Development and governance of public and non-motorised transport provision in African cities

ACET (VREF African FUT CoE for Studies in Public and Non-motorised Transport)

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Roger Behrens, 20 May 2008 (20 minutes)  
Conference on Future Urban Transport, San Francisco
Institute for Development Studies, University of Nairobi
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4. Dr Mary Kinyanjui
5. A/Prof Dorothy McCormick
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2. Dr Estomihi Masaoe
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4. A/Prof Theophil Rwebangira

Dar es Salaam City Council
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… comprised of 12 research projects …

Project 1: Transport systems and travel behaviour  (A/Prof Masaoe)
Project 2: Transport planning practices and governance systems  (Prof Alila)
Project 3: Road safety  (Prof Odero)

Project 4: Paratransit operations  (A/Prof McCormick)
Project 5: Paratransit regulation, rationalisation and integration  (A/Prof Wilkinson)
Project 6: Public transport system assessment  (Dr Mfinanga)

Project 7: Non-motorised travel analysis  (A/Prof Mitullah)
Project 8: Non-motorised transport infrastructure improvement  (A/Prof Rwebangira)

Project 9: Intelligent transport systems  (Dr Vanderschuren)
Project 10: Travel behaviour change  (A/Prof Behrens)
Project 11: School travel planning  (Dr Bwire)
Project 12: City restructuring  (A/Prof Del Mistro)
... interlinking over a **five year period** (2008-2012) ...
Project 1: Transport systems and travel behaviour
Objective:

- to critically investigate the components and characteristics of transport systems within the case cities, and patterns of travel behaviour
- to provide input data for later projects (4-12)

Methods:

- literature review of travel behaviour and transport systems in the case study cities
- analysis of available secondary data sets on transport systems and travel behaviour
- quantitative household travel survey in the case study cities (n=±3,000)
- processing and analysis of data for each case study, city and a comparative analysis of travel patterns
Project 2: Transport planning practices and governance systems
Objective:

• to examine the origins and evolution of contemporary practices in the case cities, and the complexities of their policy and planning frameworks and their (fiducial as well as ‘realpolitik’) governance arrangements
• to provide input data for later projects (4-12)

Methods:

• literature review of relevant legislation, regulations, policy, practice guidelines, and organisational arrangements
• interviews with strategically located individuals involved in planning, regulations, financing and operational management of urban transport provision
• focus group discussions with sampled stakeholder groups councilors, council staff, transport owners, vehicle operators, etc.
Project 3: Road safety
Project 3: Road Safety

Objective:

• to critically investigate the magnitude and characteristics of road crashes in the case cities, and their road safety policies and strategies, paying particular attention to PT and NMT systems
• to provide input data for later projects (4-12)

Methods:

• review of literature on road safety in the case study cities
• acquisition and analysis of secondary data in the case cities.
• interviews with selected key informants from city departments responsible for urban governance, planning and development, urban transport systems, and road safety.
• workshops and meetings with stakeholders.
• user (drivers, pedestrians, cyclists, passengers) surveys on their knowledge and perceptions of road safety
Project 4: Paratransit operations
Project 4: Paratransit operations

Objective:

- to investigate the underlying political, socio-economic and institutional factors that have influenced the development and operations of paratransit services in the case cities, and the operating conditions of paratransit services from a user, driver/conductor, owner/small enterprise, ‘route association’, and policy-maker and regulator perspective

Methods:

- passenger intercept surveys, and
- (incentivised) ‘hall test’ surveys and focus group discussions amongst drivers and owners
- ethnographic or participant observation
- interviews with selected industry representatives, politicians and officials
- enterprise and value chain analyses
Project 5: Paratransit regulation, rationalisation and integration
Objective:

• to investigate current regulatory regimes governing paratransit operations in each city and contemporary proposals for ‘formalising’/integrating such operations, and to assess strategies for such ‘formalisation’ and incorporation

Methods:

• literature review of paratransit regulation, rationalisation and integration, as well as of current initiatives and proposals
• interviews with strategically located individuals involved in the regulation and operational management of paratransit operations and in the planning of their further regulation and/or incorporation in formal public transport networks
• workshops with key stakeholders (officials and operators) in each city to test and document responses to possible strategies for the regulation, rationalisation and integration of paratransit operations
Project 6: Public transport system assessment
Project 6: Public transport system assessment

Objective:

• investigate: (1) the conditions under which investments into particular public transport modes and systems are appropriate; and (2) which public transport system(s) have the greatest potential for improvement in different African city contexts (and in particular, the prospects of BRT)

Methods:

• literature review of public transport modes and systems, and best practices in planning and evaluation of alternatives;
• collection of data on existing modes/systems
• the development of a public transport cost model that assists in the selection of appropriate systems features in public transport planning, and provides a method for the strategic appraisal of transport project proposals in African cities
• ex post assessment of the impacts of current public transport projects in South Africa and Tanzania
Project 7: Non-motorised travel analysis
Project 7: Non-motorised travel analysis

Objective:

• to investigate the limitations of existing NMT travel analysis practices in the case cities, to analyse existing NMT travel patterns and attitudes, and to explore selected NMT user behaviours

Methods:

• critical review of past travel surveys in the case cities, and of available data on NMT travel behaviour
• review and comparative evaluation of alternative NMT travel analysis methods
• development, administration and analysis of a NMT user survey in the case cities
• count and survey analysis of pedestrian route choice and road crossing behaviour and pedestrian-driver interaction at selected sites
Project 8: Non-motorised transport infrastructure improvement
Project 8: Non-motorised transport infrastructure improvement

Objective:

- to investigate institutional and planning frameworks for NMT infrastructure improvement, to develop methods of NMT infrastructure assessment improvement identification, and to establish what design standards and construction technologies are appropriate to African contexts

Methods:

- critical review of institutional and implementational frameworks
- review and comparative evaluation of alternative NMT infrastructure assessment methods
- development and testing of an analytical framework enabling the identification of strategic NMT movement corridors and precincts, and assessment of infrastructure networks and sites
- application of the analytical framework to assess NMT infrastructure in the case cities, and the development of NMT infrastructure design standards
Project 9: Intelligent Transport Systems
Project 9: Intelligent Transport Systems

Objective:

- to critically explore the prospects for intelligent transport system (ITS) support of public transport operations in the case cities, and the most suitable ways of assessing impacts and benefits

Methods:

- literature review of existing ITS systems, and of their implementation and operational challenges
- comparison of (driving) behaviour between the developed world and the participating countries, based on the collection of existing information (headways, etc.) as well as the collection of additional data for selected corridors
- *ex ante* modelling studies (appropriately calibrated to the case city traffic conditions) of selected corridors to estimate the impacts and benefits of ITS measures
Project 10: Travel behaviour change
Project 10: Travel behaviour change

Objective:

• to develop an understanding of the triggers and pace of ('churning') travel behaviour change in the case cities, and to explore how switching from NMT and PT to private car use might be constrained, NMT and PT mode share might be increased, and cycling might replace long distance walking trips

Methods:

• development and administration of a personal interview retrospective survey (as a proxy for panel data)
• qualitative case studies to construct ‘mobility biographies’
• an attitudinal and stated preference survey
• development and administration of a Travel Feedback Programme (control/experiment before-and-after surveys)
• development of an appropriate model to estimate the likely (behavioural, transport system and environmental) impacts of TDM strategies
Project 11: School travel planning
Project 11: School travel planning

Objective:

• to explore the prospects of school travel planning in the case cities as a means of improving the safety and security of scholar travel and reduced car dependence

Methods:

• review of existing school travel planning practices
• design and administration of classroom scholar travel surveys (incorporating both data collection and education objectives) in selected schools
• design and administration of stated preference and attitudinal surveys in selected schools
• development of a set of materials that can facilitate the formulation of school travel plans
• testing the school travel planning ‘toolkit’ through implementing the travel plans in selected schools in case study cities
• monitoring and reviewing applications
Project 12: City restructuring
Project 12: City restructuring

Objective:

- to explore means of reducing ‘excess travel’ and vulnerability to oil depletion, as well as the prospects of appropriate forms of ‘transit-oriented development’ in the case city contexts

Methods:

- development of a strategic (work and education) trip distribution model, with associated O-D matrices for different income groups and travel modes, capable of estimating existing as well as predicted ‘excess travel’ following the distribution of a land take forecast of economic growth and demographic change
- stated preference study of the interventions that an authority could make to induce investors to locate development for office, industrial and residential activity in more appropriate locations
- analysis of interview survey data to study the effects on the employer, the GDP or the individual of reduced accessibility within each city