CHAPTER 3

LITERATURE REVIEW

An evaluation of the Literature Review on “Public Private Partnerships (PPP)” brings forth the body of knowledge as it exists now, leading to the establishment of the need of this study. A thorough review of current literature searched for documentation of all aspects of Public Private Partnership. A general review of texts and literature relating to the PPP was conducted. The documents from the Government of India and Uttar Pradesh government, including actual legislation, guidelines, and policy framework for implementing PPP projects, served as a large source of information. A select number of journal articles relating to PPP were examined. Sources of literature include textbooks, journal articles, Department of Economic Affairs, Government of India Reports, World Bank reports and various other reports.

This chapter discusses the literature review of PPP in International context, Asian context and Indian context. It also deals with literature appraisal of environmental constraints faced by PPP and successful implementation of PPP projects.
3.1 Literature Review – International context

This section discusses general and theoretical literature appraisal as well as empirical literature appraisal of Public Private Partnerships projects at international level. It also discusses literature appraisal of environmental constraints faced by PPP and successful implementation of PPP projects at the international level.

3.1.1 General and Theoretical Literature Appraisal

An extensive range of PPP approaches has been debated in the literature and PPPs have been defined from different angles. There is a wide range of PPPs with diverse features and involved in different activities. However, very few people agree on what exactly a PPP is and what is its definition. There is no precise and widely accepted definition of PPP and the concept of PPP is still contested.

Bovaird (2004) stated that through PPPs the public sector establishes long-term partnerships which are essentially ‘working arrangements based on a mutual commitment between a public sector organization with any organization outside of public sector’. Relationships between public enterprises and private service providers should be based on trust to make the system sustainable and effective in delivering quality services to recipients. However, a PPP is not simply a joint venture investment or joint decision making between parties, unless this is linked to a PPP contract through networking.

(Broadbent, et al., 2003) observe that Public private partnerships (PPPs) are contractual arrangements between public sector organizations and private sector investors for joint, symbiotic and collaborative provision and financing of public
projects and services. They arise out of the realization that although the public sector is responsible for the delivery of infrastructure projects, it often encounters financial, technical and institutional limitations in availing such projects. Literature provides widespread evidence of a growing utilization of PPPs in the delivery of public infrastructure facilities and services to meet the numerous needs of modern economies.

There is no single definition of PPPs. The term PPP has been explained and interpreted widely in the literature to encompass any form of arrangement between the public and private sector to deliver services to the public which was previously provided by the public sector alone. The definitions of PPPs differ in scope and formality of arrangements. PPPs vary from country to country in terms of information and operation even within the developed countries (Hodge, 2004).

PPP's can be defined in broad terms or in more narrow terms. In broad terms, it simply means any form of cooperation between organizations in the public sector and the private sector, usually meaning "cooperative ventures between the state and private business (Linder, 1999). Contracting out can be viewed as a form of PPP in this perspective (Savas, 2000). A more narrow conception will look at PPP's as distinct from contracting out. Contracting out means principal-agent relationship between public purchasers and private providers.

The PPP approach is expected to eliminate the decision making and managerial bureaucracy associated with the public sector (Perrot and Chatelus, 2000). It further positively draws from the good credit rating and general goodwill of the public sector to consolidate market based procurement of project finances while ensuring less resistance from the general public. The private sector’s limitations in
managing macro level public infrastructure risks as pointed out by Carnevale (2002) can be overcome through the backing by the government in policy formulation for implementation of PPPs.

PPP's have the following elements: a business-like relationship, common decision-making procedures, risks sharing, and long term contractual relations. A PPP can be defined as "co-operation of some durability between public and private actors in which they jointly develop products and services and share risks, costs and resources which are connected with these products or services" (Van Ham & Koppenjan 2001). PPP's focuses on cooperation of entities: "The hallmark of partnerships is cooperation, not competition; the disciplining mechanism is not customer exit or thin profit margins, but a joint venture that spreads financial risk between public and private sectors" (Linder, 1999).

The institutional form of a PPP varies. The institutional form can be a formal joint-venture company, an agreement to cooperate or simply a new organization where both public and private participate. Some include cooperation between public organizations and voluntary organizations as distinct forms of partnerships (Salamon, 1995). Savas (2000) lists a number of possible types of PPPs. This list include infrastructure projects like BOOT, BOT, BOO and other models. These models are highly complex and rest on extensive risk sharing between the parties in the partnership.

Many see PPPs as a new tool of organizational structure and a mechanism for the delivery of public services to enhance efficiency (Watson, 2003) and to establish different types of relationships with private sector organizations (Carroll & Steane,
2000). However, there are views that PPPs can be seen as new forms of governance (Teisman & Klijn, 2002).

Hodge (2004) focuses on the economic and operational aspects of PPPs in which government establishes long-term business relationships with other providers to share risks and returns and allows these partners involvement in financing, designing, constructing, owning or operating public facilities or services. English (2007) also argues PPPs are time- and cost-specific agreements between the state and a private consortium for infrastructure-based service provision; here the private consortium is responsible for finance, design, construction and providing services and maintenance which is agreed upon for the duration of contract.

There are various theories explaining the growing popularity of the use of PPPs in financing and implementing public infrastructure projects. Leibenstein (1966) proposed the X-efficiency hypothesis of PPPs according to which government backed public entities are inherently inefficient such that PPPs are necessary to reduce the sources of inefficiency in such organizations. The involvement of the private sector allows public entities to respond to market forces and become more competitive. This explanation is rooted in the belief that government interventions in the operations of public entities to bail them out during potential failure, introduces inefficiencies in their operations. The knowledge by a public entity that it would not be allowed to fail worsens the moral hazard among public entities. The need to avoid this hazard and improve efficiency in infrastructure provision necessitates the use of PPPs.

According to the value for money postulation of Sappington and Stiglitz (1987), PPPs are desirable in infrastructure financing because they promote technical and
allocative efficiency among public projects. Reeves (2004) argues that PPPs might help derive value for money so long as they are established in an environment rooted in long term cooperative relations among stakeholders. This co-operation should incorporate risk sharing and proper delineation of authority, communication and information channels as well as responsibility and accountability.

The market orientation theory advances the case for PPPs from the market demand point of view while incorporating PPP risk considerations (Dailami and Klein, 1997). The reasoning here is that market conditions affect the incentives of private firms to participate in any PPP in infrastructure projects. A private partner is bound to have a faster recovery of their investment in larger and profitable market segments with considerable purchasing power than otherwise. Kee and Forrer (2002) note that a competitive market is central to ensuring effective PPPs. Theoretically, a competitive PPP contract model is superior in delivering infrastructure because it encourages efficiency stemming from the inherent competition among the market players.

In the financial leverage hypothesis, Kopp (1997) posits that PPPs can enable the public sector to leverage more financial resources by using the private sector as an intermediary. Accordingly, the propensity for a government to use PPPs to finance infrastructure is a function of the fiscal constraints such a government faces. According to this argument, PPPs allow the public sector to consider the implementation of the otherwise unaffordable infrastructure projects. Imperatively, countries facing fiscal problems coupled with deficient external sources of revenue tend to be more open to foreign private investment including in the infrastructure sector. Such countries are more open to the use of PPPs in infrastructure.
Despite of the theoretic grounding of the use of PPPs in infrastructure financing, there is widespread documentation of the varied experiences of countries across the globe. In Europe, most PPP models are derivatives of the French concession model and the British Public Finance Initiative (PPP) model. Karisa and Dantas (2006) indicate that PPPs were instrumental in the development of high-performance roads in France originating from the use of concessions and tolls for financing motorway construction by public companies from the mid 1950s. They document several major issues arising from France’s experience with concession as a form of PPP. These include the relative advantages and disadvantages of motorway financing through cross subsidies; relative advantages and disadvantages of toll financing of highways; efficiency of private concessions for highways; dilemma of regulating toll rates of concessionaires; importance of guarding against potential conflicts of interest when construction companies participate in concessions and relative ability of public and private sector companies to take environmental considerations into account.

Besides France, key economic sectors in the UK have benefited from the PPP in infrastructure development especially the health, transport and the energy sectors. For instance the London underground railway network began operating as a public private partnership in 2003 (Wolmer, 2004). In this context, the issues arising in PPP finance include determination of appropriate sharing of revenues, risks and other issues relating to value for money derived from PPP infrastructure projects. Evidence from South America seems to suggest that most countries follow the French concession model of PPPs in infrastructure financing (Karisa and Dantas, 2006). This category includes Chile, Brazil, Colombia and Argentina. The major issues arising from the experience in these South American nations relate mainly to the challenges of structuring PPP contracts and facilitating a legal environment for
their implementation. Political issues are also of great interest. Karisa and Dantas (2006) note that Brazil in this respect grappled with the challenges of using cross-subsidies to fund unprofitable toll roads as well as with issues concerning the use of relatively low toll rates to foster public acceptance. To solve these challenges some countries have resorted to legal measures. Chile for instance enacted a law allowing for the award of concessions for the construction, maintenance, and operation of toll roads, tunnels, and related infrastructure under Build, Operate and Transfer (BOT) schemes, which intended to attract enough funds over the 1997 to 2000 period. Besides, there has been collaboration between these nations and multinational lending institutions including the World Bank.

Li, B., Akintoye, A., Edwards, P.J. and Hardcastle, C. (2005) observed that the most important CSFs, in descending order of importance, are: a strong private consortium, appropriate risk allocation, available financial market, commitment/responsibility of public/private sectors, thorough and realistic cost/benefit assessment, technical feasibility, a well-organized public agency, and good governance. They have classified CSFs into five principle factor groupings: effective procurement, project implementability, government guarantee, favorable economic conditions, and available financial market.

Li, B., Akintoye, A., Edwards, P.J. and Hardcastle, C. (2005) have identified three levels of risk: macro-, meso-, and micro-level. They further explore preference in risk allocation: macro- and micro-level risks should mainly be retained within the public sector or shared with the private sector; while the majority of meso level risks should be allocated to the private sector.
Koch, C. and Buser, M. (2006) have observed that the roles of the Denmark government in managing PPP projects include: to establish a central counseling unit; to develop a set of guidelines, tools, and standard contracts; to select a set of pilot projects; to subsidize feasibility studies; and to investigate potential sectors for PPP.

Grabow et al. (2005) made a comprehensive and up-to-date review of Public Private Partnership (PPP) projects at federal, land and municipal level. It includes information on the distribution of PPPs, project types, investments, obstacles and prospects of success. The survey concentrated exclusively on "PPP projects for related infrastructure measures". The survey's main focus is on projects which had been planned or implemented since 2000. The survey's most important findings reveal that PPP infrastructure projects are now widespread in Germany, particularly at municipal level. Expectations of PPP regarding higher efficiency and faster implementation go a long way to explaining the increase in the number of PPP projects. On the other hand, the survey did not find much evidence to suggest that PPPs are primarily seen as instruments to bridge widening gaps in public finances. The need for private capital injections plays an important role in one-third of projects. However, this does not mean that struggling municipalities have a stronger tendency to pursue the PPP-project option than their more affluent neighbours. A popular claim is that PPPs are often thwarted by legal technicalities. The survey has not confirmed this, although around two-thirds of projects had to contend with legal restrictions or difficulties, frequently regarding public procurement and contract law. However, such hurdles are rarely insurmountable and hence do not lead to the decision to abandon PPPs. Rather, they represent challenges to be overcome and indicate the need for legal reform in some cases.
In the Oceania region, English (2007) notes that the development and implementation of PPPs in Australia in the pre-2000 period was largely steered by non-PPP specific infrastructure procurement policies, that resulted in the Build, Own and Operate (BOO) and Build, Own, Operate and Transfer (BOOT) models of PPPs. These models involved private consortia in building, operation, ownership and transfer of infrastructure projects to the public sector with varying conditions. She shows that in the post 2000 period, control modifications were done resulting in two main PPP models. In the first model, the core public services are delivered by government agencies whereas infrastructure and associated ancillary services are delivered by the private partner. The government directly pays the consortium for service provision. In the second model, there is transfer of demand, market or revenue risk to a private consortium and the financial risk to the project users. For control purposes, these PPPs are limited to a maximum life of 35 years.

Jefferies, M., Gameson, R. and Rowlinson, S. (2002) identified the CSFs from reflection of an Australian sports stadium project, which include: solid consortium with a wealth of expertise, considerable experience, high profile and a good reputation, an efficient approval process that assist the stakeholders in a very tight timeframe, and innovation in the financing methods of the consortium.

In Africa, PPPs have been implemented on a lower scale than in the developed countries. Sheppard et al. (1997) show that Sub-Saharan Africa receives only a small share of private funds targeted for foreign PPP investment in infrastructure. They suggest that this could be a consequence of the difficulties in accessing project finance mostly because of the low creditworthiness of most African countries, the limits of local financial markets, and the adverse risk profiles typical of infrastructure projects. They further indicate that the ability of the region to attract more private foreign currency funding for infrastructure depends in part on
the ability to reduce foreign exchange risks. Alexander (2008) indicates that the World Bank (WB) Group through its private sector arm, the International Finance Corporation (IFC) supports PPPs in Africa through the Sustainable Infrastructure Action Plan (SIAP).

Russell and Bvuma (2001) indicate that PPPs in all sectors including infrastructure financing were introduced in South Africa in the year 2000. This was after implementation of reforms geared towards new public management including the enactment of the Public Finance Management Act of 1999 to guide PPPs contracting, implementation and evaluation (PPP Unit, 2003). According to their model, value for money is only achieved if all appropriate risks are transferred to the private sector. The lessons the PPP experiences offer in the country are that there is need for regulatory framework that is effective, affordable and which offers value for money. The PPP Unit (2003) also suggests that procedural certainty coupled with technical assistance and political goodwill can boost infrastructure projects. Ultimately, development of capital markets would enhance accessibility to private debt finance for facilitating PPPs.

There are various PPP financing approaches to infrastructure financing applied by different countries. The precise definition of each depends on the combination of various contractual functions expected to be performed by the respective partners on the infrastructure project (Karisa and Dantas, 2006). These individual functions include designing, building, financing, operating, maintaining, owning, transferring, leasing, developing and buying the infrastructure. The matrix of the functions performed, the degree of risk borne by either partner and/or the length of period necessary for project implementation define the type of PPP structure or model put in place.
It is evident from the literature that, since the mid-1990s, the role and scope of governments across the globe for providing public services in an effective and efficient way have come under severe criticism at various levels and in different forums (Pessoa, 2008).

The literature on PPPs has revealed a growing tendency by governments for collaborative efforts that transcend philosophic orientations. Indeed, collaboration is at the centre of New Public Management (NPM) (Kettl, 2005), but there has been much pressure on governments to provide better services. While the NPM emphasizes market values, PPPs align more with an increased focus on networks, partnerships and collaboration. Thus, a PPP is, as Mohr (2004) argues, a network of independent public and private actors who come together to form a cooperative and interdependent working relationship to provide improved management skills and financial solutions. The emergence of this network has introduced a range of issues about how to manage the interdependence. The collaborative management approach has thus claimed considerable attention as knowledge becomes increasingly specialised and the demand for state and non-state collaboration increases (Ansell & Gash, 2008) due to citizens’ demands increasing. This collaborative management is a concept that describes the process of facilitating and operating in multi-organisational arrangement in order to remedy problems that cannot be solved or solved easily by single organisation.

Thus in recent years governments have widely recognised the necessity of some key elements of collaboration such as informal communication for the purpose of sharing and exchanging information, sharing initiatives, developing trustworthy relationship between the public and the private sectors and stakeholders
involvement in the collaborative process through which they can share financial and managerial resources to solve the challenges that neither can address individually (Bryson, Crosby, & Stone, 2006). This is a strategic response to resource dependency and for pooling technical, managerial and financial resources together as a means of reducing risks and transaction costs and entering into major projects or services. O’Flynn (2009) rightly argued that this collaborative management approach improves efficiency, quality and innovation encouraging trust between partners, reducing conflicts, effectively utilising competencies of the partners with synergy and setting a benchmark in public private partnership.

Vidigni (2002) has therefore underlined how cooperation can take place in an organisation where decisions are taken and implemented jointly. However, an economic aspect of the PPP model cannot be overlooked as it involves substantial finance by both the public and the private sector in PPP projects.

Zhang, X.Q. (2005) has identified five main Critical Success Factors (CSF) aspects which are economic viability, appropriate risk allocation via reliable contractual arrangements, sound financial package, reliable concessionaire consortium with strong technical strength, and favorable investment environment.

3.1.2 Empirical Literature Appraisal

Allen Consulting Group (2007) investigates cost performance and timeliness outcomes of PPPs in Australia relative to budgetary provisions for the management and construction of public infrastructure projects. The study covers largely completed projects that were undertaken from the year 2000 to 2007. Drawing from a population of 206 projects, 50 of which were PPP financed, the study is
based on detailed analysis of publicly available data for a sample of 21 PPP projects and 33 traditional projects. On the cost aspect they use value weighted analysis to test and estimate the optimism bias which is the possibility of underestimating costs and overestimating benefits from a PPP financed project.

Athias and Nunez (2007) empirically assess the effects of the bidding competitiveness (which they call the winner’s curse) on the auctions for road concession contracts. They use their study to address three questions. First, they investigate the overall effects of the winner’s curse on bidding behavior in such auctions. Second, they examine the effects of the winner’s curse on contract auctions with differing levels of common-value components. Lastly they interrogate how the winner’s curse affects bidding behavior in such auctions after accounting for the possibility of contract renegotiation by the bidders. They cross sectionally investigate a dataset of 37 road concessions worldwide by comparing similar projects across countries. Their findings show that the winner’s curse effect is strong among less competitive toll road concession contract auctions. Bidders would bid less aggressively in toll road concession auctions when they expect more competition and weaker when the likelihood of contract renegotiation is higher. This shows that bidders are more likely to employ strategic bidding in weaker institutional frameworks, where renegotiations are easier.

Early estimates of efficiencies to be gained through PPPs showed cost-savings figures of 17 per cent from HM Treasury (2003) in their analysis of 29 business cases and 10 to 20 per cent based on seven empirical cases from the National Audit Office (2000). However, other scholars refute this implied value for money pointing towards contrary evidence. Prominent among these are Pollock et al
who have been highly critical of PFI arrangements across a wide range of services, including roads, hospitals and rail-transport infrastructure.

Their findings indicate that PPPs are more cost efficient than traditional procurement methods. This efficiency ranges from 30.8 percent when measured from the time of project inception, to 11.4 percent when measured from the time of contractual commitment to the final outcome. The study indicates that in absolute terms, the PPP cost advantage is economically and statistically significant. Additionally, with respect to time over-runs, on a value-weighted basis they find that traditional projects are likely to be completed later than PPPs relative to the budget. Between the signing of the final contract and project completion, PPPs are found to be completed 3.4 percent ahead of time on average, while traditional projects are completed 23.5 percent behind time. In their conclusion they note that PPPs provide superior performance in both the cost and time dimensions, and that the PPP advantage increases (in absolute terms) with the size and complexity of projects.

McKee et al. (2006) investigate the success of PPPs relative to the traditional method of procurement of hospital infrastructure projects in Australia, USA, UK, Canada and the European Union. They carry out the study of the two decades leading up to December 2006 by exploring four main issues related to PPPs: cost, quality, flexibility and complexity of the resultant infrastructural project. They use PPP and its variants DBFO, BOO, BOOT and franchising on one hand and public procurement on the other. They combine case study research method with cross-sectional analysis to investigate various types of hospital infrastructure projects in the countries identified above. The methodology involves identifying relevant cases, evaluating cost, flexibility, quality and complexity at individual levels and
comparing with public facilities in the same country. Eventually, cross section analysis is done by comparing similar facilities with those in other countries.

After their comparison of PPP with the conventional mainly public finance procurement their results reveal varying results. In the UK for instance, 76% of PPP projects are delivered on time while only 30% of the conventionally procured projects meet this target. Furthermore, PPP approach is better at meeting budget provisions (79%) compared to the conventionally procured projects (27%). In the USA, out of 149 projects, 88 public facilities were found to be less costly than budgeted; there was no cost difference among 43 while 18 cases reported better cost performance for PPPs.

In general, for all the countries investigated, the findings indicate that PPP is a significant success with regard to delivery on time and on budget of hospital infrastructure, although this is achieved at the expense of quality such that the gains of efficiency and time could be watered down from the detriment of poor quality. Further their results imply that new facilities are in general, more expensive under PPP than they would have been if procured using traditional methods. They conclude that PPP seems to work well on budget discipline and timely delivery aspects assuming that neither budgets nor time are inflated at the contracting time. Such inflation, they observe, is less likely in competitive PPP implementation. In addition, PPP contracting procedures are found to be very complex because of regulatory policies. This gives the private sector an incentive to keep construction times low because they would otherwise lose part of their income stream. These findings imply that the advantages and shortcomings of PPP in infrastructure financing are finely balanced and that only careful analysis is likely to reveal if PPP approach is advantageous in particular circumstances.
Consistent with the findings above are the results of HM Treasury (2003) who carried out a study among all PPP projects in Britain in the year 2003. The objective was to determine the ex post performance of PPPs in the country since the inception of the program in 1992. At the time of the study, there were 451 PPP projects that had become operational. Accordingly, a study was carried to evaluate the performance of these projects vis-à-vis the rationale for the involvement of the private sector in infrastructure financing. The evaluation was made for timeliness of completion, cost efficiency and quality of PPP projects as proxied by operational performance. The main findings of this research are that PPP projects in UK are being delivered on time and on budget as indicated by 88 per cent of the projects met these time and budget constraints. Although comprehensive, the study falls short on time comparisons by using the budgets as the benchmark instead of a more elaborate tool like PSC that takes into consideration time value of money. This is critical given that PPPs are implemented over lengthy periods.

Li et al (2005) undertook a survey to assess the relative importance of eighteen critical success factors (CSFs) among PPPs that were involved in service provision in the UK’s construction industry. Their Data analysis involves descriptive analysis of the data; reliability tests using Cronbach’s alpha; one way analysis of variance and factor analysis. The eighteen CSFs evaluated include a strong private consortium in the PPP arrangement; appropriate risk allocation and risk sharing; a competitive PPP procurement process; the commitment/responsibility of public-private sectors; a thorough and realistic cost-benefit analysis; the project technical feasibility; the transparency of the procurement process and good governance practice. Others include a favorable legal framework; available financial market; political support; government involvement by providing guarantees; well
organized public agency; sound economic policy; social support; technical transfer and shared authority between the public and the private sectors. The findings reveal that effective procurement processes; project implementability; government guarantee; favorable economic conditions and the available financial market are the main factors that influence effectiveness of PPPs in financing infrastructure projects.

Low et al. (2005) investigate relative costs and benefits of PPPs in comparison with the traditional procurement methods in Scotland. The study covers all infrastructure PPP projects implemented up to 2005 in that country. The approach involved sending questionnaires to the public authority and private sector contractor responsible for each operational PPP as well as interviewing public and private sector PPP contract managers. 84% of the projects used PSC in project evaluation and indicated the PPP returned a saving versus the PSC. However, from the procurement and construction standpoint, the PPP procurement process is shown to be expensive and particularly burdensome for small projects. Here, the mean time taken to procure the PPP projects surveyed of 28 months was deemed to be slower than non-PPP procurement. Besides this, the study finds that authorities were satisfied with design quality and innovation levels inspired by PPPs in the construction of infrastructure. In addition they promoted appropriate sharing of risks between the public and private sectors. On the flipside, they find no evidence on the improvement of the standard of service delivery by PPPs against the public sector. Further, the PPP contracts were found to be less flexible than non-PPP contracts. In general, majority of authorities considered PPPs to represent good or excellent VFM.
Vining et al. (2005) evaluate the cost savings of PPP projects in Canada and the USA. They collect evidence on cost aspects of PPPs from six major prison infrastructure projects in these two countries operational at the year 2005. They use qualitative analysis combined with descriptive statistics on the contracting costs of the target PPP projects. They then provide a summary analysis of these PPP financed prisons. Their results confirm that PPP contracting costs are usually high. They conclude that these high contracting costs reflect the presence of complexity/uncertainty and lack of contract management skills by governments. According to them, efficiency and effectiveness of PPP projects would only be realized if public sector managers recognize that they must design contracts that both compensate private sector partners for risk and then ensure that they actually bear that risk.

Numerous studies have been conducted to ascertain the factors that impact the effectiveness of PPPs in financing public infrastructure projects. These factors can summarily be referred to as critical success factors (CSFs) or value for money drivers. Pitt et al. (2006) investigate the principal factors which drive value for money within the PPP framework in the UK. They first conduct literature review to identify these factors before they assess them against the existing PPP projects in UK as at the year 2006. This is done through report analysis and interviews with PPP stakeholders. Their results reveal that the positive aspects of PPP incorporate the advantages of competition generated by the concept as well as improved risk management. They however point out that lack of agreed formulae by all stakeholders by which to benchmark VFM coupled with a cynical general public regarding the ability PPP concept to provide VFM provide the biggest challenge to their implementation. Their study identifies the factors that affect a PPPs value for money which they refer to as the drivers of VFM.
According to the findings, the highest ranking driver of VFM is the transferability to the private sector of project risks that are better managed by this sector when the PPP model is utilized. In addition, the length of the PPPs; contracts output specification; competitive bidding for the contracts; the harnessing of private sector management skills; performance evaluation as well as the use of incentives all contribute towards ensuring value for money among the PPP initiatives. The length of time is crucial because it determines if the duration is long enough to allow for recovery of the initial investment while offering flexibility for changes given the ongoing changes in the environment.

Hammami et al. (2006) use panel data analysis on PPPs in infrastructure projects in various countries for the period 1990 to 2003 to empirically investigate cross-country and cross-industry determinants of public-private partnership (PPP) arrangements and their prevalence thereof. Their PPP database incorporates projects in low- and middle-income countries mostly in Latin America, the Caribbean, East Asia, the Pacific, Eastern Europe, Central Asia, South Asia, sub-Saharan Africa, the Middle East and North Africa. They determine the prevalence through counting their occurrence; considering the monetary values of these PPP occurrences and considering the extent of private participation. To analyze their data, they carry out three different regression analyses. Where the dependent variable is the number of PPP projects, they use Poisson or negative binomial regressions with zero-inflated Poisson (ZIP) specifications where appropriate (zero counts of PPPs in a year). Where the dependent variable is the nonnegative dollar value of investments in PPP projects, they use Tobit regression model. Finally, where the dependent variable is the extent of private participation in PPP arrangements, they judiciously use both ordered Probit and Logit regression
models taking care to possible biases in the PPP index ranking given the ordinal nature of the data.

They find that PPPs are more common in countries where governments suffer from heavy debt burdens and where aggregate demand and market size are large. Their findings suggest that macroeconomic stability is essential for successful implementation PPPs. They provide evidence on the importance of institutional quality, where less corruption and effective rule of law are associated with more PPP projects. PPPs are also more prevalent in countries with previous PPP experience over a long period of time. At the industry level, they find that the determinants PPPs vary across industries depending on the nature of public infrastructure, capital intensity, and technology required. They also find that private participation in PPPs depends on the expected service marketability and the technology required.

Pollock et al (2002) evaluate the accuracy and challenges of appraisal of VFM focusing on evaluation of the discounting rate that is critical in time translation of project cash flows for comparison with PSC. They use the country’s National Health System (NHS) data from 1991 to 2002. This corresponds to the time when the NHS was transferred to the PPP system of financing from the traditional public finance. They compare cash costs and net present costs of individual PPP hospital schemes and their risk valuations. Their data, derived from publications in the British House of Commons Health Select Committee Public Expenditure Memorandum of 2000 and 2001 and from full business cases for individual hospitals that benefited from the PPP system finance. Their methodology shows the impact of discounting on cash flows before and after risk transfer.
Their results show that the costs of raising the finance account for 39% of the total project costs under the PPP yet publicly financed capital does not incur these costs. On the other hand the PPP approach seems to be only better than PSC after risk transfer was included in the net present value of PPP. This indicates the crucial significance of incorporating risk transfer when appraising the suitability of the PPP yet the evaluation of risk is quite problematic. For instance the results indicate that the private sector's risk as a proportion of the total capital costs under PPP varies enormously between projects from 17.4% to 50.4%. This presents a difficulty in consistency of the project appraisal process. In addition, the results show that the value of risk transferred to the private sector is remarkably close to the amount needed to close the gap between the public sector comparator and the PPP. This calls to serious doubt the usefulness of PPPs in this sector.

3.1.3 Literature appraisal of Environmental constraints faced by PPP:

Bovaird, T. (2004) analyses public-private partnership arrangements which are becoming increasingly common in numerous countries around the world. They discuss the formation of partnerships, their pros and cons and what the future may hold for these organizations. Bovaird argues that it is still early days to make definitive judgements about their effectiveness in various sectors. He also stresses the need for the application of good governance in future PPPs and make sure their functions are relevant to the context they are implemented in. Devapriya, K.A.K (2006) looks into nature, form and unique governance issues in debt and equity arrangements in regulated PPP organizations.
Rather than alleviating a deficit in the institutional capacity of the public sector, the use of PPPs actually depends for its success on the development of a variety of new types of capacity from governments. As Dutz et al. (2006) propose: This shift from traditional public sector methods places new demands on government agencies. They need the capacity to design projects with a package of risks and incentives that makes them attractive to the private sector. They need to be able to assess the cost to taxpayers, often harder than for traditional projects because of the long-term and often uncertain nature of government commitments. They need contract management skills to oversee these arrangements over the life of the contract. And they need advocacy and outreach skills to build consensus on the role of PPPs and to develop a broad program across different sectors and levels of government.

In practice however, the environmental conditions that surround the project – the state of the economy, legislation that influences aspects of the project, political stability etc – are often subject to change over the life of a project. When such circumstances unduly affect the private or the public sector in comparison to the other, the best laid plans can go awry. Successfully structured projects therefore face turbulent times and are either re-structured, if possible, or fail. Indeed, this has been the fate of several PPP projects over the last few decades (Gausch, 2004).

PPP projects encounter several risks that often lead to cancellations and/or significant renegotiations. The evidence from developing countries indicates that actual or perceived rise in tariffs, macroeconomic fluctuations in currency or purchasing power, inadequate regulatory and institutional environments, societal discontent against the private sector and political reneging are some of the key reasons for the failure of PPP projects (Gomez-Ibanez et al, 2004).
Jooste, Stephen F. (2009) explored the problem of institutional capacity shortfalls that governments face when they employ Public Private Partnerships (PPPs) for infrastructure provision. He specifically explores the variety of organizational forms (governance bridges) that have arisen in response to this problem, using an organization field-level analysis to identify the institutional forces that these organizations are subjected to. It also presents a brief discussion of the institutional change process that surrounds them. Finally the paper draws attention to a field level aspect which is of particular salience to the study of governance bridges.

Menendez, A. (1998) summarizes the key obstacles to the expansion of PPP initiatives in case of transport projects and highlights the structuring principles that can help to define and develop those initiatives in a better way. The paper explores various institutional factors like poor regulatory framework and an unstable sector policy environment which undermine the credibility of PPP initiatives. This paper suggests measures to improve the interactions among the stakeholders in order to reduce the risks as perceived by each stakeholder (and for the project as a whole), and subsequently spur the development of transport infrastructure. The paper also identifies constraints to the expansion of PPP projects as political, regulatory, financial and methodological constraints and further explores measures to address these constraints and create opportunities for PPP Transport projects.

The last two decades have seen significant changes in the modes of government intervention in many developed countries. Reforms in countries like Great Britain and New Zealand have been at the forefront of this movement, largely driven by two broad factors: perceived public sector inefficiencies, and the ascendance of liberal economic ideology (Salamon, 2002). Changes have broadly involved a
reduction in the role of government or, more accurately, a change in the functions it performs, and greater private sector involvement (Peters & Pierre, 2002). For infrastructure development this has meant a move toward increased reliance on Public Private Partnerships (PPPs) that involve private companies in the financing and provision of infrastructure. In most countries these PPP arrangements have been aimed at overcoming two broad public sector constraints: (i) a lack of public capital; and (ii) a lack of public sector capacity – the resources and specialized expertise to develop, manage, and operate infrastructure assets (Kumaraswamy & Zhang, 2001).

The 1990’s saw proliferation of PPPs in both developed and developing countries, totalling almost $755 billion in private investment across nearly 2,500 private infrastructure projects globally in developing countries alone (Harris, 2003). However, after peaking in 1999, private investment in infrastructure fell off dramatically at the beginning of the first decade of the 21th century, only recently returning to its former level. A number of reasons have been put forward for this downturn, including highly publicized cases of public opposition to private provision and large numbers of contract renegotiations and cancellations (Guasch, Laffont, & Straub, 2002).

These pervasive failures of infrastructure PPPs in recent years (Guasch et al., 2002) illustrate the need to address four challenges: (i) market failures associated with private infrastructure provision (rooted in the natural monopoly characteristics and externalities of infrastructure) (Goldberg, 1976); (ii) agency failures relating to the limited capacity of public entities; (iii) perceived legitimacy issues surrounding private provision of public infrastructure; and (iv) government opportunism stemming from the fact that infrastructure is plagued by what has been called the
“obsolescing bargain”—once the facility is completed and in operation, the private developer loses much of its bargaining power in subsequent negotiations over tariffs or other matters (Woodhouse, 2005).

A significant amount of work on increasing PPP effectiveness and sustainability has focused on the constraints from the private perspective, stressing the limits employing private incentives to overcome public problems. A number of scholars however have recently highlighted the critical role that the public sector plays in ensuring PPP success (Van Slyke, 2003). For instance, based on a review of the World Bank’s experience with infrastructure PPPs, Harris proposes that if private provision is to be sustainable and to benefit consumers of infrastructure services, governments will have to address many of the problems overlooked in the initial rush towards private participation (Harris, 2003).

This assertion makes it clear that ensuring the success of PPP projects goes beyond successfully governing the projects that have been developed; indeed, the recent history of PPPs seems to suggest that some projects are flawed from the outset (Klijn & Teisman, 2000). Of critical importance are the choices made in deciding which projects to pursue, and developing these projects in a way that make them attractive to private investors while still protecting the interest of users and taxpayers in general.

3.1.4 Literature Review of Successful Implementation of PPP Projects

Abdel Aziz, A.M. (2007) discusses the principles that need to be addressed in order to ensure the successful implementation of a PPP program. These principles include: to understand the objectives of using private finance when selecting a PPP
arrangement, to properly allocated risks to the private sector, to establish a broad and comprehensive PPP legal framework, to assess the value for money when selecting a delivery system, to create a PPP unit for policy development and/or implementation, to maintain the transparency in the selection process, to standardize the procedures and contracts, and to use performance specifications.

Akintoye, A., Hardcastle, C., Beck, M., Chinyio, E. and Asenova, D. (2003) concluded that factors that contribute to the achievement of best value in PPP projects are detailed risk analysis and appropriate risk allocation, drive for faster project completion, curtailment in project cost escalation, encouragement of innovation in project development, and maintenance cost being adequately accounted for. They also found the factors that impede the achievement of best value in PPP projects are: high cost of the PPP procurement process, lengthy and complex negotiations, difficulty in specifying the quality of service pricing of facility management services, potential conflicts of interests among those involved in the procurement, and the public sector clients’ inability to manage consultants.

Charoenpornpattana, S. and Minato, T. (1999) suggest risk allocation strategies for five risk categories which are political, economic, legal, transaction and operation risks.

Durchslag, S., Puri, T. and Rao, A. (1994) have studied a set of conditions that must be met for PPP to be successful over the long term. These conditions were found out to be to ensure that the highest political authorities give their complete commitment and support to pushing the program, as fast as possible; maximize transparency and minimize the scope for discretionary decision making to ensure the integrity of the process; minimize government provision of guarantees,
incentives and credit; empower a small committee of carefully selected individuals to oversee the privatization process across all sectors; develop and enact the legal and regulatory framework for the sector before conducting any actual securitization or privatization; ensure the integrity of the restructuring process; and maximize competition through the use of public tenders.

Huxman & Hubbert (2009) have studied what makes partnerships a success or not. Huxman & Hubbert pick out five types of success. They are:

1. Achieving outcomes,
2. Getting the process to work,
3. Reaching emergent milestones,
4. Gaining recognition from others,
5. Acknowledging personal pride in championing a partnership.

Out of these types of success, the most well-known ones from other parts of the literature are (1) and (2). ‘Achieving outcomes’ is often considered to be the final decision on whether a project or a policy is a success or not. ‘Mission accomplished’ could be another expression used for this. Achieving the outcome of constructing a new hospital as a PPP and helping more people get well could be termed ‘achieving an outcome’. The second criterion is ‘getting the process to work’. Researchers argue that it is not the output or outcome that is important to a reform and change effort, but more what the process brings with it. New and innovative elements can be discovered in a partnering process. If the process itself runs smoothly and helps create new ideas and satisfaction among participants, then the process could be a success criterion. The third point about ‘reaching emerging outcomes’ is about the content of that innovation that a smooth process can bring about. New goals and objectives may have risen because of a well-structured process, and a success factor could be that an invention is being discovered. The two remaining factors mentioned by Huxman & Hubbert have to do with the personal investment and the actor point of view of making the change. If a partnership ensures ‘recognition from others’ and ‘acknowledgment of
personal pride’ then that, in Huxman & Hubbert’s view, also counts as a success factor.

Kumaraswamy, M.M. and Zhang, X.Q. (2001) have discussed the issues that governments need to deal with for the BOT scheme to work smoothly which include: establish adequate legal and regulatory framework, provide stable political environment, develop domestic capital market, ensure a fair and competitive bidding, provide adequate government assistance and guarantees, conduct project feasibility study, select the most suitable concessionaire, continuously assess project progress and performance.

Merna, T. and Dubey, R. (1998) discuss the concept of financial engineering and how it may be used to structure financial packages for infrastructure projects. They outline the instruments, markets, sources and risks associated with the procurement of privately financed infrastructure projects and demonstrate how financial engineering techniques can be used to tailor lending packages to suit projected cash flow.

McConnell, A. (2010) observes that despite some literature available on policy success (including much literature on ‘failure’), the phenomenon of policy success is rarely tackled directly and systematically. He acknowledges, though, that policy has to date been about process; about programmes and about the political dimension. As a consequence, he suggests that these three main dimensions provide a foundation for interpreting success. McConnell notes that governments do process (defining issues as problems, examining options, consulting, and so on), they do programmes (using a wide variety and combinations of policy instruments), and they do politics (engaging in activities that can influence electoral prospects, maintaining capacity to govern and steering policy direction).
Clearly, success can reside in each of these three spheres. These insights are crucial in the discussion of PPP success.


Skelcher, Chris (2010) writes about PPP success from another angle – that of the governance of PPP. Acknowledging the existence of a wide range of PPP forms, he writes about four different types of governance: legal governance, regulatory governance, democratic governance and corporate governance. He observes that there has been some focus on legal governance, democratic governance and also regulatory governance. However, he states that corporate governance aspect has been the least examined aspect of PPPs, with few studies having focused on the relationship between the board and the director and the governance structures surrounding them.

3.2 Literature Review – Asian Context

In Asia, China and India among other countries have had experience with PPPs in financing infrastructure projects. In India, both transport and water supply infrastructure heavily benefited from the PPP infrastructure financing initiatives.

Adams et al. (2006) note that one of the greatest challenges in China’s PPP set-up is the country’s legal system that is not clear about ownership of private property. They argue that this has impacted policy risk where there is a big gap between the policies of central government and implementation by the local governments where local governments could vary PPP policies to align with local circumstances.

Adams et al. (2006) examine the PPP system in China to identify the constraints facing its implementation and progress in the context of several models of bureaucracy in the country. Their study uses qualitative analysis based on Chinese PPP secondary data available for a twenty year period commencing when the PPP arrangements came to practice in China up to 2006. This involves intensive study of the individual projects by studying reports, news items, manager responses and the details of project implementation, ex ante budget and ex post cost and performance records. In the Chinese PPP context, they indicate that the main PPP models are concessions, divestiture and outsourcing. The qualitative desk-top research reveals the following as the major stumbling blocks to the effectiveness of PPPs in China. First is the allocation of risk between the public and private partners. The other challenges are identified as corruption, continued weak supervision, poor accessibility to investment capital and authorities and the central government which exacerbates this fluidity and policy contradictions.

Qiao, L., Wang, S.Q., Tiong, R.L.K. and Chan, T.S. (2001) have identified eight independent CSFs which include: appropriate project identification, table political and economic situation, attractive financial package, acceptable toll/tariff levels, and reasonable risk allocation, selection of suitable subcontractors, management control, and technology transfer.

3.3 Literature Review – Indian Context

This rapid growth of the Indian economy has brought into focus the poor state of infrastructure in India. Congestion can be seen everywhere, be it roads, ports or airports and reports show that all sections of the Indian society, from the business community to the common man, feel constrained by the lack of adequate infrastructure. It is being increasingly recognised in India that lack of good quality infrastructure is a bottleneck that must be removed in order to maintain the growth rate shown by the country. Though PPP infrastructure development in India is at a nascent stage, recent trends have been encouraging in the recent past.

Asian Development Bank (ADB) Report (2009) discusses challenges faced by PPP’s in India and the initiatives taken by the Asian Development Bank to provide technical assistance in development of PPP’s at the Central and State level. It also discusses the difficulty in developing self-sustaining, bankable PPP projects in India at state level.

The Department of Economic Affairs, Government of India and Asian Development Bank Report (2006) discuss status of PPP’s in India and their relevance in economic development. It also discusses key government initiatives and private sector perspective on PPP’s in India. It also throws light on the role of multilateral agencies in PPP. It further discusses the role of government in capacity building at the state and central level. In the end, the report draws lessons for India from the experiences of developed and developing countries like Mexico, Chile, California, Virginia, etc.
DEA, MoF, GoI Report (2007) discusses the Infrastructure challenges and Role of Public Private Partnerships in India. It focuses on the importance of organising the government capacity for PPP’s. The report further describes the innovative financing models for infrastructure and the growing pool of international investors looking to invest in PPP’s. The report also discusses the typical risks in various infrastructure sectors and arrangements for sharing them.

A study done by the Committee on Infrastructure Financing, constituted by the Government of India, has indicated that India must invest close to USD 400 Billion in infrastructure development and maintenance over the period ranging from 2006-2011 (Committee on Infrastructure Financing, 2007). Given the large sum of money involved as well as the vast amount of infrastructure that is to be built, it is clear that the participation of the private sector will be necessary, both in terms of financing and in terms of implementation of infrastructure. Public Private Partnerships (PPP) are therefore considered to be inevitable in the prevailing Indian Infrastructure context and are estimated to constitute 40% of new infrastructure development over the next four years (Department of Economic Affairs, GoI, 2007). The private sector too is increasingly becoming interested in participating in infrastructure projects. In the roads sector for instance, PPP projects attract more bidders today than they did 5 years ago.

Government of India Report (2010) discusses various policy initiatives taken by Central government to promote private participation in infrastructure like formation of Committee on Infrastructure (COI), Cabinet committee on Infrastructure (CCI), Public Private Partnership Appraisal Committee (PPPAC), etc. It also discusses the role of these committees in monitoring and developing private participation in infrastructure. It also lists various PPP projects approved by
these committees at central and state levels. This report further discusses the status of various PPP projects at the central as well as state levels which are at different stages of development, i.e. completed, under implementation or in the pipeline.

PriceWaterHouseCoopers Report (2007) prepared for World bank states evidence based description of present financing sources for PPP in Infrastructure. It analyses the debt and equity financing of PPP in India. It further identifies changes required to reduce and ease the identified constraints. The report supports the above study through a survey findings and data analysis through pie charts and bar graphs.

Thomas, A.V., Kalidindi, S. N. and Ananthanarayanan, K. (2003) have identified eight types of risks: traffic revenue risk, delay in land acquisition, demand risk, delay in financial closure, completion risk, cost overrun risk, debt servicing risk, and direct political risk. They further discuss risk perception of project stakeholders and factors influencing risk acceptance.

World Bank Report (2006) discusses a number of wide ranging issues on the subject. This report explores the need for developing and strengthening capacities for PPP’s in India. It lays emphasis on the role of public sector/government for a successful PPP program in the country. It states that government can boost performance of PPP programs through various policy and regulatory frameworks and developing human resource capacities through proper training and information dissemination. It also suggests various measures for PPP’s in India based on experience of other countries like Philippines, South Korea, Chile. Besides, its bibliography itself is a good guide for further research on the subject.
Another World Bank Report (2006) discusses the various constraints to infrastructure financing in detail like financial constraints, fiscal barriers, inadequate administrative capacity and poor infrastructure regulations. This report also discusses investment need for infrastructure and participation by financial institutions in infrastructure projects. It further explores sector specific constraints related to poor regulation and related risk and uncertainties. In the end, the report suggests measures to address infrastructure financing constraints and related regulatory issues.

3.4 Research Gap

The studies cited above explain that Public Private Partnerships are the most viable option to overcome constraints and challenges in provision of infrastructure in India. Some studies discuss challenges and constraints faced by PPP at national level but the direction of these studies lack the following:

(i) All the studies focus on PPP’s at national level but there is no study which explains the constraints faced by PPP’s at the state level specially Uttar Pradesh.

(ii) There is no study which identifies the environmental constraints faced by PPP projects at state level specially Uttar Pradesh.

(iii) The studies conducted do not explain the impact of the presence of various environmental constraints on successful implementation of PPP projects at state levels specially Uttar Pradesh.

(iv) There is no study which explores the initiatives taken by Uttar Pradesh government in provision of infrastructure through PPP mode.
3.5 References:


74. PPP Unit (2003), National Treasury of South Africa. www.treasury.gov.za.


