Paratransit in Sub-Saharan African Cities: Improving and Integrating ‘Informal’ Services

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Introduction

Collapse of formal services

Cities got larger,
Congestion drove up costs, and
Competition by informals reduced passengers

Problems of cities in Sub Saharan Africa are urgent

Poor mobility stifling economic development
Pollution
Public safety
This project involved detailed study of three cities (Cape Town, Dar es Salaam and Nairobi) plus inputs from other cities.

**First phase** was understanding:
- Business models
- Daily operations
- Public institutions and governance

**Second phase** will be:
- Advocating for reforms, and
- Technology based on consumer ICT
**Common features** (with notable exceptions):

- direct service networks (minimal pax transfer)
- small fleet owners (but few owner-drivers)
- route associations / cooperatives
- rank/stage ‘fill-and-go’ systems
- cash fare collection
- ‘target system’
Some differences:

- vehicle size (4 seat sedan vs. 9-16 seat minibuses vs. 17-35 seat midibuses)

- fare setting (government regulation vs. association collusion vs. driver variation)

- business ownership (owner-employee vs. owner-lessee model)

- extent of competition with formal modes
Paratransit’s public transport passenger market share in African cities

Note:
• Most individual data sources do not specify whether the market share is measured during the peak period or over the entire day, and whether trips for all purposes are included, so comparisons may be inaccurate in some cases.

Behrens et al 2015 (forthcoming)
Cape Town also has scheduled modes

Unlike the mini-taxis, they receive an operating subsidy
What are the key problems faced by paratransit users and regulators?

• Un- or under-restricted market entry often leads to **overtrading** and **overloading** on more lucrative routes

• Route associations often **compete aggressively** (sometimes violently) for control of routes

• ‘**Target system**’ incentivises drivers to compete for pax, leading to speeding, signal jumping, unsafe stopping

• Unreliable operations due to dependence upon running in **congested, mixed traffic**

• Insecure **labour conditions** for drivers and conductors

• **Vehicle** poorly maintained and heavy **emitters** of pollutants - **replacement** is seldom planned
• Boarding and alighting practices that spill into traffic lanes reduce already limited road capacities considerably.
• **Compliance** with most regulations is usually weak
Riders must pay **two full fares** for any **interchange**
What opportunities do paratransit operations offer?

- Paratransit operators are quick to respond to new demands, can penetrate many and diverse markets.

- This demand-responsiveness, service innovation and coverage is achieved free of subsidization.

- Paratransit offers an important source of income to a segment of the population.

- Smaller paratransit vehicles can maneuver in streets that larger buses cannot.
What policy responses and interventions are underway to mitigate paratransit problems?

• (With some exceptions) standard or full specification BRT is being promoted on the continent as a public transport solution...
• A number of Sub-Saharan African city governments have embarked upon the initial phases of BRT.

• BRT already exists in some cities.

• BRT infrastructure construction underway in others.

• BRT system planning is underway in others.

• In some, if not most, cases, these BRT services are intended to replace paratransit services, including the feeder services.
“Hybridity” as a realistic solution

Definition: **Hybrid Service** is either

1) two services peacefully co-exist, mostly because they target different ridership, or

2) an integrated service, typically trunk-feeder, perhaps having a combined fare.

Path dependencies and constraints:

1) Business owners themselves

2) Institutional capacity lacking

3) Insufficient success in early phases
Issues with Integration

**Service coordination**
Informals withdraw service or wait for full vehicles

**Formal operators**
Threat to informals’ livelihood.

**Keeping out of sight and out of mind**
Avoiding corruption and harassment
Financially unrealistic standards
Cash fares

**Legacy of distrust with government**
Corrupt enforcement
Monitoring technologies for criminal sanctions

**Surrender of planning authority to unqualified institutions**
Forecasting and capacity planning,
Revenue distribution

**Availability and use of capital investment funds**
Queue bypasses, PT signal priority, shelters, etc.
Bus lanes take time politically.
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Tentative recommendations for a reform program
**Quality-of-service improvement** (from a business development, not a punitive regulation, perspective)

- cashless **fare collection**
- passenger-side subsidies
- speed **governors**
- vehicle **tracking** (real time and planning benefits)
Are there lessons from the experience of intercity matatu SACCOs in Kenya?

... with respect to:

- alternatives to the ‘target system’
- ceded vehicle **fleet management**
- bulk purchasing and (larger) vehicle **finance**
- some operators have an appetite for adopting new practices and technologies
Entrepreneurial opportunities and additional income streams

**Subsidies**
Redistribution of existing subsidies (SA)
Incentives for feeder services

**Diversification and purchase of assets**
School and up-market tourist trips
Business admin. education

**Minibus taxi loyalty program**; maximizing buying power
SANTACO has 130,000 members
Ex: 18 associations buy from one gas station

**Outdoor and mobile advertising**
Already widespread
An unprecedented insight into routes and travel speeds using smartphones

Morning peak hour mean matatu speeds from Nairobi BRT study
Source: University of Nairobi, Columbia University and Massachusetts Institute of Technology, 2013
Research proposal – smartphone apps to speed up some of the reforms

CAD/AVL from the richer countries is far too expensive.

Operational improvements
  control center
  terminal management
  bus lane and queue jump enforcement
  traffic signal control

Passenger experience improvements
  passenger information system
  onboard wifi
  covert alarms

Archived data will help both city and firm-level planning
  matching of supply with demand
  prioritization of limited investments
  pollution hotspot monitoring,
  etc.
Conclusions

Limits to the effectiveness of entrepenuerial and organizational solutions.

There is no substitute for capital investments.

But, there are definitely things one can do.

Thank you for your time

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