

# Understanding mobility and poverty linkages in Ahmedabad (India)

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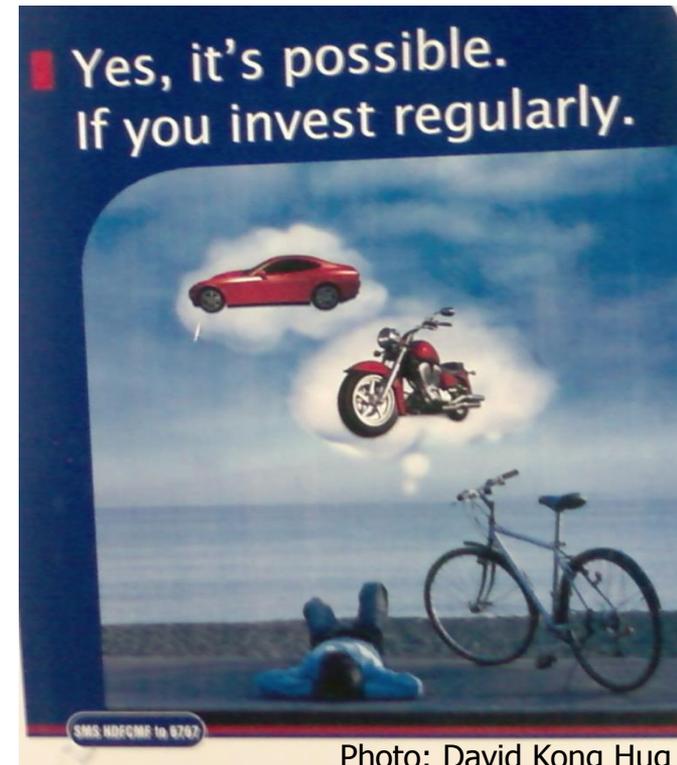


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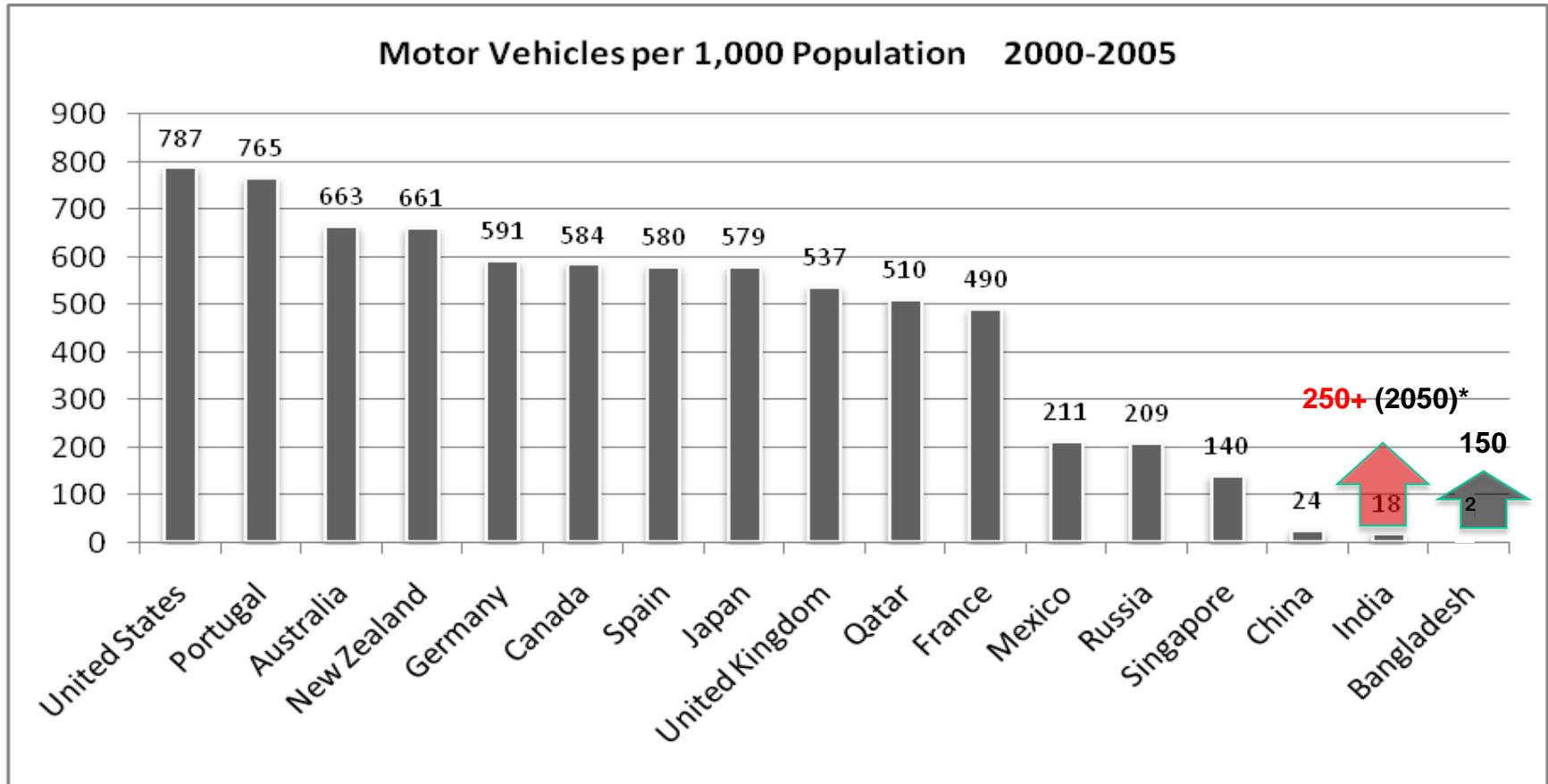


# Motorisation in developing countries

- Motorisation is a process of continuous increase in the number of motorised vehicles along with rising income levels fueled by rapid industrial-commercial activities.
- Political demand for wider roads, fly-overs, uninterrupted traffic flow from the cities. In addition, cheap automobile loans, free parking, demand of cheaper fuel etc.
- Motorisation should also be seen as a political constituency and a cultural phenomenon.



# Motor vehicles/ Population



Source: Population Reference Bureau: World Population Datasheet 2008

\* 2050 estimate is based on Chamon (2005) by IMF/Uni. of Virginia

# Poverty, informality, the Indian city

- Poor people – passive victims OR active agents of change?
  
- Slum dog urbanism (entrepreneurial spirit!) vs. Occupancy urbanism (Benjamin, 2008)
  
- Informality – from the top and the bottom
  - subversion of the formal
  - Informality not only flows from the bottom but also from the top!  
That's why India cannot plan its cities... (Roy, 2009)

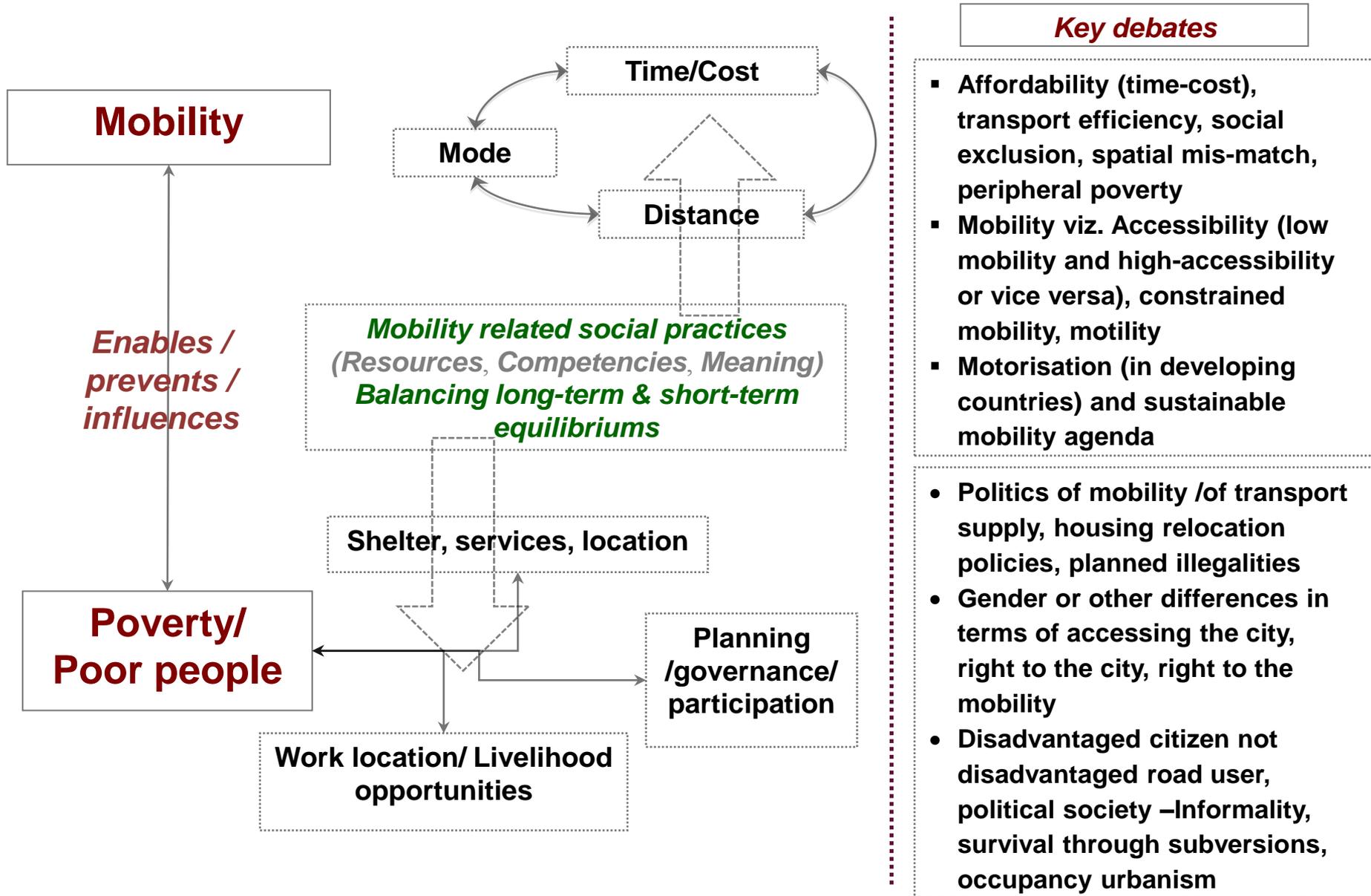
# Mobility and poor / low-income groups

- Vulnerable road users
  - Vulnerable as cyclists or pedestrians
  
- Disadvantaged commuter
  - North American literature... mainly car-less people in highly motorised society
  
- Disadvantaged citizen
  - The social exclusion/inclusion debate in Europe
  - Civil society viz. Political society – resistance and resilience
  - Do urban informalities provide for the scope of resilience and resistance to the poor people?

# Conceptualising 'mobility practices'

- Mobility practices = mobility related social practices (shove, 2011)
  - Routinised
  - Everyday
  - Linked to the social-community network
  
- Mobility practices = travel choices + mobility choices
  - short term + long term
  - Mode, purpose, cost + residential & job location
  - Understanding the 'choice'
  
- Practices based thinking vs. system-based thinking!
  - Do systems take in account the actual practices or are they pre-supposed idea of ideal systems and how they are supposed to function?

# Conceptual model of mobility related social practices to understand mobility – poverty nexus



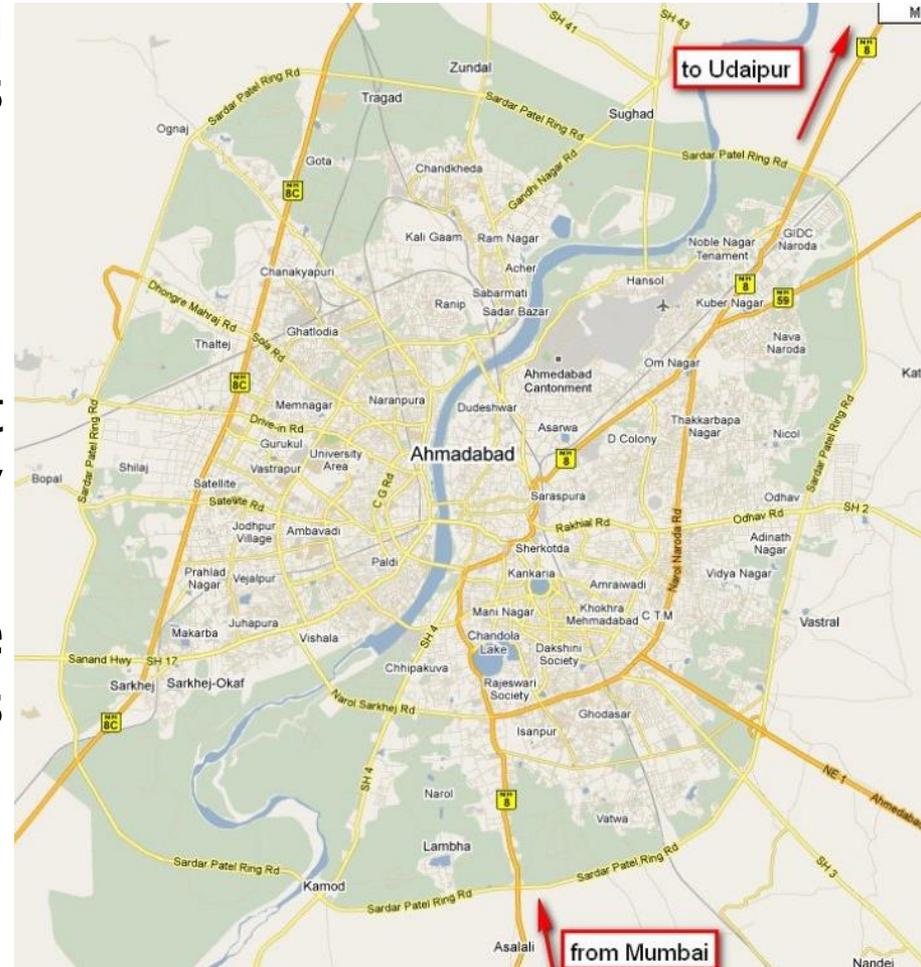
# **Research Questions & Data analysis**

# Research Questions

- 1. How do poor people in the large developing cities negotiate their transport opportunities and mobility practices?**
  - a. What are the mobility patterns of the urban poor?
  - b. How are those patterns negotiated by different sub-groups within the poor based on e.g. gender or varying locations in a city?
  
- 2. What do the policies related to poverty alleviation and sustainable mobility learn from the mobility of the urban poor in the specific context?**
  - a. To what extent does the city's transport infrastructure and planning facilitate the mobility/accessibility of the poor?
  - b. How do the mobility related negotiations influence the aspects of moving out of poverty and how can it be supported by the urban policies?

# AHMEDABAD

- 7<sup>th</sup> largest urban agglomeration at 7.5 millions (5.5 millions municipal population)
- Area: 490 sq kms
- 1.4 millions vehicles growing at the rate of 0.1 million every year.
- Almost 1 million passengers use buses (0.86 m municipal buses + 0.14 m BRT)
- Avg trip length 5.8 kms.
- 61% affected modes in fatal accidents are pedestrians and cyclists



# Bus Rapid Transit (BRT)

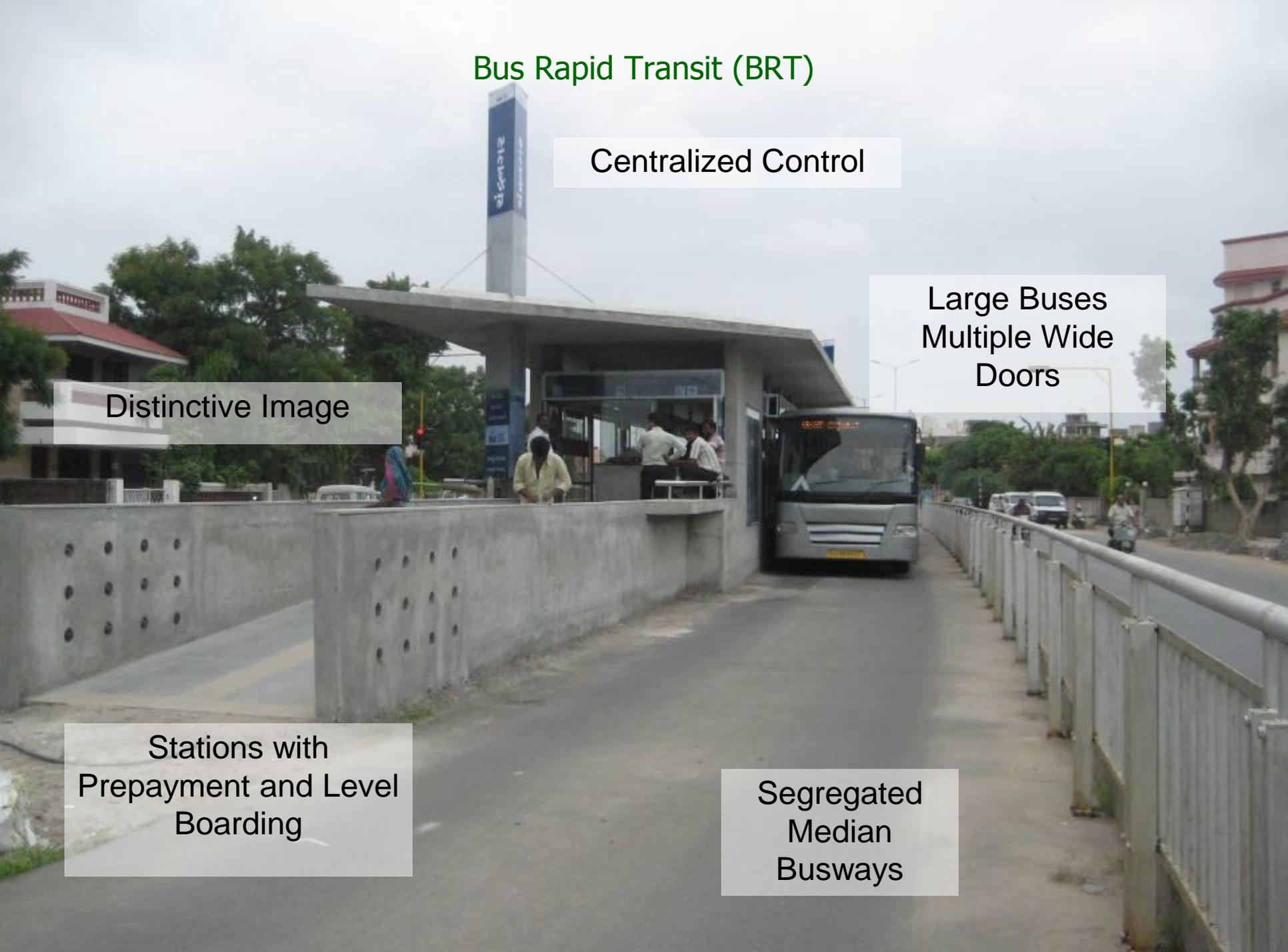
Centralized Control

Large Buses  
Multiple Wide  
Doors

Distinctive Image

Stations with  
Prepayment and Level  
Boarding

Segregated  
Median  
Busways



# BRT Ahmedabad/India

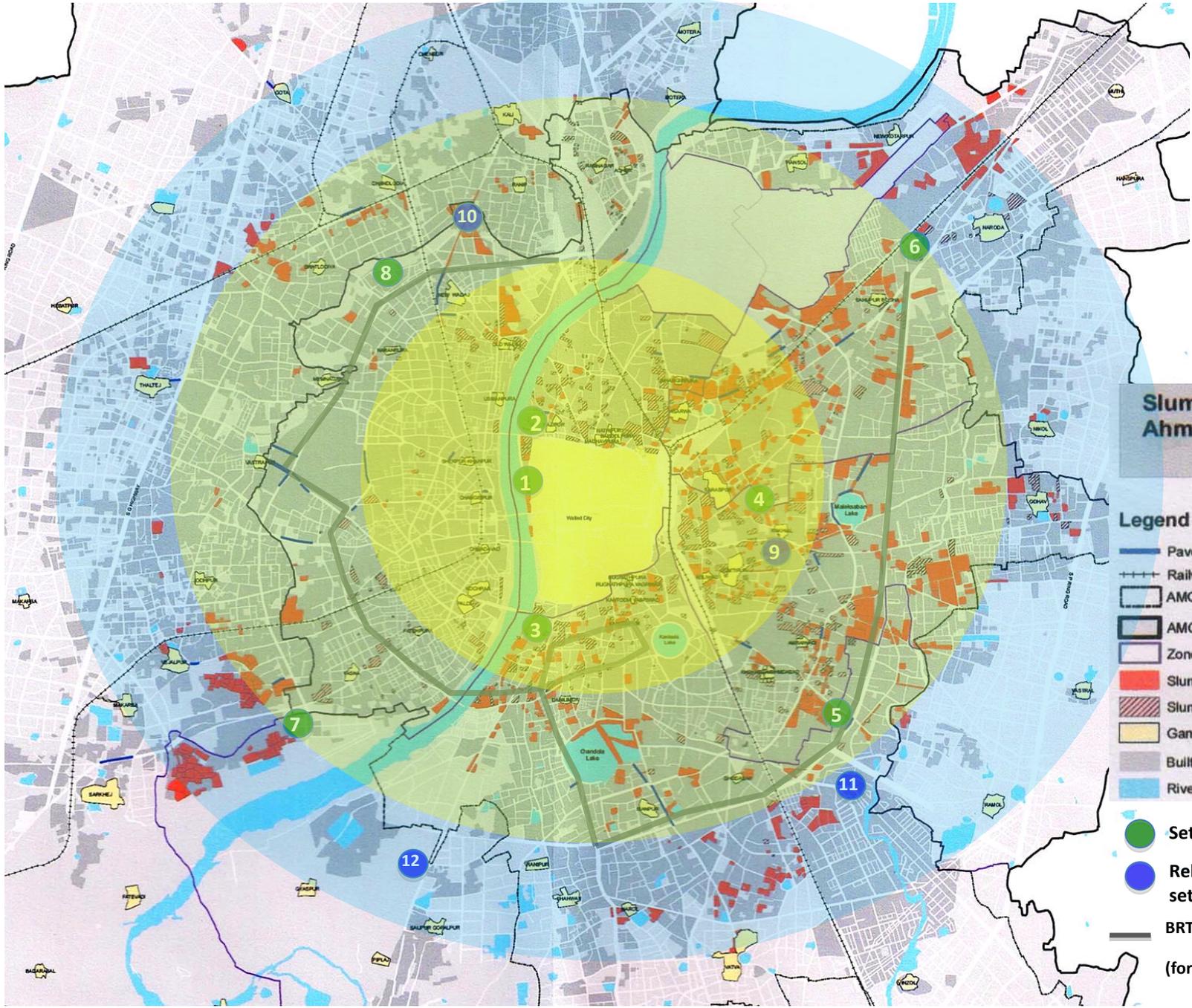


**JANMARG : BUS STOP DESIGNS (NEW AND OLD CITY), BIRDS EYE VIEW, INTERIORS**

### Slums and Chawls in Ahmedabad City

#### Legend

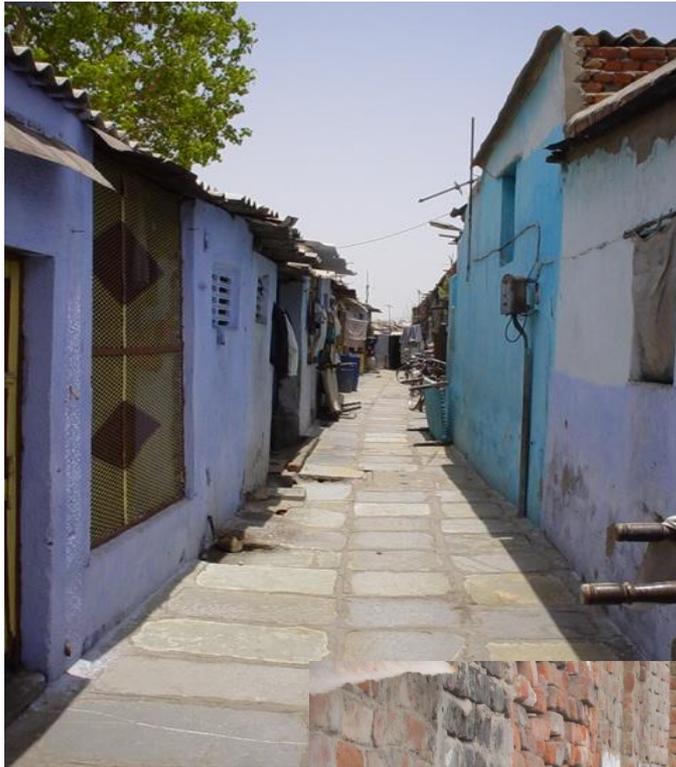
-  Pavement Dwellers
-  Railway Line
-  AMC Limit Before Expansion - 2006
-  AMC Limit After Expansion - 2006
-  Zone Boundary
-  Slums and Chawls - 2011
-  Slums and Chawls - 2000
-  GamtaI and Walled city
-  Built up Area within AMC
-  River and Lakes
-  Settlements studied
-  Rehabilitation settlements studied
-  BRT Route
- (for reference only)



# Quantitative Sampling

	Name of Major Settlements surveyed	Slum settlement type/ location	Ward	Zone	No of Hh in settlement	Sample surveyed
<b>Core City Slums</b>						
1	Municipal quarters	Central core	Shahpur	Central	310	29
2	Khanpur darwaja	Central core	Khanpur	Central	500	47
3	Baba Lavlavi Nagar, Ramji mandirni chali	Southern Core city	Baherampura	South	750	64
4	Lalluramni chali, Damodarni chali	Eastern Core city	Rakhial	East	1097	98
					<b>Total</b>	<b>238</b>
<b>Periphery slums</b>						
5	Hanuman Nagar, CTM	Industrial suburban South-Eastern Periphery	Bagefirdos	South	320	29
6	Santoshinagarna chhapara	Industrial suburban Northern Periphery	Naroda-muthiya	North	1040	52
7	Yogeshwar nagar-1	Western periphery	Vasana	West	450	29
8	Sanjay Nagar Na Chhapara	Western intermediate	Naranpura	West	975	59
					<b>Total</b>	<b>169</b>
<b>Relocation-Resettlement sites</b>						
9	Ajit Mill Ni Chali , Rakhial	Core city Rehabilitation	Rakhial	East	704	30
10	Balol Nagar BSUP	Western Rehabilitation	Near Akbar Nagar	West	640	35
11	BSUP Housing, Trikampura	Eastern Rehabilitation	Jasodanagar	South east	672	54
12	Ganesh Nagar, Piplaj	Temporary rehabilitation site (south)	Piplaj	South	600	54
					<b>Total</b>	<b>173</b>
					<b>Grand Total</b>	<b>580</b>

# Core/periphery city slums



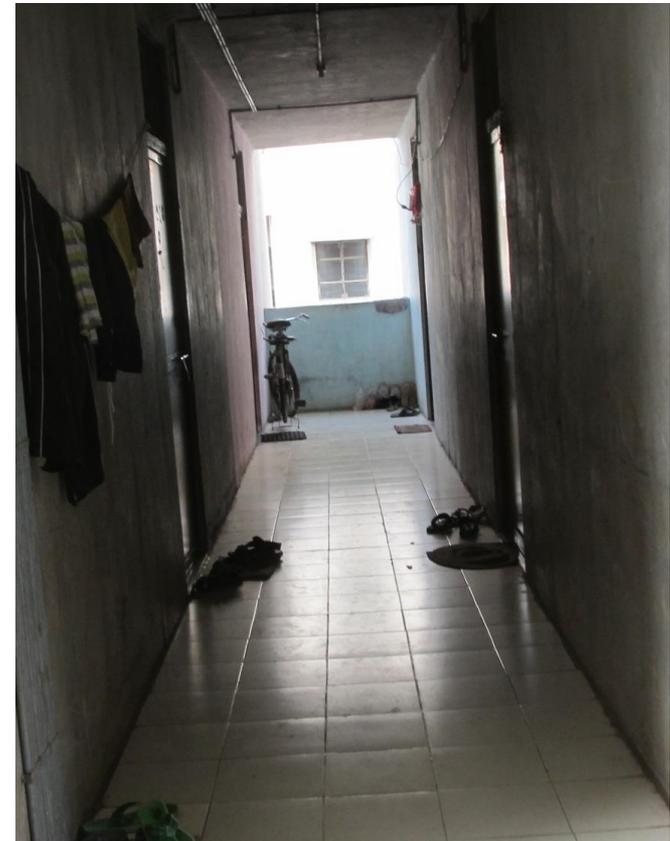
# Peripheral slums



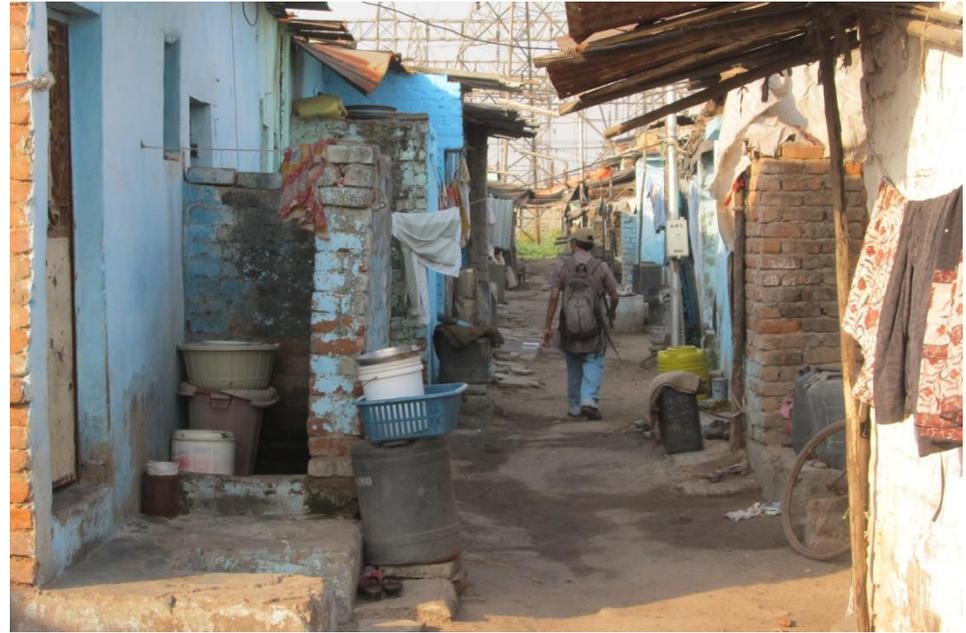
# Resettlement Colonies



**Basic services for the urban poor?**



# H/h surveys in progress



# Sample description

- 580 households, 3002 people – H/h size of 5.2
- Sex ratio 853 (females/1000 males)
  - National avg 926 (2001)
- 73.2% literacy rate (read and write).
- 39.9% regular employment (salaried), 29.7% self-employed, 30.5% casual labour (daily wage)
- average monthly household income is Rs. 6,049 (Ahm city avg Rs 8728) - 85% of sample would fall under official poverty line of 32 Rs/capita/month
- 3,419 trips - 1253 by females and 2166 by males

Age group	% of sample
<b>Female</b>	<b>46.5</b>
Upto 14	13.0
15-40	24.8
41-59	6.6
60 & above	2.1
<b>Male</b>	<b>53.5</b>
Upto 14	15.6
15-40	27.8
41-59	7.1
60 & above	3.0
<b>Total</b>	<b>100.0</b>

# Mode usage (%)

Sex	Mode Share (after distributing multi-modal trips) (%)								
	Walking	Cycle	Hand cart/ paddle rickshaw	Public bus	BRT	Shared auto rickshaw	Auto Rickshaw	M2W	Grand Total
Female	65	2	1	10	0	18	3	1	100
Male	34	22	3	13	1	18	4	6	100
Over all	45	15	2	12	0	18	4	4	100
	Non-motorized modes = 62			Public modes = 34				Private modes = 4	100

# Mode/Trip distances (%)

All trips	Walking	Cycle	Public bus	Shared auto rickshaw	BRT	M2W	Auto rick.	Average trip length
Female	1.36	2.90	5.24	4.77	1.50	6.88	3.39	2.88
Male	1.35	4.86	9.34	6.12	4.75	7.07	5.96	5.10
Overall	1.36	4.77	8.14	5.70	4.39	7.06	5.24	4.35

# Trip expenses

Sex	Expense per trip (in Rs.)						
	Nil	01-05	06-10	11-15	16-20	20+	Grand Total
Female	<b>63</b>	17	13	3	1	2	100
Male	<b>54</b>	15	17	5	2	6	100
Over all	<b>58</b>	16	15	5	2	4	100

# Trip expenses

Sex	Expense per trip (in Rs.)						Grand Total
	Nil	01-05	06-10	11-15	16-20	20+	
Female	<b>63</b>	17	13	3	1	2	100
Male	<b>54</b>	15	17	5	2	6	100
Over all	<b>58</b>	16	15	5	2	4	100

# Why should it cost?

- *'There is no need to pay for coming and going, there is no need to spend money on that...'* (Female, 32, house maid)
  - The word 'coming and going' is widely used for transport
  
- *'I do get shuttle (on my route) but I don't take it. It will take me 10 Rs to go to work, but why would I? (If I spend money like this then) what is the point of making ends meet by working?'* (Female, 37, factory worker)
  - 'Shuttle' is a word used for shared auto rickshaw (with 3 or 6 seats) service in Ahmedabad.

# Challenges - walking/cycling

*' I get very tired, I have to walk fast...my legs pain but how do one do this otherwise? If one thinks to spend some money on it (transport)... it wastes lot of time waiting (for the vehicles).'*

(Female, 37)



Photo: Carlos F. Pardo



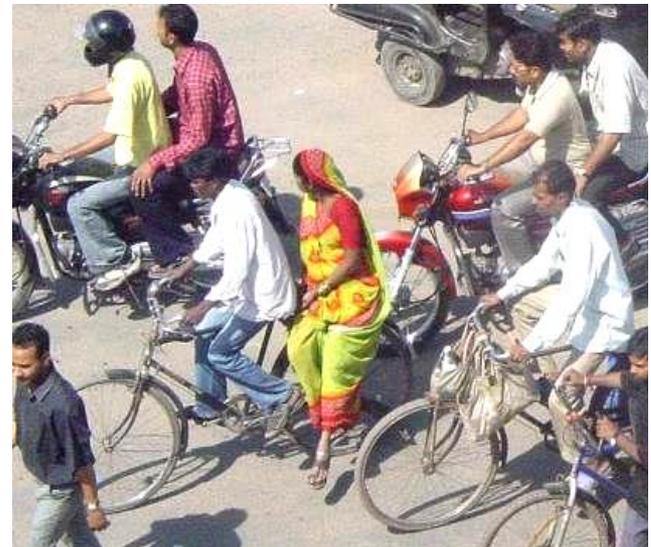
**Photos:  
Murali H R**

# Informal job junctions + cycles on rent

*"See, generally work is nearby. If it is far like 10-15 kms and the contractor feels that coming on cycle would delay the work, he would ask to leave the cycle and come in a rickshaw and also pay the expenses. Otherwise, **cycle is always there**".*

(Male, 28)

Construction worker (daily wage)



# Modal split by locations

	Walking	Cycle	Hand Cart/ Paddle Rickshaw	Municipal bus	Shared Auto Rickshaw	BRT	M2W	Auto Rick.	Total
<b>Core City Slums</b>									
Female	66	3	1	10	16	0	1	3	100
Male	40	26	6	8	12	0	6	2	100
<b>Over all</b>	<b>50</b>	<b>17</b>	<b>4</b>	<b>9</b>	<b>14</b>	<b>0</b>	<b>4</b>	<b>2</b>	<b>100</b>
<b>Peripheral Slums</b>									
Female	77	1	0	6	12	1	1	2	100
Male	33	21	1	15	17	2	4	7	100
<b>Over all</b>	<b>48</b>	<b>14</b>	<b>0</b>	<b>12</b>	<b>16</b>	<b>1</b>	<b>3</b>	<b>5</b>	<b>100</b>
<b>Resettlement Sites</b>									
Female	52	2	1	13	27	0	1	4	100
Male	22	17	1	20	27	0	8	4	100
<b>Over all</b>	<b>34</b>	<b>11</b>	<b>1</b>	<b>17</b>	<b>27</b>	<b>0</b>	<b>5</b>	<b>4</b>	<b>100</b>

# Mode wise trip distance/locations

Trips <4 days/ week	Walking	Cycle	Hand Cart/ Paddle Rickshaw	Municipal Bus	Shared Auto Rickshaw	BRTS	M2W	Auto Rick.
All settlements								
Female	1.4	2.9	3.3	5.2	4.8	1.5	6.9	3.4
Male	1.4	4.9	5.1	9.3	6.1	4.8	7.1	6.0
<b>Overall</b>	<b>1.4</b>	<b>4.8</b>	<b>4.8</b>	<b>8.1</b>	<b>5.7</b>	<b>4.4</b>	<b>7.1</b>	<b>5.2</b>
Resettlement Sites								
Female	1.1	2.8	2.0	6.6	6.5	0.0	10.0	4.3
Male	1.5	8.0	5.5	10.8	7.5	0.0	10.3	4.9
<b>Overall</b>	<b>1.3</b>	<b>7.6</b>	<b>4.3</b>	<b>9.5</b>	<b>7.2</b>	<b>0.0</b>	<b>10.3</b>	<b>4.7</b>

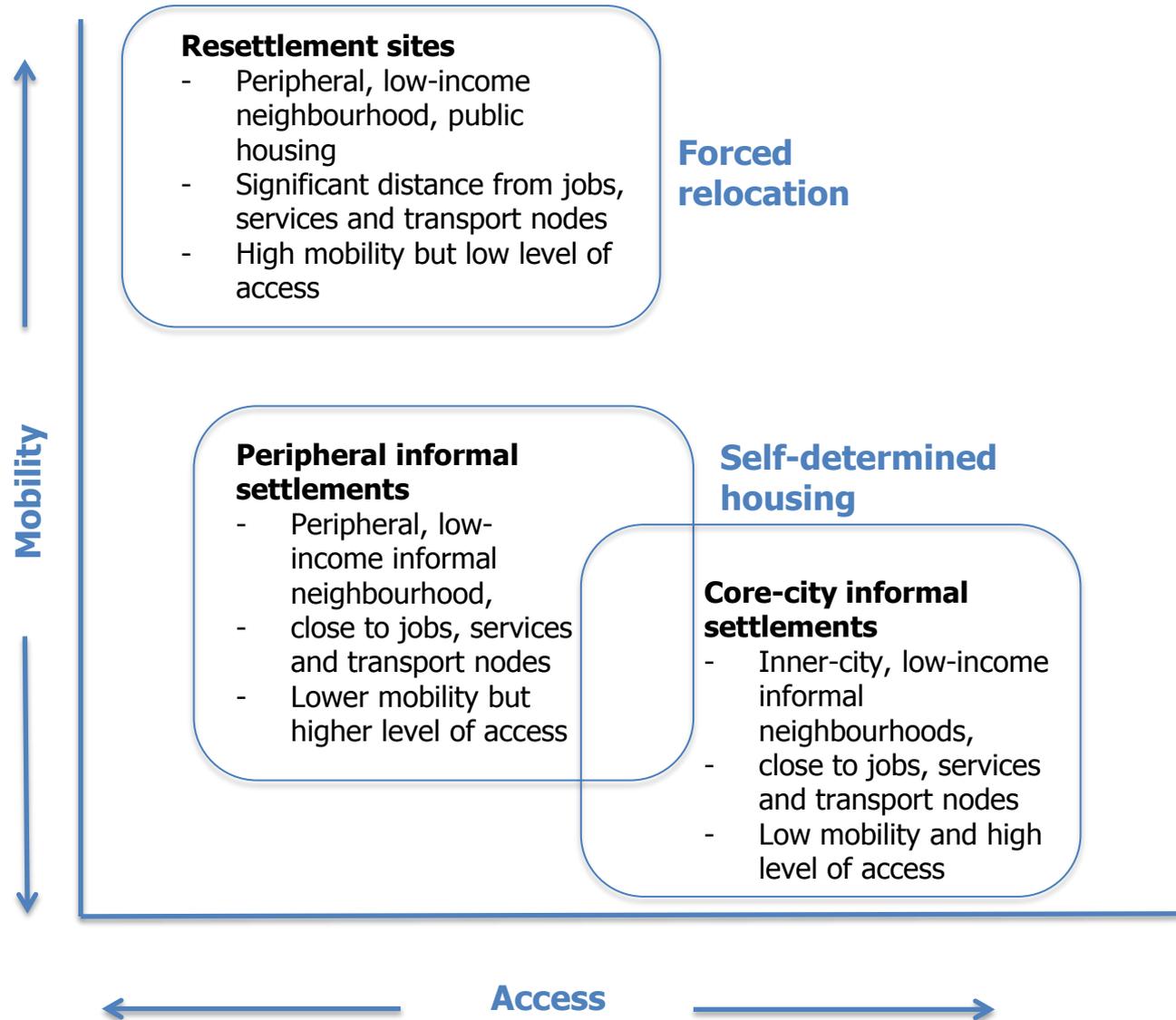
# Life in resettlement colonies

“Mostly there is a difference in everyone’s life. Some people’s situation is very bad. Because earlier we never paid any fares for coming and going, we just lived there. Now there is an additional expense of 1000 Rs for everyone. One third part of the incomes goes waste like this.”

(Male, 39) from the resettlement colonies



# Conceptual diagram of access, mobility and residential location



# Major findings...qualitative

- Social practices around low affordability
  - Continue to walk or cycle in spite all odds
  - There are lot of people being stuck in the same situation for a long time with no way-out visible
  - Vulnerabilities of being a marginalised road user
  
- Informality helps to survival – informal transport, housing – Opportunity for slumming

# Mobility linked social practices

## Resources (Constraints)

- **Transport cost**
- **Private Vehicle access**
- **Public transport access**
- **Limited Livelihood options**

## Competencies

- **Social barriers – gender**
- **Spatial barriers – location**
- **Information barriers – timings, routes, fares**
- **Political barriers – demanding or negotiating for better governance**

## Meaning

- **Saving is a virtue (I save money on transport!)**
- **Cycling is freedom, Walking is easy - Mode-linked perceptions**
- **Grievances against municipal buses**
- **Its not all the same like before**

# Conclusion

- **Achieving shelter – livelihood – mobility balance**
  
- **Socially exclusion?**
  
- **Mobility paradox of moving out of poverty**
  - the tension between being the non-motorised poor vs. the motorised poor
  - Being motorised is a way out but there are advantages or constraints in each category
  
- **Motorisation and new infrastructure**
  - The process of motorisation and how it impacts the society
  - Access of formal transport system and politics of transport infrastructure

# Energy and Equity

*"...equity and energy can grow concurrently only to a point. Below a threshold of per capita wattage, motors [transportation] improve the conditions for social progress. Above this threshold, energy [use] grows at the expense of equity."*

- Ivan Illich, 'Energy and Equity', 1973.



**Thank You**