

Efficient Utilization of Public-Private Partnerships (PPPs) to Develop Resilient and Sustainable Public Infrastructure

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Abstract

The efficient utilisation of long-term public-private partnerships (PPPs) contractual models for the procurement and operations of public services and infrastructure has been a widely debated topic within the infrastructure industry and the academic research. Whilst the key driver for PPPs remains to be the public deficits facing critical infrastructure requirements crucial for both current public needs and future economic growth, the socioeconomic benefits have been historically marginalised. This paper examines the global and the regional landscape for achieving socioeconomic benefits under PPPs and the associated contribution to the national development agenda in alignment with the global pledge to develop sustainable and resilient infrastructure under the umbrella of Sustainable Development Goals (SDGs). The paper is based on the researcher's master thesis This where the research approach follows Conceptual Framework of an exploratory Study of existing literature and semi-structured interviews followed by case study research. This paper concludes that incentivised output-based performance PPPs can drive the private sector to achieve optimum efficiency through utilising the best of its experience and innovation to maximise efficiency gains incentivised by revenue sharing or rewarding schemes whilst concurrently delivering socioeconomic benefits contributing to the economic growth and quality of life, conditional to identifying the targeted socioeconomic outcomes at the earlier preparation stages and specified within the contractual agreements e.g. reduced service tariff, improved service quality and coverage, service reliability and availability and moreover, employability and income.

Keywords

Public Private Partnerships (PPPs), Sustainable Development Goals (SDGs), Sustainable Cities



1 Introduction

Efficient infrastructure programmes are the foundations for long-term development, decreasing inequality and unemployment and strengthening sustainable growth. Across most developing and developed countries, infrastructure needs significant improvement, as does its financing ability. It is estimated that the worldwide infrastructure financing gap of around US\$1trn per year, representing 1.4% of GDP. (World Economic Forum 2016)

Across the developing world, public budget as the largest contributor of infrastructure finance have not fully recovered from the last financial crisis, widening the market for infrastructure finance. Traditionally, governments have burdened the major share of infrastructure finance with tax revenues. As most the demand for infrastructure for most countries increases, Public-Private Partnerships (PPPs) perform a significant role in delivering public assists and services, thus narrowing the infrastructure gap.

In a broad way, PPPs can be viewed to cover the integration between the public and the private sectors and specifically sets of financial and risk-sharing relationships. Even when viewed closer, the number of PPPs is already significant in some countries and in majority of countries the number of new PPPs is increasing. PPPs contributed for US\$90.7 billion (290 Projects) billion of the total US\$93.3 billion (304 projects) for Private Participation in Infrastructure (PPI) in low- and medium-income countries in 2017 (World Bank Group 2017).

If utilised efficiently PPPs can provide better value for money than traditional procurement, however, they can be threatening for the fiscal sustainability due to the complexity of the aspects of risk sharing, affordability, costing, contract negotiation, budget and accounting treatment. Moreover, the impact of the PPPs has been historically to a degree limited to the impact on the capital and operational expenditure without the comprehensive consideration of the wider socioeconomic impact especially in low- and medium-income countries where PPPs are politically and fiscally driven. The academic empirical literature is very limited. Most evidence is based on informal and unreliable case studies and evidence. Moreover, most case studies are comparing outcomes after and before without well-defined parameters where the overall socioeconomic impact has not been comprehensively analysed using robust analysis. (World Bank Group 2016)

The argument about the inefficiency of PPPs and the effectiveness of the evaluation methods, will be explored through this paper to determine the current significance of Private Participation in Infrastructure (PPI) after decades of utilising PPPs across the world, and the wider socioeconomic impact. Moreover, the dissertation will test the maximisation of the efficiency gains through incentivized output-based performance utilising the foremost of the private sector expertise and innovation to achieve the optimum value for money concurrently with delivering predetermined socioeconomic outcomes.

This paper will test the hypothesis **“Public-Private Partnerships should be structured as socioeconomic partnerships to drive optimum value for money concurrently with socioeconomic outcomes through incentivized output-based performance”** *where the research approach follows three principal stages; (1) exploratory study to identify concept, (2) case study research to test the identified concept empirically and finally (3) review of secondary sources to confirm the empirical results of the case studies research on a wider scale.*

This study will explore the socioeconomic impact of successful PPPs based on output-based performance agreements, and the ultimate benefits during efficiency gains during the long term operational stage rather than the focus cost and time efficiencies during construction stage only.

2 Literature Review

This section will review the existing literature about PPPs, and it is structured as following (1) Existing Literature, (2) Lesson Learnt, and (3) Research Motivation and Objective.

This section represents the theoretical base for the hypothesis. It provides crucial background knowledge and foundation for the discussion of the conceptual framework and demonstrates how this study can contribute the body of knowledge.

2.1 Existing Literature

There is no universal definition for PPPs where each international organisation and government authority has developed its own definition, for example; OECD defines PPP as “An agreement between government and one or more private sector partners (which may include the operators and the financiers) according to which the private partners deliver the service in such a manner that the service delivery objectives of the government are aligned with the profit objectives of the private partners and where the effectiveness of the alignment depends on a sufficient transfer of risk to the private partners” (OECD 2008) whilst UK defines a PPP as “arrangements typified by joint working between the public and private sectors. In their broadest sense, they can cover all types of collaboration across the private-public sector interface involving collaborative working together and risk sharing to deliver policies, services and infrastructure.” (HM Treasury 2008).

There is no standard contractual form for PPPs where the contractual structure is shaped upon the objectives of the project. However, there are some common types of contractual structures for PPPs i.e. long-term performance-based Management Contracts, Design-Build-Finance-Operate-Maintain (DBFOM) and Built-Operate-Transfer (BOT).

The diagram below illustrates the relationships between the different parties within the contractual structure of a typical PPP and the associated responsibilities



Note: DBFOM=Design-Build-Finance-Operate-Maintain; EPC=Engineering, Procurement, Construction; O&M= operation and maintenance; SPV= special purpose vehicle.

Source: APMG CP3P Certification Guide 2016

Payments under PPP contractual structures is divided principally into two mechanisms; (1) User-pay concession PPP – payments are received directly through the revenues from end-user payments.

Demand risk is the principal concern for such arrangement. An example is toll-road PPPs; and (2) Government-pay PPP – payments are principally received through the government. Sometimes known as availability pays PPP as the payment takes place when the asset is available for use regardless the performance levels.

This section explores the key rationale for using PPPs in the financing and development of public infrastructure and services as demonstrated in the existing academic literature and industry reports. It widely agreed that there are 4 principal key drivers for using PPPs; (1) infrastructure finance gap (2) alternative finance to restrained public budgets, (3) inefficiencies of the public sector, and finally (4) efficiency of the profit-driven private sector.

Across the developing and developed countries, infrastructure needs significant investments for development, maintenance and rehabilitation which can't be fully financed through the strained government budgets where governments are seeking alternative finance through the private sector to reduce the infrastructure finance gap and avoid restricting the associated economic growth. The global infrastructure finance gap has been estimated at 1 billion USD annually representing 1.4% of Gross Domestic Product (World Economic Forum 2016)

Investment in the development of existing and new public infrastructure is always strained due to limited government budgets. This delay affects the economic growth, which is significantly supported by the infrastructure development, and moreover, the delay threatens the quality of life of citizens due to the deterioration of level of services. (Agrawal 2010). “One significant motivation in using PPP has been to partly overcome budget and borrowing constraints, which have become a major restriction of national policy autonomy” (McQuaid and Scherrer 2008)

As a general logic, the experience of private sector surpasses the public sector, a government agency would be limited to a few number of similar type projects and within certain geographical jurisdiction while the private developer would be continuously developing similar type projects in various locations harvesting significant experience of defaults and lessons learnt motivated to increase efficiency, and thus maximising the profits. In addition to the full life cycle approach for long-term concessions where the asset is designed or rehabilitated at the early stages of the contract to provide ultimate efficiency along the life cycle to maximise operational savings and the associated profits. Risk management is the core foundation for the various efficiency gains in PPPs.

A fundamental concept in PPPs is that each risk should be allocated to the party best able to manage and mitigate this risk. For the public sector, risk transfer provide certainty on cost and time, and moreover reliability on outputs where any default is highly penalized where for the private sector is rewarded for the transfer of this risk in a fair trade-off of risk and reward that drives higher efficiency and savings. A principal motivation for PPPs is the cost and time efficiencies compared to the traditional procurement. The cost of public procurement in its pure nature without private sector profit under lower interest rates for debt should be cheaper than the private sector, only with efficiency gains, the private sector can driver better value for money. In a study that explored the performance of completed PPP projects compared to traditionally procured projects, it was concluded that PPPs provided significant reductions in cost and time overruns. (OECD 2011). Similar results were achieved on high cost and time efficiencies in Australia (Raisbeck et al. 2010). Another study for North America confirmed the cost and time efficiency gains (Chasey et al. 2012).

Infrastructure is the core foundation for socioeconomic progress. “Infrastructure typically has a socioeconomic rate of return of around 20 percent. In other words, one dollar of infrastructure investment can raise GDP by 20 cents in the long run” (Mckinsey Global Institute 2016). This economic impact is a result of enhanced productivity through reduce service tariffs and improved

quality, moreover, smart infrastructure upgrades connect the countries to the global digital economy. In addition, infrastructure increases employability and creates jobs. “In the shorter term, increasing infrastructure investment by one percentage point of GDP could generate an additional 3.4 million direct and indirect jobs in India, 1.5 million in the United States, 1.3 million in Brazil, and 700,000 in Indonesia” (McKinsey Global Institute 2016).

However, the academic empirical literature is very limited. Most evidence is based on informal and unreliable case studies and evidence. Moreover, most case studies are comparing outcomes after and before without well-defined parameters where the overall socioeconomic impact has not been comprehensively analysed using robust analysis. (World Bank Group 2016).

2.2 Lessons Learnt

Public infrastructure projects are complex arrangements that requires large investment and has a significant impact on the economic development and quality of life. It is crucial to learn from past experience to deliver major infrastructure projects efficiently. “Learning is expected to improve the generation and utilization of useful knowledge to help governments avoid future policy failures and increase the potential for greater success with respect to future policy goals and outcomes” (Howlett 2009). Failure can be caused by inability to learn from past experience to enable future success in identification and mitigation of unforeseen risks and avoidance of poor implementation.

Many of the developed countries have seen the benefits of concluding and extracting the lessons learnt from past experience in order to enhance policy, legislation and implementation of PPPs. However, the assessment of the performance and impacts of completed PPPs on the efficiency and quality is limited. Some studies include partial assessments with a more comprehensive assessment for PPPs in OECD countries. This section will demonstrate the conclusion of the lessons learnt from a number of reputable international organisations, financial institutions and national government that have led a significant number of PPPs in major infrastructure projects.

In 2014, WBG investigated the performance and efficiency of PPP framework through reviewing the performance of 60 PPP projects in 35 countries along the period of 7 years, projects worth more than \$10 billion and providing service to more than 30 million people. All selected projects included the delivery of public services with some risk transfer to the private partner. Lessons learnt are divided into 3 main categories economics, politics and execution which are the main drivers for the success or failure of PPPs. This section will focus on the economic and political factors considering their relevance to the research topic.

- Economics – PPPs can improve challenging project economics, only if sound economic fundamentals in the terms of robust basic cost assumptions and a coherent business case are considered. PPPs should structure partnerships that balance the economic benefits of the private partner and social outcomes of the public partner driving optimum cost, quality and investor return. (World Bank Group 2014)
- Politics – Political champions play a crucial role in the success of PPPs especially public-sensitive sector as education, healthcare and aviation. In addition to the need for long-term consistent and sustainable regulatory framework for PPP programs and pipelines that aren't affected by the regular change of political systems. Stakeholders in general are influential to the success of PPPs due to the various socioeconomic and environmental impacts and concerns which should addresses at the very early stages of the project with maintaining efficient stakeholder management. (World Bank Group 2014)

In 2009, EIB investigated the performance of 66 active PPPs and concluded the lessons learnt as following:

- Two major threats identified by the participating interviewees are the political motivation and off-balance nature of PPPs that leads to the implementation of PPPs in countries that can't afford them.
- Robust project screening process and coherent pipeline of projects supported by transparent procurement process, are among the crucial success factors for PPPs.
- Significance of the proper management and mitigation of project risks as well as demand risks.

2.3 Research Motivation and Objectives

The existing literature of studies and industry reports demonstrates the significance of social and economic factors on the success of PPPs, and its influence on the value for money evaluation. However, the review of the existing literature about PPPs has identified the lack of research on the socioeconomic impact of PPPs and the distant consideration in the VFM analysis specifically in low and medium income countries where PPPs are political driven focusing on the short-term development of the capital asset.

Most economists and practitioners agree that the main benefits of PPPs are maximizing efficiency gains. However, the findings in the literature are less clear on socioeconomic outcomes in terms of job creation and poverty reduction as they seem to be linked to the provision of infrastructure services itself rather than the procurement method used (traditional procurement vs. PPPs).

The academic empirical literature of the economic impact of PPPs is very limited. Most of the evidence is based on anecdotal evidence and case studies with the majority of them comparing outcomes before and after without a well-defined counterfactual.

Sound empirical analysis has been carried out in the literature of private sector participation (PPI) in Infrastructure mainly privatizations. (Galal et al 1994; Jones et al. 1998)

The identified research gaps within the existing literature of academic research and industry report concerning the socioeconomic impact of PPPs and evaluation of whole life cycle costs, raises two significant research questions that can contribute to the body of knowledge for the successful implementation of PPPs;

“Can PPPs drive optimum value for money through incentivized output-based performance efficiency gains across the lifecycle of the asset, standing out from traditional procurement?”

and

“In the pursue for a better value for public money, can PPPs deliver tangible socioeconomic benefits?”

This paper will test the following hypothesis about the structure of successful and efficient PPPs **“Public-Private Partnerships should be structured as socioeconomic partnerships to drive optimum value for money concurrently with socioeconomic outcomes through incentivized output-based performance”**.

This research will contribute to the literature addressing socioeconomic impacts of PPPs and the significance of incentivized output-based performance compared to traditional procurement to maximise efficiency and value for money.

3 Research Methodology

This section demonstrates the methodical approach to select the research philosophy and strategy that will be used to test the research hypothesis and answer the research questions where the conceptual and case study approaches are the recommended research approached due to the complex nature of the output-based performance and the associated socioeconomic impact.

The review of the existing literature of academic research and industry reports in the previous chapter suggests the importance of understanding and analysing the overall context of PPPs to determine the success factors and the outcomes of output-based performance and the associated socioeconomic impact.

“Empiricism is referred to as a set of philosophical beliefs that have developed upon the idea that experience, rather than reason, is the main source of the knowledge of the world” (Morick 1972). The research based on empiricism is a practical method to investigate the nature of the world through ways that depend on experience rather than assumptions and theories. Empirical research settle questions about the nature of human ideas and actions by recognizing claims raised by direct observations only (Love 2001). Discussion and arguments can drive important concept. “The interpretivist approach focuses on selecting what data should attend to imply ‘theory’. The belief of interpretivism relating to ontology and epistemology is that realities are multiple and relative” (Hudson and Ozanne 1988).

The conceptual framework for this research is incorporated by contextual factors from the literature review. The conceptual framework guides the requirements from the empirical data to test the research hypothesis and address its questions. In this dissertation, sequential triangulation was the basis of the research design which has been a widely endorsed approach in both of natural and social sciences. In this thesis, the research design was based on ‘sequential triangulation’. It is notable that the triangulation approach has been advocated by researchers and widely applied in a variety of studies for both social and natural sciences (Morse 1991; Love et al. 2002; Bjurulf et al. 2012).

The research approach includes three principal stages; (1) exploratory study to identify concept, (2) case study research to test the identified concept empirically and finally (3) review of secondary sources to confirm the empirical results of the case studies research on a wider scale.

This research is investigating multifaceted phenomenon to develop a deep understanding of the context which can be achieved through case study research (Eisenhardt and Graebner 2007). One of the main strengths of case study research is comprehensive analysis of real life events which strengthened our knowledge of organisational and individual phenomena which differentiates case study research from experiments and surveys due to their limited ability to explore wider context (Yin, 1994). Moreover, the conceptual framework through its exploratory study is used to direct data collection and analysis within case study research.

4 Findings and Discussion

4.1 Exploratory Study

The exploratory study undertaken is based on an interpretivist approach that depends on semi-structured interviews to extract the required primary data to test the hypothesis derived from the literature review. It has been demonstrated in the previous sections that researchers in performance measurement researches tended to “marry with the ontology and epistemology of interpretivism because reality and multiple perspectives are sought to gain an understanding of its use in practice” (Neely et al. 2000).

For the purpose of a comprehensive research on output-based performance measurement of PPPs and the associated socioeconomic impacts, a qualitative study was undertaken to investigate the current practices and outcomes.

To meet the objectives of the interpretivist research, it requires “the purposive selection of a sample size of 10 to 35 participants who have specialised knowledge of the topic” (Kumar, 1989). Accordingly, the researcher conducted 17 in-depth interviews with market leading experts who were directly involved in preparation and implementation of PPPs in the Middle East and/or globally, and thus acknowledged as experienced practitioner in the PPP industry.

The interview questions focused on the topics that can contribute to interpretation the research area and testing the research hypothesis. These topics included; (1) significance of PPPs in Public infrastructure, (2) motivations and obstacles, (3) socioeconomic parameters in the evaluation of PPPs, (4) relationship between output-based performance and efficiency gains, and finally (5) relationship incentivized output-based performance and maximizing efficiency gains.

There is a general agreement from the interviewed experts from various sectors of the infrastructure industry on the significance of PPPs in the finance and development of infrastructure. Majority agreed that in addition to the infrastructure finance gap, one of the main drivers of PPPs is inefficiency of traditional procurement through raising debts and awarding separate contracts with fragmented lifecycle between design, construction, operation and maintenance, and ultimately disconnected from output-based performance of such contracts.

On the wider impact of PPPs, majority of experts agreed that efficiency gains of PPPs should have a wider socioeconomic impact through the efficiency gains achieved. The experience and the efficiency of the private sector should be used to improve the quality, reliability and coverage of the public services, moreover, the impact should be reflected to the economic prosperity of the surrounding areas to these projects in terms of increasing productivity, reducing tariffs and employability on the long run. The main challenge that has been highlighted is the balanced distribution of the efficiency gains between the private sector with profit driven and the public sector which social-driven which can be only achieved through well-structured output-based performance contracts for these complex projects determining output obligations and the associated profits. Moreover, whilst being of utmost importance, integrating the stakeholder aspect into the overall PPP scheme has shown to be challenging – not in the least because of the soft, subjective and non-measurable aspect of it.

On incentivized output-based performance, there is a general agreement that this approach leads to the ultimate efficiency gains rather than fixed output levels obligations. However, the complex nature of these projects remains the biggest obstacle especially from the perspective of the demand risk and revenue sharing.

4.2 Multi-Case Study Research

This section presents a number of success and failure stores for the utilisation of PPPs in the financing and development of public infrastructure within the sectors of transportation, water and telecom which were used to empirically test the output-based performance of PPPs compared to its preceding performance under traditional procurement, and the associated socioeconomic benefits.

4.2.1 *Success Stories in PPPs*

This section demonstrates the socioeconomic impact of successful PPPs through output-based performance leading to efficiency gains in the provision of public infrastructure assets and services. The selected success stories demonstrate that the advantages of PPPs can go beyond the cost and time efficiency during the development of the asset extending across the whole life cycle of the asset through the long-term implementation and operation process.

4.2.1.1 *Transport Sector*

Demand increase – Suape Container Terminal witnessed the increase in the Twenty foot Equivalent Units (TEUs) reached 500%, over 300,000 TEUs annually compared to pre-commission. This economic efficiency gain was associated with additional socioeconomic impact of increased employability of 172 job created. (IFC 2008)

Time Efficiency in Ports – Port of Toamasina in Madagascar witnessed the decrease in loading and unloading time resulted in the increase of the number of container from 10 to 30 per hour per vessel where time required for yard handling decreased from multiple days to a number of hours. (IFC 2010)

Time efficiency in Roads – Hyderabad mirpurkhas Dual Carriage Way Project in Pakistan witnessed the reduction in the travel time from 100minutes to 30 minutes. This economic efficiency gain was associated with an additional socioeconomic impact of increased employability through 15000 indirect jobs and 5000 direct jobs. (PPP unit, Sindh government 2012)

Reduced Service Fee – Virgin Samoa Airlines in Samoa witnessed the reduction of airfares that resulted in estimated savings of 57.7million USD and increased demand of 243,000 between 2005 and 2009. This economic efficiency gain was associated with an additional socioeconomic impact of increased employability through 671 jobs and improved salaries. (WBG, 2009)

4.2.1.2 *Water Sector*

Reduced Service Fee – Shanghai water authority witnessed the reduction of the service fee for treated waste water at CNY 0.33 per cubic meter at minimum treatment level of 1.4 million m³/day. This resulted in generating savings of 1.4 million m³/day, around 40% of the estimated government service fee. (ADB 2010)

Retained long-term Service Fee – Busembatia in Uganda witnessed the results of output-based performance management contract through retaining a fixed service fee for 5 years. This economic efficiency gain was associated with an additional socioeconomic impact of improved service reliability through 24-hrs service and extended service coverage through 430 new water connections.

4.2.2 *Failure Stories in PPPs*

This section demonstrates the influence of socioeconomic factors on the success and failures of PPPs. It explores both type of stakeholders, decision makers and end-users where the political support of the decision makers and affordability for end-users have been utilized in normative literature as CSFs for the success of PPPs.

4.2.2.1 *Failure due unaffordability*

SR 91 Orange County (USA) – The increased toll rates were poorly received by road users who have driven elected officials to re-own it and reduce the tolls. (Fitch, 2013)

Chicago Street Parking (USA) – The very high initial tariff resulted in public outrage and escalations that led to the cancellation of the concession in the first few years. (Fitch, 2013)

4.2.2.2 *Failure due to lack of political support*

Stewart Airport (USA) – Major regional airports were a strong barrier due to their well-established connections despite the initial anticipation of attracting new carriers. Future demand risks require some sizeable public equity to be feasible. (Fitch, 2013)

Hospital Sud Francilien (France) – The delays and cost overruns resulted in PPP failure driven by political bias against PPPs which led to unnecessary changes delaying the overall project progress. (Fitch, 2013)

5 **Conclusions and Further Research**

The aim and objective of this paper was to explore the significance of incentivized output-based performance in driving efficiency gains and associated socioeconomic impact. The conducted analysis in this research based on primary data gathered from semi-structured interviews and multi-case study research, and secondary data of existing academic literature and industry report, concur the research hypothesis where incentivized output-based performance tends to maximize the economic profits of the private partner incentivizing the efficiency gains where usually a revenue-sharing mechanism and increased demand are the biggest motivations. The analysis interpreted the importance of socioeconomic parameters in the success of PPPs especially output-based performance and user-pays PPPs in addition to interpreting the socioeconomic benefits derived by efficiency gains, thus deducting the overall importance of socioeconomic parameter in the provision of public infrastructure assets and services. The research analysis provided comprehensive answers to the research questions through the research recommendation in the following section.

5.1 **Research Recommendations**

Recommendation (1) – In a broad term, public finance can't suffice for the provision of public infrastructure and services neither financially due to the infrastructure finance gap nor technically due the difference in the levels of experience of the private sector compared to public sector and moreover, the strict contractual nature of PPP which allocates the risks to the party best able to manage it which succeeded to a large extent to reduce significantly cost and time overrun especially in availability PPPs.

Recommendation (2) – Incentivized output-based performance PPPs drives the private sector to achieve optimum efficiency thus maximizing the efficiency gains and the associated profits. In standard output-based performance contract, private sector is paid at fixed targets and penalized for defaults but not rewarded on exceeding targets where incentivized output-based contracts through revenue sharing or rewarding schemes, motivates the profit-driven private sector to utilize the best of its experience and innovation to maximise efficiency.

Recommendation (3) – Socioeconomic parameters in PPPs have a crucial value at both ends of PPPs. From one end, socioeconomic parameters of political support (decision maker) and affordability (end users) plays a key role in the success of PPPs especially in public sensitive sectors as healthcare, education, and aviation. On the other end, the socioeconomic benefits resulting from output-based performance PPPs and its associated efficiency gains, are significant to the socioeconomic growth and quality of life e.g. reduced service tariff, improved service quality and coverage, service reliability and availability and moreover, employability and income. Socioeconomic parameters can be considered as key performance indicators for PPPs and should be comprehensively assessed at the initial stage of the projects similar to the cost benefit analysis undertaken by some developed countries at the screening stage of PPPs.

5.2 Research Critique and Limitations

Limited Interviews – Despite the broad sample, breadth of its background and significance of its experience in the research field, only transaction advisory experience was comprehensively investigated to the vast experience of advisors across various projects in different location. The sample should have included wider representation of each group.

Interviews Timing – Despite the comprehensive and consistent primary data extracted from the semi-structured interviews. Several interviews were conducted in conjunction with the case study research where the interpretations and insights of those the experienced practitioners might not have fully contributed in the fine-tuning process of the hypothesis.

Secondary source bias – A large portion of the secondary data are produced by international organisations and Western expats that might be affected by the western political, technical, and socioeconomic parameters through their investigations and interoperations. This research was restricted with this approach due to the lack of performance measurement data of PPPs in the Middle East through the procuring government agencies, in addition to the limitation of locally developed industry reports.

5.3 Recommendations for Future Research

Recommendation (1) – The existing literature is very limited in the critical research area of output-based performance measurement of PPPs and quantification of improved value for money. The future research in this area will contribute to the enhanced performance of PPPs.

Recommendation (2) – The socioeconomic impact of PPPs require further research work to identify the main parameters of efficiency gains that drive socioeconomic benefits, and the early assessment of socioeconomic parameters to integrate its requirements in the early stages of the project preparation and the its specifications within the project agreement in specific the relationship to support the national development agenda and the sustainable development goals (SDGs). The identification and the measurement of relevant environment, social and governance (ESG) parameters will be crucial to achieve such strategic integration.

6 References

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