

Overview: Spatial Transformation and Effective Public Transport

Background

The South African Cities Network (SACN) public transport and mobility research programme has disembarked from a position which understands that transport cannot be viewed in isolation of the urban spatial environment in which it exists. Until significant strides begin to be made in restructuring the spatial form of South African cities the financial and implementation challenges currently being experienced with regard to expensive mass public transport systems will persist. However, mass public transport solutions are critical to the long term sustainability of South African cities and are committed to in the National Development Plan and urban policy. Urban policy simultaneously commits to densification and compaction which are understood as fundamental to more sustainable cities. Driving inclusive compaction is thus a priority issue. To continue in a business as usual manner, where BRT systems and passenger rail upgrades are invested in while spatial patterns continue to sprawl, will place huge financial burdens on the state in the face of many other urban investment priorities (see figure 1).

Spatial transformation is a long term game. So, even if South African cities are to successfully begin to transform the built environment the mini-bus taxi industry will remain a highly relevant mode of transport for the foreseeable future. Legitimising the industry as a critical component of the broader public transport system in such a way which improves safety and reliability should thus be an essential component of transport policy and strategy moving forward.

The intent is therefore about advocating for the development of a more nuanced strategic approach to public transport investment. There is a fine balancing act which needs to occur around driving compaction, investing in mass transit and legitimising and improving the service of the mini-bus taxi industry so as to move towards an integrated and entire transport system understanding. The reality is that no city throughout the world is located neatly within a single quadrant of figure 1. However, it is where the majority weighting lies which is most significant. Those cities which have been able to develop dense and compact urban fabrics at scale whilst simultaneously investing in mass transit systems are more often than not touted as the most sustainable cities.

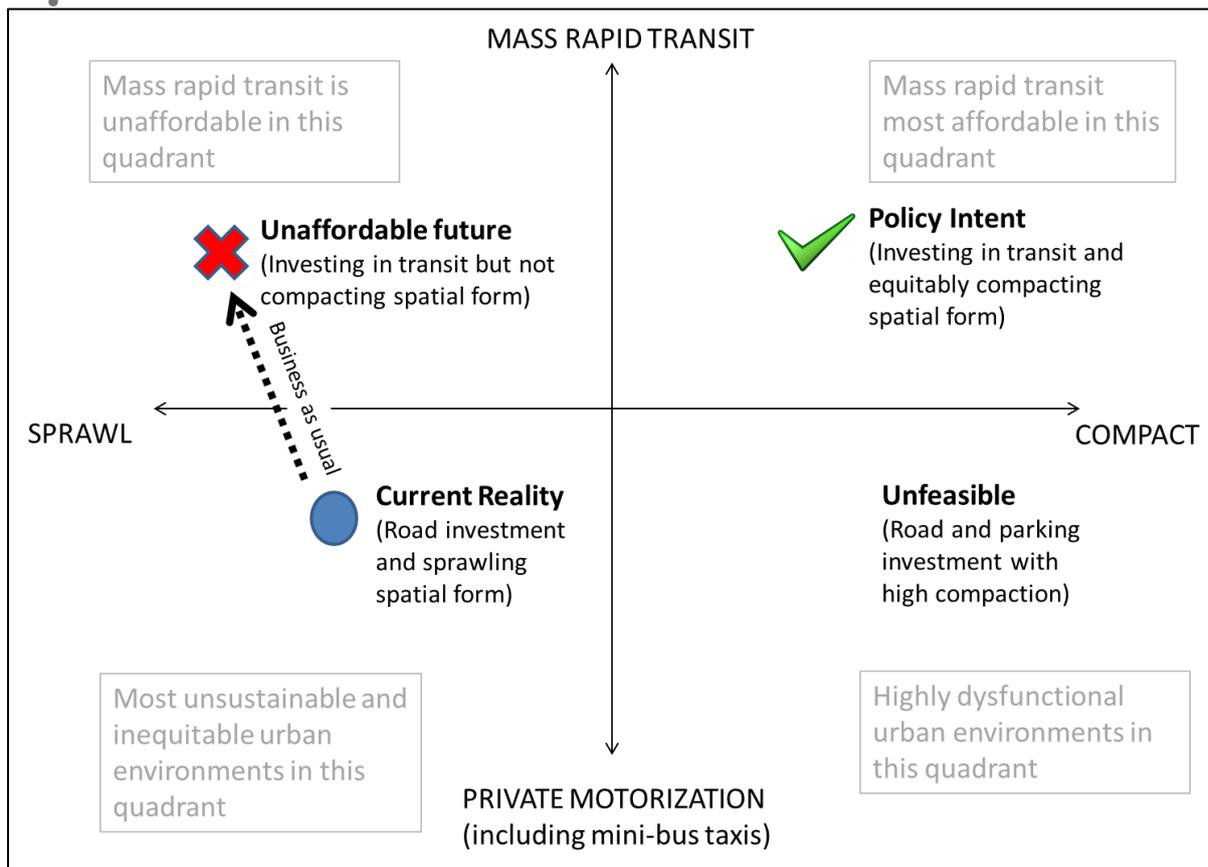


Figure 1: Relationship between transport and land use

Transport-Land Use interdependency

It is widely accepted that transport and land use share a recursive relationship making them mutually dependent. Globally, much evidence exists which highlights that low density, mono-functional sprawling environments reduce the feasibility of providing high quality public transport services as highlighted in figure 2.

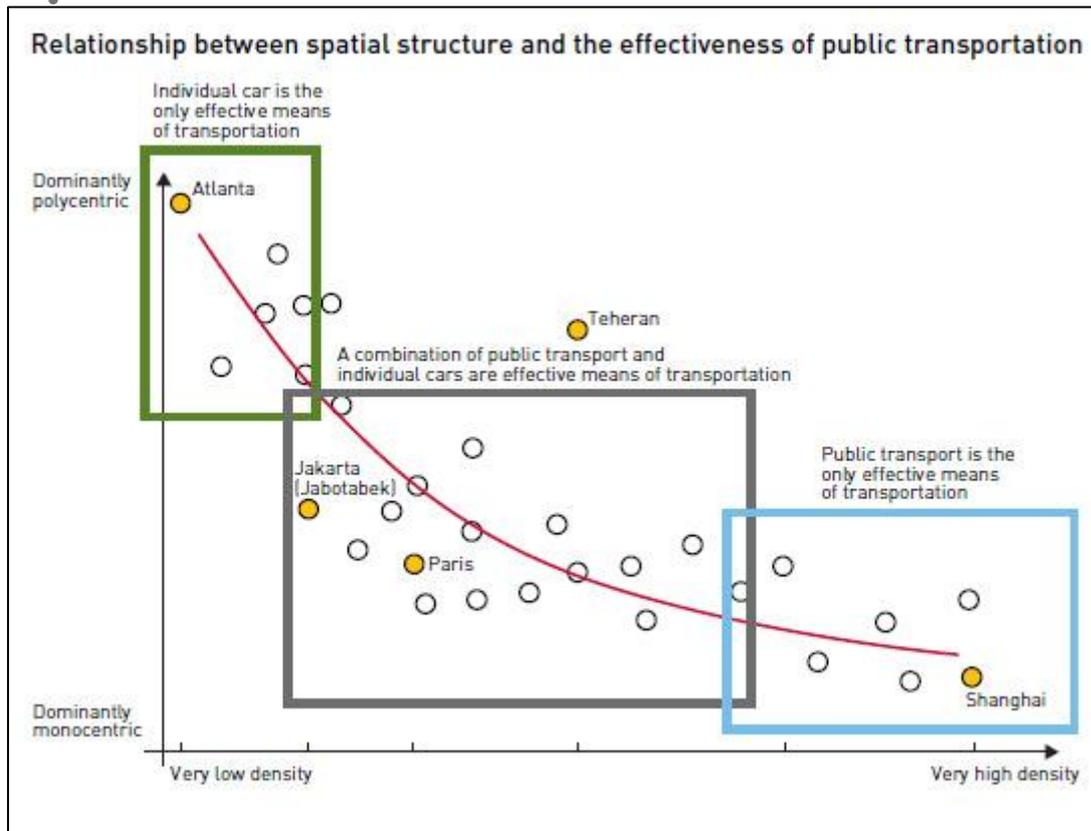


Figure 2: Relationship between spatial structure and the effectiveness of public transport

Source: Image extracted from: Lefèvre (2009) Urban Transport Energy Consumption: Determinants and Strategies for its Reduction. S.A.P.I.EN.S [Online], 2.3 | 2009, Online since 15 December 2009, connection on 27 August 2014. URL : <http://sapiens.revues.org/914>

South African Context

The South African land use transport relationship presents a somewhat more challenging relationship. Apartheid urban planning and its persisting legacy has resulted in a situation in which the majority of poor urban residents live in peripheral locations. The predominant settlement form of these peripheral residential areas are one house per erf suburban based housing. Essentially transit dependent communities reside in vehicle oriented settlements. This relationship largely paved the way for the growth of the mini-bus taxi industry. South African sprawl has been compounded by the adoption of dominant road and highway building approaches to transport planning. This largely facilitates the growth of sprawling middle class suburbia. The predominance of vehicle oriented investment has resulted in highly unequal transport landscapes in which the majority of people rely on walking or public transport and yet the minority, vehicle users, have been primarily catered for.

This spatial context renders public transport systems highly inefficient and ineffective. The mini-bus taxi industry provides the most appropriate response to the particular spatial context and for this reason remains the dominant passenger carrier, even in areas where rail and newly introduced BRT systems are operating. These mass public transit systems require high levels of subsidy to operate and struggle to provide as effective transport responses to the spatial form of South African cities as the mini-bus taxi industry. As a result ridership of mini-bus taxis is significantly higher. However, as a

public passenger carrier there are inherent safety and reliability problems born out of the mini-bus taxi business model.

Attempting to remove mini-bus taxis from certain high volume routes and replace these services with mass transit systems alone will not yield great results. Every effort needs to be made to transform the urban spatial structure on which the efficiency of mass transit is dependent. This spatial restructuring effort will take time and in the interim the mini-bus taxi will remain the most appropriate and thus most used means of transport for the majority of low-income earners in South Africa. Evidence is emerging that BRT investments are providing improved access and mobility for people. However, low densities and vehicle oriented settlement forms (even for transit dependent communities) have meant that functional access is afforded to few. Furthermore a cost recovery financial model has resulted in BRT prices which are largely unaffordable for the urban poor.

SACN research

The SACN has attempted to focus on the integrated nature of public transport and has developed insight into how to achieve improved balance when looking at the public transport landscape in South African cities, including a study on understanding the extent of skills which are required to achieve more integrated outcomes. At the same time the National Treasury's City Support Programme (CSP) is grappling with how to achieve improved integration across metropolitan municipal built environment functions. Cities experiences to date offer many lessons. Acknowledging that some of the immediate challenges are around the financial and practical difficulties associated with expensive mass transit infrastructure and services, it is essential that the broader built environment connections not be overlooked as it is there where the underlying issues are found.

Strategic Conversation

Drawing upon the various ongoing initiatives on this subject, this Strategic Conversation will focus on framing the South African transport challenge and facilitating a discussion around moving towards an appropriate municipal strategy given some of the lessons learnt to date.