

# **Public Private Partnerships (PPPs): An effective and legitimate finance model for TOD in South Africa?**

**Robert Ndebele and Clinton Aigbavboa**

Department of Quantity Surveying & Construction Management  
Faculty of Engineering and Built Environment  
University of Johannesburg, South Africa  
[robertndebele01@gmail.com](mailto:robertndebele01@gmail.com), [caigbavboa@uj.ac.za](mailto:caigbavboa@uj.ac.za)

**Aurobindo Ogra**

Department of Town and Regional Planning  
Faculty of Engineering and Built Environment  
University of Johannesburg  
Johannesburg, South Africa  
[aogra@uj.ac.za](mailto:aogra@uj.ac.za)

## **Abstract**

The current framework of planning legislation in South Africa reflects a growing emphasis in tools and strategies that seek to redress the spatial imbalances of the past and facilitate socio-economic transformation going forward. As part of the planning efforts to give practical effect to these trajectories, Transit Oriented Development (TOD) has become a central feature in policy making in the major metropolitan municipalities of the country. While this has been the case, the planning and implementation of TOD initiatives is however a multi-layered undertaking which warrants the consideration of a number of critical issues. One of the issues in this regard specifically relates to the financing of a TOD project from strategy design to implementation. Drawing on the review of the literature, there is a general consensus that the degree of success in infrastructure projects undertaken exclusively by government is a major concern mainly due to capacity and technical challenges. As a result, the need for governments to consider other alternatives has never been so paramount. One such alternative available to government is the Public Private Partnership (PPP). A PPP essentially involves a contractual arrangement between a public and private sector entity for the development and/or operation of a particular project.

Against this brief background, the aim of this paper is to deconstruct the concept of PPPs and explore its discourse as a finance mechanism for TOD initiatives within the context of South Africa. The study will employ a case study deductive approach with an overall qualitative methodology. In this regard, select international cases that have successfully adopted PPPs as part of their TOD initiatives will be considered. The research findings will aim to determine the efficacy of PPPs as a service delivery model for TODs. Moreover, TODs are a relatively new concept in South Africa and as such, this paper aims to contribute to current debates on PPPs and specifically determine the consistence of current perceptions and implementation thereof to the basic goals of TOD initiatives.

## **Keywords**

Public Private Partnerships, Transit Oriented Development, Infrastructure Projects

## **1. Introduction**

The recent interest seen in mobilising privately owned entities in public service delivery reflects a growing emphasis in policy shifts that advocate for collaborative arrangements between the public and private sectors. The PPP model, a form of outsourcing external finance and expertise, has subsequently gained a great deal of popularity in many government contexts. Using international best practice, this paper discusses how PPPs can be leveraged towards financing TOD initiatives within the South African context. The country's PPP environment is governed by a well-established legislative and regulatory framework which applies differently across national, provincial and municipal spheres. A number of successful PPP cases within the country are equally well documented in the literature and widely common in the areas of eco-tourism, water and sanitation, prisons etc.

While this has been the case, much less has been written on PPPs in Transit Oriented Development. There still remains a wide spectrum of development challenges that confront the nation particularly in the area of sustainable mobility. In recognition of the universal trend of TOD, there has been a major emphasis in public transport infrastructure development as a means towards socio-economic spatial restructuring and transformation in human settlements. TOD has since been identified as one of the potential instruments that can be leveraged for spatial interconnectedness that will ensure appropriate sustainable development and empowerment of the country's poor and marginalised communities.

However, the challenge that still confronts government is the widening gap between the costs of developing a well-established transportation system and limited public funds. The research question guiding this paper subsequently finds expression in the review of how other governments across the globe have approached this challenge and whether these strategies have been effective enough to an extent that they can also be considered suitable for the South African unique landscape.

## **2. Theoretical Framework**

The purpose of this framework is to provide the theoretical foundations for both PPPs and TODs. The discussion starts off with a brief historical background of the evolution of PPPs in the wake of increasing fiscal challenges within the public sector and moves on to elaborate on the concept of TOD.

### **2.1 Public Private Partnerships (PPPs) – A Historical Background and Prominence**

A review of the literature indicates that PPPs have long been in existence despite the increasing attention they are receiving recently. Termed the "Golden Age" of infrastructure (Siemiatycki, 2012), the period between 1950s and late 1970s was marked by a significant expansion in the development of public infrastructure. The delivery approach thereof was based on model called the "Design-Bid-Build", whereby the government assumed a central role in the planning and operations of the project (ibid). The role of the private sector was limited to that of an advisory function and ad-hoc involvement in certain phases of the project. Due to the fragmented nature of this approach, however, there were emerging growing concerns of its viability against the backdrop of increasing strains on public fiscal resources which ultimately limited the maintenance and expansion of essential infrastructure.

The beginning of mid 1980s marked a fundamental policy shift which saw the emergence of public private partnerships (PPPs) to redress a wide spectrum of challenges emanating from the traditional infrastructure development approach. Although still a controversial subject, Siemiatycki (2012) posits that the first PPP projects were initially pioneered in Britain. Currently, the concept of PPPs has become a global phenomenon which has been used in the procurement of many projects in a number of sectors. PPP are defined as a long term institutional arrangement between the public and private sector for the construction, operation, financing, maintaining, and/ or management of a facility or system (Mu et al.2011; Maskin and Tirole, 2008)

## **2.1 Transit Oriented Development**

There is growing worldwide consensus that transit oriented development is one of the crucial spatial planning instruments that can potentially be used to foster the achievement of coordinated urban development and sustainable mobility. It is a well-documented concept in the literature and a number of authors have written extensively on the subject. Peter Calthorpe, a renowned architect and urbanist, is widely considered the first authority on the subject through his book “The Next American Metropolis; Ecology, Community, and the American Dream (1993)”. In this book, Calthorpe defines TOD as “moderate and high-density housing, along with complementary public uses, jobs, retail and services, are concentrated in mixed-use developments at strategic points along the regional transit system”.

He further asserts that the concept can also bear various other names such as “Pedestrian Pockets”, “Traditional Neighbourhood Developments”, “Urban Villages”, or “Compact Communities” (Calthorpe, 1993). The emphasis of TOD is in this regard centred on public transport as the backbone of a sustainable and efficient transportation system which is supported by strategically located nodes. Nodes represent various locations where movements are originating, ending and being transferred (Bertolini, 1999). These are made manifest in the significance and locational characteristics of nodes in relation to urban activities. Nodes thus have a hierarchy related to their importance and contribution to urban functions (ibid). In essence, TOD is a very complex undertaking that draws from a wide range of development approaches. It must facilitate the production of social spaces where people can ‘live, work, and play’ within their immediate environments.

## **2.3 Synthesis of Issues**

Having reviewed the relevant literature on these two central themes of this paper, the desirability of a collaborative approach in TOD is worth exploring. According to Pagano (2009), this credence rests exclusively on the principle of efficiency. He identifies two types of efficiency, namely, ‘allocative efficiency’ and ‘productive, managerial, cost or X-efficiency’. In economic terms, allocative efficiency simply refers to the prize of a product relative to its marginal cost. From a transportation perspective, allocative efficiency occurs when there is an optimal level in the amount and quality of transportation produced. The public sector is very crucial in this type of efficiency. If the production of public transportation is left entirely to the private sector, services are unlikely to be produced at socially optimal levels (ibid).

In the second type of efficiency, the fundamental premise is keeping production costs effectively minimal. This is largely common within the private sector; where competition is strife and the production of high quality transportation while keeping marginal costs low is very crucial. Cost efficiency may therefore not be attained if the provision of transport services is left exclusively to government. In view, each sector needs to focus on what it does best, that is, government must direct its attention to what needs to be produced and in what quantities, as well as resource allocation while the private sector must deal specifically with the actual production of the service (ibid). In this type of set-up, collaboration is achieved for better results.

## **3. Research Methodology**

Given the overarching intent of this paper, a deductive qualitative approach was used. According to Neuman (1997:46), a deductive approach starts “...with an abstract, logical relationship among concepts then move(s) towards concrete empirical evidence”. The paper starts with a review of the literature that has been written on the concepts of PPPs and TODs and thereafter moves on to formulate a hypothesis which ties to the research question. The empirical aspect of the study manifests through the use and analysis of select case studies within which PPPs and TODs formed an integral part thereof. Eisenhardt and Graebner (2007) in Romboutsos et al. (2013), state that theory emanating from case studies is very crucial and brings rich qualitative data to mainstream deductive research. The following diagram depicts the various steps that were followed in completing this study:



Data collection was done through a desktop study of journal articles and reports written on the research topics. The end result was a derivative of the analysis and interpretation of the data collected.

#### **4. Hypothesis**

If Public Private Partnerships have been successfully adopted as a finance model for the development of public transportation infrastructure in a number of countries that have unique transport policy and regulatory landscapes, then they can also be successfully adopted in TOD initiatives within South Africa.

#### **5. Select Case Studies**

The intention is to make use of case studies that exhibit an array of characteristics particularly in terms of BRT systems and institutional arrangements, and operating practices.

##### **5.1 Curitiba, Brazil**

The Curitiba BRT system is uncontestedly the cradle of the BRT concept. According to Vyas and Sharma (2011), Curitiba's BRT is widely known as a world class transport system and a classic example of a "...pragmatic, integrated, cost-effective, and efficient transport system". The system was Jaime Lerner's brainchild who initially struck a deal between the City of Curitiba and private bus operators. The City of Curitiba was to finance and provide the required new infrastructure for this system while the private bus operators would provide the buses. This finance model arguable set the tone for the modern day PPP regulatory framework in Brazil. Romboutsos et al. (2013) enunciate that Brazilian PPP law requires local government to only provide transportation infrastructure, while vehicular and operating costs are the responsibility of the private sector. Today, Curitiba's BRT infrastructure includes 72km of bus way corridors, 362 tube stations, 30 urban terminals integrated to a feeding services system, and approximately 2.3 million passengers per day transported by a fleet of 1920 buses (Duarte, 2013)

##### **5.2 Bogota, Columbia**

This case study is perhaps one of the best examples of the benefits of a collaborative approach in leveraging private partnerships for better results. The system (official called the TransMilenio BRT system) was proposed by the then mayor of Bogota, Enrique Peñalosa, as part of his mobility strategy. The TransMilenio system had its premise on four crucial elements, namely, "specialized infrastructure; efficient operations; advanced ticketing; and a new institution for system planning, development, and control" (<https://pub.iges.or.jp/contents/APEIS/RISPO/inventory/db/pdf/0043.pdf>). The system's infrastructure was modelled on the Curitiba BRT system and includes dedicated trunk bus lanes, bus terminals, feeder routes as well as related ancillary facilities. The design, planning and investment in the infrastructure are the responsibility of public institutions while the operation of TransMilenio is performed by private entities. Essentially, the private sector is responsible for the investment of the bus fleet, the ticket selling and validating system, and for the operation of the trunk and feeder services. With a total of 12 lines serving 144 dedicated stations in the city of Bogota, the system currently serves more than 2.2 million people daily and is the largest in the world covering over 112km with a fleet of 1400 buses

##### **5.3 Ahmedabad BRTS, Gujarat, India**

Like many developing countries, the adoption of BRT systems in India is a relatively recent phenomenon. The nation started implementing its first BRT projects in 2005 (Kathuria et al. 2016). The 2007 Ahmedabad BRTS in Gujarat is one of India's landmark BRT systems and is considered one of the best performing in the world (Ibid). The management of the Ahmedabad BRTS is cast in three distinguishable functions, namely, Operation, Maintenance and Finance/Administration (Vyas and Sharma (2011). Several PPP arrangements have also been put in place to ensure the system operates efficiently, as well as shared responsibility in the aforementioned functions. The City of Ahmedabad is basically responsible for the "planning of services, selection of operators, monitoring of service quality, fare revisions, coordination with relevant departments and future BRTS expansion plan" while the private sector is responsible for functions relating to the operation, maintenance and financing of the system

(ibid:30). Since its official opening to the public in 2009, the system has seen an increase in its coverage from 12.5 km in 2009 to 82 km in 2014 with a total fleet of 136 standard buses.

In summary, the case studies presented in this chapter are pragmatic examples of BRT-based TOD initiatives. They showcase the need for a collaborative approach to these initiatives and specifically illustrate the importance of mobilising the private sector in realising the common goal of sustainable mobility while achieving cost efficiency. In the ensuing section, a more elaborate discussion is provided on the lessons learnt from the literature review and whether it provides adequate basis to support the hypothesis.

## **6. Discussion and Conclusion**

This section provides a brief discussion of the research findings emanating from the literature review, as well as the issues surrounding the convergence of PPPs and TODs through an analysis of the three TOD case studies presented above. This will ultimately form the basis for our conclusion as to whether the findings support the hypothesis. The contemporary prominence of PPPs largely reflects an evolutionary process in public funding models and indicates departures from traditional procurement methods in public infrastructure development. Amidst this popularity, PPPs have equally been subjected to a great deal of scrutiny and criticisms with however a general consensus that they are fundamental in achieving cost efficiency in light of declining public funds.

While their policy frameworks and implementation environments also differ from country to country, the case studies reviewed in this paper illustrate how the relevant governments have managed to achieve cost efficiency while meeting operational efficiencies as per demand. In view, the case studies provide adequate basis to support the hypothesis that PPPs in transit oriented development can also be successfully adopted in South Africa. As TODs are currently a local government function, it should however be mentioned that successful implementation is only possible in the context of a few prerequisites. The White Paper on Municipal Service Partnerships (2004) provides an indication of the multifaceted challenges that confront the country's municipalities in effectively fulfilling their constitutional mandate of service delivery. This has been the main premise upon which the introduction of service agreements between government and the private sector has gained traction.

This alone has provided great potential for PPP adoption in a number of sectors, which also includes the development of the country's public transportation infrastructure. Notwithstanding this, a number of issues need to be addressed in order to promote a more aggressive PPP paradigm policy shift. The low competition in the PPP market is currently the most pressing challenging arguably hindering the attractiveness of these partnerships specifically in transit oriented development initiatives. This is exacerbated by capacity challenges within government arising from a lack of understanding of the nitty-gritties of PPP implementation as well as associated material issues. This paper sought to discuss the desirability of adopting PPPs for transit oriented development in South Africa using only a desktop analysis of a number of international best practice cases as well as a literature review. There is therefore a need to undertake future research incorporating surveys in order to understand PPP stakeholders' perceptions with regards to current challenges facing the PPP implementation framework and possible mitigations measures.

## References

- Bertolini, L., 1999. Spatial development patterns and public transport: the application of an analytical model in the Netherlands. *Planning Practice and Research*, 14(2), pp.199-210.
- Calthorpe, P., 1993. *The next American metropolis: Ecology, community, and the American dream*. Princeton architectural press.
- Department of Provincial and Local Government. 2004. The White Paper on Municipal Service Partnerships. Available: [http://www.cogta.gov.za/cgta\\_2016/wp-content/uploads/2016/06/THE-WHITE-PAPER-ON-MUNICIPAL-SERVICE-PARTNERSHIPS.pdf](http://www.cogta.gov.za/cgta_2016/wp-content/uploads/2016/06/THE-WHITE-PAPER-ON-MUNICIPAL-SERVICE-PARTNERSHIPS.pdf), January 14, 2017
- Duarte, F. 2013. TOD in Curitiba: how BRT may reshape a city. Available: <http://www.cseindia.org/userfiles/Fabio%20Duarte.pdf>, January 14, 2017
- Kathuria, A., Parida, M., Ravi Sekhar, C. and Sharma, A., 2016. A review of bus rapid transit implementation in India. *Cogent Engineering*, 3(1), p.1241168.
- Maskin, E. and Tirole, J., 2008. Public-private partnerships and government spending limits. *International Journal of Industrial Organization*, 26(2), pp.412-420.
- Mu, R., De Jong, M. and Koppenjan, J., 2011. The rise and fall of Public-Private Partnerships in China: a path-dependent approach. *Journal of Transport Geography*, 19(4), pp.794-806.
- Neuman, W. L., 1997. *Social Research Methods, Qualitative and Quantitative Approaches*. Allyn & Bacon, Needham Heights, MA.
- Pagano, A.M., 2009. Public-Private Partnerships (PPP) in Transportation: An Analysis of Alternatives.
- Peter, F., 2005. Assessing Public-Private Partnerships in Africa.
- Romboutsos, A., Farrell, S., Liyanage, C.L. and Macario, R., 2013. COST Action TU1001 Public Private Partnerships in Transport: Trends & Theory P3T3, 2013 Discussion Papers Part II Case Studies.
- Siemiatycki, M., 2012. The Global Experience with Infrastructure Public-Private Partnerships. *Planning & Environmental Law*, 64(9), pp.6-11.
- Vyas, S.S., Roy, S. and Sharma, P., 2011. Urban Transport Initiatives in India: Best Practices in PPP.

## Biography

**Robert Ndebele** is currently a practicing Town and Regional Planner in the private sector and has worked on a number of projects ranging from local structure plans, planning law, housing, etc. He holds a BTech in Town and Regional Planning from the University of Johannesburg and is currently pursuing an MTech in Construction Management at the said University. He is a registered Planner with the South African Council for Planners (SACPLAN) and a member of the South African Planning Institute (SAPI) and International Academic Association on Planning, Law, and Property Rights (PLPR). His research interests include transit oriented development, local economic development, spatial planning, and urban and rural development.

