Research in Transportation Economics 40 (2013) 96–103

Contents lists available at SciVerse ScienceDirect

Research in Transportation Economics

journal homepage: www.elsevier.com/locate/retrec

Comparisons of urban transport sustainability: Lessons from West and North Africa

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ARTICLE INFO

Article history:
Available online 2 July 2012

Keywords:
Bus companies
Energy cost
Institutional reform
North Africa
Paratransit
Poverty
Public transport
Sustainability
Urban mobility
West Africa

ABSTRACT

The diagnosis for urban transport sustainability depends on the context of different regions worldwide. We focus in this paper on West and North Africa which reveal similarities but also structural differences which are explored further. The importance of paratransit in its various forms is strongly observed in sub-Saharan Africa and to a lesser extent in North Africa. The attempts to regulate and organise this sector have been difficult; one interesting experience in Dakar occurred during a programme of fleet renewal. In parallel it is observed that there are positive but insufficient experiences of public transport authorities in some cities (Dakar, Abidjan) and similar projects postponed in other cities because of the institutional problems. One also observes the constant difficulties of designing sustainable schemes for bus companies. An answer to this crisis has been found in North Africa, through investment in new mass transport systems. However, mass transport projects in West Africa are very weak in comparison. The gap between public transport costs and income levels there remains a major obstacle to sustainable mobility exacerbated by the poverty of a significant part of the urban population in West Africa. Two other critical factors are also identified affecting sustainable mobility requirements, namely, the urban sprawl and increasing energy costs. Finally the conclusion recommends the use of research and expertise networks in order to help the design and the implementation of suited solutions.

1. Introduction

In the scheme of sustainable mobility, we classically consider four dimensions: economic, social, environmental and institutional. How are these dimensions to satisfy the requirements in Africa? We will consider the experience of both West and North Africa with our focus mainly on African Francophone cities where there are many differences, but also some similarities. We have chosen to focus mainly on the question of public transport supply which should be the basis of sustainable mobility systems and not to consider in this paper the question of urban structure which is nevertheless a big challenge for sustainable mobility due to the urban sprawl.

2. Some similarities and structural differences of urban mobility systems in west and North Africa

One evident difference between cities in West and North Africa are the respective roles of walking, public transport and private means of transport, particularly the motor car, in meeting travel needs.

Another difference arises from the dynamics of motorisation. Households are more and more equipped and utilising private cars in North African cities, thanks to increasing revenues and to policies alleviating the cost of car purchase, through programmes called “popular car” which aim at making easier access to private cars for the middle classes; (Morocco and Tunisia had such programmes at the end of the 90s and Algeria adopted a similar scheme in the 2000s). The car ownership rate there is now more than 100 cars/1000 inhabitants. In contrast, the car ownership is very low in West Africa and does not increase much because demographic growth compensates for the car fleet increase. (national rates of about 10–40 cars/1000 inhabitants for a range of countries).

The importance of walking is very high in Sub Saharan cities: i.e. rates up to 70–80% of all urban trips are pedestrian. This share is lower but also important in North African cities: (estimates of 53% of all trips in Algiers and in Casablanca in 2004).

These differences result from many historical and socio economic factors especially the level of available resources per capita and the supply of public transport. But there are also similarities: including the presence of public or semi-public bus companies many of which collapsed due to financial constraints and the important role of paratransit transport.

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http://dx.doi.org/10.1016/j.retrec.2012.06.033

3. The importance of paratransit transport

Paratransit comprises all forms of transport which are operated on the basis of individual initiatives usually involving an owner, a driver and a controller. Such transport is characterised by a multiplicity of vehicle ownership arrangements in which the driver has the operational responsibility and commonly pays daily the owner a rental and keeps the surplus as his revenue to share with the controller: this is the scheme observed in many cities (Godard, 2002) and plays a major role in the whole African continent. This legal small scale operation of public transport generally uses low capacity vehicles (Godard, 2006):

- *Minibus:* this generic word includes the microbus (10–15 seats); minibus (16–25 seats); and midibus (26–44 seats). They are observed in almost all West and North African cities with the exception of Tunis.
- *Shared taxis:* private cars used as taxis where each passenger pays a unique fare. The most famous examples are *woros-woros* in Abidjan or *grands taxis* in Casablanca and other Moroccan cities. This word is used in Egyptian cities, however, to define minibuses which can lead to misunderstandings.
- *Motorcycle taxis:* the motorcycle is also used as public transport and can convey in principle one person, but sometimes more. It is very popular mode and has been used in some cities for more than a decade (*zemidjans* in Cotonou, Lomé and, Douala). Usage is increasing and spreading to other cities: it has become prevalent in Monrovia

Several words are used in English[1] for the concept of informal transport (Habitat), paratransit (selected by the ACET team working in South and East Africa) (Schalekamp & Behrens, 2009) A relevant distinction is also sometimes proposed to distinguish between unscheduled services (supplied by paratransit) and scheduled services (supplied by institutional companies).

Paratransit developed often out of a political crisis in some cities such as Douala or Lomé when the traditional sector was affected by strike action in the 90s. A similar dynamic could happen in Tunisia where the Revolution of 2011 induced many social conflicts in urban transport increasing the vulnerability of the public transport companies: less revenues because the users do not want to pay the fares, less supply because some strikes limited service, and less control by the police who were viewed as too representative of the previous regime, so the course of events opened the market to paratransit and clandestine transport operations (Tables 1 and 2).

4. The attempts at regulating and organising paratransit: Dakar lessons

In many cities paratransit is operated subject to minimum regulation and is organised by the public authorities in respect of licenses and taxes only. In practice the sector is mainly self-organised by the stakeholders and particularly by the drivers themselves associated in route unions rather than the owners unions. Analogous schemes are observed in Francophone (Godard, 2006) and Anglophone cities (Finn, Arthur, & Gyamera, 2009). Attempts at organising the sector on a rational basis through coordinated schemes with bus operators exist but are not well applied because the political will is insufficient to tackle such a sensitive area. In this context a partially successful scheme was implemented in Dakar which provides some interesting lessons (Godard, 2007a; Kumar & Diou, 2010).

[1] "Paratransit" is chosen for the translation of the French word "transport artisanal" which gives a meaning different from the classical "informal transport".

Table 1
Share of public transport forms in mechanised travel in West Africa (in percent).

City	Conakry 2004	Dakar 2005	Douala 2004	Ouagadougou 2008	Yaoundé 2010
Shared taxis	42	13	50	2	56
Minibuses	46	57.5	5	–	9
Motorcycle taxi	–	–	25	–	–
Total paratransit	88	70.5	80	2	65
Institutional transport	3	4.5	2	1	2.5
Specialised transport	–	2.5	1	–	–
Total public/collective transport	91	77.5	83	3	67.5
Private car	8	14	17	6	29
Metered taxis	–	8.5	–	–	
Motorised two wheelers	1	–	–	41	3.5
Bicycle	–	–	–	50	–
Total individual transport	9	22.5	17	97	32.5

Note: data have to be considered as rough estimates. Source: Godard (2011b), and various unpublished sources.

4.1. Minibus fleet renewal and reorganisation

Dakar experienced a programme of minibus fleet renewal funded by the World Bank and managed by CETUD. The principle has been to introduce regulatory measures which the operators could accept in order to benefit from vehicle renewal financial facilities. These measures included:

- clustering of the numerous operators into a limited number of economic interest groups (EIG)
- a concession agreement to EIGs on the selection of routes (the most important).
- a ticket system for payment instead of direct payment to controllers
- wages for drivers and controllers instead of the practice of their direct payment from fare receipts.

The implementation of the financial mechanism was complex and required between 5 and 6 years before it was designed and agreed. (2000–2005). The AFTU (Urban Transport Funding Association) EIG grouping was stated in 1999 for first vehicle deliveries at the end of 2005.

Some 505 Tata minibuses (assembled in Senegal, at Thies) were purchased by the operators between 2005 and mid-2008. Thanks

Table 2
Share of public transport forms in travel in North Africa (in percent).

City	Algiers 2004	Cairo 2008	Casablanca 2004	Tunis 2002
Shared taxis	3	–	21.5	–
Minibuses	53	36	–	–
Total artisanat	56	36	21.5	–
Institutional transport	3.5	32		40
Specialised transport	8	7		–
Total public/collective transport	67.5	75	50	40
Private car	29	17	30	50
Metered taxis	3	7	11	10
Two wheelers	0.5	1	9	–
Total individual transport	32.5	25	50	60

Source: CODATU (2008) and unpublished sources.