

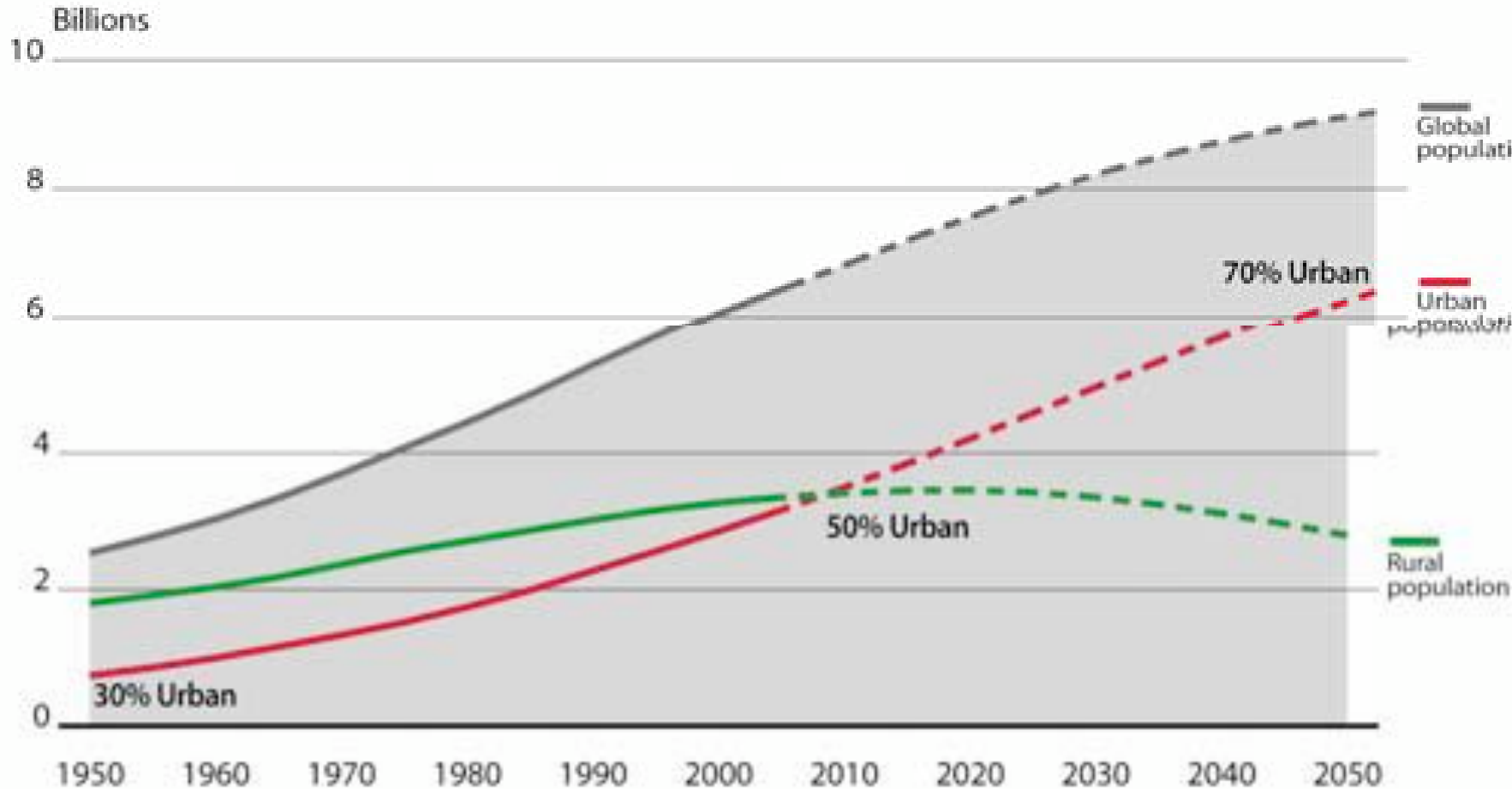
Mobility and urban planning for 21st century:  
learnings from self-organising informal settlements  
in cities

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Club of Vienna, 22 October, 2015

# Urban and rural evolution of global population



# 21<sup>st</sup> Century Urbanisation

- the informal sector is providing most of the new employment and housing in environments that have come to be known as informal settlements, where more than half of the population in many cities and towns of developing countries are currently living and working (UNHABITAT 2003)
- A large number of dwellers of informal settlements are poor and earn their living from informal sector, located within or outside their settlements, and often, extending the services to the rest of the city (UNHABITAT 2003).

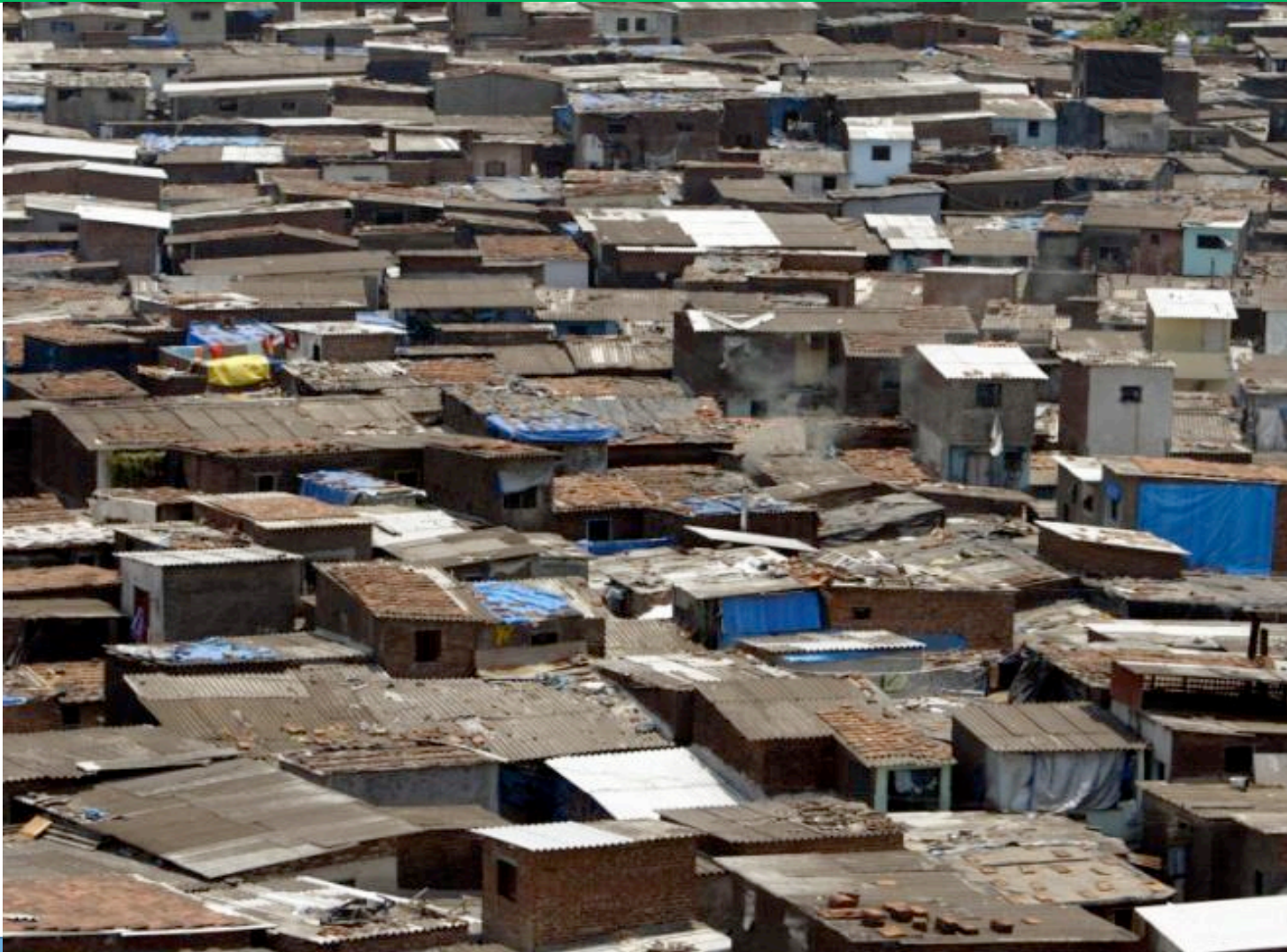
# 21<sup>st</sup> Century Urbanisation

- Accessibility to employment is the right of every citizen and providing this to all is one of the most important criteria of urban planning.
- urban poor face the problems of access in terms of long travel times in unsafe and inconvenient environment.
- many of the urban poor retain fair level of access, in spite of their disadvantaged mobility, by residing close to employment and other income generating opportunities, even if it means living in precarious sites that are rife with problems of security of tenure (Barter 2002).

# informal settlement in Africa-capetown



# informal settlement in Asia- Mumbai



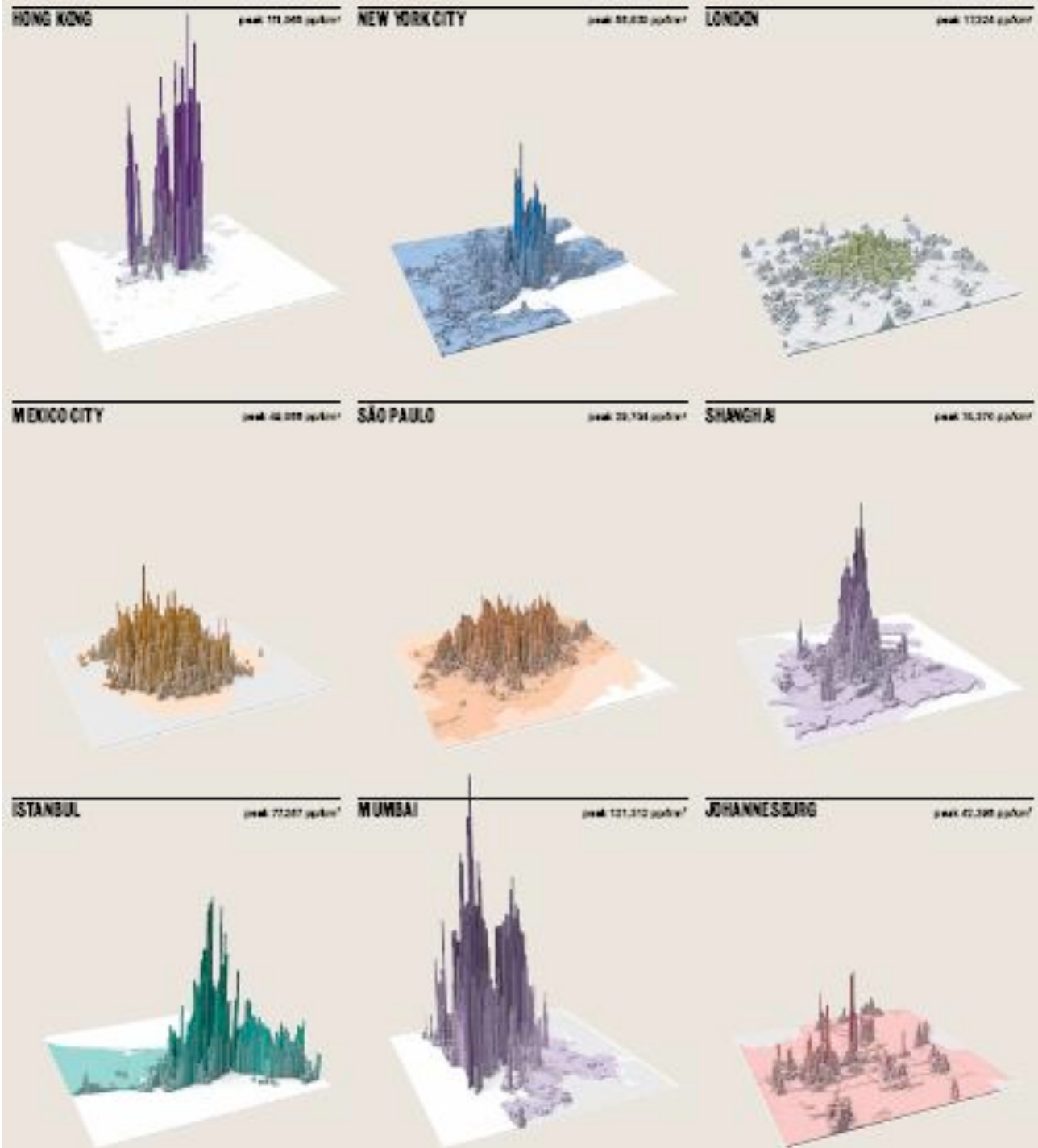
# Informal settlement in Latin America- Bogota



# Where people live

Mature cities :  
high rise density

Growing cities  
low rise densities





# Low rise highdensity



# Transport and Equity: *Access*

- Can transport provide access to livelihood in socially exclusive patterns? (opportunities for informal livelihoods as well) *Subsidized transport cannot solve time poverty*

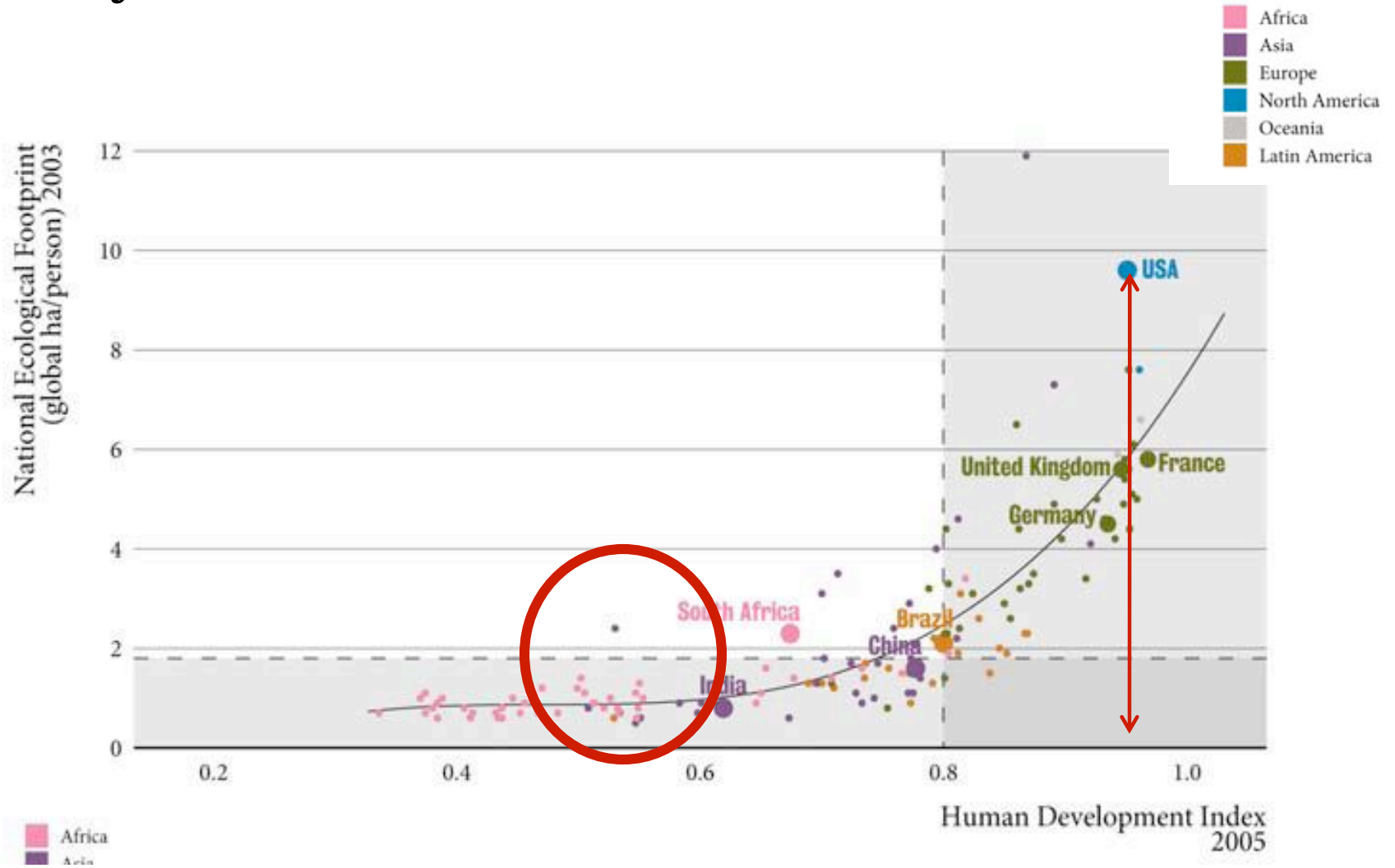


Vision 'safe and efficient Transport System'

Often focus area includes rail and road links and TDM measures

Needs of captive pedestrians, minibus users, public transport users?

# Ecological Footprints & Human Development Index by country : Source LSE



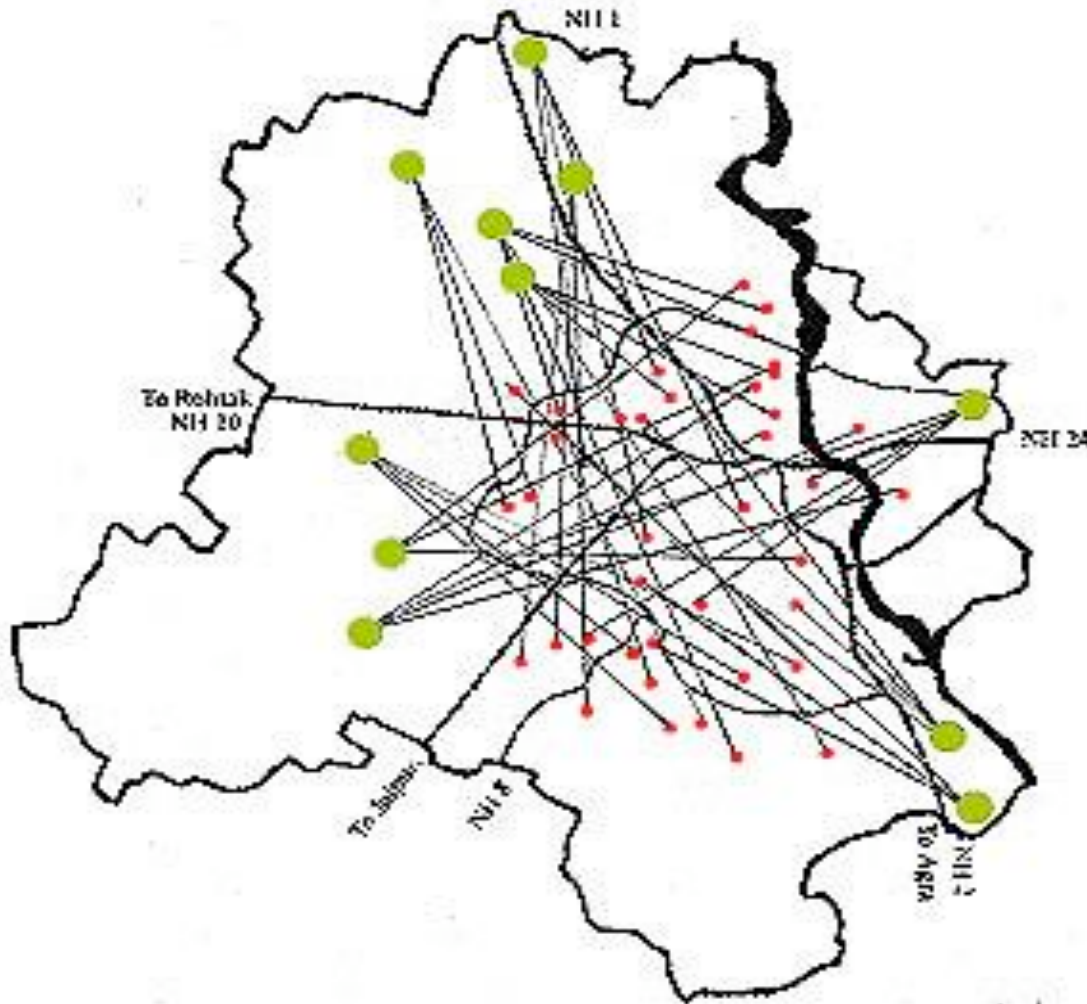
# Characteristics of Informal settlements

- **Self organized, organic growth, outside the formal process**
- **Lack of formal services(water, sewage, electricity)**
- **Poor quality housing**

**Density, Diversity, human scale**

**Location(access to employment)**

# Location of informal settlements self planned - ● vs expert planned- ●

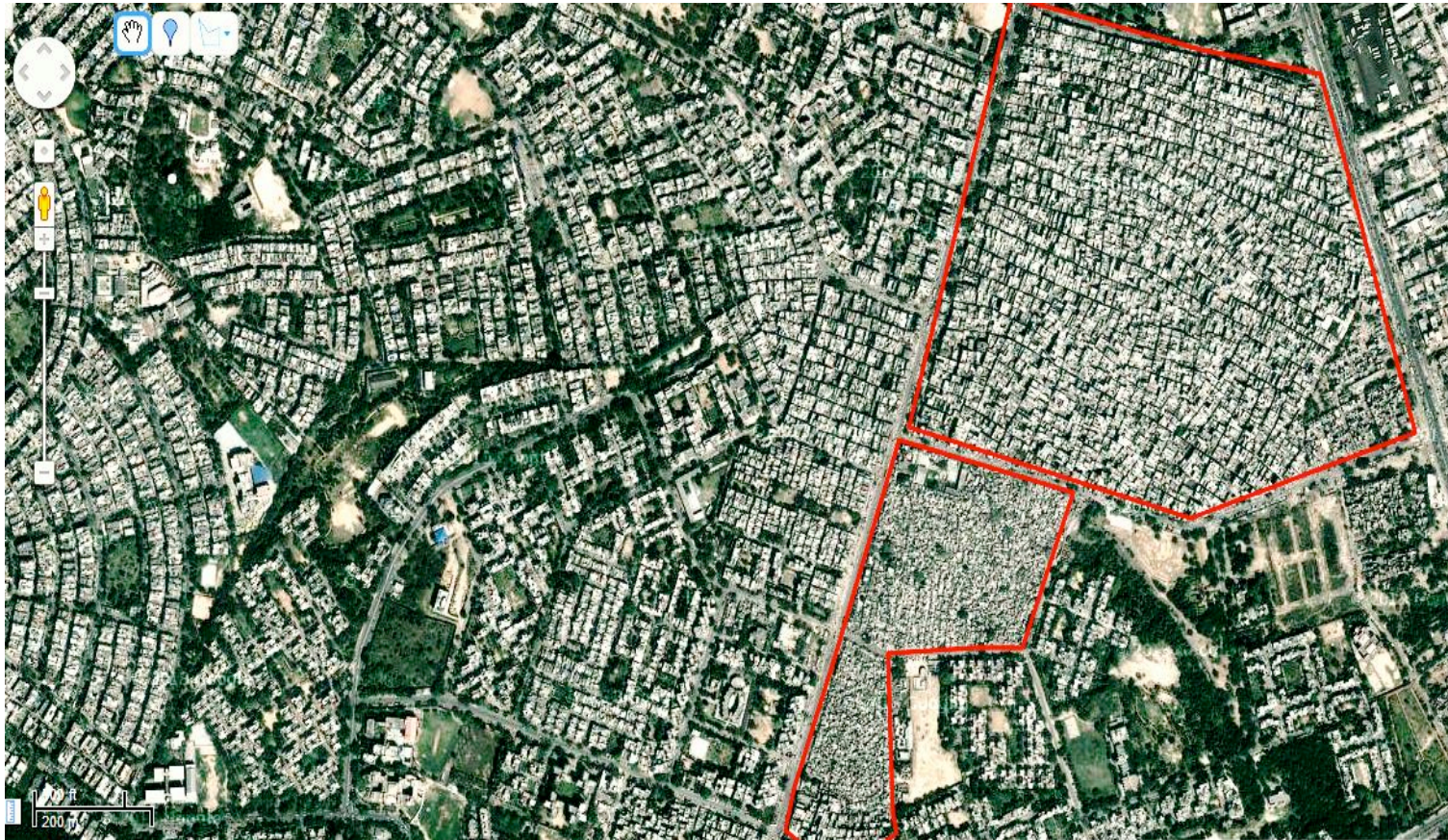


Informal settlements relocated by planners in Delhi 2001-2006 15-20 kms away from the original location

# Informal settlements density vs planned density



Contiguous development of low-density, high income and high-density, low-income colonies (enclosed within red boundary) in southern part of Delhi





Landuse policy can influence the following dimensions to influence urban air pollution (Gwilliam, Kojma. Johnson, 2004):

- **Density** : *policy that increases or maintains the population density*
- **Structure** : *policies that favour the concentration of employment and retail activity*
- **Diversity**: *traditional separation of landuses has become a net source of airpollution*
- **Local Design**: *Cities can reduce pollution from short car trips by good design of local facilities for nonmotorized transport*

**These address the 'formal'/'planned' sector in cities.**

**30%-70% urban population remains outside this discussion.**

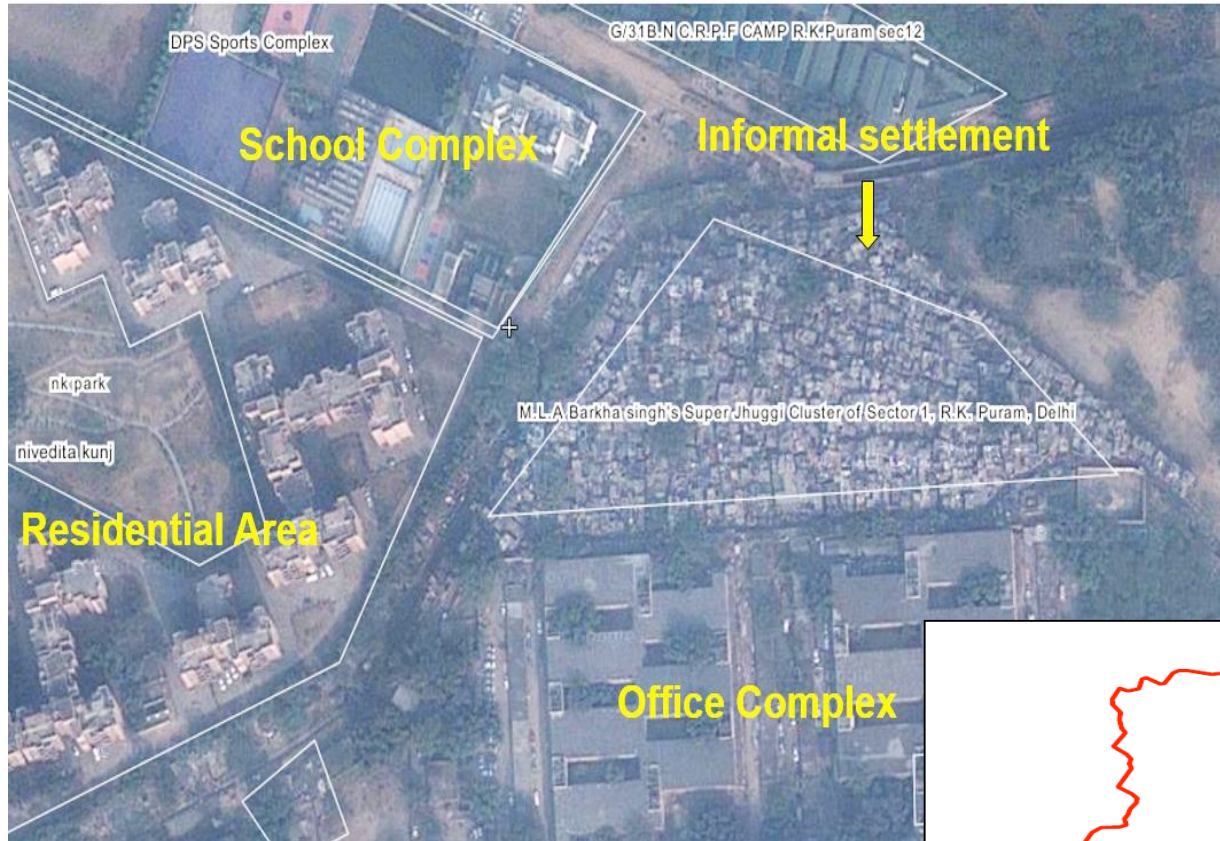




## Landuse –transport integration for 'unplanned' sector implies:

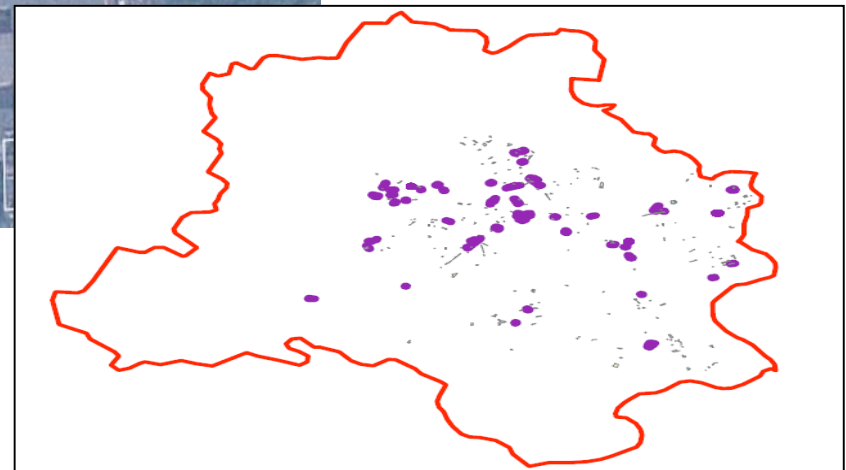
- **Density** : High rise buildings vs small houses (12-18sqm)
- **Structure** :Monocentric/polycentric vs street vendors
- **Diversity**:mixed landuse vs informal markets
- **Local Design**: short car trips vs walking/bicycling trips

# Travel patterns, activity patterns and mode choice

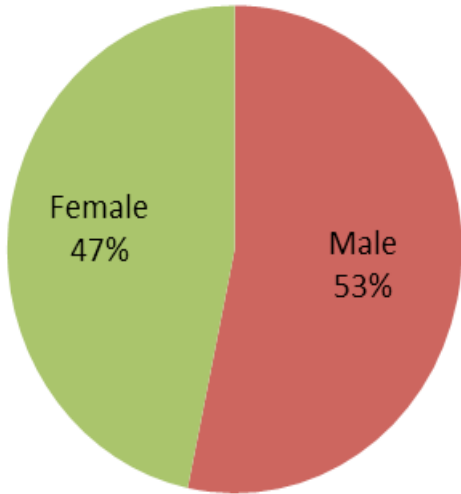


Pedestrian streets  
vs streets covered  
by parked cars

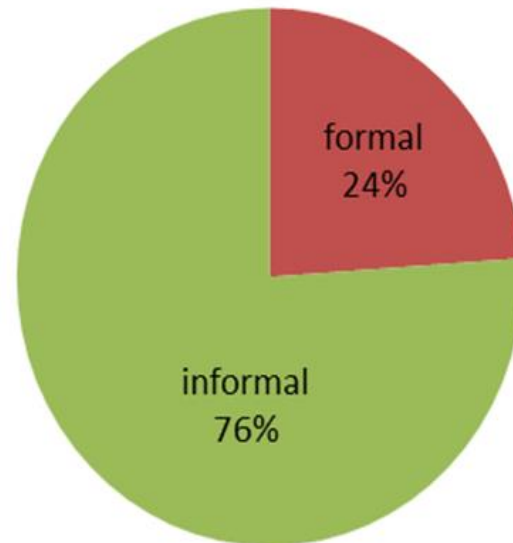
Common social activities, 50%  
residents know 25% of the  
people living in their  
settlements



## POPULATION BY GENDER

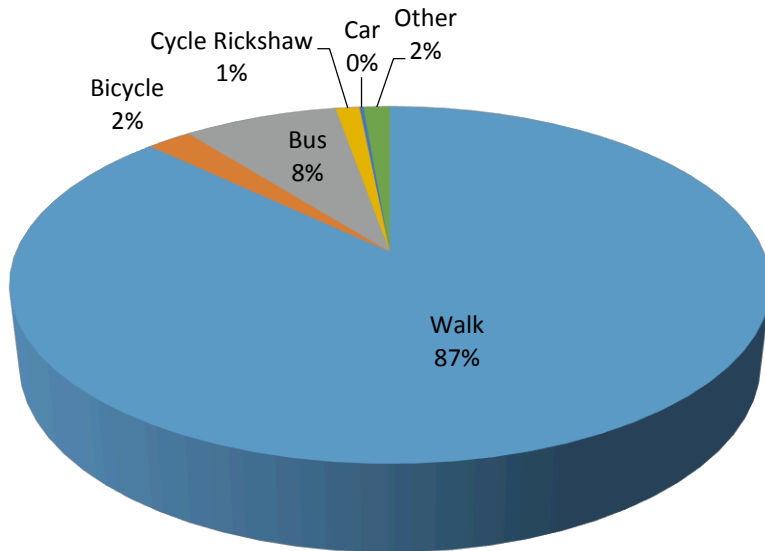


## NATURE OF EMPLOYMENT



# Travel patterns of Urban poor

Delhi low income households(2011), Employed and Unemployed

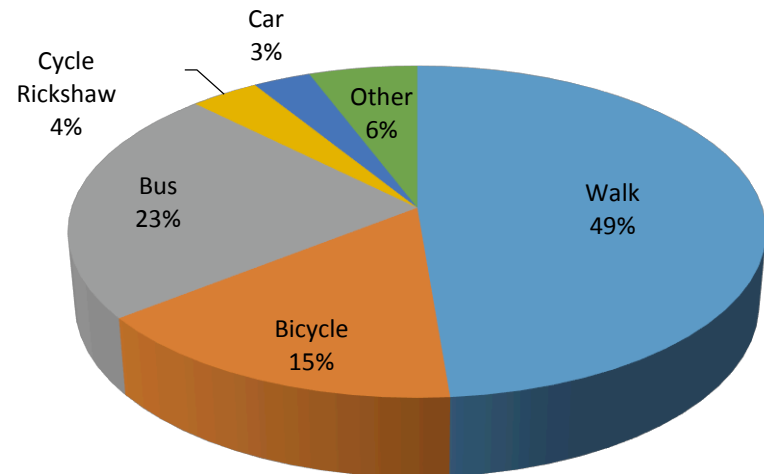


Unemployed persons

Walk 87%

Bus 8%

Bicycle 2%



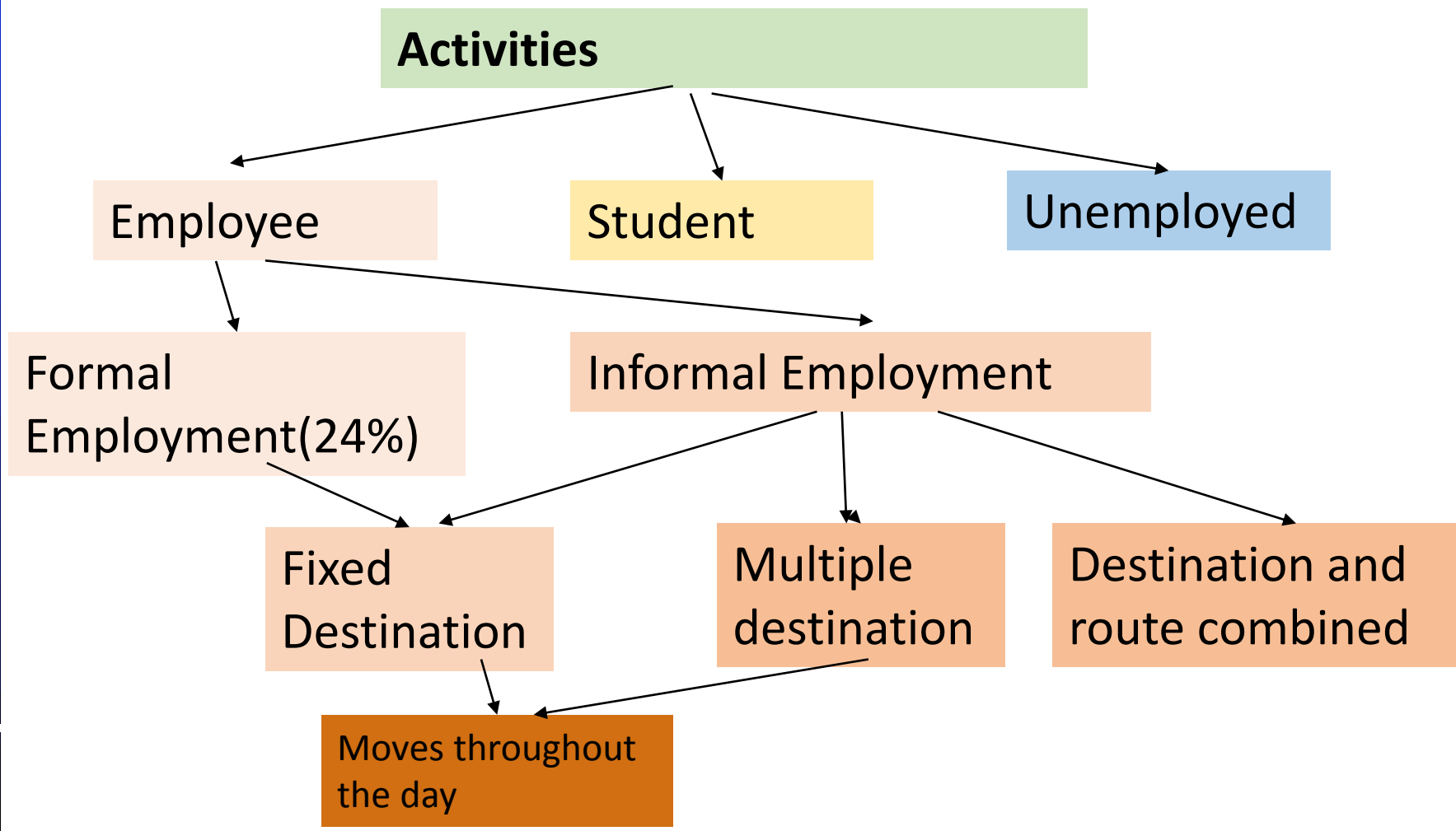
Employed persons

Walk 49%

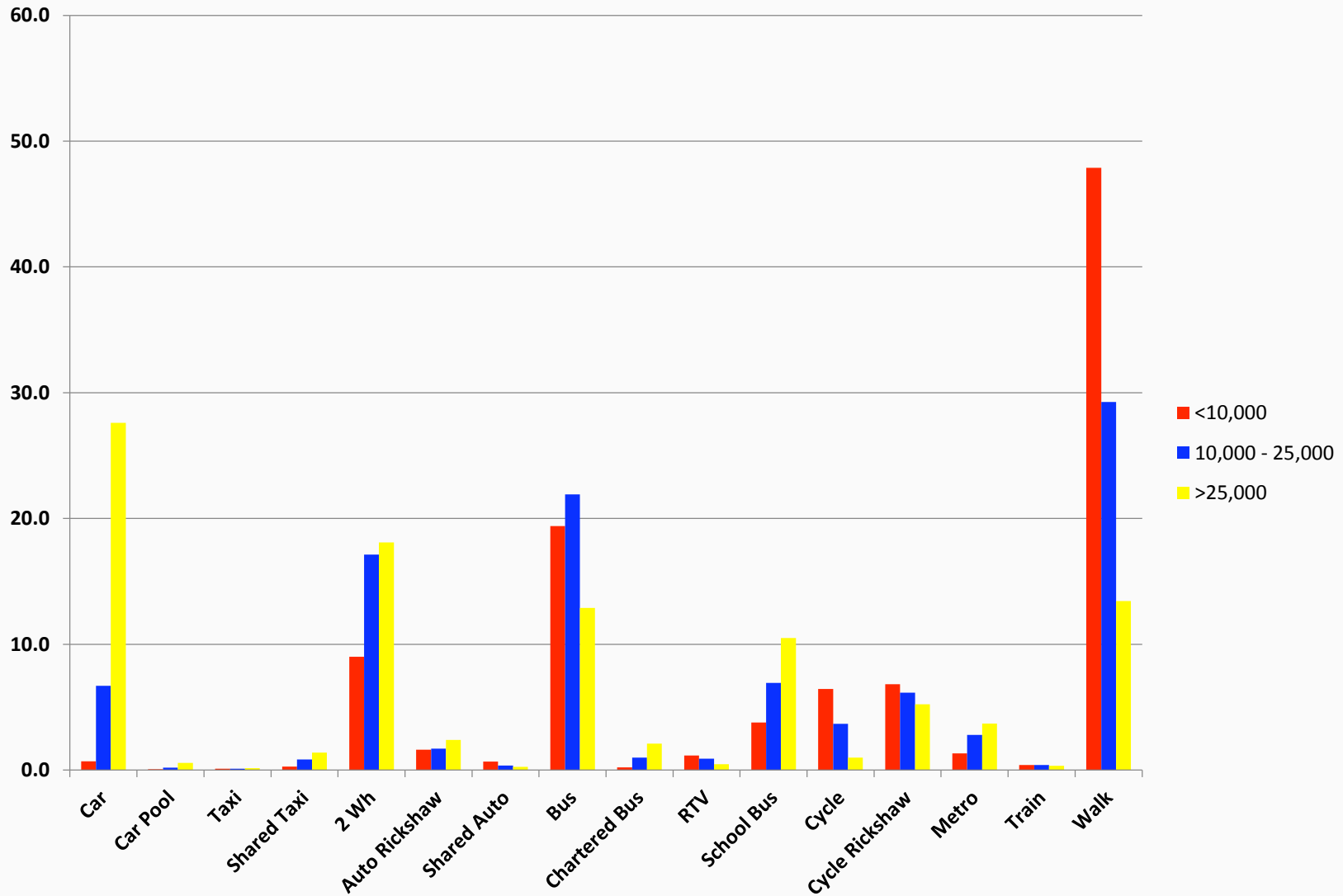
Bus 23%

Bicycle 15%

# Alternate definitions of purpose, destinations, choice of routes

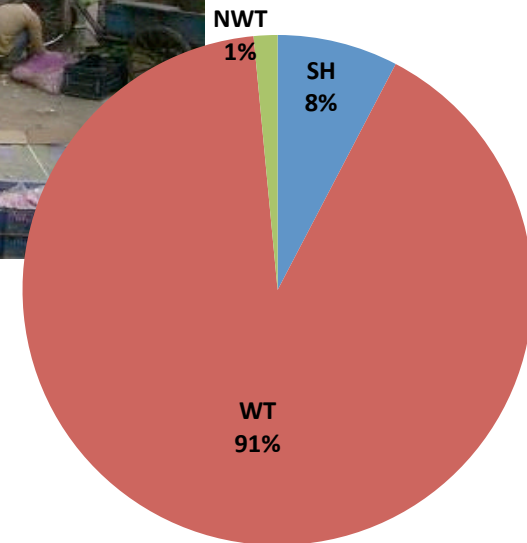


# Low income population is pedestrian and PT users



Source: Transport Demand Forecast Study by RITES, 2008

# Activities and travel patterns



# Travel characteristics

Type of Employment	Average PT distance (Km)	Average PT travel time (Minute)	Average PT travel cost (INR)
Formal	14.4	70	28.3
Informal	9.7	62	12.3
Student	3.3	29	1.7
Total	7.1	47	8.9



# Travel distances

Type of Employee	Percentage of employees by tour distance (km)					
	0	0.4-2.0	2.1-5.0	5.1-10	>10	Total
Formal	1.0%	2.1%	1.9%	3.1%	3.9%	12.0%
Informal	5.7%	7.6%	7.7%	8.1%	9.0%	38.2%
Student	14.8%	23.0%	9.4%	1.0%	1.6%	49.8%
Total	21.6%	32.8%	19.0%	12.1%	14.5%	100%



# Landuse-Transport integration for sustainable cities

- Link between livelihood-housing and mobility(location)
- Multiple use of space (diversity)
- Community living and use of public spaces

**Understanding of activities vs use of standard methodologies**

**Street designs and transport system to ensure current and potential walking and bicycling trips**