Leveraging Demand-Response Technologies to Modernize Paratransit Systems in Latin America

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Can *paratransit* services leverage *demand-response* technology to overcome existing *negative externalities*?

**Research Question**

**Traditional Paratransit**

- **Motivations**
  - Is there interest to adopt technology to improve services?

- **Barriers**
  - What is preventing the adoption of technologies?

- **Enablers**
  - What tactics can support the adoption of technology?

**Demand Responsive Technology (Microtransit Model)**
Project Information

Location:  
Mexico City

Timeframe:  
January 30th - Feb 26th

Target Group:  
Paratransit Drivers

Total # of Interviews:  
68
Micros
Size: 23 seated, ~40 standing
Num. interviewed: 26

Combis
Size: 19 passengers
Num. interviewed: 30
Understanding current services and driving conditions
Working conditions of drivers

- **Gender:**
  - 67 Male
  - 1 Female

- **Age:**
  - 42-year average

- **Years working in the field:**
  - 19-year average

- **Vehicle Owners:**
  - 15% of drivers

- **Vehicle Rent:**
  - $930 MXN = ~$50 USD

- **Disposable Income:**
  - $530 pesos = ~$29 USD

- **Hours per Day:**
  - 14 hours avg.

- **Days per week:**
  - 6 days
Would you prefer a fixed salary option?

- Yes: 20%
- No: 63%
- Depends: 17%

Reasons why they like *variable income*:

- More money than other jobs: 40%
- Earn Daily: 30%
- You get what you put in: 25%
- Own boss: 20%
Would you prefer a fixed salary option?

- Yes: 20%
- No: 63%
- Depends: 17%

Reasons why they would like a fixed salary:
- Medical Insurance: 50%
- Stability: 30%
- Benefits: 20%
- Bad days: 10%
Do you like working in this service?

- **69%** said **Yes**
- **31%** said **No**

What do you like?

- money
- community
- own-boss
- flexibility
- outdoors
- likesdriving

What would you change?

- passengers
- safety
- bad-driving
- abusiveauthority
- tariff
- problematicdrivers
- medicalinsurance
- norules
- stressful
- risky
- bad
- bad-environment
- demandings
- driving
- baddriving
What are the biggest problems you face in your work daily?

- Traffic: 60%
- Security: 49%
- Bad passengers: 16%
Feelings towards Demand Response Technology
Description of Demand Response Technology

Transportation services that use technology to define their routes and/or times based on passenger demand.

Key Characteristics:
• App-Based
• Provide passengers with route information & ETA
• Help Drivers optimize routes and pick up times (avoid traffic)
• Gives Drivers information on riders & vice versa
Do you think Demand Response Technology would be useful in your service?
Perception of DRT in service

Advantages Tech

- Route information
- ETA
- Increased Security

Perceived Disadvantages

- Security
- Fixed routes
- Fixed schedule
Who has the decision-making power to adopt these technologies?

- Route Directors/owners: 77%
- Government: 28%
- Drivers: 5%
Observations from the field

- Passengers constantly ask drivers if they stop by X location
- Drivers work with “checadores” to bring them more passengers
- Paratransit has fixed routes, but divert due to traffic or closures
- WhatsApp group to update on service

Learnings for DRT in Mexico City

Valuable Characteristics:
- Route Information & ETA for Passengers
- Information on passenger for increased security
- Daily Cash out

Considerations for DRT:
- Routing less useful given Fixed Routes
- Checadores are competition for dynamic scheduling
Thank you!