UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Gordon Institute of Business Science
University of Pretoria

An Examination of the Critical Success Factors for Private-Public Partnerships in the Electricity Distribution Industry within South African Municipalities

Thobile Mbatha

Student number: 15391877

A research project submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfillment of the requirements for the degree of Master of Business Administration.

07 November 2016

ABSTRACT

The findings that will be the outcome of this study will provide a solid foundation for Government entities particularly Municipalities as well as the private investors seeking to enter the PPP market in South Africa. The findings will also give insights into the most critical success factors for engaging PPP projects in electricity distribution. Understanding both the perspective from the "funders" and "Municipality management" on what they view to be critical will ensure that a common understanding is sought for the successful implementation of public-private partnerships especially in financing Municipal infrastructure. The findings will also give rise to the interesting test being if the "size of the municipality" matters and if the perceptive from their management varies significantly.

With the outcome of this research, the researcher hopes to provide some answers, suggestions and insights on critical considerations that Municipal management and Government spheres have to focus on, in-order to ensure that the backlog identified in the National Development Plan (NDP) and the Municipality's own Integrated Development Plan (IDP) is addressed.

Key words: Public Private Partnerships (PPP), Critical Success Factors (CSFs), Municipalities, Infrastructure, Projects, Funding

DECLARATION

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

Thobile Mbatha 07 November 2016

CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER 1: THE RESEARCH PROBLEM

EXECUTIVE SUMMARY

The study aims to gain public and private perceptions on the critical success factors (CSFs) for the implementation of Public-Private Partnerships in the electricity distribution industry within South African Municipalities. It will provide a new perspective to the PPP discussion in South Africa and provide insights in what the perceptions are regarding partnerships in delivering infrastructure within Municipalities. The South African Government has promulgated the National Development Plan (NDP) as a policy aimed at expediting the delivery of infrastructure. This needs to be aligned with Municipality's own Integrated Development Plans (IDP) for bulk infrastructure roll-out including electricity distribution infrastructure.

Since the Government's Infrastructure Plan conceived by the NDP acknowledges the role of PPPs to speed up the country's infrastructure development, this study will assist the Government and its spheres (Municipalities) to proactively ensure that they create an environment for the CSFs required. This will mitigate the constraints that will be identified in this study for the successful delivery of both the NDP and by extension the IDP. It is therefore envisaged that the study may also be useful in policy developments and interventions to ensure that barriers are removed to promote a thriving PPP environment in SA for both the Government and Municipalities.

1.1. THE RESEARCH TOPIC

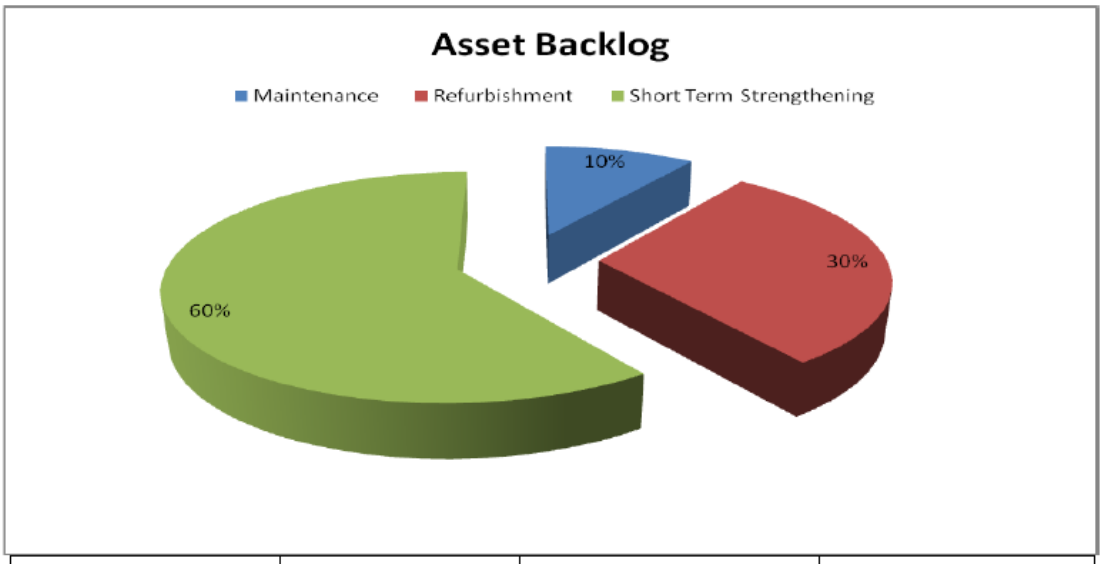
An examination of critical success factors for Public-Private Partnerships in the Electricity Distribution Industry within South African Municipalities.

1.2. BACKGROUND TO THE RESEARCH PROBLEM

For 20 years, there have been discussions and unsuccessful efforts to remedy South Africa's increasingly dilapidating electricity distribution infrastructure (Matthews C, Bdlive, July 2014). Electricity Distribution Industry (EDI) Holdings (2008) conducted a study into the state of electricity distribution maintenance backlog estimated at R27.4 billion and forecasted to be growing at R2.5 billion annually (Electricity Distribution Industry Holding's

business case report,2008). However; no long-term workable solution has been found to address this (Matthews C, Bdlive, July 2014)

Figure 1: Illustration of the electricity distribution asset backlog



Maintenance	Refurbishment	Short Term Strengthening	Total
R 2,736,914,699.00	R 8,210,744,098.00	R 16,421,488,197.00	R 27,369,146,994.00
NOTE: 2008 data with backlog growth projected at R2.5b per annum			

Source: Dr De Beer, Asset Management: An executive perspective

In 2010, Dr Willem de Beer, the COO of EDIH, reported that the majority of Municipalities neither had a budget to investment in new electricity infrastructure and refurbishment thereof nor maintenance plans. The assets' average age is reported to be approximately 45 years and most municipalities allocated less than 5% of revenue collected from the electricity function in capital investment. (de Beer, 2010)

"Without a reliable electricity distribution network, all the investments made in the generation sector i.e. Independent Power Producers, Medupi & Kusile, Ingula and various import options from neighboring countries will not translate into meaningful economic benefits" (Department of Energy, Electricity Distribution Industry, Asset Rehabilitation Review, p. 2 paragraph 1.5). There is therefore a great likelihood that the next power outages will be brought about by the lack of investment and refurbishments into the new reticulation lines and substations (Matthews C, Bdlive, July 2014).

Municipalities' budgets are unable to cater for the high costs of reducing the backlog more especially considering the added costs of cable theft, universal access ambitions, targets as well as delivery of other basic services (P. Folwes, 2010). There is therefore a need

for alternative ways to fund these essential programs of Municipalities. Infrastructure deficit is not unique to South Africa, it has been experienced in countries such as China (Chan Albert, Lam Patrick, Chan Daniel, Cheung Esther, Ke Yongijan; 2010) where the Government resolved to investigate the viability of using Public-Private Partnerships as a vehicle to fund the rapid infrastructure demand that was hampering economic growth. With the latest advances with the PPP model in developed countries such as Hong Kong, the United Kingdom, Singapore and Australia. Cheung, E., Chan, A.P.C. & Kajewski, S. (2012). PPP arrangements have become increasingly common in developing countries such as Malaysia (Ismail Suhaiza and Shochrul Ajija, 2013), Nigeria. Dada, M.O. and Oladokun, M.G. (2012) and in South Africa. Maseko, M., (2014).

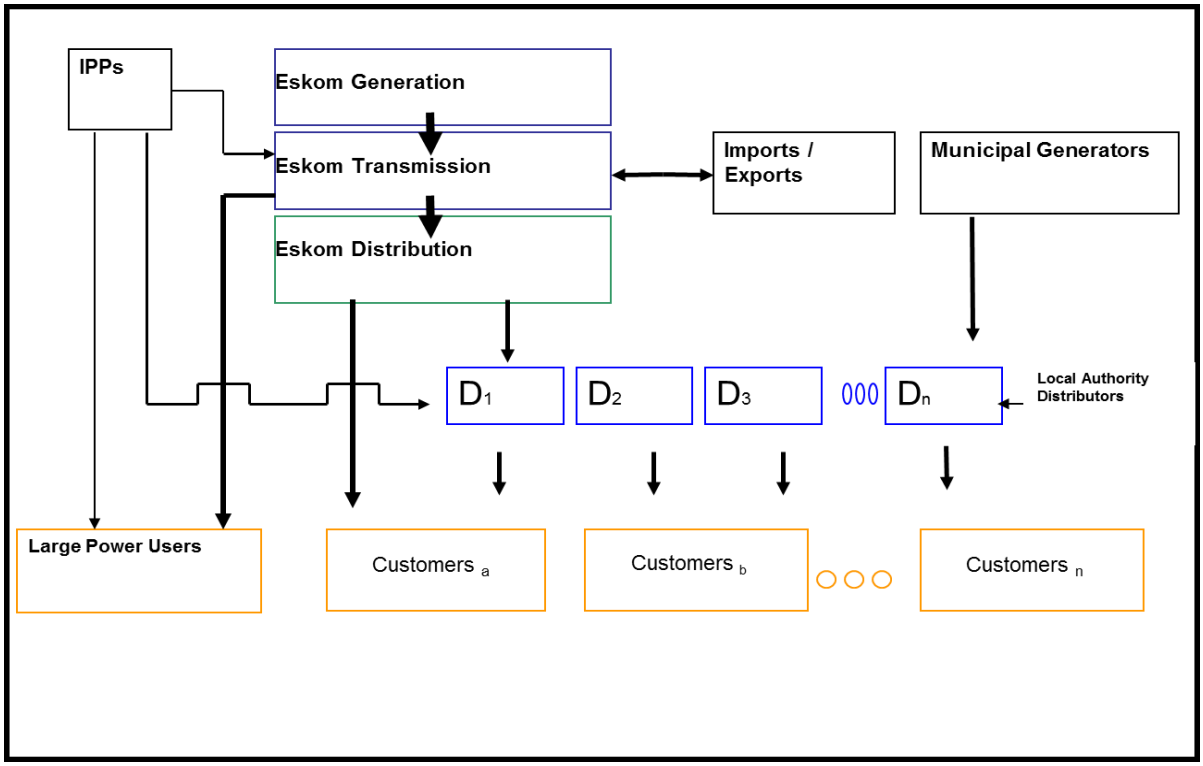
It is for this reason that this study aims to:

- evaluate the PPP landscape for SA,
- test the CSFs as identified during the literature review with the Municipal landscape and
- rank the importance of each based on the perceptions of the identified experts

1.3. STRUCTURE OF THE ELECTRICITY INDUSTRY

The South African electricity supply industry is organised around the principles of a traditional public monopoly, Eskom. Eskom controls the entire power sector value chain covering generation, transmission and distribution. The monopoly accounts for approximately 96% (44 083MW) of all electricity produced in the country while large municipalities together with a few private power producers generate 1.3% and 3.1% respectively (Steyn, G). Eskom wholly owns and operates the national transmission grid and is therefore the only licensed transmitter. (Eberhard and Newbery, 2008). Figure 2 below shows a schematic diagram of the current structure of the South African Electricity Supply Industry (ESI).

Figure 2: Current Structure of Electricity Supply Industry (ESI)



Source: NERSA, 2010

The Electricity distribution industry still remains highly fragmented with services being provided to customers by Eskom and approximately 187 redistributing municipalities (Eberhard and Newbery, 2008). Despite pockets of good performance, the current industry model is inefficient and fails to serve the best interests of the country and the economy (de Beer, Walters, 2011). The industry faces financial discrepancies between distributors; discrepancies in tariffs; and disproportionate capacity to deliver electricity services to indigent households. Clark, A., Davis, M., Eberhard, A., Gratwick, K., Wamukonya, N. (2005). Furthermore the industry is experiencing an increased inability to meet the desired performance standards required to support economic growth (de Beer, Walters, 2011).

In spite of numerous attempts to reform the sector both on the generation and the distribution front, challenges still persist in formalising the structure and the players in the industry (Steyn, G., 2004). Efforts to restructure the distribution sector that was conceived and approved by Cabinet in 2001 that were meant to consolidate municipalities and Eskom into 6 large Regional Electricity Distribution Areas (REDS), were rescinded upon in 2011 due to challenges relating to financial viability of Municipalities that would have required further fiscal support which would have been a challenge for the government at

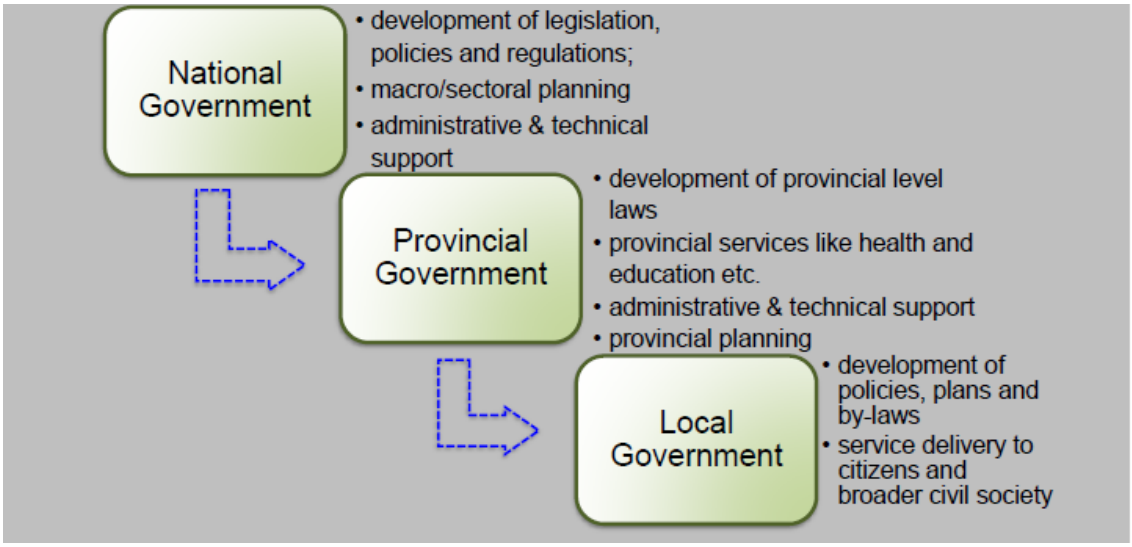
the time of the country requiring rapid investments in energy generation. (State changes energy plans, ADG, Aphane, 2011)

1.4. REVIEW OF LOCAL GOVERNMENT

Local Government was officially established as a constitutionally protected sphere of Government after the enactment of South Africa's first democratic constitution in 1996. (The Constitution of South Africa, Act 108 of 1996). The Constitution gives executive authority to Local Government as an autonomous sphere of Government by allowing independent and locally elected Municipal councils to be granted legislative and executive authority. Section 151 (2) of the Constitution of South Africa. (Act 108 of 1996).

Each Municipality therefore has the autonomy to "*govern, on its own initiative, the local government affairs of its community, subject to national and provincial legislation, as provided for in the Constitution*." Section 151 (3) of the Constitution of South Africa. (Act 108 of 1996 p.79). This devolution of power is firmly entrenched and can be seen in the resultant decentralisation of political power to the different levels of government. Figure 3 below outlines the functions and responsibility for each sphere of government.

Figure 3: The roles and functions of the different spheres of Government

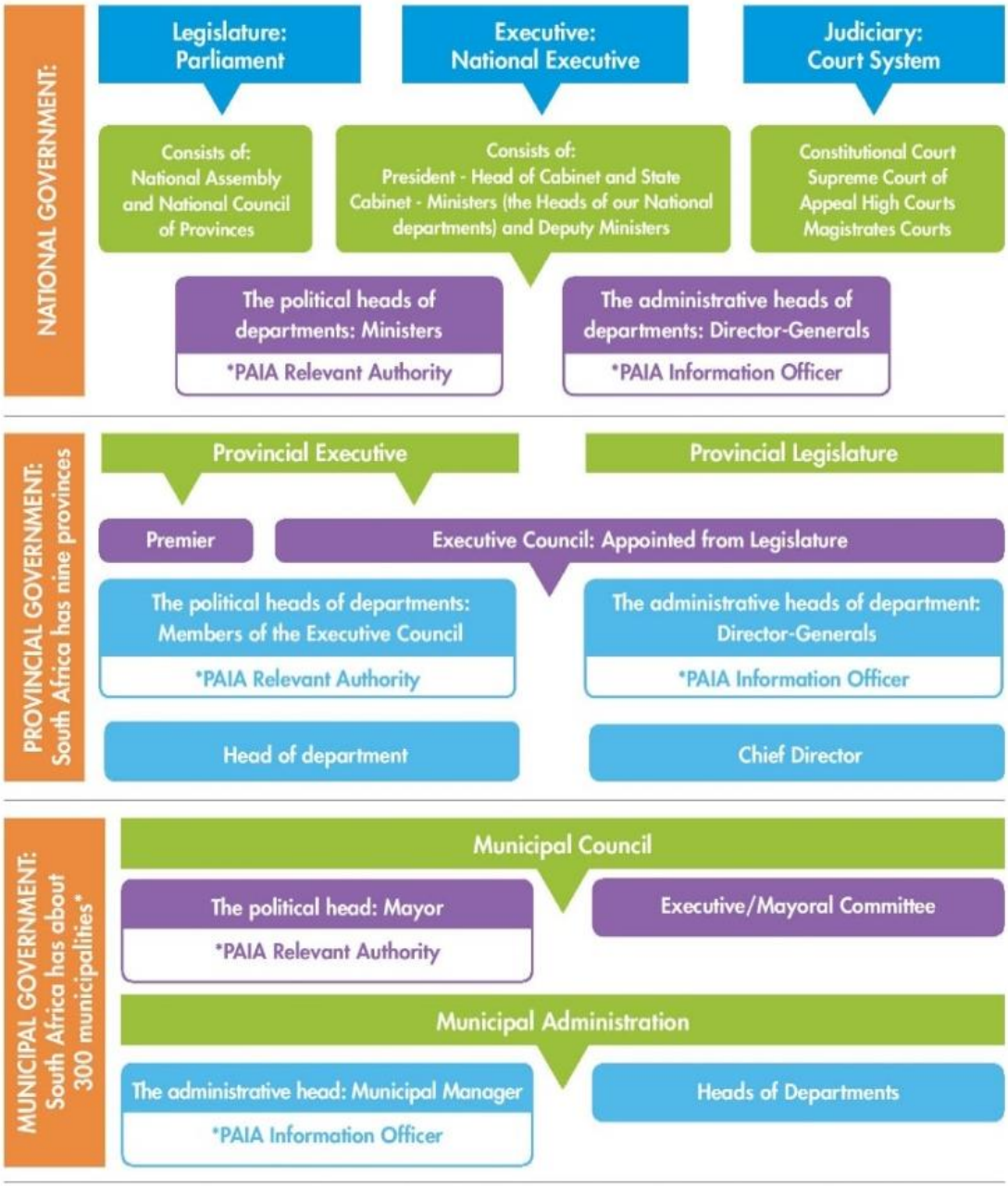


Source: Municipal Infrastructure Support Agent (MISA), 2016

The establishment of the three spheres of government namely; national, provincial and local was informed by the thinking that spheres, rather than tiers, must cohabit in a cooperative government which distinctive, interdependent and interrelated functions.

Section 41(b) of the Constitution of South Africa. (Act 108 of 1996). Figure 4 below shows the three (3) spheres of Government and their interaction with each other.

Figure 4: South African Structures of Government



Source: South African History Archive (SAHA). www.saha.org.za

The main idea behind cooperative governance is to assist and provide support through consultation and coordination of function whilst still maintaining the designated powers

and functions without encroaching on the executive authority of the other spheres. Section 41 (b) of the Constitution of South Africa. (Act 108 of 1996).

As informed by the Constitution, local government is therefore recognised as an autonomous sphere of government. Unlike a tier, local government is not secondary or subordinate to the provincial or national government rather an autonomous structure with its own powers and functions that are legally demarcated into geographical areas of jurisdiction. Local government has powers over its own revenue, and is accountable to its local constituencies through periodic local government elections. Section 41 (b)(ii-iii) of the Constitution of South Africa. (Act 108 of 1996). As such local government is officially recognised as a fully-fledged part of South Africa's decentralised system of democratic and legislative governance.

1.4.1. Municipalities in South Africa

The South African Constitution has made provision for three categories of municipalities. These categories comprise of eight (8) Metropolitan, 44 District and 226 local municipalities. This totals to 278 municipalities in South Africa across the nine (9) Provinces. The Local Government Handbook South Africa. (2015).
The primary role of this government sphere is to focus on growing local economies and providing infrastructure and service to communities. The Local Government Handbook South Africa. (2015).The Constitution also stipulates the criteria for determining how a municipality must be categorized.

Local Government: Municipal Structures Act, 1998. (Act 117 of 1998) provides for 3 categories of Municipalities, namely:

- Category A municipality known as a Metropolitan Municipalities ("**Metros**");
- Category B known as Local Municipalities and;
- Category C which is known as District municipalities

The eight (8) Metros exist in the six biggest cities in South Africa. The Eastern Cape Province has two (2) Metros namely, Buffalo City and Nelson Mandela Bay, located in East London and Port Elizabeth respectively. The Gauteng Province has three (3) Metros namely, Ekurhuleni metro located in the East Rand area of Gauteng, City of Johannesburg which services the Northern central suburbs and City of Tshwane which is located in Tshwane, the administrative capital of the South African Government. The Western Cape Province has one (1) metro in the City of Cape Town. Lastly, the Free

State Province has Mangaung metro located in Bloemfontein. The table 1 below summarises Metros per Province.

Table 1: Metropolitan Municipalities

Province	Metro
Eastern Cape	• Buffalo City (East London) • Nelson Mandela Bay (Port Elizabeth)
Gauteng	• Ekurhuleni (East Rand) • Gauteng (Northern Central Suburbs) • City of Tshwane (Tshwane)
Western Cape	• City of Cape Town
Free State	• Mangaung (Bloemfontein)

Source: Various sources

Areas falling outside of the Metros are subdivided to Local Municipalities. There are currently 226 Local Municipalities. District Municipalities are usually made up of 3-6 small local municipalities coming together to form a district council (SALGA). This category was established mainly to assist local municipality with capacity shortages in the form of skills and or resources. In essence the difference between the categories of Municipalities is that Metropolitan Municipalities possess full executive and legislative authority as opposed to district municipalities which share their executive and legislative control with their respective local municipalities as prescribed in the Municipal Structures Act, 1998.

As such, this makes it easier for any Metro to excise its powers in making budget decisions to fulfill its mandate without following the stringent and laborious processes that Local and District municipalities are subjected to. This become more evident when evaluating the performance of Metro's (compared to other categories of Municipalities) in delivering the basic services such water, electricity, health and the funding of infrastructure required to an enable the efficient delivery of these services. Ruiters, Cornelius and Matji, Maselaganye P, 2016 conducted research on funding and financing water infrastructure in selected Municipalities across South Africa. The findings demonstrated that it is imperative that municipalities have the ability to guarantee payment of services in-order to successfully enter into any form of Public-Private Partnership arrangement.

They listed several key variables that are essential including:

- the amount of debt required;
- ability to repay the debt;
- the nature of the project(s);
- ability to transfer of project risks such as design, construction and maintenance;
- value for money; and
- financial and socio-political uniqueness of each municipality. Ruiters C. and Matji M (2016).

These all tie to the ability for a municipality to generate and collect revenue. Unfortunately, most South African Municipalities as well as the Metros have dire challenges in these areas therefore making delivery and investments in infrastructure in most Municipalities unaffordable. National Government contributions should essentially be prioritised in Municipalities where affordability is a challenge. Delivery of basic essential services, like electricity, are highly politicised and this makes it difficult for Municipalities to promote cost-reflective tariffs required to ensure continued operation and maintenance of the infrastructure.

The Municipal Infrastructure Investment Framework (MIIF), an assessment by the Development Bank of South Africa and the Department of Cooperative Governance series, that reports on service backlogs, provides an assessment of capital budgets to cater for new investments and address operating and maintenance backlogs. As well as institutional capacitation of municipalities to enable service delivery. Department of Provincial and Local Government: Municipal Infrastructure, Roles and Responsibilities (2006).

The MIIF also offers proposals and suggestions concerning how to fund investments, as well as the management of municipal services to promote the development objectives. It has identified key constraints in using PPP in funding municipality infrastructure and it has also proposed frameworks to assist in alleviating those constraints.

Throughout all its spheres, the Government understands that new delivery models, i.e., PPP models, are required to meet the infrastructure needs and extend access of basic services such as electrification, water and sanitation services to communities.

These models should not exclude the long-term investment in infrastructure and refurbishment projects across provinces, determining project priorities, and utilising the expertise in the public and private sectors to manage the implementation of electricity

distribution and reticulation infrastructure through innovative and efficient financing. With the fast-growing demand to provide bulk infrastructure assets around the country, the implementation of any of PPP arrangements will further leverage private sector investment in economic infrastructure assets and, in turn, allow the Government the space to balance and prioritise other initiatives to meet the burning socio-economic needs and development demands that the Government is faced with.

1.4.2. Capacity in Municipalities

The South African Constitution (Act of 1996) states that Municipalities have the responsibility to ensure that all citizens' basic needs are provided for. The Constitution of the Republic also states that the Municipalities should be responsive, accountable and inclusive. Section 152 (1) of the Constitution of South Africa. (Act 108 of 1996). The Department of Cooperative Governance and Traditional Affairs ("**COGTA"**) defines Local Government as the country's key player in the reconstruction and development efforts of South Africa (COGTA, 2009). Since Local Government is one sphere of Government that is closest to the people. It is therefore the one sphere of government faced with the difficult task of ensuring that all services are accessible to all. Recent times has been characterised by increased violent protests due to lack of service delivery. This is due to the inability of local government to expediently deliver these services to the people.

The Auditor General MFMA report, 2014/15 shows that total Local Government expenditure budget was R347 billion. Municipalities obtaining clean audit opinions represent only 39% of the total expenditure which amounts to R134 billion. This poor performance unfortunately extends to service delivery which has been lacking resulting in violent protest.

Although improved slightly from previous years, it should be noted that the fundamental reason leading to this poor performance is a systematic lack of capacity from individuals employed in Local Government (Sasha Peters and Henlo van Nieuwenhuyze, 2015). There is also a lack of capacity to enforce institutional rules and regulation that assist in instilling effective controls for good governance. AG noted with concern that although funds are allocated for capacitation initiatives, the tendency of Municipalities to use consultants is not commended as it does not guarantee a long term and sustainable solution. Some municipalities perform even worse following the exit of consultants due to the fact that skills transfer and capacitation was not a key consideration in the appointment of any consultant.

This further strengthens the need for meaningful, fair and responsible partnerships between the private and the public sector to ensure that these skills are built and transferred over time to the public sector.

CHAPTER 2: LITERATURE REVIEW

2.1 PUBLIC PRIVATE PARTNERSHIPS (PPP) AS A VEHICLE TO DELIVER INFRASTRUCTURE PROJECTS IN SA

Following the approval by the South African Cabinet for the appointment of an inter-departmental task team to develop a package of policy, legislative and institutional reforms to create an enabling environment for PPP, in April 1997 (National Treasury, PPP unit), the country has successfully rolled out more than 20 projects in the last 18 years beginning with the highly successful road tolls (N1 North, N3, and Bakwena Platinum Highway N1N4 toll roads) (National Treasury, PPP unit). The full list of projects is available on the PPP unit website of the South African National Treasury.

In December 1999, the South African Cabinet endorsed, a Strategic Framework for PPPs which drew lessons from the rolled out projects and experiences from international PPP projects. In April 2000, Treasury Regulations for PPPs were first issued in terms of the Public Finance Management Act (Act 1 of 1999) which saw the formation of an organized unit to deal with PPP policy, governance and guidelines (National Treasury, PPP unit)

According to National Treasury, PPP unit website, “South African law defines a PPP as a contract between a public sector institution/municipality and a private party, in which the private party assumes substantial financial, technical and operational risk in the design, financing, building and operation of a project”. (National Treasury, Public Private Partnership, What is a PPP?). The emphasis is on enhancing quality public service delivery by entering into partnerships that ensure efficient, effective best practice solutions where the overarching considerations include transformation and the crucial features of a PPP: the ability to afford, cost effectiveness translating into value for money and transfer of significant technical, financial, and operational risks to the private sector. (National Treasury, PPP unit)

In its website, the PPP unit of the National Treasury specify two types of PPPs namely, where the private consortium renders an institutional/municipal function, and where the private company is allowed the use of public/state/municipal property for its own commercial purposes. A PPP may also be a mix of these types. Compensation in these settings involves one of three frameworks:

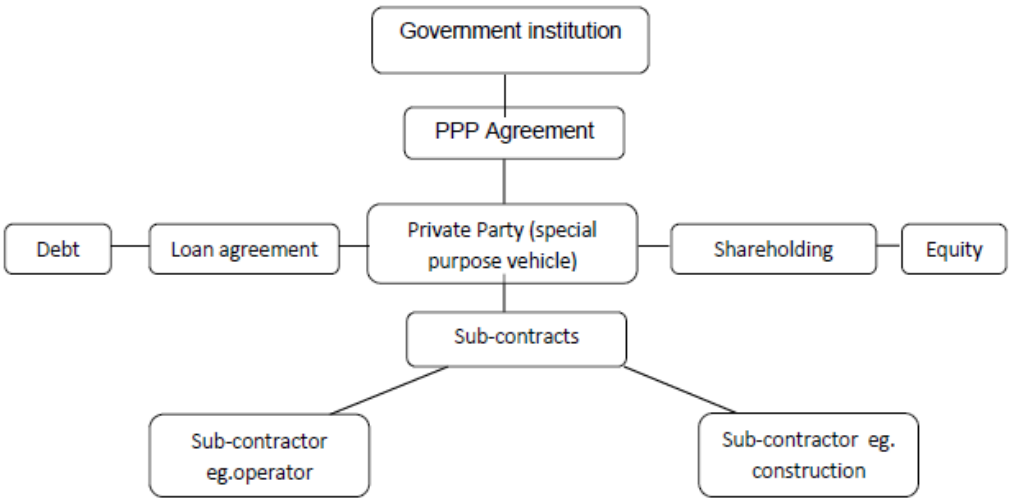
i) The public institution/municipality paying the private consortium for the provision of goods or services,

ii) the private consortium collect user charge from end users for the service provided, or

iii) a mixture of these mechanisms. (National Treasury, PPP unit)

In April 2005, the National Treasury finalized the Municipal Service Delivery and PPP guidelines which address the PPP provisions in the Municipal Finance Management Act (MFMA) and the Municipal Systems Act (MSA) including matters related to the procurement of multi-year PPP agreements. (National Treasury, PPP unit). This guideline provides a firm regulatory framework for municipalities to enter into PPP agreements in line with other spheres of government. This guideline extensively stipulates all the supply chain and procurement acts that the PPP agreements have to satisfy and abide by. It also provides examples of services and types of PPP contracts suitable for the services or projects required by the Municipalities. (The Municipal Service Delivery and PPP Guidelines, 2005). Figure 5 below gives a typical PPP structure.

Figure 5: A Typical PPP Structure



Source: Mustapha (2006); Helmy (2011)

Notwithstanding the exceptional expertise in the country for doing such projects, there is a sense of frustration equally from the public and private sector sides. PPP procurement is perceived to be complex, cumbersome and very costly. In some quarters, PPPs have been wrongly identified with privatisation, resulting in doubts over the value of such structures (World bank, 2012). This guideline and framework is particularly important for

the evaluation of the critical success factors that this study seeks to examine on the Municipal jurisdiction.

2.1 MODELS OF PRIVATE SECTOR PARTICIPATION

Kwak, Chih and Ibbs (2009) define a PPP largely as a cooperative arrangement between the public and private sectors that is premised on allocation of risk, sharing of expertise and resources, sharing of accountability, responsibilities, and rewards for the achievement of joint and common goals. Various types of arrangements have been implemented to reflect different project objectives and requirements and can largely be defined in similar definitions below (Kwak et al., 2009)

Table 2: Various definitions of PPP

SOURCES	DEFINITIONS
HM Treasury (UK Government)	An arrangement between two or more entities that enables them to work cooperatively towards shared or compatible objectives and in which there is some degree of shared authority and responsibility, joint investment of resources, shared risk taking, and mutual benefits.
The World Bank	The term “public-private partnerships” has on a very broad meaning. The key elements, however, are the existence of a “particular” style approach to the provision of infrastructure as opposed to an element. PPPs involve a sharing of risk, responsibility, and reward, and it is undertaken in those circumstances when there is a value-for-money benefit to the taxpayers.
European Commission	A partnership is an arrangement between two or more parties who have agreed to work cooperatively toward shared and/or compatible objects and in which there is shared authority and responsibility; joint investment of resources; shared liability or risk-taking and ideally mutual benefits.
Canadian Council for Public Private Partnerships	PPPs is a cooperative venture between the public and private sectors, built on the expertise of each partner that best meets clearly defined public needs through the appropriate allocation of resources, risks, and rewards

Source: Kwak et al., 2009

For the purposes of this paper, the simplest way to differentiate PPPs from customary forms of government procurement is to define PPP as a risk-sharing partnership in which a legal contract assigns public sector delivery responsibilities to a private entity (Roehrich, J., Lewis, A., George, G., 2014) .The risks and rewards commensurate with the delivery of these public services is allocated through a PPP agreement between the private entity and the public sector as the sponsor of the project. The risk that the private sector is compensated for varies depending on performance. (United Nations Economic Commission for Africa, 2011).

There are different ways that the private sector can be involved in provision of infrastructure for service delivery. Those frameworks include PPP arrangements like concessions and/or management contracts, or via other forms of direct private sector participation (PSP) such as divestiture and merchant projects.

PPPs may take place in a form of Brownfield projects which means that they are focused on rehabilitation, refurbishment or extension of existing assets. An example would be the refurbishment of distribution equipment or transmission system. However, PPPs can be used to deliver on Greenfield projects which involve the design and construction of new assets such as a new power plant or new transmission lines. (United Nations Economic Commission for Africa, 2011).

In the U.K's Project Finance Initiative (PFI) model for instance is the most adopted model for construction. Kwak, Y.H, Chih, Y and Ibbs, C.W (2009). A private entity in a PPP can be compensated for rendering as service in two primary methods namely, either by managing commercially viable trading sale of services to customers on behalf of the public sector, or via payments by the public entity/ institution on a periodic basis based on the agreement reached between the private entity and government.

Table 3: Classification of PPP models

Broad Category	Type of Contract	Capital assets ownership	Responsibility of Investment	Allocation of risk	Contract length	Typical Sectors
Supply and Management Contract	Outsourcing	Public	Public	Public	1 to 3	Supply of non-core elements e.g. labour, raw materials

Broad Category	Type of Contract	Capital assets ownership	Responsibility of Investment	Allocation of risk	Contract length	Typical Sectors
	Maintenance Management	Public	Public / Private	Public / Private	3 to 5	Transport, Water, electricity distribution
	Operational Management	Public	Public	Public	3 to 5	Transport, Water, electricity distribution
Turnkey		Public	Public	Public / Private	1 to 3	Construction
Lease/ Franchise	Build Lease Transfer	Public	Public	Public/ Private	5 to 20	Water
Concessions	Franchise	Private/ Public	Private/ Public	Private/ Public	3 to 10	Transport
	Build-Operate-Transfer	Private/ Public	Private/ Public	Private/ Public	15 to 30	Energy, Distribution
Private Ownership of assets and Private Funding Initiative	Build Own Operate (BOO) / Design Build Finance Operate (DBFO)	Private	Private	Private	Indefinite	Energy
	Private Finance Initiative (PFI)	Private/ Public	Private	Private/ Public	10 to 20	Social Infrastructure
	Divestiture	Private	Private	Private	Indefinite	Telecoms

Source: UNESCAP (2011) “A Guidebook on Public-Private Partnership in Infrastructure” p.12.

As shown in Table 3, there is diversity in the various partnership models that may be considered for the delivery of infrastructure services. It should be apparent that a homogenous approach does not apply to infrastructure. The choice of partnership model should be informed by the specific project characteristics, as well as by the risk appetite of the parties involved. Ownership of the underlying asset for instance, can remain with the public sector (which is the case in most of the partnership models). The various structures are characterised by different types of risk transfer; an important risk would relate to accountability for service delivery.

Another risk relates to ownership of capital assets. Let's take the example of a Design-Build-Finance-Operate ("**DBFO**") contract where throughout the contract term, legal ownership of the asset remains with the public authority. Yescombe, E.R (2007). Under this contract, the private sector is granted the legal rights to operate the asset and to collect revenues from those benefiting from the service as stipulated in the contract. The private sector is not interested in ownership of the physical assets. This feature is often lost in the discussion on "privatising" public infrastructure which has increasingly lost favor with leaders across Africa.

The private sector can be brought on board to help with various aspects of the delivery including design, build, funding, operations and maintenance. The private sector might be asked to perform some or all of these functions depending on the needs of the public sector. Some common models are described below.

2.1.1 LONG-TERM CONCESSION

Long-term concessions are a common form of infrastructure provision that has been around for hundreds of years. It is a end user-pays model in which the private entity known as the Concessionaire is allowed to earn fees from charging the general public user fees for access to the facility. Yescombe, E.R (2007). Typical examples include toll fees for roads, bridge etc. The revenue derived from the toll is used to repay the private party for its services. The facility will then be taken back to the public sector at the termination of the project tenure. A variant of this arrangement is the franchise model where the facility already in existence and the private entity is allowed to operate the asset for commercial benefit. Concessions have been used widely in the transport, water, and energy sectors.

2.1.2 SHORT TERM MANAGEMENT AND OPERATING CONTRACTS

Typically, management and lease contract requires a private entity to manage a public sector owned facility for a period whereby the conditions are stipulated in the contract, however, Government is still responsible to raise capital funding for the investments. (World Bank, 2012). The public sector would typically engage the private sector in this case a contractor to manage an array of activities for a fairly short time period ranging from two (2) to five (5) years. These short-term management contracts are likely to be task specific and input rather than output focused. An example could be providing cleaning or security services for a Municipal office.

Outputs or performance requirements can be imposed more for the maintenance and operation agreements. (World Bank, 2012). An example of a management contracts agreement involve the private entity earning a fixed fee by the public sector providing a specific service whereby the payment to the private entity is not dependent on success rate on collection of user fees and risk of asset condition remains with the public sector. Management contracts can be structured to be performance-based by ensuring that a private operator is allocated more risk such as the risk of asset condition and replacement thereof more minor components and equipment. This type of risk transfer is common in the water sector and has not been seen in the energy sector. (World Bank, 2012)

2.1.3 PUBLIC-PRIVATE JOINT VENTURES

The third partnership structure would entail an even greater sharing of resources and skills by the parties. Under a Joint Venture (JV), the private sector participates directly in the shareholding structure of the project company. For an existing asset, this would require partial divestiture of the Government's interest. If the utility is already in existence, shares in the utility are divested to the private sector. For a new build project, Government will establish a joint share ownership structure with the private sector project company. (World Economic Forum, 2012).

Depending on whether the government's financial standing and their ability to leverage for funding of the project, the level of share ownership will differ considering whether project will be funded off balance sheet or the government intends to retain management control of the entity. There are methods that allow for government control, or power over certain management matters. This is more common in projects involving critical infrastructure assets, of which it is expected that the Government will pursue and ensure control is retained. (World Economic Forum, 2012).

It is for strategic considerations that Government or the public sector will insist on keeping control of the entity in the initial stages of the arrangement especially if the ownership of assets reside with the joint venture company. However, the private sector will ensure they have control of the management of the entity therefore requiring powers to reverse decisions on certain issues. A management contract will therefore be used to delegate operation and maintenance functions to the private operator.

The corporate structure of the JV changes depending on the objectives of the parties. One approach is to set up a Special Purpose Vehicle (SPV) for the sole purpose of developing and operating an asset. In the case of South Africa, the SPV would be capitalised by private corporations as well as by Government, possibly through the relevant State Owned Entity (SOE) in that sector. It is also possible to have where a consortium where different parties contracted to work together on a project with the understanding that each party will only earn profits for tasks it is responsible for. (World Economic Forum, 2012). Remunerated is based on specific services rendered without a creation of a separate legal entity.

2.2 WHY PUBLIC-PRIVATE PARTNERSHIPS FOR SA'S ELECTRICITY DISTRIBUTION INDUSTRY

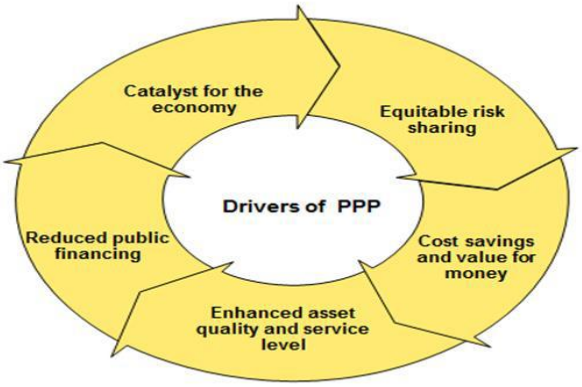
A long-term funding plan, which is sustainable and cost efficient, is key to investment in new infrastructure and refurbishment for the industry at large. (National Treasury. Budget Review 2012, Chapter 7, Infrastructure). The viability of any proposed investment depends on, inter alia, a funding plan that guarantees an optimal financing solution, taking into consideration the risks associated with making that investment. (www.doe-irp.co.za).

A suitable balance between various sources of funding needs to be considered such as:

- Raising debt from different debt markets with or without government guarantees;
- Regulatory framework for revenue and tariffs, a role played by NERSA in ensuring that tariffs reflect the cost of service;
- Raising of equity by government or development banks both domestically and internationally, or
- Raising of equity from the private sector ("PWC, The NDP- The right plan for private sector participation").

Government's primary objective in partnering with private sector in the provisioning of public services is to address budget shortfalls in public sector and to ensure efficiency, innovation, meeting the growing demands, and the delivery of ne infrastructure and the refurbishment of existing ageing infrastructure (Grimsey and Lewis, 2004). Traditionally PPPs provide various net benefits to the public sector. Chan, Lam, Chan, Cheung and Ke (2009) identified the drivers for adopting public-private partnerships.

Figure 6: Drivers of PPP implementation



Source: Chan et. al.,2009

The South African Government is faced with making difficult decisions around how much of the necessary scarce national resources can be allocated to helping Eskom and Municipalities fund the new projects, considering that tariff increases have a negative social and industrial impact. Mobilising the private sector requires that all institutional arrangements demonstrate fairness and equal access. This can easily be brought about by clarity of rules. It is for these reasons that the next chapter explores the critical success factors to aid progress and success for PPP ventures in the South African environment.

2.3 CURRENT PRIVATE SECTOR PARTICIPATION IN THE DELIVERY OF POWER PROJECTS IN SOUTH AFRICA

2.3.1 DEPARTMENT OF ENERGY'S INDEPENDENT POWER PRODUCER PROGRAMME

The Independent Power Producers (IPPs) have played a significant role and provided much needed relief especially at a critical time where SA was experiencing energy security challenges. (Eberhard,A, 2014). The IPP programme is pursuant to Government

Policy to introduce up to 30% of new generation capacity from privately owned generation facilities as outlined in the White Paper on Energy of 1998. Department of Energy (DoE), as the Department mandated with ensuring security of supply complied the Integrated Resources Plan 2010 (IRP2010) which is overarching policy documents which informs planning, allocation and procurement of power to meet the demand and enable economic growth. The IRP also aimed to bring diversification in the energy mix by including technologies like renewable energy, gas to address climate change challenges. (IRP, 2010)

Department of Energy formally launched the Renewable Energy Independent Power Producer (RE-IPP) Procurement on 3 August 2011, (Eberhard, 2014) and the subsequent determinations followed as outlined in the table below:

Table 4: Ministerial Determinations as at October 2016

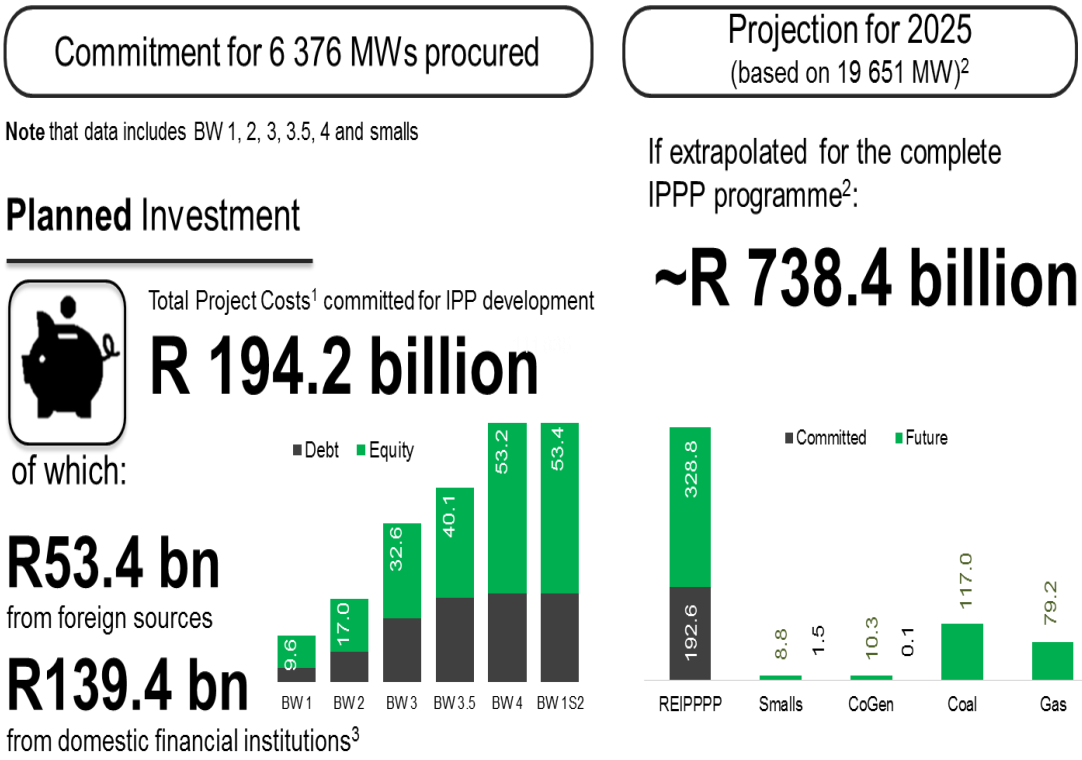
	New build options						
	Coal	Import hydro	Gas – CCGT	Peak – OCGT	Wind	CSP	Solar PV
	MW	MW	MW	MW	MW	MW	MW
2010	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	300
2013	0	0	0	0	0	0	300
2014	500	0	0	0	400	0	300
2015	500	0	0	0	400	0	300
2016	0	0	0	0	400	100	300
2017	0	0	0	0	400	100	300
2018	0	0	0	0	400	100	300
2019	250	0	237	0	400	100	300
2020	250	0	237	0	400	100	300
2021	250	0	237	0	400	100	300
2022	250	1 143	0	805	400	100	300
2023	250	1 183	0	805	400	100	300
2024	250	283	0	0	800	100	300
2025	250	0	0	805	1 600	100	1 000
2026	1 000	0	0	0	400	0	500
2027	250	0	0	0	1 600	0	500
2028	1 000	0	474	690	0	0	500
2029	250	0	237	805	0	0	1 000
2030	1 000	0	948	0	0	0	1 000
Total	6 250	2 609	2 370	3 910	8 400	1 000	8 400

RE First Determination: 3 725 MW Aug 2011
RE Second Determination: 3 200 MW Dec 2012
RE Third Determination: 6 300 MW Apr 2015
Solar Parks Determination: 1 500 MW May 2016
Coal Determination: 2 500 MW Dec 2012
Coal from Cross Border: 3 750 MW Apr 2016
Imported Hydro Determination: 2 609 MW Dec 2012
Gas Determination: 3 126 MW Aug 2015

Source: DOE Briefing on IPP programme

Figure 7 below illustrates of the Megawatts that the program has procured as well as the level of investment attributed to the programme.

Figure 7 Socio-Economic impact of the RE-IPP Programme



Source: DOE Briefing on IPP programme

The experience from South African suggests numerous key learnings for successful implementation of independent power programmes particularly renewable energy programs. For example, Eberhard, 2014 states that there is willingness from private sponsors and financiers to invest in renewable energy provided the procurement framework is well structured and transparent. Furthermore, Government should mitigate any key risks allowing for reasonable levels of profitability in the transactions.

The cost of renewable energy technologies continues to fall and the technologies such as wind turbines and photovoltaics are relatively comparable with alternatives (Breytenbach Karen, 2015). As such, the cost of distribution technology such as smart grids will soon fall deeming it affordable for financing using private public partnerships. The potential to leverage local social and economic developments that has been witnessed through the renewable energy procurement programme was attained though an effective, credible and transparent interaction between government and private sector. (Eberhard, 2014)

2.4 CRITICAL SUCCESSFUL FACTORS IN THE IMPLEMENTATION OF PRIVATE PUBLIC PARTNERSHIPS

The success factor concept was originally coined by Dr. Ronald Daniel in 1961 who's goal was to overcome the inadequacies of approaches to management information systems. Auruskeviciene V, Salciuviene L, Kuvykaite R, Zilys L (2007). Daniel outlined the information required for the support top management. To ensure that an organisation reaches its goals, Daniel (1961) mentioned that the supporting information systems should be selective and centered around highlighting three (3) to six (6) success factors. Therefore, the principal idea of the key success factors is the identification, assessment and analysis of the key areas with an intention to make specific steps to ensure success (Auruskeviciene et al., 2007)

Rockart (1979) defined "CSFs as the limited number of areas in which satisfactory results will ensure successful competitive performance for the individual, department or organization". (Rockart, 1979, p. 85) He highlighted critical success factors (CSFs) as distinct few areas of activity where positive outcomes are essential for a manager to reach his/her goals. (Rockart, 1979) The CSF model has been used for management measures since the 1970's to which a conceptual framework was developed. (Grunert and Ellegaard, 1992), and later this approach was seen to be key in highlighting the major areas essential to ensuring success in management. The study of critical success factors is therefore often seen as one of the essential ways for the improvement of effective project delivery Chan, A.P.C., Chan, D.W.N., Chiang, Y.H., Tang, B.S., Chan, E.H.W., & Ho, K.S.S., 2004.

Considering the growth in interest of the PPP since the 1990s Li, B., Akintoye, A., Edwards, P.J., and Hardcastle, C., (2005a), a number of PPP arrangements have been explored including the investigation of risk management Shen, L.Y., Platten, A.,& Deng, X.P., (2006). Stakeholder/relationship management and communication (Smyth and Edkins, 2007) and other areas. Osei-Kyei and Chan (2015) conducted a systematic review of the 27 studies published from 1990 to 2013 regarding the critical success factors in the delivery of PPP projects. The review provided a list of CSFs for PPP projects which could be explored further in other research studies.

Liu, J., Love, P.E., Smith, J., Regan, M., & Davis, P.R., (2014) suggest that since the progression of PPPs, several researchers have tried to employ the concepts and frameworks of CSFs to improve their knowledge of feasible, effective and efficient ways of implementing PPP policy for infrastructure. These concepts have been used in various

areas of PPP arrangement from several infrastructure sectors, project types and models, and the stages within the PPP phases (World Bank, 2012). For instance, prior researchers assessed CSFs for construction projects in general. Chua, D.K.H., Kog, Y.C., & Loh, P.K. (1999); Chan et al., 2004 and Saqib, M., Farooqui, R.U., & Lodi, S.H., 2008. Jefferies M., Gameson, R. and Rowlinson, S. (2002) examined CSF of a stadium construction project in Australia done through PPP using the Build Operate Own Transfer (BOOT) approach.

In the water sector, Meng, X., Zhao, Q., Shen, Q., (2011) examined CSFs for PPP projects in China delivered by a Transfer Operate Transfer Model (TOT). Zhao, Z.-Y, Zuo,J., Zillante,G., and Wang,X-W. 2010. investigated the factors adding to the success of the two PPP power projects which were coal fired and renewable energy technology (Wind Power). Both these projects were concluded using the Build Own Transfer (BOT) approach. Other various infrastructure projects in different sectors were also assessed such as Abdul-Aziz and Kassim (2011) examined CSF's for housing projects in Malaysia. Onyemaechi, P., Samy, M., and Pollard, D. (2015) examined the CSFs for housing projects in Nigeria. Similar studies have been conducted for transportation by Liu and Wilkinson (2013) and Jamali (2004) researched the CSFs for optimal PPP application in the telecommunication sector in Lebanon.

Ismail and Ajija (2011) suggest that there are two categories of literature on the CSFs of PPP, namely i) research that examines the CSFs of a specific PPP projects which are largely covered by the researchers referred to above and ii) research that assesses the CSF of general PPP ventures. The pioneers in the latter scope for examining CSF for general infrastructure projects can be found in the work done by Tiong, R.L.K., Yeo, K.T., & McCarthy, S.C. (1992); Zhang, (2005b); Chan, A.P.C., Lam, P.T.I., Chan, D.W.M., Cheung, E., & Ke, Y. (2010); Cheung et al., (2012); and Hwang, B.G., Zhao, X., & Gay, M.J.S. (2013).

According to Osei-Kyei and Chan (2015) the work that was previously done by the aforementioned has also been tested in both developed and developing countries promulgating PPP policy and legislation to foster infrastructure growth whereby CSFs identified were further explored by Babatunde, S.O., Opawole, A., Akinsiku, O.E. (2012) for infrastructure projects in Nigeria in the framework of a developing country, and (Li et al., 2005) for infrastructure projects in the United Kingdom in the context of a developed country.

The extensiveness of the research found on the CSFs for PPP implementation strengthens the argument that PPP success factor studies are one of the key areas of

interest to scholars. Ke, Y., Wang, S., Chan, A.P.C. and Cheung, E. (2009). Tang, L., Shen, Q., Cheng, E.W. (2010). It is expected that the trend for the research in CSFs for PPP will grow even more as governments are starting to adopt and implement PPP procurement policies after its success in other jurisdictions. (Ismail and Ajija; 2011).

South Africa is no different, as can be seen by the slow pace in the adoption of PPP in the early 2000's when it was first introduced to the now exceptional results of the Renewable Energy Independent Power Producers Programme (DoE, IPP 2011). Therefore, it is important to examine and understand from jurisdiction the CSF for aggressive implementation of PPP projects.

In its objective for adopting the PPP model, The National Treasury of South Africa articulates the need ensure value for money and fair risk apportionment between public and the private sector (National Treasury, PPP unit). This notion is supported by the research done by Aziz and Nabavi, (2014); Garvin, (2009) and Peng, W., Cui, Q., Lu, Y., & Huang, L. (2014) regarding enhancing value for money, financial viabilities, risk management and relationship management. In their finding, Osei-Kyei and Chan (2015) through the review of the 27 published journals on CSFs for PPPs, found that over the past 23 years (1990 to 2013), there has been a steady shift of interest form researching country specific PPP CSFs to international best PPP practices.

Although not exhaustive, the table below summarizes the key earlier studies on CSF in PPP infrastructure.

Table 5: Key studies of CSF in PPP arrangement

Author (s)	PPP Type	Region	Sector	Key Findings
Akintoye et al, 2001	PFI	UK	Construction	• Detailed risk analysis and appropriate risk allocation, • drive for faster project completion • curtailment in project cost escalation, • encouragement of innovation in project development • maintenance cost being adequately accounted for.

Jefferies et. al., 2002	BOOT	Australia	CSF in Infrastructure	• solid consortium with a wealth of expertise and considerable experience, • high profile and a good reputation, • an efficient approval process • innovation in the financing methods of the consortium.
Zhang, 2005	PPP	Internatio nal	CSF in PPPs	• Economic viability, appropriate risk allocation via reliable contractual arrangements, • Sound financial package, • Reliable concessionaire consortium with strong technical strength, • Favorable investment environment.
Helmy, 2011	PPP	Kuwait	PPP projects in Kuwait	• A common and well-coordinated vision for implementing the PPP projects as a part of the long-term development plan. Developed and clear action plan Capacity Building for all parties
Dada and Olatokun, 2012	PPP	Nigeria	PPP success sub factors (SSFs) in Private Public construction prjects	• sound financial package appropriate toll/tariff level(s) Suitable adjustment formula

HardCastle et al., 2005	PPP/PFI	UK	PPP/PFI in UK construction industry	• Effective procurement project implement-ability government guarantee, • favorable economic conditions • Available financial markets.
Hojs et al., 2012	PPP	Slovenia	CSF for PPP Road construction in Slovenia	Quality and standard of works. need for tools and models that will promote a win-win solution
Babatunde et. al, 2012	PPP	Nigeria	Infrastructure Projects	• Competitive procurement process. • Thorough and realistic assessment of the cost and benefits • A favorable framework Appropriate risk allocation and risk sharing, • Government involvement by providing a guarantee • Political support • Stable macroeconomic condition • Sound economic policy • Availability of suitable financial market.

Source: Onyemaechi, P., Samy, M., and Pollard, D. (2015) who referenced Mustafa, (2006) and Ibem (2010)

These publications not only identified a total of 57 CSFs but further ranked them to come up with the top most five 5 CSF, namely;

1) Appropriate risk allocation and sharing,

2) Strong private consortium,

3) Political support,

4) Community and public support, and

5) Transparent procurement.

The frequency at which the factors were identified in the papers considered for the research revealed the importance of the factors to the success of PPP projects regardless of the domain, the stage of the project or the project mode. Osei-Kyei and Chan, (2015).

Zhang (2005) proposes that PPPs involves several kinds of risks that may surface at various stages of the project in the lifecycle of a project. He suggests that PPPs should be viewed simply as a vehicle for government to develop infrastructure projects by re-allocating the all the risks to the private sector and thus shedding all their responsibilities. (Dada. and Oladokun,2012).

Zhang (2005) further contested that allocation of risk should be based on a private-public win-win principle. It was then that he was able to identify 47 CSFs for PPP projects, which were also classified to into five main aspects of CSFs namely:

1) Economic viability,

2) Appropriate risk allocation via reliable contractual arrangements,

3) Sound financial package,

4) Reliable concessionaire consortium with strong technical strength, and

5) Favorable investment environment.

He examined the relative importance of the CSF based on the perceptions of both academics and industry experts and was therefore able to identify, analyse and categorise a list of these CSFs. (Dada. and Oladokun,2012).

Several researchers have referred to Zhang (2005) model in the pursuit of advancing PPP infrastructure projects namely, Chan et al., 2010 where a study was conducted to researching the prospects of adopting PPPs in China by exploring the CSFs essential in implementing PPP projects. This study tested against 18 CSFs that were extracted from literature adapted from Zhang (2005) findings. The 18 CSF's were then grouped to five underlying factors namely,

1) Stable micro economic environment,

2) Shared responsibility between public and private sectors,

3) Transparent and efficient procurement process,

4) Stable political and social environment, and

5) Judicious government control.

The need for this study arose from the realization in the advent of rapid growth in the Chinese economy which created a rapid demand for infrastructure development. The Chinese government realized an ever-rising budgetary pressure on the fiscus and resolved the need to invite private sector to partner in funding the rapid infrastructure demand (Chan et al. 2010).

2.5 BRIEF DESCRIPTION OF THE CRITICAL SUCCESS FACTORS

2.5.1 FAVORABLE INVESTMENT ENVIRONMENT

An investment climate can be described as the general atmosphere of a country that is a result of economic outlook, legal, political and social factors which could directly or indirectly impact the performance of an investment in that country (World Bank, 2015). The preparedness of any investor, mostly the private sector investor and lenders to invest in the development of infrastructure projects is largely driven by the climate where the projects will operate (World Bank, 2015). Zhang (2005) suggests that for PPP arrangements to work effectively, there ought to be a favorable political, economic, legal, political and commercially viable environment for private sector to participate.

South Africa is currently sitting with an excess of R600 billion in cash waiting for the right signs from Government before they pursue any long-term investments. (Business Day, Business 'waits' to invest R600bn, October 2016). This long drawn stand-off has been at play for several years. (Mail and Guardian, Companies sit on their hoards, July 2015). "The private sector remains reluctant to invest the cash lounging on company balance sheets. Poor confidence in the economic environment has played a notable role in this, but the picture may be more complicated than it first appears". (Mail and Guardian, July 2015, Companies sit on their hoards).Government is the key driver and should be in control of that environment that result in positive investor sentiment. Part of government's role is to eliminate policy induced impediments that restrict and fail to support PPP favorable investment environment. (OECD, 2015).

An effective regulatory system is a key precondition for attracting sustainable investment in infrastructure which is necessary for economic growth and reduction of poverty in South

Africa. (South African Economic Regulation Conference, NERSA, 2012). Greater emphasis must be made to ensure that workable and reliable regulatory frameworks are established to enable an implementation of effective contracts administered by PPP which are compactible and in line with a country's legal and regulatory system. (Zhang, 2005).

2.5.2 ECONOMIC VIABILITY

Most Governments tend to conduct various kinds of economic viability analysis to help them decide whether the project proposes is a good and effective use of public funds. Economic viability of a project is measured by assessing whether the economic benefits exceed its economic costs (Burger P. and Hawkesworth I., 2011). Zhang (2005) listed 5 factors that can be deemed necessarily to ensure economic viability for PPP infrastructure projects. Those can be listed as follows:

i) Long-term demand for products and services offered by the project,

ii) Sufficient profitability of the project to attract investors,

iii) Long-term cash flow guaranteeing lenders appetite,

iv) Long-term availability of suppliers to support the operations, and

v) Limited competition from other projects.

For a project to be economically viable, market operations must be sustainable regarding current and projected revenues. Vanashree Vanarase (2016). As governments tend to seek first affordability in choosing a Private partner, private investors are more inclined to leaning towards long-term revenue generating prospects Vanashree (2016). Therefore, the key to economic viability tends to be the ability of a project to generate revenues, where revenues driven cost-reflective tariffs do not exist, as in the case of delivery of basic essential services such as electricity, water, education and health, Government's rely on their own budget and short-long term affordability to ascertain if such an investment can be sought (Zhang, 2005)

2.5.3 APPROPRIATE RISK ALLOCATION VIA RELIABLE CONTRACTUAL AGREEMENTS

As public-private partnerships become increasingly common and a successful mode of delivering infrastructure projects, Governments are getting more motivated to use this framework as it is seen and proven to deliver value for money. Hovy Pauline and August

(2015); Li, B. et. Al., (2005) conducted an analysis of preferred risk allocation in PPP projects in the United Kingdom (UK).

A similar study was done by was carried out by (Roumboutsos and Anagnostopoulos, 2008) in Greece based on a risk register identified by Li et al. 2005. Yongjian Ke; ShouQing Wang; and Albert P. C. Chan, carried a study in 2010 whereby the results illustrate that the Chinese government preferred that political and social risks be left to the public sector as well as the risks of legislation change and delays in project approvals and permits as they are best suited to manage it.

All other remaining risks are better of allocated to the private investor (Yongjian, ShouQing and Chan, 2010). In the case with the South African National Treasury, the PPP regulations categorically stipulate the intention of government to allocate risk to the partner who is best suited to carry and manage it. (National Treasury PPP manual: Model 5 PPP Procurement).

2.5.4 RELIABLE CONCESSIONAIRE CONSORTIUM WITH A STRONG TECHNICAL STRENGTH

As opposed the government or the public sector being better placed to create a favorable investment environment for the private sector to develop public infrastructure, the private sector plays a principal role in the successful delivery of a particular PPP project. Zhang (2005). Successful PPP project implementation requires a competent and financially capable private sector consortium (Hussein N. Ndonye, Dr. Emma Anyika, Prof. George Gongera, 2014). Dada and Oladokun (2012) summarized a strong and reliable concessionaire consortium for good PPP performance as that with; adequate technical strength with strong and capable project team; good relationship with host government authorities; leading role by a key entrepreneur in it; effective project organization structure; sound technical solution; multidisciplinary participants; and rich experience in international PPP project management. Selecting a right concessionaire with competent skills is key in ensuring successful delivery of projects realisable through a competitive tendering process (Chan et al., 2010 a).

2.5.5 SOUND FINANCIAL PACKAGE

The PPP arrangements in infrastructure projects are usually funded through a non-recourse or limited recourse basis (Zhang, 2005). The finance strategy adopted by PPP

project companies is usually the mixture of debt and equity, and contractual agreements between the equity owners and lenders. (Ndonye, Anyika and Gongera, 2014).

In-order to effectively mitigate the risks, lenders providing the project finance in a PPP tend to significantly monitor and take an interest in the performance of the project on which the repayment to ensure payment of loans. A high equity-debt ratio in PPP capital structure is recommended by Dada and Oladokun (2012). And the remainder of the funding requirement apart from the debt consist of equity made available by, main contractors or by third-party financial investors. (Ndonye, Anyika and Gongera, 2014)

A sound financial package gives security to the public sector that the PPP consortium and particularly its financiers, are incentivized and empowered to handle challenges that might occur in the project timely. To a great degree, the project finance framework should guarantee that the interests of the main lenders to the project are aligned with those of the government (the public that is, the two parties need the project to succeed in-order to meet their plans and objectives (World Bank ,2009). This is a critical part to the transfer of risk from the public to the private sector in PPPs. (Ndonye, Anyika, and Gongera, 2014). Zhang (2005) contends that a sound financial package must therefore include the following key features namely, a sound financial analysis, sensible schedules for investment, payment and drawdowns, stable currencies of debt and equity finance, high equity-debt ratio, low financial charges, fixed and low interest financing, long-term debt financing that minimises finance risk; the ability to deal with fluctuations and interest rates, and appropriate payment structures.

All the literature reviewed points out that Government has an important role in ensuring that the local financial markets, regulatory and legislative environment is predictable and transparent and the economic conditions are favourable for long term investment.

(Zhang, 2005). However, the private sector still has to ensure that a sound financial strategy is established accompanied by a reliable consortium with strong technical abilities to ensure value for money in the delivery of a successful PPP project and its long-term performance.

CHAPTER 3: RESEARCH QUESTIONS

3.1 INTRODUCTION

Upon evaluating various research done previously and the consolidated assessment of journals done by Osei-Kyei and Chan (2015) where critical success factors were identified, analysed and categorize into five (5) categories summing up various individual factors ranging from 18 to 57 in some cases. This study will follow the same approach where a list of 47 CSF (Zhang, 2005) categorized in the 5 identified themes will be given to the relevant municipal personnel such as municipal managers, municipal finance officers, Municipal project managers, Municipal electricity head of departments. The same questionnaire will also be given to Industry Experts such as funding institutions, PPP unit personnel and National Treasury, development banks that deal with PPP and funding of Municipal infrastructure. The experts and Municipal personnel will be requested to identify and rank in the order of importance the criticalness of each success factor in the implementation of PPPs from their perspective.

3.2 RESEARCH HYPOTHESIS

Therefore, this study is trying to ascertain the following:

Hypothesis 1:

The CSFs for PPP implementation for the funding of electricity distribution infrastructure within the South African Municipalities rank the same as the 5 CSFs identified by Zhang (2005).

Hypothesis 2:

The perceptions of municipality management differ significantly to the those of Industry Experts concerning the importance of CSFs. Industry experts are defined as personnel from the National Treasury PPP unit, selected provincial treasuries and funding partners such as development banks and commercial banks that are directly involved with certain aspect of Municipality funding.

Hypothesis 3:

The perceptions of municipality management from Local municipalities differs from Metropolitan municipalities concerning the importance of CSFs.

CHAPTER 4: RESEARCH METHODOLOGY

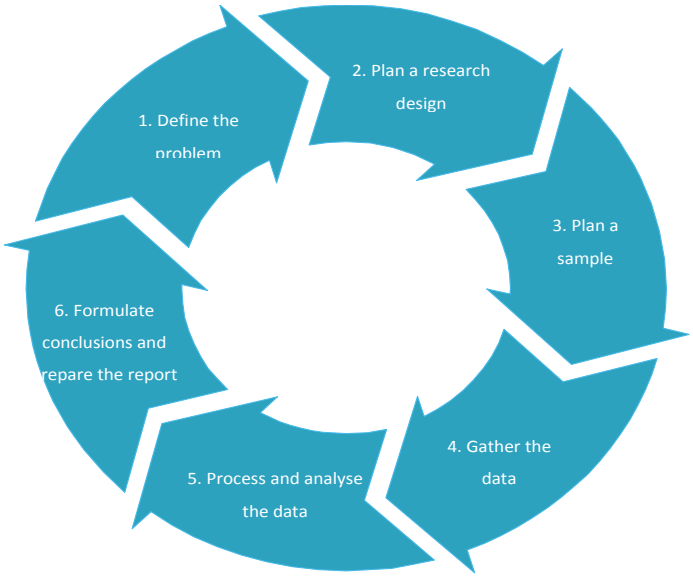
In Chapter 3 the researcher stated that the research hypotheses that were tested in this study. The key research theme focuses on determining the suitability of PPP and its CSFs as a model to deliver electricity distribution infrastructure within South African municipalities. The review of literature on PPP and the challenges in the electricity industry and its reform in South Africa provide insight into how this approach could be applied to infrastructure, particularly within the Municipal jurisdiction in South Africa.

From the literature review, critical success factors for PPP projects have been identified, which informed the questionnaire and the open-ended questions given to parties and stakeholders involved in the delivery of infrastructure through public-private partnerships. The stakeholders shared their perceptions and perspective regarding the appropriateness and the usefulness of PPP in facilitating delivery of infrastructure in South Africa specifically electricity distribution. Based on these observations and results, the recommendations that support future programme initiatives that boost PPP projects in electricity infrastructure in South Africa have been tested and formulated. This chapter explains the methodology used to test the hypotheses posed in Chapter Three.

4.1 THE RESEARCH PROCESS

Business research is defined as the systematic and objective process of gathering, recording, and analysing data for aid in making business decision (Zikmund, 2003) Zikmund (2003) designed a useful six stage forward linkage process that can be followed when conducting research that requires quantitative analysis.

Figure 8: Phases of the Research Process



Source: Zikmund 2003

The term forward linkage implies that the research design the later stages is influenced by the earlier stages of the research process. (Zikmund, 2003). The problem definition should outline the objectives of the research and thus have an influence on the identification and selection of the sample, and the way in which data is collected. (Zikmund, 2003).

“Business research is defined as the systematic and objective process of gathering, recording, and analysing data for aid in making business decision”. (Zikmund, 2003, p.6). This chapter therefore outlines the research philosophy, method, design, population, sample selection and data collection tools that will be used to address the research problem as outlined in Chapter two (2) - literature review section (Warnholz, 2007). The researcher chose a to use a quantitative approach by using a survey questionnaires as a tool to gather data. In quantitative research, the researcher typically employed descriptive statistics to analyse the distribution of variables, and then draws results which assist in explaining patterns and conclusions by the use of distributions to a certain degree of probability. (Tharenou, P., Donohue, R., & Cooper, P.2007).

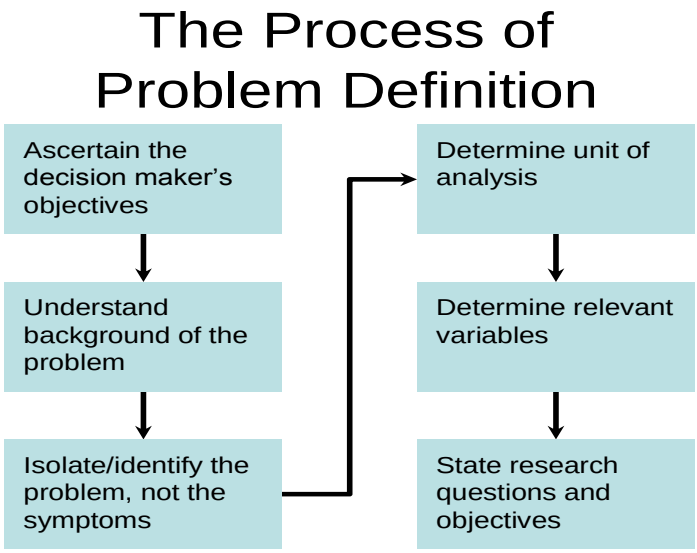
Descriptive research was used identify, analyse and categorise the applicability of the CSFs as identified by Zhang (2005) and further test whether the ranking observed by Osei-Kyei and Chan (2015) apply to the identified respondents for PPP agreements in the Municipal jurisdiction in South Africa. According to Zikmund (2003), descriptive research aims to describe the characteristics of a population and is based on previously recorded

understanding of the subject matter (Zikmund, 2003). The practicality in terms of time and costs makes the use of quantitative approaches, especially surveys often are favorable. (Survey Research, v10). Likert-scale type questions were asked about the constructs in the form of critical success factors that were identified in the literature review. The 56 CSF were tested, categorized and ranked as suggested by Zhang, (2005) and Osei-Kyei, Chan (2015). The data was used to calculate the mean and the one with the highest mean was the most applicable in that order until the least applicable is derived.

4.2 RESEARCH DESIGN

Defining the problem and the context of its existence is usually the most challenging part of any research. According to Zikmund (2003), it is extremely important to define the business problem carefully because the definition determines the purpose of the research and ultimately the research design. Figure 8 below outlines the process of problem definition.

Figure 9: The Process of Problem Definition



Source: Zikmund, 2003

A semi-structured research methodology was employed whereby the questionnaire survey will allow for the respondent to respond to a set of prescribed questions and also have an opportunity to respond freely and given more perception and insights in their understanding of the critical success factors for implementation of PPPs in the South African Municipality space. Section 3 of the questionnaire was a quantitative study to

examine the theoretical estimates with precise measures of variables (Tharenou et al., 2007).

4.3 THE RESEARCH INSTRUMENT

The research objective was to answer the three research questions posed in chapter three above. The researcher used a questionnaire method, a structural technique to collect data (Malhotra, 2010). The questionnaire used was predominantly based on the work by (Zhang, 2005) with the addition of open ended questions and demographic related questions.

The questionnaire survey was structured in three (3) parts, and split as follows:

- Section 1 : For administration purposes - Demographics
- Section 2 : Three (3) open-ended to verify if the respondents is versed with the topic of PPP's in South Africa
- Section 3 : The rating of the significant of the 57 CSF's (Zhang, 2005)

The first section of the questionnaire included questions relating to the profile of the respondent focusing on job title or current position, level of education, work experience, and the sector that the respondent worked at to distinguish between Municipalities and industry experts. In this section, the respondents were also given the choice to state or not disclose their names but indicate whether they wish to participate or not by ticking on the box and space provided.

In section 2, the researcher listed three (3) open-ended ice braking questions testing the respondents understanding of the topic and to ensure that more information is revealed and the experience level of the participants was not compromised to allow for flexibility where the experts and respondents can respond freely. (Mecerek, J., Fine, M., Kidder, L., 1997). Firstly, the respondents were required to state their opinion whether they regard PPPs successful in SA. Secondly, the respondents were required to indicate whether they know of any PPPs in the municipal or provincial treasury space in SA. Lastly, the respondents were asked their views on what they would regard as critical in ensuring the success of PPP arrangements.

The last section of the questionnaire was formulated from Zhang, 2005 survey questionnaire which had identified and ranked 47 variables in the 4 CSFs. The questionnaire used was taken from Zhang, 2005. The questions were grouped in five (5) headings as follows:

- Favorable Investment Environment
- Economic Viability
- Reliable Concessionaire consortium with technical strength
- Sound Financial Package
- Appropriate Risk Allocation via Reliable Contractual Arrangement

The five headings containing a total of 56 CSFs. Each had a minimum of five (5) and a maximum of eleven (11) individual items which the respondents were required to rate on a likert scale from 0 to 5. Likert-scale ratings are allocated to each factor in the questionnaire. Zikmund, 2003 says the attitude scale assists in locating an individual's position on a continuum (Zikmund, 2003). Respondents were asked to rate each factor ranging from 0 = being not applicable; 1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree to 5 = strongly agree. This provided the respondents with the ability to indicate if they consider the CSF identified on the literature review is indeed in their perspective a CSF then compare it with the rating produced in the literature review.
A weighting score will be attached to each response for the purposes of data analysis and measurement of attitudes.

4.4 POPULATION AND SAMPLE SIZE

Zikmund (2003) stresses the need for the researcher to select an appropriate target population is critical in ensuring that the data gathered is from the correct source. The target population are senior/middle level municipal managers of the 287 municipalities involved in procurement, project officers in the public ministries, banking institutions, law firms, project finance, risk management, general/ executive management, financiers and development finance institutions. For the purposes of this study, there was a clear distinction between the Municipality personnel and Industry Experts.

The unit of analysis in this study was Municipal personnel encompassing of Municipal Managers, Municipal Financial Director, Municipal Project Managers. The industry experts were represented by Provincial treasuries, PPP unit - GTAC, Project Managers and Development Banks.

A statistical sample is described as a subset of the larger population, selected for specific research and should be representative of the larger population (Wolverton 2009). For this study, the sample was participants with managerial experience and personnel strategic roles in the Municipal PPP environment (Koro-Ljungberg and Douglas 2008). A sample

was largely planned to capture interaction with PPP environment with Municipal jurisdiction. PPP experts with significant exposure to PPP project implementation were targeted for this research.

The study recruited 89 respondents across municipalities and industry. The respondents sample was reached by using non-probability sampling technique. This sampling technique does not use chance selection procedures, it rather relies on personal judgment of the researcher (Malhotra, 2010). This technique is justified as there is no known or published database of users and stakeholders of PPP procurement method in the study area. The technique mainly involved snow-balling and convenience sampling technique.

4.5 DATA COLLECTION

The researcher used two methods for data collection, namely, the questionnaire was programmed on the Survey monkey data collection platform and distributed electronically through a link embedded on email. Secondly, some respondents were made to fill in the questionnaires during their annual Association of Municipal Electricity Utilities (AMEU, 2016) convention hosted by Emfuleni Municipality on 2-5 October 2016. A total of 58 responses were completed on survey monkey and another 31 responses were collected using pen to paper during the convention. The data that was collected on survey monkey was downloaded SPSS (originally, Statistical Package for the Social Sciences and now called Statistical Product and Service Solutions) software. The manually collected data was also captured in the SPSS software to combine with the other dataset.

Descriptive statistics such as frequency distribution, mean, and standard deviation were used to summarise data. The mean was used to summarise metric variables such as patient weight.

4.6 ANALYSIS CONDUCTED

4.6.1 Descriptive Statistics

Descriptive statistics such as frequency distribution, mean, and standard deviation were used to summarise data. The mean was used to summarise data collected using the Likert scale. Frequencies were used to summarise categorical data.

4.6.2 Validity

Validity is “concerned with whether the findings are really about what they appear to be about”. (Saunders & Lewis, 2012, p. 128). Therefore, validity is essential in research as it establishes whether a researcher is testing what needs to be tested and assess the credibility of results, in addition, it tests if the results can be applied in other settings. (Saunders et al.,2009). A consistency matrix assists in improving validity by illustrating how the research will address the research questions.

Joppe 2000, (cited in Golafshani 2003) explains validity in quantitative research as determining whether the research truly measures that which it was intended to measure, or how truthful the research results are. In other words, does the research instrument allow you to hit "the bull’s eye" of the research object?. However, validity is also affected by survey design since it also depends on asking questions that measure what is supposed to be measured. The study portrayed validity as the test scores were correctly interpreted and used through the statistical analysis (Bernstein, D.A., Penner, L.A., Clarke-Stewart, A.C., & Roy, E.J., (2006). The questionnaire was used and in some cases adapted by at least 27 publications presented in the review done by Osei-Kei, R and Chan, A (2015).

4.6.3 Reliability

Joppe 2000, (cited in Golafshani 2003) defines reliability as the extent to which results are consistent over time and an accurate representation of the total population under study is referred to as reliability and if the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable. The concept relates i) the degree to which a measurement, given repeatedly, remains the same; 2) the stability of a measurement over time; and 3) the similarity of measurements within a given time period (Golafshani, 2003).

Reliability is concerned with a survey’s ability to produce consistent results when repeatedly measuring the same outcome. This implies that the researcher would get similar results if they repeated their questionnaire soon afterwards with the same Municipal personnel and industry experts. Table 5 below provides a quick check for a test of reliability.

Table 6: Checks for Reliability

Checks for Reliability	
Test-Retest	This involves testing and then retesting the same set of unit of analysis on the same set of test items to examine the consistency of their responses. Looks at the extent to which another researcher would agree when using the same survey.
Internal Consistency	Involves the cohesiveness of a scale's items, i.e. do all the items in the scale measure the same characteristic or concept, and can they be logically grouped together with regards to each pillar that was tested for demonstrating

Source: Table adapted from Mark Saunders and Phillip Lewis, Doing Research in Business & Management, Chapter 5, choosing your research design

Cronbach's alpha was used to assess the internal consistency (reliability) of the multiple item scales. Internal consistency describes the extent to which all the items in a multiple item scale measure the same concept or construct. The value of the Cronbach's Alpha ranges from zero to one and the closer the Cronbach's alpha coefficient is to 1 the greater the internal consistency of the items in the scale.

4.6.4 Independent Sample t-test

Independent sample t-test was used to compare the mean values for respondent ratings for the different CSFs by the respondents were municipal employees or industry expects as well as comparing ratings for Local municipal employees against he scores by metro municipal employees. The samples were independent in the sense that they were drawn from different populations and each element of one sample (either municipal employee or industry expert) is not matched with a corresponding element of the other sample (Park, H.M, 2009). A p-value less than 0.05 is an indication that there is a significant difference between the two means while a p-value of greater than 0.05 is an indication of no significant difference between the mean values.

4.6.5 Limitations to the Research

The researcher is mindful of various research limitations, presented by the chosen research method and acknowledges the following:

- One notable disadvantage to written questionnaires is the low response rates which can dramatically lower confidence in the results. The researcher was however able to solicit 89 respondents which assisted in circumventing this disadvantage.
- Another key and concerning challenges of questionnaires is the inability to probe responses due to the fact that questionnaires are structured instruments. They allow little flexibility to the respondent with respect to response format. The researcher included an open-ended opinion section to allow flexibility for comments. Comments are among the most helpful of all the information on the questionnaire, and they usually provide insightful information that would have otherwise been lost.
- Finally, questionnaires are simply not suited for some people. In the case where the variables of survey are not clearly understood, there might be a misreading and misinterpretation of what the researcher is trying to study.

The researcher also notes that while a judgement and snowballing samples are useful for this specific research objective, the researcher was mindful of the bias that may result from the belief by respondents that they may make the sample unrepresentative. Thus projecting data beyond this sample is inappropriate.

If the sample is not representative of the population (universe), a non-probability sampling may result in a finding that is not representative of the population. Therefore, it would be inappropriate to project the research findings beyond the sample, without additional research.

CHAPTER 5: RESULTS

The previous chapter explained the methodology used to test the research questions highlighted in Chapter Three. This chapter will present the findings as captured in the three sections of the questionnaire provided to respondents. The first section dealt with the demographics of the respondents and it had four compulsory questions. The second section was trying to ascertain if respondents had previous experience in dealing or being involved with PPPs in South Africa and develop an understanding of the challenges preventing the delivery of quality infrastructure in South African local government. The last section of the questionnaire listed the 5 categories of Critical Success Factors that Municipalities and Industry Experts had to evaluate to ascertain their importance or lack of in ensuring successful implementation of PPP in funding Electricity Distribution Infrastructure within Municipalities. The results will therefore be discussed in a similar fashion.

5.1 THE SAMPLE

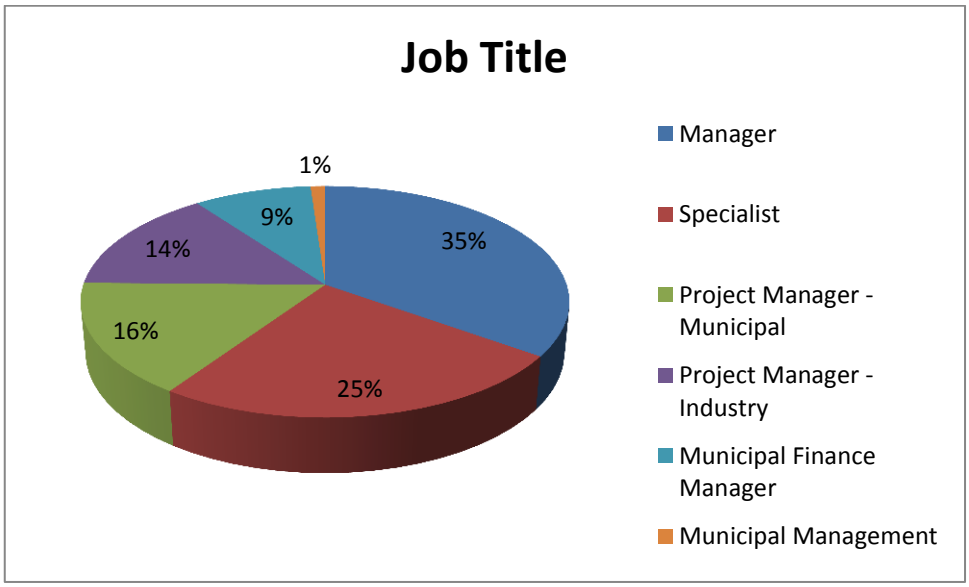
The response sample consisted of 89 respondents. A total of 89 responses were received and analysed. Questionnaires were given to relevant municipality officials and key industry experts with the knowledge of infrastructure investments particularity regarding the use if PPP arrangements.

5.2 SECTION 1: DEMOGRAPHIC INFORMATION

5.2.1 Job Title / Current Position

The following pie-chart (Figure 9) shows the positions or job titles that the different respondents held from either the Municipalities, the private sector, any other government department.

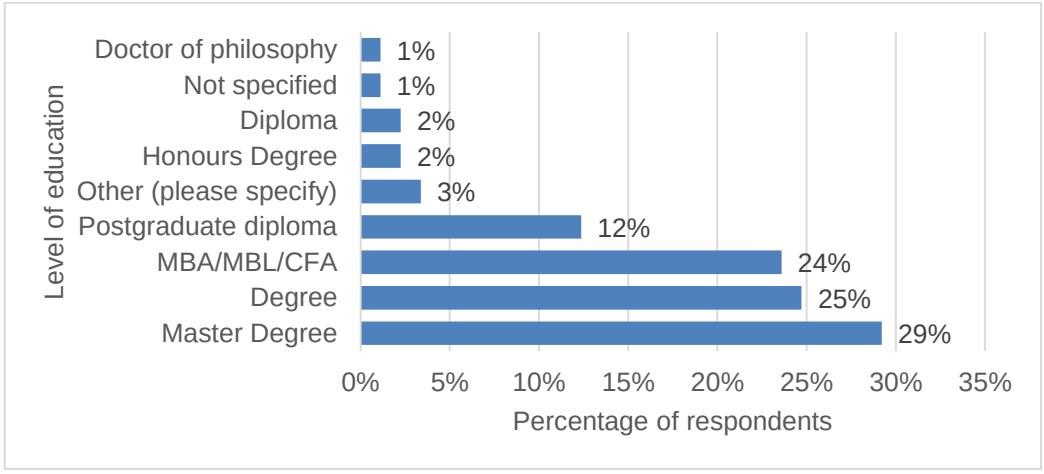
Figure 10: Job title/Current Position



5.2.2 Qualifications

The bar chart (Figure 10) below shows the highest level of education for the 89 respondents. This bar chart reveals that there are four dominant levels of education, namely, Master's degree, degree, MBA/MBL and post-graduation diplomas. This table shows that the majority of respondents had a post graduate degree.

Figure 11: Highest level of education

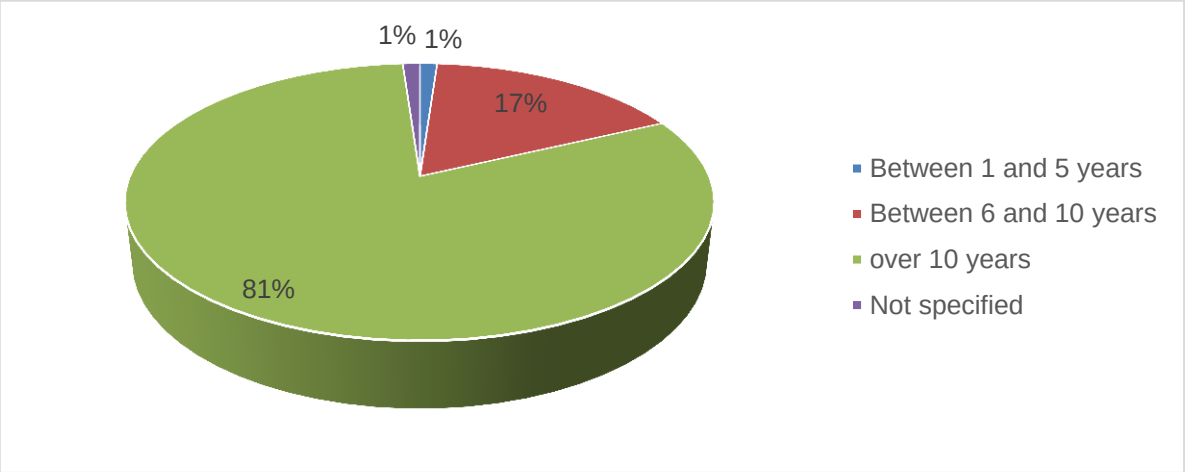


It can be noted that 29% of the respondents had Masters Degrees, 25% had degrees, 24% had MBA/MBL/CFA, and 12% had postgraduate diplomas. This table shows that the majority of respondents had a post graduate degree.

5.2.3 Work Experience

The pie chart (Figure 11) below represents the number of working experience in years that each respondent has in their industry. Of the 89 respondents 81% had been in the industry for over 10 years, 17% had between 6 and 10 years' experience, 1% had between 1 and 5 years while another 1% did not specify their work experience.

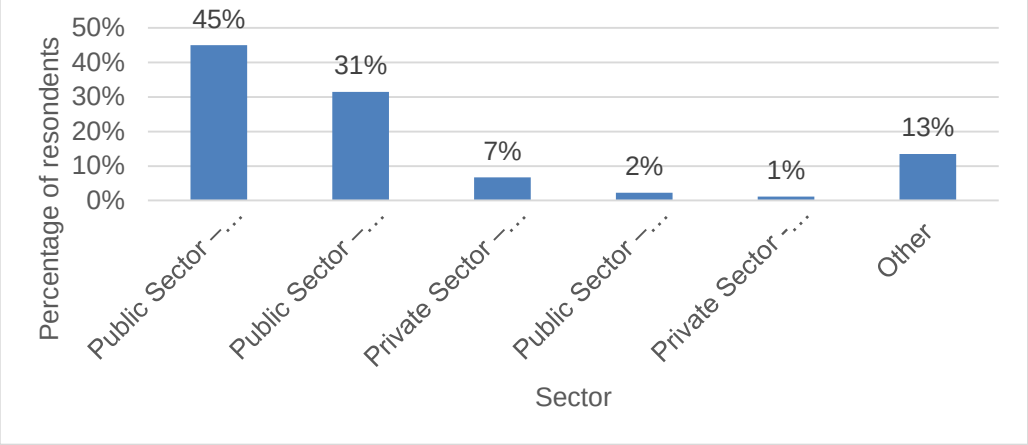
Figure 12: Work experience



5.2.4 Sector

A proportion of 45% of the respondents were from the public sector – utility which are the municipalities, 31% were from the public sector- government department which are the government entities such as development banks, provincial treasuries and the PPP unit of the National Treasury and 7% were from private sector- financial services. The chart below (Figure 12) shows the sector in which the respondents serve.

Figure 13: Sector

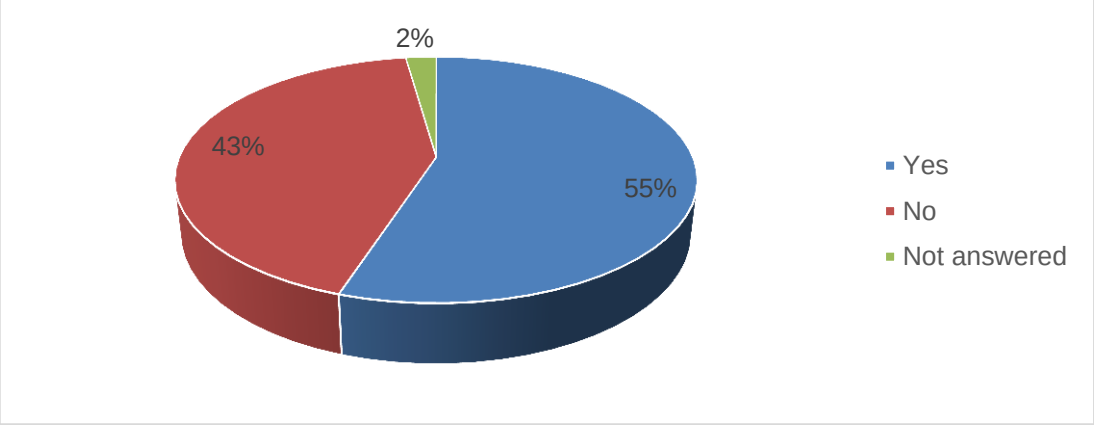


5.3 SECTION 2: OPINIONS FROM RESPONDENTS

5.3.1 *In your opinion, are PPPs successful in South Africa?*

Respondents were asked to indicate their opinion on whether Private-Public Partnerships (PPP) are successful in South Africa, the results are shown in Figure 13.

Figure 14: In your opinion are the PPP successful in South Africa?

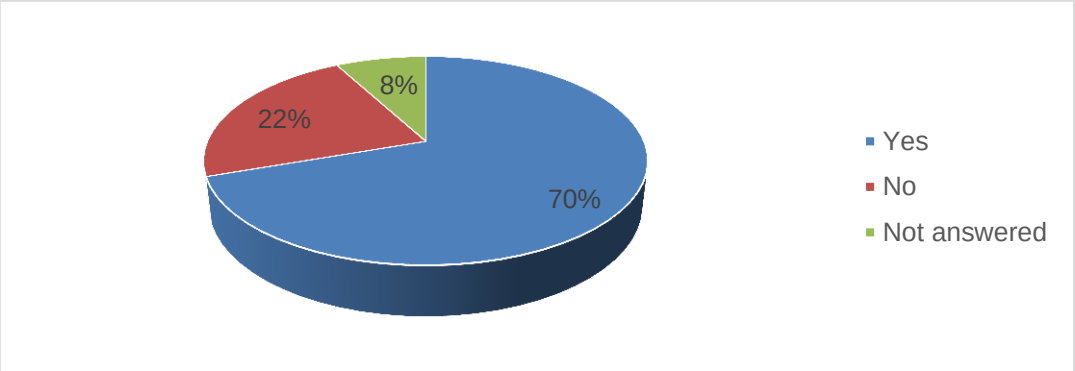


More than half of the respondents (55%) were of the view that Private-Public Partnerships (PPP) are successful in South Africa, 22% indicated that they are not successful while the other 8% did not indicate their view.

5.3.2 *Do you know of any PPP in the municipal or provincial treasury space in South Africa?*

It was also established whether the respondents knew of any PPP in the municipal or provincial treasury space in South Africa. The results are shown in Figure 14 below

Figure 15: Do you know of any PPP in the municipal or provincial treasury space in South Africa?



The results showed that 70% of the respondents were aware of some PPP in the municipal or provincial treasury space in South Africa, 22% did not know of any successful PPP's in Municipal space while the other 8% did not indicate whether they know of any or not.

5.3.3 *What in the respondents view could be seen as critical in the success of PPP arrangements?*

Participants responded with the following comments:

- Stability and certainty with respect to Legal frameworks
- Political commitment
- In the PPP environment the negotiation process takes very long which result in additional cost to the project. In some cases, the decision making process might be a challenge whereby the government takes forever in making decisions. However, the DoE-IPP environment is successful because there is no negotiation but it takes time to develop the document and the associated agreement. The respondent is of the view that it is better to take time developing the clear documentation to avoid lengthy negotiations. However, the decision making process remains a challenge evening in the IPP environment.
- Coherent policy implementation

- Proper investigation regarding viability of project
- Clear legislation
- Clear understanding of each parties role
- Contract Management, Political will, strong regulatory framework, strong technical expertise etc
- Compliance, continuous service delivery and value for money on services rendered
- Compliance, continuous service delivery and value for money on services rendered
- Good policies and good adherence during implementation
- All role players must have a clear understanding of their role and there must never be a grey area at any given point. The projects in this space are evolving and there must be full time legal representatives for all parties at any given point
- Effective and efficient delivery of PPP projects
- Contract Management, Political will, strong regulatory framework, strong technical expertise.
- Provision of the services to the public
- Budget and innovative forward planning
- Transparency and accountability
- The delivery of PPP projects on time and within budget
- Efficient implementation of PPP arrangements.
- Government support
- Stable political, policy and legal environment, appropriate PPP framework
- Public sector having necessary skills and expertise to develop PPP projects
- Upfront engagement between private sector, financiers and public sector to ensure that no 'unworkable' rules are put in place

- Citizens buy in, fair pricing model
- Realignment of Government programs with the private sector for long term goals , 50 years plans with practical and achievable outcomes
- Stable Policy Regime
- Government support and transparency
- Process is very complex and very little capacity within Government and Municipalities to understand and handle properly PPP transactions
- Clear rules and the way the PPP unit of government handles projects
- Clear regulatory framework
- Financial Guarantees provided by National Treasury
- Adherence to legislation at all times (e.g PFMA, MFMA, and the constitution). This would assist in avoiding unnecessary conflicts that could result into a very lengthy litigation process at the expense of the intended services to be delivered and ultimately tax payer's money.
- The statutory requirements are onerous on a PPP
- Government guarantees for the duration of the investment.
- Private sector doing business with government in good faith
- Political understanding and clarity of power dynamics with national treasury
- Sound municipal regulations
- Removal of political interference
- Trust, Transparency and Good Governance
- Proper investigation regarding viability
- Integration of regulations to streamline decision-making processes; Relaxation of regulations that actually work against any form of sustainable partnership
- Municipal leadership Commitment
- Keeping the infrastructure in good condition

- Transparency and risk sharing mechanism
- Clear and consistent rules of engagement that spells out the benefits for all parties
- Willingness of the private sector to partner with Government
- Appropriate risk sharing
- Legislative enablers must be created. Most of the legislative frameworks are too restrictive. Government must make conducive PFMA,MFMA, MSA and many others.
- Understanding of the function and the customer base by both the public and private sector stakeholders to the contract.
- The efficiency of the provision of the service
- Political buy in, Skills, Project Management and enabling legislative environment
- Government providing market off-take and price certainty and holding Private enterprise to quality delivery
- Willingness of the private sector to partner with Government
- Ability of Municipalities to generate revenue
- Ability of Municipalities to collect revenue that will pay for the investment

5.4 SECTION 3: ANALYSIS OF THE RESULTS FROM THE PERCEPTIONS AND THE RANKING OF THE CSF AS IDENTIFIED BY ZHANG, 2005

Hypothesis 1:

The CSFs for PPP implementation in the funding of electricity distribution infrastructure with the South African Municipalities ranks the same as the 5 CSFs identified by Zhang (2005).

Reliability of scale

The critical factors were grouped into 5 main constructs which were each rated on a 5 point Likert scale where 1 was strongly disagree and 5 was strongly agree. The constructs were Favourable investment environment (10 items), Economic Viability (5 items), Reliable Concessionaire consortium with technical strength (12 items), Sound financial Package (10 items) and Appropriate risk allocation via reliable contractual arrangement (9 items).

Reliability of scale for each of the 5 CSF was assessed using the Cronbach's Alpha. The alpha values are shown in table 2.

Table 7: Reliability of scale

Factor	Number of Items	Cronbach's Alpha	Level of Reliability
Favourable investment environment	10	.895	Very good
Economic Viability	5	.840	Very good
Reliable Concessionaire consortium with technical strength	12	.826	Very good
Sound financial Package	10	.893	Very good
Appropriate risk allocation via reliable contractual arrangement	9	.922	Excellent

The reliability test results revealed that there was excellent reliability for Appropriate risk allocation via reliable contractual arrangement (α = 0.922) since the Cronabach's Alpha values was greater than 0.9. There was very good reliability for the each of the constructs Favourable investment environment (α = 0.895), Economic Viability (α = 0.840), Reliable Concessionaire consortium with technical strength (α = 0.826), and Sound financial Package (α = 0.893) since the Cronbach's Alpha values were greater than 0.8. Since all the CSFs had Cronbach's Alpha values greater than 0.7, this implies that the constructs items within each construct could be combined together to form a summated scale.

The summated scale for each construct was computed by calculating the average of the items within each construct. The results below show the average rating of each item within a factor as well as the average for the summated scale. The ranking of items within each construct was done based on the mean rating. A high mean rating implies that the

respondents viewed the item as a **more critical factor** for the success of PPP compared to an item with a lower mean value. The results are shown below;

Table 8: Summary of responses of all respondents about Critical success factors to the implementation of PPP

Descriptive Statistics				
	N	Mean	Std. Deviation	Rank
Favourable investment environment	**89**	**4.08**	**.636**	
Predictable and reasonable legal framework	89	4.47	.785	1
Stable political system	89	4.38	.935	2
Government Support	87	4.37	.851	3
Favourable Economic system	87	4.28	.924	4
Adequate local financial Market	89	4.06	.958	5
The project is in public interest Predictable risk scenarios	87	4.00	.835	6
Promising economy	85	3.98	.899	7
Supportive and understanding community	89	3.94	.831	8
Predictable currency exchange rate	88	3.72	1.093	9
The project is well suited for privatisation	84	3.52	1.012	10
Economic Viability	**89**	**3.95**	**.816**	
Long term demand for products/services offered by the project	89	4.28	.917	1
Long term cashflow that is attractive to lenders	89	4.16	.976	2
Sufficient profitability of the project to attract investors	89	4.13	1.036	3
Long term availability of suppliers needed for the normal operation of the project	87	3.89	1.061	4
Limited competition from other projects	88	3.31	1.168	5
Reliable Concessionaire consortium with technical strength	**89**	**4.18**	**.558**	
Strong and capable project team	89	4.46	.724	1
Sound technical solution	86	4.44	.586	2
Cost effective technical solution	87	4.43	.741	3
Good relationship with host government authorities	86	4.40	.771	4
Multi disciplinary participants	88	4.27	.656	5
Innovative technical solution	88	4.26	.823	6

Public safety and health considerations	86	4.26	.754	7
Partnering skills	87	4.24	.628	8
Effective project organisational structure	89	4.20	.868	9
Leading role by a key enterprise or entrepreneur	89	3.92	.907	10
Low environmental impact	88	3.84	.908	11
Rich experience in international PPP project management	87	3.79	1.002	12
Sound financial Package	**88**	**3.89**	**.664**	
Sound financial Analysis	87	4.37	.837	1
Sources and structure of main loans and standby facilities	88	4.11	.836	2
Investment, payment and drawdown schedule	88	4.09	.853	3
Abilities to deal with fluctuations in interest/exchange rates	88	4.08	.937	4
Long term debt financing that minimises refinancing risk	88	4.01	.851	5
Appropriate toll/tariff levels and suitable adjustment formula	82	3.99	.988	6
Stable currencies of debts and equity finance	87	3.87	.818	7
Fixed and low interest rate financing	88	3.77	1.025	8
Low financial charges	87	3.53	1.109	9
High Equity/debt ratio	87	3.03	1.050	10
Appropriate risk allocation via reliable contractual arrangement	**88**	**4.23**	**.681**	
Operation agreement	87	4.43	.741	1
Offtake agreement	86	4.33	.818	2
Concession agreement	86	4.33	.846	3
Guarantees/support/comfort letters	81	4.31	.889	4
Supply agreement	88	4.27	.867	5
shareholder agreement	86	4.20	.764	6
Insurance agreement	88	4.15	.929	7
Design and Construct contract	88	4.07	.932	8
Loan agreement	86	4.00	.994	9

Table 9*:* Ranking of the Main CSFs based on the summated scale of the constructs for all respondents

All respondents	N	Mean	Std. Deviation	Rank
Appropriate risk allocation via reliable contractual arrangement	88	4.23	.681	1
Reliable Concessionaire consortium with technical strength	89	4.18	.558	2
Favourable investment environment	89	4.08	.636	3
Economic Viability	89	3.95	.816	4
Sound financial Package	88	3.89	.664	5

The results shows that Appropriate risk allocation via reliable contractual arrangement was rated as the most critical success factor (mean = 4.23 out of 5) followed by Reliable Concessionaire consortium with technical strength (mean = 4.18), then Favorable investment environment (mean = 4.08), Economic Viability mean = 3.95) and the least rated was Sound financial Package (mean = 3.89).

Hypothesis 2: Municipality personnel vs. Industry Experts.

The perceptions of Municipality management on the Critical Success Factors (CSF) differs to the those of Industry Experts. Industry experts are defined as personnel from the National Treasury PPP unit, selected provincial treasuries and funding partners such as development banks and commercial banks that are directly involved with certain aspect of Municipality funding.

The sample was split into two (2) main groups mainly those who work for Municipalities and the other group had industry experts. A proportion of 60.7% (54 respondents) were from municipalities while the other 39.3% (35 respondents) were industry experts.

Table 10: Respondents groups

Variable	Category	Frequency	Percent
Group (n= 89)	Municipality	54	60.7
	Industry expert	35	39.3

Independent samples t-test was conducted to assess whether the rating of CSFs differed by respondent group (that is whether one is a municipality employee or an industrial expert. The results are shown below;

Table 11: Comparison of Municipal personnel and Industry experts

Group Statistics					Independent samples t-test	
	Municipal Employees (n= 54)		Industry experts (n= 35)		t	P-value
	Mean	Rank	Mean	Rank		
Favourable investment environment	**4.10**		**4.04**		**.42**	**.673**
Government Support	4.42	1	4.29	3	.65	.521
Predictable and reasonable legal framework	4.39	2	4.60	1	-1.24	.217
Stable political system	4.35	3	4.43	2	-.38	.708
Favourable Economic system	4.33	4	4.20	4	.63	.533
Promising economy	4.15	5	3.70	8	2.34	.022
Adequate local financial Market	4.06	6	4.06	6	-.01	.994
Supportive and understanding community	3.96	7	3.91	7	.27	.789
The project is in public interest Predictable risk scenarios	3.96	7	4.06	5	-.53	.600
Predictable currency exchange rate	3.83	9	3.54	10	1.21	.229
The project is well suited for privatisation	3.50	10	3.57	9	-.28	.777
Economic Viability	**3.99**		**3.90**		**.52**	**.607**
Long term demand for products/services offered by the project	4.28	1	4.29	1	-.04	.968
Sufficient profitability of the project to attract investors	4.13	2	4.14	3	-.06	.953
Long term cashflow that is attractive to lenders	4.13	2	4.20	2	-.33	.742
Long term availability of suppliers needed for the normal operation of the project	3.85	4	3.94	4	-.41	.679
Limited competition from other projects	3.57	5	2.91	5	2.65	.010
Reliable Concessionaire consortium with technical strength	**4.15**		**4.23**		**-.67**	**.505**
Sound technical solution	4.44	1	4.44	3	.01	.993
Cost effective technical solution	4.42	2	4.44	3	-.16	.874
Strong and capable project team	4.41	3	4.54	1	-.86	.392
Innovative technical solution	4.38	4	4.09	10	1.64	.104

Public safety and health considerations	4.32	5	4.15	9	1.01	.315
Good relationship with host government authorities	4.31	6	4.53	2	-1.31	.194
Multi disciplinary participants	4.25	7	4.31	5	-.48	.632
Partnering skills	4.23	8	4.26	7	-.28	.783
Effective project organisational structure	4.13	9	4.31	5	-.98	.330
Rich experience in international PPP project management	3.87	10	3.68	12	.87	.387
Low environmental impact	3.83	11	3.86	11	-.14	.893
Leading role by a key enterprise or entrepreneur	3.76	12	4.17	8	-2.14	.036
Sound financial Package	**3.77**		**4.07**		**-2.14**	**.036**
Sound financial Analysis	4.25	1	4.54	1	-1.81	.073
Abilities to deal with fluctuations in interest/exchange rates	4.00	2	4.20	5	-.98	.330
Sources and structure of main loans and standby facilities	3.98	3	4.31	2	-1.85	.067
Investment, payment and drawdown schedule	3.96	4	4.29	3	-1.95	.054
Appropriate toll/tariff levels and suitable adjustment formula	3.94	5	4.06	6	-.55	.587
Long term debt financing that minimises refinancing risk	3.87	6	4.23	4	-1.98	.051
Stable currencies of debts and equity finance	3.79	7	4.00	7	-1.22	.227
Fixed and low interest rate financing	3.62	8	4.00	7	-1.85	.068
Low financial charges	3.31	9	3.86	9	-2.47	.016
High Equity/debt ratio	2.94	10	3.18	10	-1.01	.315
Appropriate risk allocation via reliable contractual arrangement	**4.19**		**4.31**		**-.81**	**.420**
Operation agreement	4.42	1	4.43	1	-.03	.973
Guarantees/support/comfort letters	4.37	2	4.22	8	.73	.466
Supply agreement	4.28	3	4.26	4	.14	.892
Offtake agreement	4.28	4	4.39	3	-.61	.544
Concession agreement	4.27	5	4.40	2	-.67	.503
shareholder agreement	4.16	6	4.26	5	-.60	.553
Insurance agreement	4.08	7	4.26	5	-.90	.372
Design and Construct contract	3.96	8	4.23	7	-1.32	.191
Loan agreement	3.87	9	4.21	9	-1.57	.121

The results shows that for the Favorable investment environment CSF, only the item Promising economy was rated differently. The municipal employees viewed Promising economy as a significantly more critical success factor with a mean of 4.15 out of 5 compared to industry experts (mean = 3.70). This was significant since the t-test p-value was less than 0.05 (p-value = 0.022). There was no significant difference in the rating of the rest of the items in the Favorable investment environment CSF as well as the overall Favorable investment environment.

Under the Economic Viability on the item Limited competition from other projects was rated significantly higher by municipal employees (mean = 3.57) compared to industry expert (mean = 2.91) since the p-value (0.01) was less than 0.05. The rating of the rest of the other items did not differ significantly between municipal employees and industry experts. The overall rating of the Economic Viability CSF did not differ significantly by respondent group as well (p-value = 0.607).

The item Leading role by a key enterprise or entrepreneur under Reliable Concessionaire consortium with technical strength was rated significantly higher as a critical success factor for PPP by industry expects (mean = 4.17) compared to municipal employees (mean = 3.76). The p-value was 0.036, which is less than 0.05. None of the other items was rated significantly different.

Overall the CSF Sound financial Package was rated significantly higher by industry experts (mean = 4.07) compared to 3.77 by municipal employees (p-value = 0.036 < 0.05). The item Low financial charges under the CSF Sound financial Package was also rated higher by industry expects (mean = 3.86) compared to 3.31 by municipal workers. None of the other items under Sound financial Package was rated significantly different.

The CSF Appropriate risk allocation via reliable contractual arrangement was rated the same by industry experts and municipal employees as none of its attributes was rated significantly different.

Table 12: Agreement analysis for the CSF responses by Industry Experts and Municipality Personnel

	Municipality		Industry expert		Agreement analysis	
	Mean	Rank	Mean	Rank		
Favorable investment environment	**4.10**		**4.04**			
Government Support	4.42	1	4.29	3	RAF	1.20

Predictable and reasonable legal framework	4.39	2	4.60	1	RAFmax	4.80
Stable political system	4.35	3	4.43	2	PA	75.00
Favorable Economic system	4.33	4	4.20	4		
Promising economy	4.15	5	3.70	8		
Adequate local financial Market	4.06	6	4.06	6		
Supportive and understanding community	3.96	7	3.91	7		
The project is in public interest Predictable risk scenarios	3.96	8	4.06	5		
Predictable currency exchange rate	3.83	9	3.54	10		
The project is well suited for privatisation	3.50	10	3.57	9		
Economic Viability	**3.99**		**3.90**			
Long term demand for products/services offered by the project	4.28	1	4.29	1	RAF	0.00
Long term cashflow that is attractive to lenders	4.13	2	4.20	2	RAFmax	2.60
Sufficient profitability of the project to attract investors	4.13	3	4.14	3	PA	100.00
Long term availability of suppliers needed for the normal operation of the project	3.85	4	3.94	4		
Limited competition from other projects	3.57	5	2.91	5		
Reliable Concessionaire consortium with technical strength	**4.15**		**4.23**			
Sound technical solution	4.44	1	4.44	3	RAF	2.67
Cost effective technical solution	4.42	2	4.44	4	RAFmax	5.00
Strong and capable project team	4.41	3	4.54	1	PA	46.67
Innovative technical solution	4.38	4	4.09	10		
Public safety and health considerations	4.32	5	4.15	9		
Good relationship with host government authorities	4.31	6	4.53	2		
Multi disciplinary participants	4.25	7	4.31	6		
Partnering skills	4.23	8	4.26	7		
Effective project organisational structure	4.13	9	4.31	5		
Rich experience in international PPP project management	3.87	10	3.68	12		
Low environmental impact	3.83	11	3.86	11		
Leading role by a key enterprise or entrepreneur	3.76	12	4.17	8		
Sound financial Package	**3.77**		**4.07**			
Sound financial Analysis	4.25	1	4.54	1	RAF	0.80
Abilities to deal with fluctuations in interest/exchange rates	4.00	2	4.20	5	RAFmax	4.80
Sources and structure of main loans and	3.98	3	4.31	2	PA	83.33

standby facilities						
Investment, payment and drawdown schedule	3.96	4	4.29	3		
Appropriate toll/tariff levels and suitable adjustment formula	3.94	5	4.06	6		
Long term debt financing that minimises refinancing risk	3.87	6	4.23	4		
Stable currencies of debts and equity finance	3.79	7	4.00	7		
Fixed and low interest rate financing	3.62	8	4.00	8		
Low financial charges	3.31	9	3.86	9		
High Equity/debt ratio	2.94	10	3.18	10		
Appropriate risk allocation via reliable contractual arrangement	4.19		4.31			
Operation agreement	4.42	1	4.43	1	RAF	1.78
Guarantees/support/comfort letters	4.37	2	4.22	8	RAFmax	3.56
Supply agreement	4.28	3	4.26	5	PA	50.00
Offtake agreement	4.28	4	4.39	3		
Concession agreement	4.27	5	4.40	2		
shareholder agreement	4.16	6	4.26	6		
Insurance agreement	4.08	7	4.26	4		
Design and Construct contract	3.96	8	4.23	7		
Loan agreement	3.87	9	4.21	9		

The method Zhang,2005 used is based on the work done by Okpala and Aniekwu (1998) which provides a quantitative method for rank agreement analysis where by the Rank Assessment Factor ("RAF") is used. (Zhang, 2005). The RAF is therefore read as follows, the higher the value of RAF is, the lower the agreement between the two groups. An RAF of zero represents perfect agreement. (Zhang,2005). "PA" is defined as Percentage Agreement between the groups compared.

The results show the following:

Of all the 5 CSF categories, CSF Economic Viability (RAF: 0, PA: 100) which indicates perfect agreement. CSF Sound Financial Package (RAF: 0.8 , PA:83.33); CSF Favorable investment environment (RAF:1.2,PA:75); CSF Appropriate risk allocation via reliable contractual arrangement **(**RAF:1.78, PA:50); CSF Reliable consortium with Technical strength (RAF: 2.67, PA:46.67)

Table 13: Summary of the ranking from the responses of Industry Experts and Municipal Personnel

	Municipality		Industry expert		Agreement analysis	
	Mean	Rank	Mean	Rank		
Appropriate risk allocation via reliable contractual arrangement	4.19	1	4.31	2	RAF	1.20
Reliable Concessionaire consortium with technical strength	4.15	2	4.23	1	RAFmax	2.20
Favourable investment environment	4.10	3	4.04	4	PA	45.45
Economic Viability	3.99	4	3.90	5		
Sound financial Package	3.77	5	4.07	3		

Hypothesis 3: Local Municipality Employees vs. Metro Municipality Employees.

The perceptions of municipality management from Local municipalities differs from Metropolitan municipalities concerning the importance of CSFs

The 54 Municipal respondents were further segmented into whether they were from a local municipality or from a metropolitan municipality. If can be noted from table 2 that 53.7% of the municipal respondents were from local municipalities while the other 46.3% were from metropolitan municipalities.

Table 14: Municipal Personnel respondents categorized as Local vs Metros

Variable	Category	Frequency	Percent
Municipality type (n= 54)	Local	29	53.7
	Metro	25	46.3

Independent samples t-test was conducted also to assess whether the rating of CSFs differed by whether a respondent is a local municipality employee or a metro municipality employee. The results are shown in Table 17 below.

Table 15: Summary of Responses from Local vs Metropolitan Municipalities on CSFs

Group Statistics					Independent sample t-test	
	Local (n=29)		Metro (n=25)		t	P-value
	Mean	Rank	Mean	Rank		
Favorable investment environment	**4.27**		**3.90**		1.83	**.074**
Government Support	4.66	1	4.13	2	1.97	.057

Stable political system	4.59	2	4.08	3	1.78	.085
Favourable Economic system	4.59	2	4.00	5	2.16	.035
Predictable and reasonable legal framework	4.59	2	4.16	1	1.77	.082
Promising economy	4.36	5	3.92	6	1.68	.099
Adequate local financial Market	4.34	6	3.72	8	2.14	.039
Predictable currency exchange rate	4.17	7	3.42	10	2.49	.017
Supportive and understanding community	4.14	8	3.76	7	1.54	.129
The project is in public interest Predictable risk scenarios	3.90	9	4.04	4	-.55	.585
The project is well suited for privatisation	3.34	10	3.68	9	-1.23	.225
Economic Viability	**4.13**		**3.82**		**1.41**	**.168**
Long term demand for products/services offered by the project	4.59	1	3.92	2	2.82	.007
Sufficient profitability of the project to attract investors	4.31	2	3.92	2	1.30	.200
Long term cashflow that is attractive to lenders	4.17	3	4.08	1	.35	.727
Long term availability of suppliers needed for the normal operation of the project	4.03	4	3.61	4	1.39	.172
Limited competition from other projects	3.55	5	3.58	5	-.10	.917
Reliable Concessionaire consortium with technical strength	**4.28**		**4.00**		**1.58**	**.119**
Innovative technical solution	4.66	1	4.04	8	2.74	.008
Cost effective technical solution	4.66	2	4.13	5	2.38	.021
Sound technical solution	4.52	3	4.35	2	1.00	.323
Public safety and health considerations	4.48	4	4.13	6	1.69	.096
Strong and capable project team	4.45	5	4.36	1	.41	.686
Good relationship with host government authorities	4.39	6	4.21	4	.75	.454
Partnering skills	4.38	7	4.04	8	1.96	.055
Multi disciplinary participants	4.34	8	4.13	6	1.18	.243
Effective project organisational structure	4.00	9	4.28	3	-1.06	.296
Low environmental impact	4.00	9	3.63	12	1.47	.148
Rich experience in international PPP project management	3.79	11	3.96	10	-.64	.524
Leading role by a key enterprise or entrepreneur	3.66	12	3.88	11	-.86	.391
Sound financial Package	**3.85**		**3.67**		**.87**	**.391**
Abilities to deal with fluctuations in	4.31	1	3.63	5	2.46	.017

interest/exchange rates						
Sound financial Analysis	4.14	2	4.39	1	-.92	.363
Sources and structure of main loans and standby facilities	4.14	2	3.79	3	1.47	.149
Appropriate toll/tariff levels and suitable adjustment formula	4.11	4	3.75	4	1.22	.231
Long term debt financing that minimises refinancing risk	4.07	5	3.63	5	1.88	.066
Stable currencies of debts and equity finance	3.93	6	3.63	5	1.23	.227
Investment, payment and drawdown schedule	3.79	7	4.17	2	-1.39	.169
Fixed and low interest rate financing	3.79	7	3.42	8	1.19	.238
Low financial charges	3.31	9	3.30	9	.02	.986
High Equity/debt ratio	2.83	10	3.08	10	-.98	.334
Appropriate risk allocation via reliable contractual arrangement	**4.25**		**4.11**		**.65**	**.516**
Guarantees/support/comfort letters	4.57	1	4.10	7	1.92	.061
Operation agreement	4.55	2	4.26	1	1.11	.277
Concession agreement	4.38	3	4.14	5	.93	.355
Supply agreement	4.34	4	4.21	2	.53	.599
Offtake agreement	4.34	4	4.21	2	.55	.581
Insurance agreement	4.21	6	3.92	8	1.08	.286
shareholder agreement	4.17	7	4.14	5	.15	.880
Loan agreement	3.93	8	3.78	9	.49	.623
Design and Construct contract	3.76	9	4.21	2	-1.59	.117

The results shows that for the Favorable investment environment CSF, the local municipality employees rated the items Favorable Economic system (mean = 4.59), Adequate local financial Market (mean = 4.34) and Predictable currency exchange rate (mean = 4.17) significantly higher than their counterparts from metro municipalities, which had mean values of mean 4.00, 3.72 and 3.42 respectively since the p-values were less than 0.05.

For the Economic Viability only the item Long term demand for products/services offered by the project was rated significantly higher by local municipal employees (mean = 4.59) compared to metro municipality employees (mean = 3.92) since the p-value (0.01) was less than 0.05. The rating of the rest of the other items did not differ significantly between municipal employees and industry experts. The overall rating of the Economic Viability CSF did not differ significantly by respondent group as well (p-value = 0.168).

For the Reliable Concessionaire consortium with technical strength CSF, the local municipality employees rated Innovative technical solution (mean = 4.66) and Cost effective technical solution (mean = 4.66) significantly higher as a critical success factor for PPP compared to ratings by metro municipality employees with mean ratings of 4.04 and 4.13 respective. This is because the p-values were less than 0.05. None of the other items was rated significantly different.

Within the Sound financial Package, the item Abilities to deal with fluctuations in interest/exchange rates was rated significantly higher by local municipal employees (mean = 4.31) compared to 3.63 by metro municipal employees (p-value = 0.017 < 0.05). None of the other items under Sound financial Package was rated significantly different.

The CSF Appropriate risk allocation via reliable contractual arrangement was rated the same by local municipality employees and metro municipal employees as none of its attributes was rated significantly different.

Table 16: Agreement analysis for the CSF responses by Local and Metropolitan Municipality Personnel

	Local		**Metro**		**Agreement analysis**	
	Mean	Rank				
Favorable investment environment	**4.27**		**3.90**			
Government Support	4.66	1	4.13	2	RAF	2.00
Stable political system	4.59	2	4.08	3	RAFmax	4.60
Favorable Economic system	4.59	3	4.00	5	PA	56.52
Predictable and reasonable legal framework	4.59	4	4.16	1		
Promising economy	4.36	5	3.92	6		
Adequate local financial Market	4.34	6	3.72	8		
Predictable currency exchange rate	4.17	7	3.42	10		
Supportive and understanding community	4.14	8	3.76	7		
The project is in public interest Predictable risk scenarios	3.90	9	4.04	4		
The project is well suited for privatisation	3.34	10	3.68	9		
Economic Viability	**4.13**		**3.82**			
Long term demand for products/services offered by the project	4.59	1	3.92	2	RAF	0.80
Sufficient profitability of the project to attract investors	4.31	2	3.92	3	RAFmax	2.60
Long term cashflow that is attractive to	4.17	3	4.08	1	PA	69.23

lenders						
Long term availability of suppliers needed for the normal operation of the project	4.03	4	3.61	4		
Limited competition from other projects	3.55	5	3.58	5		
Reliable Concessionaire consortium with technical strength	**4.28**		**4.00**			
Cost effective technical solution	4.66	1	4.13	7	RAF	2.83
Innovative technical solution	4.66	2	4.04	9	RAFmax	5.00
Sound technical solution	4.52	3	4.35	2	PA	43.33
Public safety and health considerations	4.48	4	4.13	5		
Strong and capable project team	4.45	5	4.36	1		
Good relationship with host government authorities	4.39	6	4.21	4		
Partnering skills	4.38	7	4.04	8		
Multi disciplinary participants	4.34	8	4.13	6		
Effective project organisational structure	4.00	9	4.28	3		
Low environmental impact	4.00	10	3.63	12		
Rich experience in international PPP project management	3.79	11	3.96	10		
Leading role by a key enterprise or entrepreneur	3.66	12	3.88	11		
Sound financial Package	**3.85**		**3.67**			
Abilities to deal with fluctuations in interest/exchange rates	4.31	1	3.63	6	RAF	1.40
Sound financial Analysis	4.14	2	4.39	1	RAFmax	4.40
Sources and structure of main loans and standby facilities	4.14	3	3.79	3	PA	68.18
Appropriate toll/tariff levels and suitable adjustment formula	4.11	4	3.75	4		
Long term debt financing that minimises refinancing risk	4.07	5	3.63	7		
Stable currencies of debts and equity finance	3.93	6	3.63	5		
Investment, payment and drawdown schedule	3.79	7	4.17	2		
Fixed and low interest rate financing	3.79	8	3.42	8		
Low financial charges	3.31	9	3.30	9		
High Equity/debt ratio	2.83	10	3.08	10		
Appropriate risk allocation via reliable contractual arrangement	**4.25**		**4.11**			
Guarantees/support/comfort letters	4.57	1	4.10	7	RAF	2.44
Operation agreement	4.55	2	4.26	1	RAFmax	3.33
Concession agreement	4.38	3	4.14	5	PA	26.67
Offtake agreement	4.34	4	4.21	4		

Supply agreement	4.34	5	4.21	3		
Insurance agreement	4.21	6	3.92	8		
shareholder agreement	4.17	7	4.14	6		
Loan agreement	3.93	8	3.78	9		
Design and Construct contract	3.76	9	4.21	2		

The method Zhang,2005 used is based on the work done by Okpala and Aniekwu (1998) which provides a quantitative method for rank agreement analysis where by the Rank Assessment Factor ("RAF") is used. (Zhang, 2005). The RAF is therefore read as follows, the higher the value of RAF is, the lower the agreement between the two groups. An RAF of zero represents perfect agreement. (Zhang,2005). "PA" is defined as Percentage Agreement between the groups compared.

The results show the following:

Of all the 5 CSF categories, CSF Economic Viability (RAF: 0.8, PA: 69.23) . CSF Sound Financial Package (RAF:1.4,PA: 68.18); CSF Favorable investment environment (RAF:2,PA: 56.52); CSF Appropriate risk allocation via reliable contractual arrangement **(**RAF:2.44, PA: 26.67); CSF Reliable consortium with Technical strength (RAF: 2.83, PA: 43.33). These results show that at least 50% agreement was recorded on three CSFs: Economic Viability, Sound Financial Package and Favorable investment environment.

Table 17: Summary of the ranking and agreement analysis from the responses of Local and Metropolitan Municipal Personnel

	Local		**Metro**		**Agreement analysis**	
Reliable Concessionaire consortium with technical strength	4.28	1	4.00	2	RAF	0.80
Favourable investment environment	4.27	2	3.90	3	RAFmax	2.60
Appropriate risk allocation via reliable contractual arrangement	4.25	3	4.11	1	PA	69.23
Economic Viability	4.13	4	3.82	4		
Sound financial Package	3.85	5	3.67	5		

This Chapter (Chapter 5) detailed the results of the survey. Top Three (3) CSFs emerged from the results for the South African context. Those results will be further discussed in Chapter Six outlining the emerging themes and recommendations for parties involved in PPPs within South African Municipalities.

CHAPTER 6: DISCUSSION OF RESULTS

The previous chapter (Chapter 5) presented the responses to the research questions stated in Chapter Three. The first section dealt with the demographics of the respondents. The second section was trying to ascertain if respondents had previous experience and therefore their perceptions in dealing or being involved with PPPs in South Africa and develop an understanding of the challenges preventing the delivery of quality infrastructure in South African local government. The last section of the questionnaire listed the 5 categories of Critical Success Factors that Municipalities and Industry Experts had to evaluate to ascertain their importance or lack of in ensuring successful implementation of PPP in funding Electricity Distribution Infrastructure within Municipalities.

The purpose of this chapter is to discuss the findings from Chapter Five in line with the literature (Chapter Two) and the research questions that were stated in Chapter Three. This Chapter will start by exploring the responses to the open-ended questions with the aim to provide insights from responded on what they deem lacking currently therefore should be explored as CSFs to ensure successful PPP projects.

This chapter will also confirm the existence or otherwise of links between the findings of this study and the literature. Research questions/ hypothesis will be discussed in a similar fashion to how the results were presented in Chapter Five. Finally, a framework summarising the model of PPP as extrapolated from the responses of Municipality personnel and Industry experts for improving the delivery of electricity distribution infrastructure within South African Municipality jurisdiction will be proposed.

6.1 REFLECTIONS FROM THE OPEN-ENDED QUESTIONS

The questionnaire posed three (3) open ended questions to the participant's in-order for the researcher to gain more insight from the respondent's experience. The first question was whether the participants (in their opinion) deemed PPPs successful in South Africa. The second question to state whether they are aware of any successful PPP in the municipal or provincial treasury space in South Africa. The final question solicited the respondent's view of what else they would deem as critical to ensure the success of PPP arrangements in South Africa.

In response to the first two questions, respondents indicated that they do consider PPPs to be successful in South Africa which is supported by 55% of the responses stating agreement and concurrence to the success of PPPs. Over 70% of respondents know of PPP's in the municipal space, most of the respondents mentions the Chief Albert Luthuli Hospital in Durban under the eThekwini Municipality jurisdiction as a resounding example of a successfully implemented PPP project. Some respondents mentioned the successful use of concessionaires by City of Johannesburg in refuse collection. Although the Gautrain concession project is not strictly under a specific municipal jurisdiction, it was mentioned quite repeatedly by a number of respondents. As expected, since the pool of respondents is working in the electricity sector, a number of respondents mentioned the Independent Power Producer Programme that was launched by the Department of energy in 2011. Most respondents have experience in setting up private-public arrangements in the provision of water and sanitation services within municipal jurisdictions.

In response to the third question which required municipalities and experts to comment on what they consider to be critical in ensuring successful implementation of PPP arrangements in the delivery of municipal infrastructure including electricity distribution infrastructure.

The researcher has identified few comments that provide insights to other CSFs identified by the respondents that were not adequately reflected in section 3 of the questionnaire that was adapted from Zhang, 2005. Below are the few, captured in Chapter 5 that provide unique insight in dealing with PPPs in a Municipal jurisdiction.

- Municipal leadership and commitment
- Ability of Municipalities to generate revenue
- Ability of Municipalities to collect revenue to service the payment schedule for investments
- Sound and less ambiguous municipal regulations governing the use of PPP framework
- Simplification of the contracting process. The respondents have experienced the process to be very complex and very little capacity within Government and Municipalities to understand and handle properly PPP transactions
- Removal of political interference that affects the conclusion of PPP negotiations
- Provision of Financial Guarantees by National Treasury

- Inadequate capacity to support Municipalities within the PPP treasury unit
- Realignment of Government programs with the private sector for long term goals , 50 years plans with practical and achievable outcomes
- Alignment of government policies with a specific reference to the Public Finance Management Act (PFMA), the Municipal Finance Management Act (MFMA), Municipal Systems Acts (MSA) and may others which contradicts each other in some aspects of PPP implementation
- Integration of regulations to streamline decision-making processes; Relaxation of regulations that actually work against any form of sustainable partnership
- Ability to have a partnership based on trust by both the private sector and government

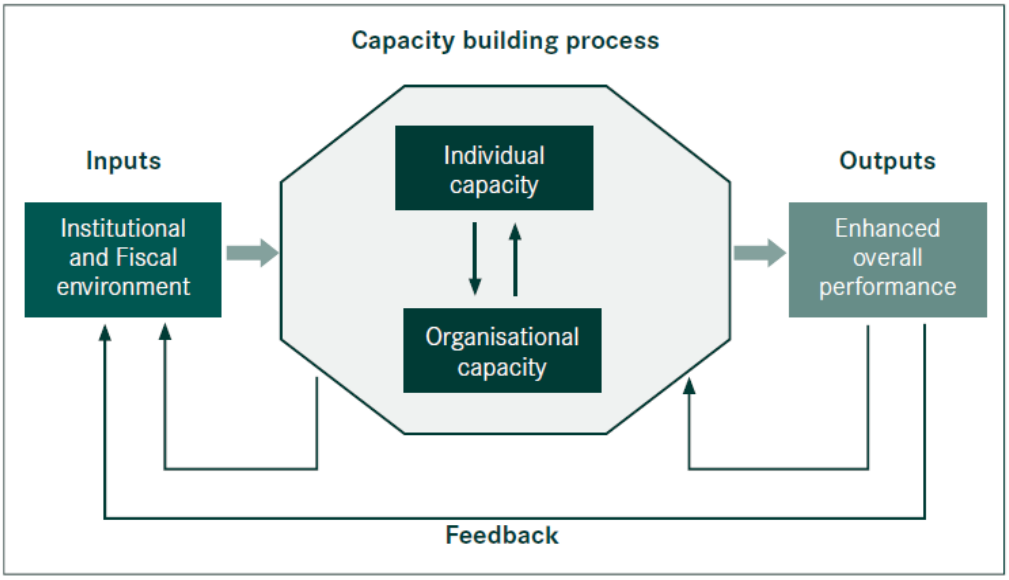
It is clear from the statements made above that capacity and the understanding of the process by both the Municipalities and the PPP unit of the South African National treasury is still a difficult challenge. Emphasis and greater efforts need to be made in reviewing the legislative environment for PPP framework for Municipalities.

It is also clear that inclusive long term planning by all three spheres of government in partnership with the private sector need to be expedited. This will ensure alignment and prioritization of funding for the delivery of strategic bulk infrastructure for distribution and reticulation of electricity infrastructure.

Lack of capacity in municipalities remains a critical issue (DCOG, 2015). Organisation for Economic Cooperation and Development (OECD, 2006) defines Capacity Building as the ability of individuals, organisations and society as a whole to manage their affairs successfully. OECD further refers to the interaction between these three levels as systematic requiring an enabling environment to produce successful and sustainable results. DCOG adopted this integrated framework in 2015.

Public Sector Capacity Building is multi-dimensional, Williams, 2006 as depicted in this illustration below, where individual potential competency or lack thereof is evaluated in three different levels.

Figure 16: Components of Capacity Building



Source: Williams, 2006

At an "individual capacity level" - To enable local government in taking up more specialised functions such as electricity reticulation, environmental functions, water and sanitation, it would need to tap into a specialised human resource spool with the right formal qualifications, experience and skill set. Attracting these types of individuals to remote and rural areas is difficult if not impossible and therefore requires a careful national strategy. Attracting them through attractive benefits and remuneration provides a short term solution which in itself creates more challenges.

At an "institutional capacity level" - Training of officials is one but not only the one component of a comprehensive capacity building strategy. Institutional capacity training is also required. Technology is one easy way that ensures that Municipalities can share processes, procedures and practices remotely or through collaborations to ensure systematic build-up of institutional capacity.

At the "enabling environment level" - If Government wishes to successfully capacitate local government by for example recruiting qualified official to be placed in local government; it should also have to have conversations with tertiary institutions in South Africa to ensure that the right training is received by graduates in preparation for local government. Government must also address and ensure planning alignment is sought between National Government and Local Government by aligning implementation budgets in the Medium Term expenditure Framework and the Integrated Development Plans

(IDPs) of the Municipalities. Lastly, it is important to note that the lack of trust by both government and private sector was mentioned to be a critical success factor in implementing successful PPP agreements.

Edelenbos, J. & Klijn, E.H. (2007), defines trust as follows: “Trust refers to the actors’ more or less stable, positive perception of the intentions of other of other actors, that is, the perception that other actors will refrain from opportunistic behavior”. Trust relates to the perceptions regarding each parties intentions and ultimately their views regarding the risk associated with the transaction. (Sanne Grotenbreg, Erik Hans Klijn, Frank Boons & Arwin van Buuren. 2014)

When it comes to contracts, partnerships or other cooperative relations involving private and public actors, the parties may be faced with various risks, therefore a significant risk exists that the other party ‘walks away’ with all the benefits of the agreement leaving the other party with the costs and loss of income or service. (Gotenbreg et. al., 2014)

Strachan, G (2014) called for government sector and private sector to work together in overcoming the trust deficit that exists between the two parties in-order to move South Africa forward. Companies are indicating that government bureaucracy and its handling of the current economic situation are their biggest challenges, government act decisively and build business confidence to boost investment. (Mike Cohen, Liezel Hill and Kevin Crowley, 2016)

6.2 ANALYSIS OF RESULTS FROM RESEARCH QUESTIONS

The researcher posed three (3) hypotheses with the intention of gaining better insights as to what are the critical success factors for the successful implementation for the delivery of electricity distribution infrastructure using the PPP arrangements. The primary objective of this section is then to focus on the results presented in Chapter 5 , the literature reviewed in Chapter 2 in responding to the research questions posed in Chapter 3 as follows:

Question/Hypothesis1: The CSFs for PPP implementation in the electricity distribution infrastructure within the South African Municipalities rank the same as the 5 CSFs identified by Zhang (2005).

Question/Hypothesis2: The perceptions of Municipality’s management differ to those of Industry Experts concerning the importance of CSFs

Question/Hypothesis3: The perceptions of local municipality's management differ from those of Metropolitan municipality's management concerning the importance CSFs.

The CSFs for PPP implementation in the electricity distribution infrastructure within the South African Municipalities rank the same as the 5 CSFs identified by Zhang (2005).

In the study conducted by Zhang, 2005 through a survey questionnaire to about 42 different organisations/institutions in a number of countries such as Australia, India, Hong-Kong, Japan, Peru, the Philippines, Thailand, the United Kingdom, the United States and South Africa. Many of the respondents were from institutions with rich and immense experience in Private Public Partnerships Projects. The results of that study formed the basis of the research as it has set the basis for international CSF for implementation of PPP projects.

In this section the researcher will compare the findings from the research conducted in a South African context with specific reference to Municipality personnel and Industry experts dealing with electricity distribution and reticulation functions.

The table below shows the summary of results of respondents surveyed by Zhang, 2005 of the international CSFs in contrast with the results from the research carried by the researcher.

Table 18: Comparison of Zhang,2005 CSF ranking to Researcher results

All respondents	Ranking by Zhang, 2005	Ranking from Research conducted
Appropriate risk allocation via reliable contractual arrangement	2	1
Reliable Concessionaire consortium with technical strength	4	2
Favorable investment environment	5	3
Economic Viability	1	4
Sound financial Package	3	5

Source: Zhang, 2005, p.11 Table 7 and Researcher Results, Chapter 5:Table 4

The research conducted by Zhang, 2005 show that (1) CSF Economic viability is ranked as the most critical of all the five success factors followed by (2) CSF Appropriate Risk allocation via a reliable contractual agreement, then (3) CSF Sound Financial Package

followed by (4) CSF Reliable consortium with technical strength and lastly (5) CSF Favorable investment environment.

The researcher's results shows that (1) CSF Appropriate risk allocation via reliable contractual arrangement was rated as the most critical success factor followed by (2) CSF Reliable Concessionaire consortium with technical strength then (3) CSF Favorable investment environment (4) CSF Economic Viability) and the least rated was (5) CSF Sound financial Package.

From the discussion above, it appears that the respondents are in agreement with Zhang, 2005 with regards to the 5 identified CSFs however the ranking differs significantly.

Upon reviewing the work done by Osei-Kyei and Chan (2015) which is a review of studies on the CSFs for PPP projects from 1990 to 2013 where they reviewed 27 published journals across the world. The observations from their analysis show that the top 5 factors that account for successful PPP projects are (1) Appropriate Risk allocation and sharing, (2) Strong and reliable private consortium, (3) Political Support, (4) community/public support and (5) Transparent Procurement.

It is interesting to note that for the South African context, the researcher also found that the top three (3) most critical success factors are the same as the ones identified by the researchers reviewed by Osei-Kyei and Chan (2015). It also important to note that the respondents stated categorically in the open ended question part of the survey that political support, political buy-in, municipal leaders commitment are key to ensuring successful partnering with the private sector.

Osei-Kyei and Chan (2015) also suggest that transparency in the procurement is one of the top five CSFs based on the studies they reviewed. This is particularly important in South Africa where there are allegations of rent seeking behavior and state capture in the public sector. One of the respondents stated in the open-ended part of the questionnaire that for PPP to be successful especially in the Municipal jurisdiction, there must be a deliberate effort to remove political interference to instill trust, authenticity and legitimacy to the process.

The last one refers to public and community support. OECD, 2010 states the importance of the host government to ensure and give commitment and assurance to the public or community of good quality services as well as the reasonable ("value for money") fees for PPP projects. This is evident in the recent experience by the Gauteng Province residents on their lack of support for e-tolling. The South African National Roads Agency Limited ("Sanral") has faced unprecedented resistance from various civil and political formations

against the implementation of e-tolling. Phalane M., 2015. Key to the objections by residents is the inability of Government to adequately consult the public and the issues relating to the toll fees associated with the e-tolling which are not seen as value for money by general public.

The lessons that personnel and industry experts interested in implementing PPP projects in relation to electricity distribution and reticulation infrastructure are as follows:

- Government (all 3 spheres) need to play a critical role in ensuring a stable, transparent environment underpinned by trust in both parties.
- Public consultation is key in-order to take public in confidence of the value that the PPP will deliver for the community
- Risk allocation is a function of trust, Gotenbreg et. al., 2014. Therefore it is important that Government and the private sector work closer to find solution that will address the trust deficit that is currently impeding on progress with regards to investment capital in South Africa.

Do the perceptions of municipality management on the CSFs differ to those of Industry Experts?

Industry experts are defined as personnel from the National Treasury PPP unit, selected provincial treasuries and funding partners such as development and commercial banks that are directly involved with certain aspect of Municipality funding.

The sample was split into two (2) main groups mainly those who work for Municipalities and the other group had industry experts. A proportion of 60.7% (54 respondents) were from municipalities while the other 39.3% (35 respondents) were industry experts. Table 19 below gives a summary of results from the respondents responses.

Table 19: Summary of Ranking between Municipal Personnel and Industry Experts

	Municipality		Industry expert		Agreement analysis	
	Mean	Rank	Mean	Rank		
Appropriate risk allocation via reliable contractual arrangement	4.19	1	4.31	2	RAF	1.20
Reliable Concessionaire consortium with technical strength	4.15	2	4.23	1	RAFmax	2.20
Favorable investment environment	4.10	3	4.04	4	PA	45.45
Economic Viability	3.99	4	3.90	5		
Sound financial Package	3.77	5	4.07	3		

The researcher followed the methodology used by Zhang, 2005 in ascertaining if there is any agreement in the ranking of the CSF's between two groups of responses, namely, Municipality Personnel and industry experts. The method Zhang,2005 used is based on the work done by Okpala and Aniekwu (1998) which provides a quantitative method for rank agreement analysis where by the Rank Assessment Factor ("RAF") is used. (Zhang, 2005). The RAF is therefore read as follows, the higher the value of RAF is, the lower the agreement between the two groups. An RAF of zero represents perfect agreement. (Zhang,2005). Therefore looking at the RAF as represented in Table 19 above, it is clear that agreement between the two groups is not good. The Percentage agreement ("PA") is 45.45% which is less that 50%. This shows a significant lack of agreement in the ranking of the CSFs by Municipality personnel and industry experts.

A major implication of the findings from the results shown above could be interpreted as a perception gap between the private sector (Industry Experts) and public sector (Municipalities) on the 'CSFs'. This perception gap has the potential of influencing or affecting the acceptability and performance of PPP projects in the country.

Looking closer to the individual ranking of the CSFs, Municipal personnel responded with the following ranking (1) CSF Appropriate risk allocation via reliable contractual arrangement, (2) CSF Reliable Concessionaire consortium with technical strength, (3) CSF Favorable investment environment, (4) CSF Economic Viability and lastly (5) CSF Sound financial Package. When compared to Industry Expert who raked the CSFs as follows: (1) CSF Reliable Concessionaire consortium with technical strength, (2) CSF Appropriate risk allocation via reliable contractual arrangement, (3) CSF Sound financial Package, (4) CSF Favorable investment environment, and lastly (5) Economic Viability.

The results show that South African Context, Municipal Personnel and Industry experts especially when dealing with municipal jurisdiction, the CSF are not understood or prioritized the same. This is contrary to Zhang, 2005 findings where the RAF value was recorded as 0.4 and with a PA of 83.33% showing good agreement in the ranking between industry experts and the academic group chosen with specialist insights in PPPs. It is also interesting to note that Zhang, 2005 results for both the two groups of respondents showed the following ranking, namely, (1) CSF Economic viability is ranked as the most critical of all the five success factors followed by (2) CSF Appropriate Risk allocation via a reliable contractual agreement, then (3) CSF Sound Financial Package followed by (4) CSF Reliable consortium with technical strength and lastly (5) CSF Favorable investment environment. These results contrast in the sense that the South

African respondents place a reliable consortium with technical strength and appropriate risk allocation right at the top of the ranking and placing economic viability right at the bottom of the ranking which is not the case for the respondents from Zhang, 2005 study.

This observation is further supported by the responses to the open ended questionnaires where skills and capacity was one of the key factors raised by respondents, indicating lack of skill and capacity in the government and public sector including the Municipalities and PPP unit of the National Treasury. It is therefore not surprising that CSF Reliable consortium with technical strength will be on the top two (2) ranking for both the Municipal personnel and Industry experts.

CSF Appropriate Risk allocation via reliable contractual agreements is also in the top two for both Industry and Municipal personnel which also supports the notion that various risks can be effectively managed by allocating them to a party best placed to manage those risk. Zhang, 2005. Understanding where the risks are likely to emanate from assists in anticipating and therefore putting mitigation strategies to manage the risks.

Therefore to respond to Research Question 2 seeking to understand whether the perceptions of Industry Experts is different to those of Municipal personnel in ranking the CSF for successful PPP projects in the electricity distribution within South African Municipalities? The conclusion based on the responses analysed is ‘yes’. Municipalities views risk allocation as top priority whilst industry believes that reliable consortium with technical strength in number most important CSF. It is interesting though that both Municipalities and Industry experts view top two CSFs to be the Reliable Consortium with Technical strength and Risk Allocation via contractual agreement. It is therefore important both parties have robust engagements in the initial stages of crafting the PPP framework for a project to understand what are the key elements of the projects that , what are the expectations from each party, what are risk each party is exposed to and then draft a project specific PPP framework that will address those findings to ensure the success of the project.

Do the ranking of the CSFs differ based on the perceptions of management from local municipalities and metropolitan municipalities?

The 54 Municipal respondents were further segmented into whether they were from a local municipality or from a metropolitan municipality. Of the 54 respondents from municipalities, 53.7% of the municipal respondents were from local municipalities while the other 46.3% were from metropolitan municipalities.

With this research question, the researcher wanted to solicit views from both local and metropolitan municipalities in what they regard as CSF, and to ascertain if their perceptions on the CSFs are different. The importance of this question is derived from the findings that Metropolitan Municipalities have executive rights to excise its powers in making budget decisions to fulfill its mandate without following the stringent and laborious processes that local and district municipalities are subjected to. Jugal Mahabir and Ntombizodwa Mabena, 2015/16, identified ability to raise own revenue contribution to municipal capital funding as one of the key constraints affecting local municipalities more than Metros in raising or entering into framework such as PPP to fund delivery of capital infrastructure.

Therefore this party of the research seeks to compare local municipalities to metro and understand the perceptions of the management in both regarding what they rank priority between the CSFs identified. Table 20 below represents the results of the respondents surveyed.

Table 20: Summary and agreement analysis of the Ranking between Local and Metropolitan municipalities

	Local		Metro		Agreement analysis	
Appropriate risk allocation via reliable contractual arrangement	4.25	3	4.11	1		
Reliable Concessionaire consortium with technical strength	4.28	1	4.00	2	RAF	0.80
Favorable investment environment	4.27	2	3.90	3	RAFmax	2.60
Economic Viability	4.13	4	3.82	4	PA	69.23
Sound financial Package	3.85	5	3.67	5		

The RAF as represented in the table above show 0.8 which shows that there is relatively good agreement between the two groups. The Percentage agreement (“PA”) is 69.23% which is above 50%. This shows good agreement in the ranking of the CSFs by Local and Metropolitan Municipality Management. The top 3 ranked CSF are ranked consistently with the results from the summary of all respondents surveyed in this research which has been discussed in Hypothesis 1 and 2 above.

It should be noted that CSFs Economic Viability and Sound Financial Package were ranked at 4 and 5 respectively by both Metro and Local municipality respondents.

Under the CSF Economic Viability, both Local and Metro municipalities ranked Sufficient profitability of the project to attract investors (2) , Long term availability of suppliers

needed for the normal operation of the project (4) and Limited competition from other projects (5).

Under the CSF Sound Financial Package both Local and Metro municipalities ranked Appropriate toll/tariff levels and suitable adjustment formula (4), Long term debt financing that minimises refinancing risk (5), Low financial charges (9) and High Equity/debt ratio (10).

6.3 SUMMARY OF THE RESULTS

The table below represents a consolidated summary of the results that have been outlined in Chapter 5 and further discussed in the sections captured in Chapter 6 above.

Table 21: Summary of results for the three research questions from respondents perceptions regarding the ranking of the CSFs in the South African Municipal jurisdiction.

	All respondents	Industry Experts	Municipal Management	Local	Metro
Appropriate risk allocation via reliable contractual arrangement	1	2	1	3	1
Reliable Concessionaire consortium with technical strength	2	1	2	1	2
Favorable investment environment	3	4	3	2	3
Economic Viability	4	5	4	4	4
Sound financial Package	5	3	5	5	5

With the exception of Industry Experts, all the tested categories of respondents indicated top three (3) CSF to be Appropriate risk allocation via reliable contractual arrangement, Reliable Concessionaire consortium with technical strength and Favorable investment environment. From the results, the following insights were gained in respect of the three top ranked CSFs. The insights can be interpreted as follows:

Regarding Appropriate risk allocation via reliable contractual arrangement:

Efficiency Unit (2003) states that the core principle in a PPP arrangement is the allocation of risks to the party who can best be able to manage and control it. Governments would then prefer to transfer risks associated with the procurement of assets and the delivery of

services to a private sector consortium or company who are generally more efficient and experienced in managing those risks (Chan. et al., 2010). PPPs should be well structured as PPPs are not merely a vehicle for government to develop infrastructure projects by unfairly transferring all the risks to the private sector thus relinquishing from all responsibility and accountability (Zhang, 2005). This can affect the progress of the project and even deter future participation by private sector (Osei-Kyei and Chan, 2015). In the South African context, the respondents identified the following elements of this CSF as the most important top 5, namely, Operation agreement, Off-take agreement, Concession agreement, Guarantees/support/comfort letters and Supply agreement. One of the responses in the open-ended questions indicated that Government (National Treasury) should consider giving direct guarantees similar to the ones given in national and State-Owned Company's project to ensure financial support and bankability of Municipal Projects.

Reliable Concessionaire consortium with technical strength:

An investigation was done by Bing et.al (2004) into the CSFs for PPP/PFI projects in the UK construction industry, results showed that a financial and technical strong and experienced private consortium is among the top three most important CSF in the UK PPP/PFI environment. This is also true for the South African context reasons being the current challenges facing South Africa with regards to skills shortage and institutional capacity in all three spheres of Government. Project management and technical skills are still rare and scarce therefore making the Public sector to rely on Private sector for delivery of key projects including delivery of electricity infrastructure. Suggestions from respondents imply that Government must select a company to partner with a view to strengthen the consortium rather than weakening it. Elements of this CSF that were in the top five are, Strong and capable project team, Sound technical solution, Cost effective technical solution, Multi-disciplinary participants and Innovative technical solution.

Favorable investment environment:

The National Treasury PPP Unit, 2007 mentioned that an independent, fair, and efficient legal framework is key factor for successful PPP project implementation. A transparent, predictable and stable legal framework assists in ensuring that agreements are bankable. (Chan. et al., 2010). Another important element in ensuring that the environment is favorable to investments is stable micro economic conditions. Li et al. (2005) mentioned that for successful PPP projects implementation the government must ensure that consistent efforts is made to ensure that the environment is favorable. Captured in the open-ended questions, some respondents mentioned "coherent policy implementation"

and “removal of political interference” as key to the success of PPPs in the Municipal space. These statements suggest that the current environment can be seen as not conducive and supportive of PPP.

With uncertainty and lack of coherence comes risk, and risk increases cost of doing business in South Africa which ultimately affects end customers in user fees or worse lack of service delivery. It is responsibility of government to ensure that the environment is favorable (Zhang, 2005) which will eliminate fear and reluctance from the private sector. The sub-factors that the respondents consider top five most important are the following: Predictable and reasonable legal framework, Stable political system, Government Support in the form of guarantees, Favorable Economic system, Adequate local financial Market where local banks support local investments. In the recent past, South African banks and companies have been holding on to cash instead of investing which is a tell-tale sign for a perceived investment toxic environment.

CHAPTER 7: CONCLUSION AND RECOMMENDATIONS

The previous Chapter (Chapter 6) discussed the results of the study and in the three areas of analyses, the researcher noted findings and formulated insights for consideration by the parties to the PPP framework. Chapter 7 will re-iterate the background to the study as well as the objectives of the study. A summary of the findings in relation to the research questions proposed in Chapter Three and in light of existing literature will follow with recommendations to stakeholders. This chapter will conclude with limitations and implications for the findings of the research with regards to future research that could contribute to enhance and give more meaningful insights into the subject matter as identified by the researcher.

7.1 BACKGROUND TO THE RESEARCH

Municipal capital expenditure is crucial for local economic and social development and a key component of the NDP's vision of long-term economic growth through greater state investment in infrastructure (NDP, 2020). By failing to plan and spend their capital budgets properly, municipalities are compromising the delivery of key social and economic infrastructure. In addition, municipal revenue sources for capital expenditure are under stress, mainly because of the current poor economic climate (Jabir and Mabena, 2015/16)

Municipalities have a limited ability to generate surpluses from user charges that can be reinvested in capital expenditure. Metropolitan and larger urban municipalities have prospects to improve their borrowing potential. Unlike the local and smaller municipalities who are strained with resources and the customer base they are servicing which deems them unable to generate revenue, the possibility exists to explore extending resources and using more non-traditional revenue sources such as PPPs. However those innovative solutions require framework and model conducive for the unique circumstances presented within the South African Municipal space. Furthermore, the financing sources available to smaller and rural municipalities are very limited to government grants, and an alternate arrangement is needed for infrastructure delivery in these areas.

There are a number of constraints negatively impacting Municipalities revenue generation and management of its affairs. Those include the inability of municipalities to optimally and autonomously generate revenue. This is due to their ineffective revenue collection systems, lack of capacity to generate and administer correct billing systems, inability to

establish and charge tariffs that feasibly recover incurred costs, political influence and interference on budget allocation.

Government has imposed inappropriately structured intergovernmental transfer systems. Department of Cooperative Governance ("DCOG") has a number of municipal grants such as Local Government Equitable Share Grant (LGES), Municipal Infrastructure Grant (MIG) and many more which all have rigid conditions tending to be complex and excessive which at the end of the tend to create a dependency from municipalities and kill any innovation with regards to the Municipalities own effort to remain profitable undermining the essence of local being an independent sphere of government with autonomy and accountability. Also, these grants sometimes lack transparency and therefore vulnerable to political manipulation deviating municipal administrative officials from delivering on priorities.

Lastly, Local governments (Municipalities) tend not to use borrowing or financial markets as a financing alternative. The Auditor General (AG) report of the 2014/16 Financial year shows that total local government expenditure budget was R347 billion. Municipalities with clean audit opinions represent only 39% of the total expenditure which amounts to R134 billion. This depicts improper financial management practices which deters private capital and curtails borrowing capacity as a result of lack of financial management and in some cases fraud and corruption.

For the reasons stated above it makes it extremely difficult for Municipalities to raise the capital required to fund their infrastructure investment plans. As such the researcher has used the insights gained from the respondents which looked at the top CSF to inform a proosed framework to fund electricity distribution infrastructure in Municipal areas. Currenly, the development of bulk municipal electricity infrastructure by a municipality is normally undertaken in accordance with the guidelines of a master infrastructure development plan.

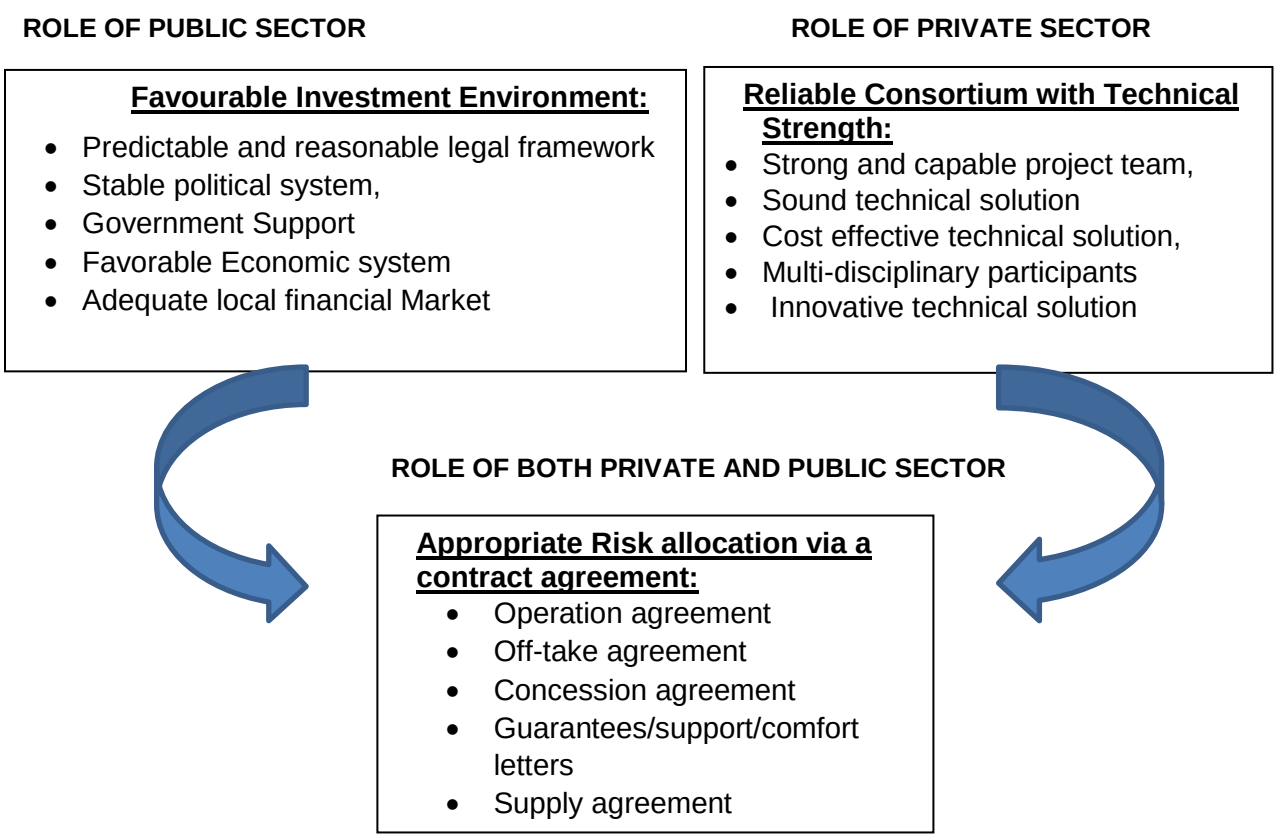
The master plan is part of Municipal Integrated development Plan (IDP) and the capital funds for the construction of the infrastructure are budgeted annually in accordance with the approved IDP. The Municipal Electricity Distribution infrastructure backlog was reported to be sitting at R27.4 billion in 2008 and estimated to be growing at R2.5 billion annually (Electricity Distribution Industry Holding's business case report, 2008). Therefore there is a need to explore a deferring framework underpinned by a different funding model to deliver this infrastructure. There is great acknowledgement by South African

Government that for an efficient and cost effective delivery of infrastructure, involvement of the private sector is paramount.

7.2 CONCLUSION BASED ON FINDINGS

Public-Private Partnerships (PPPs) will play a critical role in servicing the growing demand for infrastructure to deliver on basic and essential services such as roads and railways, water and sanitation, electricity. The respondents highlighted top 3 CSFs to be Appropriate Risk allocation via a contract agreement, Reliable Consortium with Technical Strength and Favorable Investment environment. The illustration below depicts interaction the researcher conceived from the perceptions of the respondents analysed.

Figure 17: Illustration for the interaction of the CSF's between the Public Sector and Private sector



Zooming purely in the "Role of Government" which the diagram above depicts as creating a "Favorable investment Environment" will form a significant portion of the researcher's recommendations in ensuring successful delivery of infrastructure specifically Municipal infrastructure. Whilst a Predictable and reasonable legal framework, Stable political system, Government Support and Adequate local financial Market are very critical

elements that the respondents raised as important sub-factors. However a Favorable Economic system is very critical.

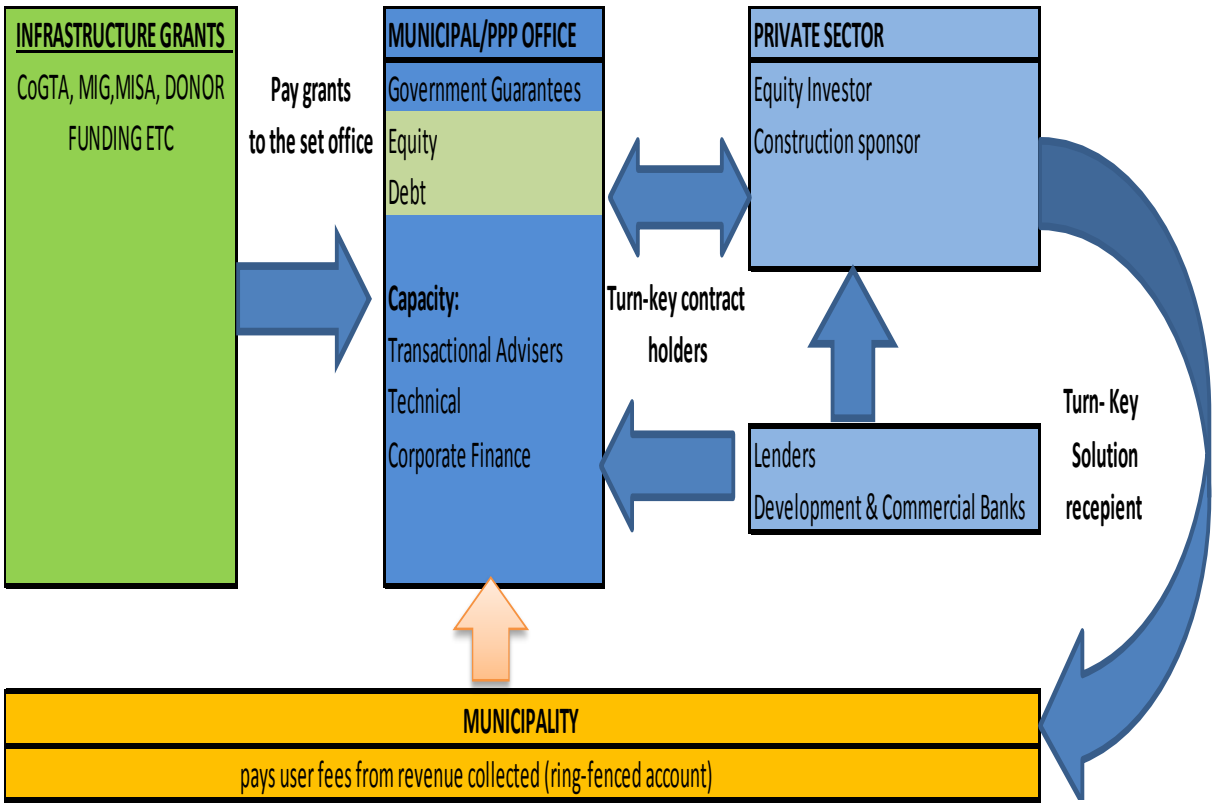
The researcher proposes a framework that will assist to amalgamate the different grants that are allocated to Municipalities. The National PPP unit will work together with Municipal Infrastructure Support Agency (MISA) to identify, prioritize and enter into PPP arrangement with private sector on project specific base on behalf of municipalities. The Capital expenditure function be totally divorced from daily operations of the municipality. Municipality administration will continue to busy itself with service delivery whilst the function of procuring and entering into contract for new bulk infrastructure , maintenance and refurbishment of old infrastructure be a sole function of this new office created.

This will assist with ensuring that a centralized approach to the maintenance and delivery of bulk infrastructure is prioritized. This will ensure that the right capacity required from public sector side to enter into these PPP agreements is centralized and optimized. This will assist in removing bureaucracy to the process and address the issue raised of political influence from municipal bodies.

This body can be similar to the IPP office of the Department of Energy which acts as a procuring arm for the Department of Energy. This office provides a one stop service for both the Private sector (Project Sponsors, Funders, Transactional lawyers, Development Banks and BEE partners) and the Public Sector (Eskom, the Single Buyer - Eskom, National Energy Regulator, Department of Energy - The Energy policy Department, the Department of Public Enterprises - Department mandated with a shareholder oversight role to Eskom, Municipalities, for instances where the IPP will connect directly to a municipal area instead of Eskom’s transmission grid).

Figure 8 below provides a proposal from the researcher after having reviewed the relevant literature and gained insights from the respondents. It is important to note that this structure will need approval from the highest Authorities in Government as it challenges the current arrangements and the notion of municipalities being autonomous thus possessing their own executive authority over budgets and decisions to how they spent grants allocated by National Government.

Figure 18: Proposed Framework for PPP arrangement to deliver Municipal Infrastructure



Source: The researcher adapted the Model from various literature reviewed including Veryard, D and Makovsek D, 2016

7.3 RECOMMENDATIONS

Following the discussion in Chapters 5 and Chapter 6 which aimed to address the challenge of funding infrastructure in South Africa, more specifically electricity distribution infrastructure in Municipal arrears, the Researcher therefore recommends the following

7.3.1 Recommendations to the Public Sector: Policy Implications

- ***The municipal/PPP office should be staffed with skilled personnel with vast PPP experience. Then the Municipal/PPP office should provide training for all levels for government staff.*** The successful implementation of PPP requires its participants to possess diverse skills and expertise in procurement, legal, and financial management. Therefore, the Municipal/PPP office that should be established should provide training in the areas to its employees, especially those at the national, provincial and local government. At the initial stages, the Municipal/PPP office should also hire advisors who have actual experience in PPP

projects to assist in their development as done in the current IPP procurement of DoE.

- ***Identify and prioritize pilot PPP projects through the structure/framework proposed above.*** The Municipal/IPP office should be aware that a PPP is not the only solution and may not be appropriate for all infrastructure projects. This office should be well capacitated and technically equipped to conduct a comprehensive feasibility study to examine the applicability of the PPP approach to a specific infrastructure project before it is implemented. Additionally, when several projects are intended to be developed under PPP, the government should also prioritize these projects by considering their financial strengths and weaknesses looking specifically where maximum value will be derived.

- ***This Municipal/PPP office should create and maintain a database for municipal specific PPP projects.*** A database of historical information on PPP projects is essential for institutional memory and experience collected over time. The expertise will be required to spot infrastructure projects suitable for PPP arrangement. How risk is to be assessed and allocated based on experience gained from previous projects and therefore avoiding making similar mistakes.
  .
- ***The Municipal/ PPP office to Standardize PPP procurement process and contract documentation.*** Most municipal respondents relayed their frustration in the uncoordinated and contradicting documentation required for PPP approval. Regulations such as PFMA, MSA, MFMA are not streamlined and contributes to the confusion. The Municipal/IPP office should standardize its PPP procurement process, provide general and/or industry-specific PPP guidelines, standardized tender documents and model contracts for a range of infrastructure sectors. Possibly within the unit, an electricity infrastructure specific business unit will need to be formed and adequately capacitated to ensure that sector knowledge is leveraged and expedite the crafting and drafting of PPP agreements that will best serve the industry. Such measures can significantly reduce not only the tendering costs to the private sector, but also the tender evaluation costs to the public sector. Furthermore, the negotiation time can also be shortened to address the concerns regarding the long and complex procurement framework presented by the current PPP framework.

- ***The municipal/PPP office should be the central office to establish two-way communication channels with the private sector.*** This office will facilitate communication between private and public sector, through transparent, predictable and fair dissemination of oncoming projects. Similar to the DoE process where the Minister of Energy promulgates policies and regulations for private sector participation, then the formulation and promulgation of the integrated resources plan (IRP 2012) followed by the determination energy procurement from specific energy generating technology and finally the process of procurement unfolds. It is predictable meaning that the private sector knows the process to be followed and lead time required if interested in being part of the IPP program. The office should further establish two-ways communication channels with the private sector, such as hosting regular meetings to share updated information about PPP policies and potential projects. Early feedback from the private sector can be expected to improve the quality of the policies and increase the possibility of success for a PPP project.

7.3.2 Recommendations to the Private Sector: Management Implications

- ***Skills transfer and knowledge sharing with Municipalities and the Public sector at large.*** For sustainable and beneficial relations between the private and public sector, The private sector should learn to share its knowledge and expertise with the government in creating PPP-related policies and a favorable investment environment. This can be done by instituting a practice of skills transfer without being forced by regulations. It is of paramount importance because in helps instil trust between the two parties and thus eventually reducing risk which is embedded in lack of trust and strained relations.

- ***Bringing the financial sector right at the beginning.*** Although a Sound financial Package ranked last from the five (5) critical factors surveyed, it is however immensely critical. Therefore, the private entity that is interested in pursuing a PPP project should get the financial institution involved early in the bid preparation process. This early involvement of financial institutions provides the private entity an opportunity to verify the feasibility and soundness of its financial plan, which in turn may increase its possibility of wining the bid because of early readiness. In addition, it reduces the possibility that a project might fails due to the

financing issues as a financial partner would have been confirmed earl on in the process.

- ***There is value in long-term relationships with industrial partners and suppliers.*** PPP projects are usually very complex, therefore requiring a consortium of multidisciplinary companies. Sharing of information, cooperative working environment, collective and decisive decision making, take corresponding responsibilities, and resolving disputes is key in ensuring the consortium is functioning optimally. This would not be possible if there is trust between these participants. Having a long-term relationship with potential industry partners is the best way to build this trust.

7.4 RESEARCH LIMITATIONS

Given the unique and complex characteristics of PPPs in a specific country with a unique context, solely adopting success factors of other countries may not provide a comprehensive and the exclusive list of critical success factors for PPP implementation in South Africa. Therefore, it might be useful that future studies consider other CSFs that are relevant in the context of South Africa and specifically in the Municipal jurisdiction. Further to that, sector specific CSFs might need to be explored. This came out in the open-ended responses which identified other CSFs that Municipal management and experts dealing with Municipal infrastructure funding using PPP arrangements.

The use of questionnaire to identify the CSFs for PPP projects in general may not be the best method. Hence, future research may want to consider case study method to investigate the CSFs for a specific PPP sector or project using the case study method.

There were other several limitations to the research:

- No existing literature on PPP in electricity distribution in South Africa and abroad could be sourced. The existence of such literature would contribute positively to gaining even more insight into the notion.
- Purposive samples target a very specific population, which can help gain detailed insight on their characteristics, but a disadvantage is the difficulty in reaching a large sample size. The researcher population size was potential of 287

municipalities, however only a total of 54 Municipal personnel and 35 Industry Expert.

Despite its limitations, this present study will offer some insights and useful information for the public sector which in this case is identified as Municipalities, PPP unit of National Treasury, the Provincial Treasuries and private sector which encompasses project managers, development banks and commercial banks, concerning the important factors that need to be emphasized in ensuring the successful implementation of PPP in South Africa within the Municipality jurisdiction.

8. REFERENCES

Abdul-Aziz, A.R., Kassim, J.P.S., 2011. Objectives, success and failure factors of housing public–private partnerships in Malaysia. Habitat Int. 35 (1),150–157.

Auruskeviciene, V, Salciuviene. L, Kuvykaite. R., Zilys, L., 2007. Identification of key success factors in free economic zone development in Lithuania. Economics and Management: 2007. 12 ISSN 1822-6515

Aziz, A.A., Nabavi, H., 2014. Unsolicited proposals for PPP projects: private sector perceptions in the USA. Construction Research Congress. Construction in a Global Network. ASCE, pp. 1189–1198.

Babatunde, S.O., Opawole, A., Akinsiku, O.E., 2012. Critical success factors in public–private partnership (PPP) on infrastructure delivery in Nigeria. Journal of Facilities Management, vol. 10, ISS.3, pp. 212-225..

Bender P, Gibson S., 2012. Case Study for the 10 years of the Mbombela (Nelspruit) Water and Sanitation Concession South Africa.

Bernstein, D.A, Penner, L.A., Clarke-Stewart, A.C., & Roy, E.J., (2006) Psychology (7th ed). New York: Houghton Mifflin Company

Breytenbach Karen, 04-07 October 2015, South African International Renewable Energy Conference

Chan, A.P.C., Chan, D.W.N., Chiang, Y.H., Tang, B.S., Chan, E.H.W., & Ho, K.S.K., 2004. Exploring critical success factors for partnering in construction projects. Journal of Construction Engineering and Management, 130(2), 188-198

Chan, A.P.C., Lam, P.T.I., Chan, D.W.M., Cheung, E., & Ke, Y., 2010. Critical success factors for PPP in infrastructure developments: Chinese perspective. Journal of Construction Engineering and Management, 136 (5), 484-494

Chan, A.P.C., Lam, P.T.I., Chan, D.W.M., Cheung, E., Ke, Y., 2010. Privileges and attractions for private sector involvement in PPP projects. In: Ghafoori (Ed.), Challenges, Opportunities and Solutions in Structural Engineering and Construction. Taylor & Francis Group, London.

Cheung, E., Chan, A.P.C., Kajewski, S., (2012). Factors contributing to successful public private partnership projects, comparing Hong Kong with Australia and the United Kingdom. Journal of Facilities. Management. 10 (1), 45–58.

Chua, D.K.H., Kog, Y.C., & Loh, P.K. (1999). Critical success factors for different project objectives. Journal of Construction Engineering and Management, 125 (3), 142 -150

Dada, M.O. and Oladokun, M.G. (2012). Analysis of critical success sub- factors for Public-private partnership in Nigeria. Alam-cipta International Journal of Tropical Design Research and Practice, vol. 5, iss 2, pp.13-26.

Department of Energy- Electricity Distribution Industry: Asset Rehabilitation Review. Retrieved from http://www.energy.gov.za/files/tenders/DOE007201314/TOR.pdf

Department of Provincial and Local Government (2006) : Municipal Infrastructure, Roles and Responsibilities (2006)

Donnelly, L. (03 Jul 2015). Companies sit on their hoards. Retrieved from: http://mg.co.za/article/2015-07-02-companies-sit-on-their-hoards

Dr Willem J. De Beer. (23 November 2010) Chief Operations Officer, EDI Holdings (Pty) Ltd, South Africa. Retrieved from http://www.miningreview.com/wp content/uploads/Willem_deBeer.pdf

Dr Willem J. De Beer, Chief Operations Officer, EDI Holdings (Pty) Ltd, Asset Management: An executive perspective

Dr Willem J. De Beer, Waters N. (2011). EDI Restructuring: The Legacy, the Lessons and the Future. Retrieved from http://www.ameu.co.za/Portals/16/Conventions/Convention%202011/Papers/EDI%20Restructuring%20The%20Legacy,%20the%20Lessons%20and%20the%20Future%20-%20W%20de%20Beer.pdf

Eberhard , A, (2014) South Africa's Renewable Energy IPP Procurement Program: Success Factors and Lessons

Eberhard, A., Clark, A., Davis, M., Gratwick, K., Wamukonya, N., (2005). Power sector Reform in Africa: Assessing the impact on poor people Retrieved from: http://www.gsb.uct.ac.za/files/esmappowersectorreformafrica.pdf

Eberhard, A., Newbery, D. (2008). South African Network Infrastructure Review

Edelenbos, J. & Klijn, E.H. (2007) Trust in Complex Decision-Making Networks: A Theoretical and Empirical Exploration, in: Administration and Society, vol.39(1), pp.25-50

Efficiency Unit. (2003). Serving the community by using the private sector—An introductory guide to public private partnerships (PPPs), Hong Kong Special Administrative Region Government, Hong Kong.

Fowles, P., (2010). The Association of Municipal Electricity Undertakings (Southern Africa).

Garvin, M.J., (2009). Enabling development of the transportation public–private partnership market in the United States. Journal of Construction and Engineering Management. 136 (4),402–411

Grunert, K.G., Ellegaard, C., (1992). The Concept of Key Success Factors: Theory and Method. Project no 15, MAPP working paper

Hussein N. Ndonye, Dr. Emma Anyika, Prof. George Gongera, (2016). Evaluation of Public Private Partnership Strategies on Concession Performance: Case of Rift Valley Railways Concession, Kenya. European Journal of Business and Management. Vol.6, No.39, 2014

Hwang, B.G., Zhao, X., Gay, M.J.S., (2013). Public private partnership projects in Singapore: factors, critical risks and preferred risk allocation from the perspective of contractors. International Journal of Project Management 31 (2013), 424–433.

Jamali, D., (2004). Success and failure mechanisms of public private partnerships (PPPs) in developing countries, Insights from the Lebanese context. International Journal of Public Sector Management. 17 (5), 414–430.

Jefferies M., Gameson, R. and Rowlinson, S. (2002). Critical Success factors of the BOOT procurement system. Reflection from the stadium Australia case study. Emerging Construction and Architectural management, vol. 9(4), pp. 352-361.

Jul 1, 2011 . UNCC, Addis Ababa, Ethiopia. Green Economy - High-level Workshop on “Public-Private Partnerships' implementation in the. Energy Sector in Africa: Challenges, Best Practices and New emerging trends. Retrieved from http://www.uneca.org/sites/default/files/uploaded-documents/MPD/PPP-HLW2011/ppp_in_the_energy_sector-eca_background_paper.pdf

Klijn, E.H., J. Edelenbos, and B. Steijn. 2010b. Trust in governance networks: Its implications on outcomes. Administration and Society 42 (2): 193–221.

Kotze, R., Ferguson, A., and Leigland, J., 2000 Government Facilitation of Public-Private Infrastructure Projects: Lessons from South Africa. The Journal of Project Finance.

Kwak, Y.H., Chih, Y., Ibbs, C.W., 2009. Towards a comprehensive understanding of public private partnerships for infrastructure development. California. Management. Rev. 51 (2), 51–78.

Li, B., Akintoye, A., Edwards, P. J., and Hardcastle, C. _2005_. "The allocation of risk in PPP/PFI construction projects in the UK." *Int. J.Proj. Manage.*, 23_1_, 25–35.

Li, B., Akintoye, A., Edwards, P.J., Hardcastle, C., 2005b. Critical success factors for PPP/PFI projects in the UK construction industry. Constr.Manag. Econ. 23 (5), 459–471.

Liu, J., Love, P.E., Smith, J., Regan, M., Davis, P.R., (2014). Life cycle critical success factors for public–private partnership infrastructure projects. Journal of. Management. Engineering. 04014073.

Liu, T., Wilkinson, S., (2013). Can the pilot public-private partnerships project be applied in future urban rail development? A case study of Beijing Metro Line 4 project. Built Environment Project and Asset Management 3 (2), 250–263.

Mahabir J and Maben, N. (2015/16) Identifying funding constraints in Municipal Capital Investment. Submission for the 2015/16 Division of Revenue

Makovsek, D., Veryard, D., (2016). The Regulatory Asset Base and Project Finance Models - Analysis of Incentives for Efficiency. OECD. International Transport Forum

Maswanganyi Ntsakisi. (07 October 2016). Business 'waits' to invest R600bn retrieved from. http://www.bdlive.co.za/economy/2016/10/07/business-waits-to-invest-r600bn

Mathews, C. (2014,July 25 2014). Eskom not the main culprit in electricity outages. Business Day live. Retrieved from http://www.bdlive.co.za/business/energy/2014/07/25/eskom-not-the-main-culprit-in-electricity-outages

Mecerek, J., Fine, M., Kidder, L., 1997 . Working between worlds: qualitative and social psychology. Journal of Social Issues, vol. 53, no.4. pp 631-644

Meng, X., Zhao, Q., Shen, Q., 2011. Critical success factors for transfer– operate–transfer urban water supply projects in China. J. Manag. Eng. 27(4), 243–251

Meng, X., Zhao, Q., Shen, Q., 2011. Critical success factors for transfer–operate–transfer urban water supply projects in China. J. Manag. Eng. 27(4), 243–251.

Mike Cohen, Liezel Hill and Kevin Crowley. 23 May 2016. SA corporate cash piles hit new record – no confidence means no investment Retrieved from http://www.biznews.com/sa-investing/2016/05/23/sa-corporate-cash-piles-hit-new-record-no-confidence-means-no-investment/

Mott MacDonald. 21-22 August 2012. South African Economic Regulators Conference

Mr Garth Strachan, Deputy Director General - Industrial Policy, Department of Trade and Industry, June 2014. Retrieved from http://www.gov.za/need-overcome-trust-deficit-between-government-and-private-sector

National Treasury PPP Unit of South Africa (2007). Public Private Partnership manual. [Online]. [Accessed 26 April 2016]. Retrieved from: http://www.treasury.gov.za/organization/PPP/default.htm.

National Treasury, PPP Unit. 2005 The Municipal Service Delivery and PPP Guidelines. Retrieved from http://www.ppp.gov.za/Pages/About.aspx

National Treasury. Budget Review 2012, Chapter 7, Infrastructure. Retrieved from. http://www.treasury.gov.za/documents/national%20budget/2012/review/chapter7.pdf

Onyemaechi, P., Samy, M., Pollard, D., 2015. An examination of the critical success factors for public private partnership in housing projects in Nigeria. Journal of Sustainable Development in Africa (Volume 17, No.3, 2015)

Organisation for Economic Co-operation and Development (2015), Policy Framework for Investment 2015 Edition, OECD Publishing, retrieved from: https://www.oecd.org/daf/inv/investment-policy/Policy-Framework-for-Investment-2015-CMIN2015-5.pdfOECD

Organistion for Economic Co-operation and Development, 2010 Progress in Public Management in the Middle East and North Africa: Case Studies on Policy Reforms, OECD Publications

Osei-Kyei, R., Chan, A., 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 (2015) 1335–1346

Park, H.M. (2009).*Comparing Group Means: T-tests and One-way ANOVA Using Stata, SAS, R, and SPSS*. Indiana University.

Pauline Hovy (IMG Rebel). August 2015. Risk Allocation in Public-Private Partnerships: Maximizing value for money

Peng, W., Cui, Q., Lu, Y., Huang, L., 2014. Achieving value for money: an analytic review of studies on public–private partnerships. Construction Research Congress, Construction in a Global Network. ASCE, pp. 1189–1198.

Phalane Motale , 11 October 2015 E-tolls on brink of collapse. Retrieved from http://www.iol.co.za/news/south-africa/gauteng/e-tolls-on-brink-of-collapse 1928063A

Philippe Burger and Ian Hawkesworth, 2011, Organisation for Economic Co-operation and Development (OECD), How To Attain Value for Money: Comparing PPP and Traditional Infrastructure Public Procurement. *Retrieved from* www.gsb.uct.ac.za/files/ppiafreport.pdf

Rockart, J.F., 1982. The changing role of the information systems executive: a critical success factors perspective. Sloan Manag. Rev. 24 (1), 3–13.

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., and Anagnostopoulos, K. P. (2008). "Public-private partnership projects in Greece: Risk ranking and preferred risk allocation." *Constr. Manage. Econom.*, 26_7_, 751–763.

Sanne Grotenbreg, Erik Hans Klijn, Frank Boons & Arwin van Buuren . 2014. The influence of trust on innovative outcomes in Public-Private Partnerships

Saqib, M., Farooqui, R.U., & Lodi, S.H., (2008). Assessment of critical success factors for construction projects in Pakistan. Retrieved May 02, 2016, http://www.neduet.edu.pk/ICCIDC-I/Conference%20Proceedings/Papers/041.pdf

Shen, L.Y., Platten, A., Deng, X.P., 2006. Role of public private partnerships to manage risks in public sector projects in Hong Kong. Int. J. Proj. Manag. 24(7), 587–594.

Smyth, H., Edkins, A., 2007. Relationship management in the management of PFI/PPP projects in the UK. Int. J. Proj. Manag. 25 (3), 232–240.

State changes its mind Retrieved from http://www.joburg.org.za/index.php?option=com_content&view=article&id=6021:state-changes-energy-plans&catid=164&Itemid=245

Steyn, G. Administered Prices. Electricity. A report for National Treasury.

Suhaiza, I. Ajija, S., Critical success factors of public private partnership (ppp) implementation in Malaysia

Survey Research: A Quantitative Technique", Sociological Inquiry Principles: Qualitative and Quantitative Methods (v. 1.0) Chapter 8. Retrieved from: http://2012books.lardbucket.org/books/sociological-inquiry-principles-qualitative-and-quantitative-methods/s11-survey-research-a-quantitative.html

Tang, L., Shen, Q., Cheng, E.W., 2010. A review of studies on public–private partnership projects in the construction industry. International Journal of. Project. Management. 28 (7),683–694

Tang, L., Shen, Q., Skitmore, M., Cheng, E.W., 2012. Ranked critical factors in PPP briefings. J. Manag. Eng. 29 (2), 164–171.

Tharenou, P., Donohue, R., & Cooper, B. (2007). Management research methods (p. 338). Melbourne: Cambridge University Press.

The importance of the Regulatory Framework in enabling private sector participation in the Energy Sector; Dr Nick Frydas–Head Energy Markets & Regulation

The Local Government Handbook South Africa. (2015). A complete guide to municipalities in South Africa

The NDP- The right plan for private sector participation. Retrieved from: http://www.pwc.co.za/en/publications/right-plan-for-private-sector-participation.html

Tiong, R.L.K., Yeo, K.T., McCarthy, S.C., 1992. Critical success factors in winning BOT contracts. J. Constr. Eng. Manag. 118 (2), 217–228.

United Nations Economic Commission for Africa. (2011). High-level Workshop on "Public-Private Partnerships' implementation in the Energy Sector in Africa: Challenges, Best Practices and New Trends"

Vanashree V, 2016. Economic and Financial Analysis for Feasibility Study of Public Private Partnership Road Project, International Journal on Recent and Innovation Trends in Computing and Communication ISSN: 2321-8169Volume: 4 Issue: 4 182 - 185. Retrieved fromhttp://www.ijritcc.org/download/conferences/ICMTEST_2016/ICMTEST_2016_Track/1462170327_02-05-2016.pdf

Wolverton, M.L. 2009. research design, hypothesis testing, and sampling. Appraisal Journal, vol. 77. pp.370–382

World Bank, 2015, “Investment Climate”, www.worldbank.org/investmentclimate

World Bank. 2012. PPP in Infrastructure Resource Center. [Online]. Available: http://ppp.worldbank.org/public-private-partnership/

World Economic Forum (2012). Strategic Infrastructure. Steps to Prioritise and Deliver Infrastructure Effectively and Efficiently.

Yescombe, E.R (2007). What are Public-Private Partnerships?. Principles of Policy and Finance Pages 1-14

Yongjian Ke; ShouQing Wang; and Albert P. C. Chan, 2010. Risk Allocation in Public-Private Partnership Infrastructure Projects: Comparative Study. Journal Of Infrastructure Systems © Asce / December 2010 / 351

Zhang, X.Q., 2005b. Critical success factors for public–private partnerships in infrastructure development. J. Constr. Eng. Manag. 131 (1), 3–14.

Zhao,Z.,Zuo,J.,Zillante,G., & Wang,X., 2010. Critical success factors for BOT electric power projects in China: Thermal Power versus Wind Power. Renewable Energy, 35, 1283-1291.

Zikmund, (2003). Business Research Methods (2nd Edition), McGrawHill: London

9. APPENDICES

9.1. CONSISTENCY MATRIX

Question/Hypothesis1: The CSFs for PPP implementation in the electricity distribution infrastructure within the South African Municipalities rank the same as the 5 CSFs identified by Zhang (2005).

Question/Hypothesis2: The perceptions of Municipality's management differ to those of Industry Experts concerning the importance of CSFs

Question/Hypothesis3: The perceptions of local municipality's management differ from those of Metropolitan municipality's management concerning the importance CSFs.

Hypothesis	Literature Review	Data Collection	Analysis
The CSFs for PPP implementation in the electricity distribution infrastructure within the South African Municipalities rank the same as the 5 CSFs identified	Zhang, X.Q., 2005b. Critical success factors for public–private partnerships in infrastructure development. J. Constr. Eng. Manag. 131 (1), 3–14 Osei-Kyei, R., Chan, A., 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 (2015) 1335–1346	Questionnaire survey with open ended questions (semi-structured)	Descriptive analysis, mean, standard deviation

The perceptions of Municipality's management differ to those of Industry Experts concerning the importance of CSFs	Zhang, X.Q., 2005b. Critical success factors for public–private partnerships in infrastructure development. J. Constr. Eng. Manag. 131 (1), 3–14 Osei-Kyei, R., Chan, A., 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 (2015) 1335–1346	Questionnaire survey with open ended questions	Descriptive analysis, mean, standard deviation, agreement analysis, Independent t-test
The perceptions of local municipality's management differ from those of Metropolitan municipality's management concerning the importance CSFs.	Zhang, X.Q., 2005b. Critical success factors for public–private partnerships in infrastructure development. J. Constr. Eng. Manag. 131 (1), 3–14 Osei-Kyei, R., Chan, A., 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 (2015) 1335–1346	Questionnaire survey with open ended questions	Descriptive analysis, mean, standard deviation, agreement analysis, Independent t-test

9.2. ETHICAL CLEARANCE RESPONSE LETTER

Dear Mrs Thobile Mbatha

Protocol Number: Temp2018-01868

Title: Examination of Critical Successful Factors for PPP in Electricity Distribution within SA munics

Please be advised that your application for Ethical Clearance has been APPROVED.

You are therefore allowed to continue collecting your data.

We wish you everything of the best for the rest of the project.

Kind Regards,

Adele Bekker

9.3. RESEARCH TOOL - SURVEY QUESTIONNAIRE

INFORMATION CONTENT LETTER:

The content of this questionnaire attempts to gain public and private perception on the identified as critical success factors (CSFs) to the implementation of Public Private Partnerships in the electricity distribution industry within South African Municipalities. This study will provide a new dimension to the PPP debate in South Africa and provide insights in what the perception are regarding partnerships in delivering infrastructure with Municipalities. Currently the South African Governments has also approved the National Development Plan (NDP) as a policy that will assist the Republic of South Africa in expediting the infrastructure development which is further integrated in to the Municipality's own Integrated Development Plans (IDP) for bulk infrastructure roll-out including electricity distribution infrastructure.

The Government's Infrastructure plan and conceived by the NDP acknowledges the role of PPPs to fast track the country's infrastructure development. This study will then assist the Government and its spheres (municipalities) to proactively ensure that they create an environment for the CSFs required. This will mitigate the constraints that will be identified for the successful delivery of both the NDP and by extension the IDP. It is therefore envisaged that the study may further assist in some policy reviews and interventions to ensure that barriers are removed to promote a thriving PPP environment in SA for both the government and Municipalities.

Your participation is voluntary and you can withdraw at any time without penalty. Of course, all data will be kept confidential. By completing the survey, you indicate that you voluntarily participate in this research. If you have any concerns, please contact me or my supervisor. Our details are provided below.

Researcher name: Thobile Mbatha

Email: tmbathagibs@gmail.com

Phone: 0723361059

Research Supervisor Name: Lizette Venter

Email: lizette@projecthub.co.za

Phone: 083 258 4420

.

FOR ADMINISTRATION PURPOSES:

Name (Optional):	
I wish to participate in the interview (mark with X)	Yes [ ] No [ ]

SECTION A: PROFILE

i. Job Title /Current Position

[ ] Municipal Manager

[ ] Municipal Finance Manager

[ ] Project Manager - Electricity Trading

[ ] Manager

[ ] Project Manager

[ ] Specialist

[ ] Other, please specify _____

ii. Graduation degree

[ ] Matric

[ ] Certificate

[ ] Diploma

[ ] Postgraduate diploma

[ ] Degree

[ ] Master Degree

[ ] Doctor of philosophy

[ ] MBA/MBL/CFA

[ ] Other, please specify _____

iii. Work experience years group

[ ] Under one year (six months to one year)

[ ] Between 1 and 5 years

[ ] Between 6 and 10 years

[ ] over 10 years

Vii. Sector

[ ] Private Sector - IPP

[ ] Private Sector – Financial Services

[ ] Private Sector - Contractor

[ ] Public Sector – Government Department

[ ] Public Sector – Regulator

[ ] Public Sector – Utility

SURVEY QUESTIONNIARE

Section 1:
Open Ended Questions: The respondent is required to provide his/her views on the following key questions.

1. In your opinion are the PPP successful in South Africa?	
2. Do you know of any PPP in the municipal or provincial treasury space in South Africa?	
3. What in the respondents view could be seen as critical in the success of PPP arrangements?	

Section 2:

Please complete the following questionnaire with specific regard to the above enquiry, by placing a CROSS or "X" in the appropriate box

Favourable investment environment	Not Applicable	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
Stable political system						
Favourable Economic system						
Adequate local financial Market						
Predictable currency exchange rate						
Predictable and reasonable legal framework						
Government Support						
Supportive and understanding community						
The project is in public interest						
Predictable risk scenarios						
The project is well suited for privatisation						
Promising economy						
Economic Viability	Not Applicable	Strongly disagree	disagree	Neutral	Agree	Strongly Agree
Long term demand for products/services offered by the project						

Limited competition from other projects						
Sufficient profitability of the project to attract investors						
Long term cashflow that is attractive to lenders						
Long term availability of suppliers needed for the normal operation of the project						
Reliable Concessionaire consortium with technical strength	Not Applicable	Strongly disagree	disagree	Neutral	Agree	Strongly Agree
Leading role by a key enterprise or entrepreneur						
Effective project organisational structure						
Strong and capable project team						
Good relationship with host government authorities						
Partnering skills						
Rich experience in international PPP project management						
Multi disciplinary participants						
Sound technical solution						
Innovative technical solution						
Cost effective technical solution						
Low environmental impact						
Public safety and health considerations						
Sound financial Package	Not Applicable	Strongly disagree	disagree	Neutral	Agree	Strongly Agree
Sound financial Analysis						
Investment, payment and drawdown schedule						
Sources and structure of main loans and standby facilities						
Stable currencies of debts and equity finance						

High Equity/debt ratio						
Low financial charges						
Fixed and low interest rate financing						
Long term debt financing that minimises refinancing risk						
Abilities to deal with fluctuations in interest/exchange rates						
Appropriate toll/tariff levels and suitable adjustment formula						
Appropriate risk allocation via reliable contractual arrangement	Not Applicable	Strongly disagree	disagree	Neutral	Agree	Strongly Agree
Concession agreement						
shareholder agreement						
Design and Construct contract						
Loan agreement						
Insurance agreement						
Supply agreement						
Operation agreement						
Offtake agreement						
Guarantees/support/comfort letters						

Source: Zhang, X.Q., 2005b

9.4. RESPONDENTS DATA BASE

9.4.1. Hand captured questionnaires from AMEU and various Municipal meetings

9.4.2. Respondents Captured on survey monkey: https://www.surveymonkey.com/r/CSFPPPinMunics