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11th Urban Mobility India Conference & Expo 2018

ASSESSMENT OF BUS CONTRACTING MODELS

A Case Study of Bhopal

Presented by,

R. Kanika Gounder

CEPT University (Transport Planning)

Co-Authored by,

Dr. Abhijit Lokre

INSTITUTE OF URBAN TRANSPORT (INDIA)

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NEED OF THE STUDY

According to the BPMC Act, 1949 – ***'Construction and maintenance of public transport facilities' is one of the discretionary services of the ULBs.***

City Bus	Profit / Loss (Rs. in millions)				
	1999-2000	2005-06	2008-09	2010-11	2013-14
DTC	-207.4	-603.6	-1388.4	-2061.2	-2785.1
BEST	-178.8	-250.3	-410.9	-381.3	-630.4
AMTS	-41.7	-29.1	-102.5	-121.1	-138.4
BMTC	+1.3	+102.3	+27.2	+49.9	-73.1

Source: Public Transport Planning and Management in Developing Countries, 2014

Losses incurred by these city bus organizations make them **financially and operationally weak.**

Why involve Private Sector in Urban Transport?

To Create Capacities

Cost-Effectiveness

High Efficiency

But, till what level?

FOCUS OF THE STUDY

Aim:

To study the impact of net cost contract on the level of service of city bus operations in Bhopal.

Research Question:

DOES THE CONTRACTING MODEL HAVE AN IMPACT ON THE QUALITY OF SERVICE?

Objectives:

- ✓ To assess the evolution of risk sharing over the years.
- ✓ To assess the quality of service of city bus organizations.

METHODOLOGY

Literature Review → Data Collection → Analysis → Conclusion

Literature Review

- Public and Private Finance
- Public Private Partnership
- Contracting Arrangements for Public Transport Operations

Data Collection

Secondary Data

- Authority's Office
- Online passenger information

Primary Data :

- On-site Observations
- User Perception Interviews

Analysis

Evaluated quality of service provision:

- Condition of buses and infrastructure
- Routing and Scheduling
- Frequency of service
- Information system
- Comfort of travel

Conclusion

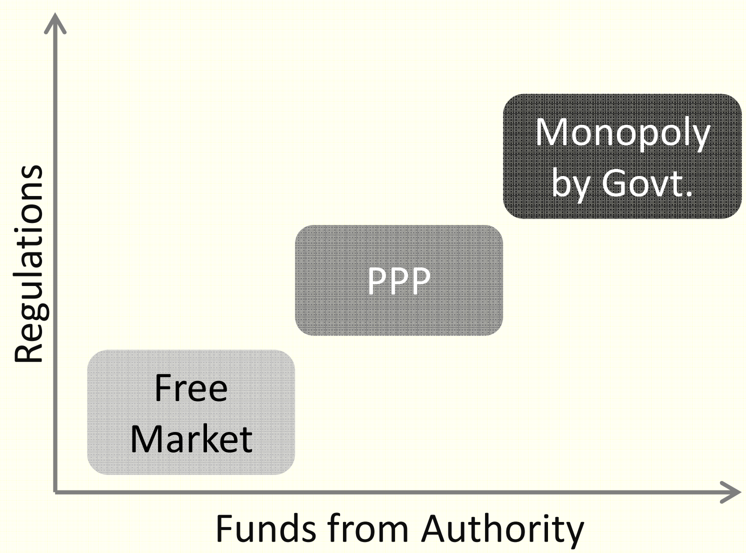
Analysis of results on whether the contracting arrangement has had an impact on quality of service.

LITERATURE REVIEW

Total Monopology — **PPP** — **Free Market**

Buses owned by Authority	Wet lease / hiring of buses, Fare box revenue with Authority	Tendering of routes or clusters	Laissez faire operations

Degree of competition →



Run by <u>ULB or public agency,</u>

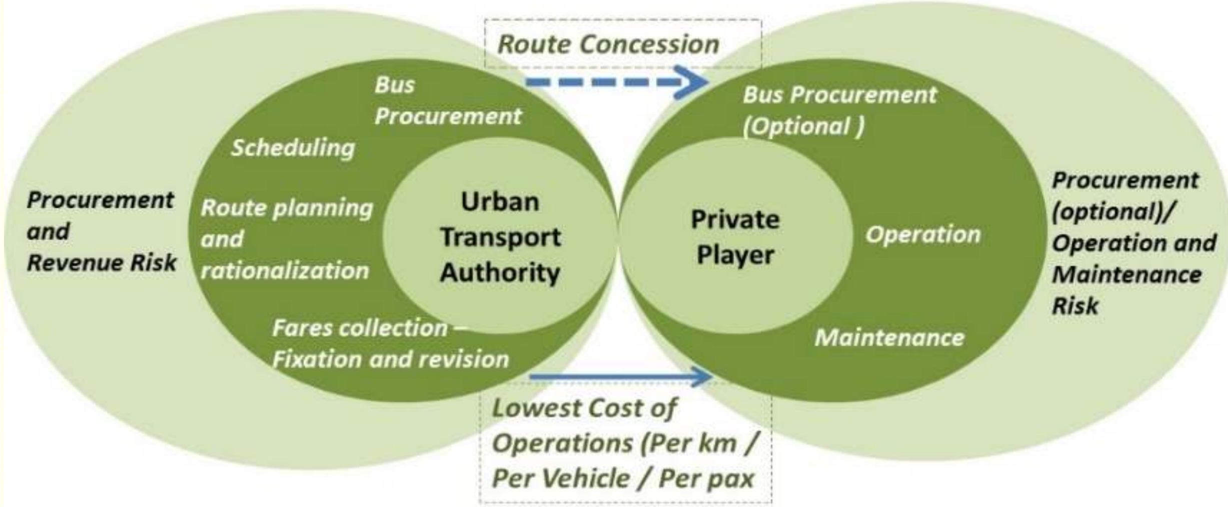
Run by <u>private operator</u> through concessions but regulated by ULB or government agency

<u>Limited role of ULBs </u>where IPT or buses are hired / shared, LCVs and taxis are run by <u>private owners</u>

Source: Financing Urban Public Transport, IUT Journal, PS Kharola

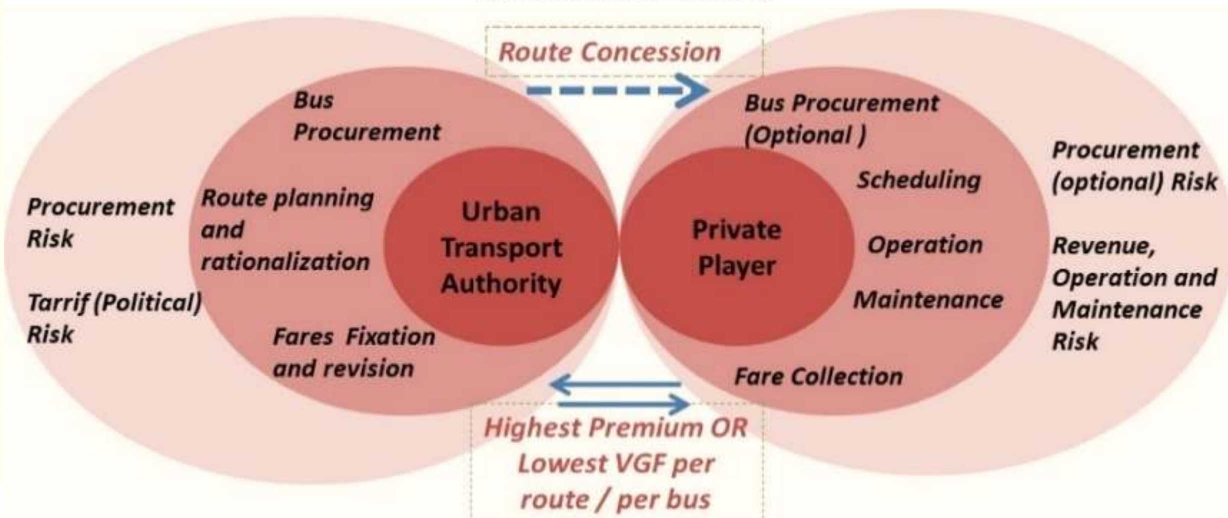
LITERATURE REVIEW

GROSS COST CONTRACT



Examples:
Ahmedabad BRT,
Indore BRT,
London City bus

NET COST CONTRACT



Examples:
Vadodara City Bus,
Indore City Bus,
Bhopal City Bus

Source: Contracting Arrangements in PPP, CoE-UT Ahmedabad

MAJOR FINDINGS

GROSS COST MODEL

- **No revenue risk to Bus Operator**
- Authority performs **route selection &** fixes **headway**
- **Authority receives fare box revenue**
- Authority has **better control over performance**

- **Revenue risk** to Authority
- Potential of **regulatory capture**
- **Stalled expansion of services**
- **Higher cost of** monitoring and **administration**

NET COST MODEL

- **Increased incentives** (as revenue risk transferred to operator)
- **Limited administration cost**
- **Steady income** to the Authority
- **Flexibility to operator** to modify routes and frequency

- **Decreased incentives** in case of viability issues in operation
- Possibility of **soliciting passengers** to increase revenues
- **Chances of carteling** in case of more than one operators
- **Lack of contractual enforcement**

HYBRID MODEL

- **Sharing of revenue risk**
- **Incentives & Participation** by Operators
- **Fare Integration** with existing transport system
- **Financial sustainability** through utilization of revenue generated

- **High dependency** on estimated **levels of ridership**
- Need of immediate **short term action**
- **Possibility of an institutional issue.**

INTRODUCTION TO SITE

Net Cost Contracts ⟷ Short-term projects

Gross Cost Contracts ⟷ Long-term projects

Yet, there is one city bus service and BRT that still works on a <u>net cost contract.</u>

MyBus, by Bhopal City Link Limited (BCLL)

Source: www.mybusbhopal.in

UMI award for "**Best practices in PPP initiatives**" in 2011 and "**Best urban mass transit project**" in 2014

HUDCO award for "**Best practices to improve the living environment**" in 2013-14

SKOCH award for "**Integration of city bus operation with BRTS of Bhopal**"

INTRODUCTION TO SITE

	Trips	Vehicles (Number)	%
Public Transport	48.6 %	Standard Bus (390)	5.3
		Mini-Bus (600)	31.0
		Tempos (450)	12.3
IPT	5.7 %	Auto (3000)	5.2
		Taxi	0.5
Private Vehicles	37.4 %	Two-wheeler (300,000)	34.5
		Cars (50,000)	2.9
NMT	8.3 %	Cycle	8.3

Trip Distribution in Bhopal (2010)

Area: 285.9 sq. km.
Population: 1.79 million
City Bus Service launched in September 2013
Bus Fleet: 225 buses

The procurement and operation :

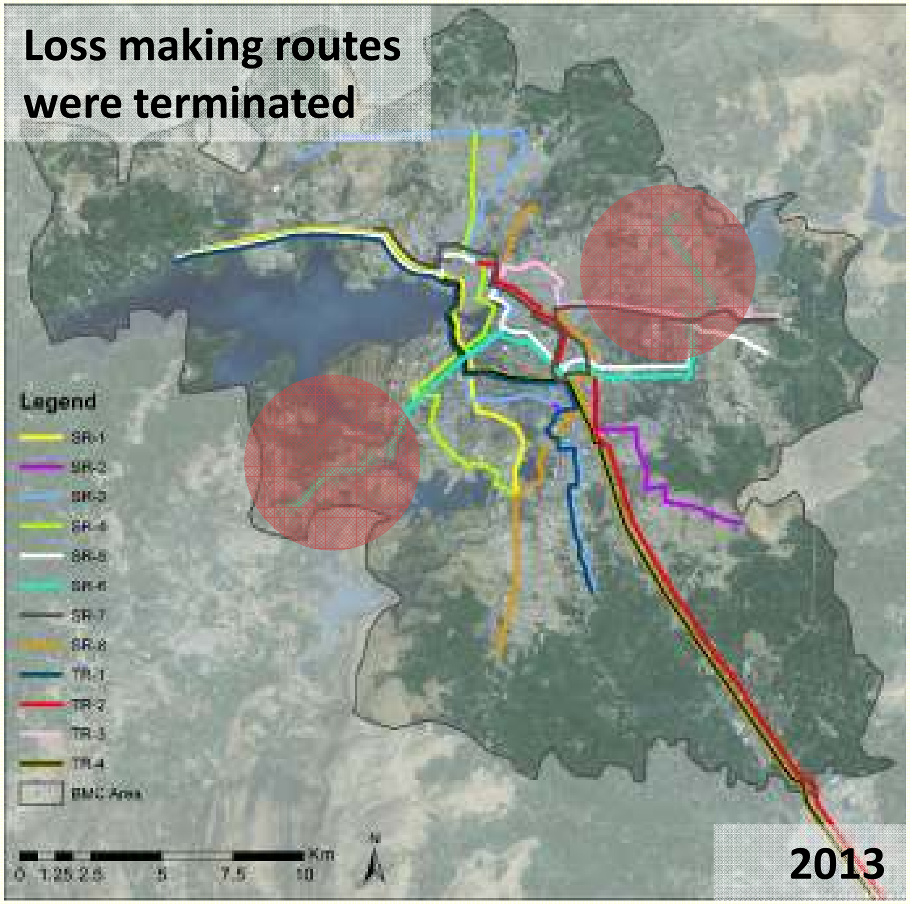
Central Govt.	State Govt.	PPP
50 %	20 %	30 %

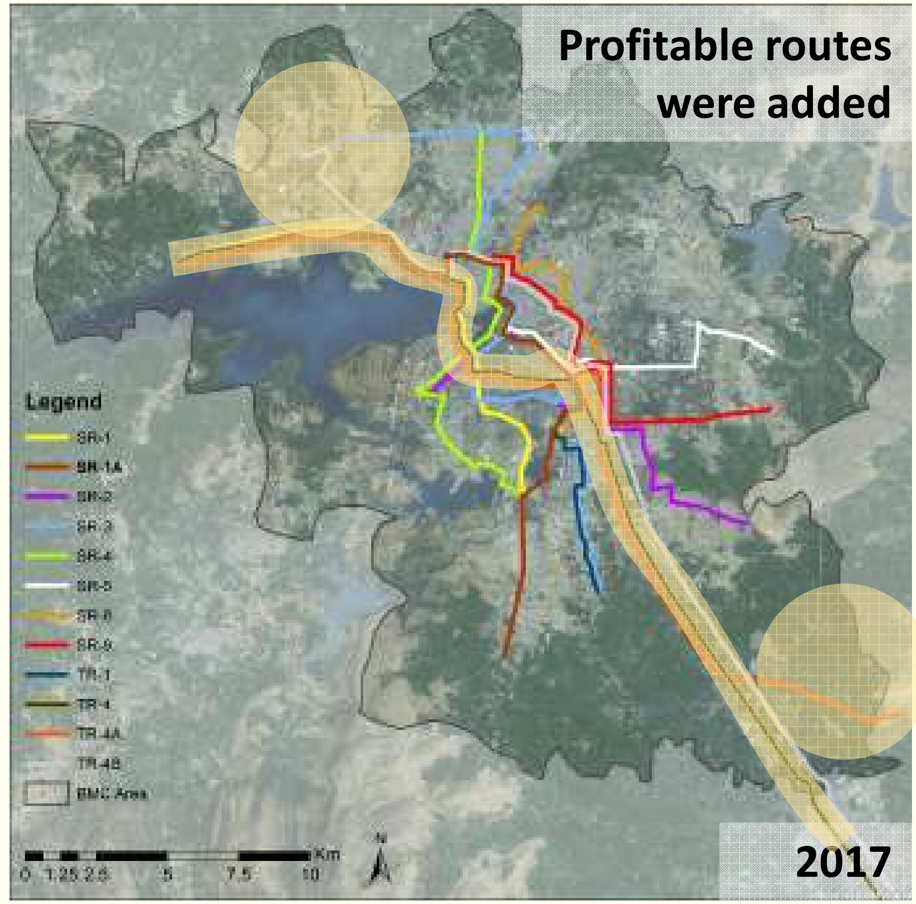
Source: www.mybusbhopal.in,
Optimization of Public Transport Demand: A Case Study of Bhopal (2010),

ANALYSIS:

CHANGES OVER THE YEARS

CHANGE IN ROUTING

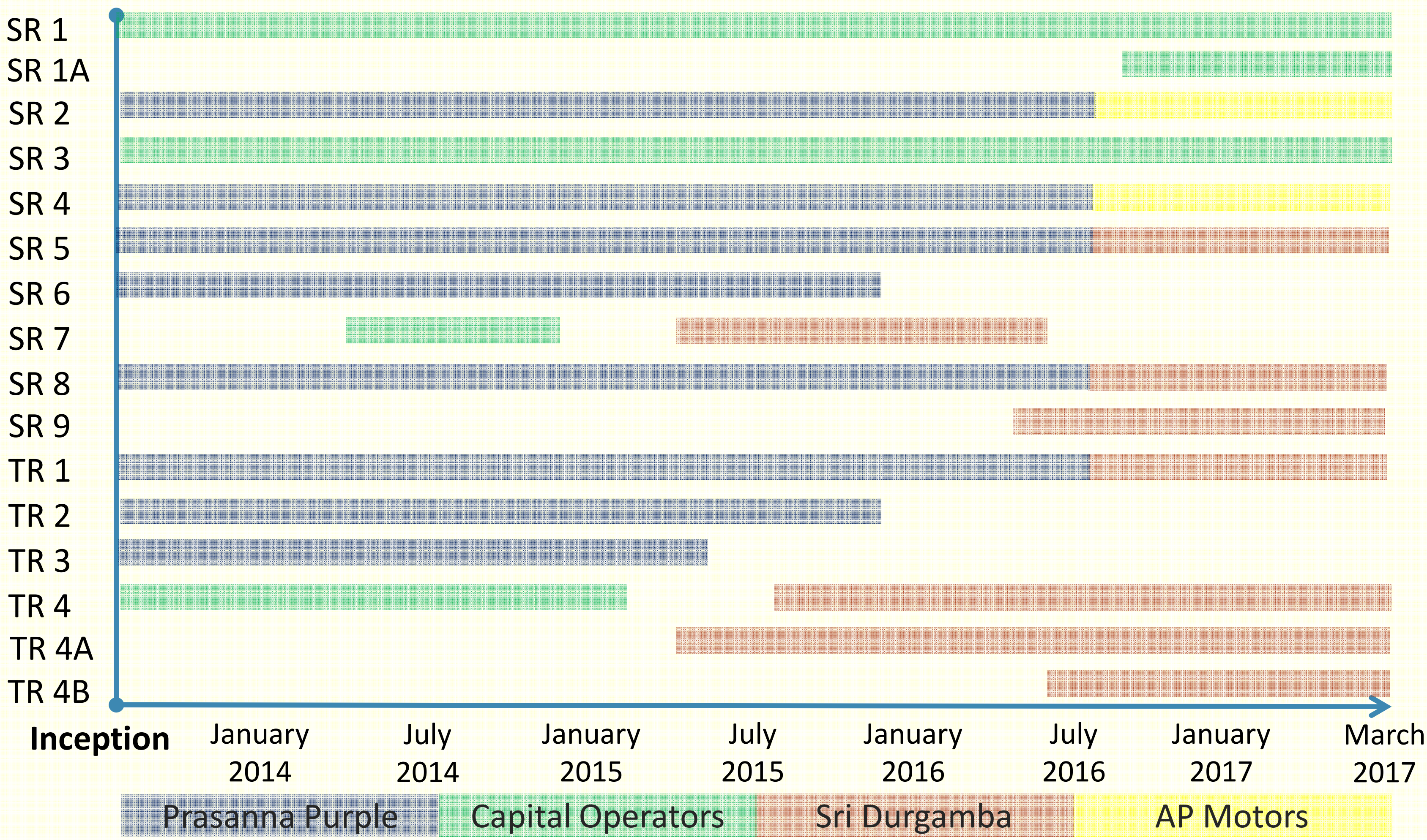




Headways	SR1	SR4	SR8	SR2	SR9	TR4	TR4A	SR5	TR1	SR3
Claimed	8	8	8	8	8	8	8	8	8	8
Observed (in Feb 2017)	10	10	10	20	20	10	12	6.5	10	60

Source: Primary Survey

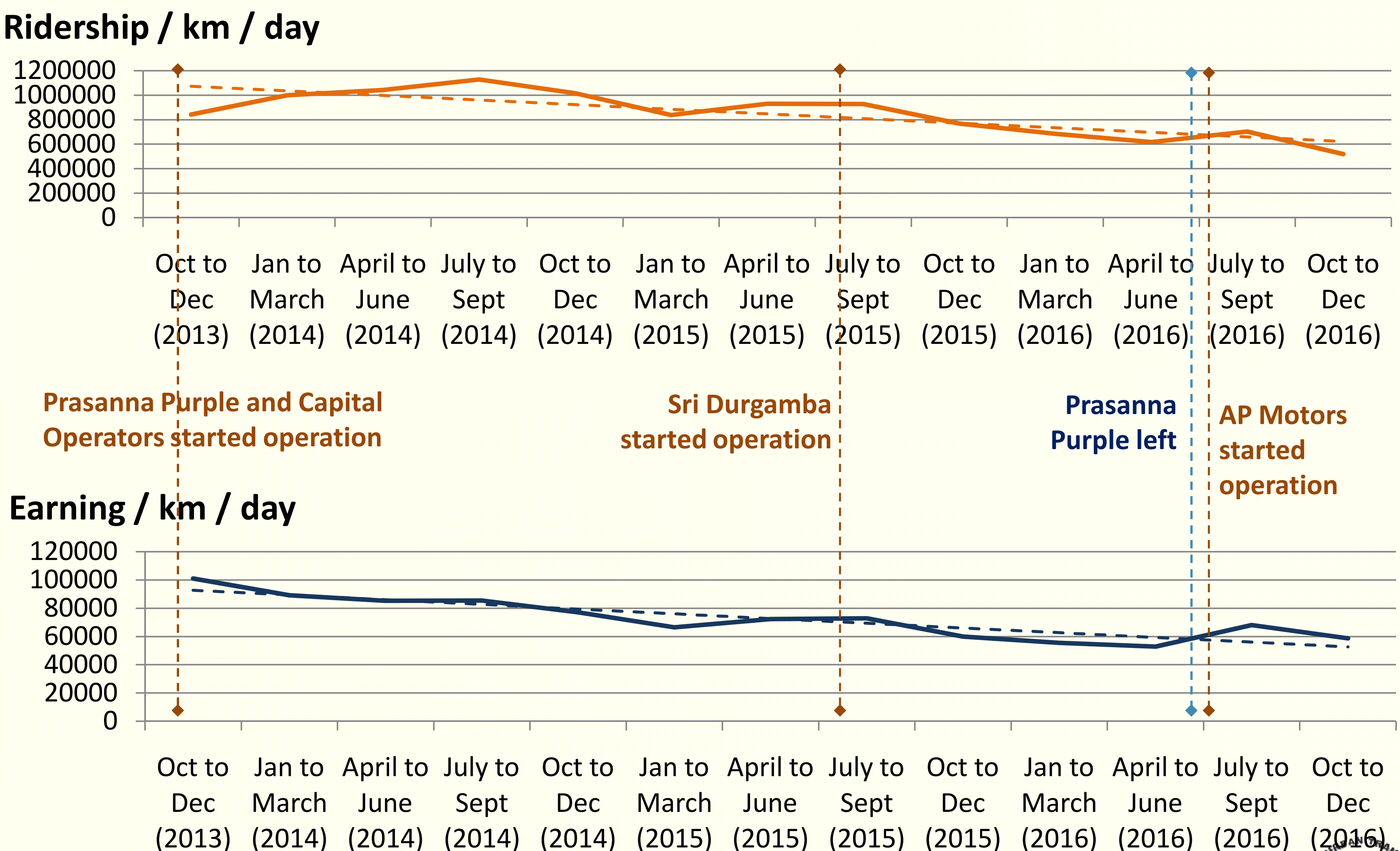
TIMELINE OF BUS OPERATORS



The operators kept on changing, which has **affected the quality and sizes of bus** provision. Also, it has **left many routes unserved**.

Source: Data on ridership and earning per route per day from BCLL, 2017

RIDERSHIP AND EARNINGS



Source: Data on ridership and earnings per route per day by BCLL

COMPARISON OF CONTRACTS

	2013 Contract (2 Operators)		2016 Contract (3 Operators)	
	BCLL	Operators	BCLL	Operators
Procurement Risk	100 %	0 %	0 %	100 %
Advertising Revenue	50 %	50 %	20 %	80 %
Annual Maintenance Contract	100 %	0 %	0 %	100 %
Viability Gap Funding	Rs. 23,000 each for 2 routes	-	Rs. 49,900 for 1 route	-
Premium / Month	-	Rs. 4,800 / bus	-	Rs. 100 / bus

Source: Request for Proposal Documents for Operators for 2013 and 2016

- BCLL felt the need to implement changes due to the **lack of enthusiasm shown by operators.**
- BCLL **shifted the responsibility of bus procurement to the operators** in the new contract.
- They **reduced both VGF and premium** per month.

PROFIT - BUS OPERATOR

October 2013 to March 2017,
Fare Box Revenue = Rs. 5.4 Crores

	Expenditure	Revenue
Per month	Premium = Rs. 100 / bus (24 buses)	Viability Gap Funding = Rs. 49,900 (1 route)
Per day	Rs. 36 / bus / km (AC), Rs. 28 / bus / km (Non-AC)	Advertising = Rs. 2,500 / bus
Total (per month)	Rs. 44.92 lacs	Rs. 68.69 lacs
Profit (per month)	Rs. 23.77 lacs	

Source: Data from Bus Operator (Sri Durgamba), March 2017

- The operators receive a **better Viability Gap Funding** (Rs. 49,900) than before.
- They pay a **much lesser premium per bus** of merely (Rs. 100) monthly.
- The refurbishment of the buses was done by BCLL, so the **buses required only good maintenance.**

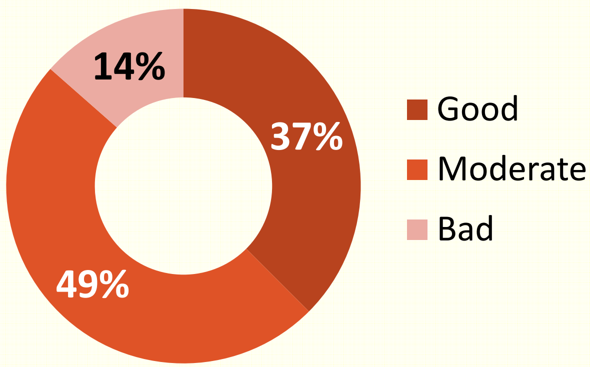
SITE OBSERVATIONS

SOLICITING OF PASSENGERS	ACCESSIBILITY ISSUES	INFORMAL COMPETITION
		
		

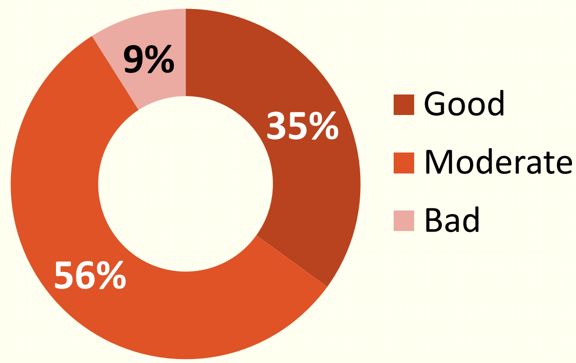
Source: www.go.itdp.org/display/public/Bhopal+BRT+photos, Primary Survey

USER PERCEPTION

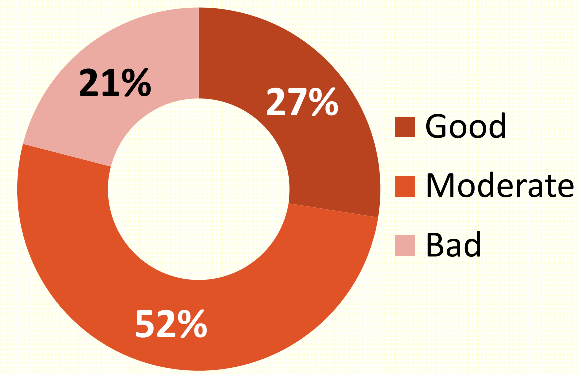
Bus Condition



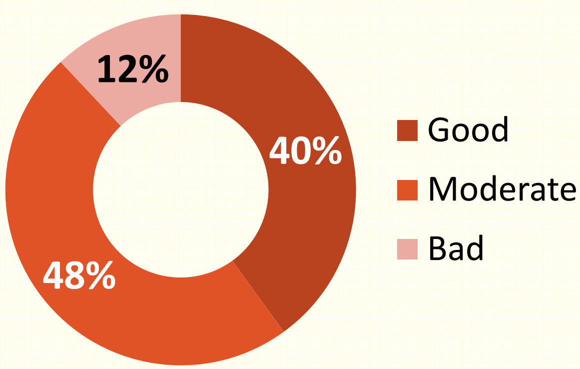
Bus Frequency



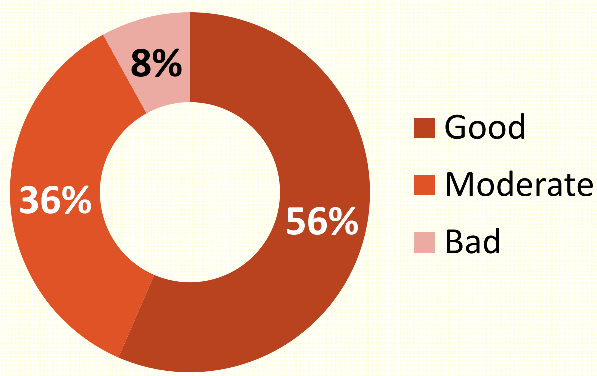
Driving Quality



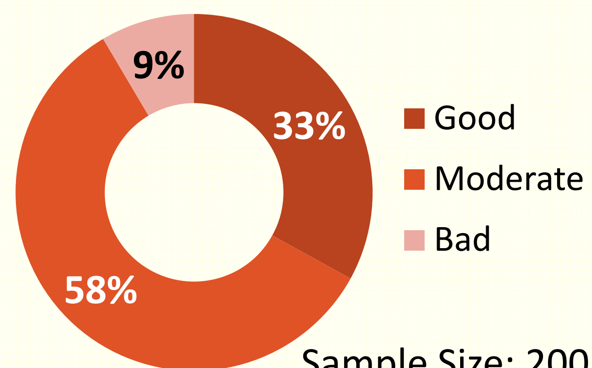
Bus Cleanliness



Seat Comfort



Boarding Ease



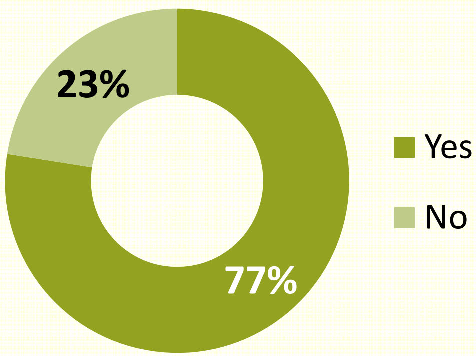
Sample Size: 200

Users are **moderately satisfied** with the **condition, cleanliness, comfort, frequency of buses and ease of boarding.** They mentioned that MyBus is much more comfortable than the minibuses and tata magic services.

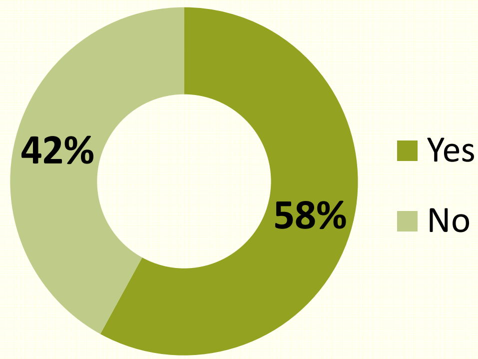
Source: Primary Survey (Qualitative Answers)

USER PERCEPTION

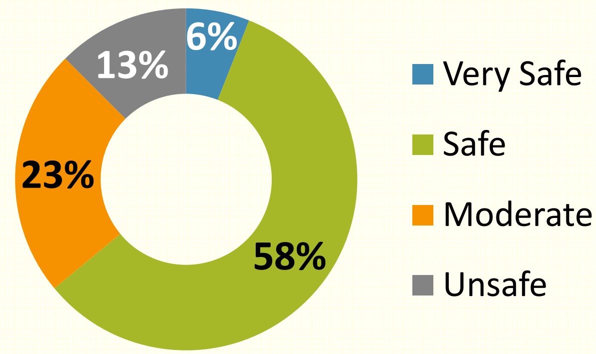
Overcrowding?



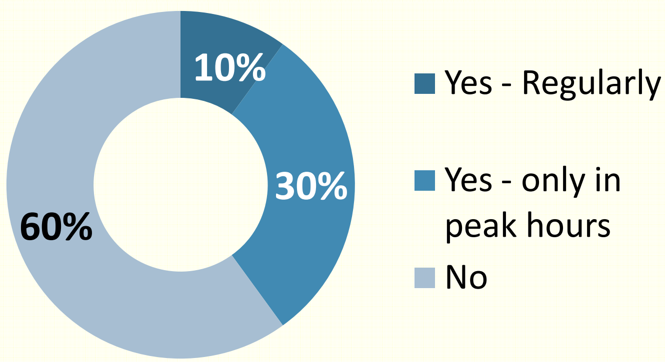
Information Available?



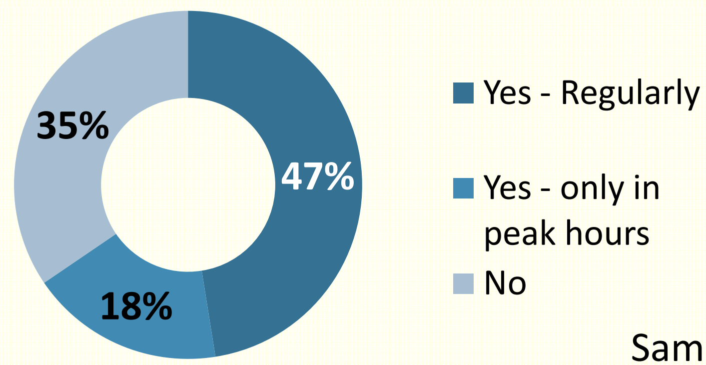
Women Safety



Termination of routes



Soliciting of Passengers



Sample Size: 200

But, more than 75% of the users surveyed feel that there is **overcrowding** in the buses. About 40% users still feel there is **lack of information** on scheduling. They feel that **routes are being terminated** in case of losses to operators, & there is **regular soliciting of passengers**. Also, **rash driving** and **low frequency** is experienced as well as **lack of maintenance of infrastructure.**

Source: Primary Survey (Qualitative Answers)

IS THERE AN ISSUE WITH THE CONTRACTING ARRANGEMENT?

- ✓ **Ridership and earnings have decreased** over the years.
- ✓ **The maintenance of buses** and infrastructure is **not up to the mark**.
- ✓ 7 / 11 routes have not performed well as there is **no overall stability or continuity in operations planning.**
- ✓ **Non-profitable routes got terminated.**
- ✓ **Huge losses were incurred** at the time of operator's exit.
- ✓ Arrangement shifted from high premium per bus to a **negligible premium per bus.**
- ✓ The **private operators impair service in need of a higher revenue.**

YES, THE CONTRACTING ARRANGEMENT HAS LOWERED DOWN THE QUALITY OF SERVICE OF CITY BUS IN BHOPAL.

RECOMMENDATIONS

- **Procurement risk** may be with the **Authority**.
- **Staff** may be **provided by the Authority** with incentives to operate more efficiently.
- A small percentage of the **fare box revenue** and the **advertising revenue** should be put **back into the bus service** for infrastructure & maintenance.
- **VGF should be provided for more routes** to promote higher frequency.
- **Maintenance of infrastructure and rolling stock** should be looked upon regularly by the Authority.
- **Tata Magic** should be **integrated** to the city bus and BRT **as feeder services.**
- There should be **policy level and local-level management to avoid soliciting of passengers** on ground.

REFERENCES

- www.mybusbhopal.in
- Public Transport Planning and Management in Developing Countries, 2014
- Financing Urban Public Transport, IUT Journal, PS Kharola
- Contracting Arrangements in PPP, CoE-UT Ahmedabad
- Optimization of Public Transport Demand: A Case Study of Bhopal (2010)
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THANK YOU

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