use case scenarios for app-based cab services (N = 518)



Source(s): Survey (N = 518), PGA Labs analysis

Use case for popular ride hailing platforms like Ola, Uber is largely intracity; major proportion of economy rides indicates price consciousness of customer base

% usage of cab type city-wise *(N = 518)*



Source(s): Survey (N = 518), PGA Labs analysis

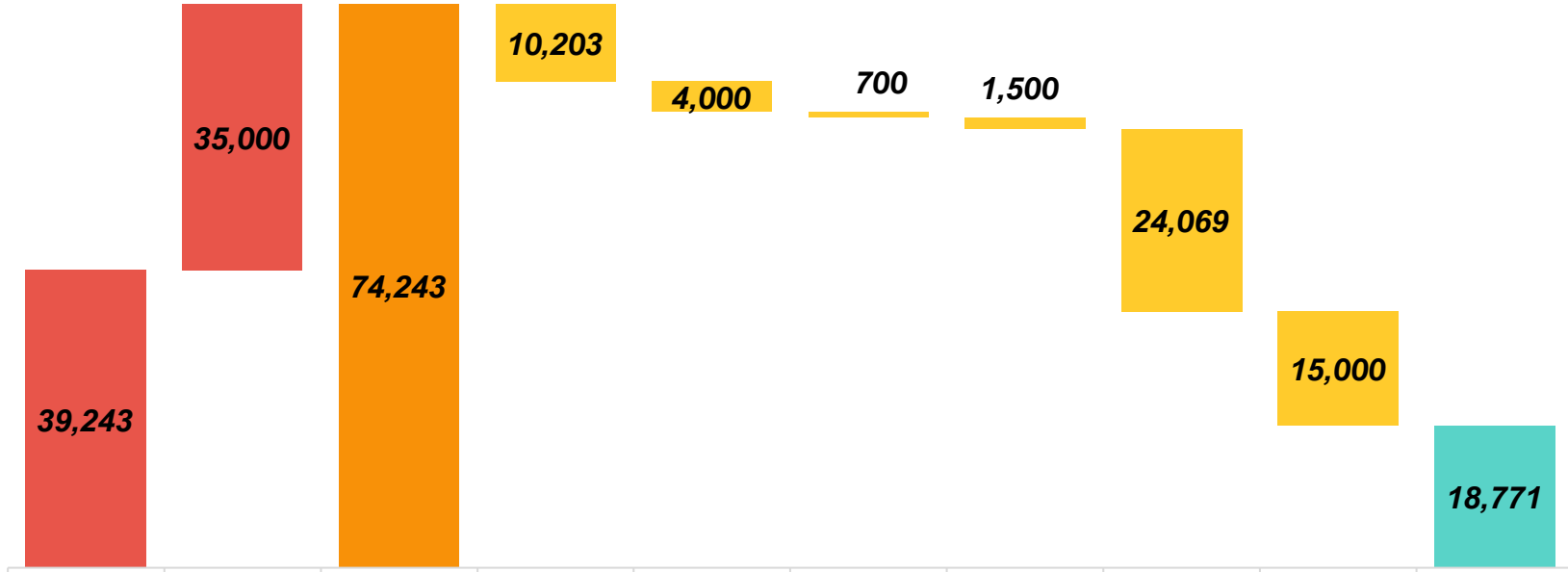
Aggregator apps Uber, Ola are well- funded & compete heavily against Meru; Savaari is popular for inter- city travel, Lithium is emerging player with electric cars

Offerings	Uber	OLA	SAVAARI CAR RENTALS	MERU	Lithium
Player type, Ownership	Aggregator	Aggregator	Aggregator	Aggregator, Private Cabs (Owned)	Private Cabs (Owned)
Valuation	US$ 49B	US$ 4.3B	NA	NA, 55% stake owned by Mahindra & Mahindra	US$ 50M
Funding	US$ 20B	US$ 3.8B	US$ 28M	US$ 75M	US$ 20M
Geographical coverage in India	36 cities	125 cities	98 cities	24 cities	Bengaluru, Delhi Hyderabad, Pune, Manipal and planned in Jaipur, Mumbai
Service type	B2C / B2B (Corporate)	B2C / B2B (Corporate)	B2C / B2B (Corporate)	B2C / B2B (Corporate)	B2B
Ride booking mode	Online	Online	Online / Offline	Online / Offline	Offline
Vehicle types	4W Taxis, Rickshaws, 2W Taxis	4W Taxis, Rickshaws, 2W Taxis	4W Taxis	4W Taxis	Electric 4W
Number of vehicles	350,000	550,000	~500	20,000	1,100
# rides per day	2M	2M	NA	NA	B2B service- Car use frequency as per employers' demand
Pricing	• Booking fare + Minimum fare + Fare per km (for extra km) + INR 1 per min (for extra time) + Surcharge on surge	• Base fare + Distance fee (INR 5-7 per km x Total distance travelled) + INR 1 per min + Surge pricing	• Distance fee (INR 9- 15 per km x Total distance travelled*) + Fare per min *Min. distance 150-250 km/day	• Base Charge + Distance fee (INR 10- 20 per km x Total distance travelled*) *No surge pricing on Meru	NA
Payment modes	Debit / Credit card, UPI, PayTM, Uber Credits	Debit / Credit card, UPI, e- Wallets, Ola Money, Postpaid	Debit / Credit card, UPI, e- Wallets, Loyalty programs	Debit / Credit card, UPI, e- Wallets	NA
Driver service	Yes but not managed by Uber	Yes but not managed by Ola	Yes, managed by operators contracted by Savaari	Yes, own car drivers managed by Meru	Yes, trained and managed by Lithium; 2 per car available 24x7
Trip type	Intracity, Intercity	Intracity, Intercity	Intercity, Intracity	Intracity, Intercity	Intracity Only
Operational expense account	Driver	Driver	Driver / Operator	Driver for aggregator model / Meru for leased cars	Lithium

Source(s): Statista, Secondary research, Praxis analysis

Unit economics for app-based Indian aggregator, OLA: A driver driving approximately 300 trips / month can make up to ~25% profit

Unit economics – OLA driver per month profit (INR)



	Direct revenue	Incentives	Total revenue / month	commission cost	Taxes / month	Insurance / month	Maintanence / month	Fuel / month	EMI	Margin
% to revenue	53%	47%	100%	14%	5%	1%	2%	32%	20%	25%
Per ride	131	0.47	247	34	13	2	5	80	50	63

Assumptions

	Value	Unit
Per month ride (#)	300	#
Average booking value	131	INR
Monthly EMI	**Value**	**Unit**
Average cost	5,50,000	INR
loan tenure	36	month
Interest rate	10.50%	%
monthly EMI	15,000	INR
Monthly Fuel Cost	**Value**	**Unit**
Average distance traveled per ride	13	km
# rides per month	~250-300	#
Additional unbilled travel	20%	%
Total distance traveled in a month	4,680	km
Petrol price	72	INR/l
Mileage	14	km/l
Total monthly fuel cost	24,069	INR
Other costs	**Value**	**Unit**
Maintenance / month	1,500	INR
Insurance / month	700	INR
Taxes / month	4,000	INR
Average commission / month	10,200	INR

Note(s): Commission cost includes the total commission that the OLA driver has to pay to OLA as commission fee

Choice of model for 4W taxis depends on use case - longer term choice in favor of private cabs, chauffeur driven rentals for shorter term, aggregators for single rides

	Model	Description	Fare computation model	Destination	Key players
Conventional models	**Metered taxis**	• Oldest model for taxi services • Popular in public taxis • Owner and operator / driver can be different	• Distance charge by meter reading • Per km charge fixed	• No constraint • Driver approval required for intended destination	No major organized player
	Private contracts	• Contract / agreement with vehicle owner mandatory • Popular for private taxis • Usually longer term contracts such as monthly or annually	• As agreed with owner in the contract • Calibration is usually done by benchmarking with typical taxi fares; driver cost also built-in	• As per contract • Could be fixed as mentioned in the contract or variable depending on contract terms	No major organized player
	Rental on hourly or distance basis	• Usually for longer duration trips • Popular for private, public taxis as well as aggregators like Savaari, Ola, Uber	• Fixed charges + distance charge on per km basis + driver allowance	• As pre-agreed with the owner / driver • Minimum distance constraint	SAVAARI CAR RENTALS, Uber, OLA
	On-demand supply matching (ride-hailing)	• Shorter duration / distance trips unless intercity • Tech play rampant for demand- supply matching • Players in this model operate as aggregators	• Base fare + distance fee + INR 1 per min + surge pricing	• No constraint apart from state borders which depends on product type	Hippo, Uber, OLA
Emerging models	**Private contracts with electric car owners**	• Private contract model is similar to conventional • For instance, Lithium provides chauffeur driven electric car services to corporates • Charging facilities built by Lithium at client site at own expense	• Pre-agreed in contract with driver and operational charges built-in	• No constraint as long as destination is within the charge capacity of the vehicle (usually, ~130 km per charge)	Lithium, BLU SMART MOBILITY
	Novel use cases	• For differently-abled, UberAssist • Ferry aggregation in Mumbai, UberBoat • Female run female only cabs, Pink Cabs by OLA	• Model same as general ride-hailing model • Surcharge for special service	• UberBoat currently in Beta phase hence limited range • No constraint for others	
	Pool services	• Popular service provided by aggregators to provide cheaper individual rides and reduce congestion, pollution	• Fixed charges + (distance charge on per km basis + time charge)	• No constraint • Pool services available in limited cities currently	WIZZRIDE, uberPOOL, Ola Share

Source(s): Press releases and company websites, PGA Labs analysis

Case study: Aggregator platforms like Ola, Uber are widely popular; Indian ride hailing market has seen exponential growth reaching US$ 4B in 6 years

Apr 2007 – Meru cabs launched operations in Mumbai

Jan 2010 – Meru raised ~US$ 42M till date led by True North

Dec 2010 – Ola founded by Bhavish Aggrawal and Ankit Bhati

Aug 2013 – Uber launched operations in India

Nov 2013 – Ola raised ~US$ 24M led by Tiger Global Management

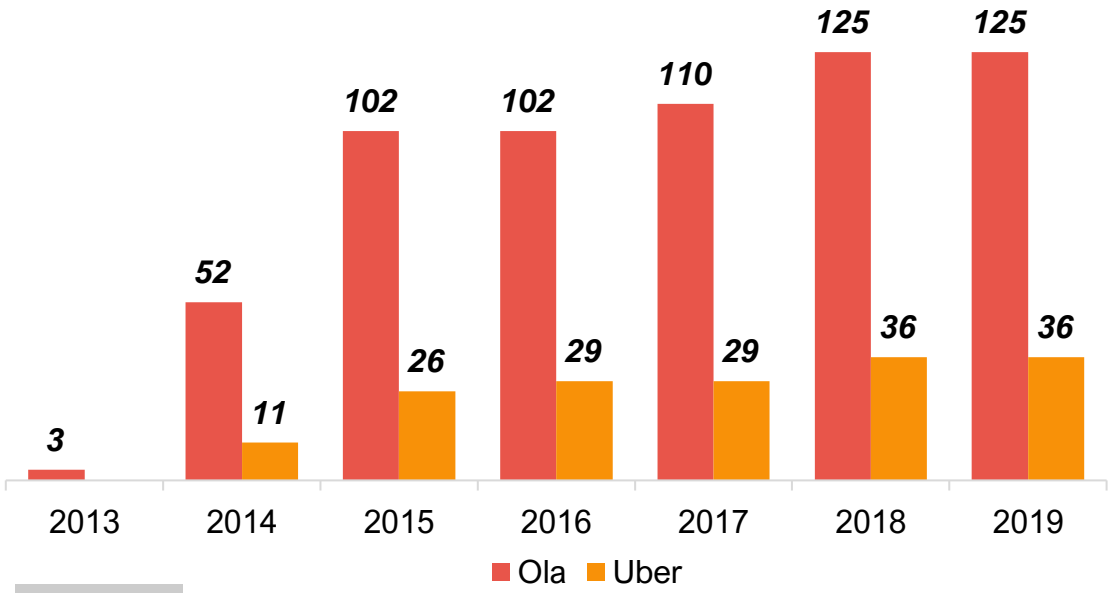
Mar 2015 – Ola acquired TaxiForSure for US$ 200M

Apr 2016 – Ola launched Ola Auto in India

April 2017 – Ola raised US$ 259M in Series G funding led by SoftBank

Mar 2018 – Ola launched international operations in Australia, UK and NZ

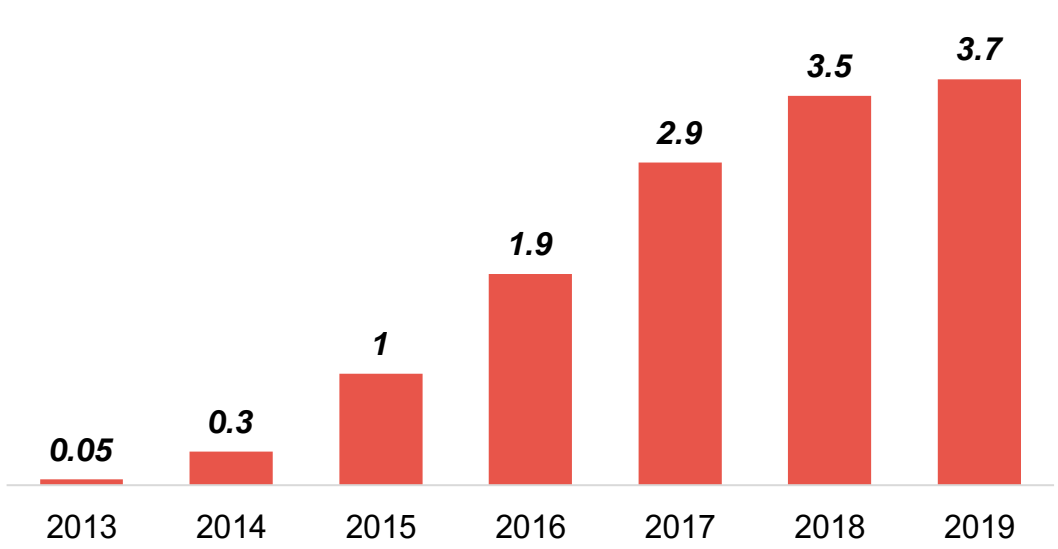
Number of cities of cab hailing market



YoY growth							
	Ola	16x	96%	0%	8%	14%	0%
	Uber		136%	12%	0%	24%	0%

Number of daily rides of cab hailing market

M



Revenue (US$ M)	40	241	914	1,823	2922	3,703	4,055
YoY growth		470%	261%	90%	53%	21%	4%

Source(s): Secondary research, PGA Labs analysis

Bus penetration in India is small; various STUs, private players are realising the value proposition but find themselves cash strapped to fund purchase, operations

Headwinds

Cash strapped STUs: Lower STU (State Transport Undertaking) cash reserves result in inability to purchase new buses, maintenance of existing fleet and pay subsidies to PPP (Public Private Partnerships) operators to maintain quality service for commuters

Unfavourable unit economics for private players: Private players often are not available to recover the investment made in purchase of vehicles by the size of average fares. Raising fares is not sustainable since purchasing power of a typical customer is low. This has led to **bankruptcy of many private players** contracted by the government for bus service

Vandalism: Buses usually become the **first target in public riots in tier- 2/3 cities**. The limited fleet of state transport becomes further burdened leading to poor service to commuters and a feedback loop leading to private vehicle purchase and subsequent reduction in bus usage. Smaller ridership leads to higher losses for private players.

Red tape: A bus owner intending to start operations has to jump through **multiple bureaucratic hoops for final approvals**. This leads to **delays and additional costs** which endangers service provider's confidence.

Shift of modal shift to metro: Due to congestion, inconvenience and irregular service **bus commuters are gradually shifting towards other modes such as metro and private cars**. For instance, in Delhi the modal shift of buses has decreased from 60% to less than 40% in 2018. With metro projects in cities like Bangalore, Hyderabad and Mumbai coming up / expanding, buses are expected to loose modal share unless better service is provided

Tailwinds

Rapid congestion: Increasing congestion in Indian cities is leading to promotion of bus as a means of daily commute. From the commuter perspective, it helps avoiding the involvement required for driving one's own vehicle and on a macro level, this will help reduce congestion as well.

Addition of buses on OTA platforms: OTAs (Online Travel Agency) like Redbus are adding buses to their platform by increasing their own fleet or on aggregator model which showcases availability of marketing channels for new and growing businesses in the space

Increasing focus of state transport authorities on intra-city commute: States are coming to the realization that viable commute options are critical for economic growth. Also, providing public transport in form of buses is the cheapest way to fight rapid congestion which is why **State Transport Undertakings (STUs) are ordering / contracting larger number of buses**.

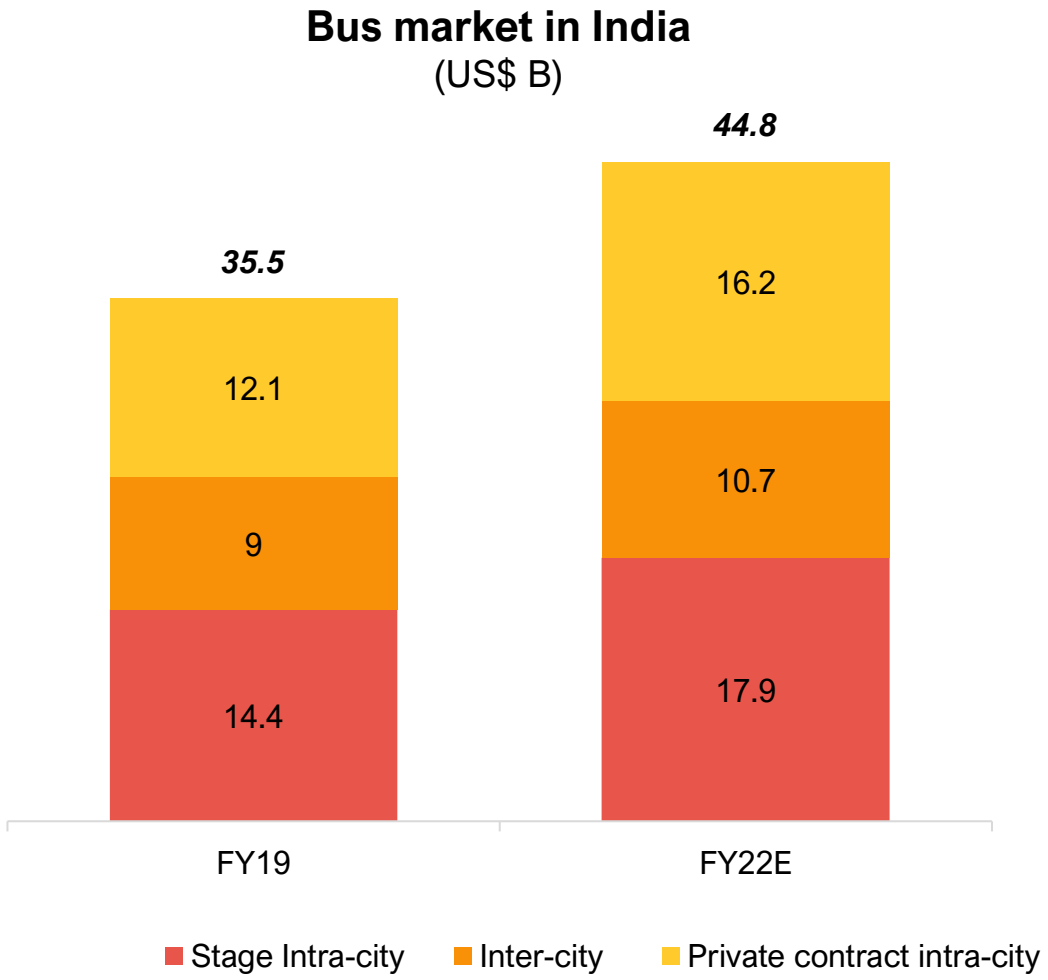
Rise of tech players in bus services: Increasing penetration of mobile internet coupled with increasing purchasing power has led to growth of platforms like Shuttl which are patronized by tech savvy, young professionals in Metro. The buses are contracted from owners / operators for specific time durations thereby boost vehicle utilization.

Boost in tourism industry in India:. Tourism market in India (in pre COVID- 19) state was slated to grow at a rate of 4-6% annually representing lucrative opportunities for new entrants especially in the inter- city travel space. The outbreak of COVID- 19 has severely impacted the sector and normalization timeline can extend up to 1- 1.5 years after which public interest is expected to re- kindle

Source(s): Secondary Research, PGA Labs analysis

Bus market is expected to grow @ 8% CAGR from FY19-22 with highest growth coming from stage intra-city and private-contract intra-city segments

Bus market is growing @ 8% CAGR; Private contract intra-city and stage intra-city are leading growth



Rationale for growth based on type of bus operations

Bus type	Rationale	# vehicles	Passengers	Fare price
Private –contract	• Increasing value added services by aggregator players • Increased usage of school buses in tier-2 and tier-3 cities • Decrease in corporate usage but increase in schools in tier 2/ 3 cities	↑	↑	↑
Inter-city	• Improved connectivity of metro trains & intra-city buses to outskirts of the city • City urban limits increased; hence other modes of transport easily available	↔	↔	↑
Intra-city	• Improvement in bus journey with online app, cashless payments and increased PPP leading to higher frequency of services • Availability of other transport modes (metro / online 2W/ 4W taxis etc.)	↑	↔	↑

Source(s): MORTH, Census 2011, UIPT India, Ministry of urban development, PGA Labs analysis

8 revenue models exist in the intra-city bus market in India with private players plying contract buses

Key models	100% owned & operated by STU[1]	PPP – Public private partnership				100% owned & operated by pvt operator	Private operators	
		GCC[2]	GCC – Hybrid	NCC[3]	NCC – Hybrid		Unorganized* / Organized*	Aggregators (Shuttl, Cityflo)
Description	• STU owns the fleet • STU has efficient operating capacity	• STU have capital and management skills • Lacks operating efficiency so partners with private player		• STU doesn't have capital and management skills or operating efficiency • Partners with private player for full stack		• Private operator running own bus on stage permit	• Operates in non-STU routes • Services to corporate companies	• Provides premium services with asset lite model
Bus ownership / maintenance								• 3rd party player
Operations – Fare price setting								
Operations – Determine route					• Operator gets subsidy on unviable routes			• Crowdsourcing to determine new routes
Operations – Increase ridership			• Bonus to private comp. for increase in ridership	• As linked to revenue	• As linked to revenue			
Operations – Service monitoring								• Feedback at end of every ride
Revenue sharing	• No sharing of revenue (unless JV)	• Fixed operating fee / bus	• Fixed operating fee / bus	• Per Km basis	• Per Km basis	• No sharing of revenue	• No sharing of revenue (unless JV)	• Fixed fee is paid for every trip taken
Carriage type	• Stage	• Stage	• Stage	• Stage	• Stage	• Stage	• Contract	• Contract

Government | Private player | Aggregator

Note(s): State Transport Undertakings, [2]- Gross Cost Contract, [3]- Net Cost Contract, * includes private players plying in city bus routes, corporate buses, school buses
Source(s): Ministry of urban development, PGA Labs analysis

Private-organized, aggregator have higher customer satisfaction levels; GCC-hybrid model is more satisfactory than NCC models

Key models	100% owned & operated by 'STU'	PPP – Public private partnership				100% owned & operated by pvt operator	Private operators		
		GCC	GCC – Hybrid	NCC	NCC – Hybrid		Unorganized	Organized	Aggregators (Shuttl etc.)
Cordial staff	😐	😐	😐	☹	☹	☹	😐	😐	☺
Safe driving	😐	😐	😐	☹	☹	☹	😐	😐	☺
Availability on all routes	☺	☺	☺	😐	😐	😐	☹	☹	☹
Schedule on-time	😐	😐	😐	😐	😐	😐	😐	😐	😐
Maintenance of safety standards	😐	😐	😐	☹	😐	😐	😐	😐	☺
Subsidized / low fare prices	☺	☺	☺	☺	☺	😐	😐	☹	☹
Comfort / availability of seats	😐	😐	😐	☹	☹	☹	😐	☺	☺
Hygiene / quality of vehicle/ seats	😐	😐	😐	☹	☹	☹	😐	😐	☺
Overall score	★★★☆☆	★★★☆☆	★★★☆☆	★☆☆☆☆	★☆☆☆☆	★☆☆☆☆	★★★☆☆	★★★★☆	★★★★☆

Customer satisfaction level ☺ High 😐 Above average 😐 Average 😐 Below average ☹ Low

Source(s): WRI India, Ministry of urban development, PGA Labs analysis

Overall the adoption and implementation of technology to overcome challenges is low; private bus aggregators have had some success but at a small scale only

	Challenge	Success of players
Public	• **Leakage** in the **revenue** with **fraudulent** ticket collection	• **Electronic handheld ticket** machine to **reduce leakages** in ticket revenue
	• **Decrease in ridership** due to **increasing superior transport alternatives** such as metro, on-demand 2W and 4W	• Route optimization covering non-metro with focus on scheduling premium vehicles (AC / deluxe) on peak demand time
	• **Decreasing revenue** due to **reduction in passenger ridership**	• Increased focus on **non-fare revenue** such as **advertising** on buses / back of tickets etc.
	• **Women passengers preference of other modes of travel due to safety concerns / issues** in buses	• Tackled safety issues **with SOS in STU's transit apps**, **CCTV** in buses
	• **Customer dissatisfaction** about **bus journey** due to **uncertainty** about bus schedule, arrivals etc.	• **Introduced online app** to provide info about bus schedules and Delhi, Gurugram STUs are providing live tracking of buses via APP ease pain points in bus journey
	• Issue with efficiency of operation due to higher fuel consumption over standard limit	• **Driving training** conducted to enhance driving techniques to improve fuel efficiency
Private	• **Increased difficulty in managing large size fleets** and handling drivers' workload over multiple different routes and **lack of transparency for owners** about ground level operations	• Use of **ITS** (intelligent transportation software) **to manage fleet operations** and **use analytics** to improve **asset utilization** and assign work orders remotely
	• Complaints from customers about **rash driving** and started **creating safety concerns for passengers on board**	• **Installed GPS tracking / speed governor** in the buses to track bus speed, **if found beyond acceptable** limits take actions on driver accordingly
	• **Decrease in ridership** due to increasing superior alternatives such as on-demand taxis, and rentals etc.	• **Diversification into multiple routes** or **partnering with private companies** to provide **bus services to their employees to work**
	• **Customer dissatisfaction about quality of buses** / condition of seats and **heavily overcrowding** buses than acceptable limit	• **Small fleet 1-5 bus owners** unable to operate buses above 50% occupancy for breakeven, so started **partnering with bus aggregators** to ensure **positive cashflows**
Aggregator	• **RTA ceases operations** of aggregator's **contract carriage buses within city limits**	• **Use pretext of customer pre-booking before boarding ride fall under definition of contract carriage** for bus operation
	• Issue with **utilization rate of buses**, as **utilization for 2 rides / day** and rest of the day being idle	• **Cost optimizing and revenue maximizing** with **focus on higher demand markets** and venturing into **bus rentals and corporate tie-ups**
	• **Higher focus on scaling rapidly** over **improving the network in existing cities** has caused some players like Zipgo, Limo to **cease operations**	• **Cityflo has focused in Mumbai market** only since 2015 and similarly **Easy commute focused majorly in Hyderabad market**
	• **Higher fare prices per ride** for buses run by aggregator player compared to local buses	• **Changing customer perception with ads** about **fare price (/Km) and value-added services offered** compared to traditional buses or metros
	• **Women passengers preference of other modes of travel due to safety concerns / issues** in buses	• Tackled safety issues **with SOS**, **physical panic button**, **CCTV** in buses and **Homecheck confirmation call**
	• **Connectivity to first / last mile** for **availing bus service** is causing an issue for many customers	• **Route optimization with connecting to major IPT** hubs for first / last mile connectivity

Overseas players like Grab Shuttle, Chariot have recently ceased operations due to some of the challenges mentioned above

Challenges intensity level: Low ○ ◔ ◑ ◕ ● High

Adoption in India: Low ○ ◔ ◑ ◕ ● High

Success of adopted initiative: Low ○ ◔ ◑ ◕ ● High

Source(s): Primary conversations (N = 11), Transport research wing, PGA Labs analysis

Various business models in the ecosystem supporting or enabling smoother intra-city and inter-city travel in bus

U Consist of many unorganized players along with organized players in this space

Online | Organized | Unorganized | Product | Service | Product + service

Source(s): PGA Labs analysis

Chalo & Ridlr are only transit apps providing online payment services but Chalo & few STU based apps provides live tacking & ride fare price details via app as well

Services provided	Private company – Transit apps				STU based transit apps		
	Google Maps	ridlr	moovit	CHALO	GMCBL	BEST प्रवास	One
Discover public transport routes (Bus / metro)	✓	✓	✓	✓	✓	✓	✓
Nearby bus stop	✓	✓	✓	✓	✓	✓	✓
Bus service timetable	✓	✓	✓	✓	✓	✓	✓
Live tracking	✗	✗	✗	✓	✓ Live tracking is limited to STU's undertaking cities	✓	✗ Will get live tracking feature in future
Ride fare price	✓	✓	✗	✓	✓	✓	✓
Online payment	✗	✓ (Online payment available only in Mumbai)	✗	✓ (Online payment available in 7 cities)	✓ (Currently provision for cashless transaction via transit card)	✓ (Currently provision via transit card)	✓ (Currently provision for cashless transaction via transit card)
Online monthly pass / subscription	✗		✗				
Online payment for single use	✗		✗				
Emergency alert	✗	✗	✗	✓	✗	✓	✓
# Cities in operation	Many cities	25 cities	8 cities	17 cities (launched) + 8 cities (Beta)	1 – Gurgaon	1 – Mumbai	1 – Delhi

✓ Service provided ✓ In only few cases ✗ Not applicable

Source(s): Company website, Apps, PGA Labs analysis

Chalo, the only stage carriage aggregator provide route discovery, online payment, live tracking whereas contract carriage aggregators provide seat booking services

Contract bus aggregator's services	Aggregators – Contract carriage buses			Aggregators – Stage carriage buses
	Shuttl	cityflo	easycommute	CHALO
Discover route / bus	✓	✓	✓	✓
Live tracking	✓	✓	✓	✓
Seat booking	✓	✓	✓	✗
Online payment	✓	✓	✓	✓
Online monthly pass / subscription	✓	✓	✓	✓
Online payment for single use	✓	✓	✓	✓
Reservation against cancellation	✗	✓ (Notify option only)	✗	✗
Cancellation period before pick up time	1 minute	10 minutes	1 hour	-
Refund of money if breakdown	✓	✓	✗	✗
Emergency alert	✓	✗	✓	✓
Buses to corporate enterprises	✓	✓	✗	✗
Buses for rentals	✓	✓	✗	✗
Cities in operation	6 cities	1 – Mumbai	3 cities	17 cities + 8 cities (beta)
Bus type (# seaters)	Mix of buses	Mix of buses	Mini / Mexi	STU buses

Zipgo used to provide waitlist booking

Operates majorly in Hyderabad

Sources: Company website, Apps, PGA Labs analysis

✓ Service provided ✓ In only few cases ✗ Not applicable

Latest technology in the intra-city ecosystem for enabling faster, smoother and transparent operations for fleet owners or providing better experience to customers

Asset management / product	Back end Operations	Route planning and timetable	Ticketing	CX
 Parking cameras / sensors		 Digital display board at bus stops with bus schedules	 Ticket vending machine	 Electronic handheld ticket machine	 CCTV for safety of customers
 Fleet / driver management software	 Fleet / driver management software	 Bus schedule info via app	 Live crowd tracker via app	 Online payments / booking via phone	 Wi-fi as a service	 Charging points
	 Intelligent transport system	 Information kiosk	 Live tracking of the bus via apps	 Cashless payment via smartcard	 RFID based payments	 Panic button in bus / app for safety

Available in India and rest of the world | Provided by private operators in India but also available rest of the world | International players but not in India

Source(s): Primary conversations (N = 11), PGA Labs analysis

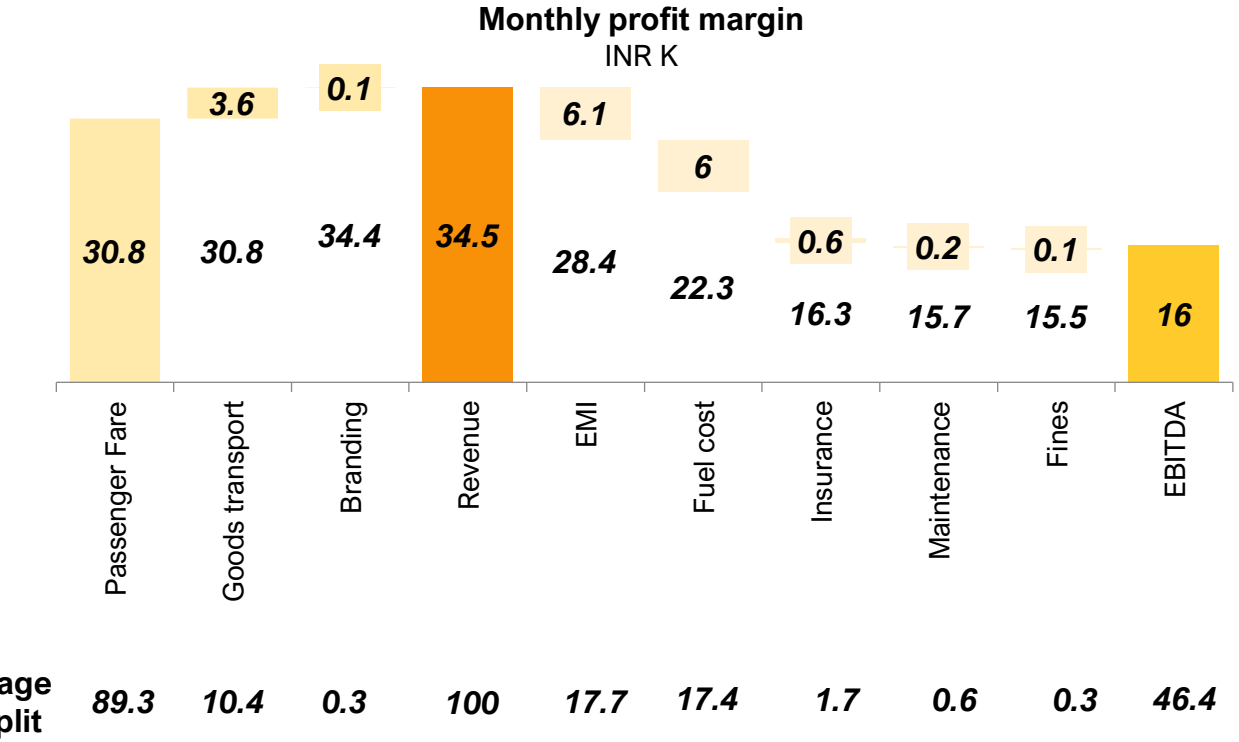
3W summary: 3W is a US$ 26B market in India with presence of a few scale players; Ola's electric auto projected expected to reduce costs and give segment a boost

Particulars		Details
Market size (FY19)	Auto	• US$ 19.1B (3-seater autos comprise 62% and 4-6 seater autos comprise 38% of the market revenue)
	Rickshaws	• US$ 6.9B (cycle rickshaws comprise 68% and e-rickshaws comprise 32% of the market revenue)
# vehicles (FY19)	Auto	• 4,435 (3-seater autos comprise 64% and 4-6 seater autos comprise 36% of the supply)
	Rickshaws	• 5,475 (cycle rickshaws comprise 86% and e-rickshaws comprise 14% of the supply)
Organized penetration (FY19)	Auto	• 3% of overall revenue (5% organized in 3-seater autos segment but 100% fragmented in 4-6 seater autos segment)
	Rickshaws	• 0.3% of overall revenue (1% organized in e-rickshaw segment but 100% fragmented in cycle rickshaw segment)
Market growth rate (FY16-19)	Auto	• 12%
	Rickshaws	• 13%
Key players and total funding		• *Jugnoo* (US$ 17M) • *Oye Rickshaw* (US$ 13.4M) • *SmartE* (US$ 21.6M) • *AutoWale* (US$ 500K)
Key operating models		• **Aggregator model:** On-demand auto-rickshaw taxi services given by companies with an aggregated fleet of autos. *Jugnoo* and *Oye Rickshaw* operate with this model. • **End-to-end supply chain model:** Self-designed and manufactured automobiles that can be booked through company's in-house tech platform. *SmartE* is a key scale player in the segment with *Ola* planning to launch by 2021 (having successfully piloted in Nagpur and Gurgaon)
Key innovations		• ***Ola's Mission: Electric* project** - Wants to launch ~10,000 electric rickshaws and autos with in-house manufacturing of vehicles and lithium-ion batteries by 2021 - In a pilot in Nagpur, electric autos under the project charge INR 0.5 / km as compared to INR 7.25 / km charged conventional Ola autos, thus reducing the running costs by more than half of CNG autos - Vehicles have roughly 1/10th the parts of a traditional vehicle with an internal combustion engine which reduces the costs of repair and maintenance and thus, the overall cost of ownership for an auto driver significantly - Project also includes a battery-as-a-service model with battery swapping kiosks and charges INR 200 for 3-4 battery swaps for an electric rickshaw. Reduced time spent at CNG gas stations potentially boosts run time of autos by 30-40%.

Source(s): Industry reports and press releases, Traxcn, PGA Labs analysis

A shared auto owner typically has a monthly profit margin of ~46%

Monthly EBITDA margin for shared auto owner is ~46%



Assumptions:
1-Unit economics calculation for a new Bajaj RE 3W purchased in 2019
2-Occupancy rates haven't been considered as drivers target daily income
3-Value of depreciation is not taken into consideration
4-Fuel costs have been kept the same for the three-year period
5- INR 500 premium reduction in insurance premium per year
6- Daily fare income has been increased @INR 50 per year for any expected increase in daily expenses

EBITDA for a shared auto owner is INR 251K after 1st year

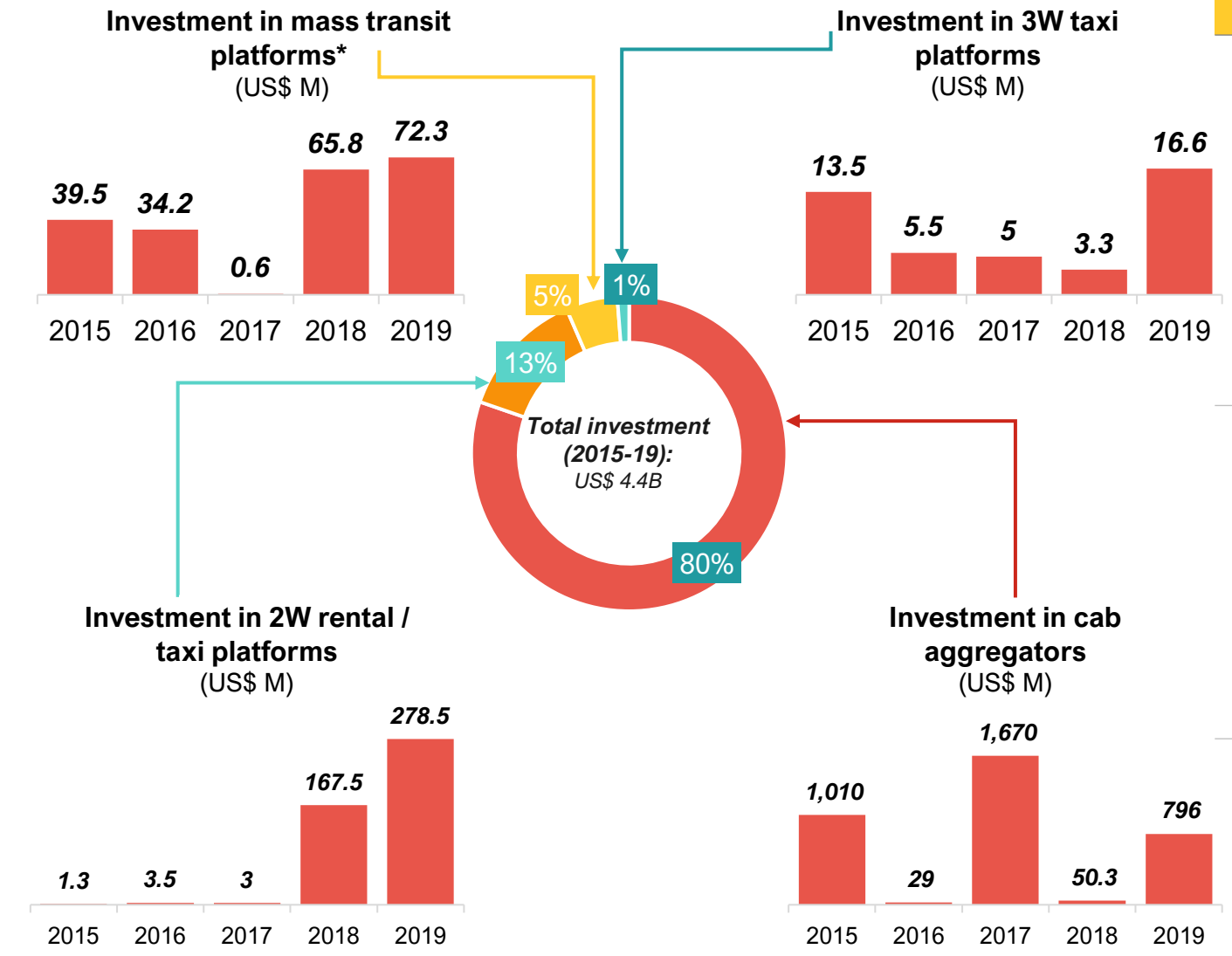
Annual profit ramp up of shared auto owner

(All figures in INR K)	Y0	Year 1	Year 2	Year 3
Weekday fare income	Earnings remain the same mostly as the passenger mix changes	374	406	437
Weekend fare income		115	120	125
Goods transport		3.6	3.6	3.6
Marketing income		1.2	1.2	1.2
Total Income		408	442	475
EMI payment (over 12 months)		73	73	73
Fuel costs		73	73	73
Insurance		7.0	6.5	6.0
Maintenance costs		2.4	3.6	6
Traffic fines		1.2	1.2	1.2
Total cost		157	158	159
EBITDA		251	284	316

Capital employed (in INR)	
Initial Deposit	INR 25K
EMI payments	INR 258K for 42 months period
Total capital employed	INR 281K

Source(s): Primary interviews (N=3), PGA Labs analysis

Shared mobility in India attracted a whopping US$ 4.4B in private equity funding during 2015-19 with electric mobility being the most important investment theme



Investment theme	Rationale
Electric mobility companies offering mobility-as-a-service	• On-demand e-vehicles rental / taxi segment in India has seen a significant **investment of US$ 385M during 2016-19** • Investment largely attributed to *Ola*'s *Electric* project (total funding US$ 308M till 2019) which seeks to develop a **full-stack EV solution by 2021** • Micro-mobility player *Yulu* (total funding of US$ 16.5M) a unique scale player in the segment which has captured investor interest at the back of its **low-cost hybrid vehicles and cluster / hub model**
2W rental / taxi startup trio of *Bounce – Vogo – Rapido*	• Both self-rentals and taxi segments in the 2W shared mobility market has seen heavy **consolidation in the last 2 years with *Vogo, Bounce* and *Rapido*** leading the segments respectively • *Bounce* received US$ 105M in Jan 2020, *Vogo* received US$ 100M in Dec 2018, and *Rapido* collected US$ 54M in Aug 2019 as these players **expand aggressively to tier-2 and tier-3 cities and experiment with newer operational models** to reduce costs
Ride pooling platforms for intra-city daily commute	• Investments in mass transit platforms in 2019 was **2x the amount in 2015**, an indication of increasing popularity of these apps **disrupting the state-sponsored mass transit systems** • Investments in the segment were led by office commute platform ***Shuttl*** **which has raised a total of US$ 105M during 2015-19**

Note(s): * Includes companies that facilitate both inter and intra city mass commute; data only for Indian market
Source(s): Industry reports and press releases, Traxcn, PGA Labs analysis

COVID-19 has already impacted demand of shared mobility companies significantly and likely to continue having serious implications for both players and consumers

Expected impact on demand	Q1 – FY21	Q2 – FY21	Q3 – FY21	Q4 – FY21	Q1 – FY22	Q2 – FY22	Q3 – FY22	Q4 – FY22
Travel, tourism, hospitality and mobility	⌄⌄	⌄⌄	⌄⌄	⌄	⌄	–	^	^

Overall macro impact

1. **GDP growth rate in India hit an 11 year low of 4.5%** during FY20 and outbreak can reduce the GDP growth rate by up to 1% for FY21
2. **25% of total workforce of 496M** in India is constituted by **casual labor and will be directly impacted** by the economic consequences of the COVID-19 lockdown

1 How has COVID-19 impacted demand of shared mobility services?

- Two-wheeler rental startups like ***Bounce*** **and** ***Yulu*** **have seen 40-50% dip in daily rides** across all cities, as of late March 2020
  - **Ola, Uber have also suspended operations across** all cities to comply with the government-mandated lockdown
  - **Travel to places of work have reduced by a significant ~47%**

2 What impact COVID-19 has had on employees of shared mobility companies?

- **~2M drivers** associated with ride aggregator like *Ola* are estimated to be **experiencing a complete loss of income** during lockdown
- ***Bounce*** **announced pay cuts** across the organization within the **range of 20-60%** and laid off **120 employees** in March 2020

3 What are the near-term implications of COVID-19 for key stakeholders in the market?

- Consumer demand crash will lead to **lowered revenue and stock prices** for players
- **Effusion of new capital for companies will be difficult** as investors become more conservative with capital
- **Consumer favorability will be compromised** to save burn in a hostile environment

"We at Bounce have announced salary cuts across the org other than those less than INR 3 lakhs p.a. The pay cut is graded based on salary. Needless to say, founders would take a 100% pay cut. This will give us run-way of beyond 30 months."

- Co-founder, Bounce

Source(s): Industry reports and press releases, PGA Labs analysis

Key implications and takeaways: Shared road mobility in India

- **Increasing vehicle density on roads** growing at a CAGR of ~6% with **41 vehicles per kilometer** in 2016 has made Indian cities among the most congested globally. This is amplified by **low usage of public transport** at mere ~5% of total trips and **85% of all commute occurring on road**.

- **Penetration of mass road transit** systems like buses in India**,** standing at **1.2 buses available per 1,000 people,** is quite lower than required and the situation is unlikely to change in near future

- **Buses** capture **largest market share** at **US$ 36B** across metro and tier-1 cities. **Private contract buses** are steadily **growing across state as well as private usage** boosted by presence and growth of **tech players** like **Shuttl, Chalo, Riddlr** etc.

- **Private buses dominate in terms of passenger rides** accounting for **85B of ~315B** i.e. **~36% of total passenger rides,** thus being the **most preferred mode of public transport** corresponding to **~4,456B passenger kms** i.e. **~2/3rd of total**

- In terms of passenger rides, **4-6 seater auto, rickshaws / e-rickshaws and maxi cabs are 100% unorganized** however all other segments are getting organized

- **Barring 2W taxi, regulatory framework for other modes of shared mobility is well-defined** and with **inherent tailwinds** in the market it makes possible for shared mobility to be a way of road transportation in the future

- **Penetration of online bookings is quite low** overall across segments accounting for **only 6%,** corresponding to about **2% in bus, 100% in cab aggregators, 5% in 3W auto-rickshaw and ~90% in 2-wheeler rental and taxi space**

- **4W taxi** market in India is largely **unorganized** with dominance of **Maxi cabs** and **private cabs**; popular aggregators like **Ola, Uber** and **Meru Cabs** capture market share of mere **~US$ 3.1B** in a **~US$ 19B** market

- **2W rental and taxis is a relatively small market valued at US$ 0.15B in FY19 but has grown rapidly in the last 3 years at 98% CAGR; ~70% market constituted by bike taxis with Rapido and Ola holding ~40% of the market**

Source(s): PGA Labs analysis

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We have a wide bouquet of deep business research skills and advanced analysis capabilities. Our research is unique, focusses on “What and Why” and our approach is holistic unlike a typical MR firm.

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Comparison of players across relevant parameters

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Company360: Company review
Detailed review of company’s details, strategy and operations

Competitor intelligence
Intelligence and analysis of a company’s tactics

Survey administration and management
Design, oversee, implement, analyze and present findings

Voice of the customer
Customer interviews and survey-based analysis

Web scraping and analytics
Scraping and analysis of public data

Process mapping and best practices
Enlist best practices

Connect with us - We will be happy to share perspectives

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