



**Manchester
Metropolitan
University**

Sinkala, Alinaswe and Ochieng, Edward and Ominde, Diana and Zuofa, Tarila and Badi, Sulafa (2021) Reimagining Public-Private Partnership Model as Hybrid: South Africa Viewpoint. *Public Works Management & Policy*. pp. 1-32. ISSN 1087-724X

Downloaded from: <https://e-space.mmu.ac.uk/628586/>

Version: Accepted Version

Publisher: SAGE Publications

DOI: <https://doi.org/10.1177/1087724x211046626>

Please cite the published version

<https://e-space.mmu.ac.uk>

Reimagining Public-Private Partnership Model as Hybrid: South Africa Viewpoint

Public Works Management & Policy
1–32
© The Author(s) 2021
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/1087724X211046626
journals.sagepub.com/home/pwm



Alinaswe Sinkala¹, Edward Ochieng² ,
Diana Ominde³, Tarila Zuofa⁴, and Sulafa Badi²

Abstract

As significant increases in the financing of infrastructure and other resources will still be required to bridge the current infrastructure gap experienced globally, alternatives to the standard PPP infrastructure project delivery models are constantly appraised in several nations. This research examined the viability of reframing Public Private Partnership (PPP) frameworks as hybrid PPP alliances (HPPPA), which would enhance current PPP practices and enable practitioners in South Africa to deliver PPP infrastructure projects more efficiently. The research adopted a two-pronged qualitative data collection approach, utilizing semi-structured interviews as well as case studies to obtain empirical evidence that was compared to secondary data on how PPP practices in South Africa can be enhanced. The research established that while the South African PPP legislations was adjudged as being suitable, the delivery framework was found to be highly costly and comprised of long approval processes.

Keywords

public-private partnership, South Africa, hybrid public-private partnership alliance, project management, infrastructure

¹Architect, Johannesburg, Gauteng, South Africa

²The British University in Dubai, United Arab Emirates

³Strathmore University, Nairobi, Kenya

⁴Manchester Metropolitan University, UK

Corresponding Author:

Edward Ochieng, Faculty of Business and Law, The British University in Dubai, PO Box 345015 Dubai, United Arab Emirates.

Email: Edward.ochieng@buid.ac.ae

Introduction

While South Africa stands as the most progressive public-private partnership (PPP) country in Africa, arguments still remain as to whether PPP has achieved its intended objectives (Seeletse, 2016). According to Grimsey and Lewis (2005), one reason for this stems from the lack of universal congruence on the definition of PPP. This in turn makes it open to diverse interpretations and in some cases a passive approach from the public sector during the delivery process. Despite the lack of congruence on the PPP concept, Fombad (2014) posited that perhaps the establishment of a formal PPP structure within the National Treasury provided fundamental guidance on how best to explicate the concept within the context of South Africa. Accordingly, the National Treasury (2007) defined PPP in South Africa as “*a contract between a government institution and a private party, where the private party performs an institutional function and/or uses state property in terms of output specifications; substantial project risk (financial, technical, operational) is transferred to the private party; and the private party benefits through unitary payments from government budgets and/or user fees.*” The South African National Treasury (2012) disclosed that many public entities fail to execute their planning mandates and spend infrastructure budget due to lack of management and technical capacity. National Development Plan 2030 (NDP, 2012) concurred that the state had committed substantial funding to public infrastructure to address backlogs, but not all of it had been spent. Development Bank of Southern Africa (DBSA, 2012) advised that South Africa’s focus for the next 10 years should be to redress economic infrastructure backlogs and inadequacies that impede economic growth. National Development Plan 2030 (NDP, 2012) informs that infrastructure investment, as a percentage of gross domestic products needed to grow to 30% by 2030.

From the above, lack of infrastructure delivery may not be due to shortage of capital finance alone, as many public entities have failed to execute their planning mandates and infrastructure budget due to lack of management and technical capacity NDP (2012). In South Africa for instance, the National Planning Commission (n.d.) identified that due to poverty, many households are unable to afford the cost of services while limited human and financial resources to deliver services could still be classed among other concerns affecting the lack of infrastructure delivery. Zhang et al. (2015) argued that questions still remain as to how to cultivate a facilitating institutional environment for developing PPP projects success. National Treasury (2018) found that in order to increase the delivery of PPP there is a need to streamline its implementation to reduce project lifecycle and ease regulatory regime so that it is less cumbersome for stakeholders (NDP, 2012). Zou et al. (2014) pointed out that PPP’s success depends on selecting the “right” team and building good relationships throughout the project lifecycle. National Treasury (2018) established that in order to build a bankable pipeline of PPP projects, the public sector must change their passive approach to be able to effectively implement, manage and monitor such projects (NDP, 2012).

Koolwijk (2010) found that in Australia, alliancing is embedded in other contracting systems known as hybrid alliance characterized by allocating certain risks

rather than total sharing or transfer which is similar to the observation made on two Dutch cases of hybrid alliancing. Clifton and Duffield (2006) examined means of improving private finance initiative (PFI)/PPP and concluded that improved value for money would be realized through the application of alliancing principles. This was due to the flexible structure for management of change via a hybrid public-private partnership alliance (HPPPA), which provided a mechanism for managing long-term outcomes whilst maintaining the original commercial intent of a PPP. Snopko (2014) identified PPP and hybrid projects as an effective method for financing local government investment projects in the European Union. In the “rationale for the development of innovative PPP’s conducted by WEF (2014)”, it was recommended that the role of the public sector remained vital in the success of PPP and innovative partnerships with the private sector. It was also contended that civil society actors needed to educate and encourage society in order to change the perspective toward PPP (Danish Institute for International Studies, 2015; European PPP Expertise Centre, 2011; WEF, 2014).

One explanation offered for HPPPA is that it enables governments take advantage of their ability to raise financing at reduced rates than might not be the case for the private sector. Furthermore, given the scale of the global infrastructure deficit, Ochieng et al. (2020) advocated the need embrace innovative strategies for financing infrastructure. Therefore, the need to develop more flexible and collaborative forms of infrastructure delivery in South Africa that can better meet the objectives of both the public, private partners and other stakeholders while still achieving cost-effective infrastructure remains crucial. Consequently, the aim of this research was to examine the viability of reframing PPP projects as HPPPA framework, to enhance current PPP practices and enable practitioners in SA to deliver PPP projects efficiently. The study contributes to a theoretical enhancement of the existing PPP infrastructure literature, achieved by proposing HPPPA framework. The study provides sufficient empirical evidence which indicates that effective and efficiency in PPP infrastructure delivery can be achieved by infusing alliancing principles. This would reduce project delivery duration, cost and enhance a collaborative approach toward PPP project delivery. The remainder of this article is structured to provide a review of the SA PPP framework and PPP success factors. Subsequent sections explain the research method, findings, discussion, and conclusions.

South Africa Public Partnership Framework

Zhang et al. (2015) argued that in as much as there are diverse opinions on the definition of PPP, it still carries a vague construct that is very general in nature based on different countries or organizations tied to their industrial synthesis. The South Africa Public-Private Partnership Manual (2004) defined a PPP as a contract between public and private entities in which the private partner assumes substantial financial, technical, and operational risk in the design, financing, building, and operation of a project. It is worth noting that this definition does not outline roles of the public sector, omits the collaborative aspect, does not inform of the alleged skills transfer, the

empowerment of the previously disadvantaged, and innovation. Brinkerhoff and Brinkerhoff (2011; cited by Zhang et al., 2015) warn against function-specific definitions as being of little help in delineating the key features of PPP. Using an integrated approach, Zhang et al. (2015) proposed redefining the PPP as a strategy that is utilized to provide quality infrastructure facilities only possible with total active commitment from both public and private partners. Just like in alliancing, a PPP needs public sector with internal expertise to underline infrastructure opportunities, manage and monitor its implementation, and facility management agency capacity at post concession stage.

Global experience indicate that PPP has been promoted as an alternative procurement method (Ahmadabadi & Heravi, 2019b; Reynaers & Parrado, 2017; van Marrewijk et al., 2008) which offers immense benefits to the public sector by increasing value for money, economic growth, employment, and project management (Carbonara et al., 2014; Orzes et al., 2017; Zhang et al., 2016). According to Macário et al. (2015), the expectation was that compared to traditional procurement models, PPP would facilitate improved quality, effectiveness, and greater efficiency for infrastructure development; by taking advantage of private management experience, competitive pressure in the allocation of contracts, and transference of most of the investment risk to the private sector side. National Treasury (2018) identified PPP as one of the pillars to infrastructure development in South Africa and out of R834.1 billion planned for public sector infrastructure spending over a period of 3 years, PPP projects accounted for R18.5 billion or 2.2%. DBSA's (2012) report on the state of SA's economic structure established that lack of sufficient governance framework was one of the causes for the decline in infrastructure development with only 25 number of closed off PPP undertaken using treasury regulations. It is, however, worth noting that the 25 number of closed off PPP projects reported by government technical advisory center was different to the 33 projects published by National Treasury, which includes projects undertaken by South African National Roads Agency, a schedule two entity and hence not subjected to treasury regulations. According to Osei-Kyei and Chan (2015), SA PPPs are undertaken using various models and majority of the infrastructure projects are bundled with attaining financial benefits thereby overshadowing innovation and skills transfer. Osei-Kyei and Chan (2015) further noted that obstacles of high transaction cost, lengthy procurement process, lack of appropriate skills, unattractive financial market, incomplete risk transfer, and higher end-user charges have impeded full utilization of PPP.

As observed from the PPP Manual, South Africa also has established a robust regulatory framework in terms of which national and provincial government institutions can enter into PPP agreements. According to Arimoro (2018), the legislation that drives PPPs for national and provincial government is Treasury Regulation 16 issued to the Public Finance Management (PFMA) Act. However, it is worth highlighting that there has been a lack of studies that focus on the actual delivery framework of PPP and many research conducted in SA have failed to explore the application of HPPPA as a way of improving infrastructure delivery. There are many questions that still linger on whether the PPP has achieved its mandate in South Africa.

Theoretical Context of PPP Delivery Framework

The South Africa Public-Private Partnership Manual (2004) identifies the PPP framework as pivotal in ensuring tasks are executed by partners according to the planned sequence, quality and duration. However, studies by De Schepper et al. (2015) established that PPPs are characterized by high transaction costs, the long duration for feasibility study, and procurement which causes projects to be delayed at early stages. Many researchers concur with De Schepper et al. (2015) and proposed various framework reviews that could enable the PPP framework to become more efficient in infrastructure delivery. Table 1 provides a selected list of similar research studies that have come close to exploring shortfalls of PPP in SA. In as much as they provide an in-depth study on SA PPP, these have mostly focused on isolated elements of PPP but failed to holistically review the performance of its framework against set objective needed in closing the infrastructure gap as outlined in National Development Plan 2030. In addition, none of the researchers focused on reviewing the SA PPP framework with the aim of remolding it as an HPPPA. Furthermore, their studies failed to analyze the operations and maintenance of infrastructure during the post concession period. Zhang et al. (2016) critical review of PPP publications from selected Chinese journals recommended that holistic and pragmatic research on PPP management is still necessary due to increased construction industry growth and complexity of infrastructure projects.

It is also particularly important to clarify the success factors of PPP. Without a common understanding of success factors for PPP, monitoring and controlling their performance effectively becomes problematic. Therefore, the identification of appropriate success factors is important for PPP stakeholders in SA, as they require specific and measurable frameworks for tracking and benchmarking the key outcomes of their project investments. As noted by Jaafar et al. (2020), ascertaining PPP projects critical success factors (CSFs) remains a challenge given the complex and typically highly customized nature of each project. For infrastructure projects, performance evaluation are even more compounded by existence of multiple contractual arrangements typically found in such projects (Jaafar et al., 2020; Liu et al., 2016). Consequently, no reliable statistical or meta-analytical model would accurately evaluate project performance. While literature specific to CSFs in South African PPP in infrastructure projects remain scarce, a host of comparative studies from both developed and developing nations, exist on the subject, with divergent perspectives.

To examine infrastructure-based PPPs, a host of CSFs with several subordinate factors would need to be considered. Díaz (2020) suggested a binary classification of risks in infrastructure PPPs—that risks can be due to extrinsic factors or intrinsic factors (in relation to the project). Drawing evidence from Latin America and Caribbean countries, they concluded that project scale (size), sector of implementation (water and sanitation or transport), and investment in divested assets are key intrinsic causes of project failure. Extrinsic factors that are likely to guard against early termination include quality regulatory environment, presence of stable domestic macroeconomic environment, and presence of external financial shocks.

Table 1. Previous Similar Research Projects in SA.

S/N	Name of author(s)	Date	Paper title	Lessons learnt	Critique
1.	Johan A. Minnie	2011	Critical success factors for PPP in SA.	The building up of hypothesis from identifying successful PPP from those that collapse.	Does not address the framework itself, no proposal for any HPPP and does not address the infrastructure aspect.
2.	Bhekabantu Alson Ntshangase	2002	PPP for service delivery in SA.	The study is against PPP engagement of the private sector as a way of increasing service delivery to meet apartheid imbalance and shortfall. Proposes contracting systems that combine private and public sector participation.	The research argues against PPP as PRS would milk the poor and not good for poor countries such as SA, but does not propose how to make PPP work efficiently.
3.	Oarona Bogopane	2008	Are PPP effective in delivering public office accommodation projects?	Value for money and risks highlighted.	The study fails to bring out reasons behind the hypothesis that, public-private partnerships would be effective for office "accommodation projects as an office", rarely generate income compared to user paid facilities tolled roads.
4.	Rene Winifred Albertus	2016	PPP contract management failure in information technology service delivery: A qualitative inquiry into the South African Department of Labour ERP implementation project.	Identifying that the causes of failure are due to public sector management competency challenges and not system complexities and hence puts too much power in the hands of the consultants.	The study only pins its review and recommendation on top management failure but fails to point out how the PPP expertise of private sector could assist in uplifting public sector management shortfall. There is also no mention of a public-private partnership framework review.
5.	Solly Matshonisa Seeliese	2016	Performance of SA PPPs.	PPP is unable to successfully transfer risks due to failure to achieve synergistic relationships.	The proposed regulatory PPP unit was already set up in SA but need decentralizing to manage all public-private partnership projects.
6.	Bruchez Nathanael	2014	PPPs in SA: to what extent are PPPs suitable for the long-term development of infrastructure in SA?	Recognizes the infrastructure challenges in SA and disappointed at a number of closed off projects. Proposes to give PPP more visibility by having the public-private partnership unit more active in the role as a promoter.	The use of PPP should recognize the reasons the public sector needs private engagement beyond financial.
7.	Kosie Jacobus Haarhoff	2008	PPP as an alternative Service delivery option: a multiple case study of the healthcare sector in SA.	Recognizes different PPP models and that the legal framework should be conducive for private sector involvement in service delivery.	Proposes that public institution must do its background research but does not recognize how the early engagement of the private sector on the project could assist in the success of PPP.
8.	Edith Wakondye Chikagwa	2014	A policy analysis of the Gautrain PPP in SA.	Ascertaining the merits and limitations of PPP by examining the Gautrain public-private partnership in SA.	The paper mainly analyses existing legislation with no tangible proposals, does not outline reasons that led to the success of the Gautrain Project.
9.	Refilwe Leonard Mokanse	2017	Do PPP projects create value-for-money in the public sector? The SA experience in office accommodation projects.	The comparison of value for money in different phases for project lifecycle indicates that it is not all feasibility outcomes that are achieved at procurement and implementation.	The research focus on value for money ignores other elements such as innovation, skills transfer, and management that could be beneficial in a well-run PPP.

This is a simple CSF classification based on the origin of the risk in relation to the project. Legal support and favorable political environment is predominantly cited as a primary (extrinsic) CSF in PPP in infrastructure projects. The subordinate success factors in this category include presence of comprehensive guidelines and controls for PPPs, commitment to the contract by both public and private actors, presence of compliance control mechanisms (Liu et al., 2016), stable political environment, and political goodwill in the PPPs and transparency (Ahmadabadi & Heravi, 2019a; Liu et al. (2016). Extending discourse on the role of political factors, both Yun et al. (2015) and Ahmadabadi and Heravi (2019a) found that government guarantee in supporting the project, previous experience in similar or related projects, and matching government-private sector objectives are related political factors associated with successful projects. Political CSFs can be viewed from risk management perspectives, in that supportive political environment and legal framework diminishes political and legal risks of the project. In South African context, assessment of political dimensions of CSFs should focus on the presence of supporting political structures and processes associated with infrastructure PPPs, and the extent to which they encourage, guide, support, and control high performing infrastructural PPPs.

There is growing prominence of social and community support as a CSF in infrastructural project. Projects with higher prospects of success when they promote environmental sustainability, support the local communities, are supported by the local communities (are consistent with the demands of the locals), supports local socio-economy—including job creation and align to public interest (Jaafar et al., 2020; Osei-Kyei & Chan, 2015; Yun et al., 2015). The reviewed literature suggests that social considerations (social responsibility, community welfare, and public interest) are gaining special place in project sustainability, and that communities are increasingly gaining visibility during the planning and implementation of PPPs in infrastructure projects. Socio-economic standing of a PPP infrastructure project remains critical to South African context, considering the sociopolitical history of the nation. According to Larson (2020), entities seeking PPPs would be in privileged position, and tip the project for success if they conformed to the Sullivan principles. These are a set of principles that seek to strengthen social and economic welfare of the South African communities, including: community investment, elimination of discrimination, sponsoring social programs, promotion of education, and creation of employment opportunities. Socio-economic support should be integral part of CSFs evaluation for South African projects in that they grant a social license through winning public support.

A key shortcoming with the infrastructure PPPs CSF analysis in the extant literature is the scarcity of project stage-by stage analysis. Most infrastructure projects are multi-staged, and some CSFs could be stage specific (Jaafar et al., 2020). At the pre-implantation stage, studies have identified procurement capability as a key success factor. Successful procurement is more likely where the specialists in private sector have a capability to undertake necessary procurement, and where it will be possible to acquire or procure equipment's at the working site Ochieng et al. (2017). Liu

et al.'s (2016) comparative analysis (of China and Australia), identified in CSF in early stages of the PPPs arrangements (tendering stage). They found that project success will depend on the quality reflected in the short project (used as the basis of projecting future completion), level of competition, governance structure, transparency in tendering, and public sector capability. The applicability of these factors in both developing and developed nations underscores the need for South African PPP management to consider wide range of issues, including structural issues (such as governance and competition), capability considerations, governance dynamics, and logistical dimensions (for instance, if there are short milestones prior to completing major milestones).

Proponents of PPP have lauded the delivery approach for leading to cost saving (Liu et al., 2016; Salamah, 2017; Tang et al., 2010; Ye et al., 2018) and relieving the public sector from management huddles thereby enabling them to focus on core competencies (Bob, 2009; Clifton & Duffield, 2006; Osei-Kyei et al., 2017; Vining & Weimer, 2016). The Dartford Crossing for instance was the first PPP highway-related project in England to rely exclusively on private sector for financing, delivering, and facility operation. Granted that this was England's first Design-Build-Finance-Operate (DBFO) highway project, AECOM (2007) still regarded the project as a success because it was delivered on time and within budget by the original DBFO consortium. Furthermore, Deloitte (2006) points out that PPP has shown a solid track record of meeting infrastructure projects timelines such as in Canada where a Terminal 3 project at the Toronto Pearson Airport was completed 18 months ahead of schedule. However, Haarhoof (2008) suggested that PPP contracting should not be viewed as a way of exonerating the public sector from its responsibility and a "coupon to save millions." Despite sentiments expressed by some scholars that PPP is not another form of privatization or commercialization of a public function De Schepper et al. (2015), arguments have continued to be raised that PPP is another form of outsourcing, which favors a few and deprives the society in having a say in national facilities. However, Grimsey and Lewis (2005) dispel these sentiments citing that as with privatization, the government no longer has a direct role in ongoing operations, whereas, with PPP, it retains ultimate responsibility.

A Deloitte report on re-evaluating PPP as strategic alliances to resolve infrastructure crisis in SA, identified a list of perceived factors that cause PPPs to fail (Deloitte, 2006). These included poor set-up, accountability, unclear project objectives, excessive focus on transaction, inappropriate risk allocation model, political, lack of internal capacity, failure to release value for money, failure to release value for money, inadequate planning, legal and regulatory framework, and adopting a lifecycle perspective beyond the transaction. However, the list does not establish how the institution capacity affects the PPP at pre-registration and post concession phase and hence not exhaustive. While public entities have shown increasing interest in PPP it was recently observed that the private sectors are becoming reluctant in PPP bidding due to high transaction costs, unfair distribution, and projection of risks (Ahmadabadi & Heravi, 2019b; Liu et al., 2016; Roumboutsos & Chiara, 2010; The Australian Government, 2015; Zhang, 2005).

For example, infrastructure expenditure through PPP in SA only accounted for 4% due to the contrasting interests between the public and private sector Government Technical Advisory Centre (GTAC, 2017). Roehrich et al. (2014) conceded that the rising use of PPP in developing countries need to be nestled with exploring gaps that have led to slow progress in the delivery of projects. It was established that it is difficult to conclude that value-for-money, sustainability, and risk transfer has taken place on a PPP and that successful negotiation around the final measurement is critical to the success of PPP (KPMG, 2010; Lapan et al., 2012; Public-Private Partnership Unit [PPPU], 2007). Partners in a PPP have different and complementary but not common interests as the public sector and private sectors are “diverse actors” contractually bound to deliver “mutually agreed objectives” (Loxley, 2013; Zhang, 2005). Public-private partnerships need to go beyond the transactional nature to adopting a life-cycle perspective by getting stakeholder buy-in, managing the change process, correctly allocating risk, developing the legislative, and regulatory framework (Loxley, 2013; Petersen, 2010). There is a need to close the loopholes in the framework, discard repeating roles and bring back the public sector as champions of the management process as they are stuck with the infrastructure facility for a lifetime. Walker and Jacobsson (2014) argued that the dilemma caused by rigidity of PPP contracts to integrate the flexibility of specifying performance has increased research interest in finding a balance between adopting a “hands-off” and relational “hands-on” approach whereby the needed expertise can be marshaled effectively without compromising the project intent. The next section details the research method and symposium of key findings drawn from the participants. This is followed by a discussion, conclusion, and recommendations.

Method

The nature of the research problem and the study area influenced the choice of research design. Thus, the research took consideration of the complexity and uniqueness of the topic in arriving at the research approach used and only selected participants with experience in PPP management as they were deemed to be exposed to an understanding of the intricate PPP frameworks and legislations. In as much as there were closed off PPP projects in SA, lack of HPPPA ones would have rendered quantitative method incomplete as only figures for PPP would have been collected. Interpretivism enabled the researcher’s to understand the differences between humans in their role as social actors, which were crucial to adopting an empathetic stance by entering a social world of research subjects from their point of view (Saunders et al., 2015). This was contrary to positivism, which adopts a philosophical stance of natural scientism, realism which was scientific inquiry based on senses and pragmatism premised on believe that there is no single reality as all individuals have unique interpretations of reality. It is important to stress that there were no variables (independent or predefined) or hypotheses to test during this research. Rather, akin to Gerring (2009) the research aimed to produce an in-depth understanding of the social context of a particular phenomenon. In this case, the extent to which current PPP practices can be enhanced to enable practitioners

in SA to deliver future PPP projects more efficiently. For this reason, qualitative research method utilized, enabled the researchers to gain deeper insight into the performance of PPP in SA. From a philosophical viewpoint, this research adopted the interpretative philosophical stance because the researchers wanted to study HPPP context-specific and processes aligned to SA project delivery. Secondly, the interpretative approach was well-suited for exploring hidden reasons behind complex, interrelated HPPP processes, such as interdepartmental politics, where quantitative evidence may be biased, inaccurate or difficult to obtain. Third, the interpretative approach was found to be useful in theory elaboration, especially in areas where there was insufficient priori theory. Nathaneal (2014) argued that unlike quantitative method, qualitative research method was found to be flexible and allowed participants to freely express themselves resulting in data rich in the textual content. The research relied on participants from different aspects within the construction sector and had PPP experience in SA, this led to a diverse perspective. The explanatory strategy of inquiry was used to establish “what” caused a low number of PPP projects undertaken using treasury regulations 16 and “what” could be done to achieve efficient results as a building theme to gaining deeper insight on the effect of introducing HPPPA. The research strategy further sought to understand the cause of the public sector seeking an extension of concession periods despite claims that the advantage of a PPP was imparting skills and empowerment.

As the phenomena of HPPPA was relatively new and untested in SA, the research used an induction design that made an observation as a point of departure in order to come up with a theoretical framework. The qualitative multi-method strategy of exploratory interviews and case study was chosen for empirical investigation in line with the research aim. Interviews were deemed more appropriate for this research as they go beyond tabulating of figures to creating deeper conversations with professionals’ experienced in PPP. Exploratory interviews presented an opportunity for probing phenomena by collecting rich and detailed data, which added significance and depth to the research. After gaining in-depth exploration view of the participants’ experience on the PPP framework, the researchers went step further and identified case studies that were appropriate in tapping lessons that spoke to the research aim and objectives. The literature review established that there was no accord in the definition of both PPP and alliancing leading to different implementation interpretation, which resulted in exploring a more neutral framework of HPPPA that eliminates the shortfalls in both frameworks. In as much as HPPPA has not been used before in SA, the case study seeks to provide an in-depth understanding of the research problem.

The multi-method research strategy employed a two-stage choice that investigated the performance of PPP in SA for delivering infrastructure. The first stage used semi-structured, face-to-face and one-to-one interviews with professionals from various sectors of the construction sector vested with experience in SA PPP. The outcome of this first stage helped in identifying particular case studies executed that presented interesting framework implementation in line with the research aim. The case study used open-ended, telephone interviews that enabled participants to freely express themselves without being confined to a list of questions.

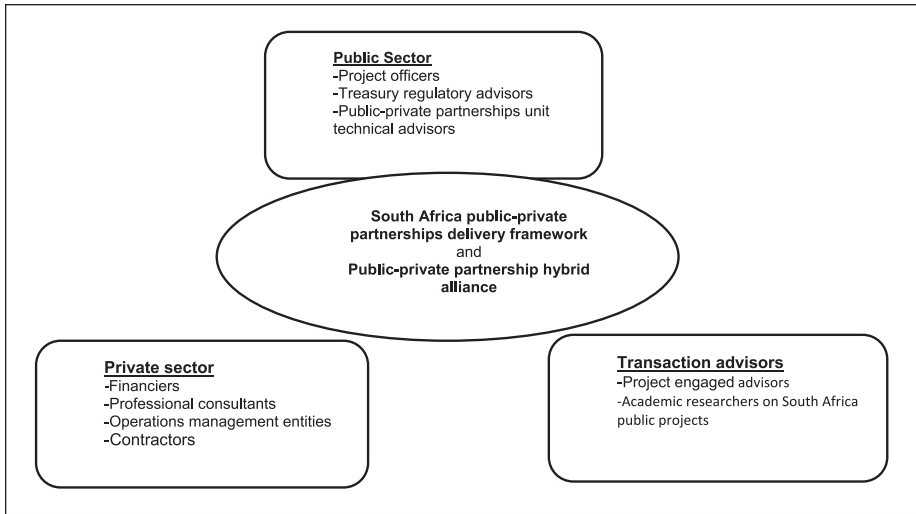


Figure 1. Sampling frame.

Data Collection

Semi-structured interviews were used as a first stage of data collection. The research interview sampled individual professional participants based on their experience in PPP infrastructure projects in SA. The participants engaged were those who had been involved in the project contractual management level and thus aware of the PPP contract intricacies. It was anticipated that the interviewee's rich background, knowledge and technical skills on implementation on PPP projects in SA would provide an in-depth contribution to the research objectives (Nathaneal, 2014). Figure 1 shows a sampling frame allocated in strata from which sampling units were drawn as follows:

- Private partner: consisting of the special purpose vehicle, contract works execution entities, professional consultants, and facility managers;
- Public partners: consists of the public institution, public-private partnership unit, and national treasury advisors;
- Transaction advisors: independent experts engaged by a public institution to advise on the financial, contractual and technical aspect of PPP.

Despite a limited number of the sample population, both simple random (probability) and purposive/judgmental (non-probability) sampling methods were used in selecting the sampling units from closed-off SA PPP. Simple random sampling was restricted to technical advisors from the PPP unit, as its sample population was known. However, the purposive sampling method was used on the rest of the sampling units. Care was taken in targeting participants that had at least 5 years' experience in high-level management of PPP and hence exposed to contractual matters. Table 2 below

Table 2. Interview Participants.

Participants	Reason for choice of method	Population size	Sample size	Actual sample size	Sample criteria
Public participants	Consists of a public institution, PPP unit and national treasury advisors	4	4	4	Probability simple random sampling
Private participants	Private consulting companies engaged on signed-closed off projects	25	5	5	Non-probability sampling—purposive sampling
Transaction advisors	Engaged by public institutions as independent advisors	25	5	3	Non-probability sampling—purposive sampling

shows the sample population, targeted and actual sample size selected from each stratum. The sample size depended on individuals that were accessible and expressed willingness to participate in the research and the actual sample size comprised of those that participated in the actual research.

Prior to interviews, a briefing and consent letter was sent to each participant. Despite some participants not concerned with revealing their identity, it was resolved to allocate them with a code for easy sorting of data as per Table 3.

The research ensured that the identity of participants was concealed and replaced with code letters aligned to the strata. Compiled and coded data was then referred back to participants for confirmation.

Case Study Data Collection and Sample Size

After establishing contact with participants for stage one interviews, the researchers were able to identify those that participated in selected case studies. Case studies used unstructured interviews for data collection. The difference was that while the semi-structured interviews were based on a general overview of PPP framework in SA, unstructured interviews narrowed the investigation to the two case studies thereby providing a deeper and more understanding of the respondents' experience in reference to particular projects.

Analysis

The themes presented critical red flags identified that would lead to a successful implementation of infrastructure once addressed through HPPPA. Themes were used in analyzing each interview's transcript. A challenge presented with this kind of analysis was

Table 3. Coded Research Respondents.

Strata	Strata code	Respondent roles	Respondent codes
Public sector (PUS)	PUS	Technical advisor	PUS01
		Technical advisor	PUS02
		Technical advisor	PUS03
		Legislation advisor	PUS04
Private sector (PRS)	PRS	Financial consultant	PRS01
		Facility developer	PRS02
		SPV financier	PRS03
		Facility manager	PRS04
		Facility manager	TRS05
Transaction advisors	TRA	Financial advisor	TRA01
		Cost management	TRA02
		PPP research professor	TRA03

how to avoid biases in linking the theme to participants' response, which was overcome by interview outcomes. After the thematic analysis, the outcome was presented graphically. The research used the following methods to establish its validation and credibility. Purposive sampling: in addition to simple random sampling, the research used purposive which was characterized by selecting sampling units based on specific purposes associated with answering research questions. This allowed the researchers to focus on key informants who were knowledgeable in the field of study and provided greater in-depth findings. Triangulation: triangulation helped the researchers to reduce bias and cross-examined the integrity of participants' responses (Anney, 2014). Among the many methods of triangulation, the following two were utilized:

- Triangulation of sources (informant's triangulation): the research drew its respondents from various sectors of the construction industry that participated in SA PPP whose responses were crosschecked against the other.
- Theoretical triangulation (variety of data collection methods): the research used the qualitative multi-method strategy of semi-structured interviews and case studies whose data findings and interpretations were compared. Themes and categories that emerged in one interview were verified in subsequent interviews and case studies in order to check the credibility of propositions.

Results

As highlighted in the previous section, primary data collected was organized in a series of similar statements, and then allocated to corresponding themes that were coded. Themes depicted a broader discussion of topics established using secondary data and refined to include consideration from primary data. The segmented data followed the themes as per Table 4 below.

Table 4. Coding of Themes.

Theme code	Code name	Description
1.	Dormant public management	Management capacity of public sector institutions, as well as the role, played by national treasury and PPP unit.
2.	Prolonged feasibility study and complex documentation	Feasibility studies impacted on project success and the way documents were structured.
3.	Contracting and implementation	The stage at which the public sector was engaged, the process and hurdles of bringing them on board.
4.	Skills transfer and empowerment	Analyzed if some of the alluded advantages of PPP such as innovation and transfer skills were attained.
5.	Usability of the proposed framework	Aimed at highlighting the respondents' experiences on the PPP framework and their perceptions on the proposed HPPPA contract.

The themes in Table 5 were further expanded to detailed sub-categories based on respondents' responses that were similar in nature. As indicated in the method section, participants were allocated in strata coded as follows, which were used in tabulating themes:

Participant Code Key

- Private sector PRS
- Public sector PUS
- Transaction advisors TRA

Theme Code I: Dormant PUS

The literature reviewed established shortfalls in the public sector's participation in the PPP processes. Zhang et al. (2015) pointed out that there was still a need to develop an institutional environment that would enable PPP projects success. Deloitte (2006) conceded that a number of PPP projects had failed due to poor setup, too much focus on transaction and public sector's lack of internal capacity. Table 6 shows a summary of research responses to the management capacity of the public sector.

As can be seen in Table 5 the majority of participants viewed political factors as the main cause for lack of project registration and in some instances termination. They cited cancellation of the prisons bid that was at the procurement stage leading to huge loss in transaction cost as one of the typical cases. The participants further alleged that public institutions lacked capacity and experience in infrastructure development, which resulted in significant reliance on transaction advisors. The other shortfall established was the spectator nature of the PPP unit and national treasury as their role was limited to advisory and approval of stages respectively. However, Deloitte (2006)

Table 5. Theme I Outcome.

Statement summary	Respondents (out of 13 total interviewed)	
	Code	Percentage
Spending public institution lacks commitment and capacity.	PRS01, TRA01, PUS01, PRS03, PUS02, TRA03, PUS04, PRS04, PUS05	69
National treasury and PPP unit advisors limited powers (lacks enforcement).	TRA03, PUS01, PUS02, PRS05, PUS04	39
Project officers not given more power lacks experience and user buy-in.	PUS05, TRA03	15
Lacks internal team and heavily reliant on transaction advisor's	PUS05, PRS01, PUS01	23
Lack of political will and political interference	TRA01, TRA02, TRA03 PRS03, PUS01, PUS03, PRS01, PUS04, PUS05, PUS02	77
Change of public institution personnel	PUS03	8
Failure to proceed has little to do with finance.	PUS01, PUS02, PUS03 TRA01, PRS04, PRS02	46
Public sector engaging transaction advisors duplicates roles and cost	PRS02	8
Conflict of interest when the private sector owns shares in infrastructure developed	PRS02	8

argued that external advisors do not exonerate the public sector's responsibilities, as many tasks cannot be outsourced which require their active participation. Interesting from the empirical findings was that only 46% of participants cited lack of capital finance as the main cause for project failure, which was similar to sentiments expressed by Walker and Jacobsson (2014) who observed that a PPP only hide the capital cost by taking it off the balance sheet and redefining it as a fee for service still payable by the public sector.

Theme code 2: Prolonged Feasibility Study and Complex Documentation

Theme 2 was based on understanding how feasibility studies, which formed a core basis for formulating PPP documentations affected its efficiency. Table 6 summarizes the respondents' view.

Despite literature reviewed on PPPU (2007) case study for case (A) alluding that rigorous feasibility study sets clear parameters and simplifies procurement, the findings in Table 9 established that majority of participants regarded the recommendations formulated at feasibility study as the cause for inefficiency, as they were benchmarked

Table 6. Theme 2 Outcome.

Statement summary	Respondents (out of 13 total interviewed)	
	Code	Percentage
Wrong intention for PPP registration	PUS01, PUS05, PUS02	23
Feasibility study highly costly and time-consuming	PUS01, TRA02, TRA03, PUS02, PUS03, PUS04, PUS05	54
Lack of adequate consultation to get user buy-in	TRA03,	8
Lack of standard feasibility study format	PUS01	8
Unrealistic feasibility study recommendations of what constitutes value for money and affordability	PUS01, PUS02, PUS03, PUS04, PUS05, PRS01, PRS03, PRS04, TRA01, TRA02, PUS03	85
Rigidity (inflexible) of documents	TRA01, TRA02, PUS02, PUS03, PUS04, PRS03	46
Public sector instructing private partner on the specification	PRS01	8
Public sector equity (financial) contribution exposes them to risks	TRA01, PUS01, PUS03, PUS04,	31
Used on inappropriate projects	TRA01, TRA02, PUS04, PRS01	31
Bidding of the single project rather multiple ones costly and time-consuming.	TRA01	8
Unsuccessful and inappropriate risk transfer	PRS01, PRS03, TRA01, TRA03, PUS05, PUS01, PUS02	54
Variations caused by change in user requirements	TRA01, TRA02, PRS02, PRS03, PRS04,	39
Failure to disclose all costs associated with PPP (contingency liability and high repayment interest)	PUS05, PRS04	15

on foreign context which was unrealistic to the local environment, rarely attained and lacked the input of the private sector. One of the participants from national treasury cited that in their years of working as the PPP approving officer, they had not seen a single project initially registered as a PPP that had recommended a different contracting system in feasibility study outcome. They also viewed the feasibility study as costly to both the public and private sector in contrast to formulated documents that were alleged to be rigid with inappropriate risk transfer. Majority of participants cited the major risk of underground oil on the department of trade and industry site and extensive existence of dolomite on Gautrain, only established after the engagement of the private sector and not at the feasibility study. Despite being involved from the inception, public institutions were viewed as the main initiators of variations due to change in requirements at an advanced stage of the project, which tied with the views expressed in Table 7 on lack of public institution capacity. These findings were similar

Table 7. Theme 3 Outcome.

Statement summary	Respondents (out of 13 total interviewed)	
	Code	Percentage
Failure to make decisions by assigned personnel	PUS01	8
Ineffective management and procurement system	TRA02, TRA03, PUS02	23
View PPP as outsourcing	PRS01, PUS02, TRA02, TRA03	31
High transaction cost	PUS02, TRA01, TRA02, TRA03, PRS01, PRS03	46
Cancellation (termination) of projects before closing off	TRA03, PUS01, PUS02, PUS03, PRS01	39
Negotiation after competitive tendering compromise terms.	PUS04, PRS01, PUS02, TRA01	31
Failure to reach agreement	PUS01, PUS05, TRA02, PRS01, PRS02	39
Lack of trust	TRA03, PRS04	15
Misunderstanding on innovation between parties	TRA01, PRS01, TRA03, PRS03	31
Project needs to be viable to attract right private sector	TRA01	8
Public sector lacks of knowledge and monitoring	PRS01, TRA01, PUS02, PRS05	31
Advisors report to the institution and not PPP unit	TRA01, PUS01	15
Transaction advisor stages were costly and delay projects	PUS03, PUS04, PRS01	31
Funds locked for a longer time prevents private sector participation.	PRS02, PRS03	15
Amicable settlement of disputes helps the project.	PRS04, PRS05	15

to the literature reviewed which pointed out that it was difficult for public and private sector representatives to contractually integrate flexibility into contract documents while maintaining the integrity of intent (Walker & Jacobsson, 2014). Mokanse (2017) established that in some cases, value for money analysis was applied to projects that had already been decided as PPP even before conducting a feasibility study.

Theme Code 3: Contracting Implementation Flow

The literature reviewed pointed out that in as much as selecting the “right” team in PPP project was critical, building good relationships, and working collaboratively was equally important (Anney, 2014; Ke et al. (2009); Mokanse, 2017). Theme 3

identified major gaps in procurement of private sector and project implementation process as shown in Table 7. Majority of participants cited prolonged procurement process, which led to high transaction costs with no compensation for losers and disagreements during negotiations such as on department of trade and industry office accommodation project. Having negotiations with the preferred bidder after a rigorous bidding process was viewed as similar to “re-writing” the bid documents. One would argue that a bidder could arbitrarily make unrealistic proposals at the bidding stage knowing they would later negotiate their way out. Despite this, the literature reviewed established that the National Treasury (2018) expressed unrealized aspirations of increasing PPP project pipeline by streamlining implementation process to reduce the project duration by making regulatory framework less difficult for both parties. In as much as PPP was alluded as a sphere for innovation, 31% of participants cited that innovation was restricted to public sectors affordability and different understanding on what was viewed as constituting value for money. There was also a lack of trust between parties with some public entities viewing PPP as a form of outsourcing or privatization Grimsey and Lewis (2005) despite dismissing the claims (De Schepper et al., 2015).

Walker and Jacobsson (2014) sentiments were similar to this research finding that the outsourced hands-off approach exposed the public sector to opportunistic behavior through transaction cost and unreasonably priced bids. In Liu et al. (2016) findings, they established that the success of a PPP was largely based on the performance of the procurement process, which should be managed by both public and private parties’ engagement.

Theme Code 4: Skills Transfer and Empowerment

Theme 4 examined claims made in the literature that PPP leads to skill transfer and empowerment of previously disadvantaged. Contrary to Maseko’s (2014) finding that a PPP allows the public sector to overcome skills shortage by using private sector resources and South African Budget Review (SABR, 2018) claims that national treasury was aware of the public sector’s need for internal skills on PPP projects, empirical evidence in Table 8 below shows that skills transfer and empowerment were seldom achieved.

Majority of the participants attributed the lack of skilled personnel to the public sector’s inability to provide and retain trainees throughout the project lifecycle, which impacted on the establishment of a capable public institution facility management agency. Majority of participants viewed the Gautrain facility management agency as the only agency that would be capable of operating and maintaining the facility at post concession stage while projects such as Inkosi Albert Luthuli hospital were fighting to extend their concession period. The literature reviewed on DIIS (2015) showed that developing and retaining skills within public institutions was challenging due to private sectors more attractive working conditions and hence one could suggest that countries wanting to implement PPP often faced considerable public sector capacity challenges.

Table 8. Theme 4 Outcome.

Statement summary	Respondents (out of 13 total interviewed)	
	Code	Percentage
Unavailability of trainees	TRA01, PUS02, PUS03	23
Failure to accommodate skills transfer	TRA02, PUS02, PRS03, PUS03	31
Institutions struggle to retain trained personnel	TRA01, TRA03, PUS05, PUS03, PUS01, TRA03	46
Public institutions fail to attract qualified personnel	PUS02	8
View empowerment as a stumbling block to PPP success	PRS01, TRA03	15
Lack of similar projects to track learning experience.	TRA03	8
Government technical advisory center PPP training courses lack industrial exposure	TRA02, PUS02	15
Lack of established facility management agency capable of operating a project for post concession	TRA01, PUS04, PUS02, PUS03	31

Theme Code 5: Usability of the Proposed PPP Framework

In line with this study aim, the preceding themes were a build up to the core of the research, which was nestled in understanding the shortfall of PPP framework and how it could be made more efficient by introducing HPPPA framework. Table 9 provides the participants view on PPP alliance and HPPPA alliance.

SABR (2018) claimed that SA had considerable experience in establishing successful PPP's, with a sound regulatory framework, which was similar to the empirical evidence from the majority of participants who pointed out that there was nothing wrong with the SA PPP legislation and framework. However, there was a contradiction in their response as the same participants in favor of current SA PPP framework admitted that its delivery system was complex and tedious especially for the developing country like SA. There was also a mix up in understanding between framework and legislation, which were used interchangeably. Despite alliancing not used, it was established that there were instances where projects were partly funded by the public sector, which worked more like an HPPPA. In addition, participants were of the view that having an HPPPA framework would need a change in legislation, which SA has never done since the ratification of treasury regulations. Participants further pointed out that regardless of the framework chosen, the critical was to have capable public institutions that would be actively involved in monitoring and able to operate the facility at post concession stage. WEF (2014) argued that while building new infrastructure assets ranked high on global agenda, governments often neglected their existing

Table 9. Theme 5 Outcome.

Statement summary	Respondents (out of 13 total interviewed)	
	Code	Percentage
Good South Africa PPP framework and regulatory system though complex and tedious.	PRS01, PRS03, TRA01, TRA02, TRA03, PUS02, PUS03, PUS04	62
Lack of PPP sign off and financial closure in the past 5 years meant no recent lessons learnt on PPP	PRS01, PRS03, PUS03, PUS04 PUS05, TRA01, TRA02	54
Failure by the national treasury to review regulation	PUS01, PUS02, PUS03, PUS04, PUS05	39
The public sector is incapable of managing regardless of the contract system	TRA01, PRS04	15
No alliancing used in SA infrastructure projects.	TRA03, TRA01, TRA02, PUS05, PRS03	39
Open to introducing another contracting system such as HPPPA.	TRA02, TRA03, PUS01, PUS02, PUS03, PUS04, PUS05, PRS01, PRS03	69
HPPPA would need a change of legislation	PUS01, PUS02, PUS03, PUS04, TRA01, PRS03, PRS04	31

Table 10. Themes Outcome Median Value.

	Median										
Respondents responses in percentage from themes	8	15	23	31	39	46	54	62	69	77	85

infrastructure assets and often fail to maximize their operation as well as meet adequate user quality standards.

Unification of Themes

From the participants responses tabulated in themes above, it was deduced that 46% was the median value of gaps in the proposed PPP framework cited as shown in Table 10.

Moreover, the empirical findings above median value in Table 10 were presented graphically to indicate bottlenecks, which were viewed by the majority of participants as inhibiting the success of PPP infrastructure projects as shown in Figure 2.

Figure 2 above shows that feasibility study recommendations were ranked as the highest cause of project failure. In addition, it could be argued that feasibility study had a knock on effect on other bottlenecks presented in the above figure such as high transaction cost, the rigidity of documents, unsuccessful, and inappropriate risk transfer as well as project cost and duration based on its recommendations. This was followed by political causes and spending institutions lack of capacity and commitment.

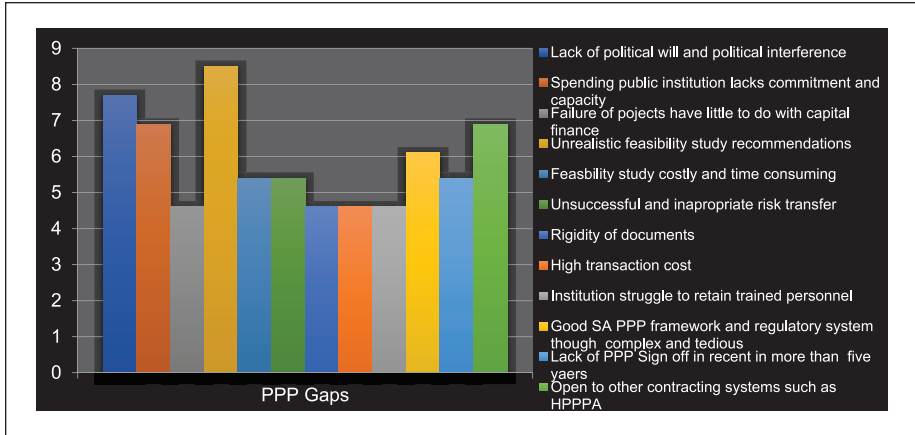


Figure 2. Integration of theme results above the median.

Despite respondents citing that the SA PPP framework was good, 69% were open to trying other contracting systems.

Discussion

The two case studies and interviews established that SA PPP framework could be meant to work more efficiently once loopholes in public sector participation were resolved and the project lifecycle phases revisited. The findings of this empirical study are in line with Liu et al. (2016) who argued that public institutions lacked skills, expertise, and capacity hence needed a central role to be played by the PPP unit throughout the project lifecycle. The Australian Government (2015) proposed establishing an effective team culture such as in alliancing that should have the capability to engage with partners on an equal footing, fully understand risks sharing implications and opportunities. Majority of participants pointed out that attempt to revise the SA PPP framework would need the amendment to the legislature, which SA has never done since its enactment in 1999. The literature reviewed cited previous discussions aimed at having a hybrid infrastructure delivery system but only looked at developing various PPP financing models (National Treasury, 2016; OECD, 2016) and not holistic limitations of the proposed PPP framework. It was further established that there were alliancing principals infused in some PPP projects such as the public sector's capital contribution, bid negotiation and amicable settlement of disputes, which worked more like an HPPPA. However, the majority of participants' main concern was the unrealistic feasibility study, political factors, and public sector capacity.

The literature established that having an HPPPA in infrastructure delivery would result in capable and actively involved public institutions throughout the project lifecycle and at post concession stage. Empirical evidence further proposed a change in the management process that should give the PPP unit more power in the

implementation of PPP and sound institutions with management capabilities that could be achieved through HPPPA. There should be a more transparent and efficient procurement process that allows sufficient competition at the start of the process. A HPPPA should enable managerial strategic fit by attaining buy-in of each party's expectations and responsibilities upfront thereby fostering reciprocal understanding of each other's cultural perspective. A HPPPA should further foster efficient allocation rather than transferring risks. The literature reviewed from Deloitte (2006) and SABR (2018) further proposed repacking of the PPP lifecycle phases and merging of the national treasury approval processes, which would assist in reducing cost, duration and increase collaboration between partners.

The results of semi-structured interviews showed that majority of participants viewed the proposed PPP framework as good despite being too complex and rigorous. The perceived complex nature may have been attributed to a limited understanding from some participants between the framework. Despite participants' admission that a pure alliance has never been used in SA infrastructure development, there were elements of alliancing in some projects that were infused in a PPP such as the public sector's capital contribution and the negotiation process. The downside of the negotiation done in the SA PPP was that it did not start from the same wavelength between parties as the documents were prepared without the input of the private sector and later meant to negotiate which exposed them to challenges of lack of agreement. The participants' main concern was that the lack of efficiency in public infrastructure delivery would not improve regardless of the framework used so long there were political factors that override legislation and framework.

The case study on the department of trade and industry showed a positive approach to PPP delivery with the collaborative nature adopted by parties, which led to the amicable settlement of disputes. Despite this, there was a lack of trust as established in the procurement process by facility management agency for maintenance services. Both case studies further showed that there were variations initiated by user institutions late on projects and regardless of claims that PPP delivered quality compared to other contracting systems, it showed that risk of defects still existed. The feasibility study was established as having little impact on the project as its results and recommendations mismatched the preceding procurement and implementation phases. The lack of agreement during negotiations between the department of trade and industry and preferred bidder showed that it was too risky leaving such an intricate stage way much into the project after too much commitment had been invested in the project by both parties.

Figure 3 above shows proposed principals of HPPPA framework pinned on a collaborative approach, empowering the PPP unit, and increase incentives in lieu of penalties as follows: Collaborative approach: mutual contribution by both parties would make the public sector be actively engaged in the project delivery process of planning, management, and monitoring. There should be well-structured agreements that clearly outline the responsibility of both parties. Capacitate public institutions: there should be a competent and capable institution management agency in place backed by a management plan before project sign off. Public sector capital contribution: this will ensure

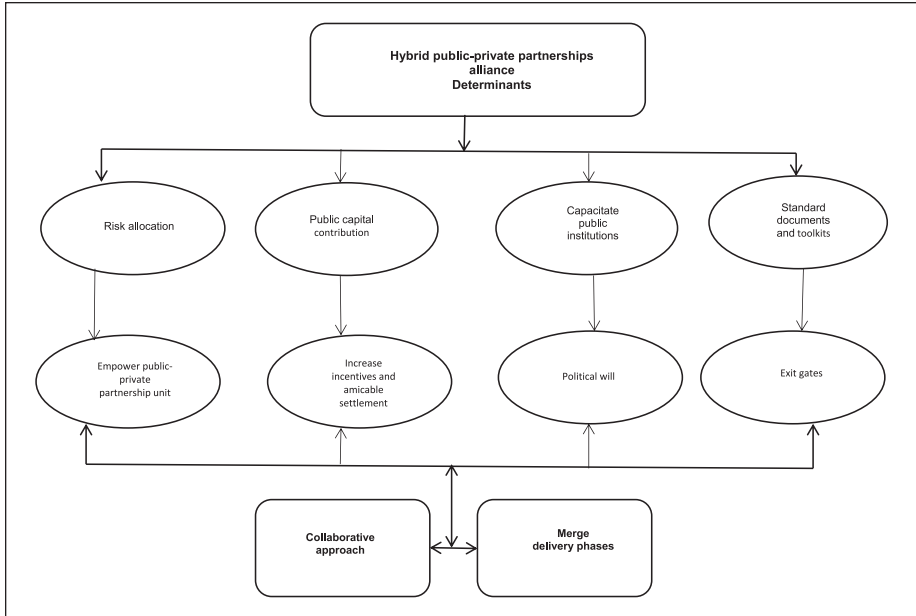


Figure 3. Determinants of the proposed hybrid private public partnership framework.

that the public sector is as equally engaged on the project as the private sector and reduce the cost of unitary repayment. Where possible, the public sector should provide 100% financing of the project, achieved through long term planning as in, either way, the public sector still pays for infrastructure development. The build now and pay later does not come free and hence should be scrutinized to avoid unsubstantiated expenses, which increase the costs of a PPP. Empower the PPP unit: rather than playing a merely advisory role, the PPP unit should be given more power to take a central role in providing technical services on behalf of the public sector.

Risk allocation: the success of an HPPPA would depend on how risks are managed. Rather than risk transfer, there should be continuous engagement through the negotiation of appropriate risk allocation. **Increase incentives and amicable settlement:** research findings showed that penalties do not really work even on PPP and that litigation damages the relationships. The study proposes an increase to incentives issued out upon successful completion of the task and only reimburse capital cost after the transfer of the fully operational project. **Exit gates:** having exit gates after each phase would minimize private sector losses and public sector contingency liabilities, as only the cost for services rendered would be paid. **Standardized documents and supplementary toolkits:** provide supplementary toolkits for each infrastructure sector as a point of departure for documentation. This would assist in shortening the procurement process and cost in transaction advisor. However, the documents should be flexible and take into consideration future changes.

Skills transfer: public sector should make available trainees who should be retained throughout the project lifecycle. It should, however, remain the private sector's responsibility to identify companies to be subcontracted for empowerment programs run by previously disadvantaged personnel and hence bare the losses or damages thereof. Bundling of similar projects: in order to ensure cost reduction and minimize time, it is recommended that multiple programs such as green energy that encompass many similar projects in one bid be conducted. Political will: there should be the political will to spearhead projects toward a common goal and reduction in interference by ensuring that documentation is watertight and not open to manipulation and capacitate procuring agencies. Merging of project phases: it is proposed that in order to reduce the duration and approval process of the public-private partnership HPPPA phases should be merged as shown in Figure 4 below.

Under the proposed HPPPA, a feasibility study should fall outside the PPP process and form part of the national infrastructure feasibility study, which would recommend projects to be implemented through the various contracting system including HPPPA. The danger of having a rigorous feasibility stage, as part of PPP was that it occurred after the project had already been registered by the national treasury as a PPP and only looked at its piecemeal achievement with less bundling. Once the project is referred to an HPPPA, it means there was a prior consideration of other contracting systems conducted through a feasibility study. Furthermore, the feasibility study recommendation for HPPPA should be increased from only looking at the project passing three tests of value for money, affordability, and risk transfer to include innovation and skills transfer. In addition, transaction advisors should only be involved at procurement and negotiation phases due to intricate contractual considerations needed at those stages. It is worth noting that this would not replicate the roles in a traditional contracting system, as the mandate to deliver infrastructure and incentives would still be maintained.

Conclusion

This research was premised on investigating gaps and limitations in the SA PPP framework and viability of reframing it as HPPPA, which would enable SA practitioners to deliver infrastructure more effectively and efficiently. The SABR (2018) established that while SA could identify successes on some delivered projects, expenditure through PPP only accounted for 4% by 2015. It was further established that there was a dire decrease in infrastructure development through PPP as it had been more than 5 years since SA had a closed-off PPP projects using treasury regulations 16 (SABR, 2018) exacerbated by many projects stuck in the early stages (GTAC, 2017). South Africa National Planning Commission (2012) indicates that infrastructure investment in relation to gross domestic product needed to grow between 21% and 30% in order to invigorate economic growth. This was supported by the National Development Plan 2030 plan, which claimed that competitive infrastructure development, would contribute to steering the SA economy by 7% (SABR, 2018). However, there was a lack of studies that focused on the actual delivery framework of SA PPP while others failed to explore the application of HPPP alliance.

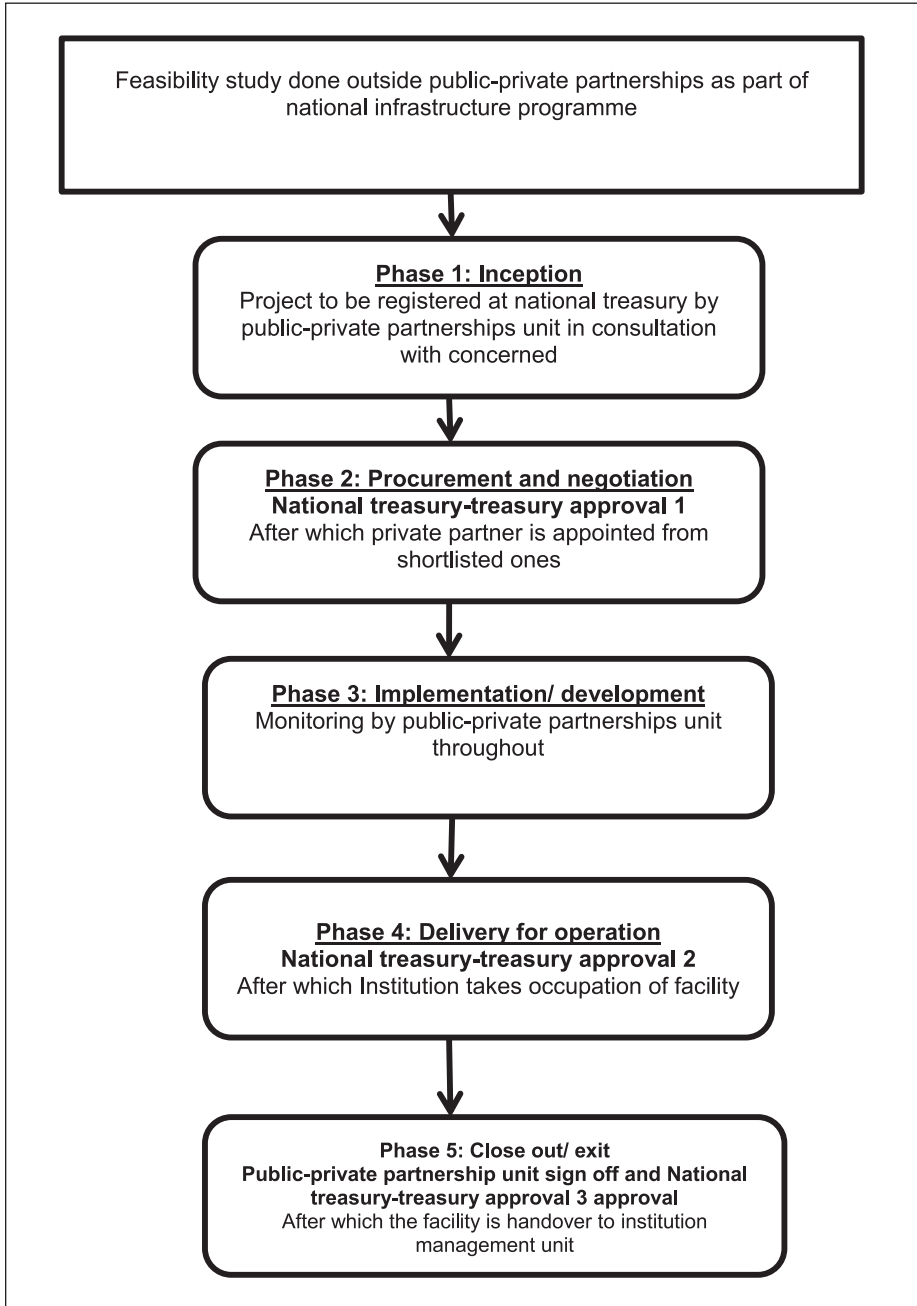


Figure 4. Proposed merging of project phases.

The empirical findings suggest that despite positive results achieved on the SA PPP framework and regulatory system, participants viewed the PPP process as complex, rigorous and highly costly marred with lack of political will to spearhead projects while in some cases, political interference led to projects cancellation. Both case studies further showed that there were variations initiated by user institutions late on projects and despite claims of quality facilities delivered compared to other contracting systems, risk of defects still exists in a PPP. Institutions had no management agencies in place capable of taking over the infrastructure at post concession while national treasury and PPP unit powers under treasury regulations were limited to advisory and approval roles. Despite both the literature reviewed and empirical evidence establishing that pure alliancing had never been used in infrastructure development in SA, the literature proposed adopting alliancing principals of mutual and active commitment from both parties while the majority of participants were open to trying other contracting systems. While alliancing could be used on any project type, it showed greater results on complex and mega projects were innovative ideas and skills sharing could be realized (Aladag & Isik, 2020; Badi & Pryke, 2015; Liang & Hu, 2018; Ng et al., 2010; Ochieng et al., 2017). Rather than removing the public partner as an actor, alliancing demanded to strengthen its capacities thereby achieving social and commercial viability that benefits both parties. However, the literature reviewed from Clifton and Duffield (2006) suggested that the no litigation or arbitration for dispute resolution in alliancing showed that it would neither be a panacea in resolving infrastructure delivery challenges faced by SA as the public sector lacked capacity, skills and experience.

As this was qualitative research, findings and conclusions could not be generalized as a representation of occurrences on all PPP infrastructure in SA. In addition, the research only reviewed PPP undertaken in SA under treasury regulations 16, thus excluded those undertaken by municipalities and schedule two entities, which followed different regulations. In view of this, the research premised its validity on its qualitative nature characterized with in-depth insight from professionals experienced in PPP infrastructure construction industry. It is, however, worth noting that the drawing of participants from various sectors within the construction industry enabled the research to be relatable to a wide spectrum especially to practitioners in the PPP infrastructure contracting system such as national treasury, PPP unit, transaction advisor's, private sector and public institutions. Despite lack of empirical evidence in the use of pure alliancing in SA, it was established that some of its principals were already incorporated on some PPP projects which majority of research participants cited as favorable for both parties. While the results of the research provided a reasonable argument for adopting a HPPPA system, it was observed that increasing the number of participants would have enabled wider representation.

Recommendations for further studies are as follows: The research established that empowerment of previously disadvantaged and skills transfer was a major component touted by the public sector as the main reason for pursuing a PPP contract. However, the benefits of empowerment remain a worry as results showed that in most of the closed-off PPP, the public sector had no established facility management agency

capable of operating and maintaining the infrastructure post concession period. Research should be conducted that establishes empirical evidence of the value of PPP in the empowerment of the public sector. In addition, the research has widely investigated on the aspect of public sector management system and capacity which has been established as having an influence on the delivery of infrastructure in general and not only under PPP. It has also established the limited powers of the PPP unit whose role could merely be cited as window dressing as they remained ruthless with only an advisory role. It is hence recommended that in order to ensure efficiency in infrastructure delivery, further research solely dedicated to investigating the public sector fragmented roles and capacity in PPP delivery framework should be conducted.

Author's Note

Alinaswe Sinkala is now affiliated with University of Derby, College of Business, Law and Social Sciences.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

ORCID iD

Edward Ochieng  <https://orcid.org/0000-0002-3888-5743>

References

- AECOM. (2007). *Case studies of transportation public-private partnerships around the world* (Final Report No. 05-002). Federal Highway Administration, US Department of Transportation. Retrieved May 30, 2019, from https://www.fhwa.dot.gov/ipd/pdfs/p3/int_ppp_case_studies_final_report_7-7-07.pdf
- Ahmadabadi, A. A., & Heravi, G. (2019a). The effect of critical success factors on project success in public-private partnership projects: A case study of highway projects in Iran. *Transport Policy*, 73, 152–161. <https://doi.org/10.1016/j.tranpol.2018.07.004>
- Ahmadabadi, A. A., & Heravi, G. (2019b). Risk assessment framework of PPP-megaprojects focusing on risk interaction and project success. *Transportation Research Part A Policy and Practice*, 124, 169–188.
- Aladag, H., & Isik, Z. (2020). The effect of stakeholder-associated risks in mega-engineering projects: A case study of a PPP airport project. *IEEE Transactions on Engineering Management*, 67, 174–186. <https://ieeexplore.ieee.org/document/8457281>
- Anney, V. N. (2014). Ensuring the quality of the findings of qualitative research: Looking at trustworthiness criteria. *Journal of Emerging Trends in Educational Research and Policy Studies*, 5(2), 272–281.
- Arimoro, A. (2018). An appraisal of the framework for public private partnership in South Africa. *European Procurement & Public Private Partnership Law Review*, 13(3), 214–228.

- Badi, S. M., & Pryke, S. D. (2015). Assessing the quality of collaboration towards the achievement of sustainable energy innovation in PFI school projects. *International Journal of Managing Projects in Business*, 8(3), 408–440.
- Bob, S. (2009). Australia; risk management; contractor strategic alliances (business); infrastructure (economics); public-private sector cooperation. Keeping good companies. *Business Management and Public Relations Journal*, 61(8), 471–474.
- Brinkerhoff, D. W., & Brinkerhoff, J. M. (2011). Public-private partnerships: Perspectives on purposes, publicness and good governance. *Public Administration and Development*, 31(1), 2–14.
- Carbonara, N., Costantino, N., & Pellegrino, R. (2014). Concession period for PPPs: A win-win model for a fair risk sharing. *International Journal of Project Management*, 32(7), 1223–1232.
- Clifton, C., & Duffield, C. F. (2006). Improved PFI/PPP service outcomes through the integration of alliance principles. *International Journal of Project Management*, 24(7), 573–586.
- Danish Institute for International Studies. (2015). *Establishing public private partnerships. Lessons learned from the global south*. Danish Institute for International Studies. Retrieved June 17, 2018, from <https://www.gtac.gov.za/>
- Deloitte. (2006). *Closing the infrastructure gap: The role of public-private partnerships. A Deloitte research study*. Retrieved March 5, 2018, from <https://www2.deloitte.com/>
- De Schepper, S., Haezendonck, E., & Dooms, M. (2015). Understanding pre-contractual transaction costs for public-private partnership infrastructure projects. *International Journal of Project Management*, 33(4), 932–946.
- Development Bank of Southern Africa. (2012). *The state of South Africa's economic infrastructure: Opportunities and challenges*. Development planning division, Development Bank of Southern Africa. DBSA. Retrieved August 24, 2021, from <https://www.dbsa.org/>.
- Díaz, G. R. (2020). What drives the failure of private participation in infrastructure projects? *International Journal of Managing Projects in Business*, 13(6), 1167–1185. <https://doi.org/10.1108/ijmpb-12-2019-0298>
- European PPP Expertise Centre. (2011). *The guide to guidance: How to prepare, procure and deliver PPP projects*. European PPP Expertise Centre. Retrieved May 14, 2019, from www.eib.org/epec/g2g/index.htm
- Fombad, M. C. (2014). *Accountability challenges in publicâ private partnerships from a South African perspective*. Retrieved June 10, 2021, from <https://ajobe.journals.ac.za/pub/article/view/33>
- Gerring, J. (2009). The case study: What it is and what it does. In R. Goodin (Ed.), *The Oxford handbook of political science*, pp. 1–38. Oxford University Press.
- Government Technical Advisory Centre. (2017). Government technical advisory centre and national Treasury programme 8: Technical support and development finance. *Strategic plan 2017/18-2019/20*. Retrieved March 7, 2019, from <https://www.gtac.gov.za/>
- Grimsey, D., & Lewis, M. K. (2005). Are public private partnerships value for money? Evaluating alternative approaches and comparing academic and practitioner views. *Accounting Forum*, 29(4), 345–378.
- Haarhoof, K. C. (2008). *Public private partnerships as an alternative service delivery option: A multiple case study of the healthcare sector in South Africa* [Master thesis]. University of Stellenbosch.
- Jaafar, M. N., Ismail, A., Abdullah, M. N., Asmoni, M., & Abdullah, M. (2020). Critical success factor of privatization project. *Journal of Sustainable Technology and Applied Science*, 1(1), 13–21. <https://ejournal.itn.ac.id/index.php/JSTAS/article/download/2612/2114>

- Ke, Y., Wang, S., Chan, A. P., & Cheung, E. (2009). Research trend on public-private partnership in construction journals. *Journal of Construction Engineering and Management*, 135(10), 1076–1086.
- Koolwijk, J. S. J. (2010). *Risk shared and allocated by construction clients and contractors in Dutch (hybrid) project alliances*. Retrieved March 15, 2018, from <https://www.irbnet.de/>
- KPMG. (2010). *PPP procurement: Review of barriers to competition and efficiency in the procurement of PPP projects*. Retrieved April 15, 2019, from https://www.procurement-tinet.org/wp-content/uploads/2017/02/Barriers_to_Competition_and_Efficiency_in_the_Procurement_of_PPPs_KPMG_May_2010-2.pdf
- Lapan, S. D., Quartaroli, M. T., & Riemer, F. J. (2012). *Qualitative research: An introduction to methods and designs*. Wiley.
- Larson, Z. (2020). The Sullivan principles: South Africa, apartheid, and globalization. *Diplomatic History*, 44(3), 479–503. <https://doi.org/10.1093/dh/dhaa002>
- Liang, Q., & Hu, H. (2018). Study on identification of spurious public-private partnerships projects in China. *IEEE Transactions on Engineering Management*, 67(2), 376–384. <https://ieeexplore.ieee.org/document/8525268>
- Liu, T., Wang, Y., & Wilkinson, S. (2016). Identifying critical factors affecting the effectiveness and efficiency of tendering processes in public-private partnerships (PPPs): A comparative analysis of Australia and China. *International Journal of Project Management*, 34(4), 701–716.
- Loxley, J. (2013). Are public-private partnerships (PPPs) the answer to Africa's infrastructure needs? *Review of African Political Economy*, 40(137), 485–495.
- Macário, R., Ribeiro, J., & Costa, J. D. (2015). Understanding pitfalls in the application of PPPs in transport infrastructure in Portugal. *Transport Policy*, 41, 90–99.
- Maseko, M. (2014). *Analysis of critical success factors for public-private partnerships in infrastructure development in South Africa* [Conference session]. The 6th International Platinum Conference, 'Platinum-Metal for the Future, Sun City, North Province. Retrieved February 20, 2018, from <http://www.platinum.org.za/>
- Mokanse, R. L. (2017). *Do public-private partnership projects creates value-for money in the public sector? The south African experience in the office accommodation projects*. Stellenbosch University.
- Nathaneal, B. (2014). *Public private partnerships (PPPs) in South Africa: To what extent are PPPs suitable for the long-term development of infrastructure in South Africa?* [Master thesis]. University of Bern.
- National Planning Commission. (n.d.). *Economic infrastructure*. Retrieved June 7, 2021, from <https://nationalplanningcommission.wordpress.com/economic-infrastructure/>
- National Planning Commission (2012). South Africa-National Plan-2012. Available from: <https://www.cabri-sbo.org/en/documents/national-development-plan-2030>. [cited 10th April 2020].
- National Treasury. (2007). *Introducing public private partnerships in South Africa*. Retrieved June 7, 2021, from [https://www.gtac.gov.za/Publications/200-Final%20Intro%20to%20PPP%20in%20SA%2021%2009%2007%20\(1\).pdf](https://www.gtac.gov.za/Publications/200-Final%20Intro%20to%20PPP%20in%20SA%2021%2009%2007%20(1).pdf)
- National Treasury. (2016). Public-private partnerships. Available from: <http://www.treasury.gov.za/documents/national%20budget/2018/review/Annexure%20E.pdf>. [cited 5th April 2020].
- National Treasury. (2018). *Public-private partnerships*. 2018 Budget Review Annexure E. National Treasury. Retrieved July 3, 2018, from <https://www.treasury.gov.za>

- NDP. (2012). *National Development Plan 2030 (NDP): Our future-make it work*. National Planning Commission, Dept. The Presidency, Republic of South Africa.
- Ng, S. T., Wong, Y. M. W., & Wong, J. M. W. (2010). A structural equation model of feasibility evaluation and project success for public-private partnerships in Hong Kong. *IEEE Transactions on Engineering Management*, 57(2), 310–322.
- Ochieng, E. G., Price, A. D. F., & Moore, D. (2017). *Major infrastructure projects: Planning for delivery*. Palgrave Macmillan's Global Academic. <https://he.palgrave.com/page/detail/major-infrastructure-projects-edward-ochieng/?sf1=barcode&st1=9781137515858>
- Ochieng, E. G., Zoufa, T., & Badi, S. (2020). *Routledge handbook of planning and management of global strategic infrastructure projects*. Routledge Taylor and Francis Group. <https://www.routledge.com/Routledge-Handbook-of-Planning-and-Management-of-Global-Strategic-Infrastructure/Ochieng-Zoufa-Badi/p/book/9780367477486>
- OECD. (2016). *Global development alliances (GDAs) United States agency for international development. Private sector peer earning: Mechanism profiles*. Retrieved February 20, 2018, from <https://www.usaid.gov/>
- Orzes, G., Sartor, M., Nassimbeni, G., & Fratocchi, L. (2017). Build-operate-transfer (BOT): An emerging entry mode for service offshoring. *Production Planning and Control*, 28(4), 295–309.
- Osei-Kyei, R., & Chan, A. P. C. (2015). Review of studies on the critical success factors for public-private partnership (PPP) projects from 1990 to 2013. *International Journal of Project Management*, 33(6), 1335–1346. <https://doi.org/10.1016/j.ijproman.2015.02.008>
- Osei-Kyei, R., Chan, A. P. C., Javed, A. A., & Ameyaw, E. E. (2017). Critical success criteria for public-private partnership projects: International experts' opinion. *International Journal of Strategic Property Management*, 21(1), 87–100.
- Petersen, O. H. (2010). Emerging meta-governance as a regulation framework for public-private partnerships: An examination of the European Union's approach. *International Public Management Review*, 11(3), 1–21.
- Public-Private Partnership Unit. (2007). *Introducing public private partnerships in South Africa*. National Treasury. Retrieved February 17, 2018, from https://www.nbi.org.za/wp-content/uploads/2019/05/NBI_KYM-Report-3_Introduction-to-PPPs.pdf
- Reynaers, A., & Parrado, S. (2017). Responsive regulation in public-private partnerships: Between deterrence and persuasion. *Regulation & Governance*, 11(3), 269–281.
- Roehrich, J. K., Lewis, M. A., & George, G. (2014). Are public-private partnerships a healthy option? A systematic literature review. *Social Science & Medicine*, 113, 110–119.
- Roumboutsos, A., & Chiara, N. (2010). A strategic partnering framework analysis methodology for public-private partnerships. *Journal of Financial Management of Property and Construction*, 15(3), 235–246.
- Salamah, Y. (2017). *Alliance contracting models in construction projects: Leadership and management* [Master thesis]. Joint Study Programme of Metropolia UAS and HTW Berlin.
- Saunders, M. N. K., Lewis, P., & Thornhill, A. (2015). *Research methods for business students* (7th ed.). Pearson Education Limited.
- Seeleste, S. M. (2016). Prominent challenges of fixed-term contracts for administrative and professional employers in higher learning institutions of Gauteng Province, South Africa. *Problems and Perspectives in Management*, 14(3–3), pp. 650–656.
- Snopko, J. (2014). Public-private partnership and hybrid projects as an effective method for financing local government. *Zarządzanie Publiczne*, 3(27), 263–271.
- South African Budget Review (2018). *Budget review: National treasury republic of South Africa*. Available from: <http://www.treasury.gov.za/documents/national%20budget/2018/review/FullBR.pdf> [cited 2nd May 2020].

- South Africa Public-Private Partnership Manual. (2004). *The public private partnership manual. Standardised PPP provisions. National treasury PPP practice notes issued in terms of Public Finance Management Act*. Note Number 1. Pretoria.
- Tang, L., Shen, Q., & Cheng, E. W. L. (2010). A review of studies on public-private partnership projects in the construction industry. *International Journal of Project Management*, 28(7), 683–694.
- The Australian Government. (2015). *National alliance contracting guidelines guide to alliance contracting*. Department of infrastructure and regional development. Commonwealth of Australia.
- The South African National Treasury. (2012). *Budget review*. Retrieved April 3, 2019, from <http://www.treasury.gov.za/documents/national%20budget/2012/review/FullReview.pdf>
- van Marrewijk, A., Clegg, S. R., Pitsis, T. S., & Veenswijk, M. (2008). Managing public-private megaprojects: Paradoxes, complexity, and project design. *International Journal of Project Management*, 26(6), 591–600.
- Vining, A. R., & Weimer, D. L. (2016). The challenges of fractionalized property rights in public-private hybrid organizations: The good, the bad, and the ugly. *Regulation & Governance*, 10(2), 161–178.
- Walker, D., & Jacobsson, M. (2014). A rationale for alliancing within a public-private partnership. *Engineering Construction & Architectural Management*, 21(6), 648–673.
- WEF. (2014). *Creating new models innovative public-private partnerships for inclusive development in Latin America*. Retrieved March 14, 2018, from <http://www3.weforum.org/docs/>
- Ye, X., Shi, S., Chong, H. Y., Fu, X., Liu, L., & He, Q. (2018). Empirical analysis of firms willingness to participate in infrastructure PPP projects. *Journal of Construction Engineering and Management*, 144(1), 1–11.
- Yun, S., Jung, W., Heon Han, S., & Park, H. (2015). Critical organizational success factors for public private partnership projects – A comparison of solicited and unsolicited proposals. *Journal of Civil Engineering and Management*, 21(2), 131–143. <https://doi.org/10.3846/13923730.2013.802715>
- Zhang, S., Chan, A. P. C., Feng, Y., Duan, H., & Ke, Y. (2016). Critical review on PPP research – A search from the Chinese and international journals. *International Journal of Project Management*, 34(4), 597–612.
- Zhang, S., Gao, Y., Feng, Z., & Sun, W. (2015). PPP application in infrastructure development in China: Institutional analysis and implications. *International Journal of Project Management*, 33(3), 497–509.
- Zhang, X. (2005). Criteria for selecting the private-sector partner in public-private partnerships. *Journal of Construction Engineering and Management*, 131(6), 631–644.
- Zou, W., Kumaraswamy, M., Chung, J., & Wong, J. (2014). Identifying the critical success factors for relationship management in PPP projects. *International Journal of Project Management*, 32(2), 265–274.

Author Biographies

Alinaswe Sinkala is an architect by profession. His research interests lie primarily in the area of construction contracting, construction management, and building modeling.

Edward Ochieng is a Professor of Project Management and Head of Project Management Programs at the British University in Dubai. Edward has edited 31 book chapters, published 4 books, 28 book chapters, and over 100 refereed papers in high ranking journals and conferences. He has secured and estimated £717,825.00 from a range of funders for several projects and

consultancy in project management. He has supervised 10 PhD students to successful completion and over 300 MSc/MBA industrial projects by research. Edward is currently supervising 13 PhD students. Edward has extensive experience and knowledge relating to organizational challenges and solution development for managing large capital and heavy engineering projects. Edward's research interest with people and organizational challenges continues but has now been complemented by the need for a wider understanding of infrastructure development, digitalization in project management, management of project processes, project value creation, capital effectiveness, project complexity and political economy, and the management of projects.

Diana Ominde is a faculty member at Strathmore Business School. She holds a PhD in Project Management and her research predominantly focuses on stakeholder management value creation and optimization of information technology projects. Her research interests include appraisal of mega projects, mega project complexity, and stakeholder integration, optimization of ICT projects, multi-partner collaboration, and project-based organizational development. In 2019, Diana presented at the PMI congress in Delft, The Netherlands where she shared her knowledge on project complexity, delivery, and operational effectiveness of projects. Diana has published one refereed journal paper, two conference papers, and two book chapters. She also holds a Bachelor of Commerce degree in Finance and Management Science and Master of Commerce in Management Science. She has vast experience in project management, and organizational development.

Tarila Zuofa is a Senior Lecturer in Project Management at the Manchester Metropolitan University. Tarila has published in several peer-reviewed business and engineering journals. Tarila has edited a book and contributed to the writing of three book chapters. He has been invited to present his research findings in leading international conferences like PMI Research and Education Conference and the Academy of Management Annual Meeting. Prior to joining the academic world, Tarila was an offshore marine engineer. He is also a Fellow of the Higher Education Academy and a PRINCE2® Practitioner. He has supervised a PhD student to successful completion and over 150 MSc students. Tarila is currently supervising two other PhD students.

Sulafa Badi is an Associate Professor of Management and Organizational Behavior at the British University in Dubai (UAE) and Honorary Senior Fellow at the Bartlett School of Construction and Project Management, University College London (UK). Her research has had both academic and practical impact and involved studies in the United Kingdom, China, India, and the Middle East. She secured research funding from the UK Engineering and Physical Sciences Research Council (EPSRC), the Royal Institute of Chartered Surveyors (RICS), Transport for London (TfL), Innovate UK, and the British University in Dubai (BUiD).