Comparison of Road Traffic Crash Scenario in Small, Medium and Mega Sized Indian Cities

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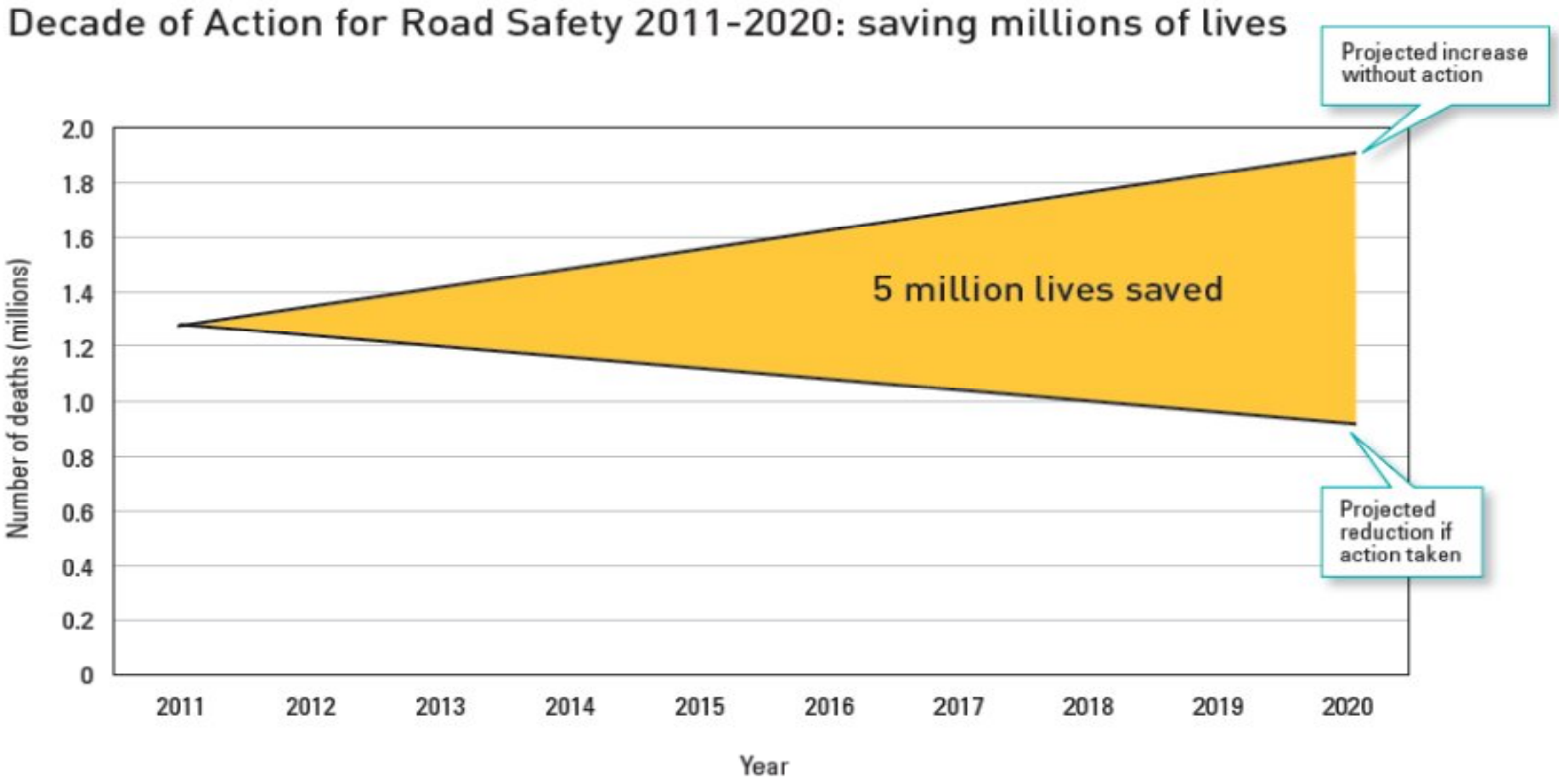
Introduction

- The road traffic injuries (RTIs) are the eighth leading cause of death in India and the ninth leading cause of overall health loss
- In India 3% of the estimated GDP is lost due to road traffic crashes

The Goal

The overall goal of the Decade is to stabilize and then reduce the forecast level of road traffic fatalities around the



Reference: Global Statistics Report on Road Safety 2013.

Objectives of the study

- 1) Risk Analysis and assessment of Small Sized Indian cities of Patiala and Rajpura to study the immensity of problem of traffic safety
- 2) Comparison of fatal traffic crash scenario of small, medium and mega sized Indian cities

Need of the study

- In the Census (2011) there are 7935 urban areas in India and the number has increased by 2774 since 2001 Census
- Detailed studies are available for bigger cities- Mumbai (Mani.A,2013), Delhi (Delhi traffic police, 2014) and for medium size cities of India (Mohan.D .et al, 2015).
- Traffic safety scenarios in small size Indian cities is missing.

Contd.

- Design amendments and adopting treatment measures are relatively easier in small cities before they become more congested and bigger in size.
- The need of the hour is essentially solving the problems at the root level so that a small city of today does not face the problems faced by the large and medium size Indian cities

Study Area

PATIALA

- fourth largest city in the state of Punjab
- administrative capital of Patiala district

As per provisional data of 2011 census :

- Population -446,246
- Literacy-84.39%
- No of police stations:5
- Area-70 km^2

RAJPURA

- municipal council in Patiala district
- Coordinates: 30.484°N 76.594°E

As per provisional data of 2011 census

- Population-92,301
- Literacy-81%
- No of police stations-2
- Area-25 km^2

Data Collection

- According to the Indian Penal code any traffic accident will be reported under one

S.No	Section	Explanation
1	IPC 279	Rash driving or riding on a public way
2	IPC 427	Mischief causing damage to the amount of Rs 50
3	IPC 337	Causing hurt by act endangering life or personal safety of others
4	IPC 327	Voluntarily causing hurt to extort property or to constrain to an illegal act
5	IPC 304A	Causing death by negligence
6	IPC 283	Danger or obstruction in public way or line of navigation
7	IPC 338	Causing grievous hurt by act endangering life or personal safety of others

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Data Collection

- Fatal crash records for 2013, 2014 and 2015
- Rajpura= 61 accidents
- Patiala= 188 accidents
- FIR copies obtained, Coded in accident recording form

Population and vehicle registration data

	Total vehicles registered		MTWs registered	
Year	Rajpura	Patiala	Rajpura	Patiala
2013	1190	69218	1019	44219
2014	2259	72184	1646	48738
2015	1453	59538	871	59538
Total	4902	200940	3536	152495

	Decadal growth rate
Population	19.6%
Males	18.6%
Females	20.8%

Patiala			
Year	Population	Males	Females
2011	446246	236198	210048
2012	4,55,001	2,40,600	2,13,963
2013	4,63,928	2,45,085	2,17,951
2014	4,73,030	2,49,653	2,22,014
2015	4,82,311	2,54,307	2,26,152
Rajpura			
Year	Population	Males	Females
2011	92301	48340	43961
2012	94,111	49,241	44,874
2013	95,958	50,158	45,806
2014	97,841	51,093	46,757
2015	99,760	52,046	47,728

Road Safety Indices

- Estimates the size and seriousness of the problem
- **Fatalities per 100,000 population**

  -indicator of personal safety

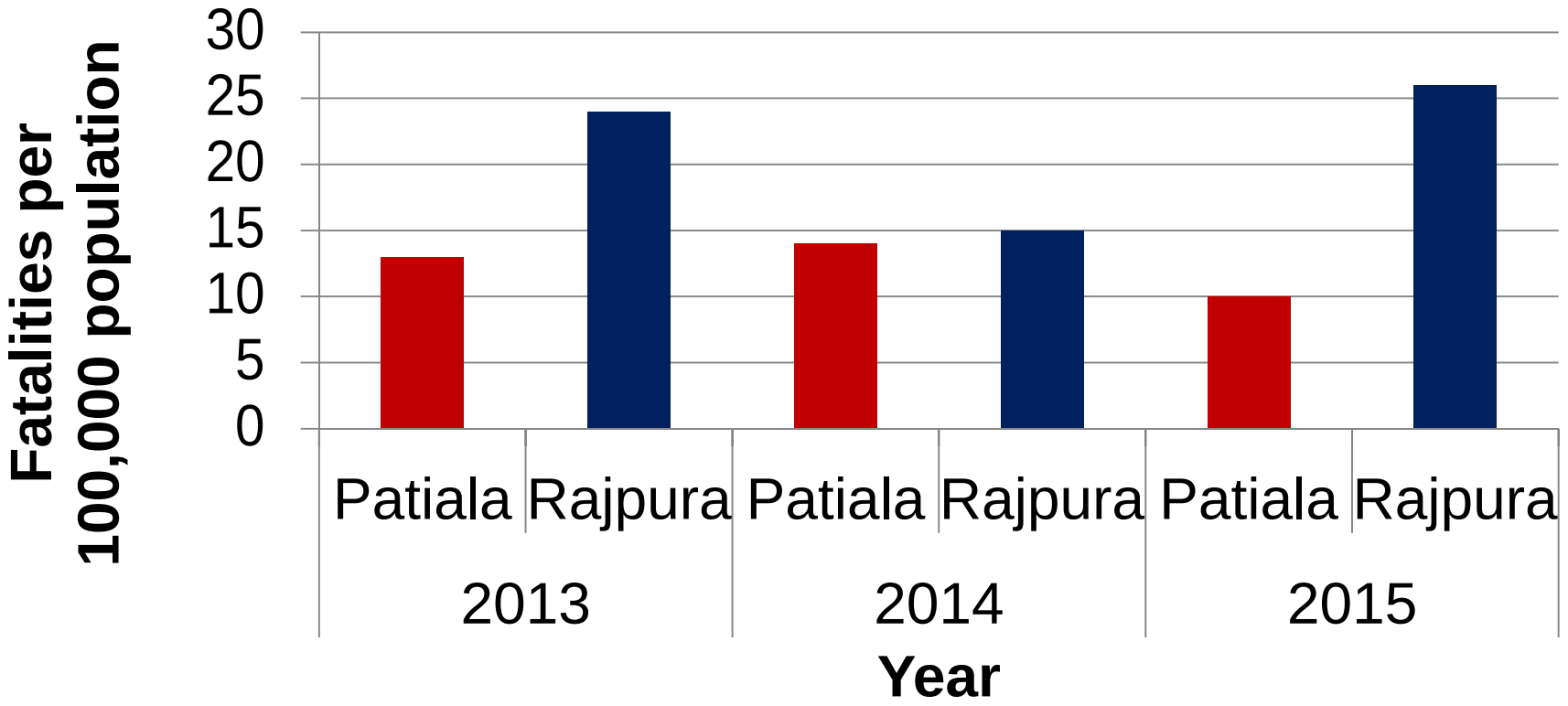
  -Comparing cities with similar travel patterns

  -Measure of health burden to the society
- **Fatalities per 10,000 vehicle registered per 3 years**

  -measure to estimate risk of motor vehicles involvement in fatal crashes

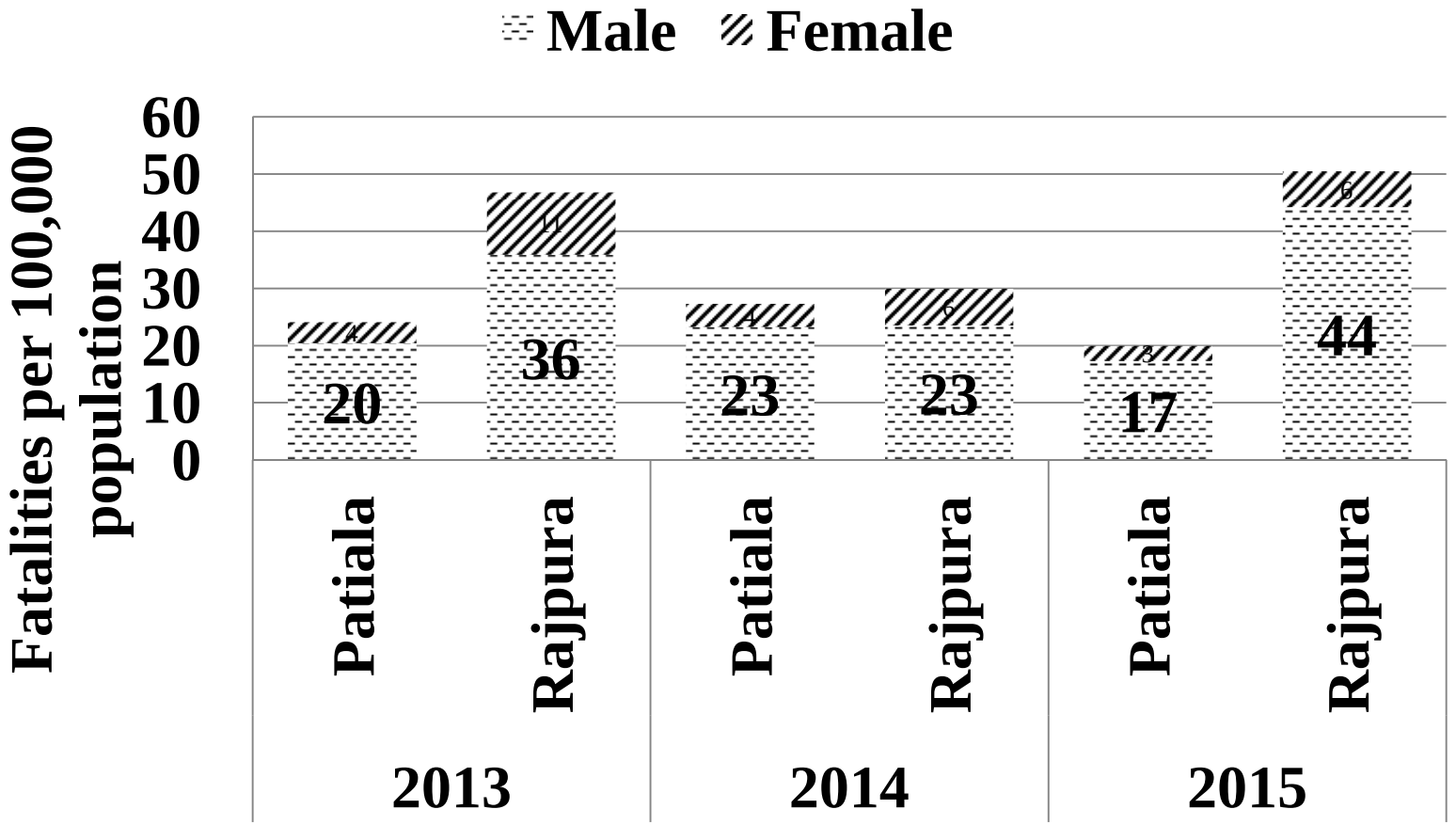
Risk indices

- Fatalities per 100,000 population
- Measure of personal safety
- Assessment of RTI as health burden for society



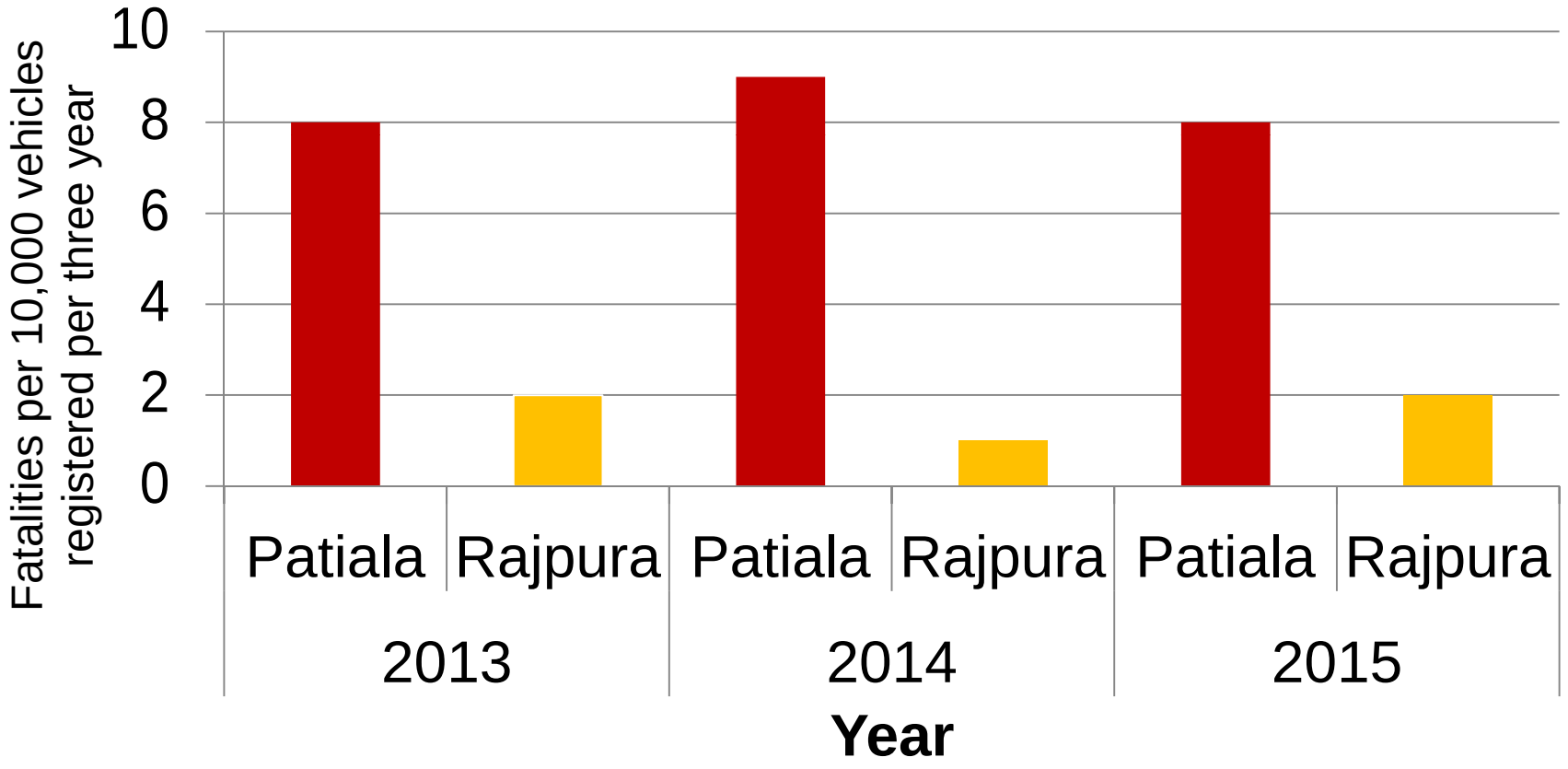
Fatalities per 100,000 population

- Lower the index better it is for individuals
- Women cities as compared to men



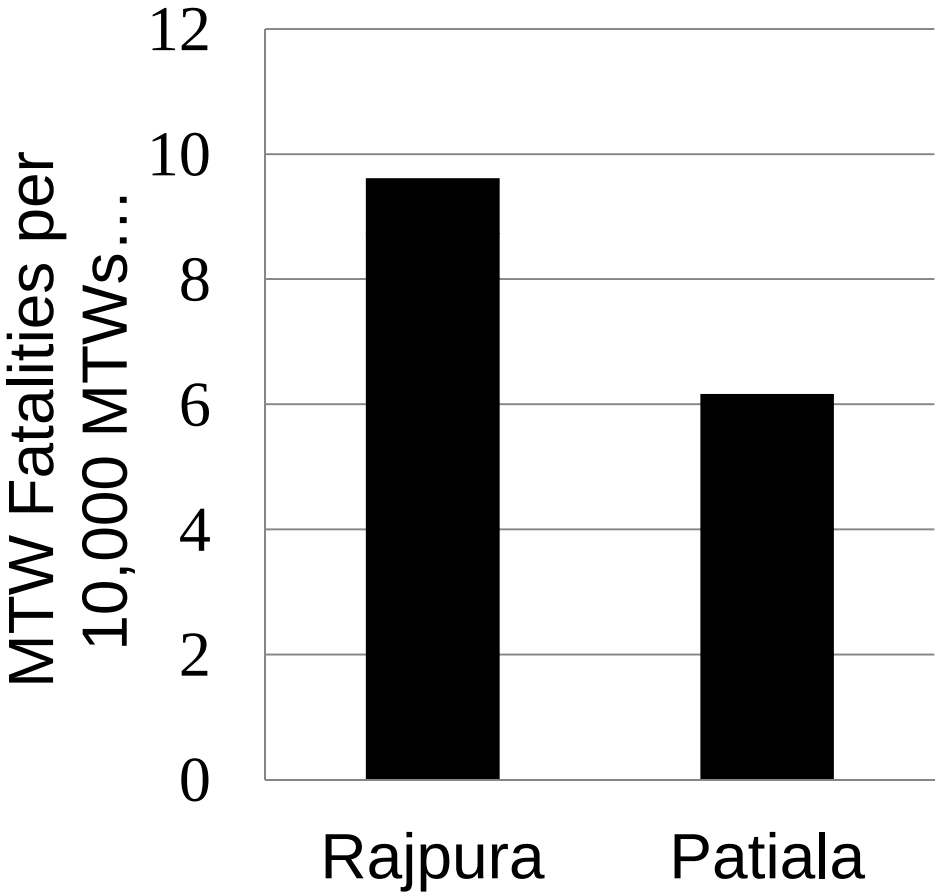
Fatalities per 10,000 vehicles registered per year

- Measure for comparing risk of involvement of motor vehicles in fatal crashes

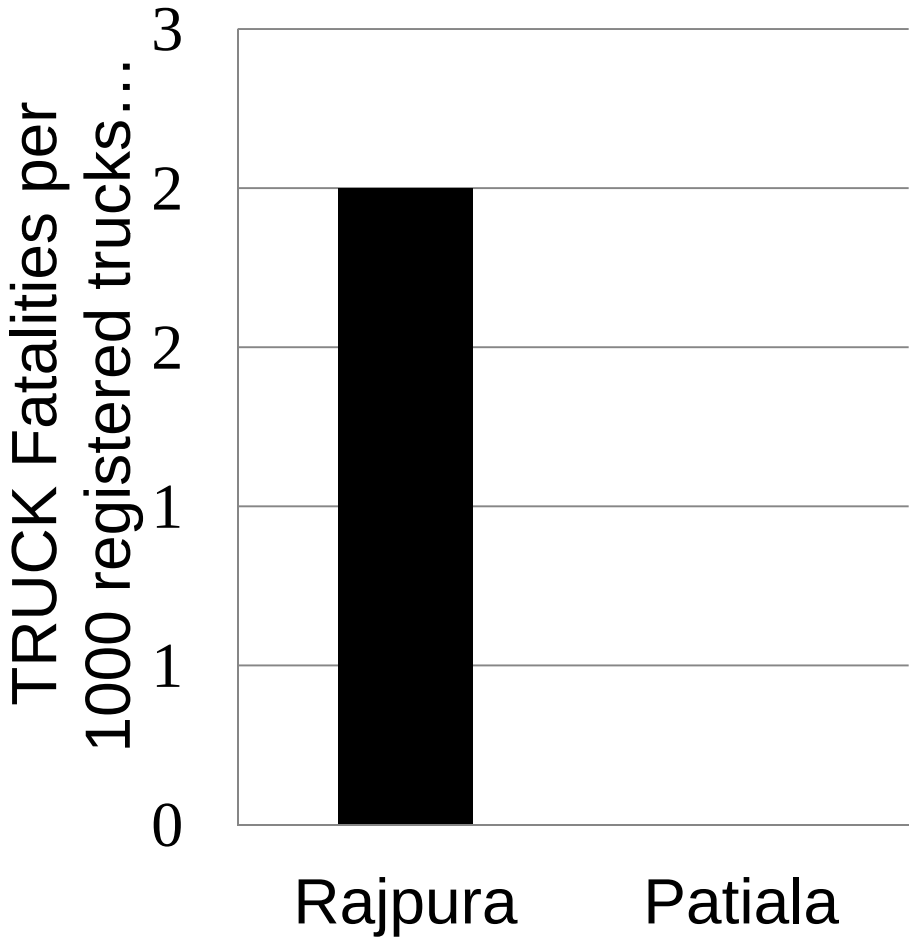


Fatalities per 10,000 vehicles registered per year

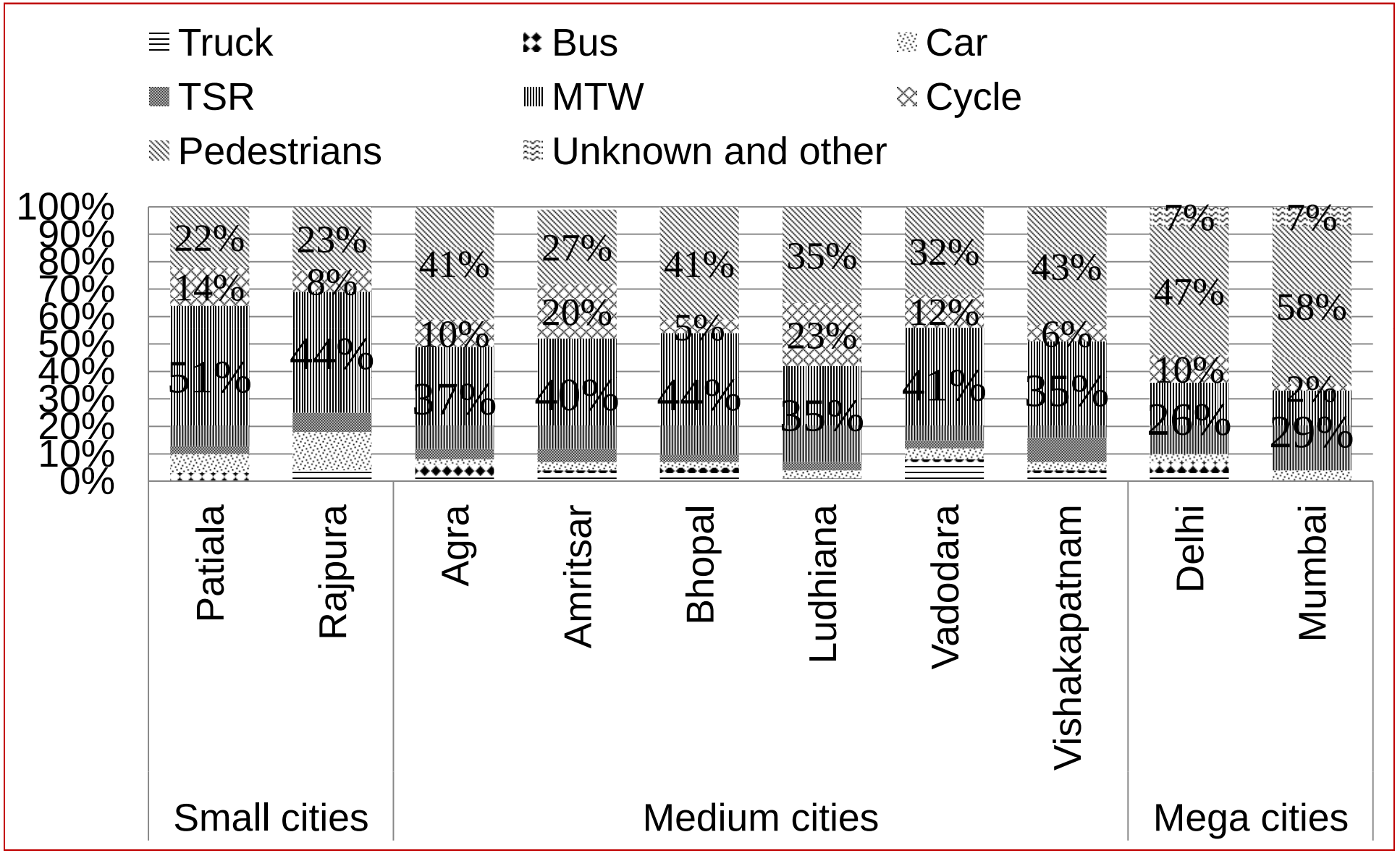
MTW Fatalities per 10,000 MTW s registered



Truck Fatalities per 1000 registered trucks



Comparison of traffic safety scenario in Small, Medium and Mega sized Indian cities



CONCLUSIONS

- Risk to personal safety is higher in Rajpura and risk of motor vehicles involvement in fatal crashes is higher in Patiala.
- Rajpura has higher risk of traffic fatalities per 100,000 population
- Women are less prone to risk on personal safety in cities
- Average pedestrian fatalities in mega sized Indian cities is 2 times higher than small cities
- Modal share of MTW occupant fatalities decreases with increasing city size.