

ACET



African Centre of Excellence for Studies
in Public and Non-motorised Transport

e-Newsletter [02.2010/2011]

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ACET's research in practice

ACET has grown significantly since being established in 2008. We now comprise 19 academics and 20 funded postgraduate students across our partner institutions in Kenya, South Africa and Tanzania. There's more to come: see our advertisement on the next page for two funded postgraduate positions that are available in Cape Town.

But we realise that it's not all about numbers. We have been hard at work making our research relevant, and have built connections with practitioners and government officials not only in our partner cities but also elsewhere on the African continent.

We have met with delegations from Accra, Ghana, and Dakar, Senegal, to share the lessons we've learnt in our paratransit project in Cape Town. In Nairobi we've been involved in stakeholder meetings with public transport operators and we've been working on an official policy brief on the proposed banning of 14-seater matatus in this city. In Dar es Salaam we're working with government on how to manage the interface between the proposed bus rapid transit and existing paratransit systems.

We have furthermore teamed up with municipal officials in Cape Town to measure the impacts of the city's travel demand management strategy, the first step of which has been the evaluation of a new rail-based park-and-ride scheme. Staying in this city, we've also successfully planned and demonstrated walking buses as an alternative to motorised means of travel.

Please read on for more on our recent news and activities, but as always you are welcome to write to us at acet-info@uct.ac.za or to visit our website at www.acet.uct.ac.za for details of our people, projects and publications.

ACET

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Postgraduate studies

Scholarships offered

ACET is offering the following scholarships for full-time study at the University of Cape Town, to commence in 2011:

- Doctoral thesis: travel behaviour change dynamics, encouragement and measurement (ZAR 160 000 p.a. for a maximum of 3 years)
- Master dissertation: impacts of reduced accessibility due to high oil prices on urban commuters in the global South (ZAR 75 000 p.a. for a maximum of 2 years)

As the research topics are multi-disciplinary in nature, applicants from a range of academic backgrounds will be considered.

To apply, submit a motivation letter and full curriculum vitae to the CFTS Administrator, Ms Rowén Geswindt, at rowen.geswindt@uct.ac.za, before 15 April 2011. She can also be contacted for more information.

Report back — April-December 2010

ACET plays key role in road safety project

International statistics show that South Africa has one of the highest road fatality rates in the world. Although regular analysis of road safety data takes place, improvement measures based on past analyses have not led to major reductions in road fatalities in the past. A key reason why these measures have not had the desired impact is that the typical approach to assessing road safety does not look across all contributing factors. Human behaviour, driver behaviour and the physical road environment all play a role, but are often viewed in isolation from one another, resulting in incomplete solutions.

Realising the limitations of conventional thinking the Provincial Government of the Western Cape (PGWC), the province in South Africa in which Cape Town is located, decided to take a more holistic view with its Safely Home initiative. It approached Marianne Vanderschuren and Rahul Jobanputra, both ACET researchers, to support it in collating and assessing available statistics, and to propose suitable ameliorating measures. Their inputs further included filling in gaps in the statistics,

and developing tools to ease the data collection and processing burden. They also conducted interviews with pedestrians around Cape Town to understand their attitudes to risk-taking while in the road environment.

Preliminary results were revealing. Depending on location, between 55% and 77% of interviewed pedestrians were inclined to take large risks while using roads. Risky driving behaviour like speeding, drunk driving and not wearing seatbelts was also disturbingly common. Most surprising perhaps was their modelling of the impact of infrastructure on behaviour in Cape Town. While reducing vehicle speeds can drastically reduce the risk of fatalities, the initial results of the local modelling shows that introducing speed reduction measures such as speed humps, chokers and roundabouts reduce travel speeds and risk of fatalities by more than what the international literature suggests.

Their research continues, so for up-to-date results contact Marianne or Rahul at marianne.vanderschuren@uct.ac.za or rahul.jobanputra@uct.ac.za.

Report back — 14-16 December 2010

The VREF Network meets in Nairobi

The Volvo Research and Educational Foundations (VREF) held its 2010 Future Urban Transport Academic Workshop in Nairobi, Kenya. This bustling city with its unique mix of pedestrians, cars, buses, motorbikes and matatus provided an ideal setting to discuss urban transport matters.

The Centre for Sustainable Urban Development (CSUD) at Columbia University in New York—which, along with ACET, is one of eight international Centres of Excellence (CoEs) funded by VREF—organised the workshop.

The first day of proceedings were structured around CSUD's work in Kenya. The remaining CoEs then presented overviews of their own research. Highlights included presentations by Wu Hongyang of CUSTRec, Beijing, outlining the barriers to public transport promotion in China; Dorothy McCormick, from ACET, on paratransit operations and institutions in Nairobi; and

Geetam Tiwari of TRIPP, New Delhi, who described research initiatives related to bicycle and pedestrian traffic in the Indian context.

The PhD workshop, held on the final afternoon of proceedings, offered a glimpse of the abundance of interesting PhD topics, and left the students with the collective sense that more time should be devoted in future to allow them to share their ideas and benefit from interaction more fully.

At a dinner at the National Museum workshop attendees gathered around a massive sculpture symbolising the increasing co-existence, sometimes challenging, of the different groupings in Kenya. Against such a powerful backdrop, Harry Dimitriou of OMEGA, London, reflected on the virtues of being part of such an internationally diverse transport research network, and on the key role that VREF has played in bringing it into being.

Collaboration: many views, one approach

Whether you look at our people or our partner institutions, at ACET we truly embrace a multi-disciplinary approach to research. Diversity is a key aspect of the way we do things, but also critical in dealing with the challenging urban environments in which we live and work.

ACET draws on engineering and policy expertise at the University of Cape Town's Centre for Transport Studies, the transportation engineering focus of the Department of Transportation and Geotechnical Engineering at the University of Dar es Salaam, and the social science strengths of the Institute for Development Studies at the University of Nairobi.

Beyond ACET's main partner institutions we also have ties in Kenya with the Department of Civil, Construction and Environmental Engineering at Jomo Kenyatta University of Agriculture and Technology in our research into non-motorised transport in Nairobi, and on

the road safety front with the School of Public Health and Community Development at Maseno University in Kisumu. The Department of Civil Engineering at the University of Pretoria furthermore contributes to our travel behaviour change project team.

Besides project researchers, the number of postgraduate research students funded by ACET has also grown steadily. Our students are registered across four universities in a range of disciplines and degrees: master of arts, master of philosophy, master of science with specialisation in engineering, and PhD.

Diversity is not an end in itself though, and does not distract us from our focus, that is, to address head-on and in a practical way the passenger transport challenges that we face in cities across the African continent. Under the banner of ACET our people and our research endeavours are firmly unified.

Research update

Supporting paratransit regulation in Nairobi

Over the years the Kenyan government has continued to seek solutions to what many see as Nairobi's chaotic paratransit sector. 2003 heralded a major turning point as the government rededicated itself to enforcing traffic regulations and put in place new road safety measures. Dramatic improvements followed, but proved difficult to sustain.

In order to address this organisational challenge the Ministry of Transport and the Transport Licensing Board (TLB) issued a notice on 1 November 2010 requiring all public transport operators to form either savings and credit cooperatives (SACCOS) or companies if they wanted to continue operating. A second notice in early December 2010 reiterated that the TLB would only license SACCOS or companies formed by legitimate vehicle operators and that no single SACCO or company would be allowed to monopolise routes. This notice added that as of 2011 no new 14-seaters would be licensed.

The ACET paratransit project in Nairobi is investigating the implementation and effects of both of these regulatory changes. Formation of SACCOS was slow at first, but seems now to be mov-

ing ahead. Our research revealed that, despite their initial resistance, a significant proportion of Nairobi matatu operators have already begun to form new transport SACCOS or joined existing SACCOS or companies. Implementation of the directive is, however, taking place amidst fears of cartelism and the dramatic expansion of SACCOS and companies on some routes.

Researchers have interviewed officials of one SACCO that pre-dates the directive and intend to interview some of the newer ones once they have established themselves. A key question is whether there are significant differences between those that arose spontaneously before the directive and those being formed as a result of the government requirement.

The proposed phasing out of 14-seater matatus in the City of Nairobi continues to be an extremely controversial move, and recent interviews found considerable resistance amongst operators. A primary consideration of theirs was that phasing out the 14-seater matatus would affect the livelihoods of thousands of people who depend on the transport sector.

Postgraduate research Marilyn Ommeh on modal choice



Marilyn Ommeh was recently awarded a Master of Arts degree by the University of Nairobi, making her one of ACET's first graduates – well done Marilyn!

Her dissertation investigated the link between

paratransit fares and passengers' modal choice by using Sameer Park industrial area in Nairobi as a case study. She was enrolled through the Institute for Development Studies, where her research was supervised by Dorothy McCormick and contributed to ACET's paratransit project in Nairobi.

Marilyn's study interrogated the effects of paratransit fares and other factors on work trip modal choices of industrial workers. Her findings show that workers who cannot afford to use matatus regularly for their work trips rely either solely on non-motorised transport (NMT), or use matatus interchangeably with NMT. Apart from fares, other factors such as their level of education, type of employment and distance from the work destination also influence modal choice.

Her research clearly illustrates that paratransit fares influence industrial workers' modal choice, and furthermore recommends the establishment of a fare regulatory board to set and control the fares of all public transport modes.





Postgraduate studies

Upcoming courses

- Rail planning and operations management (END5067Z): Lecture week 9-13 May 2011 (UCT)
- Transport demand analysis and project assessment (END5047Z): Lecture week 20-24 June 2011 (UCT)
- Management of transport supply and demand (END5035Z): Lecture week 25-29 July 2011 (UCT)
- Bus planning and operations management (END5068Z): Lecture week 19-23 September 2011 (UCT)
- Transport modelling (END5048Z): Lecture week 24-28 October 2011 (UCT)
- Local area transport planning, management & design (END5036Z): Lecture week 28 November-2 December 2011 (UCT)

Please visit www.cfts.uct.ac.za for more information.

Research update

Assessing public transport across cities

During the past few decades developing world cities have experienced rapid population growth, whether in Africa or elsewhere. As a result urban transport systems are struggling to cope with the increase in demand. In the absence of local expertise the sharing of experiences between cities could be a valuable resource. However, a common obstacle to such shared learning is the absence of a method to comparatively assess public transport systems based particularly on developing world constraints and criteria.

In collaboration with ACET researchers and public officials Yolandi Roux, an ACET-funded master degree student, developed a comparative assessment model based on information gathered in Cape Town, Dar es Salaam and Nairobi. These three cities offer widely varying local conditions and levels of data availability, and the model is thus responsive to the diversity typically found in African and other developing world cities.

The model includes steps to describe, discuss and evaluate urban public transport systems. It reflects the quality of performance in terms of prevailing conditions, and identifies public transport issues which regulatory stakeholders and public transport operators should focus on. It also contextualises the desired performance levels to make them appropriate to the city and country in question, rather than simply adopting them from other cities and countries where differing conditions exist.

Central to the model is the identification of performance indicators based on a city's existing public transport goals and objectives. This sets the scene for determining data requirements. Important considerations at this point are the quality of existing data and how much new data will be needed. Should it be necessary the indicators can be adjusted to reflect what new data can realistically be collected. The model then calculates the extent to which the current system meets pre-determined performance indicators, which can then be compared with the model's results for those indicators in other cities.

Research update

Travel behaviour change in Cape Town

The City of Cape Town recently upgraded some of its park-and-ride facilities at rail stations. Seeing an opportunity to gain insight into the impact of these upgrades on commuting behaviour the ACET project on travel behaviour change undertook a before-and-after study at a selection of these facilities. Johann van Rensburg, a master degree student, collected and analysed data at three affected rail stations and three control stations by way of parking counts and 6 500 vehicle number plate recordings over a period of 12 months. He also conducted intercept surveys of park-and-ride users at affected stations.

Parking counts revealed uneven before-and-after impacts across the stations: there were respective increases of 13%, 27% and 44% in observed vehicles at the affected stations, compared to a mean increase of 14% across the control stations. Combined, the weighted mean increase at affected stations was 29%, suggesting that park-and-ride improvements could have resulted in an increase in users in the order of 15%.

Utilisation rates were also highly variable, with clear evidence of churning (churning is when the total number of users stays constant, but when compared between days it is not the same users who make up this total). The intercept surveys revealed that 16% of the 43 new park-and-ride users interviewed were previously rail users who did not use any park-and-ride facility, and 67% were car users.

Given the absence of a uniform impact on commuting behaviour, a further 400 non-users were surveyed within the catchments of the affected stations to gauge how effectively the park-and-ride upgrades had been marketed. The researchers found that 56% of respondents were aware of the upgraded facilities, of whom 66% had heard of the facilities via the City of Cape Town's marketing strategy. In reflecting on all these findings the project team realised the great value of collecting data longitudinally – i.e. at the same sites over time – in building a better understanding of how travel behaviour changes.