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**THE PUBLIC SECTOR'S PERSPECTIVE ON PROCURING PUBLIC WORKS
PROJECTS – COMPARING THE VIEWS OF PRACTITIONERS IN HONG
KONG AND AUSTRALIA**

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THE PUBLIC SECTOR'S PERSPECTIVE ON PROCURING PUBLIC WORKS PROJECTS – COMPARING THE VIEWS OF PRACTITIONERS IN HONG KONG AND AUSTRALIA

Abstract

Hong Kong has been one of the early jurisdictions to adopt Public Private Partnership (PPP) model for delivering large public infrastructure projects. The development of this procurement approach in Hong Kong has followed an intricate path. As such, it is believed that there are a number of areas which are interesting to unveil. As part of a comprehensive research study looking at implementing PPPs, interviews with experienced local industrial practitioners from the public sector were conducted to realize their perspective on the topic of procuring public works projects. Amongst these interviews, fourteen were launched government officials and advisers. The interview findings show that the majority of the Hong Kong and Australian interviewees had previously conducted some kind of research in the field of PPP. Both groups of interviewees agreed that “PPPs gain private sector’s added efficiency/expertise/management skills” when compared to projects procured traditionally. Also, both groups of interviewees felt that projects best suited to use PPP are those that have an “Economic business case”. The interviewees believed that “Contractor’s performance” could be used as key performance indicators for PPP projects. A large number of critical success factors were identified by the interviewees for PPP projects; two of these were similar for both groups of interviewees. These included “Project objectives well defined” and “Partnership spirit/commitment/trust”. Finally it was found that in-house guidance materials were more common in the organizations of the Australian interviewees compared to the Hong Kong ones. This paper studies the views of the public sector towards the topic of PPPs in Hong Kong and Australia, which helps to answer some of the queries that both academics and the private sector in these jurisdictions are keen to know. As a result the private sector can be more prepared when negotiating with the public sector and realise their needs better, academics on the other hand are provided a wider perspective of this topic benefiting the research industry at large.

Keywords: Public Private Partnerships (PPP), Procurement, Public Sector Interviews, Hong Kong, Australia.

1. Introduction

Public Private Partnership (PPP) is a procurement approach where the public and private sector join forces to deliver a public service or facility. In this arrangement normally both the public and private sector will contribute their expertise and resources to the project and share the risks involved. The definition of PPP may differ slightly between different jurisdictions, depending on which part of the arrangement the importance is focused on. But in general PPPs can be any agreement where the public and private sectors work together to deliver a public project. PPP is a relatively modern term for this arrangement used only more commonly in the last decade. Previously different variations of the arrangement included Private Finance Initiative (PFI), which is a more familiar term to many people due to its popular development in the United Kingdom (U.K.) during the early nineties (Tieman, 2003). It would not be incorrect to say that the PFI practice developed in the U.K. raised the world’s attention to this alternative option for delivering public infrastructure and services. The extent to which PFI could be used and the advantages created were the main drivers attracting other countries to start adopting or improve their practice in PPP. A more specific term used more commonly a decade ago is Build Operate and Transfer (BOT). This arrangement was commonly adopted for transportation projects. This is because transportation projects tend to be larger in size and also because their long physical lives fit well into the procurement mode. Earlier this century, concession was a common form of PPP. These early concessions mainly occurred in Europe (particularly in France) for water projects (Grimsey and Lewis, 2004). Although water projects tend not to be particularly large in project sum, it was noticed early on the advantages of introducing private expertise to deal with tasks that the public sector was probably not as efficient or experienced in carrying out the works. Despite a long history of PPPs implementation, many jurisdictions are still unclear of how to maximize the benefits to suit their culture, environment, background, geography etc. This paper therefore sets out to address the following important issues:

- a. Identify the benefits, difficulties and critical success factors of PPP.
- b. Measure the effectiveness of PPP against other procurement methods.
- c. Identify representative case studies from countries such as Australia for analysis to identify their approach to success/failure.

- d. Identify previous projects in Hong Kong that utilized a similar approach to PPP and to analyze their implementation successfulness.
- e. Investigate the best conditions in terms of project nature, project complexity, project types and project scales under which the use of PPP is the most appropriate.
- f. Evaluate the findings collected to determine a best practice framework for implementing PPP in Hong Kong.

2. Literature Review

2.1 What is the traditional practice of procuring public works project?

PPP projects are often compared with projects that are not procured by the PPP model i.e. traditional projects. But what exactly are traditional projects and how are they procured? Traditional projects unlike PPP projects do not involve the private sector in sharing the project risks. In traditional projects the public sector will undertake most risks. In a PPP arrangement the private sector will have to take up a certain proportion of the risks, often related to their duties i.e. construction, design, maintenance and operation. Whereas the public sector will take up some of the risks that are more difficult to control by the private sector alone such as environment and government approval risks. Another major difference, but not always, depending on the financial package of the project is that traditional projects are financed fully by the public sector whereas in a PPP project it is likely that the private consortium will have some equity in the asset being delivered. Again in a traditional arrangement the public sector undertakes the financial risk as well. For example in a toll road the public sector would need to undertake the revenue risk in a traditional project, whereas in a PPP project this risk would be undertaken most likely by the private sector. Therefore in general the main difference between a project procured traditionally and by PPP is the risk sharing matrix. Table 1 shows a general risk sharing matrix for the public and private sectors in PPP projects (Grimsey and Lewis, 2004). Many other studies have also been carried out in this area (Li et al., 2005; Sun et al., 2008; Thomas et al., 2003; Wibowo and Kochendörfer, 2005; Thomas et al., 2006; Ng and Loosemore, 2007; Lam et al., 2007) .

Type of risk	Source of risk	Risk taken by
Site risks		
Site conditions	Ground conditions, supporting structures	Construction contractor
Site preparation	Site redemption, tenure, pollution/discharge, obtaining permits, community liaison	Operating company/project company
	Pre-existing liability	Government
Land use	Native title, cultural heritage	Government
Technical risks	Fault in tender specifications	Government
	Contractor design fault	Design contractor
Construction risks		
Cost overrun	Inefficient work practices and wastage of materials	Construction contractor
	Changes in law, delays in approval, etc.	Project company/investors
Delay in completion	Lack of coordination of contractors, Failure to obtain standard planning approvals	Construction contractor
	Insured force majeure events	Insurer
Failure to meet performance criteria	Quality shortfall/defects in construction/commissioning tests failure	Construction contractor/project company
Operating risks		
Operating cost overrun	Project company request or change in	Project company/investors

	practice	
	Industrial relations, repairs occupational health and safety, maintenance, other costs	Operator
	Government change to output specifications	Government
Delays or interruption in operation	Operator fault	Operator
	Government delays in granting or renewing approvals providing contracted inputs	Government
Shortfall in service quality	Operator fault	Operator
	Project company fault	Project company/investors
Revenue risks		
Increase in input prices	Contractual violations by government-owned support network	Government
	Contractual violations by private supplier	Private supplier
	Other	Project company/investors
Changes in taxes, tariffs	Fall in revenue	Project company/investors
Demand for output	Decreased demand	Project company/investors
Financial risks		
Interest rates	Fluctuations with insufficient hedging	Project company/government
Inflation	Payments eroded by inflation	Project company/government
Force majeure risk	Floods, earthquakes, riots, strikes	Shared
Regulatory/political risks		
Changes in law	Construction period	Construction contractor
	Operating period	Project company, with government compensation as per contract
Political interference	Breach/cancellation of license	Government
	Expropriation	Insurer, project company/investor
	Failure to renew approvals discriminatory taxes, import restrictions	Government
Project default risks	Combination of risks	Equity investors followed by banks, bondholders and institutional lenders
	Sponsor suitability risk	Government
Asset risks	Technical obsolescence	Project company
	Termination	Project company/operator
	Residual transfer value	Government

Table 1 A general risk sharing matrix for the public and private sectors in PPP projects (Grimsey and Lewis, 2004)

2.2 PPP experience in Hong Kong

Hong Kong is not completely new to the idea of PPP. In actual fact the city was probably one of the first to utilize resources from the private sector. The term PPP may sound revolutionary to Hong Kong, whereas a more familiar term is Build Operate Transfer (BOT). The concept of BOT has been used since the late sixties. In September 1969 the construction for the first BOT project in Hong Kong commenced (Mak and Mo, 2005). The Cross Harbour Tunnel (CHT) is a two lane tunnel in each direction. It took only 36 months to complete and was eleven months ahead of schedule. The CHT was an instant success when it came into operation in August 1972. Within three and a half years of operation the Tunnel had collected enough tolls to pay back its construction cost. The Tunnel is probably the most successful BOT project in Hong Kong, and is still one of the most important and profitable pieces of infrastructure locally (Asian Development Bank, 2000).

Although Hong Kong has had experience in adopting quite a number of BOT projects, the approach of PPP has never really been studied extensively in the local context. The traditional practice of these projects was for the government to directly award a concession to the potential bidder. This practice of awarding concessions is common in Hong Kong, but the gestation period spent in formulating the enabling legislation is lengthy (Zhang 2001).

In recent years the Efficiency Unit of the Hong Kong Special Administrative Region (HKSAR) Government has been heavily involved in PPP research. The Government's interest in utilizing PPP is obvious. The approaches that they have taken mainly involve gaining international experience from particularly Europe and Australia. One of the early documents produced by the Efficiency Unit on private sector involvement was a guideline to help governmental bureaus and departments to familiarize with private sector engagement (Efficiency Unit, 2001). These guidelines were published in 2001 and showed the government's interest in adopting the idea of PPP. Only two years later they also produced a comprehensive introductory guide to PPP (Efficiency Unit, 2003). This guide was aimed for the use of the civil service but is also made available for the public's interest to understand the government's approach. After the publication of this report much interest was drawn from the public due to the possibility of the increased business opportunities available. More recently, the Efficiency Unit published two more guidelines on PPP (Efficiency Unit, 2007; 2008a). The first of these publications shows how more knowledge on the issues of PPP have been learnt, it also identifies areas of concern to local practitioners as well as civil servants, and it tries to provide some insights into these areas. The second publication is much more specific on how to establish a PPP project. The guideline is aimed at coaching civil servants on how to conduct a PPP project by looking at the business case, dealing with the private sector, managing the risks, funding and payment issues, managing performance etc.

2.3 PPP experience in Australia

The practice for delivering public works projects across Australia is quite different depending on the state. Each state government will have its own set of guidelines and rules to go by. Political decisions are crucial in deciding procurement processes. PPP has been an increasingly popular choice for delivering public works projects in Australia. Although for decades there have been known to be public works projects delivered in Australia by similar partnership arrangements, it has only been since the early nineties that PPP was first properly introduced in Australia. PPP has been a growing alternative to procuring public projects across the world. Especially with the success seen from the Victoria state, the other Australian states are eager to get a taste (Ernst and Young 2006).

The Victoria government released the Partnerships Victoria policy in June 2000 providing a framework for developing contractual partnerships between the public and the private sector for public infrastructure and services (Partnerships Victoria, 2000). This brought about the change to the traditional practice of using Build Own Operate (BOO) and Build Own Operate Transfer (BOOT). The traditional practice focused more on bringing in the private sector's financial input and also having the risk transferred from the public sector to the private sector. But since the Partnerships Victoria policy the focus moved more towards delivering better projects as a result of bringing in the private sector expertise and also the government would regain direct control over the service or facility after the concession period.

The Partnerships Victoria team is part of the Commercial Division in the Department of Treasury and Finance of the Victoria state. The team is mainly responsible for overseeing projects implemented via the PPP practice and also developing guidelines and policies for PPP projects. Up to present, seventeen projects have already been implemented under Partnerships Victoria totaling AUD\$5.5 billion (Partnerships Victoria 2008a). The team has also produced four policies, four guidelines, three technical notes and four advisory notes for the implementation of PPP projects in Victoria. These publications are targeted for the use of both the private and public sectors, and cover areas including the public sector comparator, risk allocation, standard commercial principles, tender process, interest rates etc. (Partnerships Victoria 2008b).

2.4 PPP experience in the United Kingdom

PPP projects now account for about 15 and 8 percent of infrastructure spent in the United Kingdom and Australia respectively (Ernst and Young, 2005). Up to 2006, 794 PPP/PFI deals had already been signed. The combined capital value was approximately £55 billion (National Audit Office, 2008). Amongst these projects almost 70% were in the health sector, and over 40% costing below £10 million (Akintoye, 2007). However, Maltby (2003) asserted that PPP/PFI should be abolished for smaller projects and for information technology schemes.

Partnership UK was set up in 2000 to succeed the Treasury Taskforce. The Taskforce was set up in 1997 to oversee the implementation of PPP/PFI projects. One observation is that Partnerships UK was initiated by the local Treasury. The team is generally responsible for providing project advice and support, developing government policies, providing co-sponsorship and participating in investment of PPP/PFI projects.

Due to the long history of PPP/PFI projects in the United Kingdom, Partnerships UK has a very comprehensive collection of guidelines and policies on implementing PPP projects for all sectors in many aspects. Case study reports can also be found on the public domain. Amongst the projects conducted by Partnerships UK it was noticed that the majority included projects for schools, hospitals and transportation. Other projects which have also been conducted include environment ones, leisure facilities, prisons and detention centers, housing etc. (Partnerships UK, 2008). The extent to which PFI could be used and the advantages created were the main drivers attracting other countries to start adopting or improve their practice in PPP.

3. The Research Framework

The findings presented in this paper are part of an on-going research project looking at developing a best practice framework for implementing PPPs. As part of the data collection, interviews were conducted with PPP experts that represented the public sector in both Hong Kong and Australia. This paper did not aim to provide a general overview of PPP in Hong Kong or Australia but instead tried to draw some commonalities and differences observed between the two jurisdictions.

3.1 Design of Interview Questions

The interviews which were carried out in this research study adopted the “Grounded Theory” approach. This approach is an iterative process by which the analyst becomes more and more “grounded” in the data and develops increasingly richer concepts and models of how the phenomenon being studied really works (Denzin and Lincoln, 2007). This approach involves the interviewer to collect word for word transcripts from the interviewees. These transcripts can then be further analyzed by identifying themes which are common and meaningful by an “open coding” technique. Therefore the findings will be solely based on the responses given by the interviewees.

Dainty et al. (2000) also adopted the Grounded Theory approach for construction management research. In their methodology they collected unstructured data and coded meaning information. This method allows the researcher to relate categories in complex ways and ensuring density and precision to the developed theory. They also believed that too much structuring would mean that the interviewees’ responses would be defined by the researcher. Hence, they used a semi-structured interview format. Their aim was not to promote consistency in terms of response, but to uncover as many relevant responses as possible. Consistencies would therefore emerge from the subsequent Grounded Theory analysis.

Raiden et al. (2008) agreed that structured questions would not allow interviewees to fully expand on their knowledge. This does not mean that the theory from literature should not be tested but its generalization should be tested with a population first.

Based on these concepts, interviews were conducted with experts from the public sector. The experts were selected based on two main criteria, these included:

- 1) The experts must possess adequate knowledge in the area of PPP; and
- 2) The experts have hands-on experience with PPP projects, or experience in conducting PPP research or have followed very closely with the development of PPP.

Based on the Grounded Theory approach, six interview questions linking up to the project objectives were derived for the interviews with the public sector interviewees. Table 2 shows how these objectives are linked to the interview questions. In the first question the interviewees were asked “Have you conducted any research looking at local case studies?” This question aimed to collect information for objectives 3 – 6. Question 2 “How would you compare PPP with traditional procurement methods?” targeted to achieve objectives 2, 4 – 6. Objectives 5- 6 were covered again in Question 3 “Which type of project do you feel is best suited to use PPP?” and Question 4 “What do you feel are the key performance indicators in a PPP project?” In Question 5, interviewees were asked to answer “In general, what do you think are the critical success factors leading to successful PPP projects?” This question sought information for objectives 1, and 6. The final question was “Does your organization have any in-house guidance/practice notes?” This question aimed to collect information for objectives 1, 5 – 6.

Question	Objective					
	1	2	3	4	5	6
	Identify the benefits, difficulties and critical success factors of PPP.	Measure the effectiveness of PPP against other procurement methods.	Identify representative case studies from countries such as Australia for analysis to identify their approach to success/failure.	Identify previous projects in Hong Kong that utilized a similar approach to PPP and to analyze their implementation successfulness.	Investigate the best conditions in terms of project nature, project complexity, project types and project scales under which the use of PPP is the most appropriate.	Evaluate the findings collected to determine a best practice framework for implementing PPP in Hong Kong.
1. Have you conducted any research looking at local case studies?			✓	✓	✓	✓
2. How would you compare PPP with traditional procurement methods?		✓		✓	✓	✓
3. Which type of project do you feel is best suited to use PPP?					✓	✓
4. What do you feel are the key performance indicators in a PPP project?					✓	✓
5. In general, what do you think are the critical success factors leading to successful PPP projects?	✓					✓
6. Does your organization have any in-house guidance/practice notes?	✓				✓	✓

Table 2 Project objectives linking up with interview questions

3.2 Selecting Respondents

The target respondents of the interviews were practitioners with experience in PPP of senior level and authority who have had experience representing the public sector. A total of fourteen interviews were conducted, with seven interviews conducted in each jurisdiction. Amongst the seven interviews conducted in Hong Kong, two were from Administration Departments (one of the interviewees previously represented a Works Department), three were from Works Departments (one of which previously represented an Administration Department and the other also holds a position at a local institute), two of the interviewees were from Non Governmental Organizations (NGO) (both had previously acted for different Works Departments). The Australian interviewees consisted of three government officials and four specialist advisers from the private sector. The government officials interviewed are from local state education and treasury departments. When arranging the interviews in Australia, it was found that the state governments tended to employ advisers from the private sector to act on their behalf in providing advice and expertise for selecting and monitoring the PPP project consortia. Therefore four advisers from the private sector were also selected for interview. Their roles were solely on behalf of the public sector hence their responses can also be regarded as the public sector's view. Background details of these experts are shown in Tables 3 and 4 for Hong Kong and Australian interviewees respectively.

No.	Position of Interviewee	Organization of Interviewee
PU1	Assistant Director	Administration Department
PU2	Permanent Secretary	Administration Department (previously Works Department)
PU3	Director	Works Department (previously Administration Department)
PU4	Senior Director	Works Department
PU5	Senior Quantity Surveyor	Works Department / Local Professional Institute
PU6	Executive Board Member	NGO (previously Works Department)
PU7	Executive Director	NGO (previously Works Department)

Table 3 List of Interviewees from the Public sector in Hong Kong

No.	Position of Interviewee	Organization of Interviewee
PU8	Executive Director	Education Department
PU9	Director	Treasury Department
PU10	Executive Manager	Treasury Department
PU11	Executive Director	Transaction Adviser
PU12	Partner	Legal Adviser
PU13	Head	Finance Adviser
PU14	Director	Finance Adviser

Table 4 List of Interviewees from the Public sector in Australia

4. A Comparison of the public sector's perspective in Hong Kong and Australia

Table 5 shows a summary of the responses to each question given by the fourteen interviewees. The number of times that each response was given was tallied. Where the response was only given once it was believed to be insignificant for further analysis. For the responses given more than once, these were tabulated and further analyzed as shown in Tables 6 to 11. The numbers in brackets represents the number of times the response was mentioned by interviewees.

	Hong Kong Interviewees								Australian Interviewees							
	PU1	PU2	PU3	PU4	PU5	PU6	PU7	Total	PU8	PU9	PU10	PU11	PU12	PU13	PU14	Total
1. Have you conducted any research looking at local case studies? And if so, could you share your insights?																
Local case studies	✓							1		✓	✓			✓	✓	4
International case studies	✓	✓	✓					3						✓	✓	2
Other research conducted	✓	✓	✓	✓	✓			5	✓	✓	✓			✓	✓	5
Not mentioned						✓	✓	2				✓	✓			2
2. How would you compare PPP with traditional procurement methods?																
Using a Public Sector Comparator	✓	✓						2								0
Longer tendering/negotiation for PPP	✓							1	✓							1
Government act as supervisor in PPP		✓						1								0
Traditional method accepted as norm			✓					1								0
Each project unique			✓			✓		2								0
Difference in payment mechanism				✓				1								0
PPPs gain private sector's added efficiency/expertise/management skills				✓		✓		2				✓			✓	2
PPP projects delivered faster					✓			1								0
PPP utilizes private sector finance/difference in finance structure						✓		1	✓		✓	✓		✓		4
PPP tend to be large project sums						✓		1								0
Difference in risk profile								0	✓							1
Operational differences								0	✓							1
Management differences								0	✓							1
PPPs have a more transparent process								0		✓						1
PPPs consider whole life cycle cost								0			✓					1
More parties involved in PPPs								0					✓			1
3. Which type of project do you feel is best suited to use PPP?																
Link between performance and payment	✓							1								0
Each project unique		✓						1								0
Economic business case			✓		✓	✓		3		✓				✓	✓	3
Value for Money			✓					1								0
Large operating element/cost				✓		✓		2								0
Performance easily measured				✓				1		✓					✓	2
Mutual benefits for all parties							✓	1								0
Economic infrastructure								0	✓							1
Scope for innovation								0		✓				✓	✓	3
High project costs								0		✓	✓					2
Any nature								0				✓	✓			2

Sufficient risk transfer							0							✓	✓	2	
4. What do you feel are the key performance indicators in a PPP project?																	
Project performance	✓						1	✓	✓								2
Resources saved		✓		✓			2										0
Contractor's performance				✓	✓		2	✓					✓				2
Traditional KPIs: Cost, time, quality					✓	✓	3	✓									1
Risk Management						✓	1	✓	✓								2
Public acceptance							1			✓							0
Value for money achieved							0	✓									1
Service outcomes							0				✓						1
Contract terms							0					✓	✓	✓	✓		4
Client satisfaction							0						✓				1
Payment mechanism performed							0							✓			1
5. In general, what do you think are the critical success factors leading to successful PPP projects?																	
Champion	✓						1			✓	✓					✓	3
Large project capital value	✓						1										0
Well prepared contract/document			✓		✓		2									✓	1
Partnership spirit/commitment/trust			✓			✓	2	✓								✓	2
Transparent process			✓			✓	2	✓									1
Project objectives well defined			✓		✓	✓	3	✓	✓	✓							3
Public consultation			✓		✓	✓	3					✓					1
Appropriate risk allocation			✓		✓	✓	4					✓					1
Large operating element				✓			1										0
Development potential					✓		1										0
Economic business case						✓	1					✓		✓			2
Effective negotiations between parties							0	✓									1
Competitive procurement process							0	✓	✓	✓	✓	✓	✓				5
Government support							0	✓						✓			2
Skilled and experienced parties							0		✓	✓				✓	✓		4
Clear milestones							0		✓	✓	✓						3
Initiate project							0					✓					1
Value for money							0					✓				✓	2
6. Does your organization have any in-house guidance/practice notes?																	
Yes	✓				✓	✓	3			✓	✓	✓	✓	✓	✓		6
No			✓	✓			4										0
Refer to others			✓	✓			2	✓									1

Table 5 Summary of responses from interviewees

4.1 Research on local case studies

Table 6 shows the responses of Question 1 “Have you conducted any research looking at local case studies?” that were given more than once. The findings show that three different responses were given by Hong Kong interviewees and four were given by the Australians. Amongst the four responses given by the Australian interviewees, three were the same as those given by the Hong Kong interviewees. The response which was given most by both groups of interviewees was “Other research conducted”, mentioned five times for each. This finding showed that irrespective of geographical locations the interviewees tended to conduct other research besides case studies on PPP. The response “Local case studies” was mentioned four times by the Australians. It is possible that because Australia has had much experience in conducting PPP projects, they do not need to look else where to learn from the experience of others, instead they can refer to their own projects as reference material. As mentioned previously the Victoria state in Australia for example has a large range of guidance materials on the public domain which other states can refer to when conducting PPP projects (Partnerships Victoria, 2008b). On the other hand the Hong Kong interviewees mentioned “International case studies” three times showing there need to learn from the experience of others. The Efficiency Unit of the HKSAR Government has also been known to be interested in international case studies. They have also published a number of case study reports for PPP projects in the United Kingdom and Australia (Efficiency Unit, 2008b). The Australians also mentioned this response two times. From the interviews it was found that the involvement in research was “Not mentioned” twice by each group of interviewees.

Hong Kong Interviewees	Australian Interviewees
Other research conducted (5)	Other research conducted (5)
International case studies (3)	Local case studies (4)
Not mentioned (2)	Not mentioned (2)
	International case studies (2)

Table 6 Question 1 - Have you conducted any research looking at local case studies?

4.2 Comparing PPP with traditional procurement methods

Table 7 shows the responses mentioned more than once by both groups of interviewees for Question 2 “How would you compare PPP with traditional procurement methods?” Three and two different responses were mentioned more than once by the Hong Kong and Australian interviewees respectively. For all three responses mentioned by the Hong Kong interviewees each was mentioned twice. Mentioned the most by Australian interviewees was “PPP utilizes private sector finance/difference in finance structure” which was mentioned four times. This finding shows the importance of the different financing structure provided by PPP projects. Although finance should not be the main reason for adopting PPP projects, undoubtedly, financial drive is still an attractive factor to governments, hence this response was unsurprising. Mentioned by both groups of interviewees was the response “PPPs gain private sector’s added efficiency/expertise/management skills”. This response was also mentioned twice by the Australian interviewees. From previous literature it has also been recorded that one of the main advantages of involving the private sector is to add value to public projects in terms of their efficiency, expertise and management skills when compared to those of the public sector (Yescombe 2007; Carrillo et al. 2008; Leiringer 2006; Chiang and Cheng, 2009). Other response mentioned by the Hong Kong interviewees included “Using a Public Sector Comparator”, which was also mentioned by the Efficiency Unit (2003) of the HKSAR government as necessary whenever public money is involved. Also “Each project unique” was mentioned the Hong Kong interviewees too.

Hong Kong Interviewees	Australian Interviewees
Using a Public Sector Comparator (2)	PPP utilizes private sector finance/difference in finance structure (4)
PPPs gain private sector’s added efficiency/expertise/management skills (2)	PPPs gain private sector’s added efficiency/expertise/management skills (2)
Each project unique (2)	

Table 7 Question 2 - How would you compare PPP with traditional procurement methods?

4.3 Projects best suited to use PPP

The Interviewees were asked to answer “Which type of project do you feel is best suited to use PPP?” in Question 3. Table 8 shows their responses that were mentioned more than once. The results showed that only one similar response was mentioned by both groups of interviewees. This was “Economic business case” which was mentioned three times by both groups of interviewees and also mentioned the most. The private sector parties are businessmen, so for them to participate in PPP projects there must be reasonable financial benefits foreseeable for them. Partnerships Victoria (2001) explains how developing a business case is a key step in the decision-making process. This is where the project is fully scoped and risks and costs are identified to develop a cost-benefit analysis, as well as to test the net benefit of the proposal. The Hong Kong interviewees suggested only one more criteria for PPP projects, which was “Large operating element/cost” which was mentioned twice. One typical feature of PPP projects is that the consortium is normally responsible for the operation and maintenance of the project. Without this element PPP projects would be similar to projects procured traditionally. Therefore the operation part must constitute a reasonable proportion of the project. Grimsey and Lewis (2004) listed a number of public private business models prior to the more general term PPP, many of these emphasized the operation element of the structure within its name, showing the highly important role in these arrangements including: Operate and Maintain (O&M); Operate Maintain and Manage (OM&M); Build Transfer Operate (BTO); Build Operate Transfer (BOT); Build Own Operate Remove (BOOR); Build Own Operate Transfer (BOOT); Lease Renovate Operate Transfer (LROT); Design Build Finance Operate (DBFO); Design Build Finance Operate Manage (DBFOM); Build Own Operate (BOO) etc. Other response given by the Australian interviewees included “Scope for innovation” (Eaton et al. 2006) which was mentioned three times. Also, mentioned twice each by the Australians included “Performance easily measured” (Partnerships Victoria 2001), “High project value” (HM Treasury 2003) “Any nature” and “Sufficient risk transfer” (Jin and Doloi 2008). These features forming suitable PPP projects have been previously recorded by other researchers.

Hong Kong Interviewees	Australian Interviewees
Economic business case (3)	Economic business case (3)
Large operating element/cost (2)	Scope for innovation (3)
	Performance easily measured (2)
	High project value (2)
	Any nature (2)
	Sufficient risk transfer (2)

Table 8 Question 3 - Which type of project do you feel is best suited to use PPP?

4.4 Key performance indicators in PPP projects

The interviewees were also asked to answer Question 4 “What do you feel are the key performance indicators in a PPP project?” (Table 9). Amongst the responses received, three were mentioned more than once by the Hong Kong interviewees and four by the Australian interviewees. The response “Contract terms” was mentioned the most at four times by the Australian interviewees. In Australia high priority is given to the contract component of projects procured by PPP. Guidelines have also been published on this aspect (Partnerships Victoria 2008c). The response mentioned the most by Hong Kong interviewees was “Traditional KPIs: Cost, time, quality” (Enshassi et al., 2009). Probably due to the lack of experience in PPP projects (not including BOT type projects), the Hong Kong interviewees did not commonly come up with any responses that were specifically related to PPP projects solely. Only one response was raised by both groups of interviewees, this was “Contractor’s performance” which was mentioned twice by each group of the interviewees. Also mentioned twice by the Australian interviewees were the responses “Project performance” and “Risk Management”. The performance of the contractor and project are items which would definitely be mentioned in the contract documents, these again confirm the importance of the contract to the Australian interviewees. Many studies have been conducted on the importance of risks in PPP projects (Akbiyikli and Eaton 2004; Li et al. 2004; Li et al. 2005; Shen and Wu 2005; Rouboutsos and Anagnostopoulos, 2008). One of the main reasons for implementing public projects by PPP is also for risk transfer, therefore to classify the risk management as a performance indicator is also reasonable. Another response mentioned by Hong Kong interviewees was “Resources saved”. PPP projects are normally only conducted after they have been proved to be a cheaper alternative to traditionally procured

projects. This is normally conducted via the Public Sector Comparator (Efficiency Unit 2003; Partnerships Victoria 2008b).

Hong Kong Interviewees	Australian Interviewees
Traditional KPIs: Cost, time, quality (3)	Contract terms (4)
Contractor's performance (2)	Contractor's performance (2)
Resources saved (2)	Project performance (2)
	Risk Management (2)

Table 9 Question 4 - What do you feel are the key performance indicators in a PPP project?

4.5 Critical success factors leading to successful PPP projects

Question 5 "In general, what do you think are the critical success factors leading to successful PPP projects?" received the most variation of responses from the interviewees (Table 10). This probably indicated that there are many ways for PPP projects to achieve success. For responses that were mentioned more than once, there were six from the Hong Kong interviewees and nine for the Australian interviewees. Amongst these only two were similar for both groups of interviewees, these included "Project objectives well defined" which was mentioned three times by each group of respondents and "Partnership spirit/commitment/trust" mentioned twice by each group of interviewees. As mentioned by the Efficiency Unit (2008c) and the Queensland Government (2008) the objectives / output specification of a PPP project must be well defined. The importance of partnership spirit was also identified by Gunnigan and Eaton (2006). Mentioned the most frequently by Australian interviewees was "Competitive procurement process" (Jefferies et al., 2002) at five times, followed by "Skilled and experienced parties" (Drew, 2005; Kumaraswamy and Anvuur, 2008) at four times, "Champion" (Efficiency Unit, 2008a) and "Clear milestones" (Civic Exchange et al., 2005) both three times and "Economic business case" (Chege, 2001), "Government support" (Qiao et al., 2001) and "Value for money" (Heald, 2003) all twice. Mentioned the most by Hong Kong interviewees was "Appropriate risk allocation" (Li et al., 2005) at four times, "Public consultation" (Kanakoudis 2007) at three times and "Well prepared contract/document" (Partnerships Victoria 2008c) and "Transparent process" (United Nations Economic Commission for Europe 2004) both at two times. The majority of these critical success factors have also been summarized by (Aziz, 2007).

Hong Kong Interviewees	Australian Interviewees
Appropriate risk allocation (4)	Competitive procurement process (5)
Public consultation (3)	Skilled and experienced parties (4)
Project objectives well defined (3)	Project objectives well defined (3)
Well prepared contract/document (2)	Champion (3)
Transparent process (2)	Clear milestones (3)
Partnership spirit/commitment/trust (2)	Partnership spirit/commitment/trust (2)
	Economic business case (2)
	Government support (2)
	Value for money (2)

Table 10 Question 5 - In general, what do you think are the critical success factors leading to successful PPP projects?

4.6 In-house guidance/practice notes

For Question 6 "Does your organization have any in-house guidance/practice notes?" it was found that the majority of the interviewees (six out of seven) in Australia responded "Yes", whereas only three interviewees in Hong Kong agreed (Table 11). Four Hong Kong interviewees responded "No" and two responded "Refer to others". This finding has shown that the Australians were much more likely to have their own guidance materials, whereas for the Hong Kong interviewees the responses varied. Australia has implemented many more PPP projects compared to Hong Kong; hence they can also be regarded as much more experienced. The Victoria state in Australia alone has implemented seventeen projects under the Partnerships Victoria arrangement (Partnerships Victoria 2008a) as mentioned previously. On the other hand, not considering the previous projects conducted by BOT, Hong Kong has only completed a couple of PPP projects.

Hong Kong Interviewees	Australian Interviewees
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No (4)	→	Yes (6)
Yes (3)		
Refer to others (2)		

Table 11 Question 6 - Does your organization have any in-house guidance/practice notes?

5. Conclusions

This paper has studied the public sector's perspective on procuring public works projects via findings from fourteen interviews conducted in Hong Kong and Australia. Government officials and advisers with experience in PPP projects and research were invited to answer six questions related to the implementation. The results found that interviewees from both jurisdictions had conducted some kind of research in the area and had looked at international cases. This finding has shown that governments in both jurisdictions have shown an interest in other sources of information besides real cases and also both are keen to learn from international experiences. Therefore other governments can also consider using a similar approach if they have not already done so. The results from this question enabled objectives 3 – 6 to be achieved. Both groups of interviewees also found that the main difference between PPP and traditional projects is that in a PPP project there is the added advantage of the private sector's efficiency/expertise/management skills involved. Therefore other governments could consider whether this added advantage is required from the private sector when they consider whether or not to opt for the PPP model in their public work projects. The interviewees from Hong Kong also suggested using the Public Sector Comparator as an indicator to determine the preference between the methods. Other criteria recommended by the Australian interviewees were the private sector financing and finance structure of the project. Again these could be used as indications to which method to opt for. These findings helped to achieve objectives 2, 4 - 6. The interviewees were asked which projects would be suitable to use PPP; both groups suggested that it would be crucial for projects to be economically viable. Another important feature according to the Australian interviewees is scope for innovation. Objectives 5 – 6 were therefore achieved. It was suggested by both groups of interviewees that the contractor's performance would be the key performance indicator in a PPP project. The Hong Kong interviewees also suggested that the traditional key performance indicators such as cost, time and quality are also important. The Australian interviewees suggested that the contract terms should be considered. These findings are valuable for measuring the performance of a PPP project for both the public and private sectors. Again, objectives 5 – 6 were achieved. Common critical success factors mentioned by both groups of interviewees included the project objectives being well defined and a partnering spirit/commitment/trust. These factors should be considered by all parties before the project begins to ensure that they are achieved. The Hong Kong interviewees also felt strongly that an appropriate risk allocation would achieve success in the project. For the Australian interviewees a competitive procurement process was the most important success factor. Objectives 1 and 6 were therefore achieved from these findings. Lastly it was found that all the interviewees from Australia and some of the ones from Hong Kong had a practice of having their own organization guidance/practice notes. This practice is highly recommended and especially useful for individuals and companies that are inexperienced with the PPP practice. From these findings objectives 1, 5- 6 were achieved again. From the findings of two completely different jurisdictions that have already implemented PPP, the industry at large will understand better which types of projects should be procured by PPP and how these can be delivered the most effectively. In addition, the findings presented in this paper have formed a comparative study looking at implementation of PPPs in Hong Kong and Australia.

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7. References

- Akbiyikli, R. and Eaton, D. 2004. Risk management in PFI procurement: A holistic approach, *Proceedings of the 20th Annual Association of Researchers in Construction Management (ARCOM) Conference*, Heriot-Watt University, Edinburgh, United Kingdom, 1-3 September 2004, 1269-1279.
- Asian Development Bank [online]. 2000. *Developing Best Practices for Promoting Private Sector Investment in Infrastructure Roads* [cited 20 August 2008]. Available from internet: <http://www.worldbank.org/html/fpd/transport/roads/tr_docs/annex16.pdf>.
- Akintoye A. 2007. Developments in the UK public private partnerships: lessons for the new PPP ventures (keynote paper), *Proceedings of the 2007 International Conference on Concession Public / Infrastructural Projects (ICCP)*, Dalian University of Technology, China, 24 – 26 August 2007.
- Aziz A.M.A. 2007. Successful delivery of public-private partnerships for infrastructure development, *Journal of Construction Engineering and Management*, ASCE 133(12): 918-931.
- Carrillo, P., Robinson, H., Foale, P., Anumba, C., Bouchlaghem, D. 2008. Participation, Barriers and Opportunities in PFI: The United Kingdom Experience, *Journal of Management in Engineering*, ASCE 24(3):138-145.
- Chege, L.W. 2001. Private Financing of Construction Projects and Procurement Systems: An Integrated Approach, *Proceedings of the CIB World Building Congress*, April 2001, Wellington, New Zealand.
- Chiang Y.H. and Cheng E.W.L. 2009. Perception of financial institutions toward financing PFI projects in Hong Kong, *Journal of Construction Engineering and Management*, ASCE 135(9):833-840.
- Civic Exchange, APCO Asia Limited and Hawker Britton 2005. *Getting PPP Right: Using West Kowloon Cultural District as a Case Study* Hong Kong.
- Dainty, A.R.J., Bagilhole, B.M. and Neale, R.H. 2000. Computer aided analysis of qualitative data in construction management research, *Building Research and Information* 84(4):226 – 233.
- Denzin, N.K. and Lincoln, Y.S. 2007. *Handbook of Qualitative Research*, Second Edition, Sage Publications Inc.
- Drew, J. 2005. Public Private Partnerships – Opportunities and Challenges, *Proceedings of the Conference on Public Private Partnerships – Opportunities and Challenges*, 22 February 2005, Hong Kong.
- Eaton, D., Akbiyikli, R. and Dickinson, M. 2006. An evaluation of the stimulants and impediments to innovation within PFI/PPP projects, *Construction Innovation* 6:63-77.
- Efficiency Unit 2001. *Serving the Community by Using the Private Sector*, Hong Kong Special Administrative Region Government, Hong Kong.
- Efficiency Unit 2003. *Serving the community by using the private sector - An introductory guide to public private partnerships (PPPs)*, Hong Kong Special Administrative Region Government, Hong Kong.
- Efficiency Unit 2007. *Serving the Community By Using the Private Sector Policy and Practice (Second Edition)*, January 2007, Hong Kong Special Administrative Region Government, Hong Kong.
- Efficiency Unit 2008a. *Serving the Community By Using the Private Sector - An Introductory Guide to Public Private Partnerships (PPPs) (Second Edition)*, March 2008, The Hong Kong Special Administrative Region Government, Hong Kong.
- Efficiency Unit [online] 2008b. *List of Case Studies* [cited 28 July 2008]. Available from internet: <<http://www.eu.gov.hk/english/case/case.html>>.
- Efficiency Unit 2008c. *Serving the Community Through Successful Project Delivery*, May 2008, The Hong Kong Special Administrative Region Government, Hong Kong.
- Enshassi, A., Mohamed, S. and Abushaban, S. 2009. Factor affecting the performance of construction projects in Gaza strip, *Journal of Civil Engineering and Management* 15(3):269 – 280.
- Ernst and Young 2006. *Project Finance - Asia Pacific PPP Market*, July 2006.
- Ernst and Young 2005. Australian PPP survey – issues facing the Australian PPP market, November 2005.
- Grimsey, D. and Lewis, M. K. 2004. *Public private partnerships: The worldwide revolution in infrastructure provision and project finance*, Edward Elgar.
- Gunnigan, L and Eaton, D 2006. Addressing the challenges that are emerging in the continued increase in PPP use in the Republic of Ireland, *BEAR Conference*, 10-13 April 2006.
- Heald, D. 2003. Value for money tests and accounting treatment in PFI schemes, *Accounting, Auditing and Accountability Journal* 16(3):342-371.
- HM Treasury. 2003. *PFI: Meeting the Investment Challenge*, July 2003, The United Kingdom
- Jefferies, M., Gameson, R. and Rowlinson, S. 2002. Critical success factors of the BOOT procurement system: reflection from the Stadium Australia case study, *Engineering, Construction and Architectural Management* 9(4):352–61.
- Jin, X.H. and Doloi, H. 2008. Interpreting risk allocation mechanism in public - private partnership projects: an empirical study in a transaction cost economics perspective, *Construction Management and Economics* 26:707–721.
- Kanakoudis, V., Papatios, A., Sanopoulos, A., Gkoutzios, V. 2007. Crucial parameters for PPP projects successful planning and implementation, Schrenk M., Popovich V.V., Josef Benedikt J. *REAL CORP 007 Proceedings*, Vienna, 20-23 May 2007, 167 – 184.
- Kumaraswamy, M.M. and Anvuur, A.M. 2008. Selecting sustainable teams for PPP projects, *Building and Environment* 43:999-1009.

- Lam, K.C., Wang, D., Lee, P.T.K. and Tsang, Y.T. 2007. Modeling risk allocation decision in construction contracts, *International Journal of Project Management* 25(5):485-493.
- Leiringer, R. 2006. Technological Innovation in PPPs: Incentives, Opportunities and Actions, *Construction Management and Economics* 24:301-308.
- Li, B., Akintoye, A., Edwards, P.J. and Hardcastle, C. 2004. Risk treatment preferences for PPP/PFI construction projects in the UK, *Proceedings: ARCOM Conference, Heriot Watt University*, 1-3 September 2004, Vol.2, 1259-1268.
- Li, B., Akintoye, A., Edwards, P.J. and Hardcastle, C. 2005. The allocation of risk in PPP/PFI construction projects in the UK, *International Journal of Project Management* 23(1):25-35.
- Mak, C. K., and Mo, S. 2005. Some Aspects of the PPP Approach to Transport Infrastructure Development in Hong Kong, *Proceedings of the Conference on Public Private Partnerships – Opportunities and Challenges*, Hong Kong, February 22, 2005.
- Maltby, P. 2003. Has the PFI grown up? Public Finance, London, August 2003.
- National Audit Office [online] 2008. Background to Private Finance [cited 13 July 2008]. Available from internet: <http://www.nao.org.uk/practice_areas/private_finance/background.htm>.
- Ng, A. and Loosemore, M. 2007. Risk allocation in the private provision of public infrastructure, *International Journal of Project Management* 25(1):66-76.
- Partnerships UK [online]. 2000.[cited 25 June 2008]. Available from internet: <www.partnershipsuk.org.uk>.
- Partnerships Victoria 2000. *Partnerships Victoria Policy*, Department of Treasury and Finance, Victoria State Government, Australia.
- Partnerships Victoria 2001. *Practitioner's Guide*, June 2001, Department of Treasury and Finance, Victoria State Government, Australia.
- Partnerships Victoria [online] 2008a. *Projects* [cited 24 July 2008]. Department of Treasury and Finance, Victoria State Government, Australia. Available from internet: <<http://www.partnerships.vic.gov.au/CA25708500035EB6/WebProjects?OpenView>>.
- Partnerships Victoria [online] 2008b. *Policy and Guidelines* [cited 24 July 2008]. Department of Treasury and Finance, Victoria State Government, Australia. Available from internet: <<http://www.partnerships.vic.gov.au/CA25708500035EB6/0/C0005AB6099597C2CA2570F50006F3AA?OpenDocument>>.
- Partnerships Victoria 2008c. *Standard Commercial Principles*, April 2008, Department of Treasury and Finance, Victoria State Government, Australia.
- Qiao, L., Wang, S.Q., Tiong, R.L.K. and Chan, T.S. 2001. Framework for critical success factors of BOT projects in China, *Journal of Project Finance* 7(1):53-61.
- Queensland Government [online] 2008. *Business Case Development* [cited 29 July 2008]. Available from internet: <http://www.dip.qld.gov.au/docs/library/pdf/ppp/ppp_guide_bus_case_dev.pdf>.
- Raiden, A.B., Dainty, A.R.J. and Neale, R.H. 2008. Understanding employee resourcing in construction organizations, *Construction Management and Economics* 26(11):1133 – 1143.
- Roumboutsos, A. and Anagnostopoulos, K.P. 2008. Public-private partnership projects in Greece: risk ranking and preferred risk allocation, *Construction Management and Economics* 26:751-763.
- Shen, L.Y. and Wu, Y.Z. 2005. Risk concession model for BOT contract projects, *Journal of Construction Engineering and Management*, ASCE 131(2):211-220.
- Sun, Y., Fang, D.P., Wang, S.Q., Dai, M.D. and Lv, X.Q. 2008. Safety Risk Identification and Assessment for Beijing Olympic Venues Construction, *Journal of Management in Engineering* 24(1):40-47.
- Thomas, A.V., Kalidindi, S.N. and Ananthanarayanan, K. 2003. Risk perception analysis of BOT road project participants in India, *Construction Management and Economics* 21(4):393-407.
- Thomas, A.V., Kalidindi, S.N. and Ganesh, L.S. 2006. Modelling and assessment of critical risks in BOT road projects, *Construction Management and Economics* 24(4):407-424.
- Tieman, R. 2003. A revolution in public procurement: UK's private finance initiative, *Finance Times*, London, 24 November 2003, 4.
- United Nations Economic Commission for Europe 2004. *Governance in PublicPrivate Partnerships for Infrastructure Development*, Geneva.
- Wibowo, A. and Kochendörfer, B. 2005. Financial risk analysis of project finance in Indonesian toll roads, *Journal of Construction Engineering and Management* 131(9):963-972.
- Yescombe, E.R. 2007. *Public Private Partnerships – Principles of Policy and Finance*, Elsevier. Great Britain.
- Zhang, X. Q. 2001. *Procurement of Privately Financed Infrastructure Projects*, PhD Thesis, The University of Hong Kong, Hong Kong Special Administrative Region. Hong Kong.

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