

Can public transport interchanges be positive urban environments in the developing world context?

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Abstract

Movement is a necessity in modern day cities. This is especially true for South African cities where the political ideology of Apartheid profoundly impacted on the spatial layouts of cities. The urban poor were forcefully located in areas with the least opportunities, facilities and low levels of accessibility.

This resulted in daily travelling between places of opportunity and places of residence having a significant cost implication in monetary value, time spent travelling, comfort levels and safety and thus on the overall levels of mobility of citizens.

Public transport is seen as one of the keys to unlock a sustainable society in South Africa because of its potential to be an affordable and equitable system. Although many problems are experienced with the existing system (such as competition between modes, lack of inter-modal provision, low urban /environmental quality) a new commitment from government seems to indicate that public transport could well fulfil its potential in meeting the needs of the present without compromising future generations.

Public transport interchanges (PTIs) are an important element of and precondition for a sustainable transport system. As such, a PTI can be seen as a gateway or shop window for public transport, which could have a major influence on attracting people to the system. As it happens, in the case of most South African cities, PTIs are very often dull and boring environments at best, and crime ridden and unsafe city precincts at worst.

The purpose of this paper is to highlight the huge potential of PTIs to constitute positive urban environments in themselves. Extensive research has identified certain preconditions and performance measures for such environments and this will be presented here.

Keywords: public transport, public transport interchanges, positive urban environments, performance measures, quality of life, movement and access, empowerment, special place creation, economic generation, urban transport.



1 Introduction

South African cities share many public transport concerns with their counterparts in the Developing World. A study commissioned by The World Bank highlighted rapid motorisation and the associated air pollution, declining service levels and unsafe travelling conditions as some of the major problems [8].

South African cities are, however, also faced with unique challenges [6]:

- Escalating subsidies

Public transport is inefficient in most South African cities because of low densities and segregation between places of opportunities and places of residence. This has resulted in a highly subsidised and unsustainable system.

- Entrenched apartheid land-use structures resulting in urban sprawl

The demand for movement over large distances in urban areas is intense in South Africa, as a consequence of the previous government policies of separating residential areas on a racial basis as well as the inefficient provision of land uses. This has resulted in most South African cities experiencing seriously un-integrated land use patterns and thus being unsustainable.

Further to the above, the wasteful duplication of services and the destructive competition that exists amongst different public transport modes (especially bus and minibus taxi) are regarded as important causes of the existing public transport inadequacies in South Africa.

Notwithstanding these challenges, it is contended that a proper public transport system would provide a key strategy to ensure an equitable and sustainable city.

Vuchic [11] emphasises the importance of public transport in terms of its role as an integrator, especially with socially isolated population groups.

Through efficient public transport, people from disadvantaged backgrounds could arguably therefore, enjoy the same socio-economic benefits that the private vehicle would offer its users.

In the discussion that follows, the importance and significance of PTIs is based on the premise that an effective and functional public transport system exists.

2 The significance of Public Transport Interchanges (PTIs)

There is a common misconception that the core function of a public transport interchange (PTI) is solely to facilitate movement, and anything beyond this core function is merely incidental.

PTIs form an integrated part of a city's transportation network [8]. The fact that PTIs take up key locations in the city and link with rail and road corridors makes them strategic in terms of quality of life. It follows therefore that their



performance (or lack thereof) can have a direct influence on the quality or liveability of a city, particularly if their functioning goes beyond mere transportation efficiency.

2.1 PTI as a catalyst for nodal development

Many areas of cities are plagued by underdevelopment. A PTI can be seen as a means of overcoming this problem in that it is a point of concentration of opportunities (social, economic), which collectively provide the positive preconditions for developmental efforts.

PTIs should thus be seen not merely as points of modal interchange but potential zones for commercial and social interaction [3], and as public places to improve equity and develop a unique sense of place [7].

From the above two predominant roles of PTIs are identifiable. Firstly, they are seen to constitute important nodes in the transport network. They act as points of access to not only the rail service but also to other modes of transport and to the local area served. Secondly, station areas serve as unique places in the city. Each embodies a concentration of infrastructure, a diverse collection of surrounding buildings, pedestrian spaces and open spaces, all of these providing positive pre-conditions for a range of activities and the gathering of people. Its role as a place is further underlined by its direct influence on the quality of its surrounds, though a reverse influence also occurs. A PTI thus performs a far more pervasive role than simply facilitating movement in a city [1].

2.2 The PTI as a gateway

PTIs constitute both departure and arrival points, though it is the latter function, which implies the quality of a gateway to the local area in question. This means that they are foremost among the places in terms of which visitors form an impression of the area. Yet, many PTIs constitute the most unpleasant and unsocial places in a city, contradicting the potential they have for celebrating arrival.

3 The public transport interchange as a potentially positive urban environment

Although the current situation in the case of most South African cities is that PTIs are very often dull and boring environments at best, and crime ridden and unsafe city precincts at worst, this should not necessarily be the case.

In order to understand the qualities of better performing PTIs, evidence has been gathered from the following sources: historical and contemporary literature and theory on urban performance, the relevant South African administrative and legislative context, national and international precedent studies and public opinion through a series of personal surveys.

It emerges that PTIs can contribute positively to the urban environment in terms of the following spheres:



- Movement and access
- Special place creation
- Economic generation

These three spheres of activity, it will be noticed, refer to functional, economic and social realms of city life. They are fundamental to positive urban environments, and imply the nature and scope of the potential influence that PTIs can have not only on their immediate and surrounding environments, but also on their function within themselves.



Figure 1: A lack of safe pedestrian movement channels, underutilised space resulting in squatting, and unhealthy and unattractive environments are all associated with PTIs.

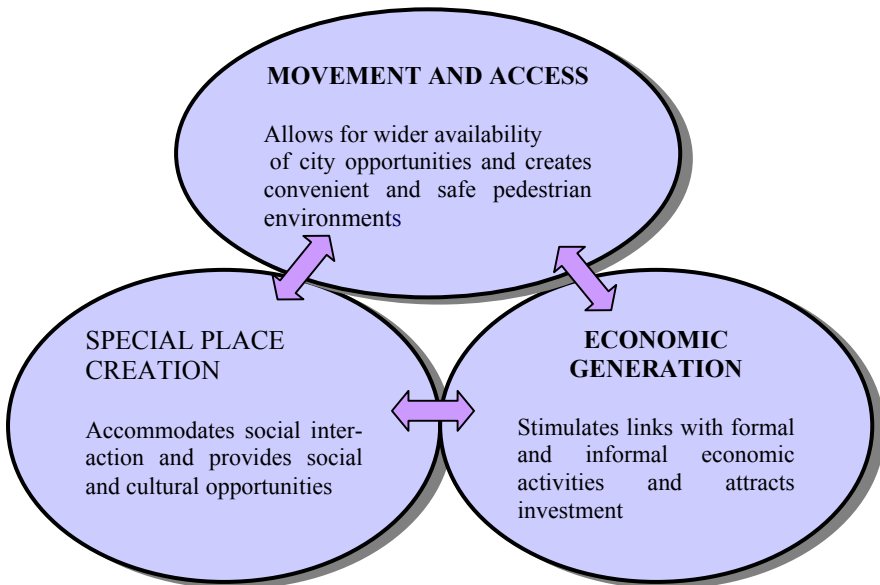


Figure 2: The three spheres of influence of successful PTIs.

The specific applicability and relevance of each of these spheres will depend on the context of the individual PTI. Aspects such as its role at city scale, its socio-economic setting, its proximity to activity corridors and mixed-use areas, will influence its potential realisation in terms of one or all of these spheres of influence.

The following are some suggested universal planning principles and objectives that underpin the optimal realisation of a PTI's potential:

Movement and access sphere:

- Integration of transport nodes at city level.

A clear understanding of the function and scale at which the PTI operates, will assist in minimising operational duplication and results in a more efficient public transport service.

- Maximised accessibility.

A PTI facilitates the movement between modes. If this can happen without long delays, lack of information or restrictions to certain times of the day and week, commuters' levels of accessibility will increase. This implies heightened levels of efficiency, as greater efficiency in movement and transport is synonymous with greater accessibility.

- Creation of a convenient and safe pedestrian environment.

Most people will be a pedestrian, at some stage, within a PTI. An easily understandable environment where pedestrians enjoy preference is thus a self-evident priority.

- Availability of choice of transport mode.

A choice in transport mode influences the levels of accessibility because different modes cover different routes at different speeds and at different rates.

Special place creation sphere:

- Provision of social and cultural opportunities.

A PTI is a place that can attract people of different ages with different socio-economic, cultural and religious backgrounds. The clear implication is that in many instances it is a grossly underutilised social and cultural space with the potential of otherwise becoming a special place in the city.

- Provision of a range of facilities.

If many different facilities exist around a PTI, such as libraries, shops, post office services, child day-care, medical services, motor vehicle-related services, gymnasium or financial services (pension payout points), more people will be attracted to it for many reasons pertaining to quality of life, other than movement.



Economic generation sphere:

- Stimulation of the link between formal and informal economic activities.

Positive spin-offs are possible for both formal and informal activities in terms of a symbiotic relationship, which will be beneficial to the quality of the PTI environment as a whole. Many instances occur where formal and informal business display mutual reinforcement.

- Poverty alleviation/job creation through informal trading.

The opportunity for informal trading exists at a PTI because the necessary consumer thresholds are present. In order to maximise this potential, the informal sector needs to be guided and monitored.

- Attraction of investment to the area.

Investments and new developments will contribute to changing a PTI's image to one of growth and prosperity.

The safety and security aspects are an overriding factor where each of the three spheres is concerned. None of the opportunities arising in the confines of a public transport interchange can be properly realised without it constituting a safe environment.

A further theme of importance is that of empowerment. As with safety and security, it pervades all three the main spheres of influence as described above. The ability to move around in a city, and having access to different opportunities, ensures a world of possibilities to better the quality of one's life at all age levels. Having access to the economic and social opportunities within a PTI precinct thus empowers people to become complete citizens, fully sharing what the city has to offer.

4 Performance measures

The engineering, functional and operational aspects of PTIs seem to be the focus in their planning in the past. This technical performance approach has in other words for the most part overshadowed the urban performance concerns, the latter being relevant to the thrust of this paper.

Halvorson [5] refers to performance measures as "quality of life measures" which illustrate their role as evaluatory tools. A number of these measures or criteria have been developed and proposed in various planning and urban design literature regarding the city as a whole. Many of these are particularly pertinent to PTIs, of which only a number of significant examples are given in Table 1. A more comprehensive list has been compiled by the author in previous research work [10].



Table 1: Selected universal performance measures.

Movement and Access	<ul style="list-style-type: none"> • Safest, most direct routes and with the least obstacles, should be chosen as pedestrian paths. • The pedestrian environment should be well maintained and should include traffic calming measures, adequate lighting, seating, surfacing and weather protection.
Special Place Creation	<ul style="list-style-type: none"> • Social facilities and activities to facilitate community interaction should be incorporated in the PTI. • PTIs should represent a cluster of social and economic facilities and should be seen as a potential Service Village, possibly housing retail outlets, informal vendors, café's and public services.
Economic Generation	<ul style="list-style-type: none"> • Formal and informal economic activities should be incorporated in the PTI to form an economic node. • Economic activities should be formally positioned along pedestrian paths.
Safety and Security	<ul style="list-style-type: none"> • Surveillance through internal positioning of PTI activities, surrounding buildings and land uses and the latest technology should be a priority to ensure safety and security. • Separate pedestrians and vehicles as far as possible. • PTIs should be multi-functional to ensure presence of people at different times of the day.
General	<ul style="list-style-type: none"> • Information should be readily available, and relevant. • Maintenance of all PTI elements directly influences the quality of the PTI and should be a priority. • PTIs should reflect the different activities people engage in such as transfer between modes, waiting, shopping and socialising.

In summary, it seems that the kind of environment that is inferred would have the following main characteristics:

- A safe, pedestrian-orientated and convenient environment where structural clarity (positioning of buildings, parking areas, informal traders and movement channels) can contribute to surveillance and the quality of legibility.
- A dynamic and inviting environment with high visual qualities and a special place sense. Any unique qualities such as views or history of the local area should be incorporated in the PTIs design. Emphasising the entrance and exist points can contribute to realising these characteristics.
- A cluster of diverse business and public functions, such as clinics, libraries, big business, shops, municipal offices and informal trading. This results in a complex urban entity, which offers a range of choices to users, which ensures people gravitate towards PTIs for reasons other than movement [4].

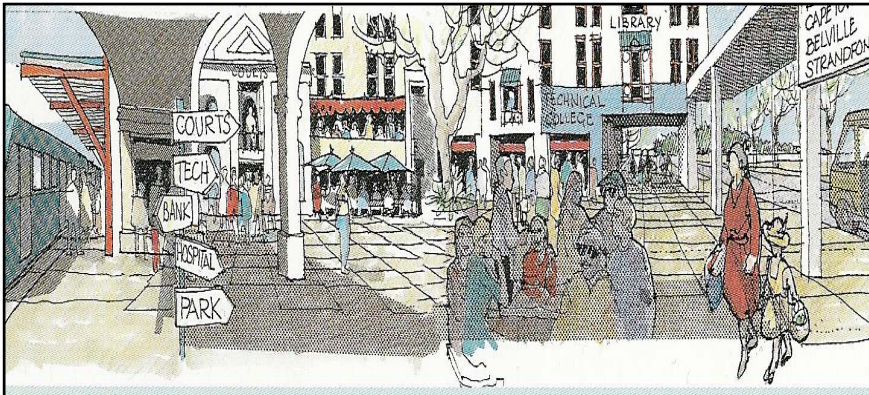


Figure 3: Transport, commercial and social activities taking place at the PTI [2].

5 Conclusion

Public transport interchanges unquestionably occupy strategic positions in the city whether in regard to transportation, economic activity and social interaction. The main thrust of this paper is that the first-mentioned is often realised whereas the other dimensions of urban life are usually lost at interchanges. These existing spaces provide dramatic scope for further planning interventions.

It has already been stated that properly designed PTIs should make a major contribution to the urban living environment of the city as a whole. The point should therefore once again be made in conclusion that planners, urban designers

and related professionals need to constantly appraise or revisit the quality “urbanity” [4], in whatever component of the city.

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