



ASSESSMENT OF CONSTRUCTION IN TERMS OF SUSTAINABILITY FOR RING ROAD IN A CITY

Mr. Saransh Rajeev Jain
Department of Civil Engineering
BTIRT, Sagar, Madhya Pradesh, India

Abstract—Public–Private Partnership in construction is gaining in popularity. Although papers published in major journals have documented real cases of public private partnership projects, there appears to be a lack of systematically summarizing what they have already provided. Consequently, this paper reviewed public private partnership studies published in the six top journals in the construction field. The objectives are to compare and contrast the findings of the studies so as to provide insights for directing further public private partnership research and improving the existing practices of public private partnership projects. To achieve the review objectives, studies were first classified as either empirical or non-empirical. Empirical studies were further grouped under three themes: risks, relationships, and financing. Non-empirical studies were grouped under five themes: financing, project success factors, risks, and concession period. Suggestions for further research are risks, financing, contractual agreements, development of public private partnership models, concession periods, and strategies in choosing the right type of public private partnership. Public private partnership is a contractual arrangement between a public entity and a private sector party, with clear agreement on shared objectives for the provision of public infrastructure and services which are traditionally provided by the public sector. The method offers a lot of benefits to the government as well as the private entity. Despite this, the use of the technique has been found to pose challenges which militate against it being used.

Keywords— Ring road, sustainability

I. INTRODUCTION

The public private partnership is defined as “the transfer to the private sector of investment projects that traditionally have been executed or financed by the public sector” The term public private partnership has not been defined exhaustively. Different organizations / economies may have different views of public private partnership. The term and level of collaborative efforts guides the entity as being public private

partnership. Essentially the term refer to a contractual agreement between public sector entity and private sector entity towards the achievement of some pre-defined and fixed aim. Normally it includes performance of the past which are commonly the responsibility of the public sector. public private partnership combines the development of private sector capital and sometimes, public sector capital to improve public services or the management of public or the management of public sector assets. public private partnership has been considered as an important vehicle of growth in an economy. It may take various forms to reap the benefits of the Public sector aims trust and private sector’s expertise and funds. In Indian context Public–private partnerships should not be seen as public partnerships and private projects. They should rather be viewed as private partnerships and public projects. According to Ministry of Finance, Government of India, public private partnership projects are the based on a contract or concession agreement, between Government or statutory entity on the one side and a private sector company on the other side, for delivering infrastructure service on payment of user charges. Provision of quality infrastructure services at reasonable cost, is a necessary condition for achieving sustained economic growth. In fact, one of the major challenges being faced by the Indian economy is enhancing infrastructure investment, improving the delivery system and quality of service. Government recognizes the critical importance of the infrastructure sector and accords high priority to development of various infrastructure services such as power, telecommunications, seaports, airports, railways, roads etc. Investments in these sectors involve high risk, low return, huge investment, high incremental capital output ratio, long payback periods and superior technology.

The Concept of Public Private Partnership

The public private partnership is defined as “the transfer to the private sector of investment projects that traditionally have been executed or financed by the public sector”. The term public private partnership has not been defined exhaustively. Different organizations / economies may have different views of public private partnership. The term and level of



collaborative efforts guides the entity as being public private partnership. Essentially the term refer to a contractual agreement between public sector entity and private sector entity towards the achievement of some pre-defined and fixed aim. Normally it includes performance of the past which are commonly the responsibility of the public sector. public private partnership combines the development of private sector capital and sometimes, public sector capital to improve public services or the management of public or the management of public sector assets. public private partnership has been considered as an important vehicle of growth in an economy. It may take various forms to reap the benefits of the Public sector aims trust and private sector's expertise and funds.

public private partnership arrangements are not principally about project financing of public infrastructure by a private party because the provision of funds is just one aspect. Private sector involvement forms an essential part of successful service delivery for most public service providers and public private partnership can help leverage this private sector resources and involvement more efficiently. Public private partnerships are used in infrastructure development through the employment of private individuals or agencies in the financing, design, construction, ownership and operation of public infrastructure and service or both. Generally public private partnership arrangements involve a private party participating in, or providing support for the delivery of service or infrastructure, and a public private partnership project results in an agreement for a private sector party to deliver public infrastructure and or services.

Types of models used in public private partnership in india

The private sector designs, builds, owns, develops, operate and manages an asset with no obligation to transfer it to the government.

- Build-Own Operate
- Build-Develop Operate
- Design-Construct-Finance-Manage

The private sector buys or leases an existing asset from the government, renovates, modernizes, and or expands it and then operates the asset, gain with no obligation to transfer ownership back to the government.

- Buy-Build-Operate
- Lease-Develop-Operate
- Wrap-Around Addition

The private sector designs and builds an asset, operates it, and then transfers it o the government when the operating contract ends, or at some other specified time. The private partner may subsequently rent or lease the asset from the government.

- Build-Operate-Transfer
- Build-Own-Operate-Transfer
- Build-Rent-Own-Transfer

Road sector in India

There has been an overall increase in the level of private-sector investment for the road sector in many developing countries during the past decade. However, there has been limited research on the effect of such increased private-sector participation on road costs. By using data from 521 public and private road projects in India, it was found that there are significant differences between public and private-sector projects. Public—private partnership roads have a longer length, a higher project cost, and lower unit costs than public projects. India ranks second in world with a total network of 4.7 million km. Road network in the country has witnessed immense growth in terms of road length, maintenance and up-gradation of roads and usage of roads. Lengths of different roads in India can be view by a pie chart.

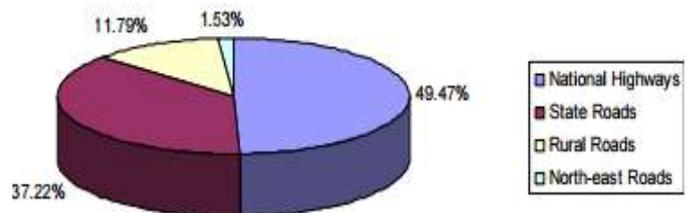


Fig. 1: Projected investment in the Indian roads sector in the 11th plan

Roads infrastructure in India may be studied under three headings: State Highways, National Highways and district and rural roads. Following are the details about the networks.

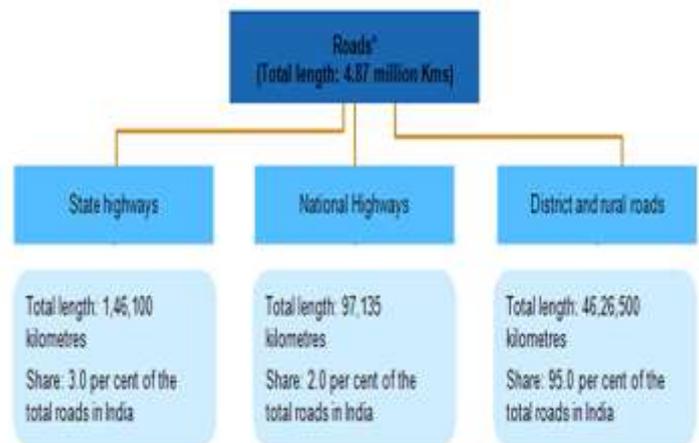


Fig.2: Road and Highway Project Planning

The road infrastructure is very important in the improvement of living standards. The lack of an adequate road network prevents access of the population especially the poor to social



services and economic opportunities, weakens sectors of regional integration and reducing the competitiveness of the products of a country. In most countries, road networks are one of the largest public goods and especially owned by the government. An effective system is important for economic growth, since the transportation cost is a substantial portion of the cost structure of the goods or services produced or imported a country. The truck cost is increased mainly by the costs of construction and maintenance of roads and vehicle operating costs, as the road deteriorates affected.

II. CONCLUSION

The review undertaken in this paper covers popular research topics in the public private partnership in construction area. India is second only to China in the number of ongoing public-private partnerships (public private partnerships) and second only to Brazil in public private partnership investments. It is studied that road construction is sustainable and easy while worked with public private partnership. The public sector entity should carefully select the private partner and also inform all stakeholders to the highway projects about the nature of the public private partnerships to dispel misconceptions about public private partnerships. The model type should be selected as per the requirement and location of site. In India road construction under public private partnership can be employed to get better maintenance results. By conducting extra research, more effective ways can be developed to manage the relationship between the public sector and the private sector. In the past decade or so, great changes have happened in the construction industry because of public private partnership practices, especially to urban development and city building. It is expected that changes will continue to evolve in the future when more research has been undertaken and new findings have been reported.

III. REFERENCE

- [1] LiYaning Tang, Qiping Shen, Eddie W.L. Cheng, “A review of studies on Public–Private Partnership projects in the construction industry” *International journal of project management*, 17 November 2009.
- [2] Ms. Ruchi Sharma, “public private partnership in road sector: a study about India” *International conference on technologies for sustainability-engineering information technology, management and the environment*, Nov 2015.
- [3] Abdul-Aziz, A.R, “Unravelling of BOT scheme” *Journal of Construction Engineering and Management*, 2001.
- [4] Hart, O., “Incomplete contracts and public ownership: remarks, ad an application to public private partnership”, *The economic journal*, 2003.
- [5] Algarni, A.M, Arditi, D., Polat, G., “Build-operate-transfer in infrastructure projects in the United States”, *J.Constr. Eng. Manag.* 2007.
- [6] Chen, M.S., Lu, H.F. and Lin, H.W., “Are the nonprofit organizations suitable to engage in BOT or BLT scheme? A feasible analysis for the relationship of private and nonprofit sectors” *International Journal of Project Management*, 2006.