Modernizing and Greening Taxi Fleets in Latin American cities

Perspectives for improving taxi services: Empirical Case Study of Cordoba – Argentina

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Existing situation:
Cordoba City
Population: 1.350.000
2 Services:

Taxis and Remises

Existing situation:

2 Services: Taxis and Remises.

Very similar, but Remises can not pick up passengers on the street and are 3% more expensive.

Fleet: 4000 taxis and 3500 remises

User complaints about the service

Objective: determine the suitable offer based on the needs of users and the city

Waiting time

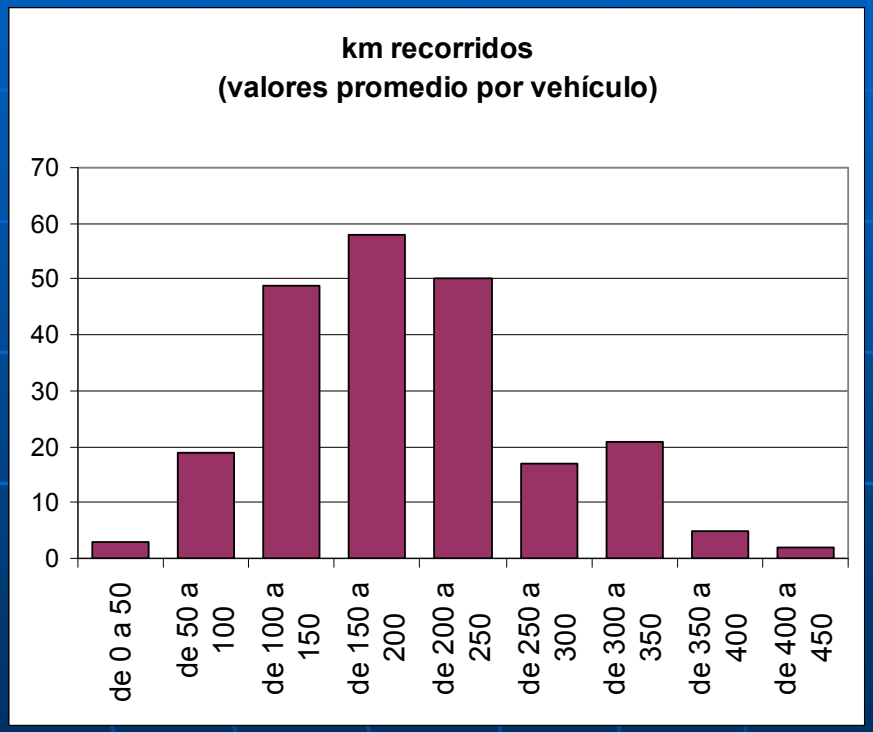
Taxis	Working Day	Night / holidays	Rain
<10 min	45%	14%	3%
10 - 20 min	47%	39%	22%
>20 min	8%	47%	76%

Remises	Working Day	Night / holidays	Rain
<10 min	59%	22%	7%
10 - 20 min	34%	40%	26%
>20 min	7%	38%	67%

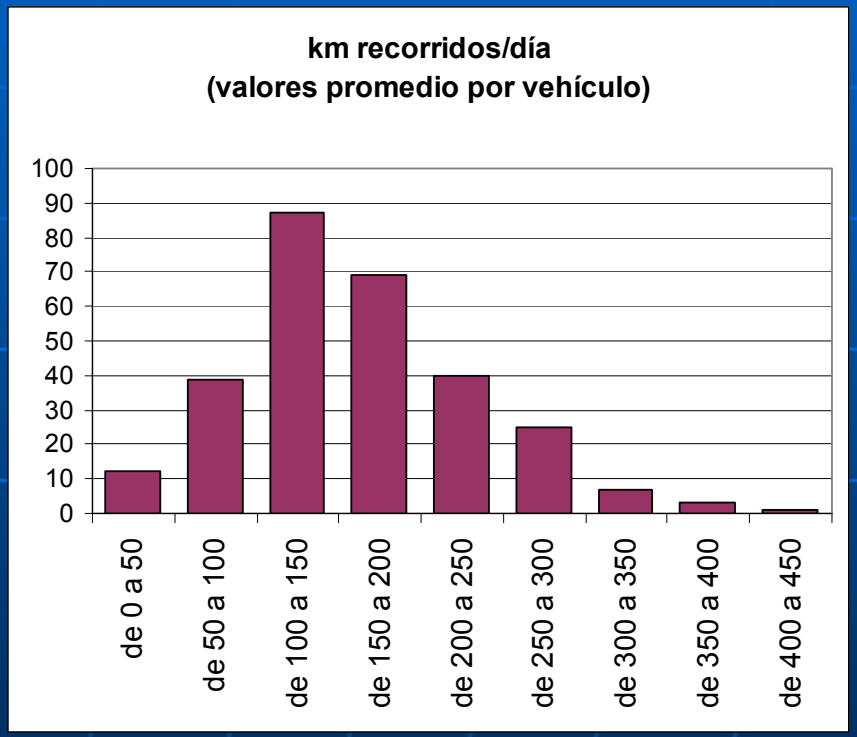
User preferences

	Fare	Waiting time	Safety and convenience
Taxis	63%	24%	34%
Remises	7%	47%	28%
Indifferent	30%	30%	37%

Distance traveled (Km)



Taxis



Remises

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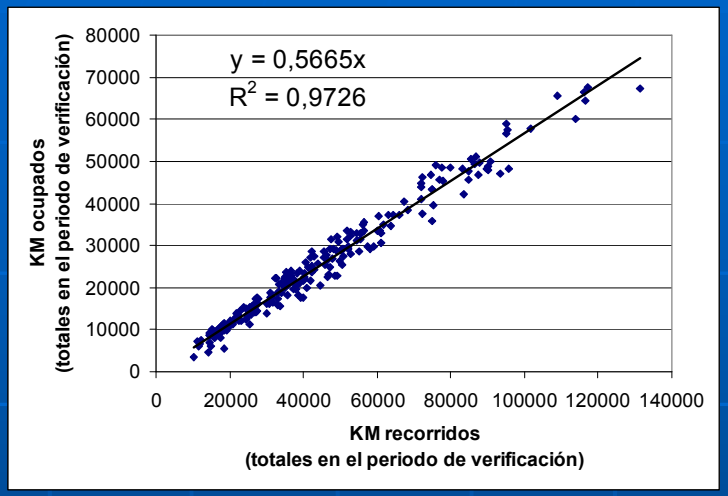
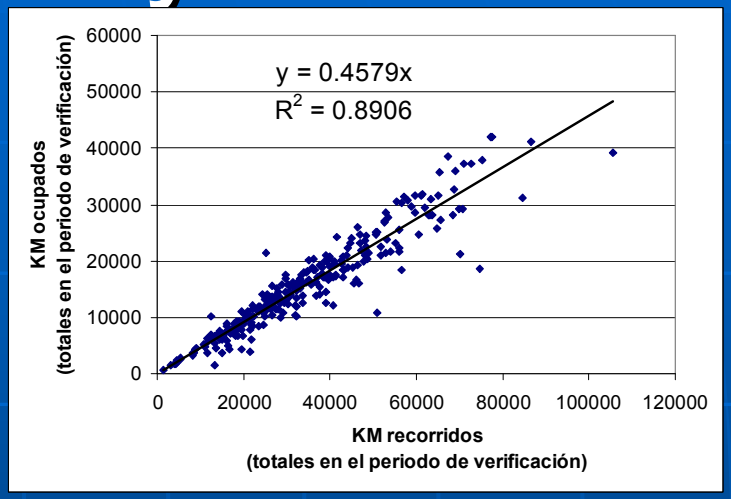
Productivity



Taxis



Remises

Daily average	Taxis	Remises	Difference
Dist. traveled (km)	190	162	17.3 %
Load factor (%)	0.57	0.46	23.9 %
Trips (N°)	28.6	17.4	64.3 %
Average trip (km)	3.8	4.3	-11.6 %
Passengers/trip (N°)	1,34	1,42	-5,6%

TPI = 190 x 0,57 x 1,34 = 145,1
RPI = 162 x 0,46 x 1,42 = 105,8
EqTF = RPI / TPI = 0,73

Mode comparison: Parameters

Mode	Load factor (Pass/veh-km)	Road space occupancy (m2)	Pay Driver	Power (HP)	Consumption (Kcal/veh km)
Buses (H.O.)	30	30	1	200	2000
Buses (L.O.)	10	30	1	200	2000
Private Cars	1,35	10	0	80	1000
Taxi	1,34 x 0,57 = 0,75	10	1	80	1000
Remises	1,42 x 0,46= 0,65	10	1	80	1000

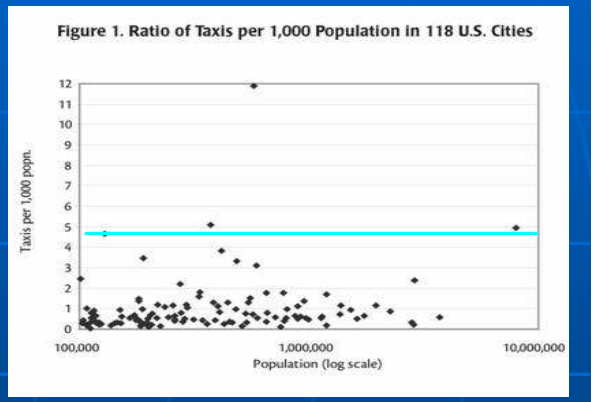
Mode comparison: Consumption per passenger km

Mode	Energy	Road space occupancy	Pay Driver	Emissions	Cost
Buses (H.O.)	70	1	0,03	1	1
Buses (L.O.)	200	3	0,10	3	3
Private Car	700	7	0	9	3
Taxis	1300	13	1,33	16	11
Remises	1500	15	1,55	18	13

Evolution of the fleets

Mode	1995	2009
Regular Buses	827	691
Troley Buses	37	38
Special Buses	147	55
Total Public Mass Transit	1011	726
Taxis	3400	4000
Equivalent Taxis (Remises * 0,73)	219	2555
Total Equivalent Taxis	3619	6555
Relation Eq. Taxis / Mass Transit	3,6	9,0

Technical Recommendations



1) 1 equivalent taxi each 200 inhabitants

2) All vehicles must work as taxis

3) Regulate supply of taxis for nights and holidays

4) Increase mass transit supply

Final Comments

- Move towards more sustainable urban transport
- In one working day more than 1.000.000 Km traveled
- Fleet: 90% compressed natural gas, 10% diesel
- Importance of the load factor (passenger / km)
  - Private cars: 1,35
  - Taxis: 0,75
  - Remises: 0,65