MOBILE PHONES, MOBILITY AND TRANSPORT IN SUB-SAHARAN AFRICA

Two panel sessions exploring the growing linkages between travel/transport organisation and mobile phones in Africa were held at the African Studies Association biennial conference at Sussex University in September 2014, organised and chaired by Gina Porter [Durham University] and sponsored by the DFID-funded Africa Community Access Programme. The remarkable expansion of mobile phone networks in Africa is bringing a tangible new dimension of connectivity into transport and access equations on the ground: now-feasible interactions between virtual and physical mobility are helping to reshape access potential, even in many hitherto remote areas (especially where linked to the rapid uptake of transportation modes such as the motorcycle-taxi). Phones can cut travel costs and time, reducing the number of long, potentially hazardous road journeys on poor roads in badly maintained vehicles, in regions with among the world's highest accident rates and where highway robbery and other types of harassment associated with travel may be widespread. Better distance management through phone use may be particularly closely associated with populations with very low disposable incomes, and/or whose physical mobility is limited, for instance by disability, infirmity, age or gender.

Six papers were presented, all exploring the emerging linkages between mobile phones, transport and mobility in Africa, but in diverse contexts: maternal health, trading, older people's lives, youth, and improving road safety. In the final session, reflections on emerging themes and issues were presented by the panel discussant, John Hine. That this is a fruitful time to revisit the access challenges characteristic of many parts of the continent was confirmed by the lively debate which characterised the meeting.

PAPER ABSTRACTS

Extending the reach - the interaction between mobile technology, transport and maternal health

Caroline Barber, Silvia Poggioli Transaid, London, UK

Mobile phone providers have predicted that by 2017, 334 million smart phones will have been sold in Africa. Coverage is rapidly increasing and handsets are becoming increasingly affordable. This presentation will share Transaid's direct experiences of how the prevalence of mobile phones in rural Africa can support efforts to reduce maternal mortality and morbidity. Interventions that involve transporting pregnant women to health often have a critical dependency on mobile technology. In Northern Nigeria an 'Emergency Transport Scheme' is in operation whereby the National Union of Road Transport Workers provides timely and affordable transport to pregnant women. In the majority of cases the driver is contacted through a mobile phone, steps having been taken to encourage transport and communication to be considered as part of birth preparedness planning. In Gombe state, Northern Nigeria, a calls centre has been established to link pregnant women with the 'ETS' drivers. Being able to make this 'direct' contact with reliable and trusted drivers may help to remove barriers at a household level and potentially reduce security concerns associated with travelling at night to health facilities. In March 2014 Transaid organised an emergency transport workshop in Tanzania which brought a range of leading researchers, practitioners and other key stakeholders from over ten countries. This meeting provided rich and valuable insights into the enabling role that mobile technology can have in facilitating emergency transport and also explored some of the limitations. This presentation will share highlights and emerging issues from the Tanzania workshop.

Mobile phones, motor cycle taxi operations and rural livelihoods: user and operator perspectives from Tanzania

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In Kibaha district, Tanzania, emerging connectivities associated with the rapid expansion of motorcycle-taxi services and mobile phone usage are bringing substantial change to the lives of the rural poor, both as users and operators of technology. In remote parts of this district, where inhabitants in the past often had to wait hours or days for a vehicle to appear, it is often now possible to call one of the young men who operate motorcycle-taxi services from the taxi stands found in each village and to be riding pillion en route to a required destination in a matter of minutes.

In-depth interviews with the young male motorcycle operators and with older users [men and women] and an associated small survey in ten rural settlements in Kibaha district form the base for an examination of the interconnections between usage of mobile phones and motorcycle taxis and the ways in which these are now helping to improve distance management and change the shape of rural livelihoods. The discussion includes a consideration of the safety issues associated with motorcycle operations from both operator and user perspectives. The paper concludes with some broader reflections on similar developments in phone/transport connectivity across sub-Saharan Africa and associated policy issues.

Mobile phone technology status and maternity health service access in rural Tanzania

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Background: Tanzania's latest reported maternal-mortality-ratio remains high at 454 per 100,000 and nationally, less than half of all births are attended by skilled health-personnel. In order to raise skilled attendance at delivery and to reduce delays in obstetric emergencies, access to health facilities during the pregnancy needs to be improved. Communications are essential components in the chain of events to improve maternal-health services and use of mobile-phone-technology (MPT) has potential for reducing delays in reaching appropriate maternal care.

Methods: Within the frame of the Health-Promotion-and-Systems-Strengthening-Project (HPSS), funded by the SDC and implemented by the Swiss TPH, this study explores MPT

knowledge and use relating to accessing maternity services. Participatory approaches on 272 participants were used.

Results: 77% of the respondents reported that their household owned a mobile-phone. The study explored battery-charging sources, traveling times to an airtime vendor, airtime expenses and skill in using the phone. A significant gap in MPT use between men and women was identified in the sample. Women own fewer phones, are less skilled in their use and spend half that of men on airtime. Only 3% of the pregnant women reported using a mobile phone to assist their travel arrangements to a health facility.

Conclusion: MPT is widely used in Tanzania. Therefore has the potential to enhance communications between rural isolated areas and maternal services; that might reduce delays, particularly during obstetric emergencies. However, women's use of MPT is less than that of men and they are unaware of it's potential when seeking maternity-health services.

Mobile Malian women traders and the need for mobility

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This paper focuses on mobile female traders from Mali, who regularly travel to Dakar in Senegal to sell or buy goods. In the recent past, these women deployed the Dakar-Niger Railway, trading goods en route and at the terminus train station in Dakar, where a Malian market existed until 2009. With the decline of the railway, the mobile women traders gradually shifted to alternative means of transport by road. This paper will first outline the trade cycles of these mobile women and discuss how the use of communications technology and different means of transport is changing women's experiences of moving. I will then discuss the volatile and precarious nature of the economies the women operate within, and the traders' ambiguous relations with each other. The paper will argue that the unstable socioeconomic environment creates a need for physical mobility and displacement of traders and that mobility is not rendered obsolete by the existence of mobile phones and other communications technology. The absence of formal contracts and legal frameworks to protect the rights, goods, and earnings of traders creates a need for surveillance and face-to-face contact with other traders and middlemen, to reinforce trust, loyalty and proper conduct.

Youth, mobility and mobile phones: exploring linkages between young people's mobile phone usage and travel behaviour in sub-Saharan Africa

<u>Gina Porter</u>^{1,2}, Kate Hampshire¹, Albert Abane³, James Milner⁴, Alister Munthali⁴, Elsbeth Robson⁷, Andisiwe Bango⁵, Ariane DeLannoy⁶, Mac Mashiri⁸, Augustine Tanle³ ¹Durham University, Durham, UK, ²Africa Community Access Programme, London, UK, ³University of Cape Coast, Ghana, Cape Coast, Ghana, ⁴University of Malawi, Zomba, Malawi, ⁵Walter Sisulu University, Umthatha, South Africa, ⁶University of Cape Town, Cape Town, South Africa, ⁷University of Hull, Hull, UK, ⁸Gwarajena consulting, Pretoria, South Africa

The communications landscape is changing dramatically in both urban and rural areas of Africa, as mobile phone usage and ownership expand exponentially. This may have significant implications for the scale and nature of travel. In the context of prevailing high

travel costs, dauntingly high rates of road accident and injury and other travel difficulties and dangers, there would seem to be considerable potential for virtual mobility to substitute for physical mobility in many contexts, and perhaps especially among young people who typically have limited resources and a strong propensity to embrace available new technologies like the mobile phone. This raises interesting questions around the intersections between physical and virtual mobility, including the extent to which intermittent copresence [Urry 2012] remains a necessary pre-condition for the maintenance of strong social relations in African youth contexts. Other considerations, however, include the potential of phone usage to facilitate travel, for instance by assisting the organisation and scheduling of group travel, by ensuring safety and security during travel through collective action and [virtually] escorted journeys, and by supporting journeys into unknown territory. The paper draws on ethnographic and survey research across 24 sites in Ghana, Malawi and South Africa, principally to explore young people's perceptions regarding the impact of phone use on their own travel behaviour, but also to consider that of family and other close contacts, insofar as this impinges on their own lives. Comparisons are drawn by age, gender, and locational context (rural versus urban sites, and country differences).

The Impact of Text Message (SMS) Reminders on Helmet Use among Motorcycle Drivers in Dar es Salaam, Tanzania

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The number of new motorcycle registrations per year in Tanzania increased from 45,000 in 2008 to 109,000 in 2012. This coincided with the number of officially reported motorcycle deaths increasing from 309 in 2008 to 930 in 2012 (Tanzanian Traffic Police, 2013).

Globally, head injuries are the main cause of death among motorcyclists. Helmets protect very effectively against such injuries (WHO, 2004).

Motorcycle taxis are an increasingly popular mode of transport in Tanzania. In the main city -Dar es Salaam - unpublished surveys have shown helmet wearing rates among motorcycle drivers to be around 85%, although observation and anecdotes suggest that rates on minor roads are far lower than this.

This paper will present the findings of a randomised controlled trial to measure the impact of SMS reminders on helmet wearing among motorcycle taxi drivers in Dar es Salaam.

The trial involves sending SMS messages to around 400 motorcycle taxi drivers, divided into three groups. The first group will receive 'peer pressure' messages to encourage them to wear a helmet. The second group will receive 'fear of injury' messages to encourage them to wear a helmet. The third group will act as a control, receiving general messages about road safety, not related to helmet wearing.

A survey of helmet wearing rates among the three groups will be conducted before, during and after the end of the 6-week messaging campaign. We will compare this rate between the three groups, to assess the impact of the SMS reminders on helmet wearing.



Africa Studies Association of UK Conference

Building a Research Community for the Rural Transport Sector in Africa

Rob Geddes and Les Sampson 11th September 2014



AFCAP

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Barriers to Innovation

AFCAP

UKaid

- No demand for new knowledge from roads and transport authorities, who themselves are not conducting research
- Road designs carried out by private consultants who are unable to take risks
- Client engineers lack practical experience and seldom question design recommendations by consultants
- Transport ministries overwhelmed by congestion in capital cities
- Very few universities in Africa are engaged in systematic research for roads or rural transport
- Extended time frames required to achieve changes to established practice which do not suit the expectations of political leaders.

Institutionalising Rural Transport Knowledge and Research Capacity in Sub-Saharan Africa. SATC 2013. LR Sampson and RN Geddes

The Uptake of Research and Innovation by the Rural Transport Sector in Africa. ICE (2015). RN Geddes





Benefits of Research

AFCAP

UKaid

Strategic Approach to Managing Knowledge



- Cost benefit analysis on AFCAP research on low volume paved road technology estimated that the research generated a benefit/cost ratio of more than 7 (Carruthers, 2013)
- In Malawi the construction costs for a two lane paved rural road can be reduced by up to two-thirds by more judicial use of local occurring materials.







Current Research Centre Initiatives

AFCAP

UKaid

Communication

- Existing
 - South Africa (CSIR)
 - Ethiopia
 - Kenya
- AFCAP supporting
 - TanzaniaMozambique
 - Ghana
- World Bank and EU support
- Variations in institutional models depending on current structures and existing capacity.



Newsletters and leaflets

- Social media (LinkedIn)
- Workshops and conferences
- Study visits
- <u>Personal networks</u> (researchers and users of knowledge).







Capacity Building is critical



Low image of research

• Staff incentives to improve retention

AFCAP

UKaid

Develop broad spectrum of disciplinesInternational research organisations can

provide technical assistance & mentorship

Linkages need to be developed.

mentorshipLinkages need

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Points for Further Discussion

AFCAP

- How do we link the Road Research Centres to Universities and other tertiary institutions?
- Are regional coordinating structures practical and realistic to prevent duplication of effort?
- What role should established international research organisations play, especially in capacity building?
- What structures and systems need to be in place to facilitate improved access to roads and transport-related knowledge and information in Africa?



ASA UK Conference, September 2014, University of Sussex, UK



ABOUT IFRTD

- Formed in 1992
- What is it: A global network of individuals and organizations working together in research, information sharing and policy advocacy on rural transport and its links to development
- Membership: c. 4000 members and 30 National Forum Groups
- Legal status: Registered in the UK as company and charity;
 Governance: International Board of Directors; Advisory Committee
- Secretariat traditionally works through coordinators in East and Southern Africa, West Africa, Asia and the Pacific and Latin America
- Core funding: (till 2011) Swiss Development Cooperation, Swedish International Development Agency, DFID
- Other funding: Research projects and activity grants



WHY FOCUS ON RURAL TRANSPORT AND DEVELOPMENT?

- "Roads Are Not Enough". A recognition of the need for a broader focus on transport not just as roads, but as key enabler, linked to wider development outcomes and policy streams.
- Transport needs to focus on users – people and communities should be an important starting point for planners.
- Means of transport are important- both motorised and nonmotorised – that provide mobility for people and goods an important part of the transport system



IFRTD

EXAMPLES OF IFRTDS RESEARCH AND ADVOCACY AREAS

- Transport and inclusive development:
 Spotlighting issues of rural isolation and poor access to key services
- Linking transport and inclusion as part of wider development such as MDGs and Post MDGs.
- Promoting an integrated view of rural transport investments
 - A holistic approach to rural infrastructure or network completion: ensuring all levels of the rural network are taken into account (strategic rural feeder roads to the basic access infrastructure tracks, footbridges, drainage structures)
 - Reliable transport services including IMTs
 - Ensure transport links to other services that deliver growth, development and inclusion
 - Monitors differentiated streams of benefits to various users



IFRTI

CHALLENGES IN RURAL TRANSPORT RESEARCH

- Last 30 years has seen proliferation of research on the nonengineering dimensions of rural transport and especially the interface between access poverty reduction, and rural livelihoods.
- Such organizations as AFCAP, IFRTD, the World Bank, IT Transport etc have been at the forefront of this as well as private consultants and academics
- However it is acknowledged that rural transport research output has not been as high as should be; key challenges include:
 - inadequate dissemination;
 - Non integration of the knowledge into mainstream transport research literature;
 - unsatisfactory conversion of knowledge into policies and widespread good practice.
 - Limited throughput of young researchers into the sector



- The networked research methodology was pioneered by IFRTD as a means to create mutually self-supporting research communities on an
- The concept has its seeds in IFRTD's philosophy of knowledge and its practice of networking existing research issue.
- Upon identification of a researchable problem, the methodology brings together people from different countries or contexts to collectively build a common analytical framework for their research
- It builds a broad methodology, mechanisms for peer support in implementing research, a common communication strategy and a policy advocacy approach into the design of the research programme.
- or Networked research is more of framework for conducting development research that allows its members to participate, learn share and customise the research process and results to their own contexts. It is not a scientific methodology of social inquiry

NETWORKED RESEARCH IN PRACTICE

IFRTD developed the concept of networked research through three international programmes as follows:

- A pioneering programme on Gender and Rural Transport known as "Balancing the Load", in 1998/99: This was the first multi-country research that showcased the burden of transport that falls on wowen accross different cultural and economic contexts
- "Waterways and Livelihoods Programme" (2001/03) research into access challenges of communities that are dependent on waterways as the primary means of transport to livelihoods opportunities
- iii. "Mobility and Health Programme" in 2006/08: 16 case studies from different countries highlighting the challenges of transport and physical access to health care services especially among women in rural areas of developing countries.

LITERATURE ON NETWORKED RESEARCH

 The use of networked research was continuously developed and refined, and culminated in the publication of the "A networked research approach', (2006) a guide to conducting research in a network setting, published by IFRTD with financial support from Skat and the Swiss Agency for Development Cooperation http://ifrtd.gn.apc.org/new/res/en_nr

_manual.pdf



IFRTD

IFRTD

IFRTD

CORE CHARACTERISTICS OF NETWORKED RESEARCH

Networked research has some core characteristics.

- 1. Focus on developing a research community on rural transport in the global south: It aims to strengthen knowledge production and southern perspectives on to the international rural transport research agenda.
- 2.It is based on the belief that diversity enhances research, and that everyone has a right to knowledge.
- 3.It aims at leveraging change and so the dissemination of findings is targeted and interactive, and integral to the research process.
- 4.Researchers are self-reflective, peer support is encouraged and the research data is fed back to the subjects of the research. It is a process of continual learning.



IFRTD

NEED TO FOCUS ON YOUNG RESEARCHERS

- IFRTD is an organisation that works by promoting global networks, coalitions and Communities of Practice around the issues of rural transport and development.
- A challenge in rural transport has been lack of growth in number of young researchers taking part in the available programmes especially non-engineering aspects of transport; this presents the following challenges:
 - Expansion of overall research output is constrained
 - Puts into jeopardy the future growth of this research area
 Limited growth of new perspectives and innovations in rural transport and access;
 - The sector is lagging behind in developing vibrant platforms for dissemination and engagement using ne communication platforms that are available.

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WHY THIS STATE OF AFFAIRS

- Rural Transport not mainstreamed in any academic discipline: This research area carries many cross-cutting themes that it straddles many disciplines: (eg Agriculture, rural development, regional planning, social studies, gender civil engineering etc).
- There has not been a deliberate effort to incentivise and mentor young people into rural transport research.
- Comfort with the current (but static) pool of established researchers?
- Pressure for quick research results and current value for money undermining long term capacity needs
- Declining interest in rural development studies in general and rural transport in general as reflected in comparative resources outlay and research outputs in urban transport



SOME RECOMMENDATIONS

- **Partnership with universities and academic institutions**: develop a mechanism to ensure that knowledge generated in this sector is integrated as modules into relevant academic programmes or as a stand-alone courses in transportation studies.
- **Innovative communication** of rural transport research issues: Dissemination mechanisms targeting young people using contemporary and emerging platforms that they use.
- Deliberate Capacity Building: Several approaches are suggested:
 Use of network research approach to nurture a community of young researchers by enrolling them into various research programmes with support
- from senior researchers. 2. Research competition: A programme where prospective young researchers are supported through competition. This support should be designed not to be short term, but should aim to have a good throughput of credible young researchers in the medium and long term
- 3. Participation in conferences/workshops: They could participate through special segments for young researchers or as presenters in main events where they interact with senior researchers



The Case for Research

Problems facing Africa.....

Lack of good road-building materials / haulage costs

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- Inappropriate specifications
- Unsatisfactory contractor performance
- Inappropriate road design
- Quality control not rigorous
- Transport costs:



Introduction

- Road sector perspective
- Previously done through Central Materials Laboratories
- History of road research in Africa originated outside the continent
- Move towards developing indigenous research capacity (Ethiopia, Tanzania, Mozambique, Zambia, etc)
- WB and DFID funded AFCAP has provided support to the initiatives
- Pool of local talent is growing (but is also mobilized
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The Ethiopia Experience (2010-2012)



The Ethiopia Experience (2010-2012)

Strategic Goals

- Fully operational RRC by December 2013.
- Establish team of 50 trained road research professionals (excluding technicians) advising on improved network development by 2016, growing to 100 trained professionals by 2021.
- To attain accepted standards of international certification for the management and operation of the RRC by December 2014.

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The Ethiopia Experience (2010-2012)

Main activities

- A vision, mission and goals
- An appropriate institutional/organisational structure
- Staffing plan and job descriptions
- Training plans and course establishment
- Business and research plans
- Plan for potential partnerships and links
- ISO accreditation, quality policy and manuals



The Ethiopia Experience (2010-2012)

Vision and Mission

- "To be an internationally recognised Centre of Excellence for roads and related transport research."
- "To support the road sector through the provision of independent, innovative and effective knowledge-based solutions for a safe and efficient Ethiopian road network."

The Ethiopia Experience (2010-2012)

Research Staff Structure

- Director
- Team Leader
- Lead Researcher
- Senior Researcher
- Researcher
- Junior Researcher
- Technician

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The Ethiopia Experience (2010-2012)	The Ethiopia Experience (2010-2012)
Training Needs Assessment	Partnerships and Links
 Traditional TNA not appropriate 	 National (universities)
 Few staff in place 	Regional
 Staff had little or no experience in roads, less in 	 International (TRL, ARRB, CSIR)
research	ISO accreditation, Quality Policy and Manual
 Responses showed a wide range of subjects 	 QA system
 Core subjects were more popular, i.e. 	 Procedures manual
• roads,	 Technical review system
pavement design	
• materials	Page• 17

The Ethiopia Experience (2010-2012)

Long Term Training Plan

- Management training
- MSc qualification
- PhD in related field
- Specialist technical courses
- Conferences, seminars, workshops
- International placements
- Practical experience and mentoring

Challenges

- Stakeholders especially political and public want to see immediate results
- In roads you can only be really sure after 15-20yrs
- Attracting funding for long term research programmes (sustainability)
- The value of research not clearly understood and appreciated by many
- Staff recruitment and retention
- Data capture, research continuity and organisational knowledge

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Challenges

Overcoming them requires:

- Political buy-in is important
- Blend of projects which includes quick wins, intermediate term and long term to win sustainable stakeholder support and funding
- Need for centre to generate its own revenue e.g. through services to private sector
- Partnering with universities international and local will provide an element of continuity and collective use of resources
- Awareness needs to be raised of research benefits

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Thank you

Presented by Andrew Otto

11th September 2014

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Rewards of indigenous research capacity

- Understand and investigate local problems and provide tested solutions to them
- Gather knowledge international and national and disseminate in the indigenous context
- Enables confident use of new techniques through trials and tests
- Sustainability in use of resources prolonged life of assets and the benefits that accrue
- Cost savings and better returns on investment



Concluding remarks

- Move towards building indigenous research capacity in Africa
- Case for establishing research centres is strong
- Links between countries and knowledge sharing is important
- Challenges exist and at the same time solutions are plausible constant stream of results
- Political buy-in very important
- We must remain focused so as to realise the rewards

ISF

