

CHAPTER 1: INTRODUCTION

1.1 Introduction to the Thesis

This thesis presents empirical research into project finance decisions made by project sponsors in public private partnerships (PPPs) when developing large scale infrastructure projects in Australia. Project finance involves the setting up of an independent project company usually involving one or more sponsors who provide part of the equity in addition to a non-recourse debt for the investment in a capital asset, usually a large scale infrastructure project (Esty, 2004). Since the majority of these projects are public projects, the public sector is usually a key project sponsor in such developments. With the increasing complexity of these projects, the public sector has recognised the importance of including the private sector as project sponsors (Akintoye, Beck, & Hardcastle, 2003; Bult-Spiering & Dewulf, 2006; S. Osborne, 2000). This leads to the formation of partnerships between the public and private sectors to undertake the development of such projects.

This form of collaboration brings together two organisations in long term partnerships for mutual benefits. However these organisations are disparate with distinctly different goals. Thus to ensure the successful operations of such partnerships, the process of goal setting and negotiations to set mutually beneficial or symbiotic goals and the process of collaborative negotiation based on altruistic empathy to resolve as many of the differences as possible are important in project finance deal. This is a critical aspect in the study of project finance decisions in PPPs.

Despite the significant role played by each project sponsor, current literature and research on project finance and PPPs has not yet integrated the literature on goal setting, negotiation and collaboration by the project sponsors into the project finance decisions. There is a wealth of literature on project finance and PPPs in areas relating to operational principles

(eg. Esty, 2002a; Esty & Christov, 2003; Finnerty, 1996; Nevitt & Fabozzi, 2000; Yescombe, 2002) accounting principles (eg. Broadbent & Laughlin, 2002; English, 2005), project finance risks (eg. Beidleman, Fletcher, & Vesbosky, 1990; Bing, Akintoye, Edwards, & Hardcastle, 2005a; Tinsley, 2000a), valuation of large scale projects (eg. Esty, 1999), financial structure of projects (eg. Esty & Megginson, 2000) and management issues in PPPs (eg. Allan, 1999; Bult-Spiering & Dewulf, 2006; English & Skellern, 2005; Grimsey & Lewis, 2004; Savas, 2000). The lack of academic interest in integrating the literature on goal setting, negotiation and collaboration into project finance as a whole represents a deficiency in project finance literature. This impedes a fuller understanding of how project sponsors in PPPs resolve their differences, set symbiotic goals, and successfully manage large scale infrastructure projects.

This thesis addresses this deficiency by presenting case study research on the process of goal setting, negotiation and collaboration in PPPs made by project sponsors of large scale infrastructure projects in project finance. It is posited that goal setting, negotiation and collaboration in PPPs is based upon the considerations of three independent variables, namely the strategic factors in project finance, public sector goals and private sector goals. Each of these variables consider the strategic issues of risks, costs and benefits associated with the projects and these have been discussed in project finance literature (Beidleman et al., 1990; Bing et al., 2005a; Department of Treasury and Finance, 2000; Lewis, 2002). Examining each of these strategic issues separately will lead to the broader understanding of the operations and management of PPPs. This will then provide insights into how goal setting, negotiation and collaboration can increase the likelihood of success in PPPs.

The strategic issues of risks, costs and benefits are regarded differently by the public and private sectors. The fundamental difference in their attitudes towards these issues arises

from the responsibilities thrust upon them by their respective stakeholders. It has been argued that the public sector goals are primarily driven by the need to provide services to the community within the allocated budget at minimum social and environmental costs (Phillippe, 1996). In the process, the public sector is committed to maximising the level of infrastructure spending by examining the risks related to the financial, economic and social dimensions of the projects (Department of Treasury and Finance, 2000). It is argued that the private sector on the other hand is primarily motivated by maximising profits for their shareholders under a prevailing risk environment (Quiggin, 2002; Savas, 2000).

These contrasting goals make the structure of PPPs complex. The central theme that underlies the difference in their respective goals has been considered to be their attitude towards risks (Akintoye et al., 2003). Project finance risks are inherent problems in PPPs and the appropriate management of these risks is pivotal to the success of the project. When PPPs are involved in the development of large scale projects, it has been considered that a different risk profile from that associated with conventional projects is involved (Crauser, 2003; Grimsey & Lewis, 2002; Miller & Lessard, 2000). Much of the risk has been found to be a result of the complexity in the partnerships (Grimsey & Lewis, 2002).

This thesis investigates the role of goal setting, negotiation and collaboration in making project finance decisions under PPPs. There are three main research objectives of this thesis. The first objective is to research on how enhancing public acceptance of the projects developed under PPPs can deliver economic benefits to the community. The second objective is to research into the influence of public opinion on the success of PPPs, and investigate whether effective PPPs are a result of positive public opinion. The third objective is to research on the importance of altruistic empathy as another key impact on collaboration in PPPs.

The thesis is structured around three related research papers. The first paper was a comparison based empirical study of two large scale PPP projects in Sydney. It investigated the potential of pursuing collaborative advantages in PPPs and how using these advantages could lead to greater public acceptance. The second paper was undertaken two years later but again using the same two PPP projects as case studies. It focused on the effect of public opinion on project outcomes. The paper showed how common symbiotic goals and collaboration could lead to positive public opinion. The third paper built on the first two papers but it included a third PPP project. It expounded the value of altruistic empathy in collaborative negotiation on the success of PPPs.

1.2 Overview of Project Finance and Public Private Partnerships

Esty (2003, p. 20) defined “project finance as the financing of long-term infrastructure, industrial projects and public services based upon a non-recourse or limited recourse financial structure where project debt and equity used to finance the project are paid back from the cash flow generated by the project”. Finnerty (1996, p.2) considered project finance as “...the raising of funds to finance an economically separable capital investment project in which the providers for the funds look primarily to the cash flow from the project as the source of funds to service their loans and provide the return of and a return to their equity invested in the project”. Nevitt and Fabozzi (2000, p. 1) offered yet another definition. They contends that project finance as “a financing of a particular economic unit in which a lender is satisfied to look initially to the cash flow and earnings of that economic unit as the source of funds from which a loan will be repaid and to the assets of the economic unit as collateral for the loan.”

In defining that “project finance involves a corporate sponsor investing in and owning a single purpose, individual asset (usually with a limited life) through a legally- independent

entity financed with non-resource debt”, Esty and Christov (2003) clearly recognized that there are three key decisions related to the use of project finance. First, there is an investment decision involving an asset. Secondly, there is an organizational decision regarding the creation of a legally-independent entity that owns the asset. Thirdly, there is financing decision involving primarily non-recourse debt. Because the project company is legally independent, the debt can be structured mostly without recourse to the equity investors who are the project sponsors.

Project finance therefore allows the equity investors to finance the projects off the balance sheet. This means that if a project fails, the project lenders recourse is to ownership of the actual project and they are unable to pursue the equity investors for debt. For this reason, lenders focus primarily on the project’s cash flow because this is the main source for repaying project debt.

The definitions also highlight that when project finance is used in the development of large scale infrastructure projects under PPPs, the confluence of interacting structural decisions such as legal issues, capital structure and operational contracts among project sponsors makes project finance decisions more complex.

During the 1970s, project finance has become a popular form of financing for large projects, partly in response to several projects in the field of natural resources (Esty, 2001). In the 1980s where several power plants were being built in the United States, project finance became a mean of financing these new generating plants with long term power purchase agreements (Esty, 2003).

Project finance was generally undertaken by the public sector because most of these large scale infrastructure projects to be developed arise from the responsibilities the communities placed on them. These infrastructure projects were not intended to generate

profit but to provide services to the community and to raise living standards. Therefore there were no or limited incentives for the private sector to undertake such infrastructure projects that restrict the revenue income during its operations. In addition, significant large financial outlays of the projects also discouraged active participation from the private sector. However in the early 1990s, there were increasingly more private sector involvements as a result of privatization, deregulation and globalization (Esty & Christov, 2003). Their involvement gradually led to the formation of partnership with the public sector in various forms. These PPPs aimed at encouraging better management and promoting more efficient risk sharing. It also expanded the pool of available funds in the face of limited public sector budgets. Between 1990 and 1996, privatization of state-owned companies totalled more than \$155.0 billion (Lieberman & Hall, 2005). Some examples were \$3.7 billion Paiton power plants in Indonesia (1995-1996), \$217.0 million Centragas pipeline in Colombia (1994), \$57.0 million Andacollo gold mine in Chile (1994), \$1.6 billion FLAG multinational telecommunications project (1995) and \$3.4 billion Malaysia North-South expressway (1989 – 1993) (Esty, 2002a).

Around the turn of the century, total project finance investment had been growing at an estimated compound annual rate of 18 per cent per year, except for the period between 1998 and 1999 where a decline was experienced due to the Asian financial crisis (Esty, 2002a). In 2001, total global project finance market was approximately \$220.0 billion including both debt and equity investments (Esty, 2002a). This peaked to \$900.0 billion before the global financial crisis in 2007, after which the scarcity of debt funding and a new set of risks impacted the development of large scale infrastructures under PPPs (Coindreau, 2010).

Project sponsors play a key role in project finance. This is evident in Yescombe's observation (2002) that the quality of the sponsors was an important consideration when assessing the potential success of a project. Strong sponsors have significant positive experiences within their own markets and internationally. Prior experiences in the regions and countries are advantageous as these sponsors will be more knowledgeable of and responsive to the business and political environments. Given that most of these large scale projects will invariably involve collaborative effort between the public and private sectors, the ability of the project sponsors to combine public service with private commercial approach in undertaking project finance is pivotal to the success of these projects.

The advantages to be gained through this collaborative effort between public and private sectors have made PPPs increasingly popular in financing large scale infrastructure projects across a wide range of industries throughout the world (Bult-Spiering & Dewulf, 2006). Such projects involve huge capital investment and face high project risks, and therefore limit the financing options for either of the developers to undertake the projects alone. With the growing number of large scale infrastructure projects related to transportation, public utilities and public services projects that need to be developed, the public sector cannot meet most of these capital development expected by the community. Therefore, these projects increasingly depend on the participation of the private sector. This leads to a bigger role for private sector involvement in financing and managing these projects.

PPPs can provide the means to meet the funding of such projects. It has been found that it can also allow the sharing of project risks and rewards among the project sponsors (Hrab, 2004). Project sponsors usually initiate these projects and make an initial equity commitment to spearhead the projects. Throughout the development of the projects, the

project sponsors will take on the important role in project finance decisions. In many cases, they are also involved in post construction operations. The success of large scale projects is dependent, to a large extent, on project finance decisions which are made through goal setting, negotiation and collaboration under PPP arrangements among the project sponsors. Their involvement at the onset is therefore important.

Unlike in the UK where PPPs have been commonplace since the mid-1990s, PPPs in Australia have been largely confined to toll roads, rails and airports. However, gradually PPPs have expanded into other social infrastructures (Allen & Skulley, 2004), including housing, schools and hospitals. Even projects involving oil, gas, mining, and telecommunications are embracing PPPs. It is not uncommon that the costs of most of these projects were often more than \$500.0 million with some of them costing over \$1.0 billion. In 2004, State and federal governments in Australia spent about \$18.5 billion on new infrastructures (Allen, 2004). New South Wales and Victoria are the two States in Australia that has extensively used PPPs in the development of large scale infrastructure projects.

Recent large scale projects in Australia, at federal and state levels, are evident of the importance of project sponsors. These included Alice Springs to Darwin Railway, Western Sydney Orbital (M7), Lane Cove Tunnel (LCT), Sydney Cross City Tunnel (CCT), Mitcham-Frankston freeway and Spencer Street Station Precinct Redevelopment (Allen & Skulley, 2004).

The Alice Springs to Darwin Railway was a PPP project of \$1.3 billion, linking Alice Springs to Darwin with approximately 1420 km railroad. The Federal Government was the project sponsor contributing \$480.0 million of the total financing. After several failed attempts to have the railway fully funded by the Government or a private company,

AustralAsia Railway Corporation was established in 1997 to oversee the project with the public sector support and private sector participation.

In NSW, the construction M7 was Australia's longest toll road project. It links three Sydney arterial motorways – the M2, M4 and M5 - via a ring road through Sydney northwest and western suburbs. Completed in 2007 at a cost of \$1.4 billion, against an initial estimate of \$1.8 million, the 39 km orbital motorway was a PPP project with NSW government being a key project sponsor. Other large scale PPP infrastructure projects in NSW included the LCT, estimated at \$1.1 billion, which was completed in 2008; and CCT, estimated at \$900.0 million, which was completed in 2006 (Foley & Allen, 2005).

In Victoria, there has been a gain in momentum in PPPs. The \$2.6 billion Melbourne's Mitchan-Frankston freeway was a showcase for Victoria's government engaging private investors in project finance when the project took off in 2006. Melbourne's \$700.0 million Spencer Street Station redevelopment was a PPP between the State government and Leighton Holdings. Swinburne University of Technology had a \$60.0 million PPP with NM Rothschild & Sons to redevelop its Hawthorn campus which included student accommodation and an institute (Skulley, 2003).

Unfortunately, not all of these projects undertaken by PPPs were successful. In Sydney, NSW, the City-Airport railroad and CCT did not generate the traffic volumes that were originally forecasted and hence adversely impacted the revenue. These two projects became financially insolvent within two years of their operations. In addition CCT, as well as LCT, was unsuccessful not only from financial perspectives but also from the lack of acceptance by the community for whom the facilities were built. In Victoria, there were problems during construction of Spencer Street Station. In Queensland, the government

had stalled most PPP arrangements after unsuccessful negotiating with potential private sector project sponsors for its first PPP project.

Notwithstanding, PPPs can still be successful provided the project finance deal are successfully negotiated with all project sponsors from the start. PPP successes in Australia and other countries are testament to how dissimilar organisations with different goals can work together to achieve optimal performance results. These strategic alliances, or partnerships, between the public and private sectors can benefit all parties, including the community who eventually uses and pays for the services, provided that their respective divergent goals are aligned with the public interest. This approach has provided the opportunity to institute new modes of public sector operations and also has allowed positive aspects of the traditional models to be incorporated (Brown & Ryan, 2000). Significantly, this partnership has resulted in improved outcomes such as greater efficiency, higher quality of service, increased focus on community needs and better value for money (Brown & Ryan, 2000)

1.3 Statement of Main Theme and Research Questions of the Thesis

The main theme of this thesis is based on three objectives. The first research objective of this thesis is to understand how the practice of collaborative advantages in collaboration can enhance the process of goal setting and negotiation in PPPs. These projects, which are developed using PPPs, can gain a high level of public acceptance and deliver economic benefits to the community. The second research objective is to inquire into the influence of public opinion on the success of PPPs by investigating the role of collaboration in setting symbiotic goals by the public and private sectors to achieve community interest. The third research objective is to provide insights into the role of altruistic empathy in framing collaborative negotiations under PPPs arrangements. By examining how altruistic empathy

and collaborative negotiation in PPPs can enhance project longevity, this objective enriches the understanding on the reasons why some PPPs succeed while other PPPs fail.

The three journal articles in this thesis examined these research objectives. In addressing these research objectives, three research questions were investigated in each of the journal article.

The first article addressed the following research questions:

1. How and why can the application of collaborative advantages enhance goal setting and negotiation in PPPs?
2. How and why can the application of collaborative advantages promote high level of public acceptance of PPPs?
3. How and why can public acceptance of the development of infrastructure projects using PPPs enhance the delivery of economic benefits to the community?

The second article was based on the same two PPP projects used in the first article to address the following research questions:

1. How and why can public opinion on whether PPP projects enhance the quality of life to the community influence the success of PPPs?
2. How and why can public opinion on whether PPP projects are value for money to the community influence the success of PPPs?
3. How and why can public opinion on whether collaboration by the project sponsors to achieve community interest influence the success of PPPs?

Finally, the third article built on the first two articles to address the following research questions by studying three PPP projects:

1. How and why can altruistic empathy facilitate collaboration in PPPs?
2. How and why can a high degree of altruistic empathy from the beginning of the project enhance collaborative negotiation in PPPs?
3. How and why can collaborative negotiation enhance the probability of success in PPPs?

This thesis concludes that the display of altruistic empathy by the public and private sectors and the application of collaborative advantages in goal setting and negotiation in PPPs will promote greater public acceptance of the projects, enable the projects to deliver economic benefits to the community and yield optimal operational and financial structures.

1.4 Description of the Problem Areas in Project Finance Decision for PPPs

The literature of PPPs has begun to attract both professional and academic interests. Professional interests on PPPs arose from both the public and private sectors, following initial successes in some of the large scale infrastructure projects in the US (Darrow, Loeb, & KapMick, 1991) and UK (Asenova & Beck, 2003). Academic debates and literature on PPPs have focused on policies and practices of PPPs (Reeves, 2003), respective goals of the public and private sectors (McPhail & Davy, 1998; Savas, 2000), and pros and cons of such partnerships (Forrer, Kee, & Zhang, 2002; Mackie, 2002; McBride, 2002; Mustafa, 1999). These descriptive and empirical works set out how project sponsors perceive the advantages and disadvantages of project finance and PPPs. These works raise noteworthy points on the key issues that the public and private sectors must consider in their respective evaluation and involvement in PPPs. However, these studies are constrained in their examination on how goals can impact project finance decisions in PPPs. As a result, our knowledge on the role of collaboration in PPPs to enhance public acceptance and deliver of economic benefits to the community is limited in both depth and scope. There also exist

a deficiency in the understanding on the influence of public opinion and the role of altruistic empathy in collaborative negotiation on the success of PPPs.

Professional project finance literature is replete with prescriptive advices on how PPP projects must be structured and whether there are merits in PPPs. However, the advices given are, for most part, unsubstantiated through theoretical investigation and lacking in the development of a more scientific approach on the management of project finance decisions in PPPs. Finnerty (1996) recognised that PPPs are governed by negotiated agreements that specify public and private sectors' responsibilities, impose public regulation of safety, require quality of service, and often restrict user fees. To ensure viability of the partnerships, the strategic context of negotiation between the government entities and private firms has been considered as important (Ghere, 2001). These observations assert the significance of collaborative advantages in PPPs which has been lacking in discussion and research.

Huxham and Vangen (2004) asserted the importance of capturing collaborative advantages to increase efficiencies and synergies to ensure successful partnerships. Differences in organisational goals and cultures have been found to pose collaborative inertia (Vangen & Huxham, 2003). Overcoming this inertia will enable culturally different organisations to realise that collaboration does not lead to attaining lesser value goals. Instead such collaborative efforts will lead to win-win situation for all.

Project sponsors from both the public and private sectors form PPPs because they are motivated to achieve as many of their respective goals as possible. Moderating their expectations will allow them to capture synergy in collaboration. To achieve this, there must be an understanding of the situation and a display of empathy for each other. This will overcome the complex interaction that exists in partnerships where collaborative

negotiation among different organisations is an intricate process. Polzer, Mannix and Neale (1998, p. 42) observed that:

Multiparty negotiations are complex social interactions because of both the multiple sets of preferences that must be considered in fashioning agreements and the interpersonal dynamics that grow increasingly complicated as more people interact.

Managing such complex interactions will help to develop an understanding on the role of collaborative advantages in the management of PPPs.

To understand the process of goal setting, it is important to first understand how goals operate. This is best stated by Locke and Latham (2002, p. 714) that:

The focus of goal setting theory is on the core properties of an effective goal. These properties are specificity and difficulty level; goal effects at the individual, group and organisation levels; the proper use of learning versus performance goals; mediators of goal effects; the moderators of goal effects; the role of goals as mediators of other incentives; and the effect of goal source.

A review of the goal setting theory will provide the first fundamental insight into the core properties of public and private sectors' goals in PPP projects. Given that these are two distinct and disparate organisations, collaborative negotiation between these two organisations is intended for both the organisations to attain as many common goals as possible when forming the partnerships. In the literature of project finance and PPPs, the complexity of goal setting theory however has yet to be thoroughly tested so as to fully integrate the unique characteristics of negotiation and collaboration. Little or no research has been undertaken to investigate both these literatures within PPPs. The three articles in this thesis intend to provide one of the first investigations on goal setting, negotiation and collaboration in PPPs and emanate the focus of this research. This thesis will enhance the understanding on the role of collaborative advantages in delivering economic benefits to the community and improving the level of public acceptance of PPPs involvement in the

development of large scale infrastructure projects. It will also provide insights into how altruistic empathy and collaborative negotiation can yield successful PPPs.

The forgoing statements serve as convenient axiomatic representations of the problem areas in project finance decisions in PPPs. The importance and necessity to establish collaborative and integrative negotiation, to encompass interest alignment and coalitions in negotiation and to incorporate both economic and social contracts into the core component of goal setting will help to eliminate a problem area in the understanding of project finance decisions in PPPs.

The prescriptive works of Esty (2004) and others (eg. Finnerty, 1996; Nevitt & Fabozzi, 2000; Tinsley, 2000b) have enabled academics to pursue research in project finance and enabled project finance professionals to be trained in the conventional wisdom. Collaborative advantages (Huxham, 1993, 2003; Huxham & Vangen, 2004; Vangen & Huxham, 2003) has also been extensively researched. There has also been a growing interest in the literature on altruism on decision making (Gates & Steane, 2009). Still, there is insufficient or no literature integrating altruism and collaborative advantages to goal setting and negotiation in PPPs and this represents a state of vagueness in the understanding of project finance decisions in PPPs. Unfortunately, these problem areas in PPPs have been gleaned over in most academic research.

To address this deficiency, a literature search was conducted to locate and support the study undertaken in the three articles. Arising from this literature, the articles addressed the research questions that will provide insights into the management and operations of PPPs and consequently understand the reasons why some PPPs have been successful while others have been failures.

1.5 Purpose and Significance of Research

The purpose of this research by qualitative case study is three folds. Firstly, it is to examine how collaborative advantages can enhance the delivery of economic benefits to the community and higher level of public acceptance. Secondly, it is to inquire into how public opinion can influence the success or failure of PPPs. Thirdly, it investigates how altruistic empathy facilitate collaborative negotiation, which in turn play an important role to enhance the success of PPPs.

Central to addressing these three purposes is the role and responsibilities of public and private sectors in PPPs when collaboratively negotiating the management of project risks. There is the opportunity for the private sector to reduce project risks by virtue that the partnership is a tangible expression of the public sector's commitment to the project. The likelihood of reducing the risk of failure depends on the level of concession and support given by the public sector as part of the partnership agreement. The extent to which the risks can be retained or transferred will depend on the concessions that are being provided by the public sector to the private sector. Therefore the role of public concessions given or not to the public sector plays an important role in the effectiveness of project collaboration.

In many countries, political accountability comes into question because the community perceives that far too many concessions are being given to the private sector in PPPs to launch the projects. This can lead to deterioration of good relationships among the project sponsors during the construction and operational phases.

On the other hand, the restraint in providing as much concessions as possible will mean that the community who uses these facilities pay a higher price. Therefore, the significance of this research is to understand the balance in providing public concessions to the private sector and pricing the use of the completed facilities.

Collectively, research into these areas provides insights into project finance decisions on the operational and financial structures of PPPs undertaken by Australian project sponsors of large scale infrastructure projects. This research will bring about a more substantial understanding and appreciation of project finance using PPPs.

It is also hoped that this research will help to extend project finance theory to encompass the complex strategies and methods used by project sponsors in establishing project finance deals. In turn, this knowledge will open the observed project finance practices to new scrutiny and lead to the development of improved project finance frameworks capable of handling complex PPPs. Practical application of this knowledge will improve the management of PPPs for managers involved in project finance. It will also help those entities which provide services to the PPPs to better understand the operational and financial aspects of large scale infrastructure projects.

This research will also make specific contributions in each of its basic areas of investigation. In the first instance, insights will be gained into the effects of the various strategic factors in PPPs set out in the project finance decisions. This knowledge will allow an increase in understanding of project finance risks by project sponsors and project finance managers alike. This will then lead to the improvement in the management of PPPs in practice.

Secondly, the influence of the strategic factors on goal setting, negotiation and collaboration will be established. Integrating these aspects into the literature of project finance will expand the knowledge of PPPs by gaining insights into the role of collaborative advantages practised by the project sponsors in order to deliver economic benefits to the community. This also provides an understanding on how public acceptance

of the PPPs can be influenced by the socio-economics benefits that the projects bring to the community.

Finally, this research will present a proposition on the importance of altruistic empathy in collaborative negotiation in PPPs. This increased knowledge will give useful incremental scholarship and practical skills to academic and practitioners alike on how PPPs are structured. It also gives a better understanding of how to achieve successful PPPs. This research will therefore serve as a frame of reference for more advanced study in project finance and PPPs.

1.6 Research Methodology

To address the above research questions, empirical information was gathered about three large scale infrastructure projects in Australia which served as case studies in the three research papers of this thesis. Considering the research questions to be addressed, qualitative case study emerges as one of the best research approaches for the three articles. The choice of this research method answers the questions of how and why a specific phenomenon is happening. Firstly, it explored new areas and issues where measurement is unclear. Secondly, it described a process of the effects of an event or an intervention, especially when such events affect many different parties. Thirdly, it helped to explain a complex phenomenon (Yin, 2003b).

Yin proposes that “how” and “why” questions are more explanatory and likely to lead to the use of case studies, histories and experiments as the preferred research strategies. Specifically, when these questions are being asked about a contemporary set of events over which the investigator has little or no control, the use of case study is relevant. Yin (2003b, p. 13) mentioned that “a case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between

phenomenon and context are not clearly evident; and in which multiple sources of evidence are used". In this research, the phenomenon of applying collaborative advantages in goal setting and negotiation by the project sponsors to enhance public acceptance, economic benefits and success of PPPs is initially not clearly evident within the context of project finance decisions in PPPs. By using deduction based on Yin's definition (Yin, 2003b), it becomes apparent that PPP is the phenomenon and project finance is the context. Therefore, in this regards, the contextual relationship between project finance and PPPs will be perceptible.

Yin (2003b) provided three main reasons to support inquiry by case study. Firstly, it can cope with the technically distinctive situation in which there will be many variables of interest. Secondly, it can rely on multiple sources of evidence and therefore allows data to converge in a triangulating fashion. Thirdly, it can benefit from the prior development of theoretical propositions to guide data collection and analysis. The inquiries of the three articles in this thesis fall within Yin's (2003a) definition of using case study as a research method. This method provides a strong relevance to problems in practice. It allows the researcher to conduct an in-depth study and learn what works and what does not.

The objective of the three articles in this thesis is to undertake case studies of three PPP infrastructure projects to analyse the "how" and "why" about a contemporary set of events over which the investigator has little or no control over behavioural events, and when the boundaries between phenomenon and context are not initially clearly evident. Case study is typically use to examine the interplay of all variables in order to provide as complete an understanding of an event or situation as possible (Yin, 2003a).

According to Harling (2002), the research methodology underlying case study usually involved qualitative research because it focuses on the uniqueness of the respective

individual situation. Qualitative research methods have been found to provide the view of phenomena involving complex interactions, particularly when humans are an integral part of the study (Stake, 1995). To understand the phenomenon, all aspects of the situation need to be considered and this inclusiveness tends to mean that each situation is unique. It can probe deeply into a situation, considers many variables and describes the full range of influences associated with the phenomenon, hoping that some of the understanding developed can be transferred to other phenomena (Yin, 2003b).

Stake (1995) explained the significance of the personal and impersonal roles of researchers in qualitative research. The researchers seek to develop expected as well as unanticipated patterns among many variables. This will require researchers to develop an initial set of questions for collecting data but, once the researchers start collecting data, the researchers play an interpretative role, making observations, exercising subjective judgement, analysing and synthesising, realising all the while the researchers' own consciousness. In qualitative research, the researchers sought to construct knowledge (Saunders, Lewis, & Thornhill, 2009) and concentrate on the situation, pulling it apart and putting it back together using analysis and synthesis in direct interpretation until meaning emerges (Patton, 2002; Saunders et al., 2009). In this way, knowledge is created from the data. Such study actively involves understanding of the situation and, in describing this understanding, creates knowledge.

Verschuren (2003) commented that case study must be both explanatory where the answers to 'how' and 'why' questions are addressed and explorative where new research questions and hypotheses are framed. It is argued that the researchers ought to be open minded and have an eye for the unexpected (Gill & Johnson, 2002; Patton, 2002). In the three articles, the investigative studies focused on communication, cooperation and conflict

resolution among parties involved with respect to regulatory decision making, and the institutions that guide and shape stakeholders' behaviour.

The choice of using a qualitative approach to address the research questions for the three articles is further supported by the argument put forth by Denzin and Lincoln (1998). Within a broader context of qualitative research, Denzin and Lincoln (1998, p. 3) contended that qualitative research is merited with a wide range of empirical techniques.

Qualitative research is multi-method in focus, involving an interpretative, naturalistic approach to its subject matter. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them. Qualitative research involves the studied use and collection of a variety of empirical materials – case study, personal experience, introspective, life story, interviews, and observational, historical, interactional and visual texts.

While there is a degree of subjectivity in qualitative research, it is argued that the richness of the data can offer many challenges for both inductive and deductive interpretations (Denzin & Lincoln, 1998). In particular, given the exploratory nature of the research in the three articles, the methodology of case study is most suitable. Therefore, a case study enables the learning of a complex issue based on a comprehensive understanding through extensive description and contextual analysis of the issue taken as a whole and in its context.

Most case studies fall into the qualitative methodology domain. Case study is the preferred strategy when how or why questions are asked (Burns, 1997). Likewise, it is the preferred method when researchers have little control over the events, and when there is a contemporary focus within a real life context (Glaser & Strauss, 1967; Patton, 2002). In addition, unlike more specifically directed experiments, it has been considered that case

study seeks a holistic understanding of the event or situation in question using inductive or deductive logic reasoning (Glaser & Strauss, 1967).

Six types of case study have been categorised by Burns (1997). These are historical case study, observational case study, oral case study, situational analysis, clinical case study and multi-case study.

The three articles in this thesis adopted a combination of observational and multi-case study methods. In the observational case study approach, particular events are studied in terms of the views of all stakeholders including the community. Their views from published media, reports and official documents, which are the key sources for this research, are collated and analysed to provide an understanding of the events. Multi-case studies, on the other hand, refer to a collection of case studies. It is not based on the sampling logic of multiple subjects in one experiment. It is rather a form of replication or multiple experiments. Except for the first article, each of the subsequent articles in this thesis built on the study of the preceding articles and therefore invariably some aspects of the investigation were replicated to reinforce the conclusions.

The variables that form the basis of each case must be consistent in order to examine whether similar results for predictable reasons are eventuated. It has been argued that the outcomes demonstrate either support for the research propositions or a need to revise the proposed suggestions with another set of case studies for retesting (Burns, 1997). Multi-case study can be beneficial because the results can be more forceful. Though conducting multi-case study requires more time and effort than other approaches, its application in the three articles of this thesis strengthens the propositions of the need for altruistic empathy and collaborative negotiation from the start to ensure success.

Merriam (2009) provided some salient arguments why case study is a particularly suitable design for analysis of process. This reinforces the choice of research methodology used in the three articles. Merriam (2009) contended that process as a focus for case study research is viewed in two ways. The first meaning of process is monitoring and this involves describing the context and population of the study. The second meaning of process is casual explanation and this involves the discovery or confirmation of the process. In addition, it has been argued that qualitative research method using case study contextualise theories by observation of the process (Cook & Reichardt, 1979). The three articles in this thesis focused more on the process in order to understand the outcome. The first two articles conducted investigative studies on how the process of managing the infrastructure projects could lead to successful outcomes. The third article then explored how and why altruistic empathy in the process of collaborative negotiation could further improve the probability of the desired outcome.

Based on the various literatures on qualitative research, this section concludes that the importance of process in PPPs justifies the selection of qualitative case study research as the most appropriate research method. This is best summarised by Saunder, Lewis and Thornhill (2009) that case studies have helped in the understanding of the processes of events, projects, and programmes. The discovering of the contextual characteristics can shed light on the issues of concerns. Significantly, the three articles recognised the value of longitudinal and contextual approaches to the understanding on the dynamics of change (Yin, 2003a). Therefore, the application of an embedded case design allows the three articles to vary the organisational characteristics of concern. This gives the opportunity to observe the influence of the different characteristics on goal setting, negotiation and collaboration.

1.7 Limitations of the Study in Scope and Applications

The study neither test nor validate the factors influencing the public and private sectors' goals in PPP projects, but only elicits commentary on what project sponsors find good or bad about these goals. Application of this study's findings to overseas projects may not be valid since the study uses Australian projects and focuses on the Australian environment. Further, this study is limited to project sponsors in NSW and does not include projects of the other states in Australia. Since the public sector of each state in Australia may have different goals, emphasis and priorities on PPP projects, the result established in this thesis may not necessary be applicable or replicated throughout Australia.

1.8 Outline of the thesis

Chapter 1 introduces the structure of this thesis. It begins by providing an introduction to the research and an overview of research topic. It then proceeds to describe the problem areas in this topic. Since this thesis is organised around three separate but related publications, this section also addresses the research questions in each of the three articles. The next section provides the statement of purpose and significance of the research follows by discussion on the research methodology and then the limitations of this study. It concludes with this section by providing the outline of this thesis.

Chapter 2 reviews the relevant academic literature. It will first review the literature on the strategic factors in project finance, public sector goals in project finance and private sector goals in project finance, before reviewing literature on goal setting, negotiation and collaboration. It concludes by explaining that the literature in project finance and PPPs is not complete without integrating the literature of goal setting, negotiation and collaboration to provide a better contextual understanding on the reasons why some PPP projects succeed while others fail.

The subsequent chapters 3, 4 and 5 present the three respective articles that have been published. Each of this chapter begins with a short introduction of the published article. In chapter 3, the first article, “Delivery of Economic Benefits using Public Private Partnerships in the Development of Infrastructure Projects” (Thia & Ford, 2009) was published in the *International Review of Business Research Papers*. It provided research integrating collaboration theory into project finance under PPP arrangements. It argued that since PPP projects are considered as “mixed goods” from an economic standpoint, it evoked controversy due to the contrasting competitive and collaborative relationships surrounding their provision. The paper concluded that the greater the extent of collaborative advantages being applied to each of the projects, the more likely these projects can deliver economic benefits to the community who in turn will accept that these projects are developed for the betterment of the society.

Chapter 4 presents the second article, “Using Content Analysis to Inquire into the Influence of Public Opinion on the Success of Public Private Partnerships” (Thia & Ross, 2011) which was published in the *International Journal on GSTF Business Review*. It built on the first article. Using the same two case studies, it applied content analysis to inquire into how public opinion can influence the success of PPPs. It concluded by establishing how public opinion on PPP projects can increase quality of life to the community, increase value for money to the community and increase level of collaboration between the public and private sectors to achieve benefits for the community. By analysing the level and frequency of positive public opinion from various media sources, the study showed how public opinion influences the success of PPPs.

Chapter 5 presents the third article, “The Importance of Altruistic Empathy and Collaborative Negotiation in Public Private Partnerships” (Thia & Ross, 2012) which was

published in *Journal of Modern Accounting and Auditing*. It built on the first two articles and by using deductive analysis it investigated the reasons why one of the PPP projects was a success while the other two were failures. It concluded that if both the public and private sectors could show altruistic empathy towards each other from the onset, then collaborative negotiation could be conducted to increase the likelihood of success in PPPs.

Chapter 6 concludes this thesis by firstly revisiting the conclusions drawn from the three articles. It then examines some of the limitations of the research and suggests areas for future research. It concludes by reinforcing the objective of this thesis. This thesis aims to provide incremental knowledge on project finance decisions in PPPs by integrating collaborative advantages into the literature of PPPs. Applying collaborative advantages to project finance decisions in PPPs enhance the understanding on how public acceptance, delivery of economic benefits and positive public opinion can lead to successful PPPs through goal setting, negotiation and collaboration. In addition, the display of altruistic empathy by both the public and private sectors will further improve the probability of success. The thesis highlights the interdisciplinary nature of project finance decisions in PPPs. Understanding the role of collaboration in PPPs provides a holistic treatment in the assessment of whether PPPs can be considered to be successful. This allows divergent perspectives to coexist and enrich the literature of project finance and PPPs. The integrative perspectives in the assessment of PPPs also enable researchers to increase the value of knowledge on contemporary issues relating to PPPs. Therefore, it is hoped that this thesis will provide a frame of reference that leads to future research in PPPs, which in turn will prove to be beneficial to both academics and professionals.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction and Chapter Overview

This chapter sets out the literature that is considered to be relevant to a fuller understanding of the project finance decisions undertaken by project sponsors in large scale infrastructure projects and that is required for an appropriate framing of the inquiries of this thesis.

Before proceeding with each of these principal discussions, the role and nature of project finance policy is set out in the first section of this chapter to permit a better understanding of the nature of project finance management and PPPs. This discussion provides an overview of project finance decision parameters. It shows how each of these parameters interacts in a project finance decision model. The discussion then proceeds to present the model of project finance decisions in PPPs. The model shows risk allocation during the process of goal setting and negotiation within the project finance decision framework. This section also discusses the role of collaboration in PPPs. This discussion within the context of PPPs provides insights into how overcoming collaborative inertia will lead to effective collaborative advantages being practised in PPPs which will then lead to positive public opinion. The discussion also emphasizes the importance of altruistic empathy as another key impact on collaboration. This section concludes with a critical analysis of the role of collaboration, public opinion and altruistic empathy in project finance decisions for PPPs.

The second section (2.2) of this chapter frames the inquiry into the impact of the first parameter posited to influence the process of goal setting in the project finance decisions. This parameter is the strategic factors in project finance. The strategic factors are the risks, costs and benefits associated with the project.

The third section (2.3) and fourth section (2.4) of this chapter frame the inquiry into the goals of the public and private sectors in PPPs respectively. Each of this section initially discusses the process of goal setting relevant to the public and private sectors. It reviews the financing of the projects, the project risks and the project benefits associated with each of these sectors. An assessment of the public and private sectors' goals concludes the respective sections.

The fifth section (2.5) of this chapter frames the inquiry of goal setting and negotiation theory. This section sets out first to review goal setting theory and how this is being integrated into the process of negotiation. The first part of the review of literature tracks Zetik and Stuhlmacher's (2002) goal setting and negotiation performance; and Polzer and Neale's (1995) representations on goal setting within the context of negotiation. Literature bridging goal setting theory and negotiation are being reviewed where major hypotheses of goal setting theory along with potential moderators may exist in negotiation situation. Reference is also made to literature by Seijts, Latham, Tasa and Latham's (2004) representations on goal setting and goal orientation. It also reviews goal commitment by negotiators to enhance the understanding of the relationship between goals and performance during and after negotiation.

This section also reviews the literature on the process of negotiation, tracking interest alignment and coalitions in negotiation as well as negotiation outside the economic contract. Firstly, the review of literature tracks Polzer, Mannix and Neale's (1998) representations on interest alignment and conditions in multiparty negotiation; and Brett, Northcraft and Pinkley's (1999) representations on self-regulation model of negotiation. The review of literature on negotiation concludes by examining Fortgang, Lax and Sebenius' (2002) representations on negotiating the "social contract". The discussion on

the review of literature provides a basis for investigation of the information processing aspects of key decision parameters that are likely to influence goal setting and negotiation in project finance.

Central to goal setting and negotiation is the role of collaboration in partnerships. Therefore, the sixth section (2.6) of this chapter conducts a review of literature on collaboration theory and the concept of altruism and altruistic act. Review of literature on collaboration theory and the application of collaborative advantages in partnerships tracks work based on Huxham (1993, 2001, 2003), Vangen and Huxham (2003) and Selsky and Parker (2005). This literature provides the fundamental framework to the development of collaborative negotiation. To enhance the understanding of trust in collaboration, this thesis further tracks the discussion of altruism as an alternative value in decision (Gates & Steane, 2009) and altruistic acts (Haski-Leventhal, 2009). From the insights gain on altruism and altruistic acts, the concept of altruistic empathy during collaborative negotiation in PPPs is expounded. The review alludes that altruistic empathy enhances the effectiveness of collaboration in PPPs.

The concluding section (2.7) of this chapter revisits the basic theoretical framework for this study and highlights the basic deficiencies in the literature in relation to PPPs. It will also briefly outline the three papers to be presented in the subsequent three chapters. Each of this paper provides incremental understanding on role of collaborative advantages in PPPs and explains an alternative assessment on the success of PPP projects.

2.1.1 The Role and Nature of Project Finance Policy

The project finance decision model that is presented in Figure 1 posits that the project sponsors' decisions in PPPs are influenced by three key parameters, namely strategic factors that examine risks, costs and benefits; the public sector goals; and finally, the

private sector goals and private sector evaluation of PPPs. These parameters influence the project sponsors' decisions indirectly through projects' policy which guides the project sponsors in PPPs through the process of goal setting, negotiation and collaboration. As such, a general understanding of the project finance decisions may be gained through consideration of the literature about the purpose, operating components, management and dynamics of project finance policy.

2.1.1.1 Purpose

Project finance is a method of raising long-term debt financing for large scale infrastructure projects based primarily on lending against the cash flow generated by the project. There are several reasons for the use of project finance in these large scale projects. Yescombe (2002) highlighted six main reasons that explain the advantages of using project finance.

Firstly, the use of debt financing in project finance results in cheaper cost as compared to equity financing because debt lenders are willing to accept a lower return (for their lower risk) than an equity investor. Secondly, project finance allows project sponsors to have higher tax deductions from highly leveraged projects. Thirdly, project finance provides project sponsors the ability to keep the debt off the consolidated balance sheet. This is beneficial to a company's position in the financial markets because poor performance of the project does not negatively impact the financial performance of the parent company. Fourthly, in majority of the cases, project finance limits the risk to project sponsors to the amount of the equity invested since project finance does not normally guarantee repayment of the debt. Fifthly, risks in project finance are spread among the project sponsors through risk sharing or risk allocation to the party best able to manage it. Finally, risks in project finance can be reduced by combining expertise among the project sponsors.

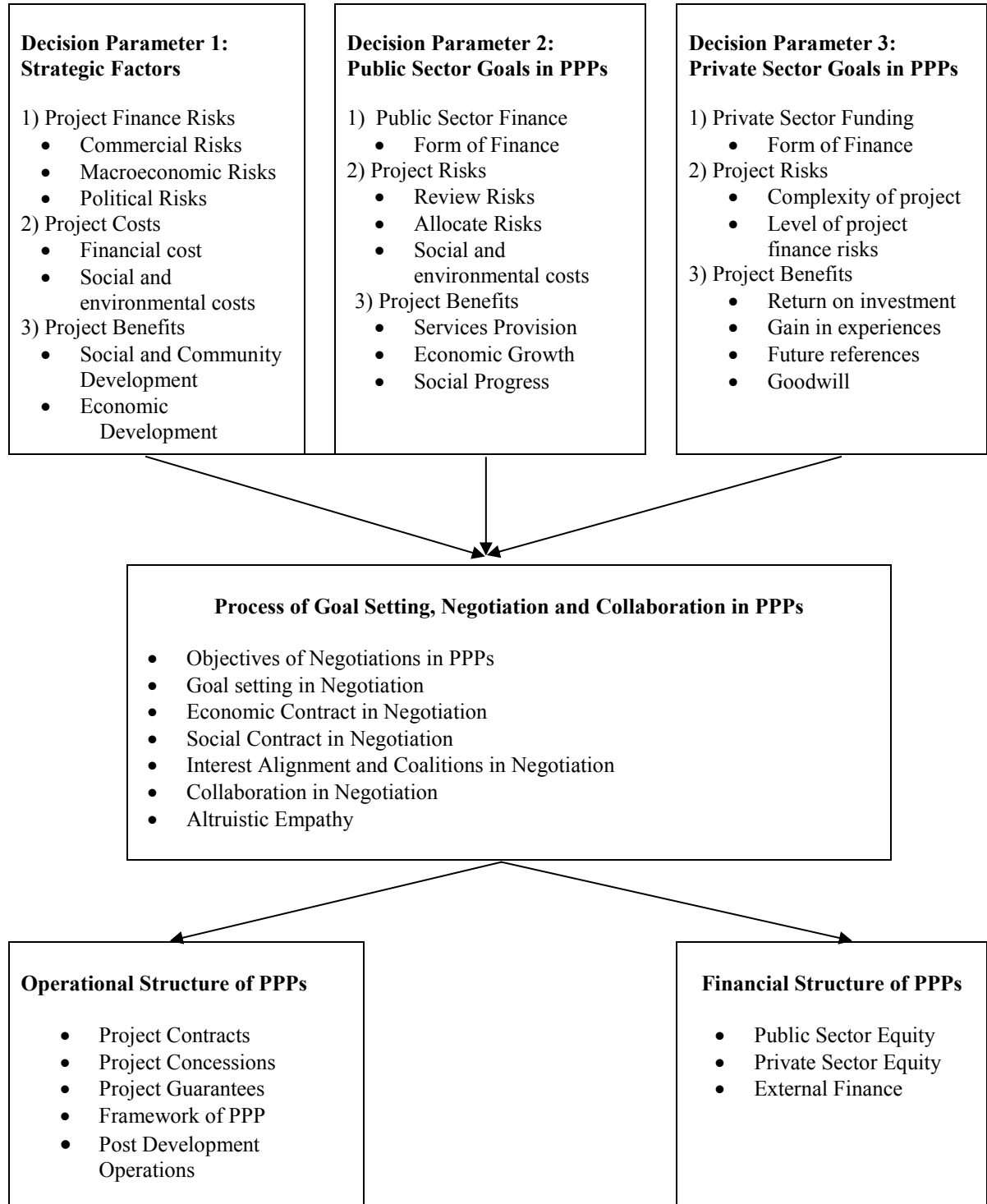


Figure 1: Project Finance Decision Model: The Decision Parameters

The purpose of project finance policy is therefore to take advantage of the opportunities that project financing as compared to other form of financing for development of infrastructure projects.

2.1.1.2 Operating Components

Project finance policy is multifaceted in nature, involving different operating components to manage the project funding, project development activities and project post development requirements. These three basic operating components provide the framework for project finance operating structure in PPPs. Such a typical framework is outlined by Yescombe (2002) as illustrated in Figure 2. It shows the interaction of the various contractual agreements in the development of a large scale infrastructure project in PPPs.

Before discussion is directed at each of these operating components, discussion is first focussed at the setting up of the Special Purpose Vehicle (SPV) or Project Company (PC), which will coordinate all contractual agreements. At the beginning, when a project is put forward by the developer, it is often proposed without much financial resources. The developer will then find investors who in turn become the project sponsors. These sponsors form the PC but may also have other interests in the project, such as being contractors or operators that provide services to the projects.

Based on the project finance structure illustrated by Yescombe (2002), it has been stated that the PC lies at the centre of all contractual and financial relationships in project finance framework and from where it dictates the project finance operations.

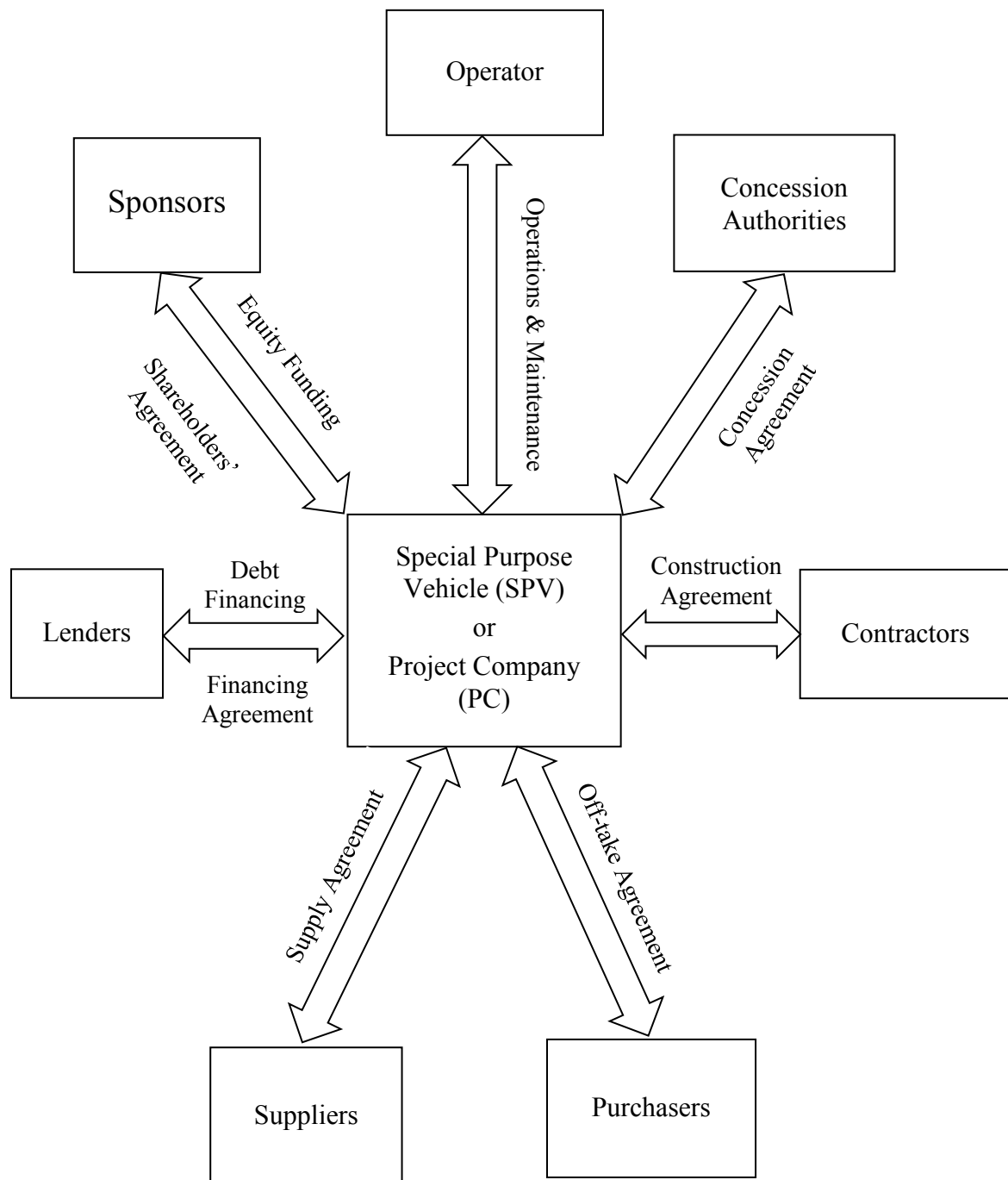


Figure 2: Contractual Arrangements Framework of a Typical Project Financing Package (Yescombe, 2002, p. 9)

The first basic component of project finance policy in PPPs is project funding. There are two elements in project funding. Firstly, there is equity which will be provided by investors in the project. Secondly, there is project finance-based debt which will be provided by one or more groups of lenders. These two contrasting project funding sources pose challenging tasks for the project sponsors in the PC because it is not easy to determine the optimal proportion of equity and debt funding.

The second basic component of project finance policy in PPPs is project development activities. Yescombe (2002) considered the main task at this stage to be the finalising of contracts. The contracts that will be entered into by the PC will provide financial support to the projects. This will ensure that risks from the PC are being transferred to or shared with other parties of the Project Contracts. Yescombe (2002) identified the key Project Contracts to include (1) an Off-take Contract, (2) Input Supply Contract, (3) Concession Contract and (4) Construction Contract. These contracts form part of the lenders' security package.

The Off-take Contract stipulates the terms and conditions under which the product or services produced by the project will be sold on a long term pricing formula. In contrast to the Off-take Contract, the Input Supply Contract specifies the long term pricing formula in agreed quantities of the raw material needed for the project. Concession Contract is usually established with one of the public sector authorities. It gives the PC the right to construct the project and to earn revenues from it by providing a service either to the public sector (e.g., a public housing) or directly to the general community (e.g., a toll road). Finally, the last aspect of the project development activities is considered to be the Construction Contract which the PC negotiates with a company on the cost and construction period for the design and development of the project (Yescombe, 2002).

The third basic component of project finance policy in PPPs is post project development activities. These relate to Operation and Maintenance Contracts. Since providers of funds to project finance look primarily to the cash flow from the projects for returns on their investment, it is important for the PC to appoint established companies to take responsibility of post development operations and maintenance of the projects. Companies with previous experiences of similar projects are preferred. If the project is going to be operated by one of its sponsors, a separate contract for this purpose is necessary to define the scope of the sponsor's involvement to avoid any conflict of interests.

2.1.1.3 Management

Management of the various aspects of project finance policy involves attention to both the individual operating components and their interactions with the PC. There are several key functions which the PC has to closely coordinate. Without a doubt, a critical role in the management is to minimize the project cost and maximize the project benefits. If there is partial public funding in the projects, the PC has greater accountability on how public fund is being used. The benefits that can be accrued from spending public fund will have to be meticulously accounted for in order to justify its expenditure. Private sector participation in the provision of public services has been found to be controversial and questionable due to social justice reasons (Vives, 1997). This is because infrastructures use public assets to develop. Often the community has been accustomed to using these facilities free of charge or at rates substantially below cost. It is for these social justice reasons in the development of large scale infrastructure projects using PPPs, the PC is required to carefully manage the various aspects of the operating components in order that it can be held accountable for.

Goal setting, negotiation and collaboration among the project sponsors within the PC are key processes in the management of project finance policy. Many intra component

variations in project finance policy exist. For example, Finnerty (1996) observed that the PC can alter the return and risk on debt and equity by seeking security arrangements to protect them from various risks. The contractual security arrangements apportion the risks among the project sponsors and external lenders. The lenders' assessment of the adequacy of any security that is offered will likely to be strongly influenced by the economics of the project. This will determine the level of commitment by the lenders. Projects with strong cash flows and low risks can be structured with a low equity and a high debt.

Management of the key Project Contracts during the development phase as well as the Operation and Maintenance Contracts during the post development phase are crucial to the success of project finance. Together with a sustainable project funding, successful management of these operating components will ensure that the large scale infrastructure projects will complete on time and generate the forecasted cash flow during the operational phase.

2.1.1.4 Dynamics

The dynamics of project finance policy between and among the different operating components depends on the level of involvement of the project sponsors in the PC. Project finance policy is not static in most projects. The PC must decide on what and how risks are to be transferred to third parties, and this in turn will determine how the risks impact each of the operating components. Finnerty (1996, p. 34) highlighted the dynamics in project finance depends on risks and returns with the following comments:

Obtaining the financing needed to fund the construction cost of a project requires satisfying prospective long term lenders and external equity investors of the project's technical feasibility, economic viability and creditworthiness. Investors are concerned about all the risks a project involves, who will bear each of them, and whether their returns will be adequate to compensate them for the risks they are being asked to bear.

Goal setting, negotiation and collaboration among the project sponsors will therefore facilitate the dynamics in the distribution of risk and returns.

Ghere (2001) considered that the strategic context of negotiation between public sector entities and private firms are fundamental to the partnership viability in PPPs. He further comments that the dynamics in PPPs will depend on the extent partnership agreements extend ownership (or proprietary) rights to private sector. The essence of this issue is whether PPPs convey some ownership rights to private interests. This in turn dictates how risks are being allocated or shared among the various operating components during the operation and maintenance of the projects when they are completed.

2.1.2 Project Finance Decision Parameters and Model

Although knowledge of the functioning of project finance policy assists in understanding the general nature of project finance decisions, a more fundamental explanation of how project finance decisions in PPPs are made can probably be obtained by examining the parameters that influence the project sponsors. In this respect, it can be argued that the strategic factors comprising the various aspects of project finance risks, project costs and project benefits are one of the parameters that influence the project finance decisions made by the project sponsors.

Similarly, the goals of the public and private sectors are the other two parameters that influence the evaluation of PPPs. The evaluations by the public and private sectors of their respective goals have an impact on project finance decisions because they perceive the environment differently given the inherent differences in their expectations and responsibilities.

The above decision parameters are the independent variables and which are posited to affect the project finance decisions through goal setting, negotiation and collaboration in

PPPs. Discussion of each of these parameters is conducted along the lines of the project finance decision model as illustrated in Figure 1.

Since risks in project finance are critical, the management of these risks through goal setting, negotiation and collaboration will ultimately determine how risks are being allocated or shared. It is worth noting that although risk transfer and risk allocation to the parties best able to manage these risks have been argued to be the premise of project finance in PPPs (Finnerty, 1996; Tinsley, 2000a; Yescombe, 2002), research on PPPs increasingly indicates the merits of risk sharing (Bing et al., 2005a; Brinkerhoff & Brinkerhoff, 2011; Hodge & Greve, 2008; Selsky & Parker, 2005). This concept within collaboration is likely to increase the probability in project success. The framework in Figure 3 illustrates the role of collaboration in the management of the risks through allocation and sharing.

2.1.3 The Role of Collaboration in PPPs

Collaboration plays a key role in negotiation in PPPs because it makes the project sponsors aware of the importance of synergy in partnership. It has been found that it allows the partnership to accomplish goals which will not have been possible if working as individuals (Kanter, 1994). Collaborative negotiation in PPPs therefore serves a core function in the model of the project finance decisions. It acts as the conduit through which the three parameters impact the project finance decisions. The decisions eventually prescribe the operational and financial structures of PPPs.

However, it is argued that collaboration can be impeded by collaborative inertia because the short term gains may appear to be insignificant (Huxham & Vangen, 2004). Overcoming this inertia and applying collaborative advantages can facilitate an integrated development of large scale infrastructure projects using PPPs. By collaboratively

harnessing the capital and expertise among the project sponsors, PPP arrangements provide the opportunities to optimise the results, increase value and maximise efficiency. In addition, the value of collaborative advantages will be significantly increased if altruistic empathy is being displayed by the negotiation parties.

2.1.4 Critical Analysis of the Model of Project Finance Decisions

Having considered the various parameters in the literature of project finance, this section only included those parameters that are considered most important to affect the project finance decisions in PPPs in the model as presented in Figure 1.

In addition, it is not possible to use what has been written within the literature of project finance to analyse PPPs in the current social, economic and political environment. This section critically argued that there are other factors not discussed within the project finance literature but are critical in influencing the successes or failures of PPPs. The emphasis of capturing collaborative advantages during collaboration among the project sponsors is an important consideration that has not been extensively researched in project finance and PPPs. Integrating this concept as outlined in the forgoing sections into the model provides valuable contribution to an understanding of the effectiveness of PPPs as collaborations. This thesis will therefore provide the incremental knowledge to project finance and PPPs.

2.2 Strategic Factors in Project Finance

2.2.1 Project Finance Risks

Each aspect of project finance risks had been variously discussed and debated by many academics and researchers. Yescombe (2002) simplified the understanding of project finance risks by broadly categorising the wide range of risks in project finance into three main categories: commercial risks, macro-economic risks and political risks.

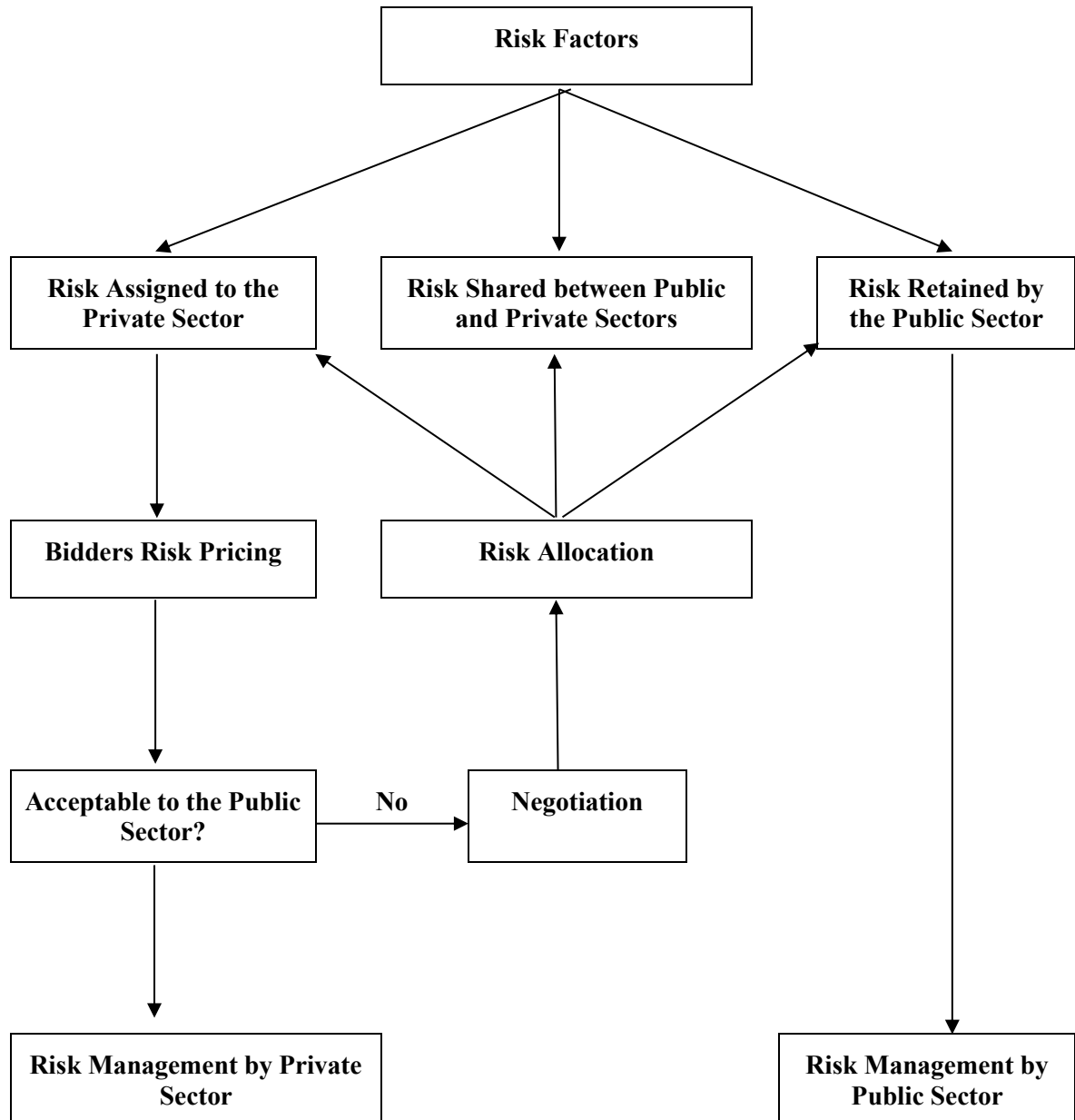


Figure 3: Risk allocation and Risk sharing process in PPPs (Bing, et al., 2004)

2.2.1.1 Commercial Risks

There are several aspects of commercial risks, also commonly refer to as project risks. These risks are those inherent in the project and the market in which it operates. Based on Yescombe (2002), the main areas of commercial risks are classified as commercial viability, completion risk, environmental risk, operating risk and revenue risk.

The first aspect of commercial risks is to determine if the project is commercially viable (Yescombe, 2002). This fundamental analysis encompasses a broad understanding of the nature of the project and the socio-economic-political environment under which the project operates. It also examines whether the long term contracts to all parties, especially those between the public and private sectors in PPPs, give any advantages to one partner since project finance is a long term business partnership. Therefore the deal underlying any Project Contract must have long term commercial sense for all parties.

The second aspect of commercial risks is the completion risk which is inherent in the construction process (Yescombe, 2002). Crucial to the success of the project is whether the contractor responsible for the development of the project is able to manage the works during construction phase. This relates to site acquisition and access, getting necessary permits, project management, construction cost overrun, third party work arrangement and delay in completion. Some aspects of this risk can be mitigated through insurance policies. However, the experience of the contractor in similar projects previously will be crucial in ensuring completion risk is well managed.

The third aspect of commercial risks is environmental risk (Yescombe, 2002). This aspect of commercial risk concerns with any environmental constraints the project may face during construction or operation. The environmental issues relating to the project can result in various contractual, legal and wider political implications.

The fourth aspect of commercial risks is operating risk (Yescombe, 2002). This aspect of commercial risk occurs after the project is completed and affects the long term operations of the projects. The key operating risk includes technology, general operations and maintenance of the project, and operating cost overruns.

The fifth key aspect of commercial risks is revenue risk (Yescombe, 2002). This risk arises when the PC is not earning sufficient revenue to service its operating costs and debt and, to provide adequate return for investors. This risk is linked directly to volume risk and price risk. The assumptions on volume and price used for revenue budgeting before the commencement of the project may become inaccurate when the project commences operations. This uncertainty can also arise due to gaps in forecasting (Dufour, Steane, & Wong, 2009). This aspect of risk may be covered by concession agreements, sales contracts and hedging contracts. However, some level of revenue risk is likely to remain. For example, the Sydney Airport Rail development incurred a huge shortfall in revenue as a result of low usage and over pricing (Allen, 2004). Similar situations were faced by the operators of Cross City Tunnel (John, Carson, & Baker, 2007) and Lane Cove Tunnel (Rochfort, 2008) in Sydney. These gaps in forecasting can be due to a lack of coherent collaboration between the public and private sectors. This arises due to the various stakeholders pursuing their respective agendas independently. Developing large scale infrastructure projects takes place over a long period of time. Therefore the differences between the anticipated and actual demand can be impacted by change in socio-economic and political contextual events over time (Dufour, Steane, & Wong, 2008).

2.2.1.2 Macroeconomic Risks

According to Yescombe (2002), macroeconomic risks, also known as financial risks, are considered to be risks associated with inflation, interest rate, currency exchange rate

movements. These risks do not relate directly to the project but to the economic environment in which the project operates. Like commercial risks, these risks need to be analysed and mitigated because they play a significant role in project finance decisions.

Inflation has been found to be either be a risk or a benefit to the PC, depending on the timing (Yescombe, 2002). If inflation leads to higher project costs during the construction period or higher operating costs during the operating period, then there will be cost overruns. Likewise, inflation can also result in higher revenue. Hence inflation can amplify either profitability if inflation has a greater impact on revenue than operating costs, or loss if operating costs is impacted more by inflation. To eliminate this uncertainty, the impact of inflation can be mitigated if both revenues and costs are indexed during forecasting. Therefore budgeting before the start of the project must take inflation into account or introduce inflation-indexed financing to reduce the exposure to such risk.

Like inflation, interest rate movement has been found to be a risk or a benefit (Yescombe, 2002). If the project is being financed with fixed rate bonds or loans from lenders providing fixed rate funding, then the PC has no interest rate risk. On the contrary, it can be a benefit if the interest rate moves significantly upwards. However, most lenders in financial markets do not provide long term loans at fixed rates because their deposit base is short term. The base interest rate on project finance loans is often adjusted at intervals to prevailing wholesale market at which the lenders raise their funding, and is therefore on a variable rate basis. Interest rate hedging arrangements need to be put in place to mitigate the interest rate risk when variable rate loans are used.

Financing during the construction and operational phases has been found to be subjected to currency exchange risk (Yescombe, 2002). As with inflation and interest rate risks, currency exchange movements can either be a risk or a benefit. During construction, if

costs are in one currency and financing in another, the PC will require additional funding if the currency in which the cost is being incurred appreciates. The same exchange risk will be experienced during the operating phase. In this instance, if the PC's revenue is in one currency and its financing and other related costs are in another, movements in the exchange rate will affect its net revenue. To manage long term currency risks, finance must be arranged in the local currency as far as possible.

2.2.1.3 Political Risks

Esty and Megginson (2000) viewed political risks to be largely as a proxy for the probability of costly default as a result of either strategic or liquidity reasons. Strategic default arising from direct or indirect expropriation by government and liquidity default arising from borrower inability to service the debt obligations are important elements that influence the structure of loans for project finance. Most large scale infrastructure projects are structured and financed with political backing and, in the majority of cases, the project finance are a partnership between the public and private sectors. Political support from a high level is often necessary to ensure the successful completion of the project.

The importance of government involvements to the overall success has been emphasized by Yescombe (2002, p. 17):

Projects financed in this way are often major long-term investments, for which a political will and sustained political support are needed. They may also form part of a government of privatization or the provision of public infrastructure through PPP's, whose success or failure may have considerable political consequences.

Continued support is also needed even during the project operational phase. The project will be unsuccessful if it becomes a target for the opposition to attack the government. On the other hand, a new government may try to undo the deal agreed by the previous

government if the former had reasons to believe that the project is not sufficiently transparent. This suspicion can be due to the lack of competitive public procurement procedures. It can also be that the operations of the project produce very high returns for private sector investors. As much as a project has to be commercially viable, it must also be politically viable.

2.2.2 Project Costs

The second strategic factor that influences project finance decisions is the project cost. It is common for large scale infrastructure projects to cost over \$500million. However, the project cost is not merely the financial cost of the project. It also includes social and environmental costs. The infrastructure is vital for national prosperity, improving living standards and generating sustainable economic growth in the communities. Therefore the project costs must take into consideration these welfare enhancing advantages the projects will bring to the economy and society. The following sections review how the financial cost of the project, and the social and environment costs influence the project sponsors in their project finance decisions.

2.2.2.1 Financial Cost of Project

Owing to the size of large scale infrastructure projects and its associated high financial cost, the development of such facilities is likely to use project finance. These reasons often pose impediments and constraints to infrastructure developments. High financial cost can deter project sponsors from participating in PPPs. The financial cost of an infrastructure depends on the size of the project. The size of the project is not just the physical magnitude of the project. It also hinges on the degree of difficulty and the technology to be used in implementing the project. The physical magnitude of the project measures the area over which the project is to be constructed. The railroad from Alice Springs to Darwin, for

example, covers an extensive area stretching over 3,000 km and was constructed at a cost of \$1.3 billion. In contrast, the Cross City Tunnel in Sydney covers a mere 2.1 km stretch of land within the city or about six per cent of the area of the railroad. In terms of financial cost, the Tunnel cost of \$0.9 billion is about seventy per cent of the cost of the railroad. The railroad from Alice Springs to Darwin is being constructed over a large area of unencumbered land while the Tunnel in Sydney is being constructed not only over an area where it is encumbered with services but also over a heavily congested area. Technology involving the construction of above ground and below ground transportation is vastly different. In addition, construction in the highly inhabited areas, as opposed to sparsely uninhabited areas, often face restrictions on work schedules.

The looming concern of high financial cost due to the size of the infrastructure is a key issue for the project sponsors at the onset. Even though the provision of most of these large scale infrastructures usually falls under the responsibility of the public sector, very often partnership with the private sector is needed because the financial cost of the project is beyond the resources of the public sector. Such partnerships are needed as much in developing countries as in developed countries. This emphasizes the importance of financial cost influencing the public and private sectors in the process of goal setting, negotiation and collaboration in PPPs.

While in most developing countries, there is generally insufficient public fund to allocate for development of infrastructure projects, developed countries, on the other hand, have to allocate funds to different projects depending on their priorities. There is an acute sensitivity on how limited government resources are allocated. With massive surplus experienced in many developed countries becoming a rarity, many of the long term needs for infrastructure development and maintenance have to be reviewed (Jones & Noble,

2008). Therefore, to access funds from the private sector, the public sector usually explores innovative ways for achieving better value for money from the private sector in the construction and operations of these infrastructures through partnerships.

2.2.2.2 Social and Environmental Costs

Developing large scale infrastructure projects have far reaching social and environmental impacts to the communities, to which it will eventually provide the use of such facilities. Project sponsors therefore cannot ignore the social and environmental costs associated with these projects. Projects can no longer just focus on issues directly impacting the economic resources of the community. The cost on the social and environmental externalities must be evaluated and negotiated to reflect the changing community expectations about the performance and responsibilities of project sponsors. The implications of the social and environment costs of capital investment have prompted companies including those in Australia to explicitly state their commitment to address the social and environmental issues (eg. BHP Annual Report, 2011; CBA Annual Report, 2011)

The Brundtland Report (Brundtland Commission, 1987) highlighted a need for “ecologically sustainable development”. Project sponsors have to evaluate the social and environmental impacts in the development of large scale infrastructure projects and incorporate them into their decision making process. The Brundtland Report (Brundtland Commission, 1987) also cautioned that the communities have a right to understand the impact of commercial activities and a legitimate expectation that developers of infrastructure projects need to act responsibly to protect the quality of the environment. This is necessary to safeguard “Our Common Future” (Brundtland Commission, 1987). Good environmental management reduces costs and meets the expectations of the communities. In particular, the project sponsors of large scale infrastructure projects need

to understand that their access to land depends to a considerable extent on informing and involving the communities. In effect, this is an endorsement of a public licence for the project sponsors to operate.

Therefore, project sponsors must recognise the need for communities to be involved in decision making. By means of public forum to engage the communities in discussing the various social and environmental issues, all stakeholders can collaboratively participate in resolving as many of the conflicting goals as possible. This will lead to achieving improved outcomes in terms of efficiency, transparency and accountability in the management of issues affecting the communities. Gray, Bebbington and Walters (1993) expounded a functional cost categorisation which encompass fines and penalties, compliance costs, waste management costs, energy costs, and remedial costs. Based on these classifications, the major factors that may affect the social and environmental costs can be categorised into five main areas.

Firstly, the implication of the development to other existing neighbouring developments must be carefully considered. Secondly, there is the need to methodically evaluate the compatibility of the development to the overall land use plan. Thirdly, air, noise and water pollution during the developmental period must be responsibly managed. Fourthly, the disposal of waste and construction materials during and after the development must be diligently administered. Finally, prudent plan must be in place to deal with post development site cleaning and any possible contamination of the land.

2.2.3 Project Benefits

The third strategic factor that influences project finance decisions is the project benefits. The benefits of large scale infrastructure projects to the community and the economy are reflected in the social and economic improvements these projects bring about. Criteria for

evaluating the desirability and economic impacts of the development collectively determine the extent of benefits these projects bring to the economy and the community. The following sections review these criteria and evaluate how these benefits influence the project sponsors in the process of goal setting, negotiation and collaboration when making project finance decisions.

2.2.3.1 Social and Community Development

The increasing demand for infrastructure development arises from the desire by the communities to attain a higher standard of living. Successful completion of large scale infrastructure projects such as telecommunications, power generation facilities, toll roads, airports, and railways elevate social and community standards. Greater communications between communities separated by physical distances bring about an improved social wellbeing. Access to public utilities enhances the living conditions and improves the public health of the community.

In order that wider section of the communities can enjoy these benefits, these services must be provided at a fair price. Failing which, these benefits will be felt by a selected and privileged section of the communities. Project finance, with the involvement of the public sector can ensure that prices are set at a level the entire community can afford. It has allowed the public sector to incorporate the broader policy relating to equity and social justice (Brown & Ryan, 2003).

2.2.3.2 Economic Growth and Development

Development of large scale infrastructure projects is critical to economic growth and prosperity in both developed and developing countries. At the World Economic Forum in

Davos, Samans (2011, p. 38), Managing Director of the World Economic Forum on Public Private Partnerships said:

Many public private partnerships are new and untested and some of them are likely to fail. Yet, these partnerships offer an important new approach that has the potential to drive innovation, improve governance, raise living standards and provide opportunity to millions of people. They deserve continued support, engagement and evaluation from business leaders.

Since this development creates jobs for the communities, it will elevate a higher living standard and increase benefits to the communities.

Development of these projects also enhances the economic development of the country. Firstly, because these projects involve a significant amount of debt and equity finance, this development can help to develop the financial service sectors of the economy. It is likely overseas fund and expertise in capital market will mobilise funds to the projects and enhance the functions of financial markets of the country. Secondly, these projects are also likely to mobilise international skilled work force into the economy. These will result in greater skill development and skill transfer into the country. Thirdly, project finance in large scale infrastructure projects usually involves tested and new technologies. The use of these technologies can enhance economic progress of the country. The accumulation of expertise, knowledge and technology means that the project sponsors will be able to undertake the construction of even larger scale infrastructure projects at a later date. Large scale infrastructure projects therefore fuel economic growth and development.

2.2.4 Critical Analysis of the Strategic Factors in Project Finance

Academic and managerial research in large scale infrastructure projects has generated great interest because the size of the projects provides scope to unravel the various complex issues in project finance. The literature on the strategic factors in project finance has so far provided a good theoretical understanding on the operations of project financing. However,

the various social, economic, environmental and political developments over the last five years required critical analysis of some of these factors. In practice not all the strategic factors that apply to a developed economy are likely to apply to a developing economy. For example, Malaysia, after the 1987 Asian currencies crisis, introduced currency control and impeded free transfer of fund (Wade, 1998) and this altered our classical understanding of project finance in developing countries where domestic financial markets are not able to provide project finance. The Global Financial Crisis that started in 2008 and the Euro Crisis of 2012 again require a critical analysis of project finance risks that have not been discussed in any project finance literature.

Then there are issues related to climate change and carbon footprint that evoke a high level of social sentiments. It is difficult to comprehensively list what constitute social and environmental costs. Therefore, it is important for this thesis to be relevant by engaging on a critical analysis of the additional categories of environmental costs and how these costs affect the pricing of project finance risks. The success in the development of the large scale infrastructure projects depends on the extent social and environmental costs are mitigated.

The importance in research of project finance for large scale infrastructure projects goes beyond common sense finance and academic interest. The large size of these investments increases the managerial relevance in investment decisions. While the significantly more money at stake in project finance means that project sponsors have the opportunities and economic incentives to make careful, value-maximising decisions, this thesis recognises that the projects also provide benefits to the community and elevate the living standard of the society which are not benefits accrued directly to the project sponsors. Therefore the role of public opinion on the importance and benefits of the completed projects to the community is as important a consideration as are the other factors that are relevant to the

project sponsors and that are so often discussed in most literatures on project finance and PPPs. These are areas that have not been researched and the inclusion of these factors in this thesis therefore provides a focus on very important and contemporary issues in PPPs.

2.3 Public Sector Goals in PPPs

PPPs have been widely perceived as effective means of establishing cooperation and collaboration between the public and private sectors (Samans, 2011). In their study on investing in economic development, Phillips, Scott and Levitt (2004) contended that public sector views PPPs can lead to significant fiscal, economic and social benefits for the community. In an increasingly difficult environment for the public sector to raise funds to provide public goods and services to the community, the public sector considers that PPPs has the ability to bundle financial resources, know-how and expertise to address the needs of society. However, to effectively appraise infrastructure projects, specific criteria are needed to evaluate the public sector goals in relation to the desirability, economic and fiscal impacts of the development opportunities.

Bennett, James and Grohmann (2000) emphasized that joint venture between the public and private sectors can be an efficient way to capitalise on their respective strengths. Arising from these synergistic opportunities, Bennett et al (2000) further argued that the public and private sectors' goals do not have to be identical in order to pursue collaborative advantages in PPPs. Their respective goals must be complementary and this can lead to common or shared outcomes. The public sector recognises that the private sector resources can infuse innovation and quality to public services. Realising the potential and capabilities of the private sector provide strong incentives for the public sector to form partnership with the private sector to undertake project finance.

In this section, the goals of the public sector in PPPs will be reviewed. Public sector goals in PPPs can be defined under three main headings: public sector finance, project risks to the public sector and project benefits to the public sector.

2.3.1 Public Sector Finance

One of the key functions of public sector is the management of public sector finance. There is an increasingly acute public concern on the limitations of public sector financial resources. The economics of public sector and public finance addresses the allocation of resources and the distribution of income among consumers. It must be recognized that there is a community service obligation face by the public sector that must be addressed when making assessment on the financing of a particular project. This is because the community has social rights to ensure that goods and services shall be provided by the government as part of its overall public sector policy.

Arising from the tax collected by the government, the public is philosophically disposed to the expectation that the public sector is responsible for the provision of social services and facilities to the community. However, the increasing infrastructure needs and social demands combined with tight governmental budgets and public resistance to additional tax increases have made it imperative for the public sector to consider the most effective way to fulfil these responsibilities.

While most government attempts to manage a balanced budget with revenue from its various sources to meet the expenditure in public goods and services, this may not always be possible. This gives rise to the need for public debt. In their evaluation of PPP projects, Thomson and Goodwin (2005) commented that the main reason for most projects to use PPPs is to launch investment programmes which will otherwise not be possible if using public sector funding alone.

Sound expenditure decisions require detailed information regarding the merits of every project the public sector intends to develop. In evaluating the merits in the development of the various projects, the public sector has to determine ways in which the most efficient use can be made of scarce resources. It must channel resources from areas of lower priority to areas of higher priority. There is also a need to determine the appropriate budget for each of the projects.

Public sector finance also needs to consider effective ways to achieve value for money (VFM) in public infrastructure projects. PPPs can provide a platform for the public sector to achieve this goal. Bing et al (2005a) contended that the PPP process seeks to combine the advantages of competitive tender and flexible negotiation to achieve VFM.

2.3.2 Project Risks to the Public Sector

When providing public services through the development of large scale infrastructure projects, the public sector is exposed to several project risks (Bing et al., 2005a). These include the risk that planned levels of service delivery are not met or delayed, the risk of financial loss, fraud, waste or inefficiency. Even the risk of missed opportunities to deliver services in new ways has to be addressed by the public sector. Therefore, an important goal of public sector when undertaking project financing is to reduce the level of project risks associated with the development of large scale infrastructure projects. It will also, wherever possible, attempt to transfer as much of these risks as it can to a third party. This will ensure successful completion of the project in accordance with the intended objective.

In Section 2.2.1, project finance risks are classified as commercial, macroeconomic and political risks. However, Bing et al (2005a) proposed that PPP project risks can also be classified using a different approach. By using a meta-classification's approach, the project

risks can be classified into three broad categories: macro level risks, meso level risks and micro level risks.

Bing et al (2005a) defined macro level risks to comprise risks sourced exogenously, that is the risks external to the project itself. Similar to the macroeconomic and political risks discussed in Section 2.1.1, Bing et al (2005a) classified these risks to associate with political, legal, economic and social conditions, or risks arising from events outside the projects. On the other hand, meso level risks include risks sourced endogenously, that is the risks arising due to the nature of the projects such as project demand, project usage, location, design and construction and technology. Finally, micro level risks, while also endogenous in nature, are those related to the project sponsors. These concern the contracts rather than the projects. The benefits of grouping and classifying PPP risks using this model facilitate a strategic approach to risk management for the project sponsors in the public sector.

Risk allocation has been defined by Bing et al (2005a) as a primary measure of assignment between the public and private sectors in PPPs. Bing et al (2005a) further outlined a process of negotiation for risk allocation in PPPs, as illustrated in Figure 3. At the onset, the project sponsors from public sector will attempt to assign as much of the risks, especially the meso level risks which are related to the projects, to the private sector as possible. Project sponsors from the public sector will find it difficult to assign macro and micro level risks to the private sector and may have to retain these risks within the public sector. Alternatively, the public sector may have to negotiate to share with the project sponsors from the private sector. An efficient risk allocation and sharing framework must be established as early as possible during the initial developmental stages. It will eliminate disputes and disagreements at a later stage.

A general principle in risk allocation and sharing must take into account that risks have to be carried by the party which is best able to control, manage or mitigate these risks (Finnerty, 1996; Tinsley, 2000a; Yescombe, 2002). However, the public sector must take on the risks if it can do so at a lower cost. A process of negotiation for risk allocation that combines a systemic risk management approach with the principle of risk sharing in PPPs is necessary to establish the type and quantum of risk that the public sector seeks to transfer and that which the private sector is willing to accept (Bing et al., 2005a).

2.3.3 Project Benefits to the Public Sector

The obligation to develop large scale infrastructure projects by the public sector arises from the responsibility the communities placed on them. Musgrave and Musgrave (1989) noted that most of the large scale infrastructure projects are broadly classified as “social goods and services” which are deemed to be the responsibility of public sector. The public sector is predisposed to ensure that such projects must be “felt” by the entire community who want to access it. If left to the private sector, it can result in the social, economic and environmental benefits not “felt” fairly and “enjoyed” by as many members of the communities (Musgrave & Musgrave, 1989). In this regards, the public sector is to consider the provision and financing of infrastructure projects to be their role (Mustafa, 1999).

However, since the public sector is faced with limited funds, PPP projects are developed under integrative, holistic, social and economic development policies (De Lemos, Betts, Eaton, & de Almeida, 2003) where the provision of a public service is being funded almost entirely by private capital. Stilwell and Jordan (2004) advocated that proponents of PPPs concede that infrastructure developed in partnership with private sector provides significant social and economic benefits. They further argued that PPPs reduce public

sector borrowing and free up public sector money for essential services. In addition, Stilwell and Jordan (2004) contended that apart from the opportunities of risk sharing between the public and private sectors, PPPs can provide better value for money and earlier project delivery than if left alone to the public sector. Therefore, PPPs can provide cost effective service delivery. It can also increase innovation, efficiency and customer focus (Goldsmith, 1997; Savas, 2000). These attributes enhance the project benefits to the public sector when using PPPs in the development of large scale infrastructure projects.

The potential economic benefit these projects can bring to the society is perhaps the single most important project benefits from the perspectives of the public sector. Thomson and Goodwin (2005) stated that PPPs enable public sector to accelerate the development of much needed infrastructure projects that will result in economic benefits, and usually with ancillary environment or social benefits. The primacy of public sector involvement in PPPs is to align economic development with strategic goals (Phillips et al., 2004). These include business expansion and job creation. Such economic vitality is necessary for economic and social prosperity. It can also allow the creation of synergistic opportunity that helps to attract other private sector development (Phillips et al., 2004). In addition, PPPs in developing countries are especially seen to be attractive because of its ability to achieve the transfer of technological knowledge to local enterprises (Bing, Akintoye, Edwards, & Hardcastle, 2005b). This is achieved by partnering with private sector with the desired technological expertise from more developed nations (Trim, 2001).

2.3.4 Critical Analysis of Public Sector Goals in PPPs

The preceding sections describe the goals of public sector when using PPPs in the delivery of public goods and services. It illustrates how PPPs can bring about increased fiscal, economic and social benefits. However, Glaister (1999) conceded that there are instances

where PPPs may not provide the best outcomes and may be fraught with misuses and abuses. This provides a challenge to critically analyse some of the classical public sector goals in PPPs.

Firstly, PPPs can be used as a device by public sector to evade its own spending. In the process of engaging private sector to develop these projects, too many concessions may have to be given to induce their participation.

Secondly, the availability of funds under PPPs can lead to a distortion of properly designed strategic public expenditure plans. This can lead to projects being undertaken even though the potential project benefits are estimated to be less than the project costs. Therefore, the premise of value for money is undermined when the development of infrastructure projects lack transparent public accountability.

Thirdly, the method which allocates project risks as envisaged by the public sector may not be acceptable to the other project sponsors. Stilwell and Jordan (2004) expressed concerns whether PPPs really facilitate a beneficial allocation of risks between the public and private sectors. In most instances, the process of negotiation and collaboration plays a key role to re-define the allocation and sharing of project risks.

Finally, while PPPs suggest a right approach to integrate the strengths of both the public and private sectors, the applications of PPPs in certain economies highlight its theoretical deficiencies in balancing social and economic values (Chan, Lam, Chan, Cheung, & Ke, 2010). For example, in weak economies, the communities cannot afford market based public services because private operators of PPPs will charge commercial rates for the use of the completed project. Opponents to PPPs concede that the partnerships generate far too many benefits to the private sector (Grimsey & Lewis, 2005). In addition, the complexity and secrecy of the contracts that are agreed upon in PPPs can create the opportunities for

hiding items of public spending from proper scrutiny (Glaister, 1999). In many countries, political accountability comes into question because the community perceives that far too many concessions are being given to the private sector in PPPs to launch the projects. This can lead to deterioration of good relationships among the project sponsors during the construction and operational phases.

These four reasons critically challenge the viewpoints of most public sector management of PPPs. Therefore, when making assessment whether public sector goals in PPPs are achieved, it is important to recognise the limitations and constraints faced by the public sector using PPPs to develop public infrastructures. The public sector is predisposed to accommodate and maintain power relationships among all the stakeholders in order to ensure successful partnerships. While the success of PPPs depends on a common understanding regarding the respective goals of the stakeholders, there is also a need to exercise some degree of flexibility and to establish fair dispute resolution processes in the management of the projects. These additional factors are included in the analysis of PPPs in the three articles.

2.4 Private Sector Goals in PPPs

For the private sector to be involved in the development of large scale infrastructure projects under the arrangement of PPPs, the projects must first have commercial or market viability, either on its own merits or through various forms of government assistance. The viability is further enhanced by the potential of reducing risk due to the way project finance in PPPs is being structured. There are also non-commercial tangible and intangible benefits the development can bring to the private sector. These provide the basic primacy of private sector goals in PPPs.

2.4.1 Private Sector Funding

Until recently before the Global Financial Crisis of 2008, large source of equity and debt in the money market allows the private sector to raise funds without much difficulty. Esty (2002a) observed that by design, PPP projects employ a relatively high leverage. Many of these financial institutions are seeking means to place their funds in sound long term investment. The long term nature of the contract of large scale infrastructure projects makes it an attractive investment option. It enables private investment to be recovered over a reasonably long period. While such projects may not offer an inherently high return, the ability to use project finance which can allow it to be highly leveraged and can improve the financial return for the project sponsors (Yescombe, 2002). Project finance takes advantage of the fact that debt is cheaper than equity, because lenders are willing to accept a lower return for their lower risk than an equity investor. A further factor that may make high leverage more attractive is that interest is tax deductible, whereas dividends to shareholders are not. This can make debt even cheaper than equity (Yescombe, 2002). On the other hand, PPP projects with high leverage have inherently higher risk from a commercial perspective (Esty, 2002a). However, the high level of risk in project finance can be limited, spread, shared or re-allocated, thereby mitigating the overall project risks.

Another important aspect of private sector funding in PPPs is that project financing generally allows the project sponsor to keep the debt off the balance sheet. Keeping the debt off the balance sheet is seen as beneficial to a company's position in the financial markets. Nevitt and Fabozzi (2000) contended that successful project finance depends on the structuring of the financing of PPP projects. While planning as little recourse as possible by the private sector sponsors, there must be sufficient credit support through guarantees or undertakings from the public sector so that lenders can be satisfied with the credit risk associated with the projects

The funds needed for the development of large scale infrastructure projects under PPPs, especially in many developing countries, are often beyond the financial means of the public sector. PPP projects can attract private capital by involving the private sector (Finnerty, 1996; Yescombe, 2002). The public sector must recognise that without access to the private sector funds, many of these projects will not be able to be implemented. Consequently, it is expected that the private sector requires a rate of return that commensurate with the level of risk that it has to bear.

2.4.2 Project Risks to the Private Sector

PPPs can allow the allocation of specific project risks to those parties best able to manage them (Brealey, Cooper, & Habib, 1996). In identifying and then allocating project finance risks (Bing et al., 2005a), the public sector can seek to divest as much as possible the risks associated with the construction and operations of the infrastructure facilities. However, the private sector may not share this view unless there is adequate return to compensate for taking on a greater amount of risk. Normally, the public sector provides explicit information about risk allocation to the private sector which will give clarity of the total project risks. In such circumstances, it is likely that private sector will agree that risk transfer is also a positive factor in its participation in PPPs (Bing et al., 2005b). Since accepting higher risk will mean higher return, the private sector may be enthusiastic about securing opportunities to profit from the risk transfer that occurs (Bing et al., 2005b). The private sector will have to make its own assessment of the type and level of project finance risks that are being transferred. In making a detailed and objective assessment of project risks, the private sector, while accepting the risks being allocated, can also explore ways to manage and mitigate overall level of risks (Estache & Strong, 2000).

Under the terms of PPPs, it is usually the responsibility of the private sector to tackle the problem in infrastructure demand and supply (Chan, Lam, Chan, & Cheung, 2008). Based on the analysis of supply and demand, the estimation of the revenue that is needed to service any financial debt and to pay for the operations of the project is crucial to the private sector in their assessment of whether the rate of return will be acceptable. It must be recognised that the private sector will need to be compensated for taking on a higher risk in the estimation. The private sector must also be compensated for any residual risk due to forecasting gaps arising from uncertainties of contextual events (Dufour et al., 2008, 2009). Understanding these risks will assist the private sector to integrate its goals with respect to the development and its associated financing efforts.

2.4.3 Project Benefits to the Private Sector

The private sector invests resources in the development of PPP projects primarily to make a profit. Investors may need to compete for the right to develop the projects, but once awarded and successfully completed, they generally do not have to participate in a competitive market (Kwak, Chih, & Ibbs, 2009). Central to the theme of project finance is that PPPs allow project sponsors from the private sector to undertake projects without exhausting their ability to borrow for traditional projects. Therefore, the private sector has the ability to maintain its debt ratios for its other operations not related to the PPP projects (Estache & Strong, 2000). While financial benefits are the overriding consideration, there are also other project benefits to the private sector in PPPs.

Firstly, there is the opportunity for the private sector to reduce project risks by virtue of the working group mechanism. This is possible because the partnership is a tangible expression of the public sector's commitment to the project. The likelihood of reducing the risk of failure and increasing the opportunity of higher profits are the outcome of

concessions and support given by the public sector as part of the partnership agreement (Bennett et al., 2000). Some of these concessions and support can continue through the operational phase of the project development.

Secondly, since PPP projects will normally require the involvement of specialist contractors, the private sector can get the opportunity to forge alliances with international contractors and investors (Estache & Strong, 2000). Such alliances will enable the private sector to have access to modern technology associated with the development. This will improve their overall capability in the long term.

Thirdly, if the project is successful, the private sector will be able to showcase the quality of the development and this can reflect upon their ability to manage project financing for large and complex projects (Estache & Strong, 2000). Consequently, this will markedly improve their financial ratings in the financial markets. The private sector will also receive good commendation and favourable reputation which are beneficial for their future projects, either in the private or public sectors.

Fourthly, the private sector can have an opportunity to develop an innovative and proactive dialogue with the public sector on matters of common environmental concerns (Estache & Strong, 2000). PPPs provide the opportunity for the private sector to be involved in sustainable development, eco-efficiency and public participation. The goodwill that the private sector develops between themselves and the public as a consequence will enhance their rapport with various social and community interest groups.

Fifthly, infrastructure projects generally benefit a large section of the community. The ability to manage the projects with minimum social inconveniences and environmental disturbances can endear them to the community (Estache & Strong, 2000). This can

enhance the image of the private sector to be responsible corporate citizens. The profit that the private sector makes from the projects will therefore not be seen as greed.

2.4.4 Critical Analysis of the Private Sector Goals in PPPs

Many critics to PPPs are vocal in their rhetoric that the private sector benefits from the public sector and even the taxpayers. The assessment of private sector goals must be viewed in a wider perspective. It has been shown that the inherent profit motive does not lead to the undermining of the delivery of public goods because the private sector has to take on a higher level of risk and can inject efficiency in managing the project (Brown & Ryan, 2000). The need to produce satisfying results in order to maintain contractual relationships and to be considered for future contracts is compelling for the private sector to provide quality performance and deliver promised services. Providing benefits to the community at reasonable cost can keep private sector goals in the right balance (Bennett et al., 2000).

Therefore, in allocating of project risks to those parties best able to manage them (Brealey et al., 1996), the public sector may invariably ask the private sector to take more risk than the latter is willing. Glaister (1999) argued that the public sector must devise sensible criteria for risk allocation which must include a higher cost for taking most of the risks by the private sector. There must also be incentives for efficiency in the delivery of public goods and services by the private sector.

In critically analysing the private sector goals, this thesis does not adopt a preconceived paradigm that the only motive of the private sector is to maximise profit. It is acknowledged that the private sector requires a return to commensurate with the risk of the investment. The transfer of project risks from the public sector to the private sector provides recognition and pricing of risks. Ultimately, the ability to deliver public goods

and services to the community by the private sector with great efficiency must be assessed against the price the community has to pay in using these facilities.

The Global Financial Crisis of 2008 and the subsequent Euro Crisis have altered the analysis of risk by the private sector and subsequently the pricing of risks in the economic environment where credit crunch prevails in the financial market. These additional factors are included in the study of PPPs in the three journal articles.

2.5 Goal Setting and Negotiation in PPPs

There is a wealth of literature on goal setting (Campbell & Furrer, 1995; Erez & Kanfer, 1983; Latham & Locke, 1979; Locke & Latham, 1990, 2002; Neale & Bazerman, 1985; Seijts et al., 2004; Tubbs & Steven, 1991; Zetik & Stuhlmacher, 2002) and negotiations (Brett et al., 1999; Doctoroff, 1998; More & Murnighan, 1999; Perkins, 1993; Wall & Blum, 1991; Walton, Cutcher-Gershenfield, & Mckersie, 1994; Watkins, 1999). In addition, numerous papers on negotiation have also been published, often in the context of conflict resolution (Lytle, Brett, & Shapiro, 1999; Thomas, 1992), performance (Earley, Northcraft, Lee, & Lituchy, 1990; Northcraft, Neale, & Earley, 1994; O'Leary-Kelly, Martocchio, & Frink, 1994), productivity (Shalley, 1995), and goal commitment (Klein & Kim, 1998; Klein, Wesson, Hollenbeck, Wright, & DeShon, 2001; Locke, Latham, & Erez, 1988). But there is a lack of research and literature integrating goal setting and negotiation into the literature of project finance and PPPs.

Of particular significance to the research objectives of this thesis are five areas of goal setting and negotiation. These are the literature on goal setting within the context of negotiation (Polzer & Neale, 1995), interest alignment and multiparty negotiation (Polzer et al., 1998), goal setting and goal orientation (Seijts et al., 2004), self-regulation model of negotiation (Brett et al., 1999), and negotiation of “social contract” (Fortgang et al., 2002).

This specific literature is further developed in the published papers presented in chapters 3, 4 and 5.

In addition, references are also made to other important themes. These include goal setting and task motivation (Locke & Latham, 2002), relationship of goals to strategic risk and performance (Knight, Durham, & Locke, 2001), relationships between goals and performance (Klein et al., 2001), influence of situational constraints and goal commitment on performance (Klein & Kim, 1998), goal setting on creativity and productivity (Shalley, 1995), influence of group goals on group performance (O'Leary-Kelly et al., 1994), negotiation performance (Zetik & Stuhlmacher, 2002), and reciprocity in negotiations (Brett, Shapiro, & Lytle, 1998).

Polzer and Neale (1995, p. 4) identified the integrative effects of goal setting and negotiation when they stated that:

The effects of goal setting on negotiator performance in bargaining task have been found to be consistent with results in other contexts. In a negotiation, externally determined, specific, challenging goals set prior to negotiation have been shown to produce higher performance at both the individual and dyadic levels when compared to negotiators given easy or non-specific goals. This effect occurred primarily because negotiators with specific, challenging goals were more likely to search for and find integrative solutions, in which outcomes on issues of lesser value were exchanged for outcomes on issues of greater value.

This reinforces the strong tie between goal setting and negotiation. To enhance the understanding of the integrative effects of goal setting and negotiation, it is important to have insights into goal commitment in pluralistic partnerships. Klein et al (2001) defined goal commitment to be the determination to try for a goal and the unwillingness to abandon that goal. Within goal setting theory, goal commitment has been identified by Locke et al (1988) as an essential condition because a goal can have no motivational effect if there is no commitment. Locke and Latham (1990) stated that, given goal commitment, a

specific challenging goal leads to higher task performance than an easy goal or no goal. Locke and Latham (1990) also commented that goals serve multiple purposes in order to attain high performance outcomes. Goals can direct action, mobilise on-task effort, encourage task persistence and facilitate in the development of strategies. In order for goal setting to be effective, Locke and Latham (1990) reaffirmed that individuals must possess the requisite ability to carry out tasks and be committed to achieving the goals. Goal commitment therefore is an integral component in goal setting.

Goal commitment in pluralistic partnerships provides a platform for collaborative negotiation where an important aspect is to seek for interest alignment and coalitions among the partners. This is supported by the statement of Polzer et al (1998, p. 42):

In multiparty negotiations, bargainers are faced with co-operating enough to reach mutually acceptable agreements while simultaneously competing enough to satisfy individual interests – interests that may align with others' interests in ways that are distributive, integrative, or compatible.

Although the concept of goal setting has been discussed within the context of negotiation, Zetik and Stuhlmacher (2002) acknowledged that the complexity of goal setting theory has yet to be thoroughly tested so as to fully integrate the unique characteristics of negotiation. Therefore, to further understand goal setting in negotiation, a review of the literature that bridges goal setting and negotiation is needed. To connect goal setting and negotiation, it is necessary to review some of the major hypotheses of goal setting theory along with potential moderators that may exist in a negotiation situation.

2.5.1 Goal Setting Theory

Comprehensive reviews of research on goal setting (Locke & Latham, 2002; Tubbs & Steven, 1991) have provided compelling evidences of the effectiveness of goals to increase performance. Firstly, goal setting theory has empirically shown that negotiators with

distinct goals consistently achieve higher outcome than negotiators with low or no goals (Locke & Latham, 2002). Zetik and Stuhlmacher (2002) gave further credence to this hypothesis that has received strong empirical support in goal setting theory.

Secondly, Zetik and Stuhlmacher (2002) observed that the relationships between goals and negotiation performance are moderated by symmetry of opponents' goals and level of interaction between opponents. When there are asymmetrical goals, competition can be dysfunctional in terms of performance (Campbell & Furrer, 1995). Nonetheless, where both parties have asymmetrical goals, the process of negotiation seeks to establish and align as many of the goals as possible (Polzer et al., 1998). It can also facilitate a process of setting symbiotic goals where the two parties can achieve an even higher goal that either party may not be achieved without working as partners. Higher symmetrical goals or symbiotic goals will encourage more successful joint outcomes because negotiators are more motivated to search for mutually agreeable solutions that can lead to higher performance. Expectedly, competitive task environments have been found to be less effective in fostering performance than cooperative and collaborative environment (Johnson & Osborne, 2003).

Thirdly, the more difficult the goal, the higher the level of performance can be (Knight et al., 2001; Locke & Latham, 2002). In their study, Knight et al (2001) found that difficult goals consistently motivated teams to choose strategies with higher levels of risk, which in turn lead to better performance. However, Knight et al (2001) acknowledged that higher risks may not always lead to better performance because risks also imply a greater chance of failure. Implementation quality, the fit of the strategy with the environmental context and the uncontrollable external influences can also affect performances. Knight et al

(2001) concluded that success of goal setting depends heavily on the strategies negotiators use to navigate the relationships between incentives and risks.

Notwithstanding this, research has generally found that the level of goal difficulty has a significantly positive impact on performances (Zetik & Stuhlmacher, 2002). This is to be expected because effort and persistence are linearly related to goal difficulty (Polzer & Neale, 1995). Difficult goals have led to negotiators taking higher strategic risks and tactical implementation processes that best fit the environment. Generally, difficult goals and incentives increased commitments for better performance.

Fourthly, research in goal setting theory generally has supported the view that specific and challenging goals result in less variance to performances as compared to vague or “do-your-best” goals (Locke & Latham, 2002; Northcraft et al., 1994). In a variety of contexts, there is strong empirical evidence for this. Huber and Neale (1987) provided evidences that in an integrative bargaining task, negotiators who are assigned difficult and specific goals perform better than negotiators who are assigned easier or non-specific goals.

However, Polzer and Neale (1995) expanded on this theory showing that negotiators with specific and challenging goals, but fail to appropriately incorporate new information presented during negotiations, do not achieve higher performances. They may even achieve poorer outcomes than negotiators with “do-your-best” goals.

2.5.2 Process of Negotiation

Since the process of negotiation in PPPs usually span over several years from pre-construction to construction and into post-construction periods, it is imperative that project sponsors from the public and private sectors constantly revise their goals to an appropriately challenging level when presented with new information. This can lead to

greater efficiency or better resource acquisition. When doing this they are more likely to achieve the potential benefits of managing goals that are specific and challenging.

Zetik and Stuhlmacher (2002) argued that before completely accepting the advantages of goal setting in negotiation, they acknowledge the process of negotiation possesses certain unique characteristics. Firstly, negotiation is characterized by interdependence between two or more parties who must work with one another to resolve conflicting goals. Secondly, negotiation can be either distributive or integrative. This has the potential to influence the effects of negotiators' goal on performance levels. In a distributive negotiation, resources are fixed and limited. The goals of one party and the attainment of those goals are in direct conflict with the goals of the other party. It has the effect of one party "winning" and the other "losing". Integrative negotiation, on the other hand, can occur when there are opportunities for both parties to "win". With integrative negotiations, negotiators seek for options that will reconcile the needs of both parties and produce solutions that will be beneficial to both parties. In this respect, integrative negotiation capture the essence of collaborative advantages when each party believes the other party possess certain attributes than can add value to the negotiation. Distributive negotiators primarily focus on their individual profits while integrative negotiators are concerned with successful outcomes for both parties. It is essential therefore that project sponsors in PPPs focus on integrative negotiation to establish mutually beneficial goals.

Lax and Sebenius (2002) further conceived another dimension of negotiation which aims at creating joint value. This dimension calls for a relentless focus on creating maximum value and an equally relentless focus on differences as means to create joint gains. This further supports the importance of integrative negotiation.

In multiparty negotiations, negotiators have to cooperate sufficiently to reach mutually acceptable agreements while simultaneously be competitive enough to satisfy individual interests (Polzer et al., 1998). These interests may align with each other interests in ways that have to be distributive, integrative or compatible (Neale & Bazerman, 1985). Multiparty negotiations are complex and challenging social interactions. Firstly, there are multiple sets of preferences that must be considered in drafting the agreements. Secondly, the interpersonal dynamics can become increasingly complicated as more people interact (Neale & Bazerman, 1985). An especially important source of complexity in multiparty negotiations has been the inherent potential for coalition members to influence the negotiated outcomes (More & Murnighan, 1999). Such a coalition, defined as two or more parties who cooperate to obtain a mutually desired outcome, can satisfy the interests of the coalition members rather than those of the entire group (Lan & Rainey, 1992).

Finally, a review of literature on negotiation will not be complete without discussing social contract in negotiation. Social contract, or the so called “spirit of the deal” (Fortgang et al., 2002), not only can complement the economic contract but helps to foster trust among pluralistic partners in a relationship. Most experienced negotiators are comfortable working out the terms of the economic contracts, or the “letter of the deal” around issues such as prices, costs, investment, equity splits, governance provisions, warranties, and exit clauses (Fortgang et al., 2002).

The economic contracts are considered that which are written, tangible and objective and therefore have far reaching legal implications. The economic contracts provide the fundamental framework for a partnership as it clearly spells out the commitments of all the partners. Most economic contracts are repeatedly negotiated until all the partners are satisfied with the clauses. A dispute in any one clause can cause impediment to progress

and delay the projects. The economic contract will explicitly record agreements in a partnership that avoid legal suits at a later stage. It is often mistaken that the negotiated economic contracts remain static after the contracts have been agreed and signed by all parties. The parties must recognize the need to renegotiate the terms and conditions over time because of the likelihood that new challenges and opportunities may arise. Instituting metrics and mechanisms to evaluate the actual performance can enable adjustment and renegotiation along the way. This requires regular monitoring and agreement on the conditions that might trigger renegotiation. Such conditions can lead the parties to adjust the distribution of value and commitment (Fortgang et al., 2002).

However negotiation often goes beyond the working out of the terms of the economic contract. Negotiating the “spirit of the deal” has to focus on expectations and provides insights into what is not legally mentioned or discussed, but implicit in the deal (Fortgang et al., 2002). The social contract has to be openly discussed and negotiated so as to eliminate the different assumptions and expectations that are not communicated explicitly. Social contract therefore must not be merely agreed upon by words-of-mouth but instead must be incorporated into the economic contract through as explicit a written expression as possible during negotiation. Since not all terms in the social contract can be incorporated in the economic contract, a high level of trust will be needed for either party to respect the intent of some of these terms.

The critical point is the importance of a fit between the economic and social contracts. Even where the economics of a contract are compelling, there may not necessarily be a meeting of the minds among all parties and the “spirit of the deal” or “social contract” can get short shrift (Fortgang et al., 2002). Unforeseen clashes between economic and social contracts may push the negotiating parties apart. It is critical that during negotiation, the

economic and social contracts have to be independently strong and can reinforce each other (Fortgang et al., 2002).

While the economic contract is a familiar document, the “social contract” may be less so in a negotiating context. Fortgang et al (2002) expounded that social contract can be classified into two levels, both centred on expectations. The first level is the underlying social contract. It deals with the basic expectations of the parties about the real nature, extent, and duration of the agreement. It addresses issues such as whether the process of negotiation is a series of discrete transactions, whether the partnership is a merger of equals and whether the intended contract is a task-oriented venture or an open ended one (Fortgang et al., 2002). The second level in the social contract is the on-going social contract. It involves the working relationship, trust, communications, consultation and decision-making. This can enable unforeseen events to be handled effectively and provide a basis for renegotiation (Fortgang et al., 2002).

Fortgang et al (2002) emphasized the importance of explicit focus on negotiating truly compatible views of the social contract because inconsistent perceptions can lead to tension and conflicts, and value destruction during both the negotiation process and the post-deal relationship. Negotiating the social contract with the appropriate parties will ensure that there will be a meeting of the minds. The social contract must not be considered to be purely subjective as opposed to the objective written economic contract. Properly dovetailing and integrating all aspects of the social contract into the economic contract must reinforce the longevity of the partnerships. Divergent views of the social contract are likely when the parties differ in values and principles. However, this must not diminish the significance and importance of negotiating the social contract.

Discussion over economic contract tends to frequently eclipse over the social one and this can pose as an obstacle to successful partnerships. The tangible terms may seem fine initially to all the parties during decision making. However, sometimes at huge cost to both parties, the realization that the divergent views of the true expectations for the relationships is too great to enable the partnerships to continue and create tension. Tension and conflicts can also arise when the conflicting goals are pursued simultaneously both within one party and among different parties.

Therefore, straightforward practices such as creating shared operating principles that govern confidentiality, information exchange, the creation and use of intellectual property and dispute resolution system, can alleviate tension. At the same time, it can build trust and stability in the partnerships. To minimize the risk of a debilitating “we-they” split, the parties also have to explicitly discuss how decisions can be made when differences emerge (Fortgang et al., 2002).

2.5.3 Critical Analysis of Goal Setting and Process of Negotiation

Within project finance, no theoretical research has been undertaken to integrate goal setting theory into PPPs. This thesis views that the study of project finance and PPPs by focusing on risks, costs and benefits alone does not provide a complete understanding of public and private sectors. Integrating goal setting and negotiation into the literature provides that incremental knowledge and understanding of project finance decisions in PPPs.

The review on the process of goal setting within the respective public and private sectors is the first step towards a better understanding of why some PPPs fail while others succeed. Analysis on the process of goal setting will provide insights into how the respective sectors assess and review their respective goals during the process of negotiation.

Setting difficult goals may result in either or both parties not achieving as many of these goals. On the other hand, they are likely to achieve poorer outcomes than negotiators with “do-your-best” goals. In the context of PPPs in Australia, many large scale infrastructure projects have either succeeded or failed not because of difficult goals. Failure is mainly due to the quality of implementation processes and uncontrollable external factors.

To be realistic, the effectiveness of goal setting to increase performances must be continuously reviewed so as to imbue a more complete understanding of PPPs. This case study research will draw upon the experiences of successful PPP projects where goal revision during negotiations has taken place and higher performance as a direct consequence has been achieved. It therefore supports the study of Polzer and Neale (1995) showing that where specific goals have not been revised to the appropriate level when negotiators have been faced with new information regarding pitfalls and problems, then they are unlikely to achieve the benefits resulting from specific, challenging goals.

The importance in the process of negotiation is underlined in this thesis. The process of negotiation allows either of the parties to achieve as many of their goals as possible or to achieve goals that they will otherwise not possible by doing it alone. What is more significant as discovered in this study is that there are opportunities in the process of negotiation for both parties to achieve even higher symbiotic goals. But the process of negotiation is not without its challenges between two disparate organisations. In the case of PPPs, some of the contrasting values and principles of the public and private sectors can impede the process of negotiation. These values include entrepreneurial versus bureaucratic, decentralized versus centrally managed and finance-driven versus operations-focused. In addition, tension and conflicts can arise when undertaking PPPs projects where the goals of political responsiveness and market responsiveness are pursued

simultaneously. These are challenging but not insurmountable tasks. Overcoming these difficulties provide a level field in the process of negotiation.

2.6 Collaboration and Altruistic Empathy in PPPs

2.6.1 Collaboration in PPPs

Collaboration theory has been extensively discussed by Huxham (1993, 2001, 2003). Her research on collaboration captured the essence of collaborative advantages based on synergy (Huxham, 1993, 2003) and the importance of negotiation of joint purpose (Huxham, 2001). Collaboration will require attention to be given to interactions among the various parties (Brown & Ryan, 2003). In doing so, collaboration will enable a majority of objectives to be achieved, which otherwise will not be possible to accomplish by any one partner acting alone.

To make collaboration work, it has to depend on the purpose for which the partnerships are created (Huxham, 2001). Gray (1985) contended that collaboration must have a common sense of purpose. While the public and private sectors are respectively predisposed with diverse goals, the need to seek complementary and even symbiotic goals to establish commonality and clarity in purpose is important to ensure successful partnerships (Mattessich & Monsey, 1992).

Kanter (1994) advocated that successful partnerships manage the relationship as much as the deal. PPPs must be seen as business alliances that are living system, evolving progressively in their possibilities with the prospect of opening new doors and unforeseen opportunities (Kanter, 1994). Collaboration must yield benefits for the partners and create new value together. Kanter (1994) proposed eight attributes for successful collaboration. Firstly, both sectors must acknowledge that they have something of value to contribute to the partnerships, and the possibility of creating synergy arising from a strong belief in

individual excellence. Secondly, since the respective partners have long term goals, the partnerships must fit the major strategic objectives of the partners. Thirdly, the partners must acknowledge the interdependence of the collaboration. Neither partner can achieve alone what both can together. Fourthly, the partners must invest financial and other resources in each other to demonstrate their respective stakes in the partnerships. This shows tangible signs of long term commitment to the collaboration. Fifthly, communication must be reasonably open so that information that can impinge on the working relationships must be shared. These include technical data, knowledge of conflicts and changing situations. Sixthly, there must be integration in the partnerships in order that the partners develop linkages and shared ways of operating to enable that work can progress together smoothly. Seventhly, the partnerships must be given a formal status with clear responsibilities and decision processes. Finally, the importance of integrity and trust are paramount for collaboration to exist. In addition to trust, Middleton and Davies (2002) stated that teamwork is equally important to the success of any partnerships.

Collaboration between the public and private sectors however can be a difficult process because of potential areas of tension inherent in its constitution (Huxham, 2001). Huxham (2003) also found that there is inertia in collaboration which can impede progress because sometimes the outcome appears to be insignificant. Even when these arrangements yield successful results, the collaborative effort in partnerships can be difficult experiences, often fraught with tension and conflicts.

Many critics (Bennett et al., 2000; Ghore, 2001) maintained that the public sector is resistant to the profit motive prevalent in the private sector, while the private sector tends to dismiss the more administrative decision-making process used by the public sector that bogs down the negotiation. Any process of developing good relationships that can

transcend the potential barriers to collaboration generally requires major changes to ways of thinking and working as well as with substantial and sustained effort (Zhang & Huxham, 2009). One of the barriers is the relevance of trusting relationships to collaborative performance which has been repeatedly emphasized (Huxham & Vangen, 2004; Kanter, 1994; Teicher, Alam, & Van Gramberg, 2006; Zhang & Huxham, 2009). The process of building trust can propel partnerships to new heights of collaboration. Trust is essential because the working relationships in PPPs are based on interdependence, and often replace hierarchal power with cooperation and collaboration (Lambright, Mischen, & Laramee, 2010)..

Addressing as many of these collaborative barriers can help to promote collaboration. Successful partnerships require strong leadership (Vangen & Huxham, 2003) and mediation (Miraftab, 2004) to overcome this collaborative inertia. In addition, collaboration must address the equity dimension (Miraftab, 2004; Vangen & Huxham, 2003). Keeping the playing field level in the partnerships allows the equity aspect of power-sharing to permeate in the working relationships. This facilitates the partnerships to capture the synergistic relationship in collaborative advantages.

2.6.2 Altruistic Empathy in PPPs

It has been philosophically argued that pure altruism is most unlikely to exist within corporate environment (Eisenberg, 1991; Paolilli, 2009). Selfishness and egoism are considered to be endemic among the private corporations due to economic rationalism (Gates & Steane, 2009). Therefore, these values and attributes will render the participation of private sector in the delivery of public goods and services pointless. However, it is possible from an egocentric perspective that altruistic act is done to gain directly or indirectly some future benefits (Khalil, 2004).

An altruistic act is to be engendered through empathy and social responsibilities from which it can emanate perceived goodness (Haski-Leventhal, 2009). This can improve the self-image of the party performing the altruistic act. (Haski-Leventhal, 2009). Altruistic empathy requires both parties to understand that it is not merely a case of expecting them to show altruism. The increasing pressure society puts on the private corporations to be responsible corporate citizens, makes many of these corporations display some degree of altruistic empathy, especially when they are involved with the development and delivery of public goods and services.

Altruistic empathy in negotiation to craft both the social and economic contracts is, therefore a practical alternative to overcome challenges among pluralistic partners such as those in PPPs (Thia & Ross, 2012). The significance of crafting both the economic and social contracts within PPPs underlines the importance that negotiating parties must not be governed by self-interest or economic rationalism but instead explore alternative ways of operating through a heightened empathy by means of altruism (Gates & Steane, 2009). Collaboration between two parties with disparate goals is important in enhancing a high level of altruistic empathy.

Conscious efforts to shape the social contract, discussing what and how the parties expect to communicate over a period of time can help stave off later problems. The display of altruistic empathy is therefore important and essential for PPP negotiations. Engendering altruistic empathy can bring diverse organisations to collaborate with some shared values and attitudes. Within the context of negotiation, altruistic empathy will lead to a higher level of collaboration.

2.6.3 Critical Analysis of Collaboration and Altruistic Empathy in PPPs

Collaboration between the public and private sectors will not be effective if both sectors do not display altruistic empathy towards each other. To be truly altruistic, one needs to be completely selfless and invoke self-sacrifice without expecting any gratitude in return. While altruism can be expected among or between individuals who are closely related, altruism among or between corporations and institutions is unlikely. The negation of self-interest expected in altruism is economically irrational. However, it can be expected that an altruistic act within the corporate environment exists because underlining this act or behaviour lie a self-interest strategy for some future gain or cooperation. In most circumstances, such altruistic acts expect some form of reciprocity. Therefore, to induce or initiate an altruistic act from one party, a degree of empathy must exist to understand that there are potential benefits from a reciprocal exchange from another party. The display of altruistic empathy means that both parties rationally evaluate whether their respective altruistic acts are worth the cost. The distinction between altruism and altruistic empathy therefore depends largely on the context and the relative circumstances of the benefactors and beneficiaries.

This distinction is most evident from the economic perspective under which the public and private sectors operate. In the case of PPPs, both sectors have to consider whether the outcome in collaboration can be optimised given the constraints of the operating environment. From the public sector, the potential gain, both politically and their own self-preservation, when the project is completed with as little problem as possible is a huge incentive. The private sector, on the other hand, considers the potential future working relationship with the public sector and the perceived goodness by the community to have a far reaching impact on its self-image in the long term. These respective motivations serve as catalysts for both sectors to enact altruistic empathy in collaboration.

Collaboration in PPPs requires both the public and private sectors to capture the synergy that exists in collaborative advantages. Collaboratively negotiating the project finance deal by giving concessions and accommodating the needs of the other parties between both the sectors can benefit both parties in achieving their goals. Therefore the importance of altruistic empathy leading to a high level of collaboration is a key factor that can influence the success of PPPs.

2.7 Conclusions

There are difficulties in creating successful operational partnerships because of the various issues relating to goal setting, negotiation and collaboration, including those pertaining to the preparation of the economic and social contracts. However, the significance of altruistic empathy and the role of collaborative advantages in non-hierarchical and non-homogenous partnerships can be promoted to form workable and amicable partnerships. Its relevance with regards to PPPs is best summed up by a quote from the Press Release of Charlie McCreevy, European Commissioner for Internal Market and Services (2008, p. 2):

“.. The increasing weight of infrastructural investment, which will be required in the future, coupled with the Government's commitment of fiscal restraint, has presented an opportunity to seek other ways of financing costly capital needs of the economy. Therefore, it is my aim to attract greater participation from the private sector in the financing and development of infrastructure projects.”

Despite the various financial crises affecting the various economies in the world, well managed PPPs can help to deliver economic benefits to the communities. Yet, there are PPPs that are not successful and lessons can be learned from these PPPs to avert some of the mistakes in the future. The literature in this chapter provides some insight into overcoming the challenges facing many PPPs. Leveraging on collaborative advantages to manage goal setting and negotiation between culturally diverse organisations will result in

successful project finance decisions in PPPs. This process requires the display of altruistic empathy from both sectors leading to the collaborative negotiation in PPPs.

In summary, the literature review has provided relevant insights into project finance and PPPs in four main distinct areas: strategic factors influencing project finance; goals of the public and private sectors in PPPs; goal setting and negotiation theories; and altruistic empathy and collaboration theories.

The literature is incomplete as these four areas of study have not been integrated to provide a fuller understanding of project finance decisions in PPPs. A theoretical framework shown in Figure 2 attempts to integrate these three main areas. The key elements in collaborative negotiation under PPPs focus on aspects in goal setting, interest alignment, economic and social contracts. To ensure these elements in negotiation can enhance the value to both the public and private sectors, understanding the significance of collaborative advantages are critical. Integrating the literature of collaborative advantages into the study of PPPs remains largely unexamined in previous studies. The three papers in the next three chapters explore these deficiencies in project finance under PPPs.

In the earlier stage of development in PPPs, most literature and research concentrates on the viability of using project finance in the construction of large scale infrastructure projects by investigating into the various project finance risks and financing structures. Though discussions into PPPs in project finance have gained increased attention for academics and practitioners, there is no firm conclusion on whether PPPs actually delivered value for the community and the public sector. No parameters have been used to measure the economic values, social and environmental effects these projects developed under PPPs bring to the community. The three papers in the next three chapters also provide insights into how community involvement can add another dimension to the

understanding of PPPs. In addition to goal setting and negotiation, this thesis also expounds that an important aspect in collaborative advantages is the need for display of altruistic empathy by the various parties in the partnerships. This again has not been previously studied in collaboration literature within the context of PPPs.

The first paper in chapter 3 investigates how the development of infrastructure projects using PPPs can deliver economic benefits to the community as long as there is a strong commitment between the partners to apply collaborative advantages. By examining goal setting and negotiation between the public and private sectors when making project finance decisions in PPPs, this first paper provides additional insights into the role of collaboration in increasing public acceptance and delivering economic benefits to the community. The second paper in chapter 4 built on the first paper by investigating how public opinion and public acceptance of PPPs can influence the longevity of the projects during its operational phase. This second paper provides insights into the relationships between positive public opinion and successful PPPs. Finally, the third paper in chapter 5 built on both the first and second papers. This third paper expounds the concept and importance of altruistic empathy and collaborative negotiation in PPPs. It provides insights into the role of altruistic empathy and collaborative negotiation in enhancing the probability of success in PPPs. The findings in all the three papers show that high level of public acceptance and high level of economic benefits being accrued to the community provide alternative measurement of success of PPPs. This is because the large scale infrastructure projects are extensively used by the community and their perceptions on projects' value for money to the society reflect whether the public sector resources are allocated economically.

CHAPTER 3: DELIVERY OF ECONOMIC BENEFITS USING PUBLIC PRIVATE PARTNERSHIPS IN THE DEVELOPMENT OF INFRASTRUCTURE PROJECTS

This first article, “Delivery of Economics Benefits using Public Private Partnerships in the Development of Infrastructure Projects” (Thia & Ford, 2009), was published in the *International Review of Business Research Papers*. It provided one of the first published research papers integrating collaboration theory into project finance. Arguing that many of the developments in project finance managed through PPPs are classified as “mixed goods” within the context of economic domain, such developments would invariably evoke controversy due to the contrasting competitive and collaborative relationships surrounding their provision.

To provide an alternative approach in the interpretation of success in PPPs, the paper investigated the potential of applying collaborative advantages in the partnerships that would allow the development of large scale infrastructure projects to create economic benefits for the larger interest of the community. The paper found that collaboration, including risk sharing, as opposed to the traditional project finance theory that risk should be transferred to the party best able to manage or mitigate it (Esty, 2001; Tinsley, 2000a; Yescombe, 2002), was essential to enhance the likelihood of success in PPPs and hence improve the delivery of economic benefits to the community when these PPP projects are completed.

3.1 Abstract

This paper evaluates the delivery of economic benefits to the community using public private partnerships (PPPs) in the development of infrastructure projects. By applying a model that considers the social and economic factors of two recently completed projects in

Sydney, the paper argues that there are long term economic benefits embodied in PPPs even though public opinion may perceive one venture as a failed project. By focusing attention on the pursuit of collaborative advantages in PPPs, this paper argues that these advantages can enhance likelihood of economic benefits being delivered to the community.

3.2 Introduction

Public private partnerships (PPPs) in project finance involve both the public and private sectors working together to develop large scale infrastructure projects. Their joint involvement necessitates the creation of collaborative arrangements to deliver essential infrastructure. The participation of the private sector was largely due to severe constraints on public sector budgets which contrasted against the significant liquidity in world financial markets. It is also because it is generally believed that the private sector would manage the development of major projects more efficiently than the public sector (Vickerman, 2004).

Proponents of PPPs argued that these collaborative arrangements enable the public sector to accelerate the development of infrastructure projects and deliver economic benefits to the community (Akitoby, Hemming, & Schwartz, 2007). On the other hand, critics of PPPs argued that since most of these projects are broadly classified as public goods and services, the development of these projects must be the responsibility of the public sector. By allowing active private sector involvement, the economic and social benefits of such projects may exclude some members of the community.

PPP model has been extensively used in project finance but there are concerns about private sector efficiency in delivering projects on time and to budget. These concerns have raised questions over the allocation or sharing of risks between the public and private

sectors (Bing et al., 2005a). The failure to collaborate effectively is often blamed for reducing the potential benefits of PPP projects to the wider community

In this paper, we address key issues which have emerged from an empirical based comparison of two road tunnel projects in Sydney. Both projects were under construction over similar periods of time and were completed within one year of each other, But the completed projects encountered different public acceptance outcomes. Lane Cove Tunnel (LCT) experienced wider public acceptance and was considered by the media as a success story which delivered economic benefits to the community. The Cross City Tunnel (CCT), in contrast, faced adverse publicity and hostile media commentary when it was officially opened. CCT was regarded as a failed PPP.

This paper begins with a review of project finance risks by examining how risk sharing, as opposed to risk allocation, can enhance success in PPPs and yield economic benefits. It then reviews the mixed goods character of PPPs and what economic benefits can be derived from the completion of an infrastructure project. Critical questions on the pursuit of collaborative advantages within collaboration theory are also reviewed. A framework for the empirical based comparison of these two tunnels is developed and applied to each of the two tunnels to investigate the degree of collaboration and how it enhances the probability of success of PPP projects and its subsequent delivery of economic benefits to the community. It concludes by highlighting the importance of capturing synergy in the pursuit of collaborative advantages.

3.3 Literature Review

3.3.1 Project Finance Risks in PPPs

The central theme surrounding PPPs are the potential financial benefits and ability to transfer risks from the public sector to the private sector. It is often argued that in

allocating risks, the risks must be carried by the party best able to control, manage or mitigate the risks (Esty, 2001; Tinsley, 2000a; Yescombe, 2002). The focus on risk allocation by the public sector in most cases leads to outright shifting of risk to the private sector. Infrastructure project risks are numerous. These include risks related to environmental issues, delays in construction, cost overruns, service availability and quality, uncertainty about revenue flows during operation, changes in interest rates and asset values. Most of these risks cannot be allocated outright or completely transferred from one party to another.

There is increasing support for risk sharing rather than risk transfer in PPPs, given that certain risks can be influenced by the public sector (Akitoby et al., 2007). The party that has control and influence over risk must bear a greater share of it while allowing the other party to take on a smaller share (Bing et al., 2005a).

Public sector concessions are considered to be legitimate form of government support for infrastructure projects (Akitoby et al., 2007). This concession can assist to mitigate project risks which in return reduce the private sector expectations of higher financial returns. In areas where the public sector can anticipate and control risks especially relating to getting necessary approvals and environmental licenses, they must take on greater responsibilities. Construction and revenue risks are more difficult to manage. While these risks are normally allocated to the private sector, there must be some form of concessions such as penalties waived when project deadlines cannot be met. Unfortunately, these concessions are often subject to public scrutiny resulting in criticism that the public sector provides too many incentives to the private sector.

3.3.2 Economic Benefits of PPPs as “Mixed Goods”

Most public goods and services are provided by government to underpin economic development and enhance national productivity. Since 1990s, there has been a gradual shift from public provision to an increased role for private sector participation. From an economic perspective, PPPs are neither pure private goods nor pure public goods in terms of their availability and use. To the extent that public access to transport infrastructure such as motorways and tunnels can be made excludable, by a toll barrier, the facility has features of a private good. In other words the benefits of consumption accrue to those individuals who pay and consume the service. It is the non-rivalrous nature of transport infrastructure which weakens the private goods character of PPP projects and makes it more like public goods. Arguably, this places many PPPs in the economic category of ‘mixed goods’.

Cases of mixed goods and their role in market economies inevitably can invite controversy due to the competitive and collaborative relationships surrounding their provision (Lieberman & Hall, 2005). Opponents of PPPs argued that the public sector does not always get good value for money when it enters into collaborative agreements with the private sector because the latter aims at achieving economic efficiency to maximise profits (Stilwell & Jordan, 2004). Moreover, contractual based relationships like PPPs are not costless to the participants. A government, like any other contracting agent, suffers from imperfect information in the marketplace. Considerable time and organizing effort must be spent searching for suitable collaborative partners, negotiating price arrangements and monitoring the agreements after both parties have reached a deal (Boyce & Ville, 2002).

Another problem with PPPs is that private sector involvement may reduce the likelihood of an equitable provision of services. The promotion of private sector involvement may

distort public spending priorities and crowd out other suitable competitors as the ability to attract private involvement becomes a key consideration in project starts. At other times a political commitment to private finance funding has resulted in delayed project starts (Vickerman, 2004). There is also the problem of lack of economic incentives for the private sector to adjust activity to changing needs and market conditions. It is sometimes argued that the only incentive motivating the private sector will be the tendency towards cost cutting rather than service enhancing activities (Forrer et al., 2002). The possible economic benefits of PPPs however, may have been underestimated and more attention needs to be given to them.

Given the ability of the public sector to define public service outputs in a sufficiently specific manner to facilitate enforcement, infrastructure projects can bring about economic benefits to the wider community (Forrer et al., 2002). Expanding the private sector role may well be attractive to the public sector but this must be tempered with the prospect that the private sector can pursue its profit maximising objective at the expense of community interest. By carefully evaluating all these factors in PPPs would increase the probability of successful completion of projects to the benefit of the wider community.

3.3.3 Role of Collaboration

The essence of collaboration is to achieve a majority of objectives which would not be achieved by any one partner acting alone. This is one of the primary concepts in collaboration research leading to the theory of collaborative advantage. It is argued that collaborative advantages fundamentally capture the synergy argument (Huxham, 1993, 2003). Huxham (2003) found that collaborative advantages can impede the progress by inherent inertia because the output can initially appear to be insignificant. Like any form of collaboration, PPPs also encounter collaboration inertia because tension and conflicts can

arise due to the differences in the respective objectives of the parties and also possibly, due to lack of mutual trust.

Kanter (1994) presented eight factors that can lead to successful partnerships, six of which are especially relevant to PPPs. Firstly, the partnerships must fit major strategic objectives of the respective parties, such that they want to make it work. Partners have long term goals which play a key role in shaping the partnerships. Bennett et al (2000) contended that strong foundations for PPPs are based on complementary goals. Not only must the respective strategic objectives be upheld, the partnerships will improve the chance of success if the goals of the project sponsors are mutually compatible. Secondly, the partners know that they need each other. They have complementary assets and skills and neither can accomplish alone what both can achieve together. Thirdly, the partners need to invest in each other to demonstrate their long term commitment. They need to pledge financial and other resources to the partnerships. Fourthly, the partnerships must be given a formal status with clear responsibilities and decision making processes. Fifthly, there must be open communication where partners share information on technical data and knowledge of changing situations. The need to share information is important as it forms a common basis of agreement. This includes eliminating as much of the forecasting gaps as possible arising from an attempt to predict the level of future traffic in as scientifically founded manner as practical (Dufour et al., 2009). It also includes any compensation plans when certain risks become more prominent than originally anticipated. Finally, mutual trust must exist between the partners. Middleton and Davies (2002) advocated that in addition to trust, teamwork is also a key to success in PPPs.

It is expected that there will be areas of tension and conflicts in collaboration. The partners have to cooperate sufficiently to reach mutually acceptable agreements while

simultaneously have to satisfy their individual interests (Polzer et al., 1998). Collaboration in PPPs thus poses challenging tasks when both parties with disparate goals attempt to align their interests when negotiating risk sharing.

3.4 A Framework to Measure Economic Benefits

Measuring the success of PPP projects is often controversial because of different criteria used by academics and practitioners. This is further complicated by the expectations of the wider community who are affected by the projects. Long term financial sustainability has often been used to measure the success or failure of PPPs. An often neglected measure of success of PPP projects is the extent of long term community benefits against the cost to the public sector. Such costs include concessions given to the private sector and the price the public has to pay when using these facilities (O'Neill, 2005a).

Levinson et al (2006) have used four criteria: public sector acceptance and society acceptance, in addition to budget and timeliness, to measure PPP success. There are some limitations to their approach. First, it focuses on the outcome and not the process. Success can be shaped by the process used in establishing the partnerships and analysing the collaborative process can provide a better understanding of the outcome (Barrett, 2002).

Secondly, the four criteria used are broad and do not include factors behind the determination of each of these criteria. The absence of detailed investigation on each of these criteria can lead to a lopsided conclusion. Thirdly, the first two criteria focus on acceptance, while the latter two focus on project outcome. These two sets of criteria are contextually different in PPP literature and it may be incoherent to integrate these criteria in the same analysis. Consequently, this paper modifies the framework proposed by Levinson et al (2006) by analysing both the process during implementation and the

outcomes of PPP projects separately. It then draws conclusions on whether PPPs deliver actual economic benefits.

This study first focuses on the process based on collaborative advantages. It is hypothesized that the ways in which collaborative advantages in the partnerships are applied will determine the degree of collaboration in PPPs. This in turn will play a role in enhancing or diminishing success. The success of the project is then assessed by analysing a range of public acceptance issues that are posited to be relevant in determining the delivery of economic benefits. These public acceptance issues include concessions given by the public sector, toll charges, improved lifestyles and environmental issues. A high acceptance rate reflects recognition of economic benefits accruing to the wider community.

3.5 Findings

3.5.1 Cross City Tunnel (CCT)

Increasing traffic congestion within Sydney prompted the public sector to construct a 2.1km east-west tunnel that crosses the city. The public sector awarded Cross City Motorways (CCM), a consortium formed by the lead private sector sponsor, Cheong Kong Infrastructure (CKI), to undertake the project. The contract was to build, own and operate the tunnel for 30 years after which it would be handed back to the public sector. The project cost was estimated at \$680m but the final cost was \$900.0 million (Pretorius, 2007).

Construction commenced in January 2003 and was scheduled to be completed by October 2005. Completing ahead of schedule, it was opened to motorists in August 2005. However it immediately received negative feedback from motorists angry about the high toll. They were also dissatisfied with the closures of road access aimed at funnelling traffic into the tunnel. This resulted in a public “boycott” resulting in fewer motorists using the tunnel.

The operator responded by offering a three week toll-free period plus a commitment to freeze further toll increases for twelve months. With continued non-acceptance of the toll after the toll-free period, the operator further decided to halve the toll for three months and also reverse some earlier public road closures.

In November 2006, CCM was in financial difficulty and needed additional equity to avoid bankruptcy. Without any support from the public sector, the project was put into receivership in December 2007 (John et al., 2007).

To evaluate the extent of collaborative advantages being applied to the partnership, the strategic objectives of both sectors are first considered. The public sector at the onset decided that CCT should be constructed under PPP program because of budgetary and public borrowing constraints (Parliament-of-NSW, 2006). An initial concept paper was prepared to consider environmental impacts. The public sector acknowledged that the project would bring potential economic benefits to the community in terms of employment and to financial institutions in terms of greater participation in capital markets. Moreover, as CCT was one of the most complex tunnel projects ever undertaken in Sydney (O'Neill, 2005a), the technology transfer to local engineering firms promised long term benefits.

Meanwhile CKI with a vision to become an international infrastructure portfolio investment company was seeking investment opportunities overseas (Pretorius, 2007). Tolloed transportation was attractive to CKI because of the finite-life concession period and relatively low regulatory and political risks in Australia. CKI regarded infrastructure projects to be medium risk with an internal rate of return between 15 per cent and 18 per cent (Fislage & Heymann, 2003).

The partnership therefore fitted the major strategic objectives of both parties. The partners also had complementary assets and skills that allowed them to achieve these objectives. In

addition, setting up CCM gave the project a formal status with clear decision making responsibilities.

The objective of the public sector was to minimize its financial exposure and deliver the project at no cost to itself. The public sector also specified that the tender should include a business consideration fee. This was aimed at recovering costs relating to the development of the initial concept. CCM included a fee of approximately \$110.0 million in the bid. The contract included provision for CCM to increase the base toll if the public sector required certain changes during the construction phase. A compensation plan to pay CCM was allowed if there were changes to the public transport system that would affect the volume of traffic using CCT. Therefore, there were very low financial and other resources committed by the public sector.

The extent of open communications did not reflect a high level of collaborative effort. Firstly, CCM projected over 90,000 vehicles per day using the tunnel by 2006 and over 100,000 by 2016 while the public sector estimated 86,300 and 101,700 respectively (Pretorius, 2007). These forecasting gaps were not openly discussed to enable a more realistic number to be used in the revenue forecast. Secondly, knowing that substantial risks would be transferred to them, CCM did not openly discuss with the public sector that they would be pricing higher toll charges in return for assuming these risks. Because the contract allowed the private sector to have autonomy in the pricing of toll charges, the public sector did not know of the high charges beforehand and were also not concerned on how the charges were to be administered. Thirdly, even though the public sector was aware that some of the compensation plan could not be easily administered, the public sector neither communicate this to CCM nor explore ways to manage this.

There was an average level of collaboration to attempt at interest alignment on risk sharing. CCM took on the risks arising from any mistakes in their own planning during the tender process. Entrepreneurial risks during construction and operation phases were also borne by CCM, especially the shortfall in revenue arising from variances in traffic demand forecast. On the other hand, any risks relating to mistakes during the planning phase were borne by the public sector. As it turned out, there were no mistakes made by the public sector during the planning phase.

The extent of mutual trust between partners was not high as reflected by both the sectors not sharing information. This led to inaccurate estimation on the number of users after the project was completed. These forecasting gaps resulted in inaccurate revenue projection. Overall, the extent of collaborative advantages that was practiced in the partnership showed that the level of collaboration was not high (Table 1).

To evaluate public acceptance of the project, concessions given by the public sector was first appraised. The high business consideration fee demanded by the public sector to achieve its “no-cost” objective sparked public outrage because the community believed that this had led to the inflation of the toll charges set by the operator. Part of the public dissatisfaction was targeted not at the level of concessions given but rather the insufficient or lack of it. On the other hand, local road closures on the public streets around the tunnel resulted in traffic congestion and caused confusion. The low level of acceptance was evidence that the concessions provided did not match the economic benefits promised to the community.

Table 1: Extent of Collaborative Advantages Applied to or Practised in CCT

	Criteria: Extent of Collaborative Advantages being applied or practised	Cross City Tunnel
1	Extent partnership fits major strategic objectives of both sectors.	√√√√
2	Extent partners have complementary assets and skills that allow them to accomplish what they could not individually.	√√√√
3	Extent partnership is given a formal status with clear responsibilities and decision making processes.	√√√√
4	Extent financial and other resources are committed by both partners.	√
5	Extent of open communication: sharing of technical data knowledge and seeking interest alignment on risk management.	√√
6	Extent of mutual trust between partners.	√√
	Score ¹	17 √
	Percentage of Maximum Score	70.8%

Footnote 1: 0 represent no collaborative advantages being practiced. √, √√, √√√, √√√√ represent a low level, average level, high level and a complete level of collaborative advantages. A 75% score is used in this paper to classify the project with a high degree of collaboration through the practice of collaborative advantages.

Table 2: Delivery of Economic Benefits based on Public Acceptance

	Criteria: Public acceptance	Cross City Tunnel
1	Acceptance of concessions given by public sector	√√
2	Acceptance of toll charges	√
3	Acceptance of improved lifestyles	√√√√
4	Acceptance of environment issues	√√√√
	Score ²	11 √
	Percentage of Maximum Score	68.8%

Footnote 2: 0 represent no public acceptance. √, √√, √√√ and √√√√ represent low level, average level, high level and complete level of public acceptances respectively. A total score of 75% is used in this paper to classify successful PPP projects in delivering economic benefits to the community.

Table 3: Extent of Collaborative Advantages Applied to or Practised in LCT

	Criteria: Extent of Collaborative Advantages being applied or practised	Lane Cove Tunnel
1	Extent partnership fits major strategic objectives of both sectors.	√√√√
2	Extent partners have complementary assets and skills that allow them to accomplish what they could not individually.	√√√√
3	Extent partnership is given a formal status with clear responsibilities and decision making processes.	√√√√
4	Extent financial and other resources are committed by both partners.	√√
5	Extent of open communication: sharing of technical data knowledge and seeking interest alignment on risk management.	√√√
6	Extent of mutual trust between partners.	√√√
	Score ¹	20 √
	Percentage of Maximum Score	83.3%

Footnote 1: 0 represent no collaborative advantages being practiced. √, √√, √√√, √√√√ represent a low level, average level, high level and a complete level of collaborative advantages. A 75% score is used in this paper to classify the project with a high degree of collaboration through the practice of collaborative advantages.

Table 4: Delivery of Economic Benefits based on Public Acceptance

	Criteria: Public acceptance	Lane Cove Tunnel
1	Acceptance of concessions given by public sector	√√√
2	Acceptance of toll charges	√√√
3	Acceptance of improved lifestyles	√√√√
4	Acceptance of environment issues	√√√
	Score ²	13 √
	Percentage of Maximum Score	81.2%

Footnote 2: 0 represent no public acceptance. √, √√, √√√ and √√√√ represent low level, average level, high level and complete level of public acceptances respectively. A total score of 75% is used in this paper to classify successful PPP projects in delivering economic benefits to the community.

Secondly, owing to the engineering complexity of the construction, the development cost was high. Without any financial commitment from the public sector to mitigate the high construction cost, the private sector had to levy higher toll fees. The community reacted adversely to this. The bad publicity of CCT altered the views of the community about the benefits of privately-operated toll roads (O'Neill, 2005b). The community did not feel that the high toll translated into the level of economic benefits expected from their use of the tunnel.

Thirdly, a survey conducted in Sydney showed that about 72 per cent of the respondents endorsed the need to pay toll in order to enjoy the lifestyle gains from using the CCT (O'Neill, 2005b). This reflected high level of public acceptance that the infrastructure project improved lifestyles.

Fourthly, the construction and operation of the tunnel addressed most environmental issues in the Environmental Impact Statement (EIS) which was prepared with feedback from the community. It averted major protest from the community. From the above evaluation of these four factors, the overall level of public acceptance was not high (Table 2). This was because the total economic benefits delivered to the community from the use of this facility did not meet with the expectations of the public. The findings showed that the average level of collaboration due to the lack of a rigorous pursuit of collaborative advantages resulted in an average level of public acceptance that the project delivered economic benefits.

3.5.2 Lane Cove Tunnel (LCT)

To allow for quicker travelling time between the north west of Sydney to the City, the Government engaged Connector Motorways (CM) in December 2003 to design, construct, maintain and operate the LCT. As a special purpose vehicle, CM was given the concession

to operate for 33 years, after which the tunnel would be returned to the Government. The lead private sector sponsors were Leighton Holdings (LH) and, again CKI (NSW-Government, 2006).

LCT is a 3.6km tunnel and the construction cost was estimated at \$1.1 billion. Previously, motorists had to drive through gridlocked suburbs for a few kilometres. LCT cut travelling time by 17 minutes. The tunnel also provided a direct link to Sydney's expanding orbital motorway network and public transport (NSW-Government, 2006).

CM designed and constructed the tunnel and its associated works to create a "sense of place" for local community by providing architecture that enhanced the journey and its vicinity. It also attempted to address the environmental problems (NSW-Government, 2006). Local community, commercial and industrial groups formed the Lane Cove Tunnel Action Group (LCTAG) to voice concerns over the way construction was to be carried out, the community development around the tunnel and the air quality coming out of the tunnel through the ventilation stacks.

Construction commenced in April 2004 and was completed in March 2007, two months ahead of schedule. Sydney commuters initially embraced the new LCT during its month long toll-free use, despite minor operating problems. The project was reported in the media as a successful PPP. While the number of motorists using the tunnel was initially below the original forecast average of 100,000, it was not a major financial concern then (Rochfort, 2008). However, one year after its operation, the traffic volume dropped to only about 60,000 motorists – a level which would seriously impact on the financial performance of CM in the long term (Besser, 2007).

In the case of LCT, to evaluate the extent that collaborative advantages were being applied to or practised in the partnership, the strategic objectives of the public and private sectors

are first reviewed. The main objective of the public sector was to ease traffic. To undertake the project itself, the public sector would have to acquire additional financial burden and take on project risks that it could not manage. On the other hand, LH and CKI were seeking infrastructure projects to expand their portfolio investment. Therefore, the partnership effectively fitted the major strategic objectives of both sectors. This reflected a high level of collaborative advantage being practised in the partnership.

Secondly, the public sector recognised its lack of experience in undertaking the development of infrastructure projects but has the skills in developing concepts as well as managing development approval process. On the other hand, the experience that CKI had gained from the construction of CCT meant that this project would pose medium level risk. The complementary assets and skills of both sectors captured the essence of practising collaborative advantages to accomplish what they could not do individually.

Thirdly, the formation of CM gave the project its formal status with clear responsibilities and allowed decision making process without the interference of other entities.

Fourthly, although the public sector did not pledge financial support to the development of the project, it provided resources in dealing with the community. The public sector became bogged down in its dealing with LCTAG. The private sector concentrated primarily on the construction and in most instances was not involved with LCTAG. While both sectors recognized their respective roles and focused on completing the project on schedule, there should have been greater collaboration to integrate their effort in dealing with LCTAG to establish greater rapport with the community.

Fifthly, there was relatively high level of collaborative effort to share technical data knowledge and seek interest alignment in negotiation of risk management. The public sector did not undertake to conduct a study on the projected traffic volume. Instead, it

allowed the private sector to use its own traffic forecast to set the toll charges. Greater collaborative effort could be taken to validate this forecast to avoid forecasting gaps. On the other hand, pressured by LCTAG, the fully bore-driven tunnels were being constructed as against the original cut and cover method. Though the former method incurred a higher cost, both sectors acknowledged that this method would be the best solution because it would not disturb the road surface and hence reduce inconveniences to the community. However, the private sector did not construct in-tunnel filtration demanded by LCTAG because the technical report prepared by their consultant indicated that the ventilation stacks were sufficient to improve the air quality. LCTAG did not agree with the findings of the technical report because a separate report raised concerns on the potential hazardous level of pollution that could be built up in the tunnel (Lane-Cove-Community-Group, 2006). There could have been greater open communication on this issue by engaging more debate with all the stakeholders.

Sixthly, there was a relatively high level of mutual trust between the public and private sectors. The toll cost was explicitly discussed. Plans to funnel traffic into the tunnel were made explicit by the public sector to the private sector even though both parties knew that there could be potential public dissatisfaction with the measure. Anticipating this, the public sector decided to postpone the plan to funnel traffic into the tunnel and amended the Project Deed to include compensation of \$25.0 million to CM (Moore, 2008). However, this decision was to be kept away from public knowledge by the public sector. The decision not to disclose to the public the correspondences on the \$25.0 million compensation package was not openly communicated between the public and private sectors. This was because the public sector believed that this compensation would not be necessary. In addition, there was no open discussion on other compensation plans should

changing conditions disrupted the long-term traffic volume. Therefore, the level of collaborative advantages practised in this area could have been improved.

Based on the extent of collaborative advantages being practised on the different areas, the model shows that overall there was a high degree of collaboration (Table 3). The degree of collaboration in LCT was also higher than that in CCT. This was partly because with LCT being constructed after CCT, the majority of the mistakes made in the development of CCT were avoided.

It was expected that the high level of collaboration would help in enhancing a high level of public acceptance based on the economic benefits that this project brings to the community. To confirm that there was a high public acceptance of LCT, the first consideration is to review the concessions provided by the public sector to the private sector. Greater management of traffic flow around the entrances to the tunnel gave the community the perception that concessions granted by the public sector were sufficient enough to enable the private sector to allow the community to have a choice in using the tunnel. The concessions would have also been sufficient enough to allow the private sector to forgo collecting toll for the first month. The decision by CM to offer a one month toll-free concession to all motorists using the tunnel generated goodwill and averted public outcry.

Secondly, some critics observed that if the public sector had partially funded the project, the toll charges would have been lower. Nevertheless, there was still a generally high acceptance of the toll charges as reflected in number of motorists using the tunnel. This number was very close to the number that was forecasted initially.

Thirdly, there was public acceptance of improved lifestyles as a result of the reduction in travelling time. It was accepted that the tunnel was essential to improve traffic flow. The

project continued to experience an overall high level of public acceptance over the following few years.

Fourthly, there remained lingering concerns that not all environmental issues had been adequately addressed. Overall, the generally high level of public acceptance indicated that the community believed the project delivered economic benefits to the community (Table 4). This shows that the high level of collaboration from applying collaborative advantages resulted in a higher level of public acceptance that the project delivered economic benefits.

3.6 Discussion and Conclusion

There are different criteria for judging whether PPPs are successful which range from financial to socio-economic considerations. CCT faced mounting financial problems one year after it was opened. Arguably, classifying PPPs as successful from a financial perspective confines us to a narrow understanding of infrastructure development. Even when projects are found to be financially viable, there still remain public concerns over a lack of proper comparison on the cost-effectiveness of private sector involvement versus the traditional public sector funding approach. Greater public acceptance of PPP projects therefore provides an alternative measure of success. This is because of the potential economic benefits the projects can confer on the public.

PPPs are aimed at increasing the delivery of services in an era of public financial rectitude by using the resources of the private sector (Levinson et al., 2006). The intention is to improve efficiency of service delivery by providing more services for less public sector outlays. Because these projects affect the wider community, they are often controversial. They are also subject to public debate and external scrutiny because of concerns raised about the balance of risks and overall benefits. The private sector will price any risk that is being transferred to it and seek public concessions to achieve higher financial returns as

compensation for assuming these risks. When the desired concessions are not forthcoming, the private sector may incur higher developmental costs, which will then be passed on to the users to ensure long term financial viability.

Working on collaborative advantages in PPPs can steer the partners towards higher degrees of collaboration which in turn can enhance economic benefits to the community. Successful PPP projects are meant to deliver improved service quality to the community. Using the approach set out in this paper, it was observed that LCT had a higher degree of collaboration than that of CCT (Table 1 and Table 3). LCT also delivered higher economic benefits to the community (Table 2 and Table 4). Therefore this study showed that there is a positive correlation between higher levels of collaboration and higher levels of public acceptance in the delivery of economic benefits to the community.

This paper has identified a number of underlying themes in PPPs when they are established to provide public goods and services. The role of collaboration in PPPs is critical in enhancing success. Understanding the importance of collaborative advantages in PPPs suggests that the public sector needs to retain greater interest in planning and management of PPP projects. This is to steer public sector towards greater civic conscious and public responsibilities. It will then lead PPPs to a higher probability of success in delivering economic benefits to the community.

CHAPTER 4: USING CONTENT ANALYSIS TO INQUIRE INTO THE INFLUENCE OF PUBLIC OPINION ON THE SUCCESS OF PUBLIC PRIVATE PARTNERSHIPS

This second article, “Using Content Analysis to Inquire into the Influence of Public Opinion on the Success of Public Private Partnerships” (Thia & Ross, 2011), was published in the *International Journal on GSTF Business Review*. This second article built on the first article by extending the discussion on collaboration theory in PPPs. A major limitation in the first article was the inability to conduct survey or questionnaire, given the reluctance of individuals and public sector employees to provide information on public issues during development and operational stages. Information was kept confidential because this could be used as the basis of litigation by the private sector against the public sector. This impeded the understanding of how one of the projects (Lane Cove Tunnel) which was widely accepted by the community and financially sound in the initial years, would eventually be rejected by the community through lower usage resulting in the project becoming insolvent.

This article focused on how public opinion can affect the outcome of the projects. By identifying the key independent variables and its underlying dimensions, this article used content analysis to show that public opinion on the quality of life, value for money, and collaboration to achieve community interest could influence the success of PPPs.

4.1 Abstract

There are major difficulties involved in collecting empirical data to examine and explain how various factors influence the successes and failures of public private partnerships (PPPs). This problem has led researchers to increasingly focus on qualitative based studies and research in this field. Unfortunately, constraints owing to legal implications arising

from parties seeking to address liquidated damages in failed PPPs do not allow interviewees to freely express themselves. This impinges on the ability to provide better insights into the decision making process in PPPs and the lessons to be learned from failed PPPs. To overcome this difficulty, this paper uses content analysis to understand the influence of public opinion on the success of PPPs. In particular, it finds that public opinion has a strong positive influence on the longevity of PPPs. The study enriches the current body of knowledge on why some PPPs are considered successful while others are seen as failures. It concludes by suggesting that content analysis is a suitable research method for testing propositions concerning PPPs. It also throws light on other research methods to further the understanding on the merits of using PPPs as a means of developing infrastructure projects.

Keywords: Public Private Partnerships, Collaboration, Content Analysis

4.2 Introduction

PPPs involves both the public and private sectors working together to develop large scale infrastructure projects. Their joint involvement necessitates the creation of collaborative arrangements to deliver essential infrastructure in order to meet expectations on public interest. In addition, it must be viewed to increase the quality of life and be a project that is seen to be value for money for the community.

From 2001 to 2006, private finance has been a significant component in the delivery of infrastructure renewal and development. In NSW, two of the latest PPP projects in Sydney were subject of intense discussion in the media and professional journals.

Both projects were under construction over similar periods of time and were completed within one year of each other, but had different public acceptance outcomes. Lane Cove

Tunnel (LCT) experienced wider public acceptance and was considered by the media as a success story which delivered economic benefits to the community. The Cross City Tunnel (CCT), in contrast, faced adverse publicity and hostile media commentary when it was officially opened.

The private partners for CCT went into receivership not long after CCT was opened. In contrast, LCT had greater patronage initially and hence had a better financial performance. But the revenue over the next three years of operations did not meet the budget forecast. Eventually in 2010, after three years of operation, the private partners also placed LCT under receivership. The experiences of these two projects have led to a temporary halt in the construction of PPP infrastructure projects in NSW.

Thia and Ford (2009) developed a framework to test the extent of correlation between partner collaboration and public acceptance of PPPs in the CCT and LCT projects. The study concludes that there is a positive correlation between the two variables. Learning from the failure of CCT, there was greater collaboration between the public and private sectors during the development phase of the LCT. The partners were able to align the needs of the wider community with the goals of project. As a result, LCT received a higher level of public acceptance than CCT when it began operation.

Thia and Ford (2009) noted a major limitation in their study. The reluctance of individuals and public sector employees to provide information on public issues during the development and operational stages hampered a fuller understanding of how collaboration and public acceptance can influence the outcomes of PPP projects. Information was kept confidential because this could be used as the basis of litigation by the private sector against the public sector. This limitation further impedes the understanding that LCT which was widely accepted by the community and financially sound in the initial years,

would eventually be rejected by the community through lower usage resulting in lower revenue (Rochfort, 2008).

As a result of this shortcoming, this paper intends to use content analysis as a research method to further the study of PPP projects. The aim is to provide a better understanding on the successes and failures of PPPs. The study will use media literature, professional journal publications and evidence from records of public submissions to government inquiries to gain insights into the influence of public opinion on the failures of CCT and LCT.

4.3 Literature Review

4.3.1 Public Private Partnership Projects

Extant research in PPPs has focused on risk allocation, risk analysis and risk evaluation (Bing et al., 2005a; Grimsey & Lewis, 2002), decision making (Zitron, 2006) and value for money (Grimsey & Lewis, 2005). More recent studies highlight the need to understand stakeholders involvement in PPPs (El-Gohary, Osman, & El-Diraby, 2006). Within Australia, there is growing academic and professional interest in the successes and failures of PPPs.

Grimsey and Lewis (2005) provided insights into academic and practitioner views on whether PPPs provide value for money. PPP projects are undertaken by both the Federal and State governments, particularly in Victoria and New South Wales. Prior to commencing the projects a full cost-benefit analysis is undertaken. In addition, the projects are assessed for their value for money against a benchmark called public sector comparator interest test.

Regan et al (2009) conducted informal and confidential interviews with senior executives from the financial services community and public sector analysing the effects of prevailing uncertainty in privately financed infrastructures under PPPs. The study shows the need for realignment in risk allocation based on the recent problems of PPPs. Realigning some of these risks can impact on the value for money outcomes of PPP models. However, this does not marginalise the value of PPPs in the prevailing economic environment. Instead, it is argued that there are opportunities for both government and industry to refine existing models.

Several large scale infrastructure projects in Australia, which were developed using different PPP models, were the basis of this research. Some of these projects, such as the Cross City Tunnel (CCT) were considered failures, with the private partner selling their stakes within a year of operations. Others such as the Lane Cove Tunnel (LCT) were initially considered a success with wider public acceptance.

Both CCT and LCT have been the subjects of several studies. Johnston (2010) used a qualitative case study to examine the failure of CCT. In her study, she argues that some fundamental pitfalls need to be addressed if future PPPs were to be successful.

Dahdal (2010) inquired into the post construction phase of PPPs by providing insights into issues faced by the public sector when PPPs projects fail. When this happens, it is not without financial, political and economic costs to the stakeholders, the public sector and the community. The research conducted a case study of two prominent PPPs that failed in New South Wales: CCT in 2006 and LCT in 2010.

Thia and Ford (2009) conducted an empirical study on two PPP projects to inquire the reasons why one of the projects was considered a success while the other a failure. The study investigated the extent these projects deliver economic benefits to the community.

The study found that one of the projects, LCT, had a greater public acceptance because the community believed it delivered greater economic benefits. The revenue from the motorists using LCT ensured that the project was financially viable in the initial year. However, over the next three years of operations, the number of motorists using LCT declined. As a result, the revenue declined and LCT became financially insolvent (John et al., 2007).

Most studies and researches on whether PPPs are successful mainly used timeliness of completion, keeping project cost within budget or its ability to generate profit during operations as their measure (Duffield & Raisbeck, 2007; Kwak et al., 2009). In contrast, this study intends to investigate the influence of public opinion on the success of PPPs.

4.3.2 The Independent Variables and underlying dimensions

Using content analysis as a research method, this study tests the influence of public opinion on the success of PPPs. Three key independent variables are found to be relevant to this study. The first variable is public opinion on how these projects impact the quality of life for the community. The second variable is the public opinion on whether the facilities provide value for money to the community. The third variable is the public opinion on whether there is a high level of collaboration between the public and private sectors to achieve the community interest. To understand the influence of public opinions on each of these independent variables, this study will investigate the underlying dimensions associated with each of these independent variables. Exhibit 1 shows the interaction of these variables and the underlying dimensions.

Exhibit 1: The independent variables and its underlying dimensions

1. Quality of life for the community	2 .Value for Money to the community	3. High Level of Collaboration to achieve community interest
1.1 Public opinion that the completed project decreased traffic congestion	2.1 Public opinion that toll charges are comparable to other motorway	3.1 Public opinion that there is negotiation of joint purpose by both sectors to achieve community interest
1.2 Public opinion that the completed projects enhanced quality of journey	2.2 Public opinion that toll charges are acceptable trade-off for decrease in travelling time	3.2 Public opinion that there is collaborative effort by both sectors to achieve community interest
1.3 Public opinion that the completed projects did not adversely impact the environment	2.3 Public opinion that annual increase in toll charges are acceptable	3.3 Public opinion that there are adequate concessions provided to the private sector to achieve community interest

Financial benefits are necessary to motivate profit making private firms to participate in PPPs. But this private sector objective may not be consistent with the ultimate social goals for which PPPs are set up (Brinkerhoff & Brinkerhoff, 2011). If the private sector is seen to be relentless in their pursuit of profit making at the expense of improving the quality of life for the community in the development of public infrastructures, the public sector would have to explain why the private sector is involved in the provision of such public services (Hall, 2009; Kwak et al., 2009; NCPPP, 2005). Therefore, public opinion on how PPP projects enhance the quality of life for the community rightly justifies it as a measure of success. In this study, public opinion on the quality of life is framed by three underlying dimensions: reduction in traffic congestion, enhancement in the quality of journey, impact on the environment (Milliman & Grosskopf, 2004). While the partners of PPPs are focused on achieving their respective objectives, aspects of economic benefits and externalities tend to be over-sighted. (English, 2007; NCPPP, 2005).

The discussion on whether PPPs add or are value for money (Akitoby et al., 2007; English, 2005; Grimsey & Lewis, 2005; Regan, 2005) has been investigated from the perspective of the public sector in terms of public spending. No research had been conducted to investigate this from the perspective of the community. The opinion of the community as to whether the completed PPP projects generate value for money to them is therefore an important independent variable in the measure of success of PPPs. Questions such as toll charges for newly completed PPPs, trade-off for decrease in travelling time, amount of annual increase in toll charges are factors the community will consider before using the completed PPP projects. These issues form the underlying dimensions of public opinion on whether the PPP projects are value for money for them. Investigating into these underlying dimensions provides understanding on community usage of the completed PPP projects and therefore preventing these completed projects from being relegated to a “white elephant” status. PPP projects that are regularly used by the community would be considered to be value for money and successful.

The third independent variable inquires into the degree of collaboration between the public and private sectors. Collaboration in PPPs between the public and private sectors must aim at moderating their respective disparate objectives to achieve community interest. Public and private sectors can therefore collaborate to create mutually beneficial partnerships to develop projects for the community (Milliman & Grosskopf, 2004). When the community notices that there are common goals in the partnerships, they would be influenced to perceive that the collaboration is for the larger interest of the community. This is important so as to dismiss the perception that PPPs are seen to be merely political symbol and policy tool for the public sector (Friend, 2006; Linder, 1999; Marty, Trosa, & Voisin, 2005). Public opinion that the collaboration is committed to achieve the community interest (Marty et al., 2005) is therefore an important measure of success of PPPs. To address

whether there is collaboration between the public and private sectors to achieve community interest, this study will investigate three underlying dimensions: whether there is negotiation of joint purpose, whether there is collaborative effort and whether there are adequate concessions provided by the public sector to the private sector. Public opinion of a successful PPP is a reflection of a high level of collaboration between the public and private sectors to achieve community interest.

4.4 Methodology

Content analysis is used widely in the study and research in the field of social sciences to analyse recorded transcripts. A range of different terms is used to define variations in the approach to this methodology. Some of these include statement analysis (Folger, Hewes, & Poole, 1984; Patton, 2002), meaning analysis (Morgan, 1993), and qualitative content analysis (Coffrey & Atkinson, 1996; Mayring, 2000). However, Holsti (1969) offered a wider definition of content analysis on which most of the research using content analysis is based. Holsti (1969) considered content analysis to be any technique for making inferences by objectively and systemically identifying specified characteristics of messages.

Most researchers using content analysis as a research method base their analysis on recorded transcripts of interviews or communications to qualitatively analyse and categorise information. Using content analysis as a research methodology, however, will entail qualitative data reduction and sense-making effort by analysing a volume of qualitative material and identifying core consistencies and meanings (Patton, 2002).

Stemler (2001) viewed this methodology as a systematic replicable technique for compressing words of text into fewer content categories based on explicit rules for coding. It enables researchers to include textual information and systematically identify its properties. This can include identifying the frequencies of most used keywords. Therefore,

content analysis will require a study of information to recognise themes and patterns in the communication (Patton, 2002). The ability to recognise the patterns and search for recurring words, such as key word in context (KWIC) or themes, from this information provides the basis for this research methodology. One of the difficulties in this approach is that most of this information appears randomly.

According to Patton (2002), the process in content analysis may be either inductive or deductive. Inductive analysis entails discovering patterns and themes from texts in order that it can be categorised. In contrast, information is analysed according to an existing framework when using deductive analysis. After patterns and themes have been identified and categorised through inductive analysis, a confirmatory stage in content analysis can be deductive to affirm the authenticity and relevance of the inductive analysis. Content analysis is therefore most appropriate as a technique for formulating conclusions by objectively and systematically identifying and analysing the phrasing and meaning of the transcripts (Holsti, 1969). The conclusion can also be formulated by identifying the patterns and trends that can be deduced from various transcripts.

When the research objective is aimed at presenting subjective experiences, content analysis judgments need not be based on value statements. They can be based on knowledge of everyday experiences. Under these circumstances, such content analyses are not evaluations. However, when content analysis judgements are based on values, such studies are evaluations (Fresbie, 1986).

One of the most important tasks in this methodology is to formulate core questions in the analysis by examining “who says what, to whom, why, and to what extent and with what effect” (Lasswell & Leites, 1968). While several methods of content analysis have been proposed, Holsti (1969) provided a framework for qualitative analysis by classifying the

different techniques into three categories. Firstly, we can formulate conclusions about the antecedents of a communication. Secondly, we can describe and formulate conclusions about the characteristics of a communication. Thirdly, we can formulate conclusions about the effects of a communication.

Through categorising content analysis into either inductive or deductive methods, qualitative analysis can help to discover patterns and themes in the communication. Findings emerging out of the analysis provide a basis to draw inferences and formulate conclusions.

Texts and documents, as a form of human communication, are the most common subjects used in content analysis. These include all forms of publications in the media, including newspapers articles and websites, government records and professional journals. In addition, information including content of disclosures, made by organisations in their annual reports is an area of interest to many scholars using content analysis in their researches (Guthrie, Petty, & Yongvanich, 2004).

4.5 Research Method Issues in this Study

4.5.1 Key requirements in the content analysis

Content analysis as a method of gathering information requires correct codifying of qualitative information into pre-defined categories in order to derive patterns in the analysis and reporting of information. Correct codification will allow published information to be analysed systematically, objectively and reliably (Krippendorff, 1980). The use of content analysis in this study provides a method of codifying the text of writing into various groups or categories based on selected criteria. It therefore assumes that frequency will indicate the importance of subject matter (Krippendorff, 1980).

In order that content analysis is relevant to this study, four key technical requirements must be established. Firstly, the categories of classification must be clearly defined. Secondly, information must be objectively determined to belong or not to belong to a particular category. Thirdly, the information must be quantifiable. Fourthly, categorising information must be consistent through the use of a reliable coder (Guthrie et al., 2004).

4.5.2 Units of Analysis

A unit of analysis has to be established in content analysis. By placing a specific segment of content into a given category will create a recording unit (Holsti, 1969). Generally, the specific segment of content can be words, sentences or paragraphs (R. Gray, Kouchy, & Lavers, 1995). Word counts allow the measurement of frequencies but it can be subjective as it does not tell us the significance or relevance associated with the word each time it is being used. Gray et al. (1995) argued that sentences are preferred in written communication if the task is to categorise inferred meaning. Use of sentences as a basis for coding is likely to provide complete, reliable and meaningful measurement for analysis (Milne & Adler, 1999).

In contrast, paragraph as a unit of analysis requires a greater accuracy in interpreting the inferred meanings and deciding on the category. It is possible for a study to draw inferences from narrative statements by establishing meaning within the paragraphs. However, the codifying process depends on clear description of all the narrative statements within each paragraph.

This study uses sentences as the preferred unit of analysis because it allows codifying the inferred meaning of the independent variables as objectively and reliably as possible. In addition, repeated sentences with the same inferred meanings from different sources of published information would increase the significance of the independent variables.

4.5.3 Sources of data

Data from three key sources are used in this study. Published literature from the media is an important source of information as reporting is investigative in nature. While this source of published information can be biased towards a particular group of stakeholders, this study suggests that if a wide selection is used, the bias will be evenly spread among the respective stakeholders. Subjectivity of information is an area of concern in some of the published literature.

Professional journals are the second source of published literature. These journals provide wider coverage to include views from every stakeholder. In any one particular journal, the views of all stakeholders are not equally represented or expressed with the same frequency. The recordings of the views of one group of stakeholders can be more frequent than another group from the same source. A higher level of objectivity is expected from this source of information.

The third source of information is based on reports from quasi government agencies and independent government commissions. These agencies and commissions provide reports based on public evidence on issues relating to the concerns of all stakeholders. A higher degree of objectivity can be expected from these reports.

4.6 Data Collection and Evaluation

4.6.1 Framework for this Study

The conceptual framework used in this study is presented in Exhibit 1 and shows the three main independent variables and the nine associated underlying dimensions. This framework allows the unit of analysis to be codified. The study made assessment on the extent of collaborative advantages being applied to the two projects based on the qualitative analysis of information provided firstly by both public media and professional

journals. This study then codifies the inferred meanings found outside this investigative published literature in the reports from government agencies. The degree of collaboration between the public and private sectors was then evaluated based on the codification to make an assessment whether the PPP project is a success or failure.

4.6.2 Size and scope of the source of information

The effect of size and the scope of the source of information is an important consideration in developing the coding instrument to be used for content analysis. Nine sources of information over a period of seven years from 2003 to 2010 were used in this study. Published information from the three media based sources, three professional journals and three committee reports by the public sector were used in this study. Published information from media based literature were abundant and constituted the major information sources.

4.6.3 Patterns and Inferred Meanings of the Analysis

Inferred meanings from each of these sources are codified. Each identifier is then categorised as to whether it is a positive or negative influence on public opinion. The frequency or the number of times of positive and negative influences are counted and tabulated.

The study finds that there was an overwhelming positive influence to support the community belief that the projects enhanced the quality of life. The majority of these inferences were from published information in media based literature and professional journals. Inferred meanings were derived from the public reactions.

In contrast, there was more balanced opinion on the level of toll fees and the trade-off between costs and benefits. Codifying using media based literature showed greater frequency of negative public opinion. Codifying using professional journals, on the other hand, displayed a more even distribution of positive and negative public opinion.

Codifying inferred meanings from reports of government committees and commissions supported a more positive public opinion when the policies were explained.

Higher frequency was observed when codifying inferred meanings on whether the public interest was upheld when developing these projects. On the frequencies of public opinion on the collaboration arrangement to uphold public interest, there were quite an equal number of positive and negative impacts. In contrast, there were higher incidences of negative perception that public interest was not considered during the negotiation of joint purpose by both sectors. Similarly, the public also did not perceive that sufficient concessions had been provided by the public sector to ensure that the public interest was being upheld by the private sector. This was shown by higher number of negative statements.

4.6.4 Limitations of content analysis in this study

Several limitations in using content analysis (R. Gray et al., 1995; Milne & Adler, 1999; Stemler, 2001) have been mentioned. One of the main limitations is the subjectivity involved in the interpretation of the inferred meanings and the subsequent coding (Bos & Tarnai, 1999; Krippendorff, 1980; Stemler, 2001). If key words are used as the coder, there are lesser problems in the codifying. However, when sentences or paragraphs are used as the coder, codifying the inferred meanings can be subjective. Milne and Adler (1999) stressed that in order for valid references to be drawn from content analysis, reliability of both the data and the instrument used in the coding is critical.

4.7 Summary and Conclusions

Content analysis is one of the more widely used methods applied in social science research than in the study of finance. However, PPP is an area of finance where qualitative content analysis can be used to investigate issues to provide complete understanding. Applying this

research method in PPPs and finance needs further refinement and development if research advances are to be made. Consistency in the application and framework, and understanding the limitations of this research method will enable more meaningful and reliable research in this field.

The limitations of using content analysis in research do not diminish the significance of this study. Analysis of the issues in PPPs by other research methods have so far not addressed the reasons many of these projects were not successful. The use of qualitative analysis expands the scope of understanding PPPs beyond the more common concern of risks in PPPs and the associated financial considerations. The use of qualitative analysis to understand public opinion can therefore provide a basis on how risk can be better managed and areas where the public sector can do more to avert further failures in PPPs.

Appendix A: Note to Article

There is concern with regards to the reasons for including this second article in the thesis. Reading this second article immediately following the first article initially suggest insufficient incremental understanding and knowledge to that presented in the first article since the second article uses the same two projects. In addition, as this second article focuses on methodology, its contribution to this thesis will therefore seem to be more appropriately confined to the methodology chapter. This note clarifies the main purpose of this second article within the context of this thesis by expanding upon the value and significance of this article to the thesis.

The author believes that including the second article as a chapter in this thesis extends the investigation and findings of the first article. The first article considers the capturing of collaborative advantages in the partnership and the public acceptance that the projects

deliver economic benefits to the community as factors influencing the success of PPPs. The research methodology of the first article is an empirical based comparative study using a model that was proposed by Levinson et al (2006) based on these two independent variables. The conclusion of the first article shows that one of the projects was considered to be a success while the other was considered to be a failure.

This second article attempts to avoid any categorical assertion to the effect that the independent variables always hold and uses other conditions to investigate the outcomes of the two projects. The independent variables used in this second article has changed from those that were considered to be intrinsically important to project finance decisions for PPPs to those that were considered as extrinsic to project finance decisions for PPPs. The independent variables in this second article are based on public opinion: the public opinion on the quality of life for the community, the value for money to the community and the level of collaboration to achieve community interest. By using content analysis to qualitatively categorise information through data reduction, this second article investigates the same two projects at a later time frame to provide an insight into the reasons why the conclusion of the first article does not fully capture the real life situation. In this case, the conclusion of the first article that one of the projects was successful is limited to the views of the public and private sectors. This second article analyses a volume of qualitative material focussing on the views of the public and community and identifies core consistencies from this material. The information is then codified into pre-defined categories to derive patterns in the analysis and reporting of information from which the conclusion of this second article is established. In this investigation, the conclusion that both the projects were considered to be failures is consistent with the real life general perceptions of the public.

Three further clarifications are also needed. Firstly, since each of the subsequent articles in this thesis built on the study of the preceding articles, and over an extended time series wherein new data emerged, invariably some aspects of the investigation were replicated to reinforce or contradict the earlier conclusions. Secondly, that the conclusion of the first article being inconsistent with the real life public perception does not diminish the significance of the first investigation. Instead, the conclusion of the first article is being interpreted from a different perspective (the public and private sectors) based on a set of different independent variables. Thirdly, since each of the articles was submitted for publication in separate journals as stand-alone investigation, there is a need for one section of the article to explain on the research methodology. Because the explanation of the methodology in this second article was more detailed, this article may come across to be a methodology chapter. Consequently, the evaluation and conclusions arising from the investigation in this second article appears to have been buried by the discussion on the methodology. Nevertheless, the detailed discussion of the methodology is necessary in this second article to reinforce the contradictory conclusions of the first two articles.

CHAPTER 5: THE IMPORTANCE OF ALTRUISTIC EMPATHY AND COLLABORATIVE NEGOTIATION IN PUBLIC PRIVATE PARTNERSHIPS

This third article, “The Importance of Altruistic Empathy and Collaborative Negotiation in Public Private Partnerships” (Thia & Ross, 2012), was published in the *Journal of Modern Accounting and Auditing*. Building on the first and second journal articles, this third article included a third major PPP infrastructure project in the study. At the time of writing the first article, one of the major PPP infrastructure projects, CCT, was generally regarded as a failure because from the start of its post construction operations, it suffered financial losses and received numerous negative public feedbacks. The second major PPP infrastructure project, LCT, was well received by the public when it began its post construction operations, even though the project was not generating an operating profit. Three years later, LCT was rejected by the public who viewed that on a longer term basis, the project did not appear to convey community interest. This prompted the investigation in the second article which was intended to provide a better understanding that on a longer term basis, public opinion can influence the success and longevity of PPPs. The third article extended the discussions by including a third PPP infrastructure project which was Australia’s biggest PPP project in terms of construction cost and which continues to be financially profitable after several years of operations. Therefore, unlike the earlier two PPP projects that were investigated in the first two papers, this third project was generally regarded as a role model of a successful PPP.

This third article used deduction analysis to explain the phenomenon of altruistic empathy in PPPs. Whether the partners display altruistic empathy towards each other will depend on the level of collaboration and the manner in which negotiations are conducted.

Explorative research into these three projects showed that a high degree of altruistic empathy before the formation of a partnership is important. The display of a high level of altruistic empathy ensures that collaborative efforts can lead to successful negotiation of mutually agreed goals which are realistic. The management of PPPs under such circumstances can avoid dispute and litigations. It also enhances the longevity of the partnerships.

5.1 Abstract

The motivation in public private partnerships (PPPs) is to harness the strengths of public and private partners to deliver essential public services. The ability to transfer risk to the private sector in PPPs has been one of the reasons why the public sector relies on the private sector to participate in the development of infrastructure projects. In most instances, the public sector also believes that the private sector can fund the project at a lower cost (Miraftab, 2004). The private sector on the other hand, believes that they can achieve a strong financial return based on the concessions that the public sector will provide. If either of the sectors have altruistic empathy towards each other, they will realise that their original goals are not achievable. However, having understood the other sector's needs and constraints, collaborative negotiation can yield a set of common goals. There are no commonly agreed frameworks on collaborative negotiation before PPPs are formally established. The objective of this paper is to use deductive analysis to develop a conceptual framework for inquiring into the motivations of the public and private sectors during negotiation. This framework will provide insights into the degree of altruistic empathy being displayed by both sectors at the onset and how this display of altruistic empathy frames collaborative negotiation. This paper shows that collaborative negotiation will influence the success of partnerships and that the display of altruistic empathy towards

each other is an important preamble to collaborative negotiation. This paper provides a frame of reference for future study using other research methods for further validation.

5.2 Introduction

Public private partnerships (PPPs) had been hailed as a panacea to the problems faced by the public sector in the delivery of community services and infrastructures (Miraftab, 2004). This collaborative partnership is to promote the coordination of the public and private sectors in order that the needs of the community are addressed in a way that can appear seamless (Huxham & Vangen, 2000). Within the past two decades, the number of projects, especially large scale infrastructure projects, has significantly increased in both the developed and developing countries using PPPs. It is therefore understandable that Hodge and Greve (2008) considered this form of collaborative arrangement to be an “iconic status within the public administration around the world”. PPPs had been adopted as a key strategy for modernisation and paved new grounds for the public sector to establish different types of relationships with the private sector (Carroll & Steane, 2000, 2002). These partnerships have necessitated the public sector to address regulatory and governance issues to ensure successful outcomes (Ryan & Lewis, 2007).

However, when several unsuccessful PPPs emerged, the iconic image of this innovative collaboration became questionable. Doubts were raised as to whether PPPs are mere rhetoric rather than reality (Wettenhall, 2003). Fundamentally, PPPs are realities as long as the potential for tension and conflicts arising from the differences in the respective goals of the partners can be overcome to achieve project success. The inherent conflicts between the welfare-driven interests of the public sector and the profit-driven interests of the private sector have led to the need to regulate the partnerships to keep the playing field level (Brown & Ryan, 2003; Miraftab, 2004).

The majority of the issues relating to these conflicts can be overcome if implementation of PPPs ensures successful development of legal framework, agreements and contracts that define the relationship clearly (Pongsiri, 2002). These have been found to be strong motivating factors for both the sectors to work together and create mutually beneficial agreements (Milliman & Grosskopf, 2004). This form of regulation will require unequivocal understanding regarding the decision making process, sharing of the project risks, financial funding process and sharing of accountability for unexpected outcomes. This therefore underlines the importance of altruistic empathy before the public and private sectors formally established PPPs. The more the partners can feel altruistic empathy towards each other, it is found that the more they would be able to engage in collaborative negotiation by forgoing self-interest (Gates & Steane, 2009).

To investigate how altruistic empathy and collaborative negotiation influence the success of PPPs, this study uses theories and principles in PPPs and collaboration literature to develop a conceptual framework to explain the phenomenon of three infrastructure projects in Australia. The first infrastructure project was well received by the community and financially successful. The second was well received but was financially unsuccessful after three years of post construction operations. The third was not well received and was not financially sustainable after only 15 months of post construction operations. By using deductive analysis, this study provides insights into whether both the sectors showed sufficient altruistic empathy towards each other and whether collaborative negotiation was practised in each of the three cases.

The findings in this study show that altruistic empathy and collaborative negotiation are important before PPPs are formally established. These must continue to be practised during the developmental phase. It also shows that the display of altruistic empathy among the

partners will frame collaborative negotiation. However, this study acknowledges that using deductive analysis to explain the phenomenon may not conclusively affirm that collaborative negotiation itself is a key to success in PPPs. Therefore this study provides a frame of reference for future research using other methods for further validation.

5.3 Literature Review

5.3.1 Public Private Partnerships

PPPs have been described as cooperative business ventures between the public and private sectors built on long term contracts in which public services are delivered on the basis of clearly defined public needs (CCPPP, 1999; Gerrard, 2001). Their motivations are viewed as a blend of self-interest and altruism (Pasquero, 1991; Westley & Vredenburg, 1997)

Owing to the divergent goals of the public and private sectors, PPPs are faced with significant challenges to achieve a shared responsibility and collective competence (Regan et al., 2009; Ruuska & Teigland, 2009). This collective competence is described as the partnership's ability to work together towards common goals. It is intended to result in the creation of a collective outcome (Sandberg, 2000). Projects that are able to achieve collective competence are likely to be successful.

One of the responsibilities of the public sector is creating jobs and improving public services to the community. In an increasingly tough socio-economic environment, the public sector needs to explore innovative management strategies to meet this challenge. Therefore, a major motivation to form PPPs has been found to be the pressure for a more efficient government which is based on the widely popular concept of "new public management" (Carroll & Steane, 2002; D. Osborne & Gaebler, 1992). This arises due to the intention of the government to shift risk in response to fiscal stringency and

restructuring of the public sector (Selsky & Parker, 2005). This leads to reforming the way government traditionally functions.

In developing large scale infrastructure projects using PPPs, five main goals of public sector have been identified (Reijniers, 1994). The foremost goal of the public sector is the realisation of social goal. The other goals include the minimisation of risks, ensuring democratic decision-making processes, managing political and community opinion and finally legislation and regulations. These goals have been found to be significant because they make the public sector recognises that PPPs are not mere political symbol and policy tools (Linder, 1999). Instead PPPs are intended to engage expertise from the private sector without which would impede the efficient and successful development of these projects.

The private sector is oriented towards realising corporate goal of maximising the value of their firms. This has been found to include achieving as high a financial return on the invested fund based on the level of business risk and managing the competitive market environment (Vaillancourt Rosenau, 1999). It is therefore not possible for the public sector to transfer all the risk and reduce the project cost simultaneously.

Some critics (Bennett et al., 2000; Ghere, 2001) maintained that the public sector is resistant to the profit motive prevalent in the private sector. The private sector on the other hand tends to dismiss the more administrative decision-making process used by the public sector that bogs down the negotiation. The differences in their fundamental views may lead to distrust and conflict. This can eventually impact the project outcomes in PPPs. However, these differences have been found to be able to be moderated by each partner giving credit to the other's experience and identity (Millar, Choi, & Chen, 2004; Selsky & Parker, 2005).

Reijniers (1994) suggested that PPPs required special attention to manage the key factors contributing to the success of partnerships. This has been found to include goal setting and service delivery (Linder, 1999), types of capabilities each partner can provide (Brinkerhoff & Brinkerhoff, 2011; Mirabella & Wish, 2001), roles of interpersonal relationships (Shaw, 2003), and governance (Selsky & Parker, 2005). Both the public and private sectors must be constantly aware of these factors before and during the construction phases.

5.3.2 Altruistic Empathy and Collaborative Negotiation

Selsky and Parker (2005) contended that when different sectors focus on the same issue, they are likely to think about it differently, to be motivated by different goals, and to use different approaches. It has been also argued that diverse organisations have underlying differences in values and attitudes where they perceive the same information differently (Mandell, 1999; Maznevski, 1994). As such these organisations tend to lack a shared social reality and fail to have a common perspective (Ruuska & Teigland, 2009). It is therefore important that negotiating parties must not be governed by self-interest or economic rationalism but instead explore alternative way of operating and decision making through the path of altruism (Gates & Steane, 2009).

It has been philosophically argued that altruism does not exist in a corporate environment (Eisenberg, 1991; Paolilli, 2009). However, it has been found that it is possible from an egocentric approach that altruistic act is done for future benefits that may be gained directly and indirectly (Khalil, 2004). Therefore, while it is highly impossible to expect neither the public nor private sectors to show altruism towards each other, it is possible, and perhaps beneficial to the public and private sectors that they display altruistic empathy towards each other. The motivation for this display of altruistic empathy is that there can be both tangible and intangible rewards to be benefitted such as self-image and social

appreciation (Paolilli, 2009). In addition, the display of altruistic empathy in PPPs can be advantageous to both the public and private sectors because it can assist to satisfy their own goals. Cultivating altruistic empathy therefore bring diverse organisations to collaborate with some shared values.

It is put forth that one of the key concepts in collaborative advantages research is synergy (Huxham & Vangen, 2004). Differences in common culture development may be overcome by focusing on the metagoals and realigning partners' expectations (Waddock & Post, 1991; Westley & Vredenburg, 1997). It is common that collaborative inertia between partners impedes progress because the partnerships can appear meaningless if lesser goals are to be attained (Vangen & Huxham, 2003). It is often stated that successful partnerships require strong leadership (Vangen & Huxham, 2003) and mediation (Miraftab, 2004) to overcome this collaborative inertia. In PPPs, this requires the understanding that collaborative negotiation can lead either sectors to have something of value to contribute to the partnerships and the possibility of creating synergy arising from a strong belief in individual excellence (Kanter, 1994).

Collaborative negotiation has been found to encourage partnerships to address the equity dimension (Vangen & Huxham, 2003). Equity addresses for whom the partnerships are expected to deliver more effective and efficient public services. The goal of collaborative negotiation is to improve the effectiveness in achieving specific business objectives. Mutually agreed objectives, trust, clearly defined mechanisms for problem resolution, and continuous improvement related to benchmarking process have been found to be keys to successful collaboration (Naoum, 2003). On the other hand, it is found that many partnerships fail or are quickly abandoned due to changing commercial pressures and the actions of unscrupulous partners (Alderman & Ivory, 2007). These types of situations can

be avoided if partners exhibit altruistic empathy towards each other and engage in collaborative negotiation.

5.3.3 Research Methodology

Of the several qualitative research methods, descriptive research and explorative research are two common approaches. The amount of pre-existing knowledge of each research topic is the main determinant for the choice of each approach. When there are gaps in the existing knowledge about a specific problem an explorative approach is recommended. The aim of an explorative research is intended to gather as much information as possible and elucidate the problem from different points of views (Gill & Johnson, 2002). Descriptive research is more suitable when the pre-existing knowledge of the problem is more thorough. When using a descriptive approach the researcher is found to try to explain a few aspects of the problem in terms of correlated relationships, condition, and cause and effect relationships (Gill & Johnson, 2002).

It is argued that research involves the use of theory which may or may not be made explicit in the design of the research (Saunders et al., 2009), but it will usually be made explicit in findings. The extent to which the researcher is clear about the theory at the beginning of the research guides the design of the research. Traditionally, theories have been developed by combining observations from previous literature, common sense, and experiences.

The tie between theoretical literature and pre-existing knowledge has often been tenuous (Perrow, 1986). Because the debate whether 'the theory or the data comes first', it is found that there exists a basic dichotomy on research design (Glaser & Strauss, 1967). It is possible to construct research methods based on whether theory comes first (deduction) or data comes first (induction). When theories are related to empirical data, one approach is to have the starting point in pre-made, accepted theories and principles in order to see if they

can explain the phenomenon of interest. This is deductive analysis. It has been explained that induction is the reverse of deduction as it involves moving from the empirical world to the construction of explanations and theories about what has been observed (Gill & Johnson, 2002). As Glaser and Strauss (1967) argued, it is the intimate connection with empirical reality that permits the development of a testable, relevant, and valid theory.

This study uses an explorative research by deduction as it is intended to develop an understanding of some phenomenon or problem of interest (Patton, 2002). Consequently, the outcome measurement aims at confirming and generalising exploratory findings based on established literature and theory where data are analysed according to an existing framework (Patton, 2002). This study elucidates that motivations of the public and private sectors will depend on the extent of altruistic empathy which would then frame collaborative negotiation. By using deduction reasoning, it will show that successful PPPs are those that have mutually agreed contracts based on altruistic empathy and collaborative negotiation.

5.4 Conceptual Framework

Based on the collaboration theory, collaborative negotiation in PPPs must develop perspectives on purposes, public-centric and good governance (Brinkerhoff & Brinkerhoff, 2011). Brinkerhoff and Brinkerhoff (2011) listed four reasons as the rationales to which PPPs are formed. Firstly, it enhances efficiency and effectiveness through comparative advantages. Secondly, it provides integrated resources and solutions required by scope and nature of the problems. Thirdly, it moves from a no-win situation based on initial goals to a compromised and potential win-win situation. Finally, it develops an open decision making processes to promote broader and equitable representation to ensure sustainability

A fifth reason can be added to this rationale in terms of power relations in the partnerships. Miraftab (2004) contended that a broader dimension on equity has been lacking in the literature of PPPs. Therefore, it is necessary to consider reducing political gamesmanship and power relationship to promote equity by sharing responsibility and accountability.

With these rationales in mind, the conceptual framework for this study will include how the partners negotiate jointly determined goals, collaborative and consensus-based decision making, non-hierarchical and horizontal structures and processes, trust-based and informal as well as formalised relationships, synergistic interactions among partners and shared accountability for outcomes and results.

Applying these theories, this study identifies six key independent variables that frame collaborative negotiation in PPPs; three of which reflect each sector degree of altruistic empathy. This study will first investigate public sector display of altruistic empathy towards the private sector in three areas: the ability of the private sector to make an acceptable profit from operating the facilities; the private sector for not taking all the project risks; and the private sector taking responsibility of the outcomes. This study will then investigate the private sector display of altruistic empathy towards the public sector in three areas as well: the public sector duty of delivering social goods and economic benefits to the community; the public sector being subject to scrutiny for providing concessions; and the public sector being held accountable to environmental issues and spending of taxpayers' money.

5.5 Empirical Findings and Analysis

Explorative findings on three PPP infrastructure projects are undertaken for this study: Westlink Motorway (M7), Lane Cove Tunnel (LCT) and Cross City Tunnel CCT. The findings and analysis on the role of altruistic empathy and collaborative negotiation for

each of these projects are described in the following paragraphs. A summary of the findings is tabulated in Table 1.

5.5.1 Westlink Motorway (M7)

M7 is a 40km motorway linking three main motorways (M2, M4, M5) in the west of Sydney. Construction started in July 2003 and the road was opened to traffic in December 2005, eight months ahead of schedule. Seventeen interchanges along the motorway provide access to the residential communities and industrial areas. Motorists travelling on M7 can avoid up to 48 sets of traffic lights on the trip and it is a fully electronic toll road. As early as 1968, the government had established open space and service corridors that included the construction of M7 (RTA, 2003). Actual planning started in 1993 and in 2001, the government made a commitment to progressively contribute \$356.0 million to the project, with the remaining \$1.5 billion to be provided by the private sector (RTA, 2003).

Westlink was selected to design, construct, operate and maintain M7, the largest completed PPP project in Australia at \$1.4 billion (RTA, 2003). This was less than the original government's estimate. The lead sponsor, Leighton (LH) had an initial equity investment of 10% in the motorway. However, LH sold its ownership interest after 5 years of post construction operations during which time, the road usage experienced strong traffic growth and delivered an average trip length of 30% above initial forecasts (RTA, 2003).

This project shows that there was an extensive public sector display of altruistic empathy towards the private sector. Firstly, there was the financial commitment to the project. Secondly, there was early planning to establish an Environment Impact Statement (EIS) to deal with issues that the community might have. Thirdly, careful budgeting and estimation allowed the private sector not to under-price the project and avoid high tolls.

Table 1: Summary of the findings

	Public sector display of altruistic empathy towards private sector			Private sector display of altruistic empathy towards public sector			Altruistic Empathy and Collaborative Negotiation
	Ensuring private sector can make a profit	Willing to be responsible for some of the risks	Willing to be responsible for some of the outcomes	Delivering economic benefits to the community	Seeking reasonable concession	Ensuring public sector can be held accountable	
M7	Provided financial support of \$356 million	Thorough planning was made to reduce uncertainties and risks	Some estimation were undertaken by public sector and conservative in estimation avoided cost overrun	Good design and completed ahead of schedule	Proposed toll charges were high but still acceptable to majority of the motorists	Willingness to sell down ownerships at an early stage even though project is profitable	High degree of collaborative negotiation at the start to ensure project provided benefits to the community due to display of altruistic empathy
LCT	No financial support provided to the project	Gaps in forecasting and planning. Risks left to private sector to deal with	Public sector took no part in forecast and did not comment if estimates were realistic	Good 'sense of place' design and completed ahead of schedule	Proposed toll charges were high and not acceptable to majority of the motorists	Complied with environment issues. Did not show intention to seek compensation	Some degree of collaborative negotiation at the start of the project with some degree of altruistic empathy
CCT	Asked for financial payment of \$105 million	Gaps in forecasting and planning. Risks left to private sector to deal with	Public sector took no part in forecast and did not comment if estimates were realistic	Good design and completed ahead of schedule	Proposed toll charges were very high and proposed increases were too frequent	Complied with environment issues. Contract allow compensation with regards to when public sector rescind on road closures	No collaborative negotiation with low degree of altruistic empathy as the financial considerations from both sectors were driving the projects

The design and early completion of the project reflected the private sector display of altruistic empathy towards the public sector on their duty of delivery of public services efficiently. Their own equity commitment and their willingness to sell their share of ownership to the government at a later stage reinforced their display of altruistic empathy towards the public sector in case the public sector is subject to scrutiny and accountability.

5.5.2 Lane Cove Tunnel (LCT)

LCT is a 3.6km motorway costing the private sector, Connector Motorways (CM) \$1.1 billion (NSW-Government, 2006). Previously, motorists had to drive through gridlocked suburbs for a few kilometres between the two freeway sections. LCT reduces commuter travelling time by 17 minutes. CM designed and constructed the tunnel and its associated works to create a “sense of place” for each local community by providing architecture that enhanced the journey and its vicinity. It also addressed the environmental problems identified in its EIS (NSW-Government, 2006). Construction commenced in April 2004 and was completed in March 2007, two months ahead of schedule. The tunnel opened with a one-month toll-free period. This gesture was well received by the community.

However, local community, commercial and industrial groups formed the Lane Cove Tunnel Action Group (LCTAG) to voice concerns over the way construction was to be carried out, the community development around the tunnel, and the air quality coming out of the tunnel through the ventilation stacks. The public sector engaged LCTAG at numerous community forums to dispel any myths surrounding these issues with scientific data, especially those related to the air quality.

The project was reported in the media as an example of a successful PPP. While the number of motorists using the tunnel was initially below the original forecast average of 100,000, it was not a major financial concern to the private sector (Rochfort, 2008).

However, one year after its operation, the traffic volume dropped to only about 60,000 motorists. At this level, it would seriously impact its financial performance of the private sector in the long term (Besser, 2007). CM intended to operate the tunnel until 2037 but the number of motorists using the tunnel did not increase in the following two years. Consequently, CM went into receivership in January 2010 after continued financial operating losses. Transurban purchased the tunnel in May 2010 for \$630.0 million.

The public sector did not show sufficient altruistic empathy. If there were, the public sector could have made some financial commitment, as in M7. This would allow the private sector to reduce their cost which in turn could lower the toll charges to the motorists. The public sector also distanced itself from taking some of the risk and responsibility of the outcomes. There was no attempt to jointly undertake a realistic revenue forecast or deal with all the problems raised by LCTAG. The private sector, on the other hand, attempted to show altruistic empathy towards the public sector. The private sector ensured that the design creates a “sense of place” for the community. Understanding the potential scrutiny and accountability the public sector might face, the private sector did not demand for unreasonable concessions or compensations to be included in the contract and addressed environment issues carefully.

5.5.3 Cross City Tunnel (CCT)

CCT connects Darling Harbour in the west to Rushcutters Bay in the east. Though it is a 2.1km motorway, motorists using CCT avoid 16 sets of traffic lights westbound and 18 eastbound. In 2002, the Government awarded Cross City Motorways (CCM) to undertake the project estimated at \$680 million but the final cost rose to \$900.0 million (Pretorius, 2007).

Construction of the tunnel commenced in January 2003. The tunnel was scheduled to complete by October 2005 but it was completed ahead of schedule. Consequently, it was opened to motorists in August 2005. Unfortunately, immediately after it commenced operation, it received poor media publicity which voiced the frustration of the community. The community criticised the disruption to traffic in the city due to misleading signage. The road closures around the exit ramps were interpreted to channel traffic into the tunnel because it gave the motorists limited opportunities to exit before the tunnel. In addition, the high price for using a short stretch of motorway was considered to be very expensive. Contractually, the public sector could not impose on CCM into reducing the toll or stopping automatic increases by CPI each quarter, as against the yearly increases implemented by operators of the other tolls. Finally, to a smaller extent, some quarter of the community was concerned with the level of exhaust fumes from the tunnel. This backlash from the community led to motorists “boycott” which resulted in even fewer motorists using the tunnel.

Faced with this dilemma, the operator responded by offering a three week toll-free period plus a commitment to freeze further toll increases for twelve months. Unfortunately, continued non-acceptance of the toll by the community after the toll-free period forced the operator to halve the toll for the subsequent three months and reverse some road closures. This significantly impacted the revenue. Before the expiry of the half-price toll period, the public sector ended further negotiations with CCM to discuss the financial and operational issues. With no agreement on how to manage the post construction operations and faced with continuous community and media criticisms, the public sector unilaterally announced the immediate reversal of all road closures which was contrary to the agreed contract.

Initially, CCT committed under oath that it would not seek compensation if the road closures were undone. However, like the government, CCM also reversed its decision subsequently and took legal action against the Government for breaching the contract (Pretorius, 2007). There was speculation that sensitive Cabinet documents were leaked to CCM during negotiations and investigation had to be conducted to eliminate possible public sector wrongdoing. The government was unwilling to disclose the contract conditions on what concessions were given to the CCM in return for \$110.0 million payment to the government for permission to build CCT.

By November 2006, CCM was in financial difficulty. Without any support from the public sector, the project was put into receivership in December 2006. A new consortium bought CCT for \$700.0 million (John et al., 2007). Immediately attempts were made by the project partners within the new consortium and the public sector to build public confidence in toll roads and PPPs.

The confrontation between the public sector and the private sector was due to the non-existent of collaborative negotiation. The public sector lack of altruistic empathy was obvious. Firstly, the demand of \$110.0 million upfront payment from the successful contractor as commitment fee was a significant 16.2 per cent of the total estimated construction cost. This would mean that CCM had to eventually recoup this cost through higher toll charges. This approach by the public sector is the complete opposite to M7 where the public sector provided financial funding to kick-start the project and allowing the private sector to make a profit without having to levy high toll fees. Secondly, the public sector should know that many conditions in the negotiated contract would not be amenable with the community. The fact that the transportation chief who was instrumental to the negotiation had to resign was testimony to an ill managed negotiation. Thirdly, there

was a lack of willingness to be responsible for some of the risks or take some responsibility for some of the outcomes arising from the probability of possible gaps in forecasting data is high and the resulting shortfall in revenue forecast.

The private sector also lacked altruistic empathy. Knowing the public sector has a responsibility to deliver public services at a reasonable price, the private sector should know that there would be community backlash even though the clauses on high toll charges, frequent toll increases, road closures to force motorists to use the tunnel and compensation if some conditions were not met were included in the agreement. This performance of CCT contrasted sharply with that of M7.

5.6 Limitations and Future Research

It has been stated that one of the limitations of deductive analysis is that the researcher can manipulate the setting under study and predetermine what variables are worth measuring (Patton, 2002). However, it is important to recognise that actually conducting the analysis is a matter of degree. Patton (2002) contended that what is discovered may be verified by going back to the world under study and examining the extent to which the emergent analysis fits the phenomenon.

Using deductive analysis, this study conveys a sense of being there and experiencing settings first-hand. It also present in close details the context and meanings of events and senses that are relevant to those involved. It has been found that it examines how things look from different vantage points and makes deduction from these insights (Taylor & Bogdan, 1998). This study coded and analysed the data as objectively as practical in order to explain the phenomenon. A different researcher may provide different insights based on the differences in coding and analysis.

5.7 Conclusion

Various literature has different interpretations of whether PPPs are successful. A post development report by the government claimed that all three PPPs were successful because the PPPs had complied with the guidelines and delivered economic benefits to the community (RTA, 2010). It is insensitive for the public sector not to empathise with the sentiment of the private sector when the private sector investment in a project suffered a huge financial loss. This study neither agrees nor disagrees whether the three PPPs were successful. Instead, it is intended to explain the reasons for the phenomenon based on collaboration theory and presents a holistic approach to see the vantage points from the perspectives of both the sectors. It therefore provides different perspectives and insights into the operations of PPPs.

When using qualitative research method in finance, it is important to ensure consistency in the application and framework, and to understand the limitations of the method. The limitations of deductive analysis do not diminish the significance of this study but instead it expands the scope in the understanding of PPPs. This study finds that the display of a higher degree of altruistic empathy by the public and private sectors towards each other increases the degree of collaborative negotiation. This can lessen confrontational issues as the project progresses, enhance longevity in working relationships, achieve common goals and strive for a higher probability of financial success. Collaborative negotiation ensures a win-win situation with no sign of power relations and a level playing field.

This study also identifies a number of underlying themes in PPPs. Further studies using inductive or abductive analysis can enhance the understanding of PPPs by developing different paradigms and theoretical propositions.

CHAPTER 6: CONCLUSION

6.1 Introduction

The themes of each of the preceding three articles track the post construction development of three large scale PPP infrastructure projects. The first two articles investigated the collaborative management of the projects and the value these projects provide to all the stakeholders in two large scale infrastructure projects. A third large scale PPP infrastructure project was introduced in the study of the third article to provide additional insights into the understanding of collaboration and negotiation in PPPs. The three articles offer different perspectives in the understanding and assessment of successful PPPs. Contemporary research continues to confine the definition of success based on the project financial viabilities and longevity. However, assessment of successful PPPs based on the perspectives of the community provides an alternative viewpoint. Integrating these perspectives with the paradigm of altruistic empathy and collaborative negotiation contribute incremental knowledge on project finance decisions in PPPs. Therefore this thesis enriches the scope of research in PPPs and enhances the cognitive knowledge on the role of collaborative advantages in the complex operations of PPPs.

This concluding chapter first reviews the conclusions drawn from these three articles. Each of the three conclusions provides incremental understanding in the management of PPPs. It will then discuss the limitations of the research methodology used in the three articles. Before summarising this chapter and concluding this thesis in the final section, it will suggest areas of future research.

6.2 Conclusions Drawn from these Three Articles

Each of the three articles has made a distinct contribution to the knowledge and literature of PPPs in project finance. A wealth of literature in PPPs had been published in relation to

project finance risks (Esty, 2002b; Tinsley, 2000a; Yescombe, 2002) and how risks are allocated to the parties most capable to manage it (Bing et al., 2005a). This literature argues that the transfer of risks from the public to the private sector in PPPs provide greater transparency in the recognition and pricing of risk to the extent that private sector financing creates stronger incentives for the performance of the investment and its delivery within time and budget. These incentives arise because private sector investors require a return commensurate with the risk of the investment. This instils a discipline in project planning and infrastructure management that is unlikely to be replicated in the case of pure public ownership and management. The greater incentive for risk management arises because private sector equity investors directly assume the risk of losses associated with construction delays or infrastructure performance, while private sector creditors assume residual risk arising from inherent project risk and the capital structure applying to the investment.

The first article acknowledged the importance of project finance risks and the financial returns it generates to its project sponsors. It further argued that given the nature of the non-rivalrous nature of transport infrastructure which weakens the private goods character of PPP projects and consequently places many PPP projects in the economic category of 'mixed goods'. The significance of PPPs in the delivery of economic benefits to the community is important and necessary measures must be taken to ensure PPPs are successful. A conceptual framework based on a study by Levinson et al (2006) is used in the article to measure success. While Levinson et al (2006) has used the outcomes in PPPs to measure success, the study provided an alternative view by examining the process to achieve these outcomes. This first article focused on how collaboration (Huxham, 1993; Huxham & Vangen, 2004) by the project sponsors in negotiation before, during and after the construction could result in PPPs generating greater public acceptance. Public

acceptance of PPP projects indicated that the projects delivered economic benefits to the wider community. It therefore provided an alternative measure of success as compared to confining the measure of success based on financial reasons.

By collaborating in PPPs, the process can steer the project sponsors towards higher level of collaboration which in turn will enhance economic benefits to the community. Successful PPP projects ought to deliver improved service quality to the community. Using this approach, the findings in the study concluded that LCT had a higher level of collaboration than that of CCT and as a result, LCT was considered to deliver higher level of economic benefits to the community. It showed a positive correlation between the level of collaboration in PPPs and the level of public acceptance based on economic benefits being delivered to the community.

The second article built on the analysis from the first article. It examined the reasons LCT, which had a higher level of collaboration and delivered a higher level of economic benefits to the community, did not receive increasing support from the community after three years of operations. Even though there was an initial greater public acceptance, there was no increase in motorists using the facilities. As a result, the project sponsors suffered huge financial losses for three consecutive years. To understand how this situation had changed, this study conducted a content analysis to inquire into the longevity of the project based on the influence of public opinion. The use of content analysis as a research method in this study was most appropriate since a major limitation was again the inability to conduct accurate survey and questionnaire due to the reluctance of individuals, private sector sponsors and public sector employees to provide answers owing to impending litigation.

This second article identified three key independent variables and its underlying dimensions that were used in the study to inquire into the influence of public opinion on

the success of PPPs. The key independent variables focused on the community perception of the project impacting their quality of life, providing them value for money and applying collaborative efforts by the public and private sectors to the achieve community interest. Given that there could be areas of tension in the partnerships, collaborative effort was intended to enable the project sponsors to attain mutually acceptable agreements while simultaneously to satisfy their respective individual objectives (Polzer et al., 1998). At the same time, the project sponsors must also integrate community interest into their objectives.

This second article gathered information through codifying of qualitative information into pre-defined categories and was able to derive patterns in the analysis. Based on published literature from the media, professional journals and reports from quasi government agencies and independent government commissions, this study provided insights into the public opinion on three aspects of PPP projects: how PPPs would increase quality of life to the community, how PPPs would be considered as value for money for the community and how PPPs would achieve community interest through collaboration. In addition, this second article reinforced the conclusion made in the first article that public sector could do more, such as retaining greater interest in planning and management of PPP projects in order to improve the probability of successes in PPPs.

Arising from the investigative studies in the first and second articles, the third article used a qualitative research method based on explorative deduction to gather as much information as possible and elucidate the problems from different point of views. The study also introduced a new case, the Westlink Motorway (M7). M7 has been the largest completed PPP project in Australia at \$1.4 billion (RTA, 2003) and it continued to operate to its present day without financial problems or disputes between the project sponsors. The

objective of introducing this new case in the study was to compare and contrast the involvement of the project sponsors in M7 against those of the LCT and CCT using established theoretical literature and practical observations. However, given that the tie between theoretical literature and pre-existing knowledge has often been tenuous and the debate whether 'the theory or the data comes first', there exists a basic dichotomy on research design. This therefore provides the opportunity for researcher to construct research methods based on whether theory (deduction) or data comes first (induction).

Considering the vast amount of theoretical literature and pre-existing knowledge, this third article chose deductive analysis as the research method because it intended to develop greater insights into the phenomenon of these three projects and an understanding of the problem areas. Again, the central issue concerning the study was the definition of success. The post development report by the government established that the three PPPs were all successful on the basis that the projects complied with the public sector guidelines and delivered economic benefits to the community (RTA, 2010). It ignored the grave economic concerns of the private sector that their investment incurred financial losses.

This third article acknowledged that different literature and research have different interpretation of successful PPPs. However, the investigation provided an explanation of the phenomenon based on collaboration theory and showed that if the project sponsors were to show altruistic empathy towards each other, there would be higher degree of collaborative negotiation. The study concluded that eliminating as much of the confrontational problems as possible throughout the project life could increase the probability of the project success based on financial profitability. It showed the importance of altruistic empathy and collaborative negotiation in PPPs. This would in turn yield project longevity and financial viability of PPP projects.

6.3 Planning and Management of PPPs

The main theme drawn from the conclusions of all the three articles is that the public sector would need to retain greater interest in planning and management of PPP projects in order that PPPs can be successful. While collaboration between the public and private sectors is important, the leadership that the public sector can provide in PPPs will give the partnership a clearer statement on the significance of the project for the community. In doing so, the public sector can emphasize that in addition to collaboration, the role of public opinion and altruistic empathy in project finance decisions for PPPs are also important.

A leadership role by the public sector will also guide the partnerships in the process of goal setting and collaborative negotiation in PPPs. This is necessary because with disparaging goals, the interest of the public and private sectors that are not aligned. Therefore the process of goal setting and negotiation can be long drawn with both parties focussing on their individual needs and objectives.

In assuming this role, the public sector must not be self-serving as to use the PPPs to serve their own political and public image agenda. Taking on this role means that the public sector has a huge responsibility to act fairly, not only for the interest of both the public and private sectors, but also for the interest of the community to which these completed projects are intended for. The public sector must evaluate the type and level of public concessions that need to be bestowed upon the private sector in order that the projects can be completed successfully and that the fees that the private sector will charge to the community for using it, when completed, will be acceptable. The public sector must also consider a more equitable risk sharing scheme during the process of risk allocation in order that the private sector can earn a sufficiently reasonable profit during operation for them to

participate in the partnerships. The forgoing of some of the short term gains with a view to ensure project longevity is pivotal in the success of PPPs.

Vesting the public sector to retain greater interest in planning and management of PPPs provides the additional value to ensure the right project finance decisions are made in the development of large scale infrastructure projects. It will lead to higher public acceptance and provide greater economic development.

6.4 Limitations of the Research

There are several limitations when conducting the investigative studies for this thesis. The first part of this section focuses on the general limitations of qualitative case study. The second part addresses specific limitations encountered during the study of each of the three articles.

Firstly, in business and management study, it is essential to understand the context within which the research is being conducted by considering social, economic, political and cultural factors that impinge on the research problem. The qualitative research used in the case studies for the three articles are based on the environment in Australia. The extent to which the conclusions are applicable to other PPP projects will depend on how closely the environment can be replicated and the extent of the influences associated with the phenomenon can be transferred to other phenomena.

Secondly, case study makes no attempt to isolate the phenomenon from its context. The phenomenon is of interest precisely because of its relation to its context. Therefore, in case study, it has been found that researchers attempt to analyse and synthesize in direct interpretation until meaning emerges by pulling the situation apart and putting it back

together (Stake, 1995). However, which parts of the situation to pull apart and which parts to put it back together are debatable.

Thirdly, qualitative research in case study is sometimes criticised for its subjectivity because it is rife with ambiguities in its interpretation. Subjectivity has such negative connotations in the public mind that to admit being subjective can undermine the researcher's credibility. However, Patton (2002) commented that the ideas of absolute objectivity and value-free science are impossible to attain in practice. Whichever strategy researchers choose, it ultimately needs credibility to be useful and meaningful. A credible research strategy must not be construed to advocate biased distortion of data to serve the researchers' self-interests and prejudices. To repel such criticisms, the researchers must maintain a stance of neutrality with regards to the phenomenon under study and not set out to prove a particular perspective or manipulate the data to arrive at predisposed truths. The researchers must commit to be truthful and honest, accept the complexities and multiple perspectives as they emerge. Finally, it is argued that researchers must be impartial in reporting both confirmatory and disconfirming evidences (Patton, 2002).

In the first article, an empirical based comparative case study was conducted using a model developed by Levinson et al (2006). The study identified some limitations in Levinson's model and a conceptual framework was proposed to improve this model. Firstly, Levinson et al (2006) focused on the outcome and not the process. Secondly, the four criteria used are broad and do not include any underlying dimensions. The absence of a detailed investigation on each of these criteria could lead to lopsided conclusions. Thirdly, the first two criteria focus on acceptance, while the latter two focus on project outcome. The two sets of criteria are contextually different in PPP literature. Integrating these criteria in the same analysis may not present a coherent conclusion.

Consequently, the study modified the framework developed by Levinson et al (2006) by analysing the processes, which was influenced by a set of underlying dimensions, during implementation. It then proceeded to study the outcomes of PPP projects as separate factors. In modifying the model, the study acknowledged that there were still limitations. The first limitation was the subjectivity in the application of the underlying dimensions to the real-life situation. Secondly, since it was an empirical based comparative study of two cases, the case which performed better than the other may not necessarily mean it was a good case. Thirdly, assigning scores to the respective underlying dimensions were based on interpretation. Finally, there was the possibility that the researcher could manipulate the setting under study and predetermine what variables were worth measuring (Patton, 2002).

In the second article, the first limitation was the accuracy in codifying of qualitative information into pre-defined categories. While the study had clearly set out the key requirements in categorising of information, consistency and accuracy in classification of the information were still areas of concern. Secondly, the choice of unit of analysis was a preference of the researcher and a different researcher may choose a different unit of analysis. In this instance, the choice of sentence was used in preference to the use of key words or paragraphs. Thirdly, another limitation that was mentioned was the subjectivity involved in the interpretation of the inferred meanings and the subsequent coding (Bos & Tarnai, 1999; Krippendorff, 1980; Stemler, 2001). If key words were used as the coder, there would be lesser problems in the codifying. However, if sentences or paragraphs were used as the coder, codifying the inferred meanings could be subjective. To overcome this limitation, Milne and Adler (1999) stressed that for valid references to be drawn from content analysis, reliability of both the data and the instrument used in the coding is critical.

Despite its limitations, content analysis used in the study did not diminish the quality of the research. The investigation allowed issues to be examined by qualitative analysis to provide complete understanding in the study of PPPs. What was important was the ability of the researcher to exercise consistency in the application and design of the framework.

In the third article, one of the limitations in the use of deductive analysis was that the researcher could, as was in the earlier articles, manipulate the setting under study. It should be recognised that actually conducting the analysis was a matter of degree. Patton (2002) contended that what was discovered could be verified by going back to the real world under study and examining the extent to which the emergent analysis fit the phenomenon. The outcome would demonstrate either support for the research propositions or a need to revise the proposed suggestions with another set of case studies for retesting (Burns, 1997). In doing so, some aspects of this limitation could be mitigated.

In using deductive analysis in the article, the study coded and analysed data to explain the phenomenon. A different researcher might provide different insights. Again the limitations of deductive analysis did not diminish the significance of the study. Instead the research method was especially meaningful because the study conveyed a sense of being there and experiencing settings first-hand. It presented in close details the context and meanings of events and senses that were relevant to those involved (Taylor & Bogdan, 1998). It is argued that therefore this allowed the researcher to examine how things were being perceived from different vantage points and to make deduction from these insights (Taylor & Bogdan, 1998).

6.5 Suggested Areas for Future Research

Each of the three articles provided a frame of reference for future research into project finance and PPPs. The first article suggested the if the public sector were to retain greater

interest in planning and management of PPP projects, this could lead to greater probability of success in delivering economic benefits to the community. Therefore, one possible future research that will be beneficial is to investigate PPPs that have greater public sector involvement against PPPs that are left more to private sector initiatives. It can be an area of public sector involvement in financing the projects and this can provide a better understanding in the application of the cost of capital in PPP projects.

The benefits of such a research can address the question as to what cost of capital are to be applied to the valuation of PPPs when public sector financing is involved. The use of government bond rates for the cost of capital of PPPs alters the funding from the private to the public sector. The use of lower bond rates can be justifiable because of the potential that can exist for some social benefits arising from the venture. The use of higher cost private sector financing rates to value PPP ventures results in their systematic undervaluation and subsequent higher pricing of services associated with the venture. This leads to fewer motorists using the PPP facilities and consequently the project is perceived not to deliver economic benefits to the community. Such a study can provide an understanding on the choice of cost of capital to be used in PPP projects.

The second article suggested that the use of qualitative analysis to understand the public opinion could provide a basis on how risk can be better managed. A possible future research that will be beneficial is to conduct a survey and questionnaire on a cross section of the communities to determine their priorities when deciding on using PPP facilities. Ranking of their priorities can provide a better understanding on how risks and returns can be managed.

The third article suggested future research using inductive or abductive qualitative research analysis to enhance the understanding on the role of collaboration in PPPs. Since some

subjectivity and judgement may have entered into the study, these research methods can be combined with deductive analysis to form triangulation study. Triangulation of data sources can increase the accuracy and credibility of the findings (Patton, 1999). Such a research can be beneficial as it would strengthen a study by combining methods. The idea is that the researcher can be more confident with the result if different methods also lead to the same conclusion. On the other hand, if conflicting answers are produced, the researcher will know that the research questions need to be reframed and the methods need to be reconsidered. By facilitating validation of data through cross verification, it can test for consistency and therefore offer opportunities for greater insights into the relationship between inquiry approach and phenomenon under study.

6.6 Summary

Project finance has been, and is, an important field of study due to its special place in business and finance to both the project sponsors and the communities for which these facilities are developed to deliver economic and social benefits. The introduction of the PPP models is to improve the delivery of these facilities. PPPs were hailed as a panacea to problems faced by the public sector. This was because the public sector failed to meet the expectations of the community with regards to the pace at which these facilities could be developed. PPPs as a form of a collaborative arrangement are intended to promote the coordination of the public and private sectors so that the needs of the community are addressed in a way that will appear seamless.

Over the past two decades, the number of large scale infrastructure project, has significantly increased in both the developed and developing countries using PPPs. It became “fashionable” because of its innovative method to tackle complex financial and engineering problems. Increasingly, PPPs have been adopted as a key strategy for

modernisation and paved new grounds for the public sector to establish different types of relationships with private sector. It began to claim an iconic status within the public administration around the world. However, when several unsuccessful PPPs emerged, doubts were raised as to whether PPPs are mere rhetoric rather than reality. Given the continued financial uncertainty faced by many countries following the Global Financial Crisis of 2008, it is crucial to revisit some of the basic considerations in PPPs in order to determine whether they can remain relevant in the current socio-economic environment.

PPPs necessitate the public sector to address regulatory and governance issues to ensure successful outcomes. It also requires the private sector to address the way they manage risks and finance the projects. The role of project sponsors in project finance decisions under the arrangement of PPPs become important to ensure that the needs and expectations of all stakeholders are met. Owing to the complexities of such an arrangement, it is important that decision making by the project sponsors must include opinion of the community for whom these facilities are intended.

This thesis extends project finance theory to encompass the complex strategies and methods used by project sponsors in PPPs. In turn, this knowledge will open the observed project finance practices to new scrutiny and lead to the development of improved frameworks for project finance deals that will be capable of handling complex PPPs. The three articles in this thesis have provided insights into the role collaborative advantages in project finance decisions under PPPs. Applying collaborative advantages to project finance decisions in PPPs provide better understanding on how public acceptance, delivery of economic benefits and positive public opinion can lead to successful PPPs through goal setting, negotiation and collaboration. Integrating the paradigm of altruistic empathy and collaborative negotiation further provides an interdisciplinary approach in the study and

research of project finance decisions in PPPs. Allowing divergent perspectives to coexist enrich the literature of project finance and PPPs. From a practical standpoint, the three articles have contributed additional insights into the management and operations of PPPs. The findings from the three articles have suggested the importance of goal setting, negotiation, collaboration and altruistic empathy to ensure successful project outcomes.

Practical application of this knowledge will improve the management of projects for managers involved in project finance. It will also help those entities which provide services to PPPs with better understanding of the operational and financial structures of large scale infrastructure projects. It is hoped that this research will lead to future research in PPPs that will broaden incremental knowledge and understanding of project finance and that will be relevant and beneficial to both academics and professionals alike.

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APPENDICES

Appendix 1: List of all publications

Refereed Journal Articles

- Thia, H & Ross, D. (Jun 2012), The Importance of Altruistic Empathy and Collaborative Negotiation in Public Private Partnerships, *Journal of Modern Accounting and Auditing* (ISSN 1548-6583), 8(6), 827-836. (Thia's contribution – 90%)
- Thia, H & Ross, D. (Aug 2011), Using Content Analysis to Inquire into the Influence of Public Opinion on the Success of Public Private Partnerships, *International Journal on GSTF Business Review* (ISSN:2010-4804), 1(1), 237-242. (Thia's contribution – 90%)
- Thia, H & Guy, F. (Apr 2009), Delivery of Economic Benefits using Public Private Partnerships in the Development of Infrastructure Projects, *International Review of Business Research Papers* (ISSN 1837-9543) 5(3), 214-226. (Thia's contribution – 90%)

Refereed Conference Proceedings

- Thia, H. & Ross, D. (Jun 2012), Risk Assessment and Collaboration in Project Finance under Public Private Partnerships, *International Journal of Arts and Sciences Conference, Florence, Italy*, ISSN: 1943-6114 (Thia's contribution – 90%)
- Thia, H & Ross, D. (Feb 2012), Collaborative Risk Management Impacting the Success of Infrastructure under Public Private Partnerships, *3rd International Conference on Financial Theory and Engineering, Singapore*, ISSN: 2010-4626 (Thia's contribution – 90%)
- Thia, H. & Ross (Sep 2011), The Importance of Altruistic Empathy and Collaborative Negotiation in Public Private Partnerships, *World Business, Economics and Finance Conference, Bangkok, Thailand*, ISBN: 978-0-9808279-2-7. (Thia's contribution – 90%)
- Thia, H & Keane, C. (Dec 2008), Public Acceptance of Public Private Partnerships: An Australian Experience. *4th International Conference on Global Research in Business & Economics, Bangkok, Thailand*, ISSN: 1940-539, 178-19. (Thia's contribution – 80%)
- Thia, H & Ford, G. (Nov 2008), Delivery of Economic Benefits using Public Private Partnerships. *9th International Business Research Conference, Melbourne, Australia*. (Thia's contribution – 90%)
- Thia, H & Ross, D. (Jul 2007), The Negotiation of Joint Purpose in Public Private Partnerships, *12th Asia Pacific Decision Science Institute Conference, Bangkok, Thailand*. ISSN: 1539-1191. (Thia's contribution – 90%)
- Thia, H. & Ross, D. (Dec 2006), Towards a Model for Goal Setting and Negotiation in Public Private Partnerships, *Australia and New Zealand Academy of Management, Rockhampton, Australia*. ISBN 1-921047-348. (Thia's contribution – 90%)

Refereed Conference Presentations

- Thia, H & Keane, C. (May 2011), Using Content Analysis to Understand the Influence of Public Opinion on the Success of Public Private Partnerships, *Annual International Conference on Accounting and Finance, Singapore*. (Thia's contribution – 90%)
- Thia, H. & Ross, D. (Dec 2008), Collaborations in Public Private Partnerships – An empirical comparison based review, *Australia and New Zealand Academy of Management, Auckland, New Zealand* (Thia's contribution – 90%)
- Thia, H & Ross, D. (Jun 2008), The Role of Collaboration in Enhancing Public Acceptances of Public Private Partnerships: A Tale of Two Tunnels. *15th Annual Multi-Organizational Partnerships, Alliances and Networks (MOPAN) International Conference, Sawyer Business School, Boston, MA, USA* (Thia's contribution – 90%)

Appendix 2: The first article in the published format.

“Delivery of Economic Benefits using Public Private Partnerships in the Development of Infrastructure Projects” (Thia & Ford, 2009). *International Review of Business Research Papers*, 5(3), 214-226.

Appendix 3: The second article in the published format.

“Using Content Analysis to Inquire into the Influence of Public Opinion on the Success of Public Private Partnerships” (Thia & Ross, 2011). *International Journal on GSTF Business Review*, 1(1), 237-242.

Appendix 4: The third article in the published format.

“The Importance of Altruistic Empathy and Collaborative Negotiation in Public Private Partnerships” (Thia & Ross, 2012). *Journal of Modern Accounting and Auditing*, 8(6), 827-836.

Delivery of Economic Benefits using Public Private Partnerships in the Development of Infrastructure Projects

Hui Thia* and Guy Ford**

This paper intends to evaluate the delivery of economic benefits using public private partnerships (PPP) in the development of infrastructure projects. By applying a model that considers the social and economic factors of two recently completed projects in Sydney, the paper argues that there are long term economic benefits embodied in PPPs even though public opinion may perceive one venture as a failed project. By focusing attention on the collaborative advantages in PPP, this paper argues that these advantages can enhance the delivery of economic benefits to the community.

Field of Research: Finance and Economics

1 Introduction

Public private partnerships (PPPs) in project finance involve both the public and private sectors working together to develop large scale infrastructure projects. Their joint involvement necessitates the creation of collaborative arrangements to deliver essential infrastructure. Some of this involvement was due to severe constraints on public sector budgets and significant liquidity in world financial markets along with a belief that the private sector would manage the development of major projects more efficiently than the public sector (Vickerman, 2004). Proponents of PPPs argue that these collaborative arrangements enable the public sector to accelerate the development of infrastructure projects and deliver economic benefits to the public (Akitoby et al., 2007). Critics of PPPs argue that since most of these projects are broadly classified as public goods and services, they should be the responsibility of the public sector. By allowing active private sector involvement, the economic and social benefits of such projects may exclude some members of the community. PPP model has been extensively used in project finance but there are concerns about private sector efficiency in delivering projects on time and to budget. These concerns have raised questions over the allocation or sharing of risks between the public and

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private sectors (Bing et al., 2005). The failure to collaborate effectively is often blamed for reducing the potential benefits to the wider community

In this paper, we address key issues which have emerged from an empirical based comparison of two road tunnel projects in Sydney. Both projects were under construction over similar periods of time and were completed within one year of each other, but had different public acceptance outcomes. Lane Cove Tunnel (LCT) experienced wider public acceptance and was considered by the media as a success story which delivered economic benefits to the community. The Cross City Tunnel (CCT), in contrast, faced adverse publicity and hostile media commentary when it was officially opened. CCT was regarded as a failed PPP.

This paper begins with a review of project finance risks by examining how risk sharing, as opposed to risk allocation, can enhance success in PPPs and yield economic benefits. It then reviews the mixed goods character of PPPs and what economic benefits can be derived from the completion of an infrastructure project. Critical questions on collaborative advantages in collaboration theory are also reviewed. A framework for the empirical based comparison of these two tunnels is developed and applied to each of the two tunnels to investigate the degree of collaboration and how it enhances the delivery of economic benefits. It concludes by highlighting the importance of capturing synergy in collaborative advantages.

2 Literature Review

2.1 Project Finance Risks in PPPs

The central theme surrounding PPPs are the potential financial benefits and ability to transfer risks from the public sector to the private sector. It is often argued (Yescombe, 2002, Tinsley, 2000, Esty, 2001) that in allocating risks, the risks should be carried by the party best able to control, manage or mitigate the risks. The focus on risk allocation by the public sector in most cases leads to outright shifting of risk to the private sector. Infrastructure project risks are numerous. These include risks related to environmental issues, delays in construction, cost overruns, service availability and quality, uncertainty about revenue flows during operation, changes in discount rates and asset values. Most of these risks cannot be allocated outright or completely transferred from one party to another.

There is increasing support for risk sharing rather than risk transfer in PPPs, given that certain risks can be influenced by the public sector (Akitoby et al., 2007). The party that has control and influence over risk should bear a greater share of it while allowing the other party to take on a smaller share (Bing et al., 2005). Public sector concessions are a legitimate form of government support for infrastructure projects (Akitoby et al., 2007). In areas where the public sector can anticipate and control risks especially relating to getting necessary approvals and environmental licenses, they must take on greater responsibilities. Construction and revenue risks are more difficult to manage. While these risks are normally allocated to the private sector, there must be some form of concessions such as penalties waived when project deadlines cannot be met. These concessions are often subject to public scrutiny

resulting in criticism that the government provides too many incentives to the private sector.

2.2 Economic Benefits of PPPs as “Mixed Goods”

Most public goods and services are provided by government to underpin economic development and enhance national productivity. Since the 1990s there has been a gradual shift from public provision to an increased role for private sector participation. From an economic perspective PPPs are neither pure private goods nor pure public goods in terms of their availability and use. To the extent that public access to transport infrastructure such as motorways and tunnels can be made excludable, by a toll barrier, the facility has features of a private good. In other words the benefits of consumption accrue to those individuals who pay and consume the service. It is the non-rivalrous nature of transport infrastructure which weakens the private good character of a PPP and makes it more like a public good. Arguably, this places many PPPs in the economic category of ‘mixed goods’.

Cases of mixed goods and their role in market economies inevitably invite controversy due to the competitive and collaborative relationships surrounding their provision (Lieberman and Hall, 2005). Opponents of PPPs argue that governments do not always get good value for money when they enter into collaborative agreements with private parties aimed at achieving economic efficiency (Stilwell and Jordan, 2004). Moreover, contractual based relationships like PPPs are not costless to the participants. A government, like any other contracting agent, suffers from imperfect information in the marketplace. Considerable time and organizing effort must be spent searching for suitable collaborative partners, negotiating price arrangements and monitoring the agreement after both parties have reached a deal (Boyce and Ville, 2002).

Another problem with PPPs is that private sector involvement may reduce the likelihood of an equitable provision of services. The promotion of private sector involvement may distort public spending priorities and crowd out other suitable competitors as the ability to attract private involvement becomes a key consideration in project starts. At other times a political commitment to private finance funding has resulted in delayed project starts (Vickerman, 2004). There is also the problem of lack of economic incentives for the private sector to adjust activity to changing needs and market conditions. It is sometimes argued that the only incentive motivating the private sector will be the tendency towards cost cutting rather than service enhancing activities (Forrer et al., 2002). The possible economic benefits of PPPs however, may have been underestimated and more attention needs to be given to them. Given the ability of the public sector to define public service outputs in a sufficiently specific manner to facilitate enforcement, infrastructure projects can bring about economic benefits to the wider community (Forrer et al., 2002). Expanding the private sector role may well be attractive to the public sector. All these factors increase the probability of successful completion of projects to the benefit of the wider community.

2.3 Collaborative Advantages

The essence of collaboration in a partnership is to achieve a majority of objectives which would not be achieved by any one partner acting alone. This is one of the primary concepts in collaboration research leading to the theory of collaborative

advantage. Collaborative advantages fundamentally capture the synergy argument (Huxham, 2003, Huxham, 1993). Huxham (2003) found that collaborative inertia impedes progress in collaboration because the output appears to be insignificant. PPPs face collaboration inertia because of conflicts arising from the differences in the respective objectives of the parties and possibly, due to a lack of mutual trust. Kanter (1994) presented eight factors that can lead to successful partnerships, six of which are especially relevant to PPPs. Firstly, the partnership must fit major strategic objectives of the respective parties, such that they want to make it work. Partners have long term goals which play a key role in shaping the partnership. Bennett, *et al* (2000) contended that strong foundations for PPPs are based on complementary goals. Not only should the respective strategic objectives be upheld, the partnership will improve the chance of success if the goals of the project sponsors are mutually compatible. Secondly, the partners know that they need each other. They have complementary assets and skills and neither can accomplish alone what both can achieve together. Thirdly, the partners need to invest in each other to demonstrate their long term commitment. They need to pledge financial and other resources to the partnership. Fourthly, the partnership must be given a formal status with clear responsibilities and decision making processes. Fifthly, there must be open communication where partners share information on technical data and knowledge of changing situations. The need to share information is important as it forms a common basis of agreement, including compensation plans when certain risks become more prominent. Finally, mutual trust must exist between the partners. Middleton and Davies (2001) advocate trust and teamwork as the key to success in PPP projects. It is expected that there will be areas of tension in the partnership. The partners are faced with the need to cooperate enough to reach mutually acceptable agreements while simultaneously satisfying individual interests (Polzer *et al.*, 1998). Collaboration in PPPs thus poses challenging tasks when both parties with disparate goals attempt to align their interest when negotiating risk sharing.

3 A Framework to Measure Economic Benefits of PPPs

Measuring the success of PPP projects is often controversial because of different criteria used by academics and practitioners. This is further complicated by the expectations of the wider community who are be affected by the projects. Long term financial sustainability has often been used to measure the success or failure of PPPs. An often neglected measure of success of PPP projects is the extent of long term community benefits against the cost to the government. Such costs include concessions given to the private sector and the price the public has to pay when using these facilities (O'Neill, 2005a). Levinson *et al* (2006) have used four criteria: public sector acceptance and society acceptance, in addition to budget and timeliness, to measure PPP success. There are some limitations to their approach. First, it focuses on the outcome and not the process. Success can be shaped by the process used in establishing the partnership and analyzing the collaborative process can provide a better understanding of the outcome (Barrett, 2002).

Secondly, the four criteria used are broad and do not include factors behind the determination of each of these criteria. The absence of a detailed investigation of each of these criteria can lead to a lopsided conclusion. Thirdly, the first two criteria focus on acceptance, while the latter two focus on project outcome. These two sets

of criteria are contextually different in the PPP literature and it may be unwise to integrate these criteria in the same analysis. Consequently, this paper modifies the framework of Levinson et al (2006) by analyzing both the process during implementation and the outcomes of PPP projects separately. It then draws conclusions on whether PPPs deliver actual economic benefits. This study first focuses on the process based on collaborative advantages. It is hypothesized that the ways in which collaborative advantages in the partnership are applied will determine the degree of collaboration in PPPs. This in turn will play a role in enhancing or diminishing success. The success of the project is then assessed by analyzing public acceptance of concessions given by the public sector, toll charges, improved lifestyles and environmental issues. A high acceptance rate is recognition of the real economic benefits which accrue to the wider community.

4 Findings

4.1 Cross City Tunnel (CCT)

4.1.1 Background

Increasing traffic congestion within Sydney prompted the Government to construct a 2.1km-long east-west tunnel that crosses the city. The Government awarded Cross City Motorways (CCM), a consortium formed by the lead private sector sponsor, Cheong Kong Infrastructure (CKI), to undertake the project. The contract was to build, own and operate the tunnel for 30 years after which it would be handed back to the Government. The project cost was estimated at \$680m but the final cost was \$900m (Pretorius, 2007). Construction commenced in January 2003 and completed three months ahead of schedule. It was opened to motorists in August 2005 and immediately received negative feedback from motorists angry about the high toll. They were also dissatisfied with the closures of road access aimed at funneling traffic into the tunnel. This resulted in a public “boycott” resulting in fewer motorists using the tunnel. The operator responded by offering a three week toll-free period plus a commitment to freeze further toll increases for twelve months. With continued non-acceptance of the toll after the toll-free period, the operator decided to halve the toll for three months and also reverse some earlier public road closures. In November 2006, CCM was in financial difficulty and needed additional equity to avoid bankruptcy. Without any support from the public sector, the project was put into receivership in December 2007 (John et al., 2007).

4.1.2 How Collaborative Advantages were Managed

The Government decided that CCT should be constructed under PPP program because of budgetary and public borrowing constraints (Parliament-of-NSW, 2006). An initial concept paper was prepared to consider environmental impacts. The Government acknowledged that the project would bring potential economic benefits to the community in terms of employment and to financial institutions in terms of greater participation in capital markets. Moreover, as CCT was one of the most complex tunnel projects ever undertaken in Sydney (O'Neill, 2005a), the technology transfer to local engineering firms promised long term benefits. Meanwhile CKI with a

vision to become an international infrastructure portfolio investment company was seeking investment opportunities overseas (Pretorius, 2007). Tolled transportation was attractive to CKI because of the finite-life concession period and relatively low regulatory and political risks in Australia. CKI regarded infrastructure projects to be medium risk with an internal rate of return between 15% and 18% (Fislage and Heymann, 2003).

The partnership fitted the major strategic objectives of both parties, and the partners had complementary assets and skills that allowed them to achieve these objectives. In addition, setting up CCM gave the project a formal status with clear decision making responsibilities. The objective of the Government was to minimize its financial exposure and deliver the project at no cost to itself. The Government also specified that the tender should include a business consideration fee, aimed at recovering costs relating to the development of the initial concept. CCM included a fee of approximately AUD110m in the bid. The contract included provision for CCM to increase the Base Toll if the Government required certain changes during the construction phase. A compensation plan to pay CCM was allowed if there were changes to the public transport system that would affect the volume of traffic using CCT.

Unfortunately, the level of open communications and mutual trust was low. Firstly, CCM projected over 90,000 vehicles per day using the tunnel by 2006 and over 100,000 by 2016 while the Government estimated 86,300 and 101,700 respectively (Pretorius, 2007). This was not openly discussed to enable a more realistic number to be used in the revenue forecast. Secondly, knowing that substantial risks would be transferred to them, CCM did not openly discuss this issue with the Government. Thirdly, the Government was aware that some of the compensation plan could not be easily administered, but did not communicate this to CCM. There were high levels of interest alignment on risk sharing. CCM took on the risks arising from any mistakes in their own planning during the tender process. Entrepreneurial risks during construction and operation phases were also borne by CCM, especially the shortfall in revenue arising from variances in traffic demand forecast. On the other hand, risks relating to mistakes during the planning phase were borne by the Government.

4.1.3 How Collaboration Enhanced the Delivery of Economic Benefits

The extent of collaborative advantages that was practiced in the partnership showed that the level of collaboration is not high (Table 1). The high business consideration fee provided to the Government to achieve its “no-cost” objective sparked public outrage because the public believed this inflated the toll set by the operator. Part of the public dissatisfaction was targeted not at the level of concession given but rather the lack of it. On the other hand, local road closures on the public streets around the tunnel resulted in traffic congestion and caused confusion. The low level of acceptance was evidence that the concession provided did not match the economic benefits promised to the community.

Thia & Ford

Table 1: Extent of Collaborative Advantages Practiced in CCT and LCT

	Criteria: Extent of Collaborative Advantages applied to partnership	Cross City Tunnel	Lane Cove Tunnel
1	Extent partnership fits major strategic objectives of both sectors.	√√√√	√√√√
2	Extent partners have complementary assets and skills that allow them to accomplish what they could	√√√√	√√√√
3	Extent partnership is given a formal status with clear responsibilities and decision making processes.	√√√√	√√√√
4	Extent financial and other resources are committed by both partners.	√	√√
5	Extent of open communication: sharing of technical data knowledge and interest alignment on risk sharing.	√√	√√√
6	Extent of mutual trust between partners.	√√	√√√
	Score ¹	17 √	20 √
	Percentage of Maximum Score	70.8%	83.3%

Footnote 1: 0 represent no collaborative advantages being practiced. √, √√, √√√, √√√√ represent a low level, average level, high level and a complete level of collaborative advantages. A 75% score is used in this paper to classify the project as a high degree of collaboration through the practice of collaborative advantages.

Table 2: Delivery of Economic Benefits based on Public Acceptance

	Criteria: Public acceptance	Cross City Tunnel	Lane Cove Tunnel
1	Acceptance of concessions given by public sector	√√	√√√
2	Acceptance of toll charges	√	√√√
3	Acceptance of improved lifestyles	√√√√	√√√√
4	Acceptance of environment issues	√√√√	√√√
	Score ²	11 √	13 √
	Percentage of Maximum Score	68.8%	81.2%

Footnote 2: 0 represent no public acceptance. √, √√, √√√ and √√√√ represent low level, average level, high level and complete level of public acceptances respectively. A total score of 75% is used in this paper to classify successful PPP projects in delivering economic benefits to the community.

The high construction cost incurred arising from the engineering complexity resulted in the high toll but the public reacted adversely to this. A survey conducted in Sydney showed that about 72% of the respondents endorsed the need to pay a toll in order to enjoy the lifestyle gains from the CCT (O'Neill, 2005b). The initial bad publicity of CCT altered the views of one-third of the respondents about the benefits of privately-operated toll roads (O'Neill, 2005b). The community did not feel that the high toll translated into the level of economic benefits expected from their use of the tunnel. On the positive side, the construction and operation of the tunnel addressed most environmental issues under the Environmental Impact Statement (EIS) which was prepared with feedback from the community. Based on these four factors, the overall level of public acceptance was below average (Table 2) because the total economic benefits to the community did not meet the expectation of the public. This shows that an average level of collaboration from not fully practicing collaborative advantages was responsible for the average level of public acceptance.

4.2 Lane Cove Tunnel (LCT)

4.2.1 Background

To allow for quicker traveling time between the north west of Sydney to the City, the Government engaged Connector Motorways (CM) in December 2003 to design, construct, maintain and operate the LCT. As a special purpose vehicle, CM was given the concession to operate for 33 years, after which the tunnel would be returned to the Government. The lead private sector sponsors were Leighton Holdings (LH) and, again CKI (NSW-Government, 2006). LCT is a 3.6km tunnel and

Thia & Ford

the construction cost was estimated at \$1.1bn. Previously, motorists had to drive through gridlocked suburbs for a few kilometers. LCT cut traveling time by 17 minutes. The tunnel also provided a direct link to Sydney's expanding orbital motorway network and public transport (NSW-Government, 2006). CM designed and constructed the tunnel and its associated works to create a "sense of place" for local community by providing architecture that enhanced the journey and its vicinity. It also attempted to address the environmental problems (NSW-Government, 2006). Local community, commercial and industrial groups formed the Lane Cove Tunnel Action Group (LCTAG) to voice concern over the way construction was to be carried out, the community development around the tunnel, and the air quality coming out of the tunnel through the ventilation stacks. Construction commenced in April 2004 and was completed in March 2007, two months ahead of schedule. Sydney commuters initially embraced the new LCT during its month long toll-free use, despite minor operating problems. The project was reported in the media as a successful PPP. While the number of motorists using the tunnel was initially below the original forecast of 100,000, it was not a major financial concern then (Rochfort, 2008). However, one year after its operation, the traffic volume was only about 60,000 motorists – a level which seriously impacted on the financial performance of CM (Besser, 2007).

4.2.2 How Collaborative Advantages were Managed

The Government's objective in this project was to improve traffic flow. To undertake the project itself, the Government would have to acquire additional financial burden and project risks that it could not manage. Lacking experience in undertaking infrastructure projects, the Government compensated with their skills in developing initial concepts and finalizing development proposal. The private sector sponsors' objective was to expand its development portfolio. The partnership effectively fitted the major strategic objectives of both sectors and the formation of CM gave the project its formal status. The Government did not pledge financial contribution but provided resources in dealing with the community. Pressured by LCTAG, the bore-driven tunnels were being constructed as against the original cut and cover method. Though at a higher cost, the former method would not disturb the road surface and reduce inconvenience. However, the in-tunnel filtration was not constructed because the Government believed the ventilation stacks were sufficient to improve the air quality (Lane-Cove-Community-Group, 2006).

While the Government was bogged down in dealing with LCTAG, the private sector concentrated primarily on the construction. Both sectors recognized their respective roles and focused on completing the project on schedule. But there could have been greater collaboration to integrate their effort in dealing with LCTAG to gain greater public acceptance. The Government did not undertake to conduct a study on the projected traffic volume. The private sector uses its own traffic forecast to set the toll charges. Risk sharing and transfer were clearly set out. There was sufficient interest alignment in negotiation of risk sharing. The toll cost was explicit and discussed. However, there was no open discussion on compensation when changing conditions disrupted the long-term traffic volume. Plans to funnel traffic into the tunnel were made explicit, even though both parties knew that there could be potential public dissatisfaction with the measure. Anticipating this, the Government decided to postpone this plan and amended the Project Deed to include compensation of \$25m to CM (Moore, 2008). The agreement not to disclose to the public the

correspondences on the \$25m compensation package was not openly communicated between both parties.

4.2.3 How Collaboration Enhanced the Delivery of Economic Benefits

Based on the practice of collaborative advantages, the model shows that there was a high level of collaboration (Table 1). This high level of collaboration aided in enhancing a high level of public acceptance because greater economic benefits to the community were felt by the public. To avert public outcry, CM decided to offer a one month toll-free concession to all motorists using the tunnel. Greater management of traffic flow around the entrances to the tunnel gave the public the perception that the concessions granted by the government were socially acceptable. Some critics observed that if the government had partially funded the project, the toll charges would have been lower. Nevertheless, there was a generally higher acceptance of the toll charges, reflected in the greater number of motorists using the tunnel. Generally, lifestyles improved as a result of a reduction in traveling time. It was accepted that the tunnel was essential to improve traffic flow. Today, the project continues to enjoy an overall high level of public acceptance. However, there remain lingering concerns that not all environmental issues have been adequately addressed. Despite this reservation, the high level of public acceptance indicates that the public believed economic benefits had been conferred upon them (Table 2).

5 Discussion and Conclusion

There are different criteria for judging whether PPPs are successful which range from financial to socio-economic considerations. CCT and, to a smaller extent, LCT faced financial problems one year after they were opened. Arguably, classifying PPPs as successful from a financial perspective confines us to a narrow understanding of infrastructure development. Even when projects are found to be financially unviable, there still remain public concerns over a lack of proper comparison on the cost-effectiveness of private sector involvement versus the traditional public sector funding approach. Greater public acceptance of PPP projects therefore provides an alternative measure of success. This is because of the potential economic benefits the projects can confer on the public. PPPs are aimed at increasing the delivery of services in an era of public financial rectitude by using the resources of the private sector (Levinson et al., 2006). The intention is to improve efficiency by providing more services for less government outlays. Because these projects affect the wider community, they are often controversial, subject to public debate and external scrutiny. There are concerns raised about the balance of risks and overall benefits. The private sector will price any risk that is being transferred to it and seek public concessions to improve profits. When the desired concessions are not forthcoming, the project may result in higher developmental costs, which will be passed on to the users.

Working on collaborative advantages in PPPs can steer the partners towards higher degrees of collaboration which in turn can enhance economic benefits to the

community. Successful PPP projects are meant to deliver improved service quality to the community. Using the approach set out in this paper, it was observed that LCT had a higher degree of collaboration than that of CCT (Table 1). LCT also delivered higher economic benefits to the community (Table 2). Therefore the study shows that there is a positive correlation between higher levels of collaboration and higher levels of economic benefits to the community when PPPs are used in the development of infrastructure projects. This paper has identified a number of underlying themes in PPPs when providing public goods and services. The role of collaboration in PPPs is critical in enhancing success. Understanding the need to capture and build collaborative advantages in PPPs suggests that the public sector needs to retain greater interest in planning and management of PPP projects. This can lead to greater probability of success in delivering economic benefits to the community.

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Thia & Ford

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Using Content Analysis to Inquire into the Influence of Public Opinion on the Success of Public Private Partnerships

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Abstract: There are major difficulties involved in collecting empirical data to quantitatively examine and explain how various factors influence the success and failures of public private partnerships (PPPs). This problem has led researchers to increasingly focus on qualitative based studies and research in this field. Unfortunately, constraints owing to legal implications arising from parties seeking to address liquidated damages in failed PPPs do not allow interviewees to freely express themselves. This impinges on the ability to provide better insights into the decision making behind PPPs and the lessons to be learned from failed PPPs. This paper intends to use content analysis to understand the influence of public opinion on the success of PPPs. The study enriches the current body of knowledge on why some PPPs are considered successful while others are seen as failures. It concludes by suggesting that content analysis is a suitable research method for testing propositions concerning PPPs. It also throws light on other research methods to further the understanding on the merits of using PPPs as a means of developing infrastructure projects.

Keywords: Public Private Partnerships, Collaboration, Content Analysis

1 Introduction

PPPs involves both the public and private sectors working together to develop large scale infrastructure projects. Their joint involvement necessitates the creation of collaborative arrangements to deliver essential infrastructure in order to meet expectation on public interest. In addition, it must be viewed to increase the quality of life and be a project that is seen to be value for money for the community.

From 2001 to 2006, private finance has been a significant component in the delivery of infrastructure renewal and development. In NSW, two of the latest PPP projects in Sydney were subject of intense discussion in the media and professional journals.

Both projects were under construction over similar periods of time and were completed within one year of each other, but had different public acceptance outcomes. Lane Cove Tunnel (LCT) experienced wider public acceptance and was considered by the media as a success story which delivered economic benefits to the community. The Cross City Tunnel (CCT), in contrast, faced adverse publicity and hostile media commentary when it was officially opened.

Financially, the private partners for CCT went into receivership not long after CCT was opened. In contrast, LCT had greater patronage but the revenue during the first three years of operation did not meet the budget forecasted. Eventually in 2010, the private partners also placed LCT in receivership. The experiences of these two projects have led to a temporary halt in the construction of PPP infrastructure projects in NSW.

Thia and Ford (2009) developed a framework to test the extent of correlation between partner collaboration and public acceptance of PPPs in the CCT and LCT projects. The study concludes that there is a positive correlation between the two variables. Learning from the failure of CCT, there was greater collaboration between the public and private sectors during the development phase of the LCT. The partners were able to align the needs of the wider community with the goals of project. As a result, LCT received greater public acceptance when it began operation.

Thia and Ford (2009) noted a major limitation in their study. The reluctance of individuals and public sector employees to provide information on public issues during the development and operational stages hampered the understanding of how collaboration could change the outcome of such projects. Information was kept confidential because it could be the basis of the litigation by the private sector against the public sector. This limitation hampers the understanding that LCT which was widely accepted by the community and financially sound in the initial years, would eventually be rejected by the community through lower usage resulting in lower revenue (Rochfort, 2008).

As a result of this shortcoming, this paper intends to use content analysis as a research method to further the study of PPPs projects. The aim is to better enhance our understanding of the success and failure of PPPs. The study will use media literature, professional journal publications and evidence from records of public submissions to government inquiries to gain insights into the influence of public opinion on the failure of CCT and LCT.

2 Literature Review

2.1 Public Private Partnerships Projects

Extant research in PPPs focuses on risk allocation, risk analysis and risk evaluation (Bing, Akintoye, Edwards, & Hardcastle, 2005; Grimsey & Lewis, 2002), decision making (Zitron, 2006) and value for money (Grimsey & Lewis, 2005). More recent studies highlight the need to

understand the stakeholders involved in PPPs (El-Gohary, Osman, & El-Diraby, 2006). Within Australia, there is growing academic and professional interest in the success and failure of past and future PPPs.

Grimsey and Lewis (2005) provide insights into academic and practitioner views on whether PPPs provide value for money. PPP projects are undertaken both by the State and Federal governments, particularly in Victoria and New South Wales. Prior to commencing the projects a full cost-benefit analysis is undertaken. In addition, the projects are assessed for their value for money against a benchmark called public sector comparator interest test.

Regan and Smith (2009) conducted informal and confidential interviews with senior executives from the financial services community and public sector analysing the effects of prevailing uncertainty in privately financed infrastructures under PPPs. The study shows the need for realignment in risk allocation based on the recent problems of PPPs. Realigning some of these risks can impact on the value of money outcomes for PPP models. However, this does not marginalise the value of PPPs in the prevailing economic environment. Instead, it is argued that there are opportunities for both government and industry to refine existing models.

Several large scale infrastructure projects in Australia, which were developed using different PPP models, were the basis of the research. Some of these projects, such as the Cross City Tunnel (CCT) were considered failures, with the private partner selling their stakes within a year of operations. Others such as the Lane Cove Tunnel (LCT) were initially considered a success with wider public acceptance.

Both CCT and LCT have been the subject of several studies. Johnston (2010) uses a qualitative case study to examine the failure of CCT. By illustrating critical issues, she argues that some fundamental pitfalls need to be addressed if future PPPs were to be successful.

Dahdal (2010) inquired into the post construction phase of PPPs providing insights into issues faced by the public sector when PPPs projects fail. When this happens, it is not without financial, political and economic costs to the stakeholders, the government and the public. The research conducted a case study of two prominent PPPs that failed in New South Wales; CCT in 2006 and LCT in 2009.

Thia and Guy (2009) conducted an empirical study on two PPPs projects to inquire the reasons why one of the projects was considered a success while the other a failure. The study investigated the extent these projects deliver economic benefits to the community and found that one of the projects, LCT, had a greater public acceptance because the community believed it delivered greater economic benefits. The revenue from the use of LCT ensured that the project was financial viable. In less than three years of operation however, the usage of LCT declined and LCT became financially insolvent (John, Carson, & Baker, 2007).

Most studies and researches on whether PPPs are successful mainly use timeliness of completion, keeping project cost within budget or its ability to generate profit during operations as their measure (Duffield & Raisbeck, 2007;

Kwak, Chih, & Ibbs, 2009). In contrast, this study intends to investigate how public opinion can influence the success of PPPs.

2.2 The Independent Variables and underlying dimensions

Using content analysis as a research method, this study tests the influence of public opinion on the success of PPPs. Three key independent variables are found to be relevant to this study.

The first variable is public opinion on how these projects impact on the quality of life of the community. The second variable is the public opinion on whether the facilities provide value for money to the community. The third variable is the public opinion on whether both the public and private sectors collaborate to ensure that the public interest is not compromised at the expense of private sector profit making.

To understand the public opinion on each of these independent variables, the study will investigate the underlying dimensions of these independent variables. Exhibit 1 shows the interaction of these variables and the underlying dimensions.

Exhibit 1: The independent variables and its underlying dimensions

1. Quality of life for the community	2 .Value for Money to the community	3. Collaboration to achieve community interest
1.1 Public opinion that the completed project decreased traffic congestion.	2.1 Public opinion that toll charges are comparable to other motorway	3.1 Public opinion that negotiation of joint purpose by both sectors to achieve public interest
1.2 Public opinion that the completed projects enhanced quality of journey	2.2 Public opinion that toll charges are acceptable trade-off for decrease in travelling time	3.2 Public opinion that collaborative effort by both sectors to achieve public interest.
1.3 Public opinion that the completed projects did not adversely impact the environment	2.3 Public opinion that annual increase in toll charges are acceptable	3.3 Public opinion that concessions are adequately provided to the private sector to achieve public interest.

Private sector benefits are necessary to motivate profit making private firms to participate in PPPs. But these private sector benefits may not be consistent with the ultimate social goals for which PPPs are set up (Brinkerhoff & Brinkerhoff, 2011). Neglecting improving the quality of life for the community would demand answers as to the reasons private sector is involved in the provision of public

services (Hall, 2009; Kwak, et al., 2009; NCPPP, 2005). Public opinion on how PPPs projects enhance the quality of life rightly justifies this as a measure of success. In this study, public opinion on the quality of life is framed by three underlying dimensions: reduction in traffic congestion, enhancing the quality of journey, adversely impacting the environment (Milliman & Grosskopf, 2004). While the partners of PPPs are focused on achieving their respective objectives, aspects of economic benefits and externalities tend to be overlooked. (English, 2007; NCPPP, 2005) If one of the main objectives for the development of PPPs projects is for the betterment of the community, their opinion on whether quality of life has improved will be a useful measure of PPPs success.

The discussion on whether PPPs add or are value for money (Akitoby, Hemming, & Schwartz, 2007; English, 2005; Grimsey & Lewis, 2005; Regan, 2005) has been investigated from the perspective of the public sector in term of public spending. No research had been conducted to investigate the opinion of the community as to whether the completed PPPs projects generated value for money for them. Questions such as toll charges for newly completed PPPs, trade-off for decrease in travelling time, annual increase in toll charges are factors the community will consider before using the completed PPPs projects. These issues form the underlying dimensions on the community views as to whether the PPP projects are value for money. Investigating into these underlying dimensions provide insights on community usage of the completed PPPs projects and preventing these completed projects from being relegated to a “white elephant” status. Distinctly, PPPs projects that are not used by the community to whom they are constructed for cannot be considered as successful projects.

The third independent variable inquires into the collaboration between the public and private sectors. The collaborative effort in PPPs will be diminished if the community views that both the public and private sectors do not integrate their objectives to meet the larger interest of the community. PPPs can be construed as both a political symbol and a policy tool for the public sector, not necessarily with the community interest at heart (Friend, 2006; Linder, 1999; Marty, Trosa, & Voisin, 2005). Public opinion that the collaboration is committed to achieve the community interest (Marty, et al., 2005) is an important measure of PPPs success. To address whether collaboration between the public and private sectors is to achieve community interest will investigate three underlying dimensions: the negotiation of joint purpose, the collaborative effort and the concessions provided by the public sector to the private sector. Public and private sectors can collaborate to create mutually beneficial agreements and concessions (Milliman & Grosskopf, 2004). Successful collaboration to achieve the community interest will therefore indicate a successful PPPs.

3 Methodology

Content analysis is used widely in the study and research in the field of social sciences to analyse recorded transcripts. A range of different terms is used to define variations in the approach to this methodology. Some of these include statement analysis (Folger, Hewes, & Poole, 1984; Patton,

2002), meaning analysis (Morgan, 1993)), quantitative content analysis (Coffrey & Atkinson, 1996), and qualitative content analysis (Mayring, 2000). However, Holsti (1969) offers a wider definition of content analysis on which most of the research using content analysis is based. Holsti (1969) considers content analysis to be any technique for making inferences by objectively and systematically identifying specified characteristics of messages.

Most researchers using content analysis as a research method base their analysis on recorded transcripts of interviews or communication to quantitatively or qualitatively analyse and categorise information. Using content analysis as the methodology, however, entails qualitative data reduction and sense-making effort by analysing a volume of qualitative material and identifying core consistencies and meanings (Patton, 2002).

Stemler (2001) views this methodology as a “systematic replicable technique for compressing words of text into fewer content categories based on explicit rules for coding” It enables researchers to include textual information and systematically identify its properties. This can include identifying the frequencies of most used keywords. Therefore, content analysis requires a study of information to recognise themes and patterns in the communication (Patton, 2002). Most of this information appears randomly. The ability to recognise the patterns and searching for recurring words, such as the key word in context (KWIC) or themes from this information provide the basis for this research methodology.

According to Patton (2002), the process in content analysis may be either inductive or deductive. Inductive analysis entails discovering patterns and themes from texts in order that it can be categorised. In contrast, information is analysed according to an existing framework using deductive analysis.

After patterns and themes have been identified and categorised through inductive analysis, a confirmatory stage in content analysis can be deductive to affirm the authenticity and relevance of the inductive analysis. Content analysis is therefore most appropriate as a technique for formulating conclusions by objectively and systematically identifying and analysing the phrasing and meaning of the transcripts (Holsti, 1969). The conclusion can also be formulated by identifying the patterns and trends that can be deduced from various transcripts.

When the research objective is aimed at presenting subjective experiences, content analysis judgments need not be based on value statements. They can, however be based on knowledge of everyday experiences. Under these circumstances, such content analyses are not evaluations. In contrast, when content analysis judgements are based on values, such studies are evaluations (Fresbie, 1986).

One of the most important tasks in this methodology is to formulate core questions in the analysis by examining “who says what, to whom, why, and to what extent and with what effect” (Lasswell & Leites, 1968). While several methods to content analysis have been proposed, Holsti (1969) provides a framework for qualitative analysis by classifying the different techniques into three categories. Firstly, we can formulate conclusions about the antecedents of a

communication. Secondly, we can describe and formulate conclusions about the characteristics of a communication. Thirdly, we can formulate conclusions about the effects of a communication.

Through categorising content analysis into either inductive or deductive methods, qualitative analysis can help to discover patterns and themes in the communication. Findings emerging out of the analysis provide a basis to draw inferences and formulate conclusions.

Texts and documents, as a form of human communication, are the most common subjects used in content analysis. These include all forms of publications in the media, including newspapers articles and websites, government records and professional journals.

In addition, information including content of disclosures, made by organisations in their annual reports is an area of interest to many scholars using content analysis in their researches (Guthrie, Petty, & Yongvanich, 2004)

4 Research Method Issues in this Study

4.1 Key requirements in the content analysis

Content analysis as a method of gathering information requires correct codifying of qualitative and quantitative information into pre-defined categories in order to derive patterns in the analysis and reporting of information. Correct codification allows published information to be analysed systematically, objectively and reliably (Krippendorff, 1980). The use of content analysis in this study provides a method of codifying the text of writing into various groups or categories based on selected criteria. It therefore assumes that frequency indicates the importance of subject matter (Krippendorff, 1980).

In order that content analysis is relevant to this study, four key technical requirements should be established. First, the categories of classification ought to be clearly defined. Second, information must be objectively determined to belong or not to belong to a particular category. Third, the information must be quantifiable. Fourth, categorising information must be consistent through the use of a reliable coder (Guthrie, et al., 2004).

4.2 Units of analysis

A unit of analysis has to be established in content analysis. By placing a specific segment of content into a given category creates a recording unit (Holsti, 1969). Generally, the specific segment of content can be words, sentences or paragraphs (Gray, Kouchy, & Lavers, 1995). Word counts allow the measurement of frequencies but it can be subjective as it does not tell us the significance or relevance associated with the word each time it is being used. Gray, et al. (1995) argue that sentences are preferred in written communication if the task is to categorise inferred meaning. Use of sentences as a basis for coding is likely to provide complete, reliable and meaningful measurement for analysis (Milne & Adler, 1999).

In contrast, the paragraph as a unit of analysis requires a greater accuracy in interpreting the inferred meanings and deciding on the category. It is possible for the study to draw inferences from narrative statements since we establish meaning with paragraphs. However, the codifying process

depends on clear description of all the narrative statements within each paragraph.

This study uses sentences as the preferred unit of analysis as it allows codifying the inferred meaning of our independent variables as objectively and reliably as possible. In addition, repeated sentences with the same inferred meanings from one source of published information would increase the significance of the independent variables.

4.3 Sources of data

Data from three key sources are used in this study. Published literature from the media is an important source of information as the reporting is investigative in nature. While this source of published information can be biased towards a particular group of stakeholders, this study suggests that if a wide selection is used, the bias will be evenly spread among the respective stakeholders. Subjectivity of information is an area of concern in some of the published literature.

Professional journals are the second source of published literature. These journals provide wider coverage to include views from every stakeholder. It does not necessarily mean that the views of all stakeholders are equally recorded. The recordings of the views of one group of stakeholders can be more frequent than another group. A higher level of objectivity is expected from this source of information.

The third source of information is based on reports from quasi government agencies and independent government commissions. These agencies and commissions provide reports based on public evidence issues relating to the concerns of all stakeholders. A high degree of objectivity can be expected from these reports.

5. Data Collection and Evaluation

5.1 Framework for this study

The conceptual framework used in this study must allow the unit of analysis to be codified. The study assessed the extent of collaborative advantages applied to the two projects based on the qualitative analysis of information provided by both public media and professional journals. The degree of collaboration between the public and private sectors was then used to measure success.

This study modifies this measurement by codifying the inferred meanings found in investigative published literature and reports from government agencies. This framework is presented in Exhibit 1 and shows the three main categories and nine elements used as the dependent and independent variables.

5.2 Size and scope of the source of information

The effect of size and the scope of the source of information is an important consideration in developing the coding instrument to be used for content analysis. Nine sources of information over a period of seven years from 2003 to 2010 were used in this study. Published information from the three media based sources, three professional journals and three committee reports by the public sector were used in this study. Published information from media based literature constituted the major information sources.

5.3 Patterns and Inferred Meanings of the Analysis

Inferred meanings from each of these sources are codified. Each identifier is then categorised as to whether it is a positive or negative influence on public opinion. The frequency or the number of times of positive and negative influences are counted and tabulated.

The study finds that there is overwhelming positive influence to support the community belief that the projects enhance the quality of life. The majority of these inferences were from published information in media based literature and professional journals. Inferred meanings were derived from the public reactions.

In contrast, there is more balanced opinion on the level of toll fees and the trade-off between costs and benefits. More codifying using media based literature shows greater frequency of negative public opinion. Codifying using professional journals displays a more even distribution of positive and negative public opinion. Codifying inferred meanings from reports of government committees and commissions support a more positive public opinion when the policies are explained.

Higher frequency was observed when codifying inferred meanings on whether the public interest was upheld when developing these projects. On the frequencies of public opinion on the collaboration arrangement to uphold public interest, there were quite an equal number of positive and negative impacts. In contrast, there were higher incidences of negative perception that public interest was not considered during the negotiation of joint purpose by both sectors. Similarly, the public also did not perceive that sufficient concessions had been provided by the public sector to ensure that the public interest was being upheld by the private sector. This was shown by higher number of negative statements.

5.4 Limitations of content analysis in this study

There are several limitations in using content analysis (Gray, et al., 1995; Milne & Adler, 1999; Stemler, 2001). One of the main limitations is the subjectivity involved in the interpretation of the inferred meanings and the subsequent coding (Bos & Tarnai, 1999; Krippendorff, 1980; Stemler, 2001). If key words are used as the coder, there are less problem in the codifying. However, when sentences or paragraphs are used as the coder, codifying the inferred meanings can be subjective. Milne and Adler (1999) stress that in order for valid references to be drawn from content analysis, reliability of both the data and the instrument used in the coding is critical.

6. Summary and Conclusions

Content analysis is one of the more widely used methods applied in social science research than in the study of finance. However, PPP is an area of finance where qualitative content analysis can be used to investigate issues where quantitative analysis fails to provide complete understanding. Applying this research method in PPPs and finance needs further refinement and development if research advances are to be made. Consistency in the application and framework, and understanding the limitations of this research method will enable more meaningful and reliable research in this field.

The limitation of using content analysis in research does not diminish the significance of this study. The quantitative analysis of the issues involved in PPPs has so far not addressed the reasons many of these projects were not successful. The use of qualitative analysis expands the scope of understanding PPPs beyond the more common concern of risk in PPPs and associated finance considerations. The use of qualitative analysis to understand public opinion can provide a basis on how risk can be better managed and areas where the public sector could do more to avert further failures in PPPs.

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The Importance of Altruistic Empathy and Collaborative Negotiation in Public-Private Partnerships

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The motivation in public-private partnerships is to harness the strengths of public and private partners to deliver essential public services. The ability to transfer risk to the private sector in PPP has been one of the reasons why the public sector relies on the private sector to participate in the development of infrastructure projects. In most instances, the public sector also believes that the private sector can fund the project at a lower cost. The private sector on the other hand, believes that they could achieve a strong financial return based on the concessions that the public sector will provide. If the sectors feel altruistic empathy to each other, they will realise that their original goals are not achievable. However, having understood the other sector's needs and constraints, collaborative negotiation will yield a set of common goals. There are no commonly agreed frameworks on collaborative negotiation before PPPs are formally established. The objective of this paper is to use deductive analysis to develop a conceptual framework for inquiring into the motivations of the public and private sectors during negotiation. This framework will provide insights on the extent of altruistic empathy of both sectors at the onset and how this altruistic empathy frame collaborative negotiation. This paper shows that collaborative negotiation will influence the success of partnerships and altruistic empathy is an important preamble to collaborative negotiation. This paper provides a frame of reference for future study using other research methods for further validation.

Keywords: Altruistic Empathy, Collaborative Negotiation, Public Private Partnerships

Introduction

Public-private partnerships (PPPs) were hailed as a panacea to the problems faced by the public sector in the delivery of community services and infrastructures (Miraftab, 2004). Such a collaborative partnership is to promote the coordination of the public and private sectors so that the community's needs are addressed in a way that will appear seamless (Huxham & Vangen, 2000). Within the past two decades, the number of projects, especially large scale infrastructure projects, has significantly increased in both the developed and developing countries using PPPs. It is therefore understandable that Hodge and Greve (2008) considered this form of collaborative arrangement to be an "iconic status within the public administration around the world". PPPs had been adopted as a key strategy for modernisation and paved new grounds for the public sector to establish different types of relationships with private sector (Carroll & Steane, 2000, 2002). These partnerships necessitate the public sector to address regulatory and governance issues to ensure successful outcomes (Ryan & Lewis, 2007).

However, when several unsuccessful PPPs emerged, the iconic image of this innovative collaboration became questionable. Doubts were raised as to whether PPPs are mere rhetoric rather than reality (Wettenhall, 2003). Fundamentally, PPPs are realities as long as the potential for conflict arising from differing goals of the partners can be overcome to achieve project success (Regan, 2005). The inherent conflict between the welfare-driven interests of the public sector and the profit-driven interests of the private sector points to the need to regulate the partnerships to keep the playing field level (Brown & Ryan, 2003; Miraftab, 2004).

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THE IMPORTANCE OF ALTRUISTIC EMPATHY AND COLLABORATIVE NEGOTIATION

The majority of the issues relating to this conflict can be overcome if the implementation of PPP ensures successful development of the legal framework, agreements and contracts that define the relationship clearly (Pongsiri, 2002). These are the strong motivation factors for both sectors to work together and create mutually beneficial agreements (Milliman & Grosskopf, 2004). However, this form of regulation will require unequivocal understanding regarding the decision making process, sharing of the project risks, financial funding process and sharing of accountability for unexpected outcomes (Gates & Steane, 2009). This underlines the importance of altruistic empathy before the public and private sectors formally established PPPs. The more the partners could feel altruistic empathy with each other goals, the more they would be able to engage in collaborative negotiation (Gates & Steane, 2009).

To investigate that collaborative negotiation is a key to success in PPPs, this study uses theories and principles in PPPs and collaboration literature to develop a conceptual framework to explain the phenomenon of three infrastructure projects in Australia: the first is well received by the community and financially successful, the second is well received but was financially unsuccessful after three years and the third is not well received and was financially unsuccessful after 15 months. By using deductive analysis, this study provides insights on whether both sectors show altruistic empathy towards each other and, as a result, whether collaborative negotiation exists.

This study shows that collaborative negotiation is important before PPPs are formally established. It also shows that altruistic empathy among the partners frame collaborative negotiation. However, this study acknowledges that using deductive analysis to explain the phenomenon may not conclusively affirm that collaborative negotiation is a key to success in PPPs. Therefore this study provides a frame of reference for future research using other methods for further validation.

Literature Review

Public Private Partnerships

PPPs have been described as cooperative business ventures between the public and private sectors built on long term contracts in which public services are delivered on the basis of clearly defined public needs (CCPPP, 1999; Gerrard, 2001). Their motivations are viewed as a blend of self-interest and altruism (Pasquero, 1991; Westley & Vredenburg, 1997)

Based on the diversity in the goals of the public and private sectors, PPPs are faced with significant challenges to achieve a shared responsibility and collective competence (Regan, Smith, & Love, 2009; Ruuska & Teigland, 2009). This collective competence is described as the partnership's ability to work together towards a common goal and results in the creation of a collective outcome (Sandberg, 2000). Projects that are able to achieve collective competence are likely to be successful (Jones & Noble, 2008).

The public sector has the goal of creating jobs and improving public services. A major source of motivation to form PPPs is pressures for a more efficient government based on the increasingly popular concept of "new public management" (Carroll & Steane, 2002; Osborne & Gaebler, 1992). This arises due to the government intending to shift risk in response to fiscal stringency and restructuring of the public sector (Selsky & Parker, 2005), leading to reforming how government functions.

In developing large scale infrastructures using PPPs, five main goals of public sector have been identified (Reijniers, 1994). The foremost goal of the public sector is the realisation of social goal. The other goals include the minimisation of risks, ensuring democratic decision-making processes, managing political and community opinion and finally legislation and regulations. However, the public sector must recognise that PPPs are not mere political symbol and policy tools (Linder, 1999). Instead PPPs are intended to engage the

THE IMPORTANCE OF ALTRUISTIC EMPATHY AND COLLABORATIVE NEGOTIATION

expertise from the private sector without which the projects would not be able to be developed. It is therefore not possible for the public sector to transfer all the risk and reduce the project cost simultaneously.

The private sector is oriented towards realising corporate goal of maximising the value of their firms. This includes achieving as high a financial return on the invested fund based on the level of business risk and managing competitive market environment (Vaillancourt Rosenau, 1999).

Some critics (Bennett, James, & Grohmann, 2000; Ghore, 2001) maintained that the public sector is resistant to the profit motive prevalent in the private sector. The private sector on the other hand tends to dismiss the more administrative decision-making process used by the public sector that bogs down the negotiation. The differences in their fundamental views may lead to conflict as goals are turned into action plans, and therefore impacting project outcomes (Steane & Dufour, 2010). These differences can be moderated by each partner giving credit to the other's experience and identity (Millar, Choi, & Chen, 2004; Selsky & Parker, 2005).

Reijniers (1994) suggested that PPPs require special attention to manage the key factors contributing to the success of partnerships. This includes goal setting and service delivery (Linder, 1999), types of capabilities each partner can provide (Brinkerhoff & Brinkerhoff, 2011; Mirabella & Wish, 2001), roles of interpersonal relationships (Shaw, 2003), and governance (Selsky & Parker, 2005).

Collaborative Negotiation between sectors with differing goals

Selsky, et al. (2005) contended that when different sectors focus on the same issue, they are likely to think about it differently, to be motivated by different goals, and to use different approaches. It is also argued that diverse organisations have underlying differences in values and attitude where they not only notice different information but perceive the same information differently (Mandell, 1999; Maznevski, 1994). As such these organisations tend to lack a shared social reality and fail to have a common perspective (Ruuska & Teigland, 2009)

One of the key concepts in collaborative advantages research (Huxham & Vangen, 2004) is synergy. Differences in common culture development may be overcome by focusing on the metagoals and realigning partners' expectations (Waddock & Post, 1991; Westley & Vredenburg, 1997). It is common that collaborative inertia (Vangen & Huxham, 2003) between partners impedes progress because the partnership appears meaningless if lesser goals are to be attained. Successful partnerships require strong leadership (Vangen & Huxham, 2003) and mediation (Miraftab, 2004) to overcome collaborative inertia. In PPPs, this requires the understanding that collaborative negotiation can lead either sectors to have something of value to contribute to the partnership and the possibility of creating synergy arising from a strong belief in individual excellence.

Collaborative negotiation must encourage partnerships to address the equity dimension (Vangen & Huxham, 2003). Equity addresses for whom the partnerships are expected to deliver more effective and efficient public services. The goal of collaborative negotiation is to improve the effectiveness in achieving specific business objectives. Mutually agreed objectives, trust, clearly defined mechanisms for problem resolution, and continuous improvement related to benchmarking process are keys to successful partnering (Naoum, 2003; Noble & Jones, 2006). On the other hand, many partnerships fail or are quickly abandoned due to changing commercial pressures and the actions of unscrupulous partners (Alderman & Ivory, 2007).

Research Methodology

Of the several qualitative research methods, descriptive research and explorative research are two common approaches. The amount of pre-existing knowledge of each research topic is the main determinant for the choice of each approach. When there are gaps in the existing knowledge about a specific problem an explorative approach is recommended. The aim of an explorative research is to gather as much information as possible and elucidate the problem from different points of views (Gill & Johnson, 2002). Descriptive research

THE IMPORTANCE OF ALTRUISTIC EMPATHY AND COLLABORATIVE NEGOTIATION

is more suitable when the pre-existing knowledge of the problem is more thorough. When using a descriptive approach the researcher tries to explain a few aspects of the problem in terms of correlated relationships, condition, and cause and effect relationships (Gill & Johnson, 2002).

Research involves the use of theory which may or may not be made explicit in the design of the research (Saunders, Lewis, & Thornhill, 2009), but it will usually be made explicit in findings. The extent to which the researcher is clear about the theory at the beginning of the research guides the design of the research. Traditionally, theories have been developed by combining observations from previous literature, common sense, and experience.

The tie between theoretical literature and pre-existing knowledge has often been tenuous (Perrow, 1986). Because the debate whether 'the theory or the data comes first', there exists a basic dichotomy on research design (Glaser & Strauss, 1967). It is possible to construct research methods based on whether theory comes first (deduction) or data comes first (induction). When theories are related to empirical data, one approach is to have the starting point in pre-made, accepted theories and principles in order to see if they can explain the phenomenon of interest. This is a deductive analysis. Induction is the reverse of deduction as it involves moving from the empirical world to the construction of explanations and theories about what has been observed (Gill & Johnson, 2002). As Glaser and Strauss (1967) argued, it is the intimate connection with empirical reality that permits the development of a testable, relevant, and valid theory.

This study uses an explorative research by deduction as it is intended to develop an understanding of some phenomenon or problem of interest (Patton, 2002). Consequently, the outcome measurement aims at confirming and generalising exploratory findings based on established literature and theory where data are analysed according to an existing framework (Patton, 2002). This study elucidates that motivations of the public and private sectors will depend on the extent of altruistic empathy which frame collaborative negotiation. By using deduction reasoning, it will show that successful PPPs are those that have mutually agreed contracts based on altruistic empathy and collaborative negotiation.

Conceptual Framework

Based on the collaboration theory, collaborative negotiation in PPPs should develop perspectives on purposes, public-centric and good governance. Brinkerhoff et al. (2011) list four reasons as the rationales to which PPPs are formed. Firstly, it enhances efficiency and effectiveness through comparative advantages. Secondly, it provides integrated resources and solutions required by scope and nature of the problems. Thirdly, it moves from a no-win situation based on initial goals to a compromised and potential win-win situation. Finally, it develops an open decision making processes to promote broader and equitable representation to ensure sustainability

A fifth reason can be added to this rationale in terms of power relations in the partnerships. Miraftab (2004) contended that a broader issue on equity dimension has been lacking in the literature of PPPs. Therefore, it is necessary to consider reducing political gamesmanship and power relationship to promote equity by sharing responsibility and accountability.

With these rationales in mind, the conceptual framework for this study will include how the partners negotiate jointly determined goals, collaborative and consensus-based decision making, non-hierarchical and horizontal structures and processes, trust-based and informal as well as formalised relationships, synergistic interactions among partners and shared accountability for outcomes and results.

Applying these theories, this study identifies six key independent variables that frame collaborative negotiation in PPPs; three of which reflect each sector degree of altruistic empathy. This study will first investigate public sector altruistic empathy to the private sector ability to make an acceptable profit from

THE IMPORTANCE OF ALTRUISTIC EMPATHY AND COLLABORATIVE NEGOTIATION

operating the facilities, the private sector not taking all the project risks and responsibility of the outcomes. This study will then investigate the private sector altruistic empathy to the public sector duty of delivering social goods and economic benefits to the community, the public sector being subject to scrutiny for the concessions given and held accountable to environmental issues and spending of taxpayers' money.

Empirical Findings and Analysis

Explorative findings on three PPP infrastructure projects are undertaken for this study: Westlink Motorway, Lane Cove Tunnel and Cross City Tunnel.

Westlink Motorway (M7)

M7 is a 40km motorway linking three main motorways (M2, M4, M5) in the west of Sydney. Construction started in July 2003 and the road was opened to traffic in December 2005, eight months ahead of schedule. Seventeen interchanges along the motorway provide access to the residential communities and industrial areas. Motorists travelling on M7 can avoid up to 48 sets of traffic lights on the trip and it is a fully electronic toll road. As early as 1968, the government had established open space and service corridors that included the construction of M7 (RTA, 2003). Actual planning started in 1993 and in 2001, the government made a commitment to progressively contribute \$356 million to the project, with the remaining \$1.5 billion to be provided by the private sector (RTA, 2003).

Westlink was selected to design, construct, operate and maintain M7, the largest completed PPP project in Australia at \$1.4 billion (RTA, 2003). This was less than the original government's estimate. The lead sponsor, Leighton (LH) had an initial equity investment of 10% in the motorway. LH sold its ownership interest after 5 years and with successful post construction operation in which the road experienced strong traffic growth and delivered an average trip length 30% above initial forecasts (RTA, 2003).

This project shows that there was an extensive public sector altruistic empathy towards the private sector. Firstly, there was the financial commitment to the project. Secondly, there was early planning to establish an Environment Impact Statement (EIS) to deal with issues that the community might have. Thirdly, careful budgeting and estimation allowed the private sector not to under-price the project and avoid high tolls.

The design and early completion of the project reflected the private sector altruistic empathy towards the public sector duty of delivery of public services. Their own equity commitment and their willingness to sell its ownership to the government reinforced their empathy towards the public sector being subject to scrutiny and accountability.

Lane Cove Tunnel (LCT)

The LCT is a 3.6 kilometre motorway costing the private sector, Connector Motorways (CM) \$1.1 billion (NSW-Government, 2006). Previously, motorists had to drive through gridlocked suburbs for a few kilometres between the two freeway sections. LCT reduces commuter travelling time by 17 minutes. CM designed and constructed the tunnel and its associated works to create a "sense of place" for each local community by providing architecture that enhanced the journey and its vicinity. It also addressed the environmental problems (NSW-Government, 2006). Construction commenced in April 2004 and was completed in March 2007, two months ahead of schedule. The tunnel opened with a one-month toll-free period.

Local community, commercial and industrial groups formed the Lane Cove Tunnel Action Group (LCTAG) to voice concerns over the way construction was to be carried out, the community development around the tunnel, and the air quality coming out of the tunnel through the ventilation stacks.

The project was reported in the media as an example of a successful PPP. While the number of motorists using the tunnel was initially below the original forecast average of 100,000, it was not a major financial concern (Rochfort, 2008). However, one year after its operation, the traffic volume was only about 60,000

THE IMPORTANCE OF ALTRUISTIC EMPATHY AND COLLABORATIVE NEGOTIATION

motorists – a level which seriously impacted the financial performance (Besser, 2007). CM intended to operate the tunnel until 2037 but it went into receivership in January 2010 after continued financial operating losses. Transurban purchased the tunnel in May 2010 for \$630 million.

The public sector did not show sufficient altruistic empathy. Some financial commitment, as in M7, would allow the private sector to reduce their cost and to charge a lower toll. The public sector also distanced itself from taking some of the risk and responsibility of the outcomes. There was no attempt to jointly undertake a realistic revenue forecast or deal with the problems raised by LCTAG. The private sector, on the other hand, attempted to show altruistic empathy towards the public sector. While the private sector ensured that the design creates a “sense of place” for the community, the toll was too high to be acceptable by the majority of motorists. Understanding the potential scrutiny and accountability the public sector might faced, the private sector addressed environment issues carefully and did not demand for unreasonable concessions or compensations to be included in the contract.

Cross City Tunnel (CCT)

CCT connects Darling Harbour in the west to Rushcutters Bay in the east. Though it is 2.1 kilometre, motorists using CCT avoid 16 sets of traffic lights westbound and 18 eastbound. In 2002, the Government awarded Cross City Motorways (CCM) to undertake the project estimated at \$680 million but the final cost was \$900 million (Pretorius, 2007).

Construction of the tunnel commenced in January 2003 and the tunnel was scheduled to be completed by October 2005. However, the project was completed ahead of schedule. It was opened to motorists in August 2005 but immediately received backlash. The community criticised the disruption to traffic in the city due to misleading signage, the high price for a short stretch of motorway and the exhaust fumes from the tunnel. This led to public “boycott” resulting in fewer motorists using the tunnel. The operator responded by offering a three week toll-free period plus a commitment to freeze further toll increases for twelve months. With continued non-acceptance of the toll after the toll-free period, the operator decided to halve the toll for three months and reverse some road closures which were interpreted to channel motorists deliberately into the tunnel. Before the expiry of the half-price toll period, the Government ended negotiations with CCM without an agreement and announced the immediate reversal of all road closures, contrary to the contract.

Initially, CCT committed under oath that it would not seek compensation if the road closures were undone. However, like the government, CCM also reversed its decision subsequently and took legal action against the Government for breaching the contract (Pretorius, 2007). In addition, CCM cannot be forced into reducing the toll or stopping automatic increases by CPI each quarter, as against yearly increases for the other tolls.

There was speculation that sensitive Cabinet documents were leaked to CCM during negotiations and investigation had to be conducted to eliminate possible public sector wrongdoing. The government was unwilling to disclose the contract conditions on what concessions were given to the CCM in return for \$105 million payment to the government for permission to build CCT.

In November 2006, CCM was in financial difficulty. Without any support from the public sector, the project was put into receivership in December 2006. A new consortium bought CCT for \$700 million (John, Carson, & Baker, 2007) and immediately attempts were made to reinstate public confidence in toll roads and PPPs.

The confrontation between the public sector, the private sector and the community was due to the nonexistent of collaborative negotiation. The public sector lack of altruistic empathy was obvious. Firstly, the demand of \$105 million payment, which is 15.0% of the estimated construction cost, would mean that CCM has to eventually recoup this cost through higher toll. This is the complete opposite to M7. Secondly, the public

THE IMPORTANCE OF ALTRUISTIC EMPATHY AND COLLABORATIVE NEGOTIATION

sector should know that many conditions in the negotiated contract would not be amenable with the community. The fact that the transportation chief who was instrumental to the negotiation had to resign was testimony to an ill managed negotiation.

The private sector also lacked altruistic empathy. Knowing the public sector has a responsibility to deliver public services at a reasonable price, the private sector should know that there would be community backlash even though they had secured agreement to the high toll, frequent toll increases, road closures to force motorists to use the tunnel and compensation if some conditions were not met.

Table 1: Summary of the findings

	Public sector altruistic empathy towards private sector			Private sector altruistic empathy towards public sector			Altruistic Empathy and Collaborative Negotiation
	Ensuring private sector can make a profit	Willing to be responsible for some of the risks	Willing to be responsible for some of the outcomes	Delivering economic benefits to the community	Seeking reasonable concession	Ensuring public sector can be held accountable	
M7	Provided financial support of \$356 million	Thorough planning was made to reduce uncertainties and risks	Some estimation were undertaken by public sector and conservative in estimation avoided cost overrun	Good design and completed ahead of schedule	Proposed toll charges were high but still acceptable to majority of the motorists	Willingness to sell down ownerships at an early stage even though project is profitable	High degree of collaborative negotiation at the start to ensure project provided benefits to the community due to display of altruistic empathy
LCT	No financial support provided to the project	Gaps in planning and risks left to private sector to deal	Public sector took no part in forecast and did not comment if estimates were realistic	Good 'sense of place' design and completed ahead of schedule	Proposed toll charges were high and not acceptable to majority of the motorists	Complied with environment issues. Did not show intention to seek compensation	Some degree of collaborative negotiation at the start of the project with some degree of altruistic empathy
CCT	Asked for financial payment of \$105 million	Gaps in planning and risks left to private sector to deal	Public sector took no part in forecast and did not comment if estimates were realistic	Good design and Completed ahead of schedule	But proposed toll charges were very high and proposed increases were too frequent	Complied with environment issues. Contract allow compensation with regards to public sector rescind on road closures	No collaborative negotiation with low degree of altruistic empathy as the financial considerations from both sectors were driving the projects

Limitations and Future Research

One of the limitations of deductive analysis is that the researcher can manipulate the setting under study and predetermine what variables are worth measuring (Patton, 2002). However, it is important to recognise that actually conducting the analysis is a matter of degree. Patton (2002) contended that what is discovered may be verified by going back to the world under study and examining the extent to which the emergent analysis fits the phenomenon.

Using deductive analysis, this study conveys a sense of being there and experiencing settings firsthand and present in close details the context and meanings of events and senses that are relevant to those involved (Taylor & Bogdan, 1998). It examines how things look from different vantage points and makes deduction from these insights (Taylor & Bogdan, 1998). This study coded and analysed the data in order to explain the phenomenon. A different researcher may provide different insights.

Conclusion

Different literature has different interpretation of whether PPPs are successful. A post development report by the government claimed that the three PPPs were successful because it had complied with the guidelines and delivered economic benefits to the community (RTA, 2010). It is insensitive not to empathise with the sentiment of the private sector when their investment in a project suffered huge financial loss. This study neither agrees nor disagrees whether the three PPPs were successful. Instead, it is intended to explain the reasons for the phenomenon based on collaboration theory and presents a holistic approach to see the vantage points from both sectors. It therefore provides different insights and perspectives of the operations of PPPs.

When using qualitative research method in finance, it is important to ensure consistency in the application and framework, and to understand the limitations of the method. The limitations of deductive analysis do not diminish the significance of this study but instead it expands the scope in the understanding of PPPs.

This study shows that if both sectors can have as much altruistic empathy towards each other, the greater the degree of collaborative negotiation. This can eliminate confrontational issues as the project progresses, enhance longevity in working relationships, achieve common goals and strive for a higher probability of financial success. Collaborative negotiation ensures a win-win situation with no sign of power relations and a level playing field.

This study identifies a number of underlying themes in PPPs. Further studies using inductive or abductive analysis can enhance the understanding of PPPs through developing concepts and theoretical propositions.

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THE IMPORTANCE OF ALTRUISTIC EMPATHY AND COLLABORATIVE NEGOTIATION

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