



Improvising intermodality and multimodality. Empirical findings for Lomé, Togo



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ABSTRACT

While achieving integrated transport is an increasingly important policy goal in the cities of the North, it is still of little concern to African decision-makers. Nevertheless, the scarcity of transport has prompted African city-dwellers to create “de facto” integration, which has, until now, received little scholarly attention. This paper describes the intermodal and multimodal practices of the inhabitants of Lomé, the capital of Togo, where the motorbike taxi plays a dominant role. Intermodality, i.e., the use of at least two transport modes in the course of a single trip, allows individuals to travel throughout the city but requires trade-offs between transport cost, duration and physically exhausting conditions. Multimodality, which is defined as the use of a different mode or combination of modes for outbound and return trips, is observed to some extent among the working population but even more amongst schoolchildren, usually in order to reduce the cost of transport. The consequences of individuals’ “de facto” intermodal and multimodal practices in terms of mobility and money and time budgets highlight the strategic importance of formal transport integration for African city-dwellers.

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1. Introduction

In the cities of the North, the integration of the different types of passenger transport services to form a coherent system is the subject of much concern and an increasing number of applications. Integration sets out to enhance simultaneously the sustainability of transport systems and accessibility which allows the provision of good transport services at a low cost. At a fundamental level, integration can be seen as a set of technical and organizational tools that seek to make the best use of existing transportation networks, by combining them with the use of personal modes when this is possible. Integration may also take more ambitious forms and attempt to align transport policies with those for other sectors.

However, in the cities of sub-Saharan Africa, where walking is the rule and the majority of motorised trips are made by informal public transport, integration arouses very little interest on the part of either the public authorities or the operators. Nevertheless, when we examine transport demand, daily travel includes

practices which can be regarded as “de facto” integration, instituted by the users themselves: the successive use of several transport modes in the course of the same trip (which may include long segments on foot), and the use of different modes for the outbound and return journeys.

This paper sets out to improve our understanding of the “de facto” integration of daily travel in the cities of sub-Saharan Africa through the study case of Lomé, the capital of Togo. It examines the modal practices of public transport users. How do citizens use the different transport modes on a day-to-day basis? How do they combine them in order to reach their destination? Do they use different modes or sequences of modes for their outbound and return trips? How does their choice of transport mode affect their travel times and their monetary expenditure on daily travel?

The analyses presented in this paper are based on empirical data collected in the course of a survey conducted in Lomé in late 2011. During the survey, 1220 individuals who were travelling in the conurbation were asked to describe their current trip, their customary practices when travelling from home to work or school and back, the availability of personal vehicles, and the accessibility of their home. The conventional data were elicited about their trips: the origin and destination, the modes used, the trip purpose, the price paid and the duration of the trip. It was consequently possible to carry out detailed analysis of modal choice, the price/

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travel time trade-offs, the difficulties they experienced and the way they adapted to them.

Section 1 deals with the different types of transport integration and defines the concepts of intermodality and multimodality as we have used them in this paper. Section 2 describes the study area, the survey methodology and the data set. Intermodal trips are analysed in Section 3, taking account of the combination of modes and the duration, distance and cost of the trip. Section 4 sheds light on multimodal practices by comparing the combinations of modes used during the outbound and return trips for work- and school-related trips. These analyses reveal the additional money and time costs incurred as a result of such intermodal and multimodal practices which are improvised by users in the absence of any formal support from the transport sector. The conclusion highlights the need for formal transport integration in order to improve the travel conditions in sub-Saharan African cities.

2. From transport integration to intermodality and multimodality

The public authorities in the developed world advocate transport policies that are based on integration because of two major factors: the urgent need to limit car traffic in order to create more sustainable cities and the limited funding available for public transport as a result of the financial crisis. However, the term transport integration may refer either to highly operational measures focused on transport supply or to strategic matters that involve comprehensive public policies (May et al., 2006). It is thus important to distinguish between different forms of transport integration (Potter and Skinner, 2000; Viegas, 2004). The first rung of an integrated transport system is internal integration, which sets out to achieve an internally consistent transport system (Givoni and Banister, 2010; Preston, 2010). The second rung aims to integrate transport policies and land-use. Finally, the third rung attempts to harmonise multi-sectoral policies (for example transport and local economic development, transport and access to healthcare). In this paper we shall deal only with internal integration.

Internal transport integration may be either modal or functional (Potter and Skinner, 2000). Modal integration aims to facilitate transfers between different transport modes by improving interchange points and synchronizing the timetables of different services. Functional integration involves integrating pricing so that a change in transport mode does not generate potentially dissuasive additional user costs. In both cases the primary aim is to promote the successive use of several transport modes during the same trip (Potter and Skinner, 2000; Hine and Scott, 2000; Gorter et al., 2000; Martens, 2004, 2007). Such successive use can be referred to by the terms “‘multimodal’ and ‘intermodal’, which are used interchangeably” (Givoni and Banister, 2010: 5). In other cases multimodality refers to the use of different transport modes at different times of the day or the week, depending on the trip purpose or the location of the destination (Nobis, 2007; Parkhurst et al., 2012). The ability to distinguish between intermodality and multimodality would seem to be important when analysing daily mobility, as they result from partially different modal choices and behavioural adaptations in response to constraints. In this paper we shall use the term intermodality to describe the chaining of transport modes within the same trip and multimodality to describe differences in modal use between outbound and return trips.

It is also important to make a distinction between intermodality and multimodality as the corresponding data are collected and processed in a different manner. Multimodality is easier to identify by observing the sequence of trips, but to measure it accurately data must be collected over a long enough period of time. The

underestimation of intermodality can be significant because conventional surveys pay little attention to short walking trips and underestimate the role of walking segments during mechanized trips (Behrens et al., 2004; Clifton and Muhs, 2012). Trips in which mechanized modes and walking are combined “[...] are generally not regarded as intermodal trips in the technological sense, nor within the consciousness of most travellers, transport planners and politicians” (Parkhurst et al., 2012: 309). As a consequence, the role of walking in the daily travel of city-dwellers is seriously underestimated. In a study of the Netherlands, Rietveld (2000) has shown that walking becomes the most used mode when pedestrian segments are considered, its share rising from 18 to 59%. In the cities of sub-Saharan Africa, walking is not only the sole mode of transport for many trips, it may also be the only possible way of reaching public transport stops, as in Douala or Conakry (Sitrass, 2004a, 2004b). In Douala, for example, trips in which a single public transport segment is combined with at least one walking segment lasting more than 5 min are three times more numerous than trips that require the successive use of several public transport vehicles. These commonplace practices show that urban residents are genuinely implementing modal integration.

Nevertheless, in the cities of developing countries, which are highly fragmented (Balbo and Navez-Bouchanine, 1995) and whose transport systems rely essentially on informal operators (Cervero and Golub, 2007), thinking about intermodality in transport policies is at a much less advanced stage (Yeh, 2008; Rivasplata, 2001). In African cities, urban transport suffers from a lack of organization and regulation which pushes informal operators into fierce competition with each other (Cervero, 2000). However, this situation does not exclude the possibility of transport modes and operators working together. In order to ensure their business remains profitable, operators must provide a minimum number of interconnections between public transport vehicles serving different routes. The informal sector's ability to organize itself leads to possible connections between different transport modes, as studied by Audard et al. (2012) in Brazzaville. The presence of the different transport modes at major stops and terminals means that these operate, *de facto*, as multimodal interchanges.

Intermodal trips are still complicated and costly. Public transport users in cities such as Conakry, Douala and Nairobi all suffer from the poor organization of passenger pick-up and drop-off and the shortening and division of routes into fare sections. They have to make unplanned walking segments or change vehicle, which increases the cost of travel (Sitrass, 2004a, 2004b; McCormick et al., 2013). Likewise, in Dar es Salaam, passengers frequently need to chain several *dala dala* journeys in order to travel to work, paying each time they board a vehicle, which makes commuting expensive (Nkurunziza et al., 2012). The marked sprawl that affects African cities and the frequent need to use several vehicles to reach a destination make transport an increasingly expensive item of household expenditure and increase transport time budgets, particularly for workers and students living in the outskirts.

A low level of modal integration and an absence of functional integration are thus the general rule in African cities. The blossoming of Bus Rapid Transit projects in many cities has scarcely stimulated any debate on the need for transport sector integration that includes informal transport (Behrens et al., 2012). Formal modal integration set up by the authorities seems to be fairly rare, in particular because interchange stations are more a setting for confrontation between stakeholders and for social and political conflict than genuine intermodal interchange (Lombard and Steck, 2004; Ndiaye El Hadji and Tremblay, 2009). The introduction of integrated fares seems unattainable in the short or medium term, as a result of the fragmentation of the sector and the

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