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PROJECT EVALUATION OF PUBLIC PRIVATE PARTNERSHIPS IN CONSERVATION INSTITUTIONS USING A RISK ASSESSMENT APPROACH: A CASE STUDY OF THE ZIMBABWE PARKS AND WILDLIFE MANAGEMENT AUTHORITY

BY

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This Thesis is submitted to University of Lusaka School of Post Graduate Studies in partial fulfilment of the requirements of the Doctor of Business Administration (Accounting) DEGREE

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DECLARATION

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DEDICATION

This thesis is dedicated to my wife Gladys, my daughter and my daughter in law my sons Tatenda, Simbarashe and Reedgewenz. Above all Glory be to the Lord Almighty.

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LIST OF ACRONYMS

AfDB	African Development Bank
AHP	Analytic Hierarchy Process
BLM	Bureau of Land Management (United States of America)
BOT	Build-Operate-Transfer
CC	Company Competence
COMESA	Common Market for Eastern and Southern Africa
COSATU	Congress of South African Trade Unions
CSF	Critical Success Factors
DRM	Direct Rating Method
DM	Desirability Model
EDF	European Development Fund
EM	Eigenvalue Method
EC	European Commission
EPEC	European PPP Expertise Centre
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
IMF	International Monetary Fund
KMO	Kaiser-Meyer-Olkin
MARS	Multi-attribute Additive Rating Scales
NGOs	Non-Governmental Organisations
NFWF	National Fish and Wildlife Foundation
OECD	Organisation for Economic Cooperation and Development
PA	Project Attractiveness
PEEPA	Public Enterprises Evaluation and Privatisation Agency (Botswana)
PFI	Private Fund Initiative
PFRAM	PPP Fiscal Risk Assessment Model

PPI	Private Participation in Infrastructure
PPP	Public Private Partnership
RBZ	Reserve Bank of Zimbabwe
REC	Regional Economic Communities
SADC	Southern African Development Community
SANParks	South African National Parks
SM	Stakeholder Management
UK	United Kingdom
UN	United Nations
USA	United States of America
UNCITRAL	United Nations Commission on International Trade Law
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
WCNB	Wildlife Conservation in Northern Botswana
ZAWA	Zambia Wildlife Authority
ZEPARU	Zimbabwe Economic Policy Analysis and Research Unit
ZPWMA	Zimbabwe Parks and Wildlife Management Authority
ZTA	Zimbabwe Tourism Authority

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ABSTRACT

In line with global trends, the implementation of Private Public Partnerships (PPPs) has gradually increased in the Southern Africa Region. Among the eleven countries covered by the United Nations Economic Commission for Africa's Sub Regional Office for Southern Africa, there have been 81 Greenfield PPP projects which were approved from the year 1993. According to the World Bank's PPI database (2013) these had a total investment commitment amounting to $40.9 billion. However, these PPP investments have not been evenly spread effectively across the African sub region. The World Bank revealed that Zimbabwe had the lowest PPP investment commitment with about 4%. Approximately 77 % of the total PPP investment commitments in the sub region were being implemented by South Africa, which has a good track history of applying PPP's in several different sectors of the economy than any other southern African country. In addition, the conservation sector is one of the least privatised sectors in the region and had a low investment commitment which makes it a sector with less PPP experience across the board.

According to Zimbabwe Economic Policy Analysis and Research Unit, ZEPARU (2016), Zimbabwe received more than US$1 billion in PPP investment commitment from the private sector during the period beginning 2013 to 2016. The uptake of PPP arrangements in different sectors of the economy has been slow with a gradual increase. This thesis revealed that the slow uptake of PPP arrangements was because of weak supportive legal framework, poor risk allocation and stakeholder dissatisfaction. This had a huge impact on the performance of conservation projects under the Zimbabwe Parks and Wildlife Management Authority (ZPWMA) which was mandated to generate its own revenue for supporting the core mandate of wildlife conservation, management and other auxiliary activities without government support.

This thesis revealed that the Zimbabwe Parks and Wildlife Management Authority (ZPWMA) was undertaking these PPP conservation projects with an unclear perception of risk. This posed a huge challenge in mitigating risks threatening the PPP conservation projects. This thesis evaluation method of key determinants of PPP performance through provision of a more comprehensive assessment of risk factors that include stakeholder's interest, private partner's competency and proper risk identification and allocation. The thesis used as the foundations the Desirability Model by A. Dias and P.G. Ioannou (1995) which was used as a multi-attribute evaluation model in the evaluation of project performances. These evaluations anchored on two pillars classified as firstly the Private Partner competence and Company competence. In addition, the weighting and assessment of these attributes centred on the Direct Rating Method (DRM) and the Eigenvalue Method.

The findings from this thesis revealed that the ZPWMA PPP projects were not performing favourably in terms of revenue generation and its conservation mandate. This thesis proved that *Country Risks, Stakeholder Risks, Financial Risks,* and *Inadequacy Concession Contract* are the most threatening risks in the conservation projects in general and ZPWMA in particular. The results showed that stakeholders' satisfaction, favourable legal frameworks, and appropriate risk allocation were important in the mitigation of risks and turnaround of the performance of these projects.

Therefore, this thesis builds on empirical literature on the key risks affecting PPP conservation projects and their mitigation measures. The literature revealed weaknesses or knowledge gaps in the perception of risks and mitigation measure when evaluating stakeholders' satisfaction, legal frameworks, and appropriate risk allocation. This thesis, bridges gaps and adds to the body of knowledge by modifying and or improving on the existing models and concepts in evaluation of stakeholders' satisfaction, risk allocation and legal frameworks towards favourable PPP environment which includes government policies

In the development of key weights in the risk mitigation measures comprising of the private company-competency index, all experts (insiders and outsiders) identified the *Financial Constraints category* as the most important, followed by the management (*Organisational Characteristics) and on third place was Service and Production Capability categories*. These results seem to suggest that a private company's ability to fund the procurement process and to provide its own resources to finance part of the project coupled with the quality of the investment in terms of potential return is of very important for the promoter in making decision on whether or not to pursue performing PPPs. The relatively low importance given to the production-related category highlight the fact that potential promoters are not as concerned with the availability of their own resources and/or the adequacy of their technical expertise as they can rely on third parties to bring the necessary resources and expertise to have the project developed and implemented.

In the ranking of categories in the project-attractiveness index, insiders and outsiders identified that the *Stakeholder Satisfaction Assessment* category is the most important in risk mitigation. Hence, a favourable stakeholder satisfaction assessment is essential in attracting private promoters and in enhancing project performance. According to these experts, the second most important category was classified as *Appropriate Risk Allocation and Effective Legal Frameworks* for the project profitability. Although both insiders and outsiders agree with these rankings, there was a notable difference in their weighting of the *managerial, technical, and financial* categories. Insiders inject funding in the process and were bound to lose their investment if the project faltered. They are confident about their ability to manage and to provide technical solutions to the project. Hence, their placing great importance on the project's ability to provide an adequate return on their investment and a relatively low importance to the categories that they have more control over. Outsiders provide services, mainly management and legal expertise to principals and promoters, and thus put less emphasis on the financial assessment (although it is still the most important category) and assign more importance on the management and technical categories perhaps indicating their concerns that some promoting companies have in the past performed poorly in this respect.

The holistic evaluations performed by respondents on most companies and project profiles were highly correlated with the outcomes obtained from the additive decomposed models. This suggests that the Desirability Model captures the preferences of both the insiders and outsiders and can be used as a substitute for the direct assessment of individuals and groups in the evaluation of (a) the capability of companies to participate in the promotion of projects with minimum risk and (b) the feasibility of projects to be pursued through a private-sector promotion procedure and realising profits.

The thesis results also revealed that (a) both weighting procedures, using the Eigenvalue Method (EM) and the Direct Rating Method (DRM), yield comparable important weights, and that (b) the indices produced by the Desirability Model were more sensitive to the worth scores (i.e., the non-dimensional numbers that measure the values of attributes in a specific company/project) than to the importance weights of the attributes. Hence, special attention should be placed in the creation of the value curves for each model attribute.

This thesis took cognisance of the problems faced by ZPWMA, empirical literature, models and theories in formulating several critical factors that contribute to the desirable performance of PPP projects. These factors were also exposed to high risk profiles that needed to be mitigated against in order to realize effective and efficient performance of PPP projects. Zimbabwe is one of the countries exposed to the threat of many risk factors that threaten the viability of PPP projects.

Political risk, currency risks, stakeholder risks and the absence of a legal framework that is sustainable to the PPP projects are the high-profile risks.

As reported by the World Bank and IMF, in 2012 alone the PPP projects contributed about 48% of total inflow of FDI in developed economies, Zimbabwe and other countries from the developing world have no bragging rights to that contribution since their PPPs were crippled by massive under performances due to poor risk allocation, lack of legal frameworks and failure to uphold stakeholder satisfaction in their PPP endeavours. This fact was as evidenced by the revenues realized by the ZPWMA under PPP projects and the problems the organisation faced.

The responses from the interviewed experts in the formulation of the Desirability Model revealed that other critical success factors or risk mitigation strategies that came out include private company competences financially, managerially, service and production capability. These factors contributed to efficient performances of PPP projects since they bring out the competence, ability, and experience in the private partner. These were the other factors that ZPWMA overlooked.

The thesis showed that risk mitigation is also pivotal on *Stakeholder Satisfaction Assessment, Appropriate Risk Allocation and Favourable Legal Frameworks.* These factors enhance performance and returns as seen in the case study of Umfurudzi Safari Area, Chipinda Pools and Charara Wilderness. Therefore, conservation PPP projects must pay attention to these factors

This thesis took a deductive approach from empirical evidence and outlined several risk mitigation strategies that included identifiable and visible senior management support for the project, explicit policies which are clearly communicated to all, adoption of a transparent and repeatable framework of activities, existence of a culture that supports and understands the concepts of controlling risk, management process and regular reviews to ensure the benefits of the processes are realized and lessons are learnt for future projects. In addition, the performance of PPP projects was favourable under judicious government control and issuance of government guarantee which is lacking in the ZPWMA and Zimbabwean context

Key Words/Concepts: *PPP, Desirability Model, Country Risks, Stakeholders Risks, Risk Allocation, Stakeholder Satisfaction, Legal framework*

CHAPTER 1
INTRODUCTION

1.0 BACKGROUND TO THE STUDY

During the nineteenth century up to the beginning of the twentieth century it was common to witness many private players participating and some even being responsible for effective delivery and funding of major huge capital demand public projects as cited by Akintoye et al (2003). Of these public projects, mostly Public Private Partnership projects (PPP) were doing well. These good performing PPP arrangements included the following: energy supply, telecoms, transport, and infrastructure development projects. As stipulated by the World Bank (2013), developed countries were emerging as the major recipients of Foreign Direct Investment (FDI) and Africa received the least FDI, with most African countries having the least GDP. Privatization in developed countries was adopted earlier and was also revolving faster than in developing countries. Developed countries took cognisance of the need for risk mitigation, measures thereby creating a risk-free environment FOR PPPs which is favourable for economic and social growth through. The period beginning 1980 Europe's PPP projects had become popular and evolved vigorously as compared to those in Africa including Zimbabwe as evidenced in the Table 1 below: Table 1 highlights the participation of the private sector in different PPP projects in Africa and Europe. These PPP projects mainly encompassed Build Own Operate and Transfer (BOOT) and Build Operate and Transfer (BOT) projects.

Table 1: Total PPP projects investments in Europe and Africa in the 1980s (US$ Millions)

PPP Type	**Sector**	**Sub Sector**	**Project Count**		**Total Investment**	
			Europe	**Africa**	**Europe**	**Africa**
BOOT	*Energy*	Electricity	381	66	91,766	21,127
BOOT		Natural gas	191	-	9,421	-
BOOT	*Telecom*	Telecom	71	19	78,145	31,121
BOOT	*Transport*	Airports	27	21	5,599	485
BOT		Railroads	20	16	15,198	10.125
BOT		Roads	194	55	36,162	22,561
BOT		Seaports	101	3	18,824	11,219
BOOT	*Water and Sewage*	Treatment Plant	297	111	8,195	2,322
BOOT		Utility	57	45	20,494	12,954
BOT	*Tourism*	Conservation	46	33	3,112	541
BOT		Hotels	396	122	28,449	9,971
Grand Total			**1781**	**491**	**315,365**	**122,311**

Source: World Bank PPI Database

As illustrated in Table 1, Africa lagged as one of the continents in the world with a significant infrastructural deficit, both economic and social, due to lack of resources to finance the infrastructural development. This challenge is no exception to the conservation projects. The United Nations Conference on Trade and Development (UNCTAD) estimated that the continent lost more than one percent per year in per capita growth owing to dilapidated or lack of infrastructure around conservation (UNCTAD, 2011). Southern African countries are embracing PPP projects although the risks to which PPP projects are exposed to remains high. Most industrialised and emerging countries are using PPPs around conservation for growth and profitability.as evidenced by Australia, Canada, Ireland, United Kingdom (UK), and the United States of America (USA) which are some of the countries that have implemented PPPs around conservation.

Irrespective of the known facts that PPPs have many benefits in the areas of conservation and tourism, Grimsey and Lewis (2002) deduced that the system have some drawbacks in many countries that are related to complexities in planning, arrangement in relation to documentation, the dynamic nature of documentation, capital budget and taxation, control, monitoring performance, politics and policies. Most of the risks such as political and financial arises from these types of complexities in PPP projects. For example, the Zimbabwe Economic Policy Analysis and Research Unit, ZEPARU (2016) cited that politics and policies in Zimbabwe were posing serious country and financial risks on PPPs and their performance were being heavily compromised.

In view of the mentioned drawbacks, risk evaluation and risk mitigation are essential for projects success, especially projects that are anchored on the concept of PPPs. On the other hand, according to, Shen *et al.*, (2006), mentioned that the risk evaluation and risk mitigation of PPP projects are centred on four main pillars, which are; risk identification, risk assessment, response to risk reduction, and proper allocation of contingencies. In support of the above a Malaysia's PPP Guideline (2009) on conservation projects, emphasised that one of the essential features of risk management is optimal risk sharing, and states that risk evaluations provide a guide to project stakeholders on how to reduce the likelihood and consequences of adverse effects and thereby increasing the probability and boosting chances of making positive and effective project decisions.

Despite the broad adoption and advantages of PPPs around the world, several PPP projects have failed to meet the targeted objective related to budget deadlines, and quality. For example, the Eco-Tourism Concession of Kruger National Park, in South Africa, cited by Farlam (2005) and Railway project in Sydney (Zhang, 2005) were affected by promoting risks and construction risks respectively. Thus, the schedule delay and cost overrun in the PPP projects were mainly caused by risks. Risks in PPP projects, or generally in conservation and construction projects, cannot be eliminated but rather should be managed to acceptable levels and shared between parties based on agreement clauses (Andi, 2006). The contract could be the primary source for the allocation of risk to the PPP project parties through clauses and contract conditions. However, with the rise in the uptake of PPP engagements for the much-needed economic growth and service delivery in Africa, there has not been the ideal environment for the PPPs. Several critical success factors have been overlooked and this has brought about under performances in the PPP concessions.

Southern African countries are fast embracing Public-Private Partnership (PPPs) arrangements as one way of delivering much needed economic and social goods and services. Attracted by prospects of overcoming public budget deficit, human skills, technical and other constraints, these countries are slowly drafting the necessary legal and regulatory frameworks for PPPs. However, in this area, of concern is that the progress has been slow and patchy. In the event, few successes can be independently proven, and these has been confined largely to economic infrastructure. Delivery on social goods and services, especially around conservation has lagged far behind, primarily due to unclear and inapplicable legal frameworks and regulations, and the top-down approach that governments have adopted in crafting these frameworks, the respective institutions and projects have been fraught with controversies, raising questions about their sustainability in the long term. Moreover, trying to run before walking has undermined much of the vaunted benefits of PPPs, with governments footing huge bills and shouldering most of the risk.

According to ZEPARU (2016), emphasized that diverging stakeholders' interests is one of the key always posed as stakeholders' risks in PPP projects, considering that legal frameworks promotes a participatory approach in order to capture and ensure that the interests of different stakeholders are taken into account and addressed. Even when these conditions appear to be remote, governments are encouraged to start small while building the public and private expertise before embarking on more ambitious projects.

In general, the objective of the private sector is making profit while the aim of the public sector is efficiency in the provision of public goods and services. These diverging objectives are the major source for disagreement in risk allocation preferences between public and private sector which results in extended and unending PPP contract operational period. The identification and allocation of risks should be carried out with due care otherwise the actual value for money target will probably be threatened. Moreover, there is no standard measurement on agreement on an optimal risk allocation between participants in the conservation industry. Thus, it is vital for the project stakeholders to evaluate and allocate risks properly through the whole project life cycle. Generally, the performance or achievements of any successful PPP project depend on the ability to evaluate, manage and mitigate risks throughout the project life cycle.

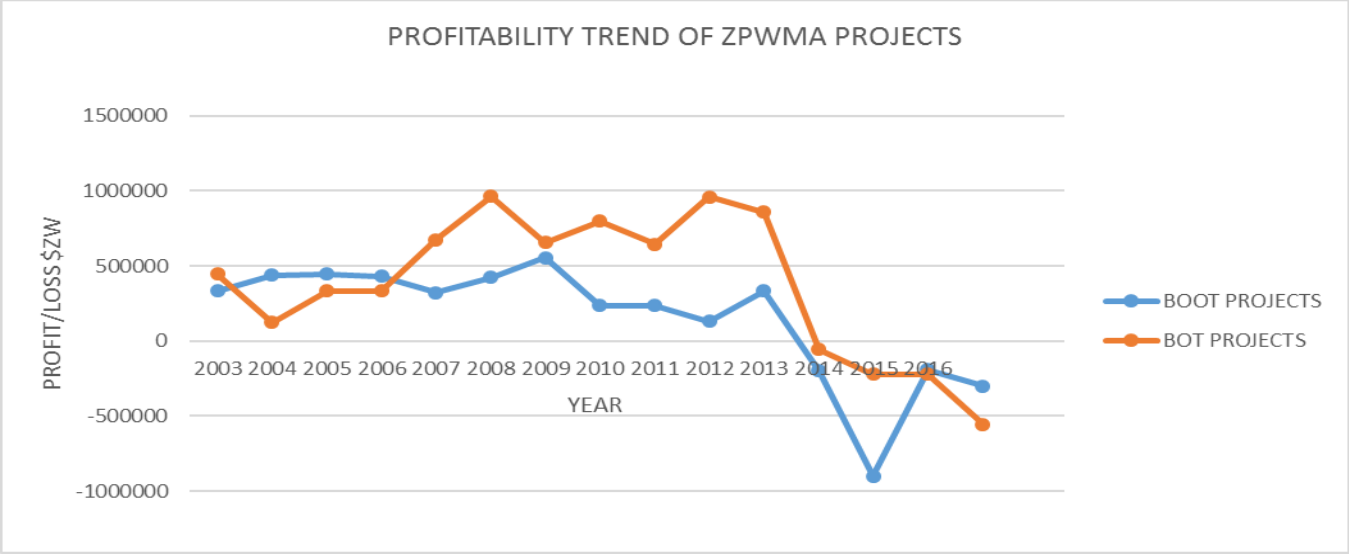
1.2 STATEMENT OF THE PROBLEM

Despite the broad adoption and advantages of PPPs around the world and back home Southern African countries are also fast embracing public-private partnerships (PPPs) as an alternative way of delivering the much needed economic and social goods and services. Although Southern African countries are fast embracing the PPP concept. Other countries in the region are yet to pass legislation on PPPs at national level. Zimbabwe is no exception to an extent that Zimbabwe lacked a legal framework, unit or investment code for PPPs (AfDB, 2013). According to the Zimbabwe Sentinel (2014), Zimbabwe was heavily dependent on colonial era policies of partnering private players and had not undertaken sufficient legislative reforms and operational policy frameworks to support new legal policies. This is unlike the PPP legal frameworks in the neighbouring South Africa, where PPPs such as the Eco- tourism concession in the Kruger National Park are flourishing.

The Southern African Development Community (SADC) stated that Zimbabwe has one of the most diversified tourism resource bases in the region but very little tourism development has taken place in the country since 1996 because of few promotional activities and inadequate support for the sector. In addition to that, budgetary constraints and poor risk allocation in government present a big challenge to sustainable tourism and conservation development in Zimbabwe up to now. One of the most viable sources of revenue generation nowadays is the PPP ventures subject to undertaking proper risk assessment, risk allocation and lobbying effective legal framework.

The failure was as a result of a number of factors including the high-risk operating environment. Following the unfavourable operating environment some projects were prematurely winded up despite them being incomplete contracts. Several stakeholders' especially private promoters were dissatisfied by the harsh business environment in Zimbabwe including high inflation and poor PPP legislation. Revenue trends were on a decline with some projects experiencing losses. These trends are as shown in Table 2 below:

Table 2: Profitability trend of ZPWMA projects



Source: Compiled by Author

Since the Zimbabwe Parks and Wildlife Management Authority was overshadowed by the need to improve revenue generation, infrastructure development and conservation operations, this resulted with the Authority venturing into several PPP projects which included the following:

Table 3: PPP projects under ZPWMA

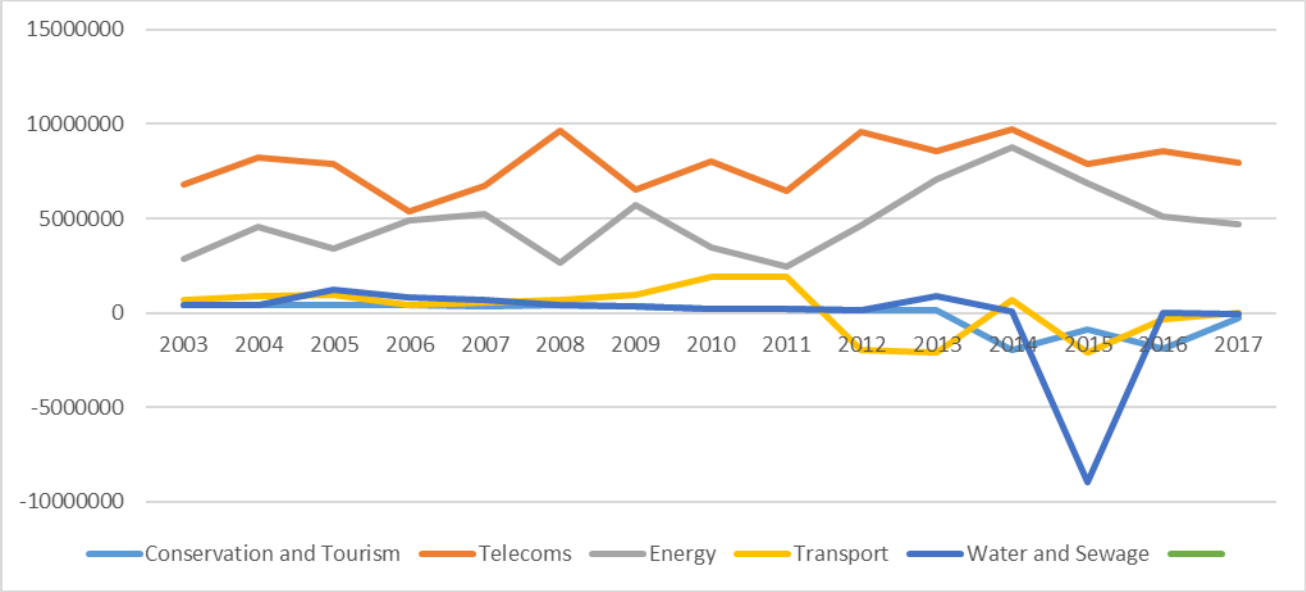
Location	**Private Partner**	**Modality**	**Objective**	**Duration**
Chipinda Pools (Gonarezhou)	Frankfurt Zoological Trust	Build-Operate-Transfer (BOT)	Supporting Conservation and building infrastructure (hotels and motels)	25 years
Umfurudzi Safari Area	Pioneer Africa	Build-Own-Operate-Transfer (BOOT)	Provide funding and management of the park and set up recreational infrastructure	25 years
Charara Wilderness	Lake Harvest	Build-Operate transfer (BOT)	To set Infrastructure for Crocodile breeding support conservation	10 years
Zambezi National Park	Adage of Success	Build-Own-Operate-Transfer (BOOT)	Construction of lodges, chalets, a restaurant, providing recreational activities and supporting conservation	25 years
Hwange National Park, Zambezi National Park	Bejane trust	(Build-Operate transfer) (BOT)	Assisting in the management of the parks, setting up supporting infrastructure and conservation of both the black and white rhino.	5 years
Matusadonha National Park	Highmile Investments	Build-Own-Operate-Transfer (BOOT)	Construction of a camp, providing recreational activities and supporting conservation	10 years

Source: Compiled by Author

These shortcomings were attributed to a turbulent risk environment which was being experienced in the country over the past two decades. The operating profitability of various PPP projects in Zimbabwe during the period under review were experiencing a negative growth. According to ZEPARU (2016), more than 67% of the projects were ineffective due to country risks. As compared to the profitability of PPP conservation projects, the telecoms and energy were the most profitable. These two sectors accounted for 33% of the profitable PPP projects as highlighted in the table 4 below. The energy sector was profitable due to an increase in the investment, control of tariffs and a favourable framework for PPPs

i.e. the Joint Venture Act of 2016 which defined BOT and BOOT as "a contract or other arrangement under which a person undertakes to construct an item of infrastructure for the State, a local authority or a statutory body in consideration for the right to operate or control it for a specified period, after which period he will transfer or restore ownership or control to the State, the local authority or the statutory body concerned. The profitability in the Telecoms sector was as a result of the same Act and stakeholders' satisfaction (Ministry Finance and Economic Development, 2014). These statistics proved evidence that PPP conservation projects were the worst on non-profitable than all other PPP in other sectors.

Table 4: Profitability of PPP projects in Zimbabwe by sector



Source: Zimbabwe Economic Policy Analysis and Research Unit 2016

Since the beginning of the year 2000, the economic and political environment in Zimbabwe was very unstable which resulted in the exposure of some of privately promoted projects to financial risks and Country Risks. These factors included high inflation environment and poor government policies. ZPWMA's engagement into PPP arrangements without undertaking any risk assessment evaluation. Worse off, there is lack of well spelt out clauses in the PPP concessions on who will be allocated these risks. This also triggered massive stakeholder dissatisfaction resulting in incomplete contracts. In addition, these incomplete contracts presented several shortcomings to ZPWMA PPPs. These included failure to setup the intended supporting infrastructure, failure to setup more recreational facilities and inability to raise the intended funding for the conservation operations.

Compounded to the undesirable conditions, ZEPARU (2016) cited that the legal conditions for PPPs in Zimbabwe are not favourable and welcoming. Thus, Zimbabwe currently has a weak legal framework, or investment code for PPPs (AfDB, 2013). Muzondo et al (2012) also pointed out that tourism projects such as the Chirinda Pools conservation programme was being affected on profit realization since there was no effective legal framework that supported the private partners or even ZPWMA itself. It is against these issues that even the Government of Zimbabwe is failing to deliver. Zimbabwe has no favourable legislative framework to govern the implementation of PPPs and is an issue that was still under debate in parliament, Zimbabwe National Budget Statement (2016).

The ZPWMA is also vulnerable to the absence of stakeholder's risks mitigation measures. The absence of operation and maintenance risks' mitigation measures which boosts stakeholder satisfaction is also another issue. This has impacted

negatively on the profitability of PPP projects since the interests of different stakeholders are not being realized or addressed resulting in the lack of solid environment aimed at encouraging and attracting private sector to invest in ZPWMA projects. The other negative impacting factor was the Government's demand of a stake of taking 51% stake in partnership deals. This study adds to the body of knowledge as opposed to earlier studies through evaluation PPP's risks in conservation PPPs projects and the effectiveness of the stakeholders' satisfaction, effective legal frameworks and risk allocation as risk mitigating measure. The focus of the study is risk identification, risk allocation and identification of effective risk mitigating measures. It clearly outlines the need for PPP project attractiveness and a drive towards private sector competences and a turnaround of performance in PPP conservation projects. Hence risk mitigation is of paramount importance in this thesis.

1.3 RESEARCH QUESTIONS

By venturing into more than four projects ZPWMA required a radical policy shift intended to turn the Authority from a non-performing and loss-making institution into a break-even or profit- making organization. Like other parastatal institutions in Zimbabwe, ZPWMA has not performed well under the current unevaluated high risk and unfavourable macro-economic conditions. Massive stakeholder dissatisfaction, risks and crippling legal atmosphere have reduced business competence. It has not been easy to determine whether the shortfall between planned and actual performance targets were as a result of poor planning, poor execution, or both or was as a result of other factors.

Considering the above problem this thesis evaluated how ZPWMA can resuscitate its PPP engagements and what mechanisms can be put in place by ZPWMA before and after venturing into the implementation of several projects. More emphasis is on project evaluation and the following specific research questions were addressed in this study:

i) What are the risks to be mitigated to ensure positive and effective performance of PPPs in conservation projects?
ii) What are the desirable risk mitigation measures that turn around or enhance PPP performances?
iii) To what extent does stakeholders' satisfaction, legal framework, and risk allocation improve the performance of PPPs?
iv) How effective are stakeholder satisfaction, legal framework and risk allocation as risk mitigation strategies?

1.4 RESEARCH OBJECTIVES

The general objective of this thesis is to evaluate the risks associated with ZPWMA projects and to determine the factors that repositions ZPWMA a performing and profitable going concern. The specific objectives include the following:

1. To determine the prominent risks to be considered for effective performance of PPPs in conservation projects.
2. To test the appropriateness of the Desirability Model in mitigation PPP conservation project risks and enhancing their performance.
3. To examine the extent to which stakeholder satisfaction, legal framework and risk allocation affect the performance of PPP projects
4. To determine the effectiveness of stakeholder satisfaction, legal framework and risk allocation factors on risk mitigation strategies

1.5 SIGNIFICANCE OF THE STUDY

The study focused towards giving a more comprehensive evaluation of PPP risks, legal framework and stakeholder interests which are the key factors in PPPs performance with ZPWMA projects no exception. This study employed the Desirability Model which is based on the following risk framework of risk mitigation measure which assesses the private sector Competence (private partner) and Project Attractiveness. On the other hand, this thesis departs from Sub Saharan perspective of just focusing on profiteering from PPPs without undertaking any feasibility study by first looking at risks in PPPs and their respective mitigation measures. Therefore, this study focuses on appropriate risk allocation, legal framework, stakeholder satisfaction as critical success factors. The study further contributes to the body of knowledge on how differently, PPP projects can turn around the performances for economic growth. This study objective included assisting conservation institutions on how to address the effects of risk misallocation, stakeholder dissatisfaction and absence of an effective legal frameworks that prohibit PPP performance.

An assessment of risks and mitigation factors is particularly important as it helps in guiding policy on how to stimulate PPP performances and eradicate constraints to investment. As reiterated by Farlam (2005) in a study of African PPPs, in which it is stated that if risks are not considered in PPPs the expected outcomes cannot be easily achieved. Farlam cited that African governments should also recognise that PPPs pose many of the same problems inherent in procurement or privatisation and are a hindrance for development. Also, whether African governments decide ultimately to follow the PPP route for any or all sectors of infrastructure and service provision, the principles that underline PPPs such as affordability, cost effectiveness, value for money, transparency and risk management should form part of the way that they approach service delivery in general. The study informs policy on considerations which enhance favourable PPP conditions and minimise the vulnerability of ZPWMA from non-performing PPPs. Risks such as country risks, financial risks, stakeholders' risks, and many others, poses unforeseen threats of underperformance of PPPs. Therefore, a clear understanding of the risks to which PPPs are exposed to, provides a proper guidance on project economic diversification, guidance on policy and investment promotion efforts to minimise the vulnerability of the PPPs under ZPWMA and in the Zimbabwean economy as a whole.

1.6 ORGANISATION OF THE THESIS

The rest of the Thesis is organised as follows: Chapter Two, presents the literature review which outlines an overview of the concepts of risk, risk mitigation, risk allocation, legal framework and stakeholder satisfaction for PPPs in conservation and infrastructural facilities. Furthermore, Chapter Two also reviews the performance of other PPPs globally and regionally (Africa and SADC) and the emerging risks. This is followed within the same chapter with a review of theoretical and empirical literature concerning PPP models and their results. Chapter Two concludes with a review of similar studies where risk mitigation factors (success factors) for PPPs and lessons learnt are outlined. Chapter Three presents the theoretical and conceptual framework for this Thesis as abstracted from the Literature review. The theoretical framework, with foundations in the Desirability Model from Dias and Ioannou (1995), derives and defines two risk mitigation modules namely relationship of private company competences and project attractiveness within which appropriate risk allocation, legal framework, profitability, organisational characteristics, technical issues and stakeholder satisfaction are the basis of the model. Chapter Four presents the research methodology based on the Theoretical and Conceptual model presented in Chapter Three, by showing the empirical models employed, and the framework applied to pave way for an analysis of

results. The empirical model outlines the set of attributes and mitigation measures from the conceptual and theoretical framework. Chapter Four further outlines the methods for analysing and weighting the data using the Direct Rating Method and Eigenvalue method. Chapter Five then gives the data analysis and presentation. This chapter gives the data description and its sources. It also analyses questionnaires for reliability and gives the distribution of respondents. It also analyses the prominent risks and mitigation measures to establish reliability and validity. Chapter Six outlines the research findings (results). Chapter Seven presents discussions and interpretations of the results, and Chapter Eight concludes the Thesis, it highlights on policy implications, recommendations, and scope for further research. References are highlighted thereafter followed by an Appendices section.

CHAPTER 2
LITERATURE REVIEW

2.0 INTRODUCTION

Since the early Nineteen ninety (1990) Public Private Partnerships (PPPs) have provided businesses and governments with a unique cooperation framework for mutual gain and growth. Several risks have been encountered in these PPP endeavours and many mitigation measures have been implemented in a bid to make these partnerships more vibrant. Components of stakeholder satisfaction, risk allocation and legal frameworks are reviewed on a broader scale. This chapter reviews several risks that have been encountered in PPPs in a broader sense. This encompasses conservation projects and other significant PPP studies on infrastructure since they are part of PPPs that are being undertaken by ZPWMA. In addition, the chapter reviews the risks trend and mitigation measures in Zimbabwe, SADC, Africa and globally. The chapter goes further to review theories in PPP and their risks, empirical literature on failures and success of PPPs and similar studies.

2.1 PUBLIC PRIVATE PARTNERSHIP DEFINITION

Public Private Partnership - The public private partnership is growing in popularity as a governing model for delivery of goods and services (Heide man, 2011). The public private partnership has become a new trend in public assets management and has been an increasingly important approach to historic preservation and urban regeneration (Ismail, 2013). Wu (2010) further explained the partnerships are a legal form of cooperation of both public and private sectors, with the principles of jointly participation and sharing of responsibility. The government leaders use the public private partnerships framework to react against their financial restrictions and to deliver public services (Lopes & Gaetano, 2015).

Ismail and Harris (2014) stated the public private partnership involves the assignment of responsibility from the public sector to the private sector for the designing, building, financing, and operating public sector assets accordingly over an agreed period of usually 25 to 30 years. There are several PPP types or modalities as shown in the Table 5 below:

Table 5: Types of PPPs

PPP Modality	Role of the Private Entity	Role of the Government	Notes/Remarks
Build-Operate-and Transfer (BOT)	Finances and constructs. operates and maintaining the facility for a fixed term. collects fees and charges to recover investments plus, profit; transfers facility at the end of cooperation period (maximum of 50 years	Provides franchise (if required) and regulates activities of BOT contractor; acquires ownership of facilities at the end of cooperation period	Includes a supply-and-operate scheme, a contractual arrangement whereby the supplier of equipment and machinery for a given infrastructure facility, if the interest of the Government so requires, operates the facility
Build-and-Transfer (BT)	Finances and constructs. turns over ownership of the facility to government after project completion	Acquires ownership of facility after Construction. compensates proponent at agreed amortization schedule	May be employed in any project, including critical facilities which, for security or strategic reasons, must be operated by the Government.
Build-Own-and-Operate (BOO)	Finances, constructs and owns facility. operates and maintains facility in perpetuity (facility operator may be assigned); collects fees and charges to recover investments and profits	Provides authorization and assistance in securing approval of BOO contract. possesses the option to buy the output/service provided by the BOO operator	All BOO projects upon recommendation shall be approved by the PPP unit.
Build-Transfer-and Operate (BTO)	Finances and constructs on a turn-key basis. transfers title of facility after commissioning. operates the facility under an agreement	Owns facility after commissioning	Minimizes construction risk delays
Develop Operate-and Transfer (DOT)	Builds and operates a new infrastructure. transfers property/ facility at the end of the cooperation period	Regains possession of property turned over to investor after cooperation period	Project proponent enjoys some benefits the initial investment creates such as higher property or rent values: akin to BOT with the option to develop adjoining property
Rehabilitate-Operate and-Transfer (ROT)	Refurbishes, operates, and maintains facility. facility is turned over	Provides franchise to ROT company; regains legal title of property/	Also used to describe the purchase of facility from abroad, importing

2.2 DEFINITION OF RISK

Merna and Thani (2005), characterized risk as the potential for unwanted negative consequences of an event or a measure of the probability and the severity of adverse effects. Mostly decisions are made in PPPs based on expectations that might be faced during the project. In this regard, definition of risk and uncertainty by Raftery (1994) is given below:

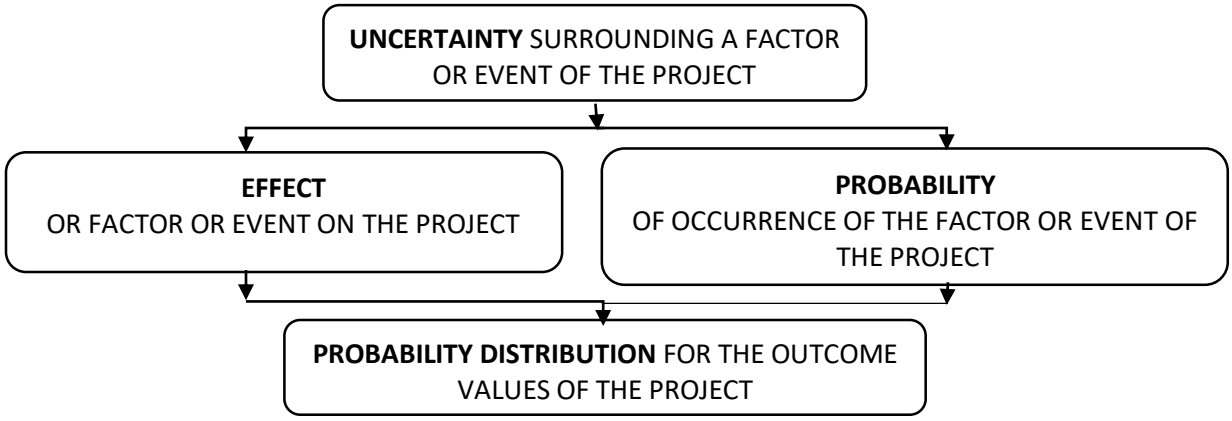
"Risk and uncertainty characterize situations where actual outcome for a particular event or activity is likely to deviate from the estimate or forecast value."

Definitions for risk and uncertainty in a PPP project can be extended by including uncertainties in financial markets, conservation problems, instability in a country's economy, stakeholders' expectation etc. In addition, several absolute definitions for risks for different PPP projects from several references are as follows:

a) According to the standard, BS 6079 (British Standard Institutions, 1996): *'Risk is the uncertainty inherent in plans and the possibility of something happening that can affect the prospects of achieving business or project goals*.
b) Smith (2002): *'Risk is adverse but an unknown by its nature can have both positive and negative effects'*.
c) British Association of Project Management (2002): 'Risk is *a combination or frequency of occurrence of a defined threat or opportunity and the magnitude of that occurrence'*.
d) British HM Treasury (2001): 'Risk is *the uncertainty of outcome, within a range of potential exposures, arising from a combination of the impact and probability of events.*

The thesis revealed that the performance of the project can be affected directly by the risks in the PPP. Figure 1 below shows a concept model of risk that has been developed by Merna and Al-Thani (2005) by including uncertainty, probability, effect, and outcomes of the PPP project.

Figure 1: The concept of risk



Source: Merna and Al-Thani (2005)

Sources of risks

Merna and Thani (2005) stipulated that, the success of a project corresponds with the occurrence of risks. Risks have been categorized into three major captions: financing, political and technical risks. The successes of any project are determined by the overall project cost, duration and quality of the final product or services delivered. Usually the risks correspond with these three parameters. The risks can be clustered into global and elemental risks.

Global risks are defined as risks being exerted externally to the PPP project environment. Adversely, elemental risks originate from the sources within the project structure which are manageable within the elements of the project. Notably, it affects the project's output and translate to the negative impact on the PPP if the partners fail to address risks and identify their sources effectively. Thus, partners must thoroughly investigate the various sources of risk before making any decision on whether to engage or not to engage into a PPP conservation project. The summary of major types, sources and mitigation measures of risks are as tabulated in Table 6.

Over the years it has become the responsibility of the private sector partner to assess and manage the risks effectively thereby minimizing and or preventing any hindrance on the overall performance of the PPP project. Delmon (2000) stated

that, there are also other sources of risk that should be assessed: operational costs, politics and policies, market conditions, stakeholders' cooperation, and credibility together with global economic environment. Considering the findings on the study on the impact of risk to the performance of a PPP project, Zayed and Chang (2002) pointed out that an organized measure of risk management is enough for the concessionaire. The concessionaire must have the ability to limit and confine the impact to the project outcome by understanding, analysing and responding to risks.

Table 6: Types of risks, sources and mitigation measures

Type of Risk	**Sources**	**Mitigation measures**
Country Risk	-Unstable government -Inadequate foreign reserve	-Conduct a thorough country risk profile and budgetary practices by reliable third party such as reputable management consultant or refer to the World Bank, ADB or the United Nations
Financial Risk	-failure to raise finance -Inadequate cash flow -Poor feasibility study -non-viable project	-Consult a top-notch financial consultant to conduct the projection or verifying the financial report of the project
Construction Risk	-Poor project design report -Prolong construction schedule -Changes in factors of production	-Ensure good project design report and vetted by owner and consultant before the project commences
Inadequacy in Concession Contract	-Major terms are not included -Exit clause not done -Variation according to time or economic condition not provided	-Compare the contract with proven and similar good concession contract Engage a good legal advisor who is familiar with the industry in drafting contract
Stakeholders' Risk	-Stakeholder dissatisfaction -Unsupportive stakeholders -Loggerhead between stakeholders	-Work closely with the major stakeholders and know their aspirations
Promotinal risk	-Lack of experience -lack of expertise -inability to allocate risks to the participants best able to market them	-engage an experienced and competitive private partner -appropriative risk allocation
Market Risk	-Change in market trend	-Conduct a thorough market research before embarking on a project
Management Personnel Risk	-Poor working conditions and benefit -Poor information feedback across stakeholders	-Provide good benefits and working environment to selected key management personnel -Creation of efficient communication channels
Operation and Maintenance Risk	-Unreliable operations and maintenance team -Poor machinery and equipment installation Poor technical feasibility reports and design	-Operations and maintenance agreement must have benefits or benefit reduction to operation and maintenance company -Provide a maintenance manual and update it regularly

Types of risks in PPP project

In addition to the risks that have been tabulated in Table 5, there are also other innumerable risks that affect PPP projects in various economic sectors including conservation. These risks are grouped as follows:

A. Financial Risk

Merna and Njiru (2002) have defined financial risk as the negative impact on the financial performance of any PPP endeavour exposed to risk. At times, investors and lenders are aware of certain risks and willing to face it, to gain the profit from their investment. Mostly, the higher the risk, the higher the profit to be gained. Developing countries in East Asia and Africa are facing obvious financial risk and the source of financial risk could be from issues of currency, interests, liquidity and others.

B. Political Risk

This type of risk comprises of the following:

1) Sovereign Risk

According to Merna and Al-Thani (2005), sovereign risk is one that is related to the provision of loans to foreign government and commonly used in banking world. This risk is prone to political environment of the country where the PPP investment will take place. Specifically, sovereign risk occurs when the political environment is unstable, unreliable, and thereby affecting the investor or promoter of the project.

For instance, in East Asia, few of the PPP projects faced difficulties due to political instability. For example, in Thailand most PPPs faced sovereign risks due to frequent change in political leaders. Besides, countries which are under different ideologies e.g. Libya and Saudi Arabia are also facing this risk. In this regard, a PPP project usually face serious risk when there are changes in government's policy and regulations due to changes in ruling government.

Furthermore, the changes in bureaucracy level imposed by reshuffling might have an impact on the decision-making process in a PPP contract. By provision of a guarantee by the host government, the risk is avoided. In addition to that, the concession contract agreement should be based on the International order systems to safeguard the promoter.

2) Country Risk

Country risk is different from the sovereign risk. Country risk is related to overall investment climate in a specific country. The aspects that usually contribute to this risk are socio-economic condition, internal or external conflicts inflicting the country such as corruption, ethnic tensions, policy, and legal aspects. Merna and Al-Thani (2005) suggested that before venturing into a PPP project, it is vital for the partners to conduct a thorough survey on the country risk profile and budgetary practices through a reliable third party (usually a reputable management consultant or a good political analyst or both) to minimize the risk.

It is important to note that in continents like East Asia, consortiums are registered for undertaking most of the PPP project. These consortiums are responsible for the feasibility study up to the implementation of the whole project and operation for a stipulated period. Hence, every foreign investment is subjected to country risk due to unstable government and other components, and inadequate foreign reserves.

C. Technical Risk

Technical risk is the most common and well understood form of risk. Technical risk is the subject of close surveillance. Delmon (2000) deduced that technical risk is categorized into construction risk and operational and maintenance (O&M) risk. To minimize the technical risk, the concessionaire should be assigned the responsibility of evaluating risks in detail to ensure that the project will be implemented according to the intended design specification and in compliance with the

government's legislation requirements and functioning as stipulated. Thus, a well versed and established consultant supported by an experienced contractor should be engaged in implementation of the PPP project without any room for violation of the standard codes and practice.

1) ***Construction Risk***

Considering constructions undertaken to facilitate conservation projects e.g. dams, hotels, might results in the conditions changes which in turn affect the PPP projects. Merna and Al-Thani (2005) cited unknown ground conditions, delay in procuring of construction materials, and price escalation of raw materials as the problems related to construction risk. In addition to that, poor design report, prolonged construction schedule and changes in factor of production also contribute to construction risk. It is essential to make available the design report for review by the partners and consultant before any PPP project commence. Preferably, to have a third independent party to audit and comment on the design and construction methodology which would help in minimizing the construction risks.

2) ***Operational and Maintenance Risk***

During this phase there are other associated risks, for instance, when the performance of a facility is not up to the required level due to technical problems. The use of inefficient machinery and equipment during the implementation phase and poor workmanship during installation phase could results in the poor performance. The backup spare parts for the selected machinery and equipment for the equipment repairs are to be readily available whenever the need arises or purchased at affordable price. Throughout the concession period of the project, the machinery and equipment will undergo routine service due to wear and tear process so as to optimize their performance. Thus, new available technology should be adapted in order to minimize problems during operational phase. Sometimes, initial cost is very high but in the long run it will benefit the consortium.

In addition, Merna and Al-Thani (2005) suggested that the manpower requires specialized technical skills and abilities in operating the equipment. Inefficient manpower would lead to unnecessary high operational costs, and this if unchecked may result in declining revenue generation. It is very important that a proper agreement should be entered into which ensure that the interests of the operator are secured. The efficiency of the equipment's operation could be increased by providing maintenance manual and update it on a regular basis together with standard operating procedure manual.

D. Other Risk

Apart from the risks discussed earlier, there are also others which affect PPP project. Market risk is based on the demand of the product or service upon the completion of the project. Thus, the private partner must conduct extensive market research before embarking on the project. As a standard norm that whenever one ventures into a business, profits are expected to be generated at the end of a stipulated period subject to good management. In PPP projects the profit is realized upon completion of the project. In this regard, poor feasibility study could result in the PPP project failure if there is no demand or failed to attract consumers.

In addition, significant risks occur to the promoter due to poor and inadequate coverage of contract agreements in the concession's contract. This problem occurs during the tendering stage whereby promoters simply tender in without properly understanding of the major terms and conditions of any project as stipulated by the host government. The standard terms should be clearly spelt out and agreed during commencement of the contract, operation and maintenance contract and other

ancillary documents should be agreed by both parties. Delmon (2000) recommended the hiring of renowned tenders to bid or negotiate for the project.

Exit clause is very critical in contract agreement formulation of any type of project and PPP projects are no exception. In most cases in the long run disputes might occur in the PPP projects due to unclear clauses in the project if exist clause was poorly formulated and failed to consider variations according to time or economic condition. These unforeseen conflicts are minimized by exchanging notes and comparing the concession contract with other reputable, tried and tested institutions' approved contracts. A good legal advisor familiar with the industry should be engaged by the partners to check thoroughly the contracts before accepting it. The contract should benefit both parties without burdening the consumers.

Personnel in key management positions of the PPP concession are very crucial and should be qualified in the respective portfolio, since these are the engine of an ideal concessionaire organization and should also engage a highly skilled management considering that they are involved in the project initiation, negotiation, implementation and project management or during transfer of ownership to the public sector partner. This type of management team is familiar not only with the PPP process but with all contractual terms and cycles of the concession contract and actual project management as well. The personnel must be properly remunerated to ensure that the management team is always efficient and productive.

Project risk mitigation in PPP

Merna and Al-Thani (2005), revealed that risk management is a very important tool in mitigating the risks in a PPP project especially in conservation PPPs. The main objective of the partners both from private sector and those from public sector is ensuring a good return on their investment endeavour. Thus, the success of the project implementation and operation in PPPs is evidenced by the generated revenue or profits. Continuing risk evaluation throughout the whole life span of the project is essential in ensuring proper management and operation of the stakeholders' assets and interests. PPP success is maximized through undertaking risk management as part of the business operating process. Delmon (2000) suggested that risk management is not meant to eliminate the risks completely but to identify and foresee the risks and to manage them at a manageable and acceptable levels. Therefore, proper mitigation measures are implemented to maximize the revenue of the project.

Risk Management Technique

. Merna and Al-Thani (2005) pointed out that identification and appropriate risk allocation to the parties that have the greatest control over those risks is key to the success of a PPP project. Smith (2002), cited that despite existence of different types of risks in a PPP contract, the most meaningful aspect is to tackle and allocate these risks effectively to essure smooth project implementation.

Tiong (1990), stated that lenders or investors are exposed to higher risk in PPP projects due to high front-end development costs, lengthy negotiation process and multiparty involvement. Similarly, the promoter also encounters equal significant weight risk over the concession period. An allocation is usually provided in the concession contract which requires the partners to allocate risks to the party who is best able to manage it. Five basic steps have been proposed by. Merna and Al-Thani (2005) to manage the risks systematically:

1) Identify the risk sources
2) Quantify their effect (risk analysis)

3) Develop management responses to risk
4) Provide for residual risk in the project estimates
5) Optimise risk allocation

In most cases, overall risk minimisation depends on the capability of the concessionaire or PPP parties to identify and formulate mitigation measures in risk management. This capability build confidence for the private sector investor and government. Tiong (1990) stated that the partner is bound to realise high profits if the host government is reluctant to provide any financial guarantee. The private sector partners realized that they need to manage the risk by applying all mitigation measure that prevent any negative impact to the project. Even though the profits of PPP project are controlled by the host government, there are some PPP endeavours that give good returns to the stakeholders., this is not limited only to the entrepreneurial capability of the concessionaire but also their ability to be proactive response to any change in the environment or response to any new emerging risks. The success of the PPP project depends on the concessionaire's strategies. The adopted strategies use an advanced proved technology and contracting out the responsibilities, which enables them to understand the nature of the risks and how to respond effectively. In addition, the success of employing risk management system which could reduce the risks to an acceptable level to all stakeholders is desirable. Successful risk management's key principles as sighted by Dallas (2006) are as follows:

Clearly identified and visible senior management support for the project

Explicitly policies are widely circulated to all

The adoption of a transparent and repeatable framework of activities

The existence of a culture that supports and understands the concepts of controlling risk

Fully embedded management processes which are consistent and rigorous complied with and clearly linked to the achievement of the objectives

Implementation of effective plans and regular reviews to ensure that the benefits of the processes are realized, and lessons are learnt for future projects

Dallas (2006) deduced that a well-formulated risk management framework within the promoter's organization is fundamentally important to support the entire process of risk management during the PPP lifecycle. Employed comprehensive risk management system in the PPP would provide the guideline for decision making to all initiated action plan during the life cycle of the project partnership.

2.3 PRINCIPLES OF RISK ALLOCATION IN PPP PROJECTS

The important component of PPP's is the transfer of risk and the key to the success of these projects is the optimal and effective risk allocation. As cited earlier in the literature, the risk should be allocated to the party best able to manage it, i.e. the party with appropriate skills to control over risks. The level of risk and control transfer achieved for a project is also depended on the type of procurement option selected. Conventional procurement methods do not transfer control or risk but at the other end of the spectrum full privatisation totally removes risk and control from the public sector. PPPs secure value for money to the public sector in procurement of services by optimally apportioning risk between the public and private sectors.

Scholarly literature and various guidelines for practitioners extensively discuss risk allocation in partnerships. Hodge (2004) and Hood *et al* (2006) stipulates that PPP governance strategy and partner relations should include risk allocation as one can view it from the two perspectives.

The first perspective is that initial risk allocation must be reflected in the original PPP contract, with an attempt to avoid or even reduce uncertainty regarding which party accepts responsibility for what in case some event occurs. Kleijn and Teisman (2003) suggests that both the public and private partners should share the PPP risks. As accepting an additional risk is likely to increase private partner's costs and decrease its profits, the risk acceptance is subject to discussion during the PPP contract negotiation process and getting some compensation to offset potentially higher costs in the partnership. Effective negotiation of identified risks and related compensation in the initial PPP contract becomes, critical from this perspective, a factor that facilitate partnership success. Researchers often view risk sharing, as one of the main PPP aspects, especially in major partnership projects due to their high capital costs (Hodge and Greve, 2005).

The second perspective suggests that, notwithstanding the contracts, how exactly PPP partners bear the risk during project implementation significantly depends on their interaction (Hofmeister and Borchert, 2004). In some instances, risks may not be spelled out in a contract, and may need further negotiation, whilst some other provisions may be subject to interpretation by either of the parties involved. Moreover, in the long run, new circumstances of any kind may emerge, which may present new challenges that creates the need to reallocate risks, responsibilities, and costs. These may include changes in legislative environment, political and economic reforms, and/or international influences. The PPP partners cannot predict challenges, such as formation of (or phasing out) a regional customs union or a change in the region's administrative boundaries, which may influence the demand for a service. Especially in such cases, it is the partner relationship dynamics, rather than initial risk allocation, which will determine distribution and redistribution of risks and related expenses (Brinkerhoff and Brinkerhoff, 2004).

The European Commission (EC) guidelines for PPPs states that 'risk should be transferred to the party best able to manage it in the most cost-effective manner' (European Commission, 2003: 52), further emphasised that risk has direct influence on the partner's financial position and on the project's total cost. In this regard, risk allocation is not about just transferring some risks from the public sector to the private sector. Effective risk allocation requires finding out which party is going to be in a better position to deal with a kind of risk, so that the risk itself is properly managed, and related costs are at the lowest. Therefore, the lowest cost becomes a critical factor in deciding which partner should bear a certain risk.

The more a PPP project will cost to a private partner, the more the government and/or citizens will have to bear the cost. The degree of risk transfer to the private sector will affect the overall cost of the project to the public sector as all risk will be associated with the price premium. Therefore, the objective must be to achieve a cost-effective risk transfer, not simply a risk allocation for its own sake' (EC, 2003: 52-53). Hence, if greater ability to mitigate some risks and deal with them at the least possible cost belongs to the public sector partner, these risks should remain with the public sector. Those risks that a private partner can mitigate better and cheaper should be allocated to the private sector.

Based on the concept of effective risk allocation, the EC guidelines for successful partnerships points out four objectives for risk transfer, which include (i) reduction of long-term project costs; (ii) creation of incentives to deliver projects on time, to required standard and within the budget; (iii) improvement of quality of service and increase in revenue through efficient operation; and (iv) ensuring consistent and predictable profile of expenditure (EC, 2003: 53). If both partners pursue these objectives, risk transfer, instead of assigning as many tasks and responsibilities as possible to the private sector partner, involves determination of which party can handle each risk best and how cost effective this risk management might be. Guidance for PPPs in New Zealand (National Infrastructure Unit of the Treasury, 2009) illustrates the meaning of proper risk allocation between parties with the following two examples. One example suggests that the public sector should bear the demand risk for a prison because 'the demand for the prison is very much influenced by legislation and therefore by the government's sentencing policy, by the sentencing policy of the courts, by the approach taken by parole boards and by the

Department of Corrections' prisoner management policies' (National Infrastructure Unit of the Treasury, 2009: 17). Furthermore, Guidance concludes that transferring demand risk to the private sector partner would therefore be an inefficient allocation of risk.

2.4 CONCEPT OF STAKEHOLDER SATISFACTION

To enhance the soundness of performance measurement for PPP projects, Henjewele et al. (2011) suggested that meeting clients' or PPP partners' requirements should be regarded as a core dimension in performance measurement of PPPs. As observed by Ng et al. (2010), a PPP project is successful only if the key interests of all stakeholders are satisfied.

Akin Toye et al (2003) and Kanji (2002) referred to stakeholders as all parties that influence the PPP project and its outcomes. These include the community, public sector, private sector and others. several authors tried to put across factors that determine stakeholder satisfaction in PPP projects and the Table 7 below outline them clearly

Table 7: Determinants of stakeholder satisfaction

Determinants of stakeholder satisfaction	References
The service provided is of high quality	Akintoye et al (2003); Kanji (2002); Campell and Finch (2004)
The service delivery is prompt, stable and reliable	Akintoye et al (2003) ; Kanji (2002) ; Campell and Finch (2004)
The cost of service is reasonable	Akintoye et al (2003) ; Kanji (2002)
There is time saving in the construction of the facilities	Bryde and Robinson (2005)
There is cost saving in the construction of the facilities	Bryde and Robinson (2005)
There are innovative solutions in the project	Kanji (2002)
The private sector can meet the output requirements specified in the contract	Bryde and Robinson (2005)
The project creates business opportunities for the private sector	Akintoye et al (2003); Kanji (2002)
Reasonable revenue can be generated from the private sector	Nijkamp et al (2002); Kanji (2002)
A good relationship can be built between the public and private sector	Bryde and Robinson (2005); Peters and Phillips (2004)
The procurement procedure is fair, open and transparent	Akintoye et al (2003); Nijkamp et al (2002); Campell and Finch (2004)
A level playing field in the market between similar projects	Hurst and Reeves (2004)
Efficient channel of communication between the community and the service provider	Campell and Finch (2004)

E. Botwe (2015) cited that the key aspect or provision towards achieving stakeholder satisfaction is a proper Stakeholder's Management. Effective and formal stakeholder management process is critical in addressing stakeholder requirements and satisfaction, which is also an important project success factor. Developed countries have embraced stakeholder management for PPPs as a project management skill and consequently developed suitable approaches for improved project delivery though developing countries are yet to follow suit. Several conservation studies have linked project failures to poor stakeholders' project acceptance, the absence of formal stakeholder management process, industry challenges and lack of proper documentation in developing countries e.g. Ghana. Stakeholder management is essential to achieve stakeholder needs and satisfaction (PMI, 2013).

Stakeholder Management Process

Jergeas et al. (2000) cited the need for efficient management of the relationships between the project and its stakeholders as an important key that enhances project success. Bourne and Walker (2005) confirmed that Stakeholder Management (SM) is an effective approach of bringing stakeholder concerns to the surface and developing robust stakeholder relationships in complex PPP project environments. Jergeas (2000) pointed out that SM should include identifying, gathering information and analysing stakeholders influence, Challenges to project managers include the identification of diverse stakeholders and the best approach to stakeholder management for effective and early detection of negative impact on project delivery as cited by (Chinyio and Akintoye, 2008; Mok et al., 2015). Yang (2010), who further outlined a chronology of stakeholder management models, processes and approaches to include; Stakeholder Matrix (Chinyio and Olomolaiye, 2010; Newcombe, 1996), Stakeholder Circle Tool (Bourne, 2005), Social Network Analysis (Bourne and Walker, 2005; Rowley, 1997) and stakeholder management framework for developed countries. Eyiah-Botwe (2015) has shown that most project managers in Ghana (a developing country) considers only some aspects of SM and keeps mental record instead of documenting and without a formal process. Gibson (2000) argues that this contradicts a current trend in PPP project development where stakeholder management process involves a high level of the pre-project planning effort and can save a considerable amount of cost and also of scheduled in facilities projects if considered.

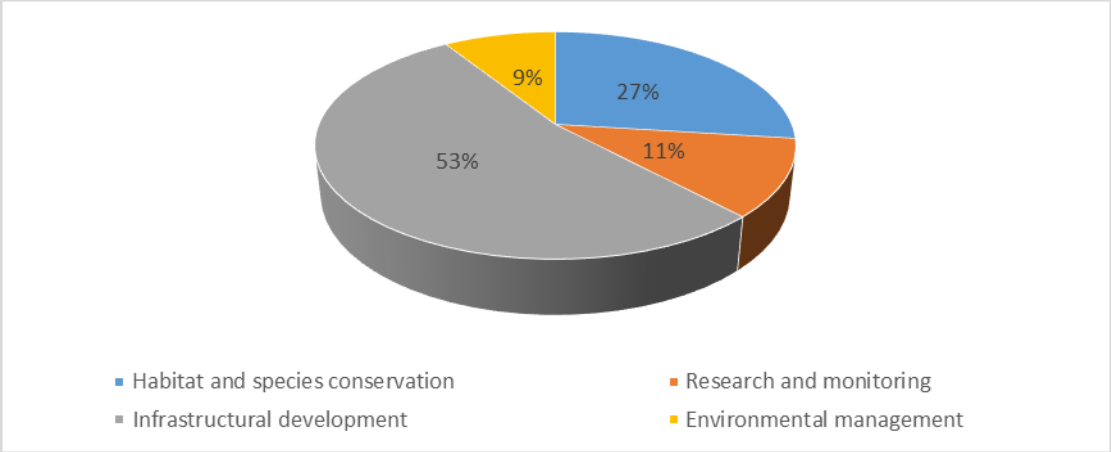
2.5 EVOLUTION OF MONITORING AND EVALUATION APPROACHES IN CONSERVATION

Although stakeholders do not realize that undertaking project evaluation daily will help in decision making. These might be as simple as choosing which project idea sounds interesting or as complicated as finding all risks associated with a project and how to mitigate or reduce them. Anytime we gather and use information to help make an informed decision, we are employing evaluation techniques. Just as we employ evaluation in our daily lives to understand a situation or make sound decisions, so does policy makers, programme officers, project donors, and the public use evaluation to understand their areas of interest and to take appropriate steps to improve them. In the field of conservation, evaluation has taken on increasing importance over the past two or three decades, as the conservation community struggles to determine and demonstrate progress made towards protecting and effectively monitor the Earth's resources.

According to Delmon (2000), specialists in evaluation agree that approaches to effective evaluation vary by context and serve different or multiple purposes, depending upon the interests of those controlling or affected by the evaluation. A few common terms describing these purposes may involve knowledge generation, project improvement, accountability, transparency, resource allocation, advocacy, and impact assessment. There are a number of different primary purposes that are brought about by project evaluation in conservation. The categories proposed by Mark et al. (2000) are knowledge building, merit judgement, project improvement, and compliance. These also correspond closely with the purposes of evaluation as identified by Patton (1997): render judgment, facilitate improvements, and/or generate knowledge.

These days the wildlife and conservation arena has evolved rapidly and is being exposed to stiff competition. This is because of the rise in demand of competitive tourist products. This has seen more Governments and conservation organisations engaging PPP partners for project delivery. The figure 2 below shows the global commitments of PPPs in conservation. Figure 2 also highlight that many organisations are evolving from only conservation to setting up infrastructure that goes hand in hand with conservation e.g. hotels, dams and motels

Figure 2: PPP commitments in areas of conservation



Source: World Bank PPI Database

This rapid absorption of PPPs has brought many challenges associated with PPPs, threatening the performance and profitability of these organisations. Stem et al (2005) suggests that legal frameworks are essential in supporting these conservation projects profitability. These also assist in risk mitigation and enhancement of the stakeholder's satisfaction. This point to the fact that more work must be undertaken in the evolvement of the PPP conservation projects.

2.6 THE STATE OF PPP CONSERVATION EVALUATION

While there is limited literature in conservation regarding the objective of this thesis, literature that describes elements for comprehensive evaluation of conservation PPP endeavours is surprisingly thin. In the past, a major emphasis by donors and conservationists alike has generated enthusiasm for evaluating conservation effectiveness of PPPs, but the results to date have been largely disjointed or often too abstract to guide practical application in the field.

In a recent editorial, a cast of prominent scientists challenged the conservation community to improve PPP projects evaluation (Saterson et al. 2004). In this statement further highlighted the importance of a systematically evaluating the impacts and costs of individual approaches and synthesizing site-specific information to enable comparisons of relative effectiveness among conservation approaches. In addition, PPPs in conservation projects have emerged liable to scrutiny and assessment. Indeed, this challenge is warranted as stated in the opinion of Stem et al. (2005), who performed a recent review of existing PPP conservation evaluation approaches. They note that the conservation community and project partners are yet to develop a common conceptual basis for evaluation, or reliable usage of available tools. They conclude that concerted and coordinated efforts are needed in developing commonly accepted evaluation systems and models for the conservation community.

According to a study by Hardner and Gullison (2005), the response to that call are recent initiatives that have taken collaborative approaches to developing indicators and evaluation of PPP programs. These were outlined by the National Fish and Wildlife Foundation (NFWF) and the Bureau of Land Management (BLM). The first is The Climate, Community, and Biodiversity Alliance – a partnership of research institutions, corporations, and environmental groups formed to develop legal frameworks standards for PPP conservation projects. The initiative has generated an evaluation system that allows third party evaluators to assess the profitability contributions of conservation PPP projects.

The second, is a joint effort between the energy sector and the conservation community entitled the Energy and Biodiversity Initiative (2004). According to Hardner and Gullison (2005) this joint effort describes the attributes of useful conservation indicators following the *SMART* philosophy – that is, indicators should be *specific*, *measurable*, *achievable*, *relevant*, and *timely*. Their philosophy runs through a variety of conservation contexts and the application of different biodiversity indicators, emphasizing practicality, reliability, and interpretation of the generated data. This was heavily tilted towards risk identification and allocation.

The third is The Nature Conservancy's *Measures of Success* initiative. Parrish et al. (2003) lay out a framework for measuring the performance of conservation and protected areas. Their framework has four main components: 1) identifying a limited number of focal conservation targets for stakeholder satisfaction; 2) identifying key evaluation attributes for these targets; 3) identifying an acceptable range of variation for each attribute as measured by properly selected indicators; and, 4) rating target status based on whether the target's key attributes exceed its acceptable range of variation.

There is also another recent initiative focusing on how to use monitoring data in the adaptive management of conservation projects. An array of conservation organizations including African Wildlife Foundation, Conservation International, The Nature Conservancy, Wildlife Conservation Society, World Wide Fund for Nature/World Wildlife Fund, Foundations for Success, Cambridge Conservation Forum, Enterprise Works Worldwide, and World Commission on Protected Areas, produced *Open Standards for the Practice of Conservation* (2004). This document offers a systematic approach to the process of monitoring and evaluation in conservation, composed of several steps which includes the following:

- Developing a conceptual model for evaluating the PPP conservation projects
- Developing an action plan and monitoring and evaluating the project risks and system
- Implementing actions and monitoring
- Analysing information frequently and communicating results to project team and all stakeholders
- Adapt action plan and monitoring based on results
- Develop a clear dissemination strategy to stakeholders
- Iterating the process

2.6.1 Considerations for PPP projects in conservation

The financing of a conservation project though a PPP is not a simple task because there are a minimum number of decision factors that must be taken into consideration before the PPP engagement. Most organisations including national parks authorities engage into different PPP modalities before analysing or evaluating these factors.

A. Grigorescu (2008) outlines that every PPP project endeavour must have expected benefits for it to facilitate favourable financing. This means that if a project is in line towards profit making there must be a projection of expected profit. If it is

a conservation project, it must have its conservation goals. Stem et al (2005) challenged PPP arrangements to have clearly laid out expected goals and intended benefits for the projects to be financed.

Some projects tend to ignite and lure favourable financing interest from the private sector due to the availability of public services and facilities at requested level. A. Grigorescu (2008) argues that the private sector hesitates to enter PPP arrangements with a public partner without the necessary services or facilities that complement the project intended. For instance, for one to engage into a PPP for sustainable conservation and tourism growth the public partner must have the necessary hotel infrastructure and or even an adequate land for wildlife conservation.

Every PPP modality is exposed to risks peculiar to it. According to Merna and Thani (2005), risk is defined as the potential for unwanted negative consequences of an event or a measure of the probability and the severity of adverse effects. BS 6079 (British Standard Institutions, 1996) also defines risk: 'as the uncertainty inherent in plans and the possibility of something happening that can affect the prospects of achieving business or project goals. When these adverse effects happen, a favourable PPP agreement share risks equally since both the private and public sector are working toward the same objective. A. Grigorescu (2008) therefore puts it across that the implication of both parties is a favourable project financing factor.

Stem et al (2005) argues that for a conservation project to attract PPP financing or donor funding there must be the existence of achievable key performance indicators. They define key performance indicators as a set of quantifiable measures that an organisation uses to gauge its projects' performance over time. Hence, they argue that PPP project financing is dependent on the existence of achievable performance indicators.

Ng and Wong (2010) states that the existence of favourable and sound PPP legal frameworks is a huge facilitating factor to PPP financing. Stem et al (2005) reviews that if governments put in place sound PPP legal framework, more PPP arrangements for financing conservation projects in national parks will emerge. This will bring mutual gain and a level playing field between the private and public sector.

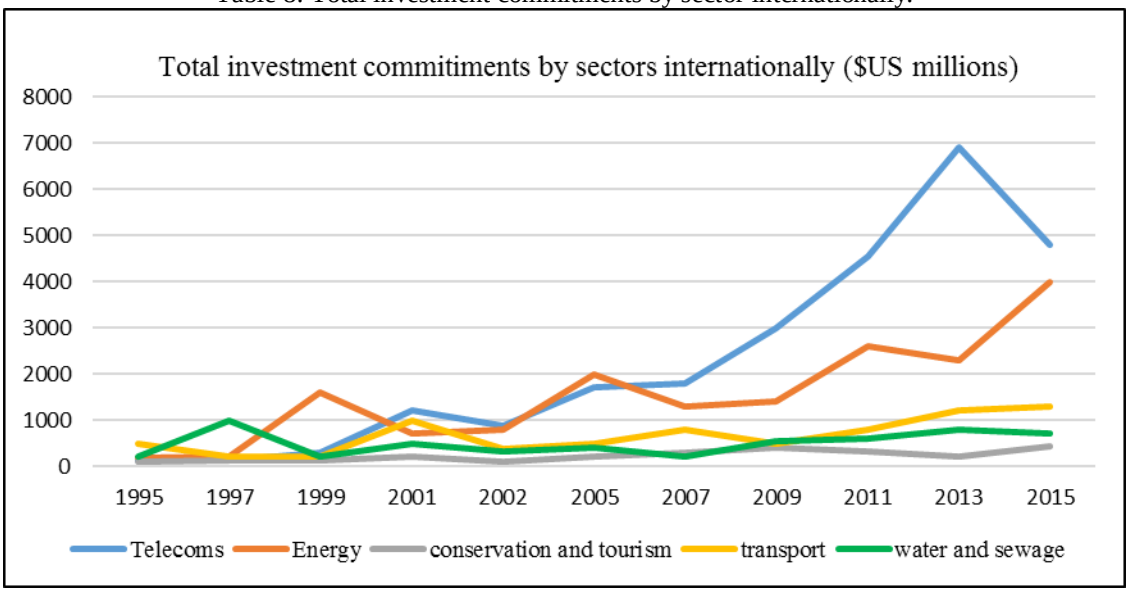
The essential PPP elements of conservation or infrastructure project planning are clearly formulated goals, objectives and activities, a coherent work plan and corresponding budget, and a stakeholder engagement strategy. Hardner and Gullison (2005) reviewed that excellent PPP projects tend to have a logical framework or a similar planning document that lays out the "big picture" and work plans and budgets to provide the supporting detail of how a project will be implemented. Hence procedures/regulation of project implementation is a prerequisite when it comes to financing. Excellent projects also have a stakeholder map that identifies those parties that are either exposed to risks as well as the conservation project, and a mechanism for engaging them appropriately in planning and executing the project. According Hardner and Gullison (2005) projects that most often scored poorly are small and of a short-term nature. In most cases the public sector does not see the need for comprehensive procedures or regulation of project implementation, but the positive impact of the project can be enhanced by intensive planning.

2.7 STATE AND PERFORMANCE OF PPP PROJECTS GLOBALLY

Among the four sectors tracked by the World Bank (2013) PPI database, there are large differences in both the absolute levels of investment and their growth rates. The transport sector has the longest record of PPP projects, with most investment going towards roads. However, investment growth has been strongest in the energy sector. Investment in PPPs in electricity

provision has increased rapidly in the past decade, with an average annual growth rate of 15.2 percent since 2000 as stated in the study by Farlam (2005) in which it was stated that different countries have experienced a growth in the uptake of PPP concessions resulting with them being better through optimal risk allocation policies and procedures. Most of the countries with a low uptake has more unfavourable risk conditions and major stakeholder dissatisfaction especially in African countries among them Zimbabwe.

Table 8: Total investment commitments by sector internationally.



Source: World Bank PPI Database

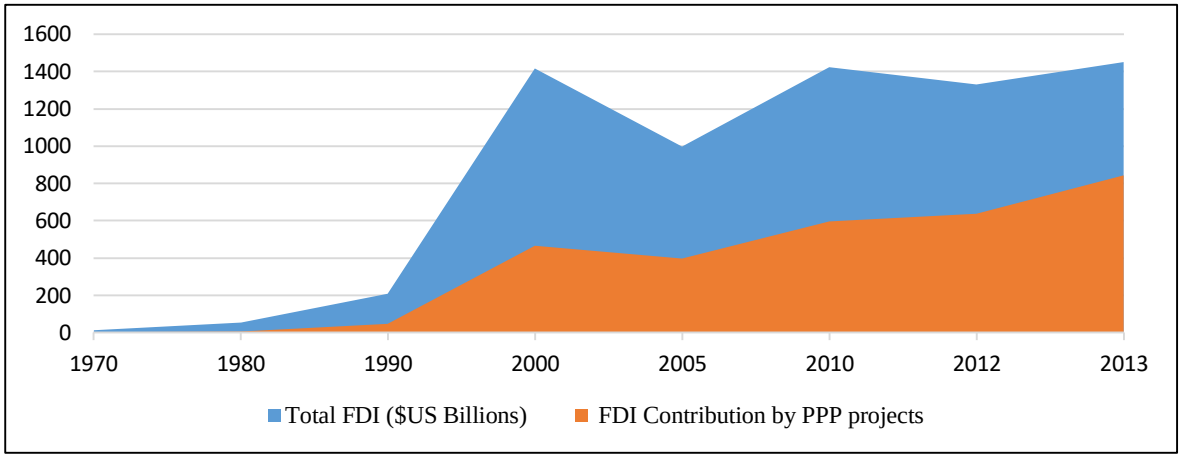
A number of PPP projects in the water and sewerage sector have been implemented over the past couple of decades, however, public opposition over user fees, operational difficulties and legal frameworks have often plagued their implementation (Farlam, 2005). For that reason, many governments have opted to maintain full public control of these utilities.

As more countries engage with the private sector, governments have learned from their experiences that there is need to improve their existing policy frameworks governing PPPs. Countries in the developed world e.g. Australia and the United Kingdom have accumulated a wealth of experience in implementing PPPs over the past couple of decades. In these countries, PPPs are a fully integrated part of their long-term economic development strategy (Kwak et al., 2009). The aftermath of having dealt with about plus or minus twenty percent of the potential downsides of PPPs has facilitated revived PPP principles in these countries. Hence, the experience of these countries is helpful in understanding lessons learned for countries that are still in the process of developing their own policy frameworks. For example, The Private Finance Initiative (PFI) was introduced in the UK in 1992 with the rationale of "harnessing the private sector's management skills and commercial expertise, to bring harmony and discipline to the delivery of public infrastructure" (UK HM Treasury, 2012). A bigger percentage of the intended objectives of the initiatives have been achieved, such as the on-time and within budget completion of infrastructure and conservation projects, certain projects had sub-optimal outcomes due to several factors. Some of the drawbacks that have been noticed in the implementation of PPPs in the past two decades include expensive procurement processes, inflexible contracts, inadequate transparency of the future liabilities of projects, and the perception of exorbitant profits by equity investors. To arrest and mitigate these issues, the UK government launched a new approach under the moniker PF2 in 2012. The updated policy framework seeks to widen the sources of equity and debt financing

instruments, to improve 'initiatives' value-for-money proposition, reducing the time and cost of procurement processes, increase the transparency of the liabilities created by long-term projects, and introduce greater flexibility into PPP projects. While the full extent of the impact of these changes are yet to be seen and observed, this iterative approach to the policy framework is based on years of trial and error – a process which is highly inevitable given the unique aspects of each national context.

In terms of specific major recipient countries of FDI inflows around the world, PPP projects have become major contributors to the growth in FDI inflow throughout sectors of the economy. In 2012 alone, the PPP projects contributed about 48% of total inflow of FDI in major economies as shown in the Table 9 below. As reported by the World Bank and IMF these economies e.g. Europe have favourable legal frameworks for PPP engagements which facilitates massive stakeholder satisfaction.

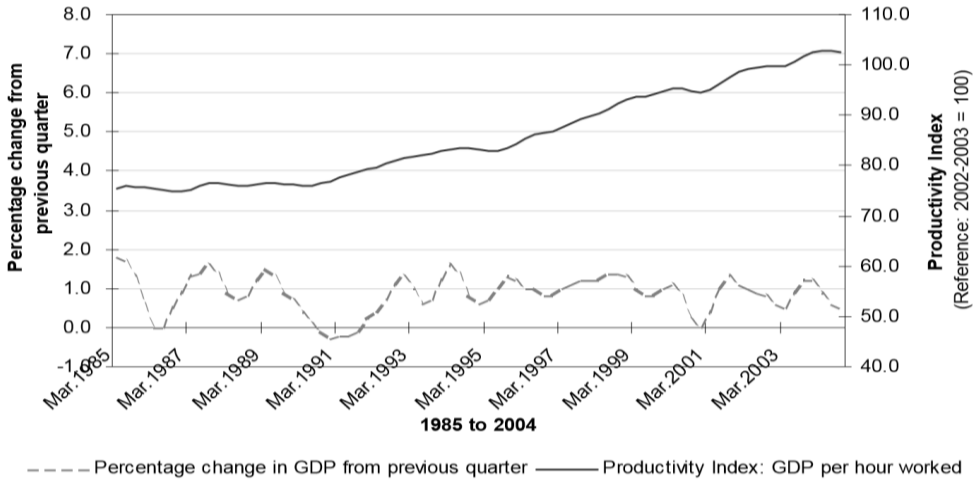
Table 9: Global contribution of FDI by PPP projects



Source: World Bank PPI Database

A number of studies show that the European economy has been buoyant since 1991, ABS (2004). The economy has had an average growth rate of over 3.3 percent per annum over the last two decades or so as shown in figure 3 below. During this period of growth earlier difficulties with deficits and excessive loan balances have been managed with most European governments now operating on a surplus budget. It is also evident that the efficiency of infrastructure investment has contributed to improved productivity, (EPAC, 1995). It has been in this environment that PPPs have matured. In Europe, PPPs are a risk-sharing relationship between the public and private sectors which exist to bring about a desired public policy outcome though the delivery of public infrastructure-based services involving private sector capital investment. According to ABS (2004), this growth in PPP projects is hinged to optimal risk allocation, stakeholder satisfaction and vibrant legal frameworks.

Figure 3: European GDP growth and productivity growth

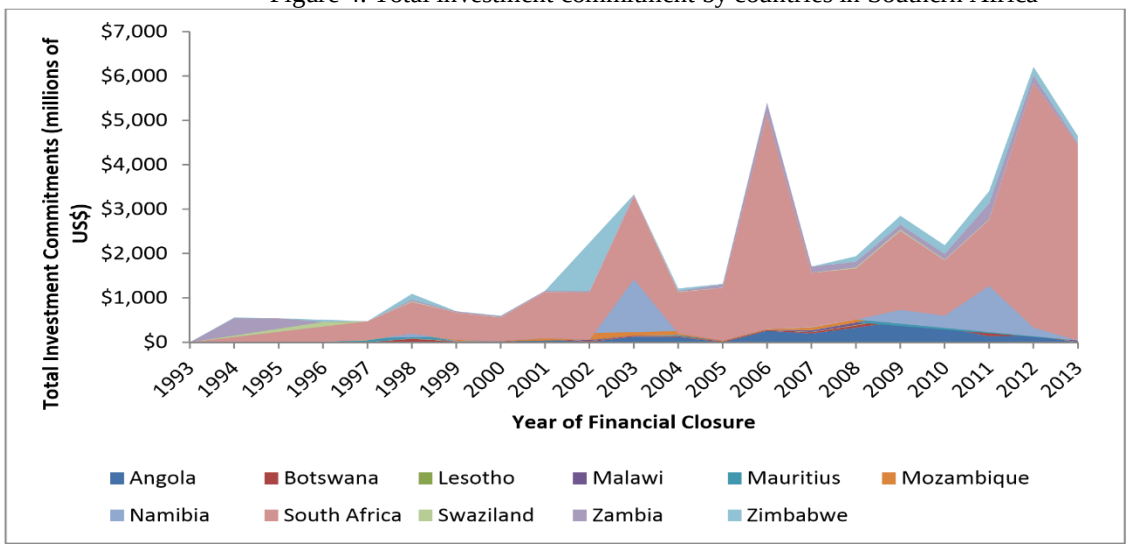


Source: World Bank PPI Database

2.8 STATE AND PERFORMANCE OF PPP PROJECTS IN SOUTHERN AFRICA

In line with global trends, the prevalence of PPPs has subsequently increased in the Southern African sub-region. Among the 11 countries covered by the United Nations Economic Commission for Africa's Sub-Regional Office for Southern Africa, there have been 81 Greenfield PPP projects that commenced since 1993 to 2013. These have a total investment commitment of about US$40.9 billion according the World Bank's PPI database. However, PPP investments are not evenly distributed effectively across the Southern African sub-region. About 77% of total PPP investment commitments in the sub-region is in South Africa, which has the longest history of engaging in PPPs in the majority of its sectors. While there have been investments in energy, transport, and the water and sewerage sectors, the predominant sector in the sub-region in terms of investment commitments has been telecoms. It had an investment of US$24.6 billion spread out over 24 projects. Looking in terms of the number of projects, the energy sector has led the way with 48 projects, 31 of which were in 2012 and 2013. Despite the massive recent growth in PPP projects in the energy sector, 30 of the 31 energy PPP projects since 2012 were in South Africa.

Figure 4: Total investment commitment by countries in Southern Africa

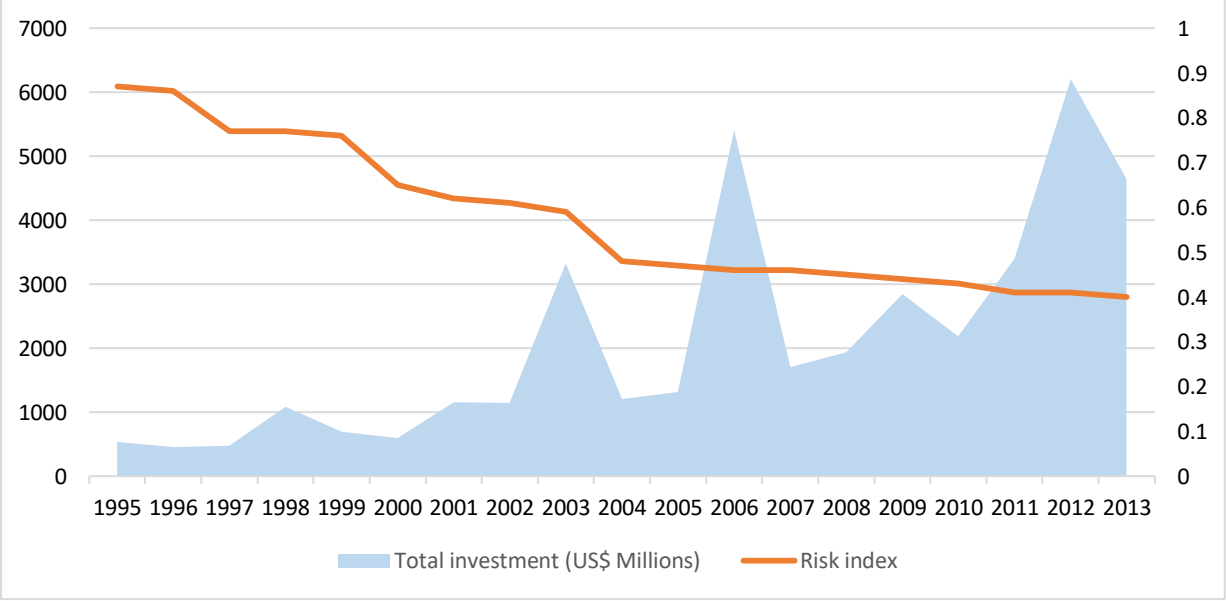


Source: World Bank PPI Database

After South Africa, the countries in the sub-region with the next highest levels of PPP investment in infrastructure are Mozambique and Angola, both with over US$2.2 billion in total investment commitments across sectors. In this regard, the 2003 Mozambique-South Africa gas pipeline project garnered US$1.2 billion in investment commitments, thereby leading energy to be the sector with the highest amount of private investment in the country. A number of, smaller projects in the telecom sector account for the remaining part of investment commitments. In Angola alone, investments in telecoms accounted for 92 percent of total investment commitments. Investments under the energy sector account for the remaining US$174 million in Greenfield project private investment.

The study reviews that, Zambia and Zimbabwe have also received over US$1 billion in investment commitments from the private sector, in the telecom sector. Other countries in the Southern African sub-region have not experienced the same levels of investment. Namibia has received only US$9 million in Greenfield project investment from a mobile telecom access project in 2007 alone. While Mauritius has implemented 10 PPP projects, second only to South Africa in the sub-region, investment levels have been small i.e.US$183 million in total investments. The Bell Vue Power Plant project of 1998 accounts for over half of the total investment. Lesotho, Botswana, Malawi, and Swaziland have all encountered a steady flow of PPP investment into the telecom sector, but at lower aggregate amounts than other countries in the sub-region. In this regard, an overall assessment has shown that Southern African countries are engaging and absorbing PPP concessions but at a slower rate than the developed nations. The gradual increase in the PPP trend is because of the decline in the risk index as pointed out by the PPI database.

Table 10: PPP total investment in Southern Africa and risk index



Source: World Bank PPI Database

Policy and legal Frameworks

Considering efforts at the sub-regional level, PPPs have been promoted and facilitated by two of the regional economic communities (RECs), the Southern African Development Community (SADC) and the Common Market for Eastern and Southern Africa (COMESA). Following the SADC Regional PPP Forum in 2011, the SADC PPP Network was launched. The objective and mission was to "*strengthen the capacity of the public sector to engage in PPPs*" (SADC PPP Network, 2014). Moreover, in recent efforts, COMESA has called specifically for PPPs in agriculture to help enhance food production

(Zambia Daily Mail, 2014). Although partnerships between the public and private sectors is being promoted by the RECs of the sub-region, many countries still do not have well-established legal and regulatory frameworks for dealing with PPPs. Moreover, neither of these RECs have provided general guidelines for what features national rules and regulations should be incorporated or encompassed by the countries in the region.

PPP laws and institutions are becoming increasingly common in the countries around sub-region, even though in a number of cases there are still underdeveloped. In the sub-region, only Mauritius, Botswana, Malawi and South Africa have established PPP units although multiple countries have passed laws mandating their creation soon. International experiences revealed that central units can provide guidance on PPP projects and serve in a coordinating role between various public agencies, which can be highly valuable (UNCITRAL, 2001).

In the sub-region South Africa has had an established framework for the longest, having developed a strategic plan for PPPs in 1999. South Africa's PPP unit was registered under the National Treasury in 2000 and subsequent legislation and PPP manual helped solidify the policy framework for PPPs in the country (Burger, 2006). In addition, a crucial aspect of PPPs in South Africa is the incorporation of Black Economic Empowerment as a weighting factor in the evaluation of bids (National Treasury of South Africa, 2004). Though in 2013 alone, South Africa implemented 42 Greenfield projects – far more than any other Southern African nation.

The Finance Minister of Mauritius announced that the government would establish a framework for PPPs during the presentation of the 2002/2003 budget. A PPP Unit was proclaimed under the Ministry of Finance in 2002 and Mauritius put in place the Public-Private Partnership Act in 2004 after the Assembly approved it unanimously (Mauritius Board of Investment, 2009). The Public-Private Partnership Act specified the roles and responsibilities of the contracting authority, the PPP unit, the Central Procurement Board, and Transaction Advisors as well as details on the appropriate process for approving and implementing projects (Government of Mauritius, 2004).

In Botswana, the cabinet approved the PPP Policy & Implementation Framework in 2009 which was to be implemented by Public Enterprises Evaluation and Privatization Agency (PEEPA), but to date there have been few PPPs in the country (Mannathoko, 2012). In 2012, a PPP unit was setup by the Ministry of Finance and Development Planning, even though the impact on the number of projects has yet to be seen. The Government announced first time in the 2002/2003 budget speech and in the National Development Plan (9) its commitment to embracing use of PPPs as the effective means of procurement and financing of infrastructure projects (Ministry of Finance and Development Planning, PPP Policy and Implementation Framework, 2009, p.1). For the establishment of a strategic Framework for PPPs in Botswana, the Public Enterprises Evaluation and Privatisation Agency (PEEPA) conducted an evaluation of the environment for PPPs with the financial and technical assistance of SADC Banking Association. Recommendations included the necessity to introduce standardized approaches and process guidelines, and a stable policy environment as well as an enabling Legal Framework.

In 2007 Zambia passed a PPP Policy and in August 2009 the parliament passed the PPP Act. However, as early as 2014, there was only one concession agreement under its provision. The PPP Act of 2009 called for the establishment of a resolute PPP unit; since the unitwas yet to be properly established. However, cabinet approval in late 2013 to institutionalize the PPP unit into the Zambia Development Agency inaugurated the setting up of this group (Zambia Development Agency, 2014).

In 2010, Malawi passed the Public-Private Partnership Bill which established the PPP Commission, institutional arrangements, procedures for PPPs, divestitures, and other types of privatizations. This Bill also specified the financing arrangements and provisions against corruption (Government of Malawi, 2010). Malawi's PPP Commission consists of the Solicitor General and Secretary for Justice, the Secretary of the Treasury, the Secretary responsible for Economic and Development Planning, the Secretary responsible for Industry and Trade, and four other members appointed by the President. This PPP Commission serves as the implementation agency for PPPs in Malawi and is responsible for developing guidelines and best practices for government agencies which are implementing PPPs. Despite the new guidelines, only one new investment was effected by 2012 since the law's passage in 2010, and it was listed as distressed after questions of corruption arose (Nyasa Times, 2012).

According to Bloomberg (2013), Angola passed a Law on Public-Private Partnerships (*Lei Sobre as Parcerias Público Privadas*,) in 2011, establishing a legal framework for PPPs in the country. The law was passed by the Ministerial Committee for the Evaluation of PPPs, which is responsible for determining the operating procedure for the selection of partners, approve proposals with the prior opinion of the ministry responsible for the sector, guide the hiring process in consultation with the Court of Auditors, and consider the reports on project execution. The committee is made up of the Ministers of Economy, Finance, and Planning, and may also include the minister of the sector in which the PPP is taking place together with the provincial governor of the region in which the project is to be implemented. It is the duty of the Committee to decide on whether to move forward with a given PPP and its conditions. On approval, it is the responsibility of the ministry of the sector to follow procedures for selection of a PPP partner and the negotiation of the terms of the partnership. While the law stipulates that a General Plan of PPPs be formulated, and more specific regulations be established, these additional steps have not yet been implemented. When asked in an interview in 2013, the Minister of the Economy, Abrahão Gourgel, stated that the country is "*going slow*" while the potential benefits of PPPs for Angola are being evaluated (Bloomberg, 2013).

Mozambique enacted PPP Law in July 2011. This development was followed by PPP regulations, which were enacted a month later in August 2011, NEPAD (2014). This law provided a general framework for PPPs while accompanying regulations established the procedural rules to be complied with in respect of each of the steps of the PPP process. In addition to this, the law also established the institutional framework for PPPs. It stipulated that a PPP unit should be set up in the Ministry of Finance. However, the PPP unit has not become operational up to date. In this regard, the City of Maputo has a stand-alone PPP unit for municipal projects. Even though the institutional environment for PPPs in Mozambique is not complete and well spelt, the country's experience in negotiating contracts for previous PPPs such as the N4 toll road between Maputo and Witbank, South Africa and the renovation of Maputo port has given it valuable experience in PPP concessions.

Swaziland enacted PPP Policy in 2013 with the objective of engaging the private sector in infrastructure development projects and enhanced service delivery, World Bank PPI database (2013). The purpose of the policy was to facilitate a framework for engaging in PPPs and developing governance structures to help achieve the objectives of PPPs. Despite that the policy mandates the creation of a PPP unit within the Ministry of Finance, this unit is yet to be established. There has not been a high level of private sector investment in the country. According to the World Bank PPI database (2013), there was only one Greenfield project, namely the MTN Group's investment in the telecom sector.

Namibia has approved a draft PPP policy and the process to put in place its legal framework has begun (AfDB, 2013). In Namibia the country's industrial policy sees PPPs as a potential financing solution for project implementation (Namibia Industrial Policy, 2013). Its Ministry of Health & Social Services has a proposed framework in place to engage in PPPs based on the Draft PPP Policy (Namibia Ministry of Health & Social Services, 2014).

The other countries in the Southern African sub-region have yet to pass legislation on PPPs at the national level. Despite Lesotho lacking a PPP unit with a nationwide mandate, the Maseru City Council has established a PPP Management Unit (UNDP, 2010). Zimbabwe currently lacks a legal framework, unit, or investment code for PPPs (AfDB, 2013). According to The Zimbabwe Sentinel (2014), Zimbabwe was heavily dependent on colonial era policies of partnering private players and do not have enough legislative reforms and operational policy frameworks to support new legal policies. This is unlike the PPP legal frameworks in the neighbouring South Africa, where PPPs such as the Eco-tourism concession in the Kruger National Parks are flourishing.

Based on the legal and institutional frameworks described above, it is evident that PPPs are an area that almost all governments in the sub-region have shown interest in but are yet to venture into them. These findings show that for governments to benefit from partnering with the private sector, the right institutional structures and expertise must be in place to make the relationship mutually beneficial. These institutions and policies should be formulated through a participatory process and ensure that there is adequate risk sharing between parties and robust oversight of the entire PPP process.

2.8.1 Evaluation of public-private partnerships in Southern Africa and emerging issues

Numerous studies have proved that PPP arrangements are still in their infancy in Southern Africa, and the limited record on the performance of PPPs portray mixed outcomes. As indicated earlier in this thesis, that PPPs were being implemented in only a few sectors and in only a few countries. Confirming an earlier observation that, in general PPP projects focussing on delivery or improving economic infrastructure have a better chance of success than those focussing on delivery of social services. Moreover, there is lack of evidence to show that these projects provided value for money. This section highlights the PPP financing successes and failures of a smaller percentage of these projects, and the underlying source of such outcomes.

Farlam (2005) records a series of studies about the performance of PPPs in different sectors in a sample of African countries from the mid-1990s. The National Treasury of South Africa's PPP Unit, the focal institution for PPPs in South Africa, also highlights projects carried at that stage around South Africa (National Treasury of South Africa, 2007). Here, PPP arrangements have been wide-ranging, covering social and economic infrastructure (e.g. hospital, roads, and conservation and government buildings), IT and distribution of state welfare grants.

In tourism, Farlam (*op. cit.*) describes the build-operate-transfer concession that South African National Parks (SANParks) engaged with private grouping to outsource management of shops, restaurants, and picnic sites in the Kruger National Park game reserve. The results for these partnerships were improved profits for SANParks, the improved quality of service for tourists and upgrading of the facilities. On the other hand, staff resistances grew as conditions of service were eroded in the changeover. In this regard, the key issues included lack of transaction skills on the part of the public sector negotiators as well as an experienced service provider. The government also failed to ensure that competition will not emerge in certain

areas after the withdrawal. This resulted in public monopoly morphing into private monopoly and subsequent sub-optimal service provision.

Among the less successful stories described by Farlam were South Africa's concessions to build and operate conservation infrastructure projects in national parks. The facilities in the country were fully operational within two years, though the cost to government turned out to be more than what had been anticipated. Whistle PPPs were reported to have been providing high quality service and that the cost of each project was comparable to that of public projects, the design and operating specifications were far too high. Importantly, the government had failed to conduct a proper feasibility study to set affordability limits prior to the availability of the public services and facilities to the requested level. In this regard, the government was forced to enter into a renegotiation so as to extract value for money. This was due to the adverse effects (risk) on the expected benefits of the projects.

Non-government organizations (NGOs) in South Africa and other countries have often taken a cautious view of any takeover of public services by private sector. With respect to PPPs, the trade unions in particularly have been scathing in their evaluation of PPP performance, calling "*for a review of the current policy framework and public-private partnership unit within the Treasury*" (COSATU, 2012, p. 17). Broadly, the non-state critics in South Africa rejected the broad justifications for embracing PPPs arguing that this "privatization through the backdoor approach" has not reduced risk for government and has in fact proved costly both to government and to the citizens (COSATU, *op. cit.*; September Commission, 1997). In addition, government has not consulted widely in the formation of the legislation and regulations governing important PPP projects in the country. Even where there have been engagements, these seem to have been forums facilitated "*to make it easier for people to comply*" offering no room for non-state parties to influence the shape or implementation of such frameworks for favourable PPP environment.

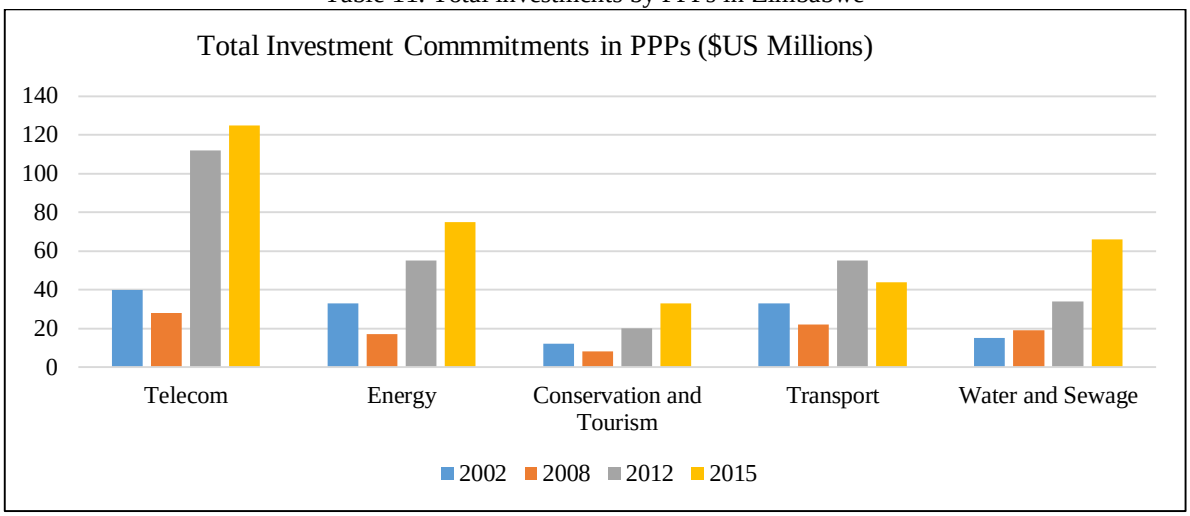
According to Hardner and Gullison (2005) PPP financing of projects in Southern Africa has not been a major success story even though most countries like South Africa, Zambia and Botswana are taking up PPP projects as an option for financing conservation and infrastructural projects for tourism growth. Factors have been outlined so that they are considered before engaging into these PPPs. These include existence of interest from the private sector, possibility of risk transfer to the private sector and common objectives identifiable to both parties

2.9 STATE AND PERFORMANCE OF PPP PROJECTS IN ZIMBABWE

In Zimbabwe the absorption rate of PPP arrangements in different sectors of the economy for project delivery has been slow but gradually increasing. This trend is as tabulated in Table 11 below. As shown in the table, in 2008 total investment commitment in PPP projects have been low with the highest being the Telecoms sector which had an investment of around $US40 million. This low intake has been attributed mostly to the absence of a supportive legal framework, country risks and currency risks. Muzondo et al (2012) cited poor risk allocation in PPP agreements that fuelled disputes and stakeholder dissatisfaction.

In 2008 total investments in PPP projects fell drastically due to political risks and currency risks. The efforts by the political fraternity to stabilise the political arena boosted investor confidence and more investments towards PPP projects were entered. As highlighted earlier other economies are realising huge FDI inflows from PPP project in different economic sectors. According to Muzondo et al, this has not been the case with Zimbabwe because much has not been done to address a sound PPP legal framework and stakeholder satisfaction issues.

Table 11: Total investments by PPPs in Zimbabwe



Source: World Bank PPI Database

According to the Zimbabwe Tourism Authority (ZTA), tourism is a major contributor to Zimbabwe's Gross Domestic Product (GDP). The tourism sector contributed about 10 percent to the country's GDP in 2012 (ZTA, 2012) and its contribution to the economy may grow by 18 percent by 2018-19 (Zimbabwe National Budget Statement, 2014, p. 41). The Southern African Development Community (SADC) states that Zimbabwe has one of the most diversified tourism resource bases in the region but very little tourism development has taken place in the country since 1996 because of few promotional activities and inadequate support for the sector (www.sadc.int/member-states/zimbabwe, 2014). In addition to that, budgetary constraints and poor risk allocation in government present a big challenge to sustainable tourism and conservation development in Zimbabwe up to today. Thus, huge sums of money were a requirement for tourism infrastructural development in the country. Most countries are in the same situation since national budgets are never adequate. To establish the much-needed revenue through tourism, there is a need to improve and/or rebuild the entire infrastructure necessary for tourism growth and inflows. Apart from infrastructure, the industry or system should improve its tourism marketing and promotion systems and practices to be more effective and efficient. All this call for cooperation among the key stakeholders in the industry. One of the most viable avenues for such cooperation nowadays is the PPP. Sustainable tourism development in Zimbabwe requires this type of cooperation as it brings together 'take cognisance of a series of stakeholders' interests and concerns' (Vijayanand, 2013) cited growth and stakeholder satisfaction.

According to The Zimbabwe government it has positioned itself as an advocate for the recognition and implementation of PPPs as a vehicle for national development (Short Term Emergency Recovery Programme, 2009; Zimbabwe National Budget Statement, 2013; Zimbabwe Agenda for Sustainable Socio-Economic Transformation 2013-2018). PPP arrangements are an effective avenue of spearheading various development projects in the country (Zimbabwe National Budget Statement, 2012, p. 146). This is important given the huge amount of financial resources needed, which are beyond the government's capacity. The projects which are suitable for PPP participation in the Zimbabwean context are in the following sectors: conservation, energy, water, roads, information technology, railways, and civil aviation (Zimbabwe National Budget Statement, 2014, p. 106). The tourism sector benefits from these PPPs and this may translate into overall competitiveness of Zimbabwe as a tourism destination and industrial harbour. According to Muzondo et al (2012) the absence of PPP legal frameworks and poor risk allocation and mitigation strategies are back drawing all these efforts.

2.10 THEORETICAL LITERATURE ON PPP RISKS AND PERFORMANCE

2.10.1 Agency Theory and Compounded Agency Theory

Ross (1973) established a theory in the agency relationship. In this theory an efficient alignment of principal and agent's interests are guaranteed through selecting appropriate governance mechanisms between principal and agents when considering PPP financing. Its main objective/agenda is to ensure that agents serve the interests of the principal, e.g. maximising firm's Net Present Value, so that agency costs are minimised through an efficient contract mechanism. The essence behind agency theory assumes that there is goal conflict between principal and agent-called an agency problem. Trailer *et al.* (2004) established a compounded agency view that adds a new dimension to the agency theory applied to PPPs. They discovered that the agency problems exist in PPPs because the private companies as an agent received residual revenues. This trigger conflict of interest with the public interest of maximising consumer surplus.

2.10.2 Stakeholder Theory

In conjunction with agency problems, another theory reviews the conflict of interests in different theoretical perspectives. In 1984, Freeman introduced stakeholder theory. According to Donaldson and Preston (1995), in their theory addressed the effects of morals and values in managing an organization. They argued that "*the ultimate managerial implication of the stakeholder theory is that managers should acknowledge the validity of diverse stakeholder interests and should attempt to respond to them within a mutually supportive framework, because that is a moral requirement for the legitimacy of the management function*". Despite the fact that agency and stakeholder views are deemed as opposing ideological frameworks, Shankman (1999) argues that stakeholder theory is a logical conclusion of agency theory when: 1) recognition of stakeholders is included; 2) a moral minimum to be upheld; 3) consist of contradictory assumptions about human nature which give rise to the equally valid assumptions of trust, honesty and loyalty to be embedded in the agency relationship. While the implications for practice of agency theory in PPPs are to align interests between private parties and government agencies (thus, taking actions to maximise the project's NPV, and using efficient contracting mechanism to minimise agency costs), the practice's implication of stakeholder theory is to balance the agency problems (thus adjusting its development strategies and management activities under the guidance of the national policies so that the interests or claims of all relevant stakeholders will be in conformity with rules and regulations).

2.10.3 Incomplete Contract Theory

In addition, there another PPP theory called theory of incomplete contracts. This is a specific part of transaction cost economics. Hart and Moore (1988) started incomplete contract theory. Tirole (1999) summarises three main reasons of generating incomplete contracts. Firstly, not all future event or circumstance can be predicted on the signing of the contract and PPP financing. Secondly, even if both parties could anticipate all contingencies that should be budgeted for in the contract, they must exchange the benefit of having a more comprehensive contract with extra time and cost of writing new clauses. Finally, the contract cannot be enforceable unless the contingent occurrences could be verified by a third party (For example an arbitration commission or a Regulatory Agency in the context of infrastructure "privatization" contracts). In addition, Solino and De Santos (2010) also stated that the contractual arrangements of PPPs are inevitably incomplete in many relevant aspects due to a long-term partnership (e.g. 25 or more years). Regarding the incomplete contract theory, PPP should be given first preference if the quality of service can be well specified in the initial contract while the quality is difficult to specify (Hart, 2003). According to these theories, the stakeholders may be able to understand the nature of PPP projects and to manage them properly. Therefore, the evaluation of PPP projects can be undertaken efficiently.

2.10.4 PPP Desirability Model

A. Dias and P.G. Ioannou (1995) explores project evaluation model for private-promoted infrastructure projects. The framework of the project financing in PPP projects was based on the multi-attribute evaluations. Different attributes were considered in decision making of PPP projects. The model took into consideration company competences, PPP partner's competencies and project attractiveness. Many attributes have been linked to PPP desirability. Li et al (2005), argues that risk allocation in contractual agreement on PPP projects attributes to project financing desirability. This considers the necessity of both partners' implication and, possibility of risk transfers to the private sector and the existence of interest from the private sector.

2.10.5 Romanian Decision Models

PPP financing decisions in conservation, infrastructure and tourism projects is determined by convergent factors. A. Grigorescu (2008) developed models for PPP financing in Romania. The PPP financing was based on general criteria and special criteria factors. Grigorescu explored that PPP financing is affected by the existence of the growth strategy in the PPP arrangement. Common objectives must also be evident and identifiable by both parties. In the Romanian PPP decision models. It was argued that there must be political support for the project and that determines PPP financing. A. Dias explains how the political environment influences the PPP financing decision. Favourable political environment in terms of legal framework and country's positive financial performance encourages the absorption of PPP financing in conservation and infrastructural projects

2.10.6 The PPP Fiscal Risk Assessment Model (PFRAM)

The PFRAM (2016), developed by the IMF and the World Bank, is an analytical tool to assess the potential fiscal costs and risks arising from PPP projects e.g. financial risks, technical risks, political and governance risks. In other countries, investment projects have been attracting investors as Public Private Partnerships (PPPs) not for efficiency reasons, but to circumvent budget constraints and postpone recording the fiscal costs of providing conservation and infrastructure services. Hence, other governments ventured into projects that either could not be funded within their budgetary envelope, or that exposed public finances to excessive fiscal risks. To address these concerns, PFRAM was adopted as an analytical tool to quantify the macro-fiscal implications of PPP projects. This model took into consideration appropriate risk allocation, legal frameworks and satisfaction of the parties involved in the PPP project so that benefits and or profits will be derived.

2.11 EMPIRICAL LITERATURE FOR RISKS AND MITIGATION MEASURES PPP PERFORMANCE IN CONSERVATION

Empirical studies that are considered in conservation PPP project feasibility have been developed in different literatures. These studies point out certain risks and mitigation measures applicable to PPP projects that are either private or public and or both partners to engage into successful partnerships. These are detailed in the empirical evidence below

According to Gunn and Clare (1976) in their empirical study for public-private partnerships in national parks and tourism destinations, there was a risk across the USA due to lack of broad legal frameworks and policies on planning and management of PPP projects. This greatly affected the performance of the much-anticipated PPP projects. This led to the development of PPP financing models which hammered on management strategy, setting of performance indicators and regulations in projects implementation. These were improved into modelling factors that had to be realized before the tourism projects were initiated. The empirical studies are as summarized in table 11 below.

Nico Saporiti (2006) in his study under the World Bank for the public policy of the private sector. The study was for managing National Parks particularly SANParks. The study looked at how PPPs can aid conservation and the general performance of these partnerships in conservation i.e. in tourism and biodiversity. The study pointed out that project managers should use their technical expertise to manage, control and feedback project performance results to relevant stakeholders. This transparency would lure more and more stakeholders to finance conservation projects thereby minimizing stakeholder's risk. The study cited that many national parks in developing countries exist only on paper, lacking enough funding for day to day running e.g. staff salaries, patrol vehicles and conservation programs. Hence private partners should be capable of financing the conservation programs with minimum or without financial challenges.

In a publication by Muzondo et al (2014), country risks and inadequacy of concession contract proved that they are prominent risks in tourism and conservation projects in Zimbabwe. Country risks comprised of lack of legal frameworks that support the performance of PPPs and lack of government initiative. Inadequacy of concession contract risks comprised of lack of trust, risk allocation, exit clauses at times major terms not included. This publication recommended that PPPs in conservation should take consideration of engaging experts in PPP, conservation and government effort to address favourable legal frameworks and what must be constituted in these partnerships so that risks are mitigated, for example, well spelt clauses and benefits to both parties.

In a bid to assess the risks and performance in PPP conservation projects in Northern Botswana, MGM Environmental Solutions Limited (1997) reviewed projects funded by European Development Fund (EDF). This assessment included a Countrywide Animal and Range Assessment Project, assistance to the Wildlife Training Centre at Maun, aerial monitoring of wildlife populations, training for staff of the DWNP at the College of African Wildlife Management at Mweka in Tanzania, an NGO program to conserve the Kalahari ecosystem, and tourist related developments including the construction of Kasane International Airport. Some risks were noted to have been interfering with developments. These included lack of strategic outlay of the projects and feasibility (operation and maintenance risk) and lack of expertise (promoting risks). The assessment pointed out strategic planning, training of staff and employment of more knowledgeable manpower as risk mitigation measures in conservation.

Grigorescu (2008) evaluated the performance of tourism and conservation resources that were under PPP in Romania. The empirical approach used in this study is a decision model that helps with decisions in PPP engagement for tourism and conservation projects. The model comes to a development that legal frameworks are essential analytical tools for PPP project financing feasibility and minimization or mitigation of country risks. In addition, training of staff, and expertise of the management team reduces promoting and operation risk and adds to the general performance of PPPs.

S. Macdonald and C. Cheong (2014) in their research under The Getty Conservation Institute for USA, UK and Australia. They conclude that, for those governments that possess the experience, legal framework, and marketplace climates to facilitate their implementation and governance, PPPs have potential applicability in conservation, areas and sites. Other countries, such as the Netherlands, the United Kingdom, Australia, and the United States, have proven to be successful in implementing such projects because of risk minimization, risk allocation efficient frameworks and stakeholder management. However, in countries lacking the necessary expertise, PPPs may not be the best alternative because of operation risks that come along. Balancing risk and responsibility are an integral element of PPPs, so it's crucial for governments to first develop the policy framework and marketplace incentives needed to attract private investment and ensure adequate public governance to secure the conservation outcomes. When these provisions are in place, PPPs present

significant opportunities to facilitate the provision of public goods and services, particularly in developing countries where government financing for public services is often extremely limited and urban public services are in high demand. For these countries, well- supported PPPs are a vehicle for private parties to provide much-needed financing, skills, and innovation to upgrade conservation and culturally significant endeavours. Partnerships are a means of sharing resources, risks and rewards including social benefits. In an examination study of PPP performance in national park management in Zambian conservation under ZAWA, Adam Pope (2006) cited that PPPs are at a threat from promoting, stakeholders, and technical risks. These emanate from lack of efficient channels of communication, availability of knowledge, availability, and capability of the private partner to fund the conservation projects. From the general assumption of the ZAWA PPP projects, if effectively structured, resourced and monitored, can perform and fill gaps in the management of ZAWA's portfolio of national parks. The different PPPs would appear to be offering support to growth, innovation and diversification in the wildlife sector that would be difficult, or impossible, for ZAWA to replicate with its resource limitations. The research recommended that a few risk mitigations measures to support this positive trajectory were what was required. Thus, the communication of information to relevant stakeholders on mitigates dissatisfaction, private partners should be knowledgeable in conservation and financially capacitated.

Table 12: Empirical literature on PPP risks and mitigation measures

Authors/References	**Covered Period**	**Empirical Approach**	**Empirical Findings/Remarks**	
			Risks	**Mitigation Measure**
Nico Saporiti (2006)	SANParks 2004-2006	Managing National Parks – How Public Private Partnerships can aid conservation	-Stakeholders risks -Promoting risks	-promote stakeholder satisfaction to lure financing -private partners should be capable to finance project
Muzondo et al (2014)	Zimbabwe 1996 – 2014	-Challenges Affecting Establishment and Sustainability of Tourism PPPs in Zimbabwe	-Country risks -Inadequacy in Concession Contract	- Appropriate risk allocation and well spelt exit clause minimises risks in PPPs
Gunn and Clare (1976)	1972-1976 Public Private Partnerships in Tourism (USA)	Models for policies and strategic management of PPP projects in tourism	Country risks	legal frameworks and regulation in project implementation are essential tools for PPP financing and project viability in conservation
MGM Environmental Solutions Limited (1997)	1993-1997 Wildlife Conservation in Northern Botswana	Mid-Term review of EDF-Funded project	-Operation &maintenance risk -Promoting risks	-expertise is essential for well-planned and feasible project and reducing operation risks -training of manpower is essential in conservation
Grigorescu (2008)	1990-2008 Romania's tourism and conservation projects	Models of PPP decision making projects in tourism industry	-Country Risks -Promoting risks Management risks	-Legal frameworks are essential analytical tools for PPP project financing feasibility -training of staff, and expertise of the management team reduces promoting and operation risk
Adam Pope (2006)	2000-2006 Case study of ZAWA Conservation projects	An Examination of PPP Performance in National Park Management in Zambia	-Stakeholders risks -promoting risks -Technical risks	-communication of information to stakeholders mitigates dissatisfaction - private partners should be knowledgeable in conservation

Stakeholders' satisfaction, legal framework, and risk allocation the performance of PPPs?

Many empirical studies have highlighted approaches used to evaluate the performances of projects and firms under PPP arrangements. These studies generalise that stakeholders' satisfaction, legal framework, and proper risk allocation are enabling factors in the performance of PPP globally.

Dias and Ioannou (1995) argued that the performance of PPP projects in infrastructural, projects comes though stakeholder satisfaction and meeting private interests. In this study, risk is cited as an inherent part of any privately promoted infrastructure project. A keen understanding of project risks is essential to the success of privately promoted infrastructure projects. The identification and analysis of the risks presented in a project and their subsequent reduction and allocation to those participants best able to manage them is central to the success of any undertaking. The allocation and willingness to face certain risks is attributed to satisfaction of stakeholders. Raisbeck (2016) also pointed out stakeholder satisfaction as a key ingredient for PPP performance in an evaluation study of the Australian PPP projects.

Furthermore, Grigorescu (2008), De Neufville and Keeney (1972) in their empirical studies highlighted the need for an effective risk allocation in PPPs so that firm experience favourable return on investments. These studies take a closer look into conservation projects in Southern Africa and an infrastructural facility of an airport in Mexico City respectively. These studies suggest risk allocation should be done firstly in the contractual agreement and then the operational agreement. PPPs are quite distinct from traditional delivery strategies due to the complexity of contractual relationships, long concession period, as well as broad range of risks and uncertainties. As observed by these empirical studies, the concessionaire assumes more responsibilities and the allocation of risks and rewards among participants is more difficult in a PPP project than in a traditional contracting out. The intrinsic problems in PPP evaluation mostly stem from the dynamic nature of PPP process.

Lemos et al (2004) conducted an Analytical Hierarchy Process in an evaluation study to see performances of PPP projects in Portugal, particularly the Lusoponte Bridge project. This empirical evidence reiterates that vibrant legal frameworks provide an enabling environment of PPP for engagements to perform positively. The PPIAF (Public Private Infrastructure Advisory Facility) analysis of Uganda also cited that a clear policy is an important basis for a successful PPP legal framework. To develop a PPP pipeline, government agencies need to understand PPPs and how they may be able to use them to achieve their policy ends. Equally, clear information on the PPP program reduces the cost to potential investors of considering opportunities in the country. The study cites that to take advantage of the potential for good quality, sustainable, well-structured PPP projects to provide infrastructure services, governments may:

Develop a clear PPP Policy

Establish a dedicated PPP unit

Adopt clear procedures and define responsibilities for developing and implementing PPPs

Establish a mechanism for evaluating the PPP framework

Legally establish the principles of the PPP framework through a PPP law

The table 13 below summarises the empirical literature analytical processes on the performances of various PPP engagements:

Table 13: Empirical literature of the analytical models and concepts on PPP performances

Authors/ Reference	Empirical Approach	PPP reference	Remarks
Dias and Ioannou, (1995).	Delta Dimension Function, Direct Rating Method (DRM) Eigenvalue method (EM)	Eurotunnel project	Attractiveness of PPP projects and competence performance are generated through stakeholder satisfaction and meeting private interests
Lemos et al (2004)	Analytical hierarchy process	Lusoponte Bridge	Legal frameworks provide an enabling environment for PPP projects to perform
Muzondo et al (2014)	Inferential statistics	Conservation & tourism projects in Zimbabwe	Zimbabwe is facing under performances in PPP projects due to poor risk allocation and poor policies
De Neufville and Keeney (1972)	Multi-attribute Additive Rating Scales (MARS), multi-attribute utility model,	Airport Facility (Mexico City)	Risk allocation in contractual and operational agreements helps companies in PPP engagements to perform positively
Rajput (2017)	Analytical hierarchy process	Indian PPP projects	Fair and efficient legal frameworks assist in the mitigation of PPP risks for growth of industries
Raisbeck (2016)	Analytical hierarchy process, Eigenvalue method	Australian PPP projects	Stakeholders satisfaction invites investment that boost PPP performances

2.12 REVIEW OF SIMILAR STUDIES

a) ***The success of PPP projects***

According to Siemiatycki (2012), in the past decades PPPs have gained popularity with governments for remedying the observed inefficiency in traditional service delivery approach. Hodge & Greve (2007) cited that globally the experience with PPP has not always been positive. Besides, partnership have been used to deliver great number of developmental projects, on the other hand, many partnership projects suffered disastrous consequences (Cheung 2009). In this regard, success in PPP endeavours can be characterized as offering greater value-for-money i.e. the optimum combination of whole life cost and quality to meet the user's requirement. As observed by Akintoye et al (2003), the achievement of the best results in PPP projects highlights efficiency and effective performance standards. Henjewele et al (2011) sees value-for-money as the key benchmark of the strategic objective of PPPs and that PPPs should be used only if they provide better value-for-money than traditional procurement. Value-for-money is mostly determined and gauged by Public Sector Comparator (PSC). The PSC is a comparison between the cost of proposed PPP projects and the benchmark cost, thus a cost-estimation of the specific service using traditional procurement (Grimsey & Lewis 2005).

Many studies have observed that performances of some PPPs in may not be exclusively reflected by 'cost', but by other measures such as project completion time and quality (Yong 2010). The over-reliance of the PSC on 'cost' parameters in assessing value-for-money has been criticized because such measure does reflect the complexity of PPP procurement process (European Commission 2003). Henjewele et al. (2011) stated that meeting client's requirements must be considered as a core dimension in performance measurement of PPP projects. As cited by Ng et al. (2010), a PPP project is successful only if the key interests of all stakeholders are satisfied. Table 14 below shows the indicators for assessing the success of PPP projects.

Table 14: Attributes of PPP project success

Indicator of PPP success	Authors
Value for money	Hambros (1999); Ng et al. (2010)
Quality of products	Akintoye et al. (2003)
Efficiency	Akintoye et al. (2003) Zhang (2006)
Financial returns to the private sector	Ng et al. (2010)
Stakeholders' satisfaction	Leung et al. (2004); Henjewele et al (2011); Udayangani et al. (2011)

b) Risk mitigation measures of PPP projects in a global context

Numerous studies apply the concept of critical success factors (CSFs) to determine the factors that influence the success of PPP projects. Kwak et al (2009) regard critical success factors as those few key areas, which if satisfactorily accomplished, will ensure successful achievement of an organization's project targets. This thesis regard those as the risk mitigation measures. Therefore, in other words, this approach is, an attempt to isolate vital areas that are essential for management or projects to achieve success. Though the idea originated from management practice, the approach was applied as a management tool in information systems (Rockart, 1982); manufacturing industry (Asare, 2012; Kahwajian et al., 2014), and financial services (Boynton & Zmud, 1984; Kahwajian et al., 2014). It was also applied in conservation projects (Jefferies et al., 2002), and infrastructure development (Osei-Kyei & Chan, 2015). To explain the success of PPP projects, Tam (1999) identified factors influencing the success and failure of Build-Operate-Transfer conservation infrastructure development in Asia.

With the complementarity among the lists of factors established in the normative literature, it is evident that many authors attempted to categorize CSFs into broad categories of major success factors each with a list of success sub-factors. Therefore, this categorization is to show the relationship between inter-related variables (Kleinbaum et al., 1998; Norusis, 2008). Hardcastle et al. (2005) employed a survey of project managers and directors of organizations across UK that were involved in PPP projects to investigate CSFs for PPPs. The authors used the factor analysis method to group the CSFs into five clusters. Several other authors have also developed a similar categorization of CSFs (risk mitigation measures) although with a bit of some alterations. Zhang (2005) classified CSFs for PPP infrastructure development in general into five (5) groups. Chan et al. (2010) identified CSFs influencing PPP infrastructure and conservation projects in China which they grouped into seven categories of key success factors. Table 15 gives a summary of critical success factors identified.

Table 15: Risk mitigation measures of PPPs

Description	Authors
EFFECTIVE PROCUREMENT PROCESS	
Transparent procurement process	Li et al. (2005), Helmy (2011), Cheung et al. (2012)
Competitive procurement process	Hardcastle et al. (2005)
Good governance	Hayllar (2010)
Trust and openness between parties	Ong and Lenard (2002), Jamali (2004a)
FAVOURABLE INVESTMENT ENVIRONMENT	
Favourable economic system	Chan et al. (2010), Babatunde et al. (2012)
Stable political system	Chan et al. (2010), Babatunde et al. (2012)
Fair and efficient legal framework	Li et al. (2005), Abdul-Aziz and Kassim (2011)
Supportive community	Heinke and Wei (2000), Ng et al. (2010)
JUDICIOUS GOVERNMENT CONTROL	
Government guarantee	Hemming (2006a), Jamali (2004b)
Efficient approval process	Jefferies et al. (2002), Abdul-Aziz and Kassim (2011)
Consistent monitoring	Abdul-Aziz and Kassim (2011)
APPROPRIATE RISK ALLOCATION	
Risk allocation in contractual agreement	Thomson et al. (2005), Li et al. (2005)
Risk allocation in operational agreement	Akintoye et al. (2003), Hwang et al. (2012)
Risk allocation in design/build contract agreement	Zhang (2005), Nsasira et al. (2013)
Risk allocation in loan contract agreement	Zhang (2005), Nsasira et al. (2013)
STRONG PRIVATE SECTOR	
Financial capability	Jefferies et al. (2002), Zhang (2005)
Technical competence	Jefferies et al. (2002), Zhang (2005)
Rich experience in partnering	Li et al. (2005)

2.13 SUMMARY

In this chapter, the literature on several PPP concepts have been reviewed. This chapter emphasised on risks that threaten the performance of PPP projects especially in conservation. These risks included Country Risks, stakeholders' risks, financial risks and promoting risks. The chapter also reviewed the mitigation strategies that can eliminate or lower the risks and turn around the performance of PPP projects positively. These mitigation measures encompassed the need to satisfy several stakeholders, government legislation on PPPs, private and public sector competences. Knowledge gaps were emanated in the areas of stakeholder satisfaction, risk allocation and legal frameworks. These factors have been underexplored in the conservation area were sub optimal evaluation strategies for risk identification and mitigation were being applied. In addition, ZPWMA lacks a strong fore sight on risks that are affecting its PPPs and the mitigation measures appropriate to combat the risks. These are the issues which are to be addressed in the development of this thesis were the concepts of the Desirability models from A. Dias and P.G. Ioannou (1995) are used.

The literature review also outlines the performance of various PPPs and takes into consideration the theories, models and empirical literature outlining stakeholder satisfaction, risk allocation and legal frameworks. Several other factors have been reviewed as critical success factors underlying PPP performances and success. The reviewed literature will pave way and assist in the bringing up of the theoretical and conceptual framework in the next chapter i.e. the theoretical and conceptual framework

CHAPTER 3
THEORETICAL AND CONCEPTUAL FRAMEWORK

3.0 INTRODUCTION

This chapter provides the theoretical and conceptual framework lined towards the analysis of factors that are essential for the performance of PPP projects in conservation. These factors are essential since they are the risk mitigation tools. The concepts are derived from the empirical and theoretical findings from the literature review. It also gives the empirical models to be from the literature review from which the Desirability model is derived. This chapter hence develops the Desirability Model from concepts by Dias and Ioannou, (1995). The developed model has got all necessary category of attributes that are necessary to evaluate, mitigate risks and enhance the performance of PPP projects in conservation. This model takes cognisance of risk allocation, stakeholder satisfaction and legal frameworks.

3.1 THEORECTICAL FRAMEWORK

According to Gardiner (1974), the effective evaluation of PPP projects demands the identification and consideration of several simultaneous dimensions (e.g., maximization of project revenues, minimization and allocation of project risks, stakeholders' involvement, etc.). Hence, a multi-attribute decision approach should be used to evaluate the various factors affecting the PPP analysis. The theoretical framework of these thesis evolves around the Multi Attribute Rating Scales (MARS) approach. This chapter provide the theoretical skeleton for the development of the Desirability Model, namely, the type of function adopted to aggregate the individual contributions of the model attributes, the weighting procedures used to determine the relative importance of these attributes, and the form of curves used to convert the level of performance (quality) of the attributes into numerical worth scores.

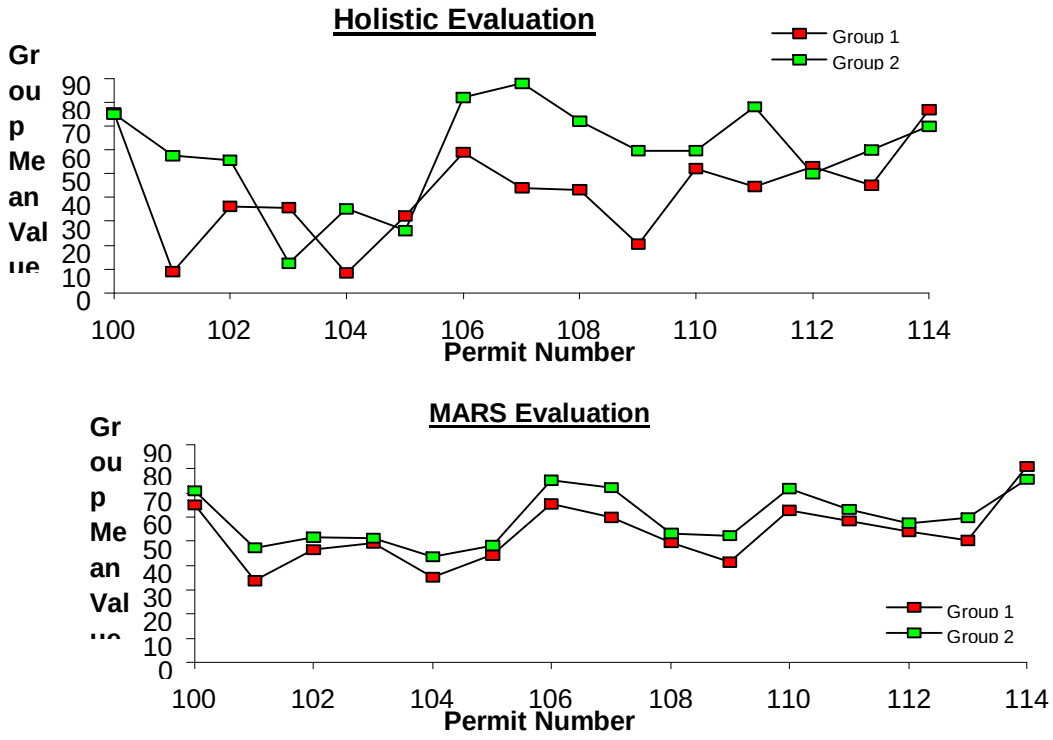
Motivation to formulate a multi-attribute decision model

Miller (1956) deduced that individuals have their judgmental capacities broken down or perform sub optimally when making complex (i.e., involving many dimensions) decisions. Gardiner (1974) also provide examples of studies where decision makers have evaluated multi-attribute alternatives by resorting to intuitive and subjective evaluation processes and have had difficulty in integrating the diverse sources of information into an overall judgment of worth or a decision about a course of action. In this regard, as the number of parameters to be considered increase, judgmental (holistic) evaluations tend to fail to preserve the underlying values of the decision making and to produce unreliable evaluations (i.e. not consistent over a period of time and not easily reproducible).

A decomposed evaluation approach can be applied advantageously to substitute a holistic evaluation by providing a more reliable and consistent procedure to deal with complex decisions despite the possibility of having a consistent procedure to aid decision makers, people feel averse and have an emotional resistance to the use of evaluation rules because they introduce some "mechanical rigidity" into the decision process (Hogarth, 1987). Dawes (1974) assessed and exerted an effort to lower such aversion by showing that the advantage of such rules is the creation of a "general policy" to evaluate different projects under the same grounds instead of recreating policies for each individual project. De Neufville and Keeney (1972) employed a multi-attribute utility model for the evaluation of an airport in a conservation facility in Mexico City.

Moreover, this thesis adopts the concepts by Gardiner (1974) to establish a multi-attribute model to evaluate the performance of PPP projects (i.e., group 1 comprised of Project Managers and group 2 Industrialists) by evaluating 15 hypothetical development plans using their intuitive judgment and using a model called Multi-Attribute Additive Rating Scales (MARS). The two groups provide substantially different holistic evaluations over the fifteen-year plan set (see top chart in Figure 5).

Figure 5: Holistic Evaluation Approach versus a Decomposed Multi-attribute Evaluation Model

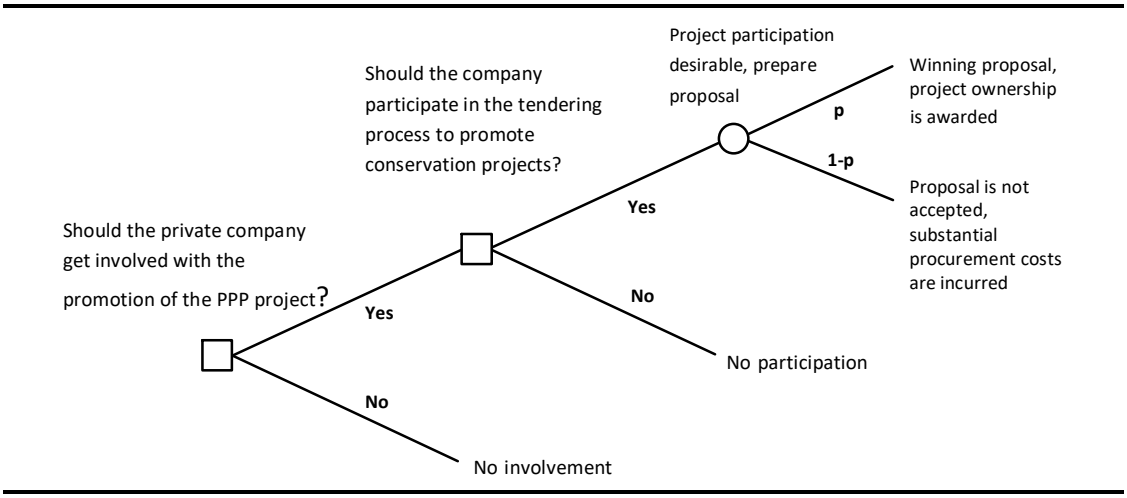


Source: by Gardner (1974)

When applying MARS, the evaluations of the two groups follow a similar pattern and show a greater agreement even though they place different importance on the alternatives (see bottom chart on Figure 5). For example, Edwards (1977) tries to give a deeper explanation for this phenomenon by arguing that "when making holistic evaluations, people with strongly held points of view tend to concentrate on those aspects of the entities being evaluated that most strongly engage their biases. Nevertheless, the multi-attribute procedure does not permit this; it separates judgment of the importance of a dimension from judgment of where a particular entity falls on that dimension."

The amount of resources invested by private companies in PPP projects is tremendous. To engage in the promotion of conservation projects, they face two basic questions: "Is the company capable of promoting a conservation project?" and "Is the project attractive enough to compensate for the risks to be encountered?" Figure 6 shows a schematic decision tree representing the decisions faced when addressing their participation in the projects (conservation). The squares represent "decision nodes," the circle represents "chance nodes," *p* is the probability that a company is chosen to promote a project. Similarly, 1-*p* (the complement of *p*) is the probability that a company is not chosen to promote a project.

Figure 6: Schematic decision tree for private companies deciding to get involved and to participate in the promotion of PPP (conservation) projects.



(Source: Developed by author)

This thesis addresses the evaluation of PPP projects from both the public and private sector' point of view and, in doing so, elaborates the **Desirability Model** (DM) that helps:

> To provide a logical, reliable and consistent procedure that facilitates a company's decision to engage in the promotion of a conservation project through the analysis of different risk parameters, the combination of their qualitative characteristics, and the calculation of two indices that assess the company's capability to mitigate against risks and the project's profitability feasibility to be privately funded;
>
> To allow sensitivity analysis to be performed such that prospective partners can evaluate how different scenarios (e.g., risk mitigation strategies, risk allocation, legal frameworks, stakeholder satisfaction) influence both indices, and consequently, the decision the company has in getting involved and participating in the promotion of projects.

3.1.1 The Value Functions

The term "value function" is used in this thesis to represent several different concepts. De Neufville (1990) considers the term "value" to define a function that determines the order of preference among single-attribute alternatives but says nothing about the intensity of the preferences. As cited by de Neufville, these functions are a special function where units have meaning relative to each other allowing alternatives to be evaluated analytically even when people have nonlinear preferences.

According to Gardiner (1974) the term "utility" account for situations where the function relating an outcome with the decision maker's relative worth (utility) for that outcome are created through lotteries (gambles) based on indifference judgments. He employs the term "value" to account for riskless choice contexts or simply the function relating an outcome with the worth perceived by the decision maker for that outcome is not based on gambles. Von Winterfeldt and Edwards (1986) believe the distinction between value and utility is illegitimate because, firstly there are no such things as a sure outcome and values that are attached to presumable riskless outcomes are in fact attached to gambles. Secondly, risk aversion can frequently be explained by marginally decreasing value functions. Thirdly, error and method variance within value and utility measurement procedures overshadow the subtle distinctions that one may extract from the theoretical differences.

In this thesis the term "value function" is employed to indicate a function that is used to transform an outcome (i.e., the performance level of an attribute) into the decision maker's relative worth for this outcome and has its construction not based on lotteries (gambles). The decision to build functions based on a method other than the indifference-preference lotteries used in the assembly of utility functions is made because of two main aspects of the desirability model: the use of a qualitative scale to measure the performance of the attributes and the desire to have a model that could be used for infrastructure projects of different nature and size. Utility functions requires the operationalization of attributes so that quantifiable measures are applied in the lotteries. It is proven to be very difficult to choose appropriate quantitative constructs to represent the model attributes. In this regard, the use of a qualitative scale, common to all attributes, is perceived as the best alternative to develop the Desirability Model.

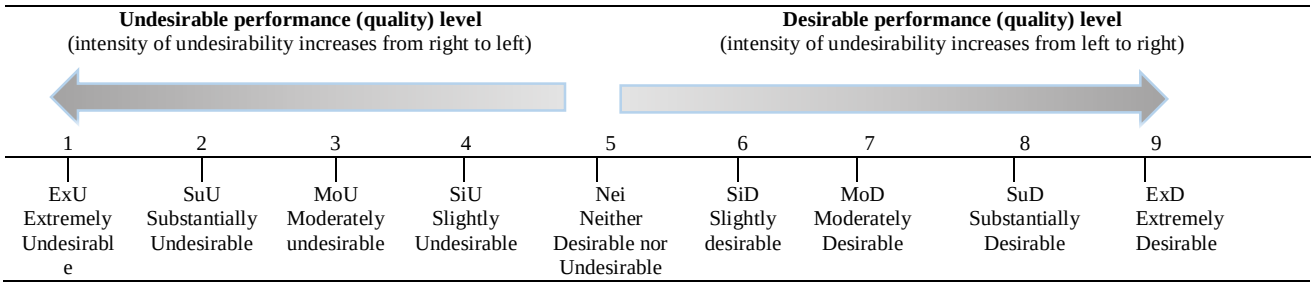
The worth score of an attribute is a non-dimensional number that represents its performance (quality) level in a specific project. In order to calculate the worth, score of attributes *i*, it is first necessary to qualitatively assess its performance level, then use its value function to transform the subjective assessment into a numerical scale. The performance scale used to qualitatively evaluate attribute *i* is shown in Figure 8. The numerical scale — called worth scale — ranges from 0 to 100. This is a special form of the cardinal scale: the ordered metric. This type of cardinal scale, also used for measurements of utility, differs from the more common cardinal scale, the ratio scale, in two ways: (De Neufville, 1990)

> Zero on an ordered metric scale has no absolute meaning; it is simply a reference point that could as well be any number (e.g., temperature scales). In ratio scale, zero indicates an absence of the phenomenon being observed.
>
> Ratios between measures on the ordered metric scale do not have any meaning.

The changing of an attribute performance level to its worth score, via a value function, is more elaborate than directly estimating the performance (quality) level of an attribute using a quantitative scale. Taking for instance, calculating the worth score of attribute "W" using "value functions" is necessary to rate the performance (quality) level of "W" using a qualitative scale such as the one shown in Figure 8. Then, it is necessary to use a value curve to convert the qualitative assessment of the performance level of "W" (plotted in the x-axis) into a value on the worth scale (plotted in the y-axis). (See Figure 7.)

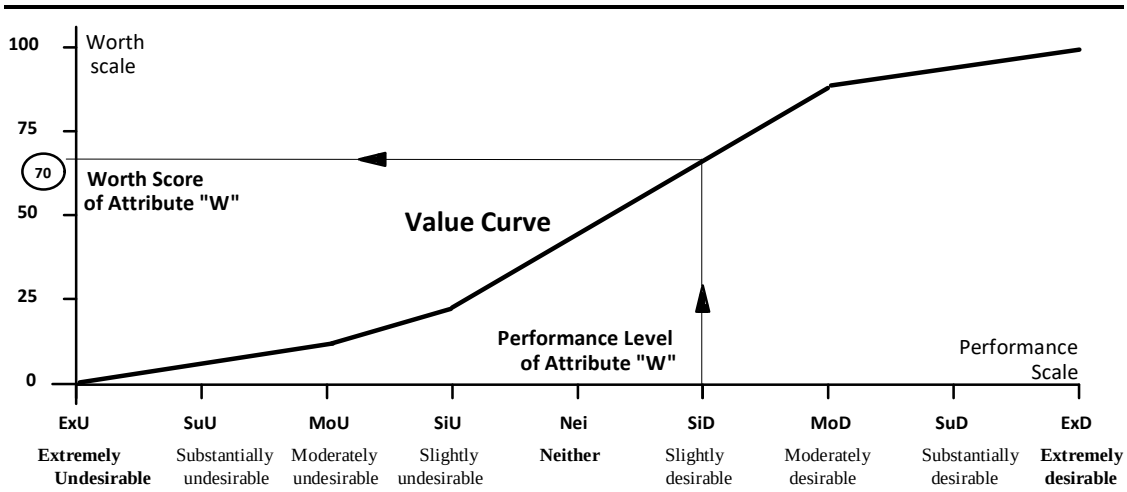
However, the "value function" procedure is preferred over the "direct estimation" procedure because it allows the disassociation between the task of measuring the location of an attribute on the performance scale from the task of determining the worth of the attribute on the worth scale. This means that it separates qualitative judgments from quantitative ones. Such a disassociation is vital in this thesis since an attribute might have different performance (quality) levels and yet have a similar worth score assigned to it.

Figure 7: Qualitative Performance Scale



(Source: Saaty, 1980)

Figure 8: Value Curve for Attribute "W"



(Source: Saaty, 1980)

The construction of value curves is a vital process in the development of a multi-attribute model since they are needed to convert the qualitative judgments about the performance (quality) level of the attributes into the worth scale. The construction incorporates the exploitation of the properties of the qualitative (i.e., performance) scale, namely monotonicity, single or multiple peakedness, linearity and concavity. Monotonicity implies to the fact that the worth score of an attribute always increases or decreases as the level of performance of this attribute increases.

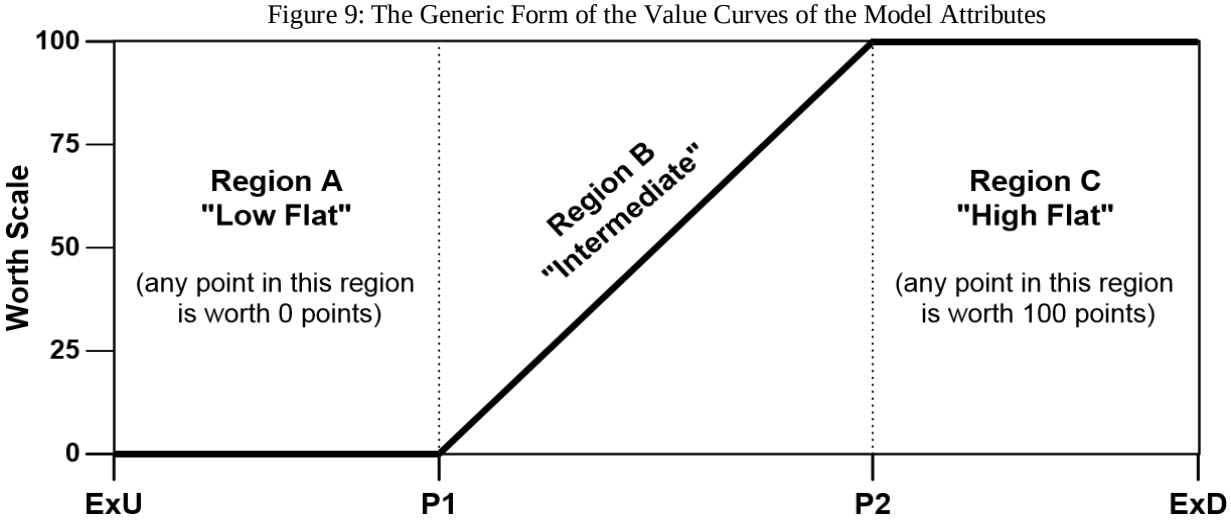
The definition of the attributes of the Desirability Model and the selection of the qualitative scale, as shown in Figure11, assures monotonically increasing value functions. In this regard, the remaining issue in the development of the value curves is concerned with the procedure of curve fitting the application of a linear or exponential (power) function and the determination of the number of points necessary to draw the curve. Von Winterfeldt and Edwards (1986) stipulated that use of linear or curvilinear functions helps analysts to find more regularity linearity in real world problems and real-world experts than in most experiments." Their belief is that value functions should be linear in appropriate qualitative scales and that nonlinear value functions are a multi-attribute problem forced into a single attribute mould. Thus, appropriate number of points necessary to draw the value curve, the literature suggests 3 to 5 points. Thus, the extreme points and 1 or 3 intermediate ones.

This thesis uses two points, P1 and P2, to describe the value curve. P1, the minimum plausible performance level for an attribute, reflects the highest point on the performance scale where an attribute is worth its minimum (i.e., 0 worth points). P2, the maximum plausible performance level for an attribute, reflects the lowest point on the performance scale where an attribute is worth its maximum (i.e., 100 worth points). It is vital to note that "minimum and maximum plausible" is used instead of "minimum and maximum possible". This is so because often, minimum plausible value is not total absence of the parameter. These two points characterize the generic form of the value curves used in this thesis by dividing the performance scale into three regions: (1) a low flat region, (2) an intermediate region, and (3) a high flat region. See Figure 10. An attribute is worth 0 points if it presents a performance (quality) level in region A ("low flat"), between 0 and 100 points if it presents a (quality) performance level in region B ("intermediate"), and 100 points in case its performance (quality) level is in region C ("high flat").

Region A ("low flat") is an extreme case of minimal return per unit of performance. It suggests that the characteristics and features of the attribute being evaluated do not need to be a "complete disaster" in order to have the attribute worth zero points. Region C ("high flat") is the attribute performance interval that provides maximum worth. It suggests that the characteristics and features of the attribute under evaluation do not need to be "perfect" to have the attribute worth a hundred points.

The decision to define only two points to describe the attribute value curves is made purely for implementation reasons. This is regarding the assumption that study respondents had no prior knowledge on developing value curves and the impossibility to directly interact with, it is presupposed that the use of extra points would not necessarily provide more accurate value curves, and therefore will not improve the results given by the Desirability Model.

Figure 9: The Generic Form of the Value Curves of the Model Attributes



ExU: Extremely undesirable performance (Quality) level
P1: highest point on the performance scale where an attribute is worth its minimum (0 points)
P2: Lowest point on the performance scale where an attribute is worth its maximum (100 points)
ExD: Extremely desirable performance (Quality) level

3.1.2 The Delta Dimension (δ)

Despite the use of linear evaluation models, Edwards (1977) noted that respondents prefer model forms that have both additive and multiplicative components since, to these respondents, some attributes are so overwhelmingly vital that if a project being evaluated scores zero on one or more of these dimensions, they want to have a zero score overall. For Instance, O'Connor (1972), carried out a study on water quality indices and argued that certain model parameters behave like toxic substances in their extreme ranges and would not trade off in terms of quality with other dimensions. In this regard, additive models cannot account for this type of behaviour.

Some of the attributes of the Desirability Model behave in a similar manner. This means, if an important attribute has very undesirable intensities, regardless of how good the performance of the other attributes, the decision maker wants the model to reflect the impossibility of the project to be under PPP promotion. Anderson (1993) further analysed the situation by saying that there are many countries where the possibility of a PPP infrastructure project having is excluded, regardless of the project characteristics, due the perceived general political risk in these countries.

The delta dimension, δ, is introduced in the Desirability Model to account for these situations whereby parameters having very undesirable performance levels are enough for companies to become incapable to promote/finance projects and projects to become unattractive to be privately promoted.

The delta dimension is derived by summing the "local deltas" (i.e., the delta of each model attribute), i.e.

$$\delta \sum_{i=1}^{n} \delta_i \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \; 3.1$$

Where δ*i* is a binary variable (either -1 or 0) representing the delta of attribute *i*. If the intensity of an attribute goes below a certain threshold, set by the decision maker, then its δ*i* is set equal to "minus one," otherwise it is set to "zero." In this regard, the δ of a project is equal to zero only if all its attributes have intensities larger than their respective threshold levels It has been assumed in this thesis that δ*i* is set equal to "minus one" whenever a dominant attribute *i* has a performance level that is inferior to its "P1" (i.e., dominant attribute *i* has a worth score, *vi(xi)*, equal to zero). Projects with original $\delta < 0$ do not need to be rejected at once. The strategies suggested in this chapter to mitigate and allocate risks might change the performance of the critical attributes to values above their threshold, therefore turning δ into zero.

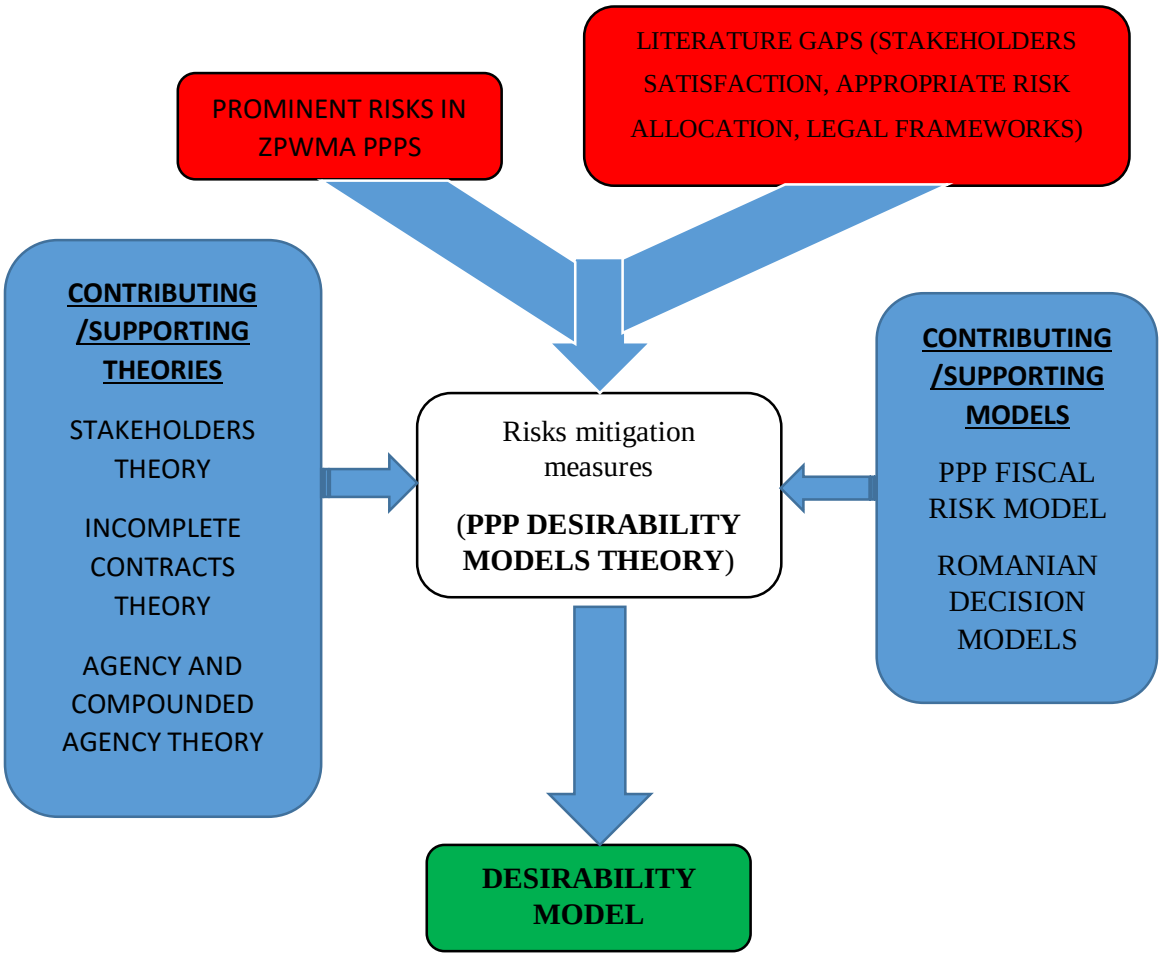
3.2 CONCEPTUAL FRAMEWORK

The conceptual framework employed for the thesis has foundations from the Desirability Models by Dias and Ioannou, (1995). This framework is also supported by the concepts from Stakeholder's theory by Freeman (1984), incomplete contract PPP Fiscal Risk Model (PFRAM) by the World Bank (2016) and the Agency and compounded agency theory by Ross (1973) and Trailer *et al*. (2004) respectively. These theories and models have been reviewed in the literature. The conceptual framework incorporates the gaps in the literature (stakeholders' satisfaction, appropriate risk allocation and legal frameworks) Together with these theories a more comprehensive and conclusive Desirability Model was prepared.

The Desirability model is a multi-attribute evaluation model that provides a logical, reliable and consistent procedure for assessing the use of public-private partnership arrangement for project delivery. It gives the desirable risk mitigation

measures for successful PPPs. This implies that it facilitates a company's decision to engage into a public-private partnership for a conservation project.

Figure 10: Outline of the Conceptual framework

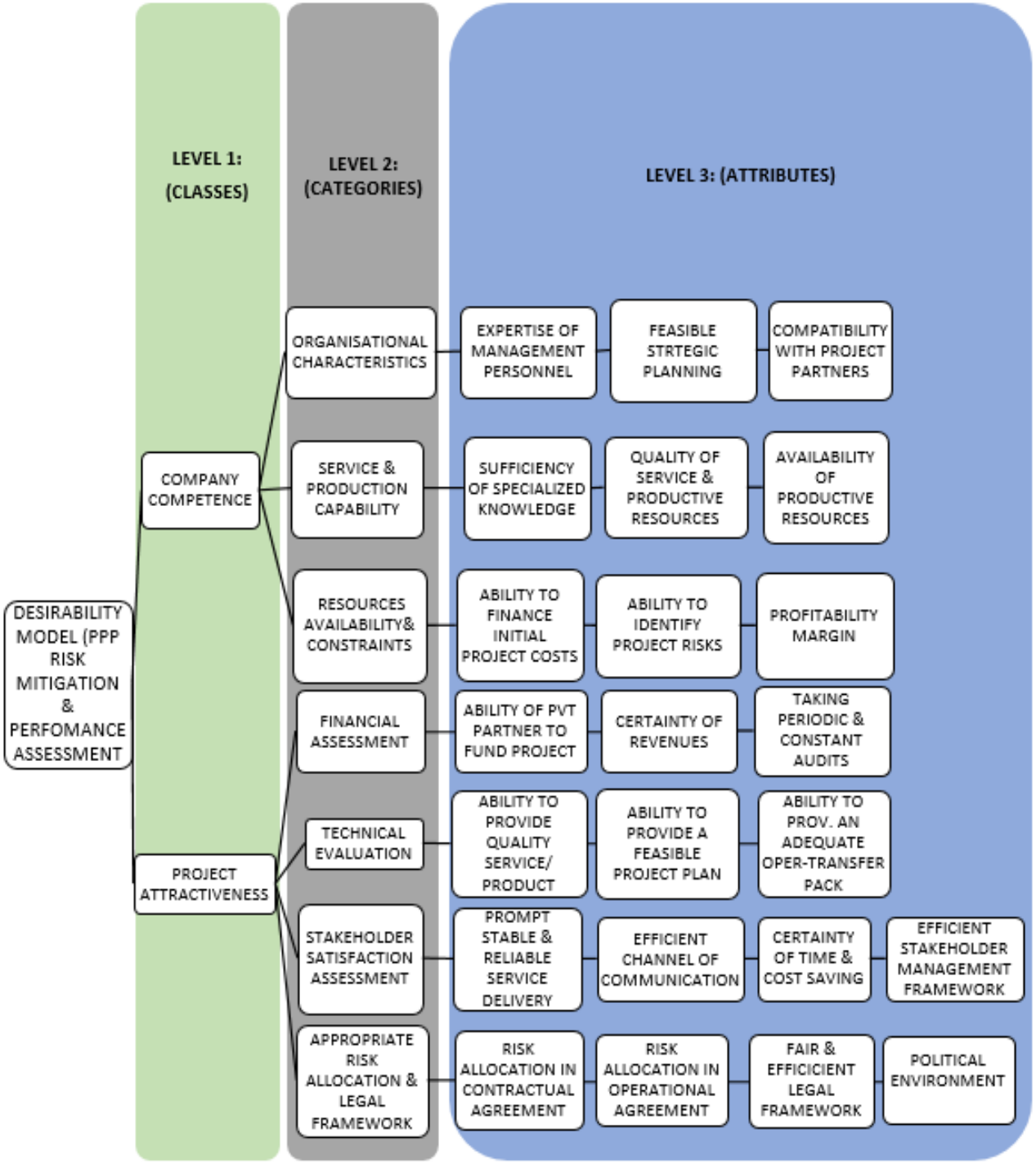


(Source: by Author)

The structure of the desirability model

The model developed in this study uses a functional hierarchy to represent the important dimensions of both decisions faced by companies that contemplate the private promotion of conservation projects. In the adopted three-level hierarchical structure, more general dimensions are located on the top row whistle more specific ones are on the bottom. The first (highest) level of the model consists of two dimensions (called classes): company competencies and project attractiveness. The second (intermediate) level consists of seven dimensions (called categories) and the third (lowest) level consists of 23 dimensions (called attributes).

Figure 11: The Desirability Model



(*Source: Compiled by Author)*

It is important to note that the hierarchy used in this model differs from the ones used in most multi-criteria problems. Typically, the hierarchies used in these problems have many dimensions, there is more than one alternative to choose from, and the objective of the decision maker is to find the alternative that best fits the overall focus or goal of the situation being analysed. In contrast, the objective of the Desirability Model is not to help choose the best project among several alternatives, but rather to decide if it is feasible for the project being analysed to be privately promoted, eliminate risks and if the company can do so. Therefore, the level "alternatives," typically at the top of the hierarchy, does not exist in the

Desirability Model. Instead, the model measures the worth of projects and companies by aggregating the worth of individual attributes.

In discussing the procedure used to aggregate the worth of individual attributes to form indices that reflect the overall worth of projects and companies, the following terminology from Gardiner (1974) is used.

Let

$$\bar{x} = (x_1, x_2, \dots, x_n) \quad \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots. (3.2)$$

be a vector describing the attributes that effectively encapsulate the characteristics of a potential PPP (promoting company), and

$$v(\bar{x}) = v(h_1, h_2, \dots, h_n) \dots\dots\dots\dots\dots\dots\dots\dots\dots (3.3)$$

be the value that represents the overall worth of the project (company), where

- $\bar{x}$ denotes a set of attributes (categories) that measure level of company competence or project attractiveness e.g. **Organisational Characteristics** or **Stakeholder Satisfaction Assessment**
- x_i represents each attribute in the set of attributes e.g. under **Stakeholder Satisfaction Assessment** there are attributes such as ***Efficient Channel of Communication Certainty of Time and Cost Saving***
- $v(\bar{x})$ represents intuitive evaluation function i.e. Aggregation Function
- h_i is a function that represents the contribution of x_i to the worth of $\bar{x}$.

Therefore, to find the necessary information to construct the model, it is necessary to:

- Identify the set of relevant attributes, $\bar{x}$, that are to be used to measure the level of project attractiveness (company capability).
- Identify for whom the function $v(\bar{x})$ is to be located
- Specify the appropriate form of $v(\cdot)$, the aggregation function, for determining the project attractiveness (company competencies) index; and
- Determine the appropriate forms of h_i.

The Aggregation Function

The aggregation function, $v(\cdot)$, combines the contribution of the relevant model parameters to determine the overall worth of an object (alternative), $v(\bar{x})$ (von Winterfeldt and Edwards, 1986). This aggregation can take several functional forms, but this thesis employs the additive aggregation function shown below:

$$v(\bar{x}) = k_1 v_1(x_1) + k_2 v_2(x_2) + k_3 v_3(x_3) \dots\dots\dots\dots. (3.4)$$

Where,

k_i is the weight of an attribute i (and will be referred as w_i from here on),

$v_i(x_i)$ is the value function of the attribute *i* (i.e., the function that is used to transform the performance of the attribute *i* into its worth).

Risks and mitigation measures for PPP conservation projects

There are several risks that have been identified by Merna and Thani (2005), Bokharey et al (2010) and cited in the ZPWMA context that affect PPP projects in conservation. These are

Country risks- lack of legal frameworks, political environment (unstable government)

Financial risks- lack of audits, losses, inadequate cash flow, no possibility of profitability

Construction risks – poor conservation infrastructure, poor time and resource management

Inadequacy in concession contract- exit clause not done, risk allocation not done, major terms not included

Stakeholders' risk- stakeholder dissatisfaction, poor information feedback to stakeholders

Operation and maintenance risks- unstable and unreliable service, incompetent management team, lack of operate transfer package

Market risks – change in market trend

Changes in key management personnel risk

The most important task in the development of a multi-attribute Desirability model is the identification of the relevant risk mitigating attributes. Keeney and Raiffa (1976) suggest five criteria for considering the adequacy of parameters (dimensions) chosen to represent a problem:

Completeness — the parameters should cover all important aspects of the problem.

Operational — the parameters should be meaningful to the decision maker and other people involved in the problem.

Decomposable — parameters need to be broken down into simpler parts to allow "intelligible" handling.

Non-redundancy — different parameters should not measure the same thing by different means.

Minimal — the number of parameters should be kept at the minimum possible. Edwards (1977) advises that when starting an analysis, one should be careful not to include too many dimensions; as a rule of thumb, "eight dimensions is plenty and fifteen is too many".

In addition, Wedley (1990) points out that parameters that belong to the same hierarchical level should present the same order of magnitude so that meaningful comparisons will be performed. This thesis defines the three categories which companies should use for risk mitigation, performance assessment and demonstrate their potential to be involved in a privately promoted project as follows:

Organizational Characteristics - Companies and organisations should assess the adequacy (i.e., experience and quality) of their management team to handle the complexity and scope of the conservation project and the interaction among the different project partners participating in the enterprise. They should also check how well the project fits their strategic objectives regarding their access to new markets, the enhancement of their corporate image, and the expansion and diversification of their line of business. Management team must also be able to transmit project feedback to all relevant stakeholders thus efficient feedback channels are established.

Service and Production Capability - in this category organisations and companies should consider their ability to provide the necessary resources (e.g., human and equipment) and to use their specialized technical knowledge to

enhance the likelihood of conservation project success. Their expertise in other areas relevant to the project is also of importance and should be assessed. For instance, besides the technical capability of constructing conservation a facility a contractor might also provide skills to operate and maintain the project.

Resources Availability and Constraints - Companies and organizations should examine their ability to fund the initial stages of the project (e.g., feasibility studies, preliminary design, proposal preparation, etc.) and to invest their own financial resources, normally through equity infusions, to provide funds for the project during its "nonrevenue" phase. Companies should also consider the quality of the project return on their investment in terms of its expected amount, its certainty (risk profile), and its timing.

This thesis also defines the four categories that companies should use to analyse the level of attractiveness of different projects. They are:

Financial Assessment - The requirement that conservation projects need to provide the necessary cash flows to pay for loans and to give an adequate return on investment for the project's investors is essential but not sufficient to have a financially sound project. Companies should assess the certainties (i.e., risk profiles) of the construction costs, operational costs, and operational revenues. They should also evaluate the availability of adequate financial instruments to raise the necessary financing, the project's capacity to repay the debt financing and the project's cash flow exposure to foreign exchange fluctuations. Internal periodic audits are also important for smooth flow of project finances for desirable results.

Technical Evaluation - companies should consider the promoting team's ability to provide an appropriate technical solution for the needs of the project. Factors to be considered include: the functionality of the design, the use of well-known construction technologies, the length of the construction period, and the capacity to offer simple and efficient operational procedures. The availability of skilled labour and other resources for the construction and operation of the facility are also of importance and should be examined. Therefor there is need for technical evaluation in all aspects of PPP projects whether be it conservation or infrastructural projects.

Stakeholder Satisfaction Assessment - In most PPP engagements stakeholders are satisfied with smooth running and ethical project values. Financial returns are also expectations of the day hence the need for a prompt, stable and reliable service delivery in PPP concessions. Information dissemination and efficient channels of communication on project developments and achievements are relevant in satisfying influential stakeholders. Since stakeholders are more concerned with value maximisation, the need for a guarantee on certainty of time and cost reduction and positive results. In addition, Efficient Stakeholder Management Framework are to be promoted to lure more investment and satisfaction of stakeholders

Appropriate Risk Allocation & Legal Frameworks - Major PPP concessions survive and rely very much on risk allocation in the contractual and operational agreement. These will minimise the possibilities of incomplete contracts because exit clauses will be well spelt and with minimal risk. The availability of vibrant legal framework necessitates the securing of the both the private and the public interest and reduces project risk. Political risks need appropriate mitigation or allocation for boosting investor confidence.

3.3 SUMMARY

This chapter provided the foundations and attributes on which the Desirability model relies on. These attributes are risk mitigation and performance assessment factors (attributes) that are necessary for the turning around the performance of PPP projects in conservation and infrastructural facilities. These are grouped into Company Competences and Project Attractiveness. The attributes seek to bridge the gaps in the literature. The chapter gives the foundations of the attribute weighting and evaluation procedures used in this thesis.

The conceptual and theoretical frameworks employed the foundations of the multi-attribute decision model. The additive aggregation function is the one being used to assess the relationship of attributes in the Desirability Model The critical aspects of this thesis namely ***stakeholder satisfaction, risk allocation and legal frameworks*** are addressed in mainly two categories which are Stakeholder Satisfaction Assessment category and the Appropriate Risk Allocation and Legal Frameworks category. The next chapter provides the methodology employed in this thesis.

CHAPTER 4:
RESEARCH METHODOLOGY

4.0 INTRODUCTION

This chapter outlines the research methodology employed in this study to collect and analyse data. It consolidates data from the administered questionnaires for easier analysis. It also puts across the various methods that have been employed in collecting data needed for the model to be modelled. This chapter showed the statistical methods that complemented the weighting procedures shown in chapter 3 namely the Direct Rating method, Eigenvalue Method, Value functions and Delta dimensions. Varying experts were interviewed and questioned for formulation of a meaningful model that assist in achieving a positive performance, risk mitigation and profitability in the ZPWMA projects. This chapter therefore outlines the research design employed in this thesis. It also provides information on how sampling was conducted and the way the questionnaires were distributed. This chapter paves way for data description in the next chapter.

4.1 RESEARCH DESIGN

This thesis employed both the qualitative and quantitative approaches to collect and analyse data since each of them has its own preferable attributes. Qualitative research was appropriate for an in-depth and information-rich understanding of a certain subject (Bryman, 2012). (Bansal & Corley, 2011; Thomas & Magilvy, 2011) pointed out that qualitative research brought the life of the organization to the study, illustrated context, and allowed readers to view the world through the author's eyes. Hence questionnaires also aided the collection of qualitative data. Yin (2011) stated that researchers use quantitative research to answer questions about relationships among measured variables with the purpose of explaining, predicting, or controlling a phenomenon. Therefore, qualitative assessment was done on data collected from interviews and questionnaires.

4.2 RESEARCH INSTRUMENTS

The research instruments used in this study for fact finding and data collection were entirely questionnaires. In general, the questionnaires investigated the present trend of PPP risks, the real understanding of conservation players on PPP in Zimbabwe; evaluated perceptions of ZPWMA's current experience in managing PPP projects, and assessed main risk mitigation measures most desirable for PPPs. The questionnaires assisted in bringing out the real risks affecting the PPPs in Zimbabwe and possible solutions to mitigate them. The questionnaires also allowed the respondent to give opinion on most cases on risks and mitigation measures to different PPP situations.

4.2.1 Questionnaire types

Regarding the types of questionnaires used for this thesis, the closed questionnaire was useful in obtaining information on age, academic qualification, and others. Despite selecting the most appropriate answer, the respondent had also an alternative of answering more than one where applicable. On the other hand, open questionnaire was a part of closed questionnaire where the respondent would specify other answers in the "Others" category as not all responses were included in the answers sheet.

4.2.2 Questionnaire test

Pilot questionnaire survey is conducted prior to the distribution of survey to test the feasibility of intended questionnaire to be undertaken, as well as to perfect the questionnaire concepts and wording. Pilot questionnaire survey ensures the reliability and workability of the questions, choices of answers, offers feedback on whether the questions are interpreted in the same way for respondents, whether the response categories mean the same thing to everyone as well as the format in the questionnaire survey by questioning a small group of respondents before the actual questionnaire survey is conducted.

A reliability analysis was conducted to test the internal consistency of the survey variable data using the Cronbach's alpha method based on internal consistency. Despite the data reliability, Cronbach's alpha method is also vital for internal validity in correctly interpreting the relationships between variables. Based on standard coefficient of Cronbach's alpha, the maximum value of reliability coefficient is 1.00 where for the output with reliability coefficient of less than 0.6; the questionnaire in data collection is considered as not reliable and thus should be corrected or eliminated from the data collection. The statistic can be defined as below:

$$\alpha = \frac{K}{K-1}\left(1 - \frac{\sum_{i=1}^{K} \sigma^2 Y_i}{\sigma_x^2}\right) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 4.1$$

Where

K= Number of factors

σ_x^2= Variance of the total scores for the respondents

$\sigma^2 Y_i$ = Variance of component i for the respondents

4.2.3 Sample selection

The respondents have to meet three criteria before being invited to participate in the survey, which include (1) having extensive working experience within the conservation field, (2) having been involved in the management of PPP projects in Zimbabwe or have gained in-depth knowledge in the area of PPP, and (3) experience in conducting PPP research or have followed very closely with the development of PPP projects. The populations considered to be defined for the analysis as follows:

> The population of the "Insiders" includes all persons in the decision-making level of the public agencies and ZPWMA that responsible of conservation projects in Zimbabwe.
>
> The population of the "Outsiders" includes all persons in the industrial practitioners, academics and private promoter who have been involved in PPP projects in Zimbabwe and specifically promoting ZPWMA projects
>
> The profiles of the respondents are as shown in the Table 17 below:

Table 16: Profiles of the respondents

Groups	No of respondents	Designation	Organisation
Insiders			
I-01	8	Directors	ZPWMA, ZTA
I-02	10	Project managers & team leaders	Frankfurt Zoological Society,
I-03	10	Project Managers & team leaders	ZPWMA, ZTA
I-04	8	Project participants	ZPWMA
I-05	10	Project Managers & team leaders	Pioneer Africa
I-06	8	Audit and accounts	ZPWMA
I-07	8	Conservation managers & experts	ZPWMA
I-08	8	Team leaders & project participants	Pioneer Africa, Frankfurt Zoological Society
Outsiders			
O-01	13	Private Conservationists	Private
O-02	16	Private Consultants	Private
O-03	14	Professors & Doctors	Private
O-04	16	Lecturers & Deans	University of Zimbabwe, Midlands State University, National University of Science & Technology
O-05	14	Public accountants	Private
O-06	17	Economists & Industrialists	Private

(Source: Computed by Author)

4.2.4 Distribution Method

The used method of distributing and collecting the questionnaire encompasses hand delivery and, mailing. Nevertheless, because of geographic constraints many were done by electronic mail distribution through a written online survey with where possible and necessary a follow-up with a telephone call to the respondent.

These methods of questionnaire distribution provide direct access to the respondent to ensure that the respondents comprehend the requirements of the questionnaire as well as demonstrate the study's endeavour in individually approaching the respondents. Direct approach is important in enhancing the respondent's interest of answering the detailed questionnaire. Each potential respondent received a cover letter and a copy of the questionnaire. The cover letter explained the purpose of the study and assured the confidentiality of answers given by respondents. History proves that questionnaire usually produces low response rate. In avoiding this, phone calls and sequential visits were undertaken to the respondents after the questionnaire submission. Phone calls were used only when the response to the questionnaire was behind scheduled due dates, or when the respondents contacted the researchers with questions or requests for further information.

4.3 STATISTICAL TOOL FOR RELIABILITY

The data analysis in this study is being used in the Statistical Package of Social Science (SPSS), as SPSS is presently the most dependable in data processing and graphical output presentation. The Kruskal Wallis H test, Pearson's Product Moment correlation and Spearman's rank order correlation was used in this thesis to check for reliability of data.

4.3.1 Kruskal Wallis H test

It is a rank-based non-parametric equivalent of the one-way analysis of variance (ANOVA). This test used to compare medians between two or more groups that may have different sample sizes. The first step is to rank all the scores, ignoring which group they belong to. The lowest score gets the lowest rank. If two or more scores are the same, then they are "equal". "equal" scores get the average of the ranks that they would have obtained, had they not been "equal". After that calculate the sum of the ranks for each group, then the test statistic, H.

The statistic H of the test is compared to a table of critical values based on the sample size of each group. It is used to evaluate the null hypothesis that all populations have identical distribution functions against the alternative hypothesis that at least two of the samples differ only with respect to location (median), if at all. Moreover, the test does not identify where this stochastic dominance occurs or for how many pairs of groups stochastic dominance obtains, it only tells you that at least two groups were different. Using post hoc test would help analyse the specific sample pairs for stochastic dominance. Three assumptions that are required for a Kruskal-Wallis H test to give valid results which are:

The dependent variable should be measured at the ordinal or continuous level (i.e., interval or ratio).
The cases represent random samples from the populations, and the scores on the test variable are independent of each other.
The continuous distributions for the test variable are the same (except their medians) for the different populations

$$H = \left[\frac{12}{N(N+1)} \times \sum \frac{Tc^2}{n_c}\right] - 3 \times (N+1) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 4.2$$

Where:

N= Total number of participants (all groups combined)
Tc= The rank total for each group
n_c= size of each group

4.3.2 Pearson's Product Moment Correlation

It is a measure of the strength of a linear association between two variables. In this thesis it is used to determine the relation between attribute weights provided by the Direct Rating Method and the Eigenvalue Method. Its formula is given by:

$$\rho_{X,Y} = \frac{cov(X,Y)}{\sigma_X \sigma_Y} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 4.3$$

Where:

COV is the covariance,
σ_X is the standard deviation of X
σ_Y is the standard deviation of Y

4.3.3 Spearman's Rank Order Correlation

It measures the strength of association of two variables. In this thesis it is used to evaluate the holistic and decomposed evaluations from the responses in the questionnaires.

$$r_s = \rho_{rgX,rgY} = \frac{cov(rg_X, rg_Y)}{\sigma_{rgX}\sigma_{rgY}} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 4.4$$

Where:

ρ denotes the usual Pearson Correlation Coefficient, but applied to the rank variables

$cov(rg_X, rg_Y)$ - is the covariance,

σ_{rgX} & σ_{rgY} - are the standard deviations of the rank variables.

4.4 EMPIRICAL DESIRABILITY MODEL

The empirical model used in this study largely builds on the specification of PPP financing facts by Dias and Ioannou (1995), informed by literature as well as data availability. It takes the assertion by Zayed and Chang (2002) that the major risks that affect many forms of PPPs are given by:

$$PPP^R = f[(CNR, STR, FR, ICC, CR, MR, OMR\ CMR)] \dots\dots\dots\dots\dots\dots\dots\dots 4.5$$

Where PPP^R are *PPP Project Risks* constituting of *Country Risks* (CNR), *Stakeholders Risks* (STR), *Financial Risks* (FR), *Inadequacy in Concession Contract* (ICC), *Construction risks* (CR), *Market Risk* (MR), *Operation and Maintenance Risk* (OMR), *Change in Key Management Personnel* Risk (CMR)

The empirical analysis employed in this study is further based on the above theoretical framework and conceptual framework and project desirability factors which are related and general to PPP risk mitigation and analysis. These risk mitigation factors are categorised into company competences and project attractiveness as outlined below:

$$PDF^M = f[(CC), (PA)] \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 4.6$$

Where PDF^M are the *Project Desirability Factors* (risk mitigation measures) which are composed of *Company Competences* (CC) and *Project Attractiveness* (PA).

$$PDF^M = f[(OC, SPC, FRC), (FA, TE, SSA, AAL)] \dots\dots\dots\dots\dots\dots\dots\dots 4.7$$

As highlighted by the in the equation above *Company Competences* (CC) comprises of *Organizational Characteristics* (OC), *Service and Production Capacity* (SPC), *Resources Availability and Constraints* (FRC).

Project Attractiveness comprises of *Financial Assessment* (FA), *Technical Evaluation* (TE), *Stakeholder Satisfaction Assessment* (SSA), *Appropriate Risk Allocation and Legal* Frameworks (AAL).

Therefore using the aggregation function, the Desirability model two indices of risk mitigation measures that assess the capability of the company (Company Competence), $v(\bar{x})_{CC}$ and the Project Attractiveness, $v(\bar{x})_{PA}$. These indices are given by the additive multi-attribute value functions in the theoretical framework and takes the form below:

$$v(\bar{x})_{CC\,(or\ PA)} = \delta \sum_{i=1}^{n} w_i v_i(x_i) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 4.8$$

This functional form of the Desirability Model employs the basis of concepts and recommendations from Gardiner (1974) and von Winterfeldt and Edwards (1986).

4.5 THE WEIGHTING PROCEDURE

In this thesis, two subjective methods are referred to in assigning importance weights to the different parameters of the Desirability Model: the direct rating method and the eigenvalue method. The direct rating method (DRM) is used by Edwards in the development of a multi-attribute decision method called Simple Multi-Attribute Rating Technique (SMART). The eigenvalue method (EM) is used by Saaty in the development of another multi-attribute decision method, the Analytic Hierarchy Process (AHP). The objectives of using both methods are twofold: (1) to verify if the different methods yield different weights and (2) in case of weight differences, to verify if there are differences in model prediction. The next two sub-sections elucidate how these methods work.

4.5.1 The Direct Rating Method (DRM)

The direct rating method (DRM) was developed by Edwards (1971, 1977) to determine the relative importance weights of different factors of a multi-attribute model. This method requires the decision maker to perform the following tasks:

Rank order the attributes in decreasing order of importance (ties are possible),
Weigh the attributes in importance-preserving ratios
Normalize the final weights

For example, in order to determine the relative importance of the three attributes (G, H, I) of a model, it is first necessary to rank them in decreasing order of importance (e.g., I, G, H). Second, assign a value of 10 to H (i.e., the least important parameter). Next, move over to the next more important parameter (G in this example), compare it to H and assign a value that reflects how much more important G is over H (e.g., if G is three times more important than H then the value of attribute G is 30). Continue up the list of attributes, checking each set of implied ratios every time a new judgment is passed. If attribute I is assigned a weight of 30, it should be three times more important than H and have the same importance as G. Finally, normalize the values given to all parameters to determine their relative importance weights: w = (30/(30+10+30) = 0.429, 0.143, 0.429).

4.5.2 The Eigenvalue Method (EM)

The eigenvalue method (EM) is used by Saaty (1980) in the development of the Analytic Hierarchy Process (AHP). The basic purpose of the EM is to derive importance weights from pairwise comparisons among the different attributes of a multi-attribute model. In this thesis the pairwise comparisons are executed with the aid of a qualitative scale. This scale tries to incorporate the decision maker's experience and subjectivity to reflect the degree to which the decision can discriminate among the intensity of relationships between attributes. Saaty (1980) compared several scales and concludes that a qualitative scale with intensities ranging from 1 to 9 is the most appropriated one. The stated reasons for this choice are the following:

The qualitative distinctions are meaningful in practice and have an element of precision when the compared items are of the same order of magnitude or close together about the property used to make the comparison.

The human ability to make qualitative distinctions is comprised of five attributes: equal, weak, strong, very strong, and absolute. Since compromises between adjacent attributes when greater precision is essential, the total requires nine values.

The assumption that the brain can simultaneously process 7±2 items (Miller, 1956).

The qualitative definitions used in the original AHP scale are of equal importance, moderate or weak importance, strong or essential importance, very strong or demonstrated importance, and absolute or extreme importance. A slightly modified version of the above scale is used in this study to have a more uniform distance among the verbal expressions than the one provided by the original scale. Table 16 lists the verbal expressions used in this thesis and their correspondent intensities of importance. Once pairwise comparisons have been made among the different model attributes, a comparison matrix is assembled, and the relative importance weights are determined using the EM. A model with n attributes needs n(n-1)/2 comparisons is made to provide information to assemble the comparison matrix. This is because the comparison matrix is reciprocal, thus, the elements of the main diagonal, $a_{i,i}$ (for all i = 1, 2, ..., n), are equal to unity and the elements below the main diagonal are reciprocal to elements above the main diagonal ($a_{j,i} = 1/ a_{i,j}$) .

Table 17: Scale used to perform pairwise comparisons

Intensity of importance	Definition	Explanation
1	Equal importance	Two parameters contribute equally to the objective.
3	Slight importance of one over another	Experience and judgment slightly favour one parameter over another.
5	Moderate importance	Experience and judgment moderately favour one parameter over another.
7	Substantial importance	One parameter is favourable very strongly over the other.
9	Absolute importance	The evidence favouring one parameter over another is of the highest possible order of affirmation.
2,4,6,8	Intermediate values between adjacent scale values	When compromise is acceptable.
Reciprocals of above nonzero	If activity i has one of the above nonzero numbers assigned to it when compared with activity j, then j has the reciprocal value when compared with i	Assumption.

Source: Saaty, (1980)

4.6 SUMMARY

This chapter therefore outlines the research design employed and the empirical model in this thesis. The experts to which the questionnaires are distributed to are shown in this chapter. It also gives the information on how sampling was conducted

and the way the questionnaires were distributed. It addresses the statistical concepts to be used hand in hand or compliment the weighting procedures shown in chapter 3. This chapter paves way for data description and its sources. In the next chapter data is analysed and the 23 model attributes of the Desirability Model are described together with data reliability, effectiveness and validity.

CHAPTER 5:
DATA PRESENTATION AND ANALYSIS

5.0 INTRODUCTION

This chapter presents the data and data analysis for the thesis. Firstly, this chapter shows the data description and their sources. The study uses primary data and checks its effectiveness and validity. The chapter analyses the primary data for their reliability and validity. Thus, it analyses sample size and fitness of data for the purpose of continued use in this thesis. The study uses questionnaires to collect primary data. This thesis employs the KMO (Kaiser-Meyer-Olkin) and Bartlett's test for checking data sampling adequacy and the Cronbachs' Alpha tests for instrument (questionnaire) reliability. The distributions of the respondents were analysed for identification of different characteristics of these respondents and their reliability in this thesis. Age groups, qualifications, and experience in conservation together with PPPs were used in the analysis of the credibility of the respondents. The results distributions were generated from SPSS 16. The Kruskal Wallis test and the factor analysis are also employed for data effectiveness. Therefore, the major thrust of this chapter is to present and analyse the data that is essential for the bringing up of the results of this thesis.

5.1. DATA DESCRIPTION AND SOURCES

All the data/variables used in the generation of the project desirability model for company competences and project attractiveness are as shown in the tables below.

Table 18: Data description and sources company competence attributes

Variable	Description	Source
	Organizational Characteristics	
QMT	Expertise of Management Personnel	EU, WCNB
FSP	Feasible Strategic Planning	WCNB, SANparks
CPP	Compatibility with Project Partners	SANparks, EU
	Service And Production Capability	
ASK	Sufficiency of Specialized Knowledge	EU
QPR	Overall Quality of Productive Resources	WCNB
APR	Availability of Productive Resources	Constructed from A. Grigorescu (2008)
	Resources Availability and Constraints	
FIC	Ability to Fund Initial Project Costs	ZAWA, EU, ZPWMA
AIR	Ability to Identify Project Risks	Constructed using data from A. Grigorescu (2008)
QP	Profitability Margin	WCNB, SANparks

Table 19: Data description and source of project attractiveness attributes

Variable	Description	Source
	Financial Assessment	
APP	Ability of the Private Partner to Fund the Project	EU, WCNB
COR	Certainty of Revenues	WCNB, SANparks, ZPWMA
TFA	Taking Periodic and Constant Financial Audits	SANparks, EU, IMF
	Technical Evaluation	
AQS	Ability to Provide Quality Product/Service	EU, ZPWMA
AFP	Ability to Provide a Feasible Project Plan	WCNB, IMF
OTP	Abil. Prov. an Adequate Oper-Transfer Pack.	Constructed from A. Grigorescu (2008)
	Stakeholder Satisfaction Assessment	
PRD	Prompt, Stable and Reliable Service Delivery	ZAWA, EU
ECC	Efficient Channel of Communication	Constructed using data from A. Grigorescu (2008)
CTS	Certainty of Time and Cost Saving	WCNB, SANparks
SMF	Efficient Stakeholder Management Framework	EU
LCS	Level of community support	ZAWA
PCP	Probability of community participation	ZAWA
	Appropriate Risk Allocation & Legal Frameworks	
RAC	Risk Allocation in Contractual Agreement	IMF, World Bank, ZPWMA
RAO	Risk Allocation in Operational Agreement	IMF, World Bank, ZPWMA
FEF	Fair and Efficient Legal framework	SANParks
PE	Political Environment	IMF, World Bank, ZPWMA

(Source: Compiled by Author)

5.2 QUESTIONNAIRE SURVEY ANALYSIS

Analysis is an interactive process by which answers are scrutinized to see whether these results support the hypothesis underlying each question. Quantitative statistical analysis for questionnaire was done by using Statistical Package for Social Sciences v16 (SPSS). The questionnaires were distributed to the insiders' groups as well as the outsiders. A general summary of statistical indicators of test carried out are shown in Table 20. In line with Table 20, 116 and 107 questionnaires survey are returned from 160 questionnaires distributed for both questionnaires one and two respectively. This contributes to 72.5% and 66.9% of the total distribution for questionnaires one and two respectively. The high percentage of answered questionnaire is probably caused by the method of direct questionnaire survey distribution to the respondents, which fosters the respondent's cooperation in the survey. Besides, cooperation by respondents' organizations in reminding their participants to respond to the questionnaire survey is also one of the milestones escalating the number of returned questionnaires.

Yet, only 99 and 92 returned questionnaires are answered for questionnaire one and two respectively, whilst 17 and 15 returned questionnaires are disqualified for questionnaire one and two respectively. This was due to blank, illegible, response behaviour (processing time and plausibility), wrong survey sample (target group), invalid or multiple answers. These returned and valid questionnaires are deemed as adequate and dependable for the purpose of this thesis.

Table 20: Comparison among distributed, returned, valid and invalid questionnaires

	Insiders		**Outsiders**		**Overall**	
Questionnaire	One	Two	One	Two	One	Two
Questionnaires distributed	70	70	90	90	160	160
Questionnaires returned	59	56	57	51	116	107
Missing	11	14	33	39	45	53
Questionnaire returned percentage	84.2%	80.0%	63.3%	56.7%	72.5 %	66.9%
Questionnaire returned and valid	48	47	51	45	99	92
Questionnaire returned but invalid (torn, unclear answer etc.)	11	9	6	6	17	15
Valid percentage	68.6%	67.1%	56.7%	50.0%	61.9%	57.5

(Source: Computed by Author)

Table 21: Adequacy of valid response rate for analysis and reporting

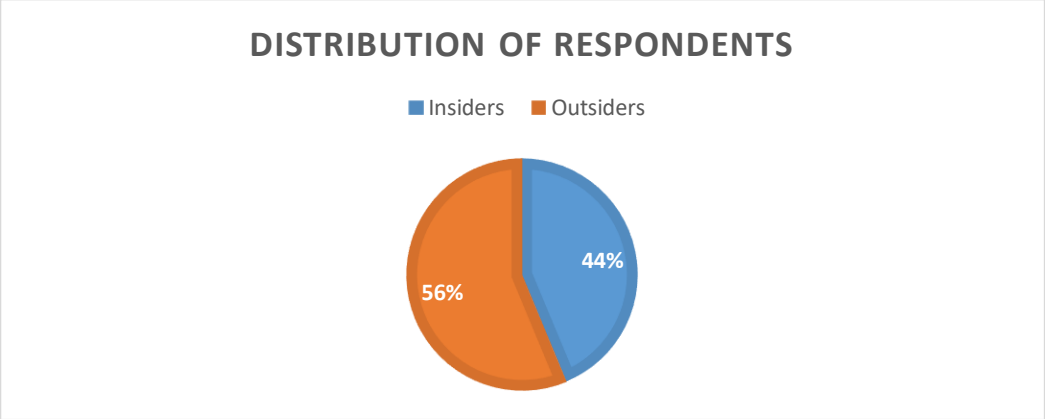
Valid response rate (%)	**Adequacy for analysis and reporting**
< 50	Not adequate
50 – 59	Adequate
60 – 69	Good
70 -100	Very good

(Source: Computed by Author)

5.3 DATA ANALYSIS

Findings in the pie chart below show that 44%) of the respondents comprises of insiders i.e. Experts that participated in this study and whose affiliation suggested they would look at projects from the ZPWMA viewpoint. The largest percentage of respondents (56%) were outsiders.'

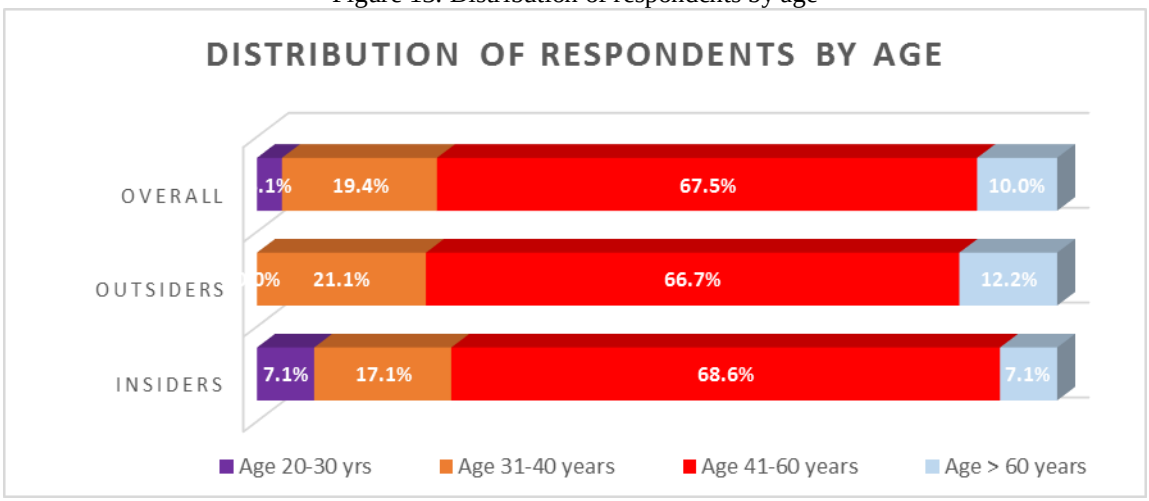
Figure 12: Distribution of respondents



(Source: Computed by Author)

Age serves as perceptual indicator of abilities, skills and experience. Findings in Figure 13 show that majority of the overall respondents (67.5%) aged between 41-60 years old. Besides, (19.4%) of respondents were aged between 31-40 years old, whilst respondents aged 60 years old and above possess about (10%), respondents aged 20-30 years old possess about (3.1%) which is the lowest percentage of respondents. Furthermore, findings show that majority of respondents from all the groups are of reputable age and experience.

Figure 13: Distribution of respondents by age

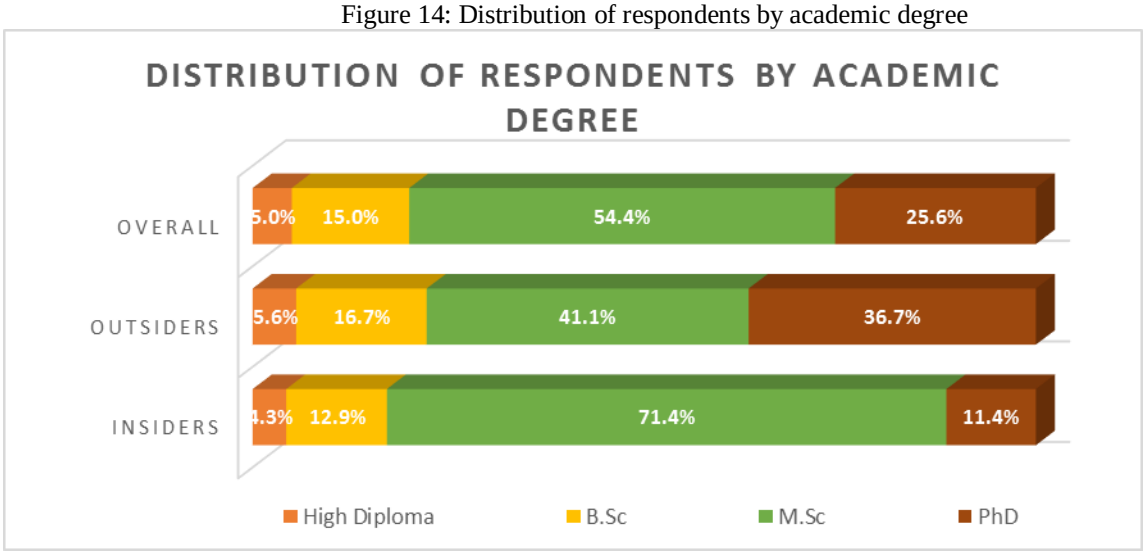


(Source: Computed by Author)

Regarding the Academic degree, respondents are also grouped into their academic qualification. It can be notes from the Figure 14, and with respect to the overall qualifications of the respondents, the highest percentage was for those with a master's degree, where this ratio was (54.4%), which is the largest percentage of respondents, followed by a PhD Degree by (25.6%), and then the Bachelor Degree with (15.0%). Moreover, the lowest percentage was for those with a High Diploma Degree by (5.0%). In addition, the survey results in Figure 14 show that majority of respondents were master's degree holders and PhD Degree.

This questionnaire result is considered as reliable and valid since majority of the respondents possess the master's degree and the PhD as their academic qualification, yet the response given is still considered as dependable given that the academic qualification is of knowledgeable people in the management and consultancy. Moreover, as a part of the survey target was the academics from Zimbabwe Universities and Institutions who involved in educating the future PPP players, this explains the high percentage of the PhD Degree holders and reinforces this survey reliability.

Figure 14: Distribution of respondents by academic degree



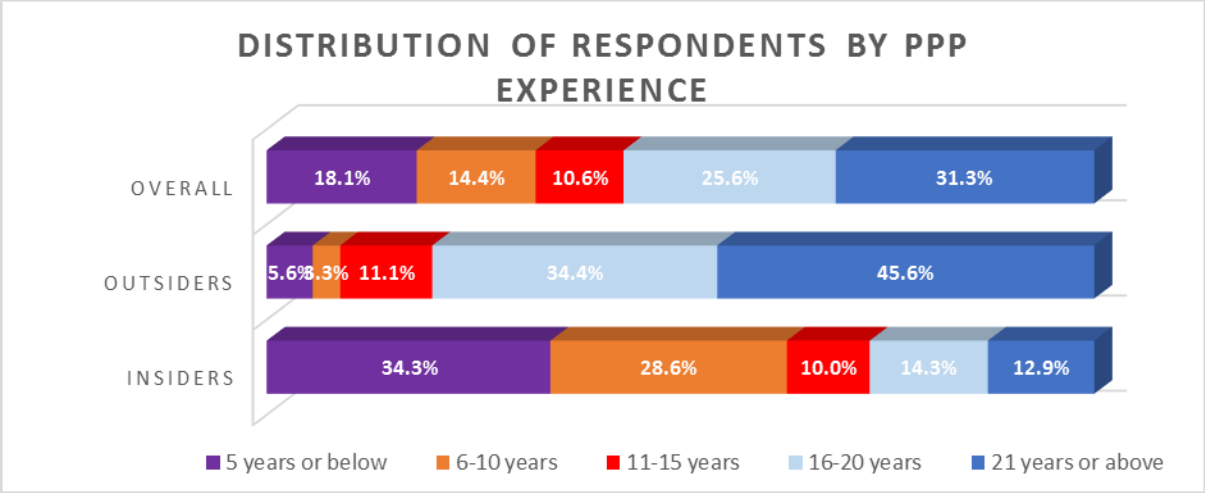
(Source: Computed by Author)

5.3.1 General experience in Conservation and PPPs

Furthermore, Figure 15 shows that nearly one-third (31.3%) of overall respondents had at least 21 years of working experience or consultancy in PPPs. At least (25.6%) of respondents had 16-20 years of experience in PPPs. (18.1%) of respondents had 5 years or below working experience. In addition, (14.4%) had 6-10 years of experience in PPPs. Lastly, about one-tenth (10.6%) of respondents had 11-15 years of working experience which is the lowest percentage of respondents.

Furthermore, survey results show that half of the respondents had at least 16 years of working experience, the variation in the working experience of the survey sample, can explained due to that part of the questionnaire target respondents was the decision makers and persons at the management level and advisors that have long experience. This hands-on working experience and relevant organizations of the selected experts uphold the validity and provided a balanced view of this study.

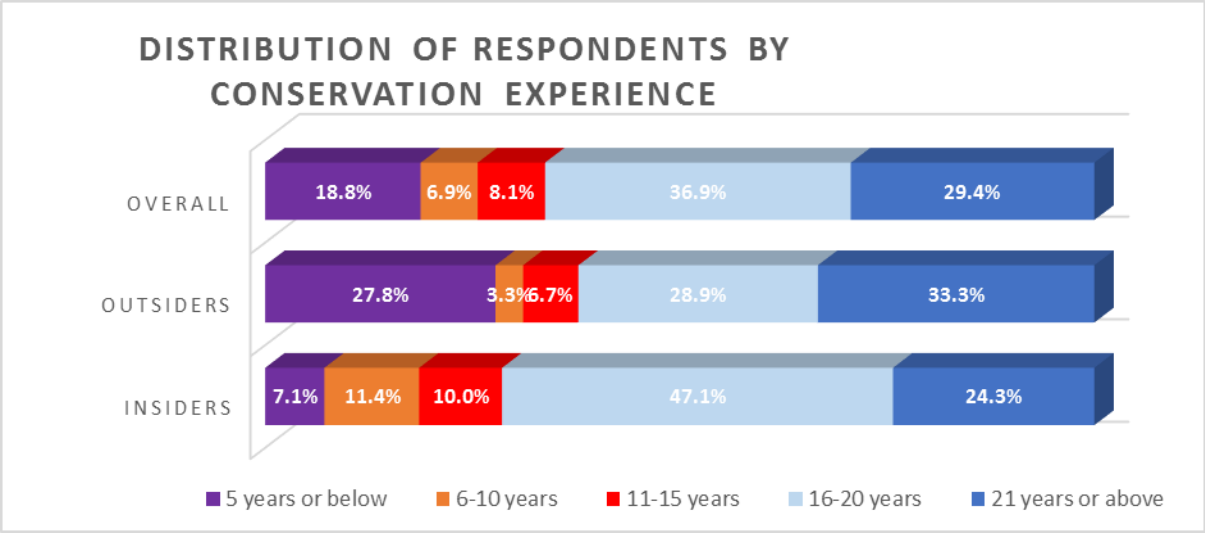
Figure 15: Distribution of respondents by PPP experience



(Source: Computed by Author)

Furthermore, the distribution of respondents has been done through analysing conservation experience of the respondents. Figure 16 shows that nearly one-third (29.4%) of overall respondents had at least 21 years of working experience or consultancy in conservations. At least (36.9%) of respondents had 16-20 years of experience in conservation. (18.8%) of respondents had 5 years or below of exposure to conservation projects. In addition, (8.1%) had 11-15 years of experience in conservation. (6.9%) of respondents had 6-10 years of experience under conservation which is the lowest percentage of respondents. This gives a reliable analysis since most respondents are experienced in the subject matter of performance of PPPs under conservation.

Figure 16: Distribution of respondents by conservation experience



(Source: Computed by Author)

5.4 ANALYSIS OF MAJOR RISKS AFFECTING PPP CONSERVATION PROJECTS

This part of the thesis shows the results of the risks to which PPP projects are prone to mainly in the conservation area. Section A of questionnaire 1 was used for deriving these results. The null hypothesis used in the analysis of the risk claims that the performance of PPP projects in conservation is prone to the following risks:

Financial Risks (FR), Inadequacy in Concession Contract (ICC), Construction risks (CR), Market Risk (MR), Operation and Maintenance Risk (OMR), Change in Key Management Personnel Risk (CMR), Country Risks (CNR), and Stakeholders Risks (STR).

All the respondents are asked to risk rate factors that affect the performance and profitability of PPP projects in conservation according to a Likert scale from 1 to 6 (1 = Completely Disagree, 6 = Completely Agree and 0= Not Applicable), a value above "3.5" would represent that the attractive factor is of importance. The mean values are shown in the Table 22 below:

Table 22: Mean Values for risk factors (categories)

Risk factors	Insiders		Outsiders	
	Mean	Rank	Mean	Rank
CNR	5.2	2	5	3
STR	5.4	1	5.7	1
FR	5.1	3	5.6	2
ICC	5.01	4	4,6	4
OMR	3.4	5	3.1	6
MR	2.9	6	3.8	5
CR	2.5	8	2.8	7
CMR	2.6	7	2.4	8

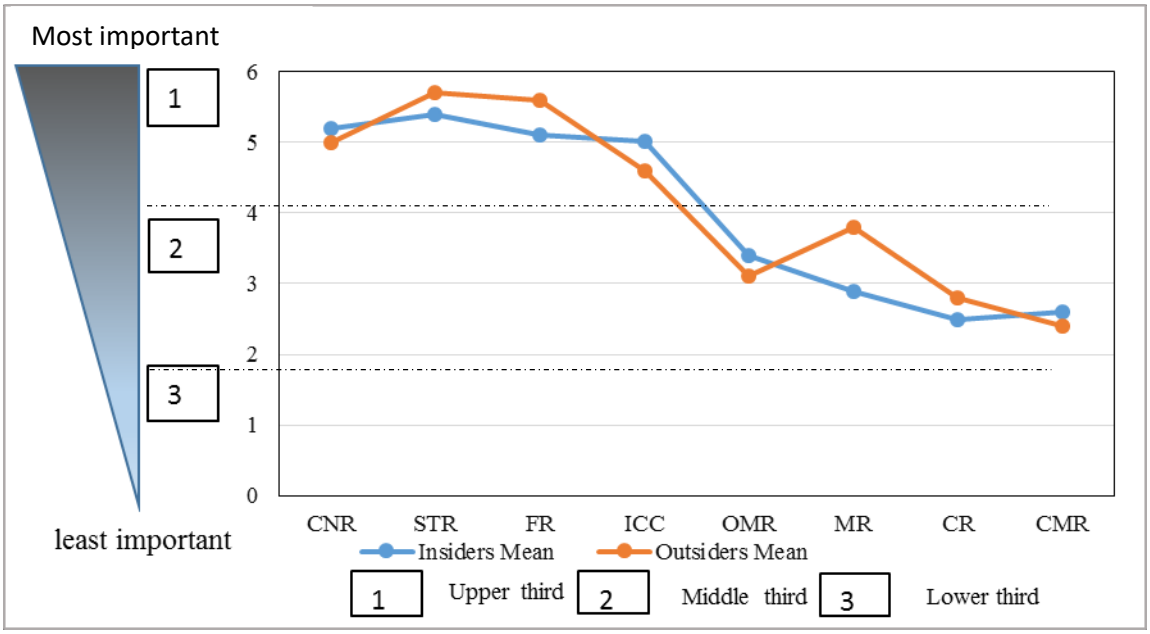
(Source: Computed by Author)

Based on the overall respondents' results the top four ranked risks that affect the profitability and performance of PPP projects in conservation are Country Risks (CNR), Stakeholders Risks (STR), Financial Risks (FR) and Inadequacy in Concession Contract (ICC) respectively.

The standard deviations also show that the respondents did not have much deviations in their judgements. Generally, the means show that all the risks have the potential to affect PPPs in conservation depending on how specific the project is. The Table 23 below shows means and standard deviations for each risk factor among survey groups, it is not surprising that

the entire respondents have rated these factors highly which reflect the small value of the standard deviations, where most of factors ranked at the upper and middle third of the importance scale.

Table 23: Risk factors results for PPPs



(Source: Computed by Author)

In order to test the agreement among survey groups, respondents on the rankings of risk factors that affect the profitability and performance of PPPs in conservation projects, the non-parametric statistical Kruskal Wallis test is performed. The null hypothesis for the test is that the median significance of each factor is equal among the three groups.

Findings indicate that as the p-value is greater than 0.05 for all factors, the null hypothesis is accepted, indicating that there is an agreement and there is no significant difference among the survey groups for all the risk factors affecting the performance of PPP projects in conservation. Table 24 below shows the test results. As the sample size in each group is larger than 5, H is represented by Chi-square value, and p- value is labelled as "Asymp Sig." as shown in the SPSS output, meaning that the probability of getting a value of H is the p- value corresponding to a Chi-square; with (n-1) degrees of freedom (df).

Table 24: Kruskal Wallis test results for risk factors

	CNR	STR	FR	ICC	OMR	MR	CR	CMR
Standard deviation (SD)	1.125	1.011	1.450	1.291	0.986	1.409	1.598	1.485
Chi Square (H)	3.483	1.258	2.187	0.678	3.600	3.682	3.482	1.244
Degrees of freedom (df)	2	2	2	2	2	2	2	2
Asymp. Sig (p-value)	0.175	0.533	0.335	0.712	0.165	0.158	0.182	0.541

(Source: Computed by Author)

5.5 INSTRUMENT RELIABILITY ANALYSIS

Cronbach's Alpha is designed as a measure of internal consistency of items in the questionnaires. It varies between zero and one. The closer alpha is to one, the greater the internal consistency of the items in the questionnaire. Total number of questions or items in questionnaire one is 64 including 48 testing variables or LIKERT scale variables and 16 items related

to demographic variables. Hence "N" of items in the below Cronbach's Alpha test is 48. In addition, the total number of questions or items in questionnaire two is 68 including 46 testing variables or LIKERT scale variables and 18 items related to demographic variables. Hence "N" of items in the below Cronbach's Alpha test is 46.

Table 25: Cronbach's Alphas for instruments reliability

	Cronbach's Alpha	**No of items**
Questionnaire One	0.697	48
Questionnaire Two	0.701	46

(Source: Computed by Author)

Table 26: Questionnaire overall results

	Mean	**Variance**	**Std. Deviation**	**No of items**
Questionnaire One	192.24	90.294	9.502	48
Questionnaire Two	189.67	86.654	7.112	46

(Source: Computed by Author)

Inference: Cronbach's alpha test was applied in checking the reliability of questions or items. The above tables displayed several results obtained. The Cronbach's alpha test was effected, and it resulted in overall scores of 0.697 and 0.701 for questionnaire one and two respectively indicating internal consistency of the items.

5.6 SAMPLING ADEQUACY

KMO (Kaiser-Meyer-Olkin) and Bartlett's test: This test is used to measure the sampling adequacy, which also decides the need to conduct factor analysis. After a positive KMO Bartlett's test, factor analysis was performed.

This means the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy is a statistic that indicates the proportion of variance in the variables that might be caused by underlying factors. The KMO value for the instrument was 0.653, which was acceptable as a middling value. Similarly, Bartlett's test of sphericity tests the hypothesis that the correlation matrix is an identity matrix, which would indicate that the variables are unrelated and therefore unsuitable for use in the thesis. The Bartletts test showed a significant level and hence the instruments (questionnaires) were accepted for further study.

Table 27: KMO (Kaiser-Meyer-Olkin) and Bartlett's test results for questionnaires

KMO (Kaiser-Meyer-Olkin) and Bartlett's test			
		Questionnaire one	Questionnaire two
Kaiser-Meyer-Olkin measure of sampling adequacy		0.735	0768
Bartlett's test of Sphericity	Approx. Chi-Square	12674.184	13288.244
	Degrees of freedom	1128	1134
	Significance	0.000	0.000

(Source: Computed by Author)

5.7 ANALYSIS OF RISK MITIGATION MEASURES (FACTOR ANALYSIS)

Factor analysis was done to extract factors for PPP risk mitigation and project performance analysis. Principal Component Analysis was the method of extraction. Varimax was the rotation method. As per the Kaiser criterion, only factors with eigenvalues greater than 1 were retained. Two factors in the solution had eigenvalues less than 1. Together, they accounted for almost 8% of the variability in the original variables. These factors were then dealt with quite prudently. Though their eigenvalues were less than one and so they were thrown away, thus LCS (Level of community support) and PCP

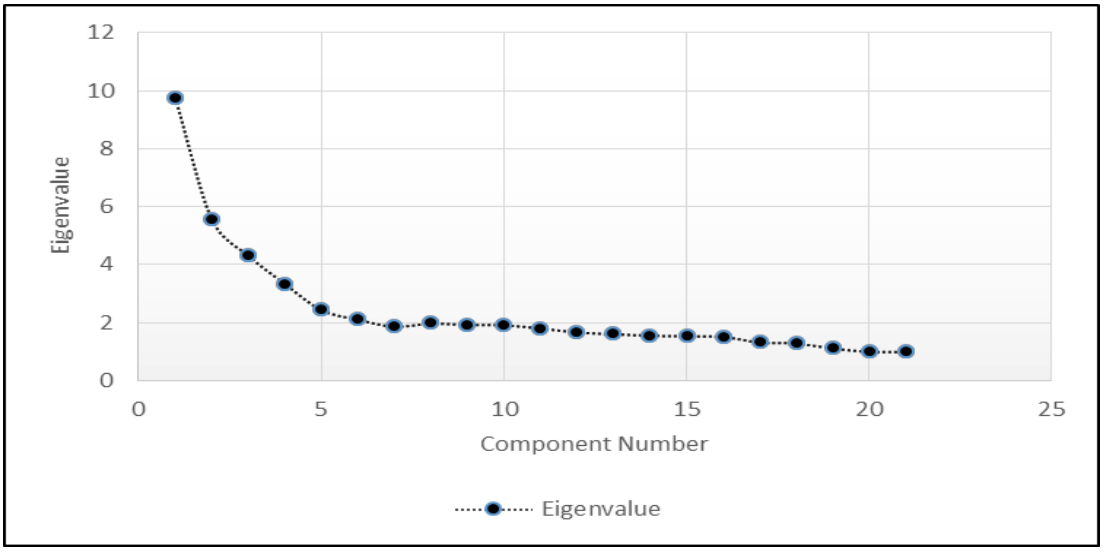
(Probability of Community participation. Table 28 shows the communality and eigenvalues of the factors. It is followed by a screen plot (Figure 17).

Table 28: Factor Analysis results for mitigation measures

Variable	Communality	Factor	Eigenvalue	% of variance	Cumulative variance
ECC	0.374648	1	9.761	21.248	21.248
CTS	0.627596	2	5.571	20.124	22.875
RAC	0.844578	3	4.321	19.887	24.376
SMF	0.320077	4	3.345	17.324	25.998
FEF	0.609170	5	2.446	16.123	28.776
PE	0.472176	6	2.116	16.001	31.108
PRD	0.507516	7	1.874	15.763	33.879
OTP	0.538497	8	1.984	15.221	34887
TFA	0.635884	9	1.936	14.181	35.429
COR	0.455140	10	1.926	14.007	36.984
APP	0.646384	11	1.812	13.845	37.223
QPR	0.398763	12	1.679	13.333	39.097
CPP	0.827456	13	1.612	12.981	39.764
RAO	0.473429	14	1.563	12.442	40.981
AQS	0.645201	15	1.543	12.097	40.667
QMT	0.589543	16	1.521	11.986	41.568
FSP	0.345620	17	1.329	11.768	43.871
ASK	0.876452	18	1.291	11.114	44.786
AIR	0.534209	19	1.123	10.261	45.690
FIC	0.445641	20	1.006	9.144	54.833
QP	0.854345	21	1.001	8.760	56.932
LCS	0.654309	22			
PCP	0.456732	23			

(Source: Computed by Author)

Figure 17: Screen plot from analysis of mitigation measures



(Source: Computed by Author)

5.8 SUMMARY

This chapter analysed the questionnaires for their reliability and validity both for sample size and data fitness. This was done to see if the data in the questionnaires was valid for continued use in this thesis. The sampling adequacy was analysed using KMO (Kaiser-Meyer-Olkin) and Bartlett's test and the reliability of the questionnaires is analysed by the Cronbachs' Alpha tests. The results pointed out the questionnaires are valid and reliable. The distributions of the respondents were

analysed to see if the data collected from these respondents was dependable for further use in this thesis. Age groups, qualifications, and experience in conservation and PPPs were used to analyse the respondents. The analysis showed that the respondents were credible respondents since their distribution showed experience and maturity.

The risks and the mitigation measures for conservation PPPs were analysed by the Kruskal Wallis test and the Factor Analysis respectively. The Kruskal Wallis tests showed that Country Risks, Stakeholders Risks, Financial Risks, and Inadequacy in Concession Contract are the major risks encountered by PPPs in conservation. The Factor Analysis considered Level of Community Support (LCS) and Probability of Community Participation (PCP) as insignificant risk mitigation measures which are not valid for further research. Therefore, the major thrust of this chapter is to present and analyse the data that is essential for the bringing up of the results of this thesis. This chapter therefore paves way for the next chapter, thus the research findings chapter.

CHAPTER 6
RESEARCH FINDINGS (RESULTS)

6.0 INTRODUCTION

This chapter is presenting the results of the thesis. It is strongly inclined to the theoretical framework and the methodology outlined earlier in this thesis. The results are centred on the Desirability Model which is composed of several risk mitigation attributes. These are in terms of Company Competence and Project Attractiveness as shown by the conceptual framework and the empirical model. The Project Attractiveness module allows the analysis of PPP projects in terms of risk allocation, stakeholder satisfaction and legal frameworks. The results were analysed using information provided by fourteen groups of experts discussed in the methodology. This chapter presents the research findings (results) on all the risk mitigation measures that the model is composed off. These results or findings are based on the information provided by the experts and utilizes an experimental procedure to validate the results obtained by the model in the evaluation of hypothetical ZPWMA projects.

In this regard, this chapter's bias is towards attaining the objectives of the thesis. Hence it provides evidence as reflected by the results on the extent of attaining these objectives. The first objective of assessing risks that are to be controlled for successful and profitable PPPs have been achieved using the Direct Rating Method (DRM) and Eigenvalue Method (EM) was used to analyse the risks. These methods were also used in achieving the second objective of establishing the risk mitigations measures to be employed to turn around the performance of PPPs. The third and fourth objectives of determining and establishing the effectiveness of Stakeholder Satisfaction, Legal frameworks and Risk Allocation in mitigating risks for PPP performance have been achieved using Delta Dimensions and Value Functions

This chapter therefore gives results on the risk mitigation measures/strategies, performance of PPPs under conservation. Furthermore, it gives the results on how stakeholder satisfaction, risk allocation and legal framework are effective as risk mitigation measures.

6.1 DETERMINATION OF RISKS AND MITIGATION MEASURES WEIGHTS

6.1.1 Relative weights (Direct Rating Method & Eigenvalue Method)

a) Category Level

On the first section of the questionnaire respondents were provided with the risk categories that were to be assessed for consideration when engaging into PPPs. On the last sections of first questionnaire respondents were given the three risk mitigation categories that formed the company capability (CC) class and the four that formed the project attractiveness (PA) class and were asked to estimate their relative importance using both weighting procedures described in methodology. For the Eigenvalue Method (EM), respondents had to fill out a comparison table like the one presented in Figure 18. Their use was to decide which of the categories, displayed at the table extremes was most important and then, using the scale provided in Table 16, to check how much more important that category was when compared with the other one. For the

Direct Rating Method (DRM), the respondents were asked to identify the least important category, to assign a value of 10 to it and them to assign values to other categories that reflected their relative importance to the least important category (e.g., a category with a value 30 is considered three times as important as the least important category).

The results for the eight groups of insiders and the six groups of outsiders, when using the EM, are presented respectively in Appendix 1 and 2. The qualitative responses given by the respondents are transformed into a numerical scale according to Table 18 and are reported under "category comparisons." Values from 2 to 9 shows that the category on the left is more important than the category on the right, 1 shows that both categories are equally important, values from 1/2 to 1/9 shows that the category on the left is less important than the category on the right. The category weights were calculated by normalizing the columns of the comparison matrices after they had been elevated to a certain power that makes the differences amongst their normalized columns negligible.

Appendix 3 and 4 show each group responses of the insiders and the outsiders when applying the DRM. The values under "category comparisons" were provided by the participants, the normalized relative importance weights are given on the "category weights".

The singular group responses were consolidated into two group responses to examine the similarities and differences between the insiders and outsiders. An attempt to obtain group responses through group interaction was first carried out. The idea is derived from the Delphi technique developed by Dalkey (1969) and focused on providing respondents with an opportunity to re-evaluate their initial assessments by giving them their answers together with the answers of the other participants. According to Lintstone and Turoff, (1975); Azani and Khorramshahgol, (1990); and Shields et. al., (1990) this type of process enables the decision analyst to bring together the opinion of individuals whose views are important for the decision process but who are in different geographical areas.

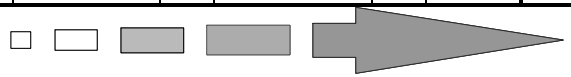
In the second questionnaire, the respondents were given theirs and the other respondents' answers to the first questionnaire and were asked if they wanted to re-evaluate and reconsider their answers. The re-evaluation was proposed not only to see if they would modify their responses based on the information provided by other respondents but also to give them a chance to re-examine and reconsider their initial answers based on better defined model categories and a better understanding of the comparison procedures. Only two experts were willing to review their answers. Two factors seem to explain the unwillingness of the experts to revise their responses: they understood the procedure well and had no problems performing the comparisons or, more importantly, they had their own original opinion about the different categories and attributes and would not be willing to change their opinion just because other responses differed from theirs. The consolidation of singular group into two group responses were obtained using two different procedures:

The geometric mean of the individual "category comparisons" were used to calculate group weights for the Eigenvalue Method (EM);

The mean average of the individual "category weights" were used for the DRM (Direct Rating Method) group weights.

If **I** is more important than **J** then you should concentrate on this side of the table (intensity of importance increases from right to left)

I	abso-lutely more		substantially more		moderately more		slightly more		equally important		slightly more		moderately more		substantially more		abso-lutely more	**J**



If **J** is more important than **I** then you should concentrate on this side of the table (intensity of importance increases from left to right)

Figure 18: The Comparison Table (Source: Saaty (1983))

The results for group category weights for the risks to be determined when engaging into PPPs are shown in the Table 29 below. The table shows the DRM and EM weights for rating the risks. The higher the weighting, the more prominent the risk must be considered in PPP performances.

Table 29: Group Category Weights for PPP risks

		Insiders		Outsiders	
		EM	DRM	EM	DRM
Risk factors					
1.	Financial Risks	0.571	0.544	0.545	0.492
2.	Inadequacy in Concession Contract	0.461	0.514	0.529	0.498
3.	Construction Risks	0.333	0.252	0.189	0.234
4.	Market Risks	0.316	0.286	0.309	0.356
5.	Operation and Maintenance Risks	0.322	0.378	0.288	0.398
6.	Change in Management Risks	0.124	0.162	0.158	0.144
7.	Country Risks	0.612	0.596	0.592	0.587
8.	Stakeholders Risks	0.582	0.564	0.570	0.611

(Source: Computed by Author)

The group results for the categories in the Company Competence index and in the Project Attractiveness index are shown in Table 30.

Table 30: Group Category Weights for risk mitigation measures

		Insiders		Outsiders	
		EM	DRM	EM	DRM
Company Competencies					
1.	Organizational Characteristics	0.251	0.304	0.245	0.292
2.	Service and Production Capability	0.171	0.194	0.229	0.289
3.	Resources Availability and Constraints	0.578	0.502	0.529	0.519
Project Attractiveness					
4.	Financial Assessment	0.121	0.178	0.220	0.208
5.	Technical Evaluation	0.125	0.182	0.188	0.241
6.	Stakeholder Satisfaction Assessment	0.532	0.386	0.352	0.300
7.	Appropriate Risk Allo. & Legal Frameworks	0.222	0.254	0.240	0.251

(Source: Computed by Author)

Results:

i) **Risks -**The DRM and EM weight for the risk categories showed consistence and little deviations in judgements. The results showed that the PPP projects under ZPWMA were affected by ***Country Risks*** which constitute country legislations and legal frameworks. Secondly ***Stakeholder Risks, Financial Risks*** and ***Inadequacy in Concession Contract*** are amongst the most threatening risks respectively. The other risks had low DRM and EM weighting though it's significant enough to be threatening when considering the effective and profitable operations of PPPs

ii) **Risk Mitigation Measures-** For the Company Competence index, the weights indicate that both insiders and outsiders consider the ***resources availability and constraints*** category as the most important risk mitigating category, with the ***organisational characteristics*** and ***service and production*** categories coming in second and third. In the case of the Project Attractiveness index for risk mitigation, insiders and outsiders indicate the ***Stakeholder Satisfaction Assessment*** category is the most important risk; that is, a favourable stakeholder satisfaction assessment is essential for projects to attract private promoters and improve PPP performance in conservation projects. According to them, the second most important mitigation measure refers to the ***appropriate risk allocation and legal frameworks*** for the project to materialize and to be operated with minimum risk. This means ***stakeholder satisfaction, appropriate risk allocation and legal frameworks*** are important in mitigating PPP risks

Although the differences between the ***financial assessment*** and ***technical evaluation*** categories in risk mitigation given by the insiders are small and so is the rank difference given by the outsiders' responses (i.e., using the EM the financial category ranked ahead of the technical one and using the DRM the financial category ranked behind the technical), there is a notable difference in the weights of these categories, as well as in the weights of the ***stakeholder satisfaction*** category, when both groups are compared. All the mitigation measures are appreciable in arresting PPP risks in conservation projects and need consideration

b) Attribute Level

Local Weights - On the second questionnaire respondents performed comparisons among the attributes assigned to each of the model categories. In fact, the category level was created with the specific purpose of making attribute comparisons easier. The idea was to make the attribute comparisons more meaningful by only comparing attributes of the same nature and to decrease the number of comparisons required. Appendix 5 and 6 provide the individual group responses given by insiders and outsiders for local attribute comparisons (i.e., importance judgments made among attributes of each category) when using the EM. Appendix 7 and 8 show their individual responses when applying the DRM. Table 31 displays the group results for the local comparisons of attributes.

Table 31: Group Weights for the Comparison of Attributes within their Categories

		Insiders		Outsiders	
		EM	DRM	EM	DRM
Internal Organization Characteristics					
1.1	Expertise of Management Personnel	0.614	0.454	0.435	0.421
1.2	Feasible Strategic Planning	0.200	0.275	0.161	0.183
1.3	Compatibility with Project Partners	0.186	0.271	0.404	0.396
Service and Production Capability					
2.1	Sufficiency of Specialised knowledge	0.642	0.476	0.486	0.416
2.2	Overall Quality of Productive Resources	0.231	0.292	0.295	0.350
2.3	Availability of Productive Resources	0.128	0.233	0.219	0.234
Financial Resources and Constraints					
3.1	Ability to Fund Initial Project Costs	0.353	0.375	0.251	0.279
3.2	Ability to Identify Project Risks	0.130	0.199	0.216	0.287
3.3	Profitability Margin	0.517	0.426	0.533	0.434
Financial Assessment					
4.1	Ability of the Private Partner to Fund the Project	0.255	0.302	0.312	0.356
4.2	Certainty of Revenues	0.523	0.422	0.360	0.337
4.3	Taking Periodic and Constant Financial Audits	0.222	0.275	0.329	0.307
Technical Evaluation					
5.1	Ability to Provide Quality Product/Service	0.381	0.363	0.408	0.419
5.2	Ability to Provide a Feasible Project Plan	0.425	0.375	0.394	0.391
5.3	Abil. Prov. an Adequate Oper-Transfer Pack.	0.195	0.261	0.198	0.190
Stakeholder Satisfaction Assessment					
6.1	Prompt, Stable and Reliable Service Delivery	0.117	0.192	0.085	0.134
6.2	Efficient Channel of Communication	0.388	0.329	0.396	0.329
6.3	Certainty Time and Cost Saving	0.163	0.179	0.265	0.258
6.4	Efficient Stakeholder Management Framework	0.331	0.299	0.254	0.279
Appropriate Risk Allocation & Legal Frameworks					
7.1	Risk Allocation in Contractual Agreement	0.277	0.275	0.216	0.242
7.2	Risk Allocation in Operational Agreement	0.216	0.252	0.105	0.173
7.3	Fair and Efficient Legal Environment	0.171	0.192	0.211	0.271
7.4	Political Environment	0.335	0.280	0.468	0.315

(Source: Computed by Author)

Results:

Both the DRM and EM showed consistence in analysing the risk mitigation strategies of the Desirability model. Both the Company Competences and Project Attractiveness risk mitigation show that they are essential for PPP risk mitigation and project performance in partnership conservation projects.

In the three categories of the Company Competences its shows that the ***Expertise of Management Personnel, Sufficiency of Specialised knowledge and Profitability Margin*** are essential provisions for risk mitigation and performance of PPP conservation projects. This is evident since their DRM and EM weight values are high when looking at the responses by the insiders and out siders

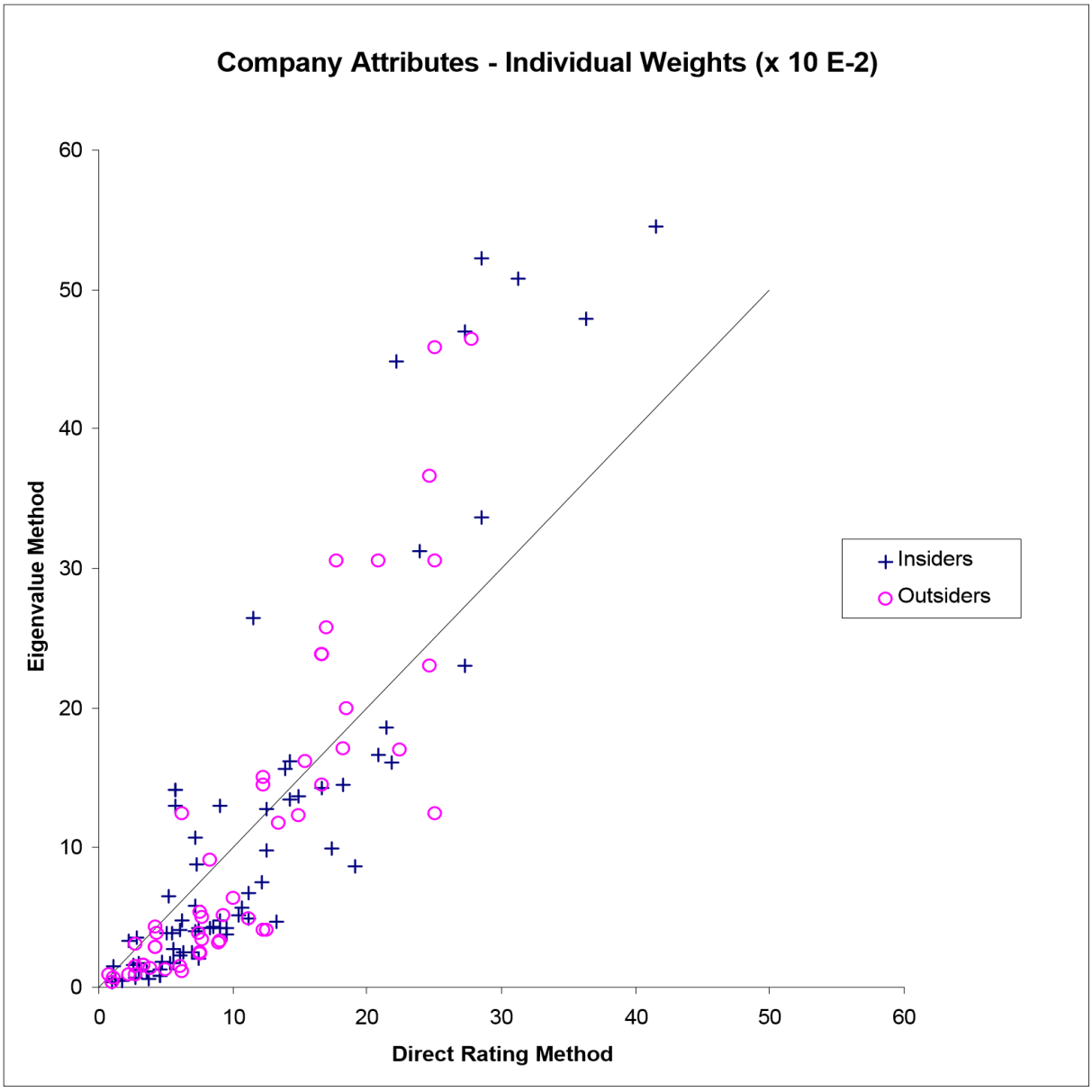
The Project Attractiveness risk mitigation measures indicates that ***Certainty of Revenues, Feasible Project Plan, Efficient Channel of communication and Political Environment Assessment*** are vital in mitigating PPP risks and enhance performance in partnership conservation. These are mitigations provisions with high DRM and EM weights from ***Financial Assessment, Technical Evaluation, Stakeholder Satisfaction Assessment, Appropriate Risk Allocation and legal frameworks*** respectively.

c) Composite Weights

The composite weight of an attribute represents its relative importance to the class (i.e., index), either the CC or PA, it belongs to. They are obtained by multiplication of the local attribute weights by the corresponding category weights. For instance, the composite weight of the attribute ***Risk Allocation in Contractual Agreement*** is determined by multiplying the local weight of this attribute and the weight of the category ***Appropriate Risk Allocation and Legal frameworks***. Therefore, the composite weight of this attribute is 0.222 * 0.277 = 0.0616. Appendix 9 and 10 provide the individual composite weights of insiders and outsiders under the EM. Note that the weights of the top nine attributes as well as the weights of the bottom fourteen sum to unity. Appendix 11 and 12 display the individual composite weights under the DRM.

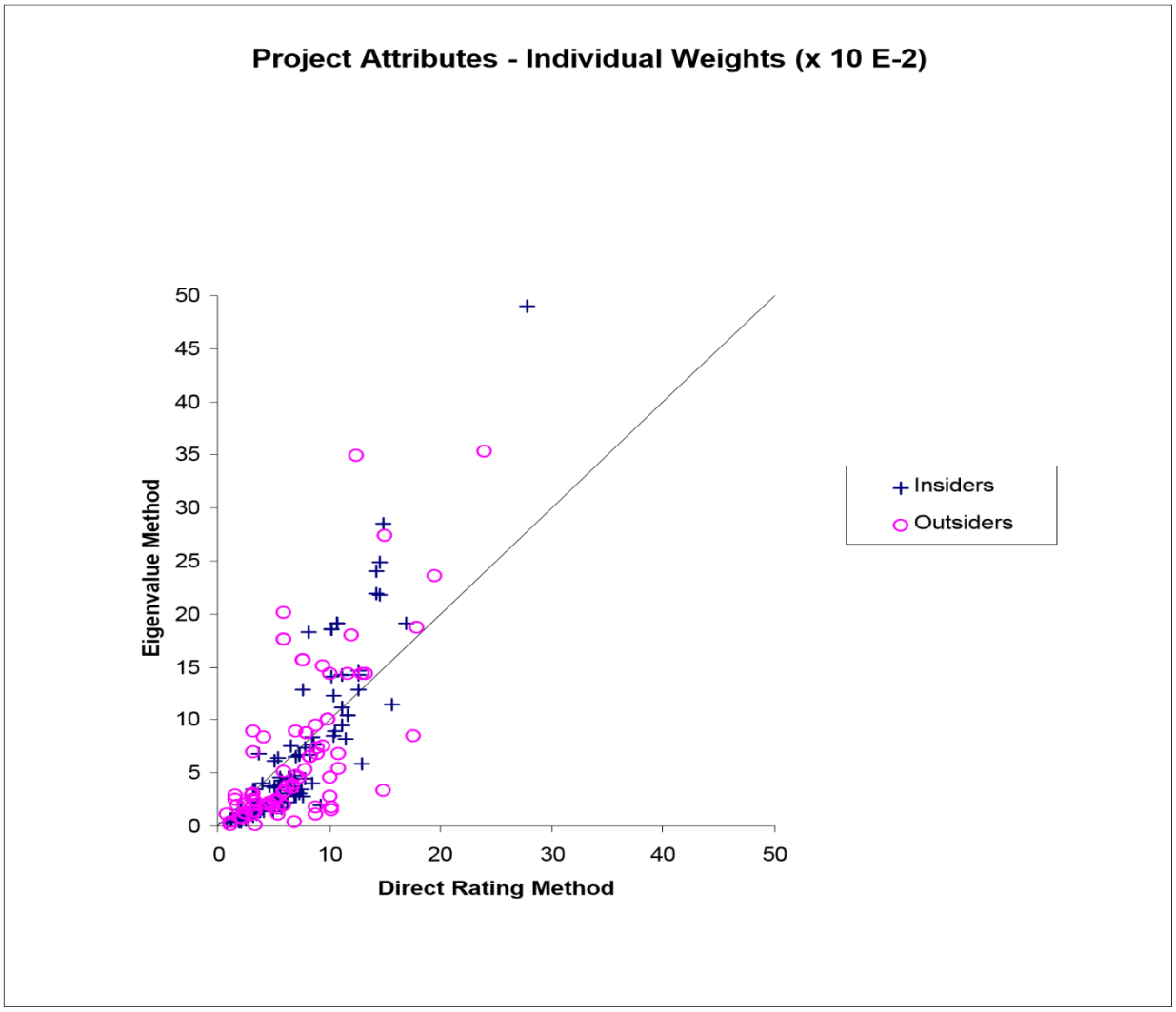
Three procedures have been employed in the verification of the similarities between the individual composite weights obtained using the DRM and the EM. The first procedure is a visual inspection of the relationship between both weighting methods. In Figure 18 each *x*,*y* pair corresponds to the individual weights obtained from the DRM and the EM for each attribute belonging to the CC index and for each expert group. Thus, Figure 18 shows 72 crosses (i.e., nine attributes * eight insiders) and 54 circles (i.e., nine attributes * six outsiders). The 45-degree line displays the expected trend of the scatter in the absence of bias. A systematic bias can be seen in the results. On the most important attributes the EM provides higher weights than the DRM while on the least important attributes the weights derived from the use of the EM are smaller than the ones from the DRM. Figure 20 displays the individual weights of the attributes of the Project Attractiveness index, a tendency like that of Figure 19 can also be observed. An explanation for these biases is that respondents might unconscientiously use a larger scale when applying the EM and thus, the resulting weights are more differentiated. This is because respondents might be more comfortable in using the extremes of the qualitative scale provided by the EM than to suggest large quantitative ratio judgments. Another plausible explanation comes directly from the critiques of Dyer and Wendell (1984) about the relation between the verbal expressions of the EM scale and the intensities of importance. It is not the purpose of this study to explore the reasons for these distinctions but to verify if the results obtained by both procedures are comparable and can be used in rating companies and projects.

Figure 19: Equivalence between the Weights Obtained from the DRM and the EM for the Company Attributes



(Source: Computed by Author)

Figure 20: Equivalence between the Weights Obtained from DRM and EM for the Project Attributes



(Source: Computed by Author)

The second procedure, Pearson's product-moment correlation, is used to determine how the weights provided by the DRM and the EM are related. Table 32 presents, for each respondent, the correlation between the composite weights obtained from both weighting procedures. It shows that most of the correlations between the methods are strong.

Table 32: Correlation between the Attribute Composite Weights Obtained from the DRM and the EM

	Insiders			Outsiders	
	Company Competencies	Project Attractiveness		Company Competencies	Project Attractiveness
I-01	0.934	0.748	**O-01**	0.805	0.569
I-02	0.947	0.895	**O-02**	0.908	0.970
I-03	0.953	0.710	**O-03**	0.951	0.760
I-04	0.754	0.969	**O-04**	0.952	0.938
I-05	0.881	0.909	**O-05**	0.878	0.424
I-06	0.707	0.910	**O-06**	0.915	0.152
I-07	0.953	0.976			
I-08	0.965	0.785			

(Source: Computed by Author)

Table 33 presents the group results for the composite weights for each one of the model attributes.

The correlation coefficients between DRM and EM group weights are:

(1) for CC attributes, 0.972 (insiders) and 0.930 (outsiders)

(2) for PA attributes, 0.976 (insiders) and 0.798 (outsiders).

Appendix 15 and 16 displays the *x, y* pair of group weights, the systematic biases between the DRM and EM weights are still present but have intensities that are smaller than the ones detected in the individual weights. This occurs because group composite weights have a smaller range of values than individual weights.

Appendix 17 and 18 display, respectively, the "DRM" and the "EM" composite weights of the attributes that constitute the Company Competence index. In each figure, every attribute is associated with two columns, the column on the left (just above the attribute designation) contains information provided by the insiders, and the column on the right contains the outsiders' information. For each attribute, the bottom part of the two columns indicate the minimum importance weights assigned by the respondents (insiders on the left column and outsiders on the right column). Analogously, the top of the columns indicates the maximum weights assigned by the respondents.

The line in the middle of the darker region reflects the attribute group weight, the darker region represents the standard deviation of the individual attribute weights (one half of the standard deviation is placed above the group weight while the other half is placed below it). Similarly, Appendix 19 and 20 display the "DRM" and the "EM" weights of the attributes that compose the Project Attractiveness index.

An examination of the figures shows differences between the weights of the attributes across the two groups. However, these differences do not appear to be large enough to support the fact that insiders and outsiders represent distinct populations. First, there are only two attributes were the difference between the insiders' group weight and the outsider's group weight is not within one standard deviation of either the outsiders' or the insiders' individual weights. They are ***business opportunities for private sector*** (using weights computed through the EM) and ***Prompt, Stable and Reliable Service Delivery*** (Using weights computed through the DRM). Second, a set of two-tailed Student's t-test was performed to examine the hypothesis that the individual attribute composite weights provided by the insiders and outsiders came from the same population. The significance level of the test was set to 1%. All attributes had the hypothesis accepted. Which means attributes within the ***stakeholder satisfaction, appropriate risk allocation and legal frameworks*** are important in project performances

6.2 MEASURING EXTENT TO WHICH STAKEHOLDER SATISFACTION, LEGAL FRAMEWORK AND RISK ALLOCATION AFFECT THE PERFORMANCE OF PPP PROJECTS

6.2.1 Establishment of Value Functions

In order to calculate the individual contributions of the attributes to either the CC or the PA index, it is necessary to multiply their relative importance weights by their worth scores, that is

*Attribute contribution = attribute composite weight * attribute worth score.*

Table 33: Group Composite Weights (x 10 **E-2)**

		Insiders		Outsiders	
		EM	DRM	EM	DRM
Internal Organization Characteristics					
1.1	Expertise of Management Personnel	15.44	13.81	10.66	12.29
1.2	Feasible Strategic Planning	5.03	8.35	3.93	5.33
1.3	Compatibility with Project Partners	4.67	8.25	9.90	11.56
Service and Production Capability					
2.1	Sufficiency of Specialised knowledge	10.98	9.22	11.14	12.04
2.2	Overall Quality of Productive Resources	3.95	5.65	6.75	10.11
2.3	Availability of Productive Resources	2.18	4.51	5.00	6.75
Financial Resources and Constraints					
3.1	Ability to Fund Initial Project Costs	20.39	18.82	13.18	11.70
3.2	Ability to Identify Project Risks	7.50	10.01	11.36	12.05
3.3	Profitability Margin	29.88	21.37	28.07	18.18
Financial Assessment					
4.1	Ability of the Private Partner to Fund the Project	3.08	5.39	6.86	7.42
4.2	Certainty of Revenues	6.32	7.53	7.92	7.01
4.3	Taking Periodic and Constant Financial Audits	2.69	4.90	7.23	6.40
Technical Evaluation					
5.1	Ability to Provide Quality Product/Service	4.76	6.61	7.66	10.11
5.2	Ability to Provide a Feasible Project Plan	5.31	6.83	7.41	9.44
5.3	Abil. Prov. an Adequate Oper-Transfer Pack.	2.44	4.76	3.73	4.60
Stakeholder Satisfaction Assessment					
6.1	Prompt, Stable and Reliable Service Delivery	6.23	7.42	3.00	4.01
6.2	Efficient Channel of Communication	20.66	12.69	13.96	9.85
6.3	Certainty Time and Cost Saving	8.68	6.92	9.34	7.74
6.4	Efficient Stakeholder Management Framework	17.63	11.55	8.93	8.36
Appropriate Risk Allocation & Legal Frameworks					
7.1	Risk Allocation in Contractual Agreement	19.29	6.99	5.18	6.05
7.2	Risk Allocation in Operational Agreement	8.78	6.41	7.51	8.34
7.3	Fair and Efficient Legal framework	9.79	6.89	8.06	6.78
7.4	Political Environment	10.44	7.12	11.21	7.89

(Source: Computed by Author)

Results:

From the above group composite weights, in Table 33, it is evident that ***Stakeholder Satisfaction, Appropriate Risk Allocation and Legal frameworks*** are essential in the performance of PPP projects. ***Stakeholders' satisfaction*** proves to be the most effective driving force behind the performance of PPP projects in conservation. This has been exhibited by factors such ***as Efficient Channel of Communication*** and ***Efficient Stakeholder Management Framework*** proving which showed they are the major factors to consider

Considering ***Appropriate Risk Allocation and Legal Frameworks,*** these factors prove that they are also vital in PPP performances in the conservation area. ***Risk Allocation in Contractual Agreement*** and ***Political Environment Assessment*** are the pivots for the performance of PPP engagements. Besides, other factors also showed that they are critical in the performance of PPP projects i.e. ***Organisational Characteristics*** and ***Financial Resources and Constraints*** because ***Expertise of Management Personnel*** and ***Ability to Fund Initial Project Costs*** had great margins of composite weights. Generally, the response from the respondents showed that every factor had a significant contribution to the performance of the PPP projects in conservation

6.3 DETERMINATION OF ATTRIBUTE DELTA DIMENSIONS

As described in the methodology, the delta dimension is used to indicate unacceptable levels of attribute performance (quality.) This concept arose from the fact that a very low performance (quality) level of certain attributes might be enough to reject the idea of project promotion without even considering the performance (quality) level of other attributes.

Table 34 shows the answers provided by the experts and denotes the attributes that must present a minimum level to permit the project (company) to be considered for promotion (involvement in the promotion.) The column "Yes" means that the level of the attribute is not enough to reject the project. The column "indicates the dominant attributes (i.e., the ones where a worth score of zero implies $\delta_i = -1$). For an attribute to be non-dominant it is necessary that the number of responses "Yes" be greater than the number of responses "No."

For insiders two thirds of the company-related attributes and six sevenths of the project related ones are dominant, the outsiders consider eight ninths of the company and all the project attributes to be dominant. This clearly indicates that a candidate project for private promotion cannot be carried further if extreme levels of undesirable performance characterize some of its attributes even if others (including the ones with highest weights) have a high level of performance. Projects must have some minimum levels across all attributes. Similar reasoning applies in the analysis of a company seeking to get involved in the private promotion of a project.

Table 34: Answers to the Question about Attribute Delta Dimensions (*) Denotes Dominant Attribute

		Insiders			Outsiders		
		Δ	Yes	No	Δ	Yes	No
Internal Organization Characteristics							
1.1	Expertise of Management Personnel	(*)	1	7	(*)	1	5
1.2	Feasible Strategic Planning		7	1		4	2
1.3	Compatibility with Project Partners	(*)	4	4	(*)	3	3
Production Capability							
2.1	Sufficiency of Specialised knowledge	(*)	2	6	(*)	2	4
2.2	Overall Quality of Productive Resources		6	2	(*)	3	3
2.3	Availability of Productive Resources		6	2	(*)	3	3
Financial Resources and Constraints							
3.1	Ability to Fund Initial Project Costs	(*)	4	4	(*)	3	3
3.2	Ability to Identify Project Risks	(*)	4	4	(*)	3	3
3.3	Profitability Margin	(*)	0	8	(*)	0	6
Financial Assessment							
4.1	Ability of the Private Partner to Fund the Project	(*)	2	6	(*)	1	5
4.2	Certainty of Revenues	(*)	1	7	(*)	3	3
4.3	Taking Periodic and Constant Financial Audits	(*)	4	4	(*)	1	5
Technical Evaluation							
5.1	Ability to Provide Quality Product/Service	(*)	3	5	(*)	1	5
5.2	Ability to Provide a Feasible Project Plan	(*)	2	6	(*)	1	5
5.3	Abil. Prov. an Adequate Oper-Transfer Pack.		5	3	(*)	3	3
Stakeholder Satisfaction Assessment							
6.1	Prompt, Stable and Reliable Service Delivery	(*)	2	6	(*)	2	4
6.2	Efficient Channel of Communication	(*)	0	8	(*)	1	5
6.3	Certainty Time and Cost Saving	(*)	2	6	(*)	3	3
6.4	Efficient Stakeholder Management Framework	(*)	2	6	(*)	3	3
Appropriate Risk Allocation & Legal Frameworks							
7.1	Risk Allocation in Contractual Agreement	(*)	3	5	(*)	2	4
7.2	Risk Allocation in Operational Agreement		5	3	(*)	2	4
7.3	Fair and Efficient Legal framework	(*)	3	5	(*)	2	4
7.4	Political Environment	(*)	3	5	(*)	1	5

(Source: Computed by Author)

Results:

Delta Dimensions with (*) denotes dominant attributes that are essential for risk mitigation and PPP project performance in conservation.

6.4 MODEL VALIDATION

Multi-attribute decision models are subjective in nature, thereby making it difficult to use external criteria for assessing the validity of decomposed evaluation models. Researchers rely mostly on indirect approaches, such as convergent validation, predictive validation, and axiomatic validation, to validate their models.

Convergent validation constitutes comparisons on the results obtained by a multi-attribute decomposed model with holistic (i.e., intuitive) evaluations made by the decision maker.

Predictive validation correlates model results with appropriate probabilistic indices of the eventual success or failure of an action taken prior to the evaluation.

Axiomatic validation is used to verify whether the model assumptions are likely to fail. E.g. in testing the Desirability Model, one could verify if the assumption about attribute independence is violated by the respondents.

This thesis uses the convergent validation to validate the Desirability Model. In the fourth questionnaire nine hypothetical company profiles and ten project profiles were presented to respondents who were asked to perform an intuitive evaluation and to rate them using a 0-100 scale. The reasons for creating hypothetical profiles being: i) to vary the CC and PA indices through a wide range so that the model performance could be evaluated for companies and projects of diverse characteristics ii) most important reason, was that not all the data about real companies and/or projects could be found that would permit the model to be validated.

Evaluation Results

The company profiles used to validate the CC index are shown in Table 35. The assumption is that these profiles reflect the performance (quality) level of different companies with respect to a privately promoted project. The outcomes of the decomposed evaluations are calculated by transforming the performance level of each of the company profile attributes into worth scores (using the information contained in Appendix 13 and 14). They are then multiplied by the relative importance weights of the attributes (available on Appendix 9 through 12.) Since the sum of either the company or project attribute weights is equal to unity and the worth scores are bounded between 0 and 100, the CC and the PA indices fall between 0 and 100. Table 40 provides the holistic evaluation of insiders and outsiders to each company profile together with the results provided by their decomposed evaluations (using both EM and DRM).

Table 35: Hypothetical Company Profiles

Company Competencies Attributes	**C1**	**C2**	**C3**	**C4**	**C5**	**C6**	**C7**	**C8**	**C9**
Expertise of Management Personnel	5	4	9	7	6	9	5	8	9
Feasible Strategic Planning	7	5	7	6	7	8	6	5	7
Compatibility with Project Partners	7	6	8	7	5	8	7	7	7
Sufficiency of Specialised knowledge	7	5	8	6	4	8	9	8	8
Overall Quality of Productive Resources	7	7	8	5	5	8	8	8	7
Availability of Productive Resources	8	8	7	8	8	6	7	6	6
Ability to Fund Initial Project Costs	7	5	9	8	9	7	9	7	6
Ability to Identify Project Risks	5	3	8	7	8	6	8	6	4
Profitability Margin	7	6	5	4	7	8	7	7	5

(Source: Computed by Author)

Table 36 below shows the individual holistic and decomposed evaluations performed by insiders on the company competence profiles

Table 36: Results for Holistic and Decomposed Evaluations Performed by Insiders on the Company Profiles

		C1	C2	C3	C4	C5	C6	C7	C8	C9
I-01	Holistic	45.0	15.0	90.0	35.0	27.0	80.0	65.0	70.0	60.0
	EM	50.2	13.2	55.2	41.8	36.9	99.0	54.0	67.6	47.5
	DRM	63.9	25.1	77.8	56.9	44.0	98.1	69.9	79.2	67.3
I-02	Holistic	80.0	20.0	95.0	75.0	80.0	100.0	95.0	95.0	80.0
	EM	62.2	32.2	47.8	39.7	58.6	80.9	71.2	67.5	35.5
	DRM	70.2	41.3	71.4	59.6	63.5	84.7	80.0	76.2	56.2
I-03	Holistic	20.0	15.0	80.0	70.0	78.0	65.0	85.0	75.0	60.0
	EM	79.7	48.4	97.5	93.0	89.1	85.2	98.1	83.8	66.2
	DRM	80.2	48.2	94.8	86.1	88.2	85.5	98.7	84.4	64.1
I-04	Holistic	35.0	30.0	95.0	80.0	81.0	89.0	83.0	86.0	40.0
	EM	40.9	13.6	56.6	21.5	35.7	76.4	55.5	56.5	39.7
	DRM	45.7	13.8	62.5	34.6	52.1	72.9	58.3	50.5	38.6
I-05	holistic	20.0	10.0	90.0	80.0	50.0	85.0	70.0	75.0	60.0
	EM	81.2	50.8	98.6	95.5	87.6	93.3	89.3	81.5	85.3
	DRM	73.6	42.3	96.4	90.5	86.0	90.3	85.5	83.5	77.3
I-06	holistic	40.0	30.0	90.0	45.0	40.0	88.0	50.0	85.0	75.0
	EM	73.1	52.4	94.7	70.2	58.9	98.2	76.0	93.0	88.4
	DRM	76.9	50.8	95.2	77.2	67.6	95.6	77.4	85.5	85.1
I-07	holistic	60.0	50.0	90.0	65.0	69.0	87.0	75.0	78.0	72.0
	EM	70.7	41.3	61.9	41.3	73.7	99.1	72.0	83.6	56.9
	DRM	72.1	41.6	76.6	56.9	72.1	98.3	73.4	85.2	70.0
I-08	holistic	30.0	10.0	85.0	60.0	70.0	90.0	55.0	55.0	40.0
	EM	42.7	19.1	50.3	38.0	37.2	82.3	48.4	50.0	41.7
	DRM	54.7	26.5	60.6	53.0	51.5	84.8	58.1	59.8	48.3

(Source: Computed by Author)

Table 36 (cont): Results for Holistic & Decomposed Evaluations Performed by Outsiders on Company Profile

		C1	C2	C3	C4	C5	C6	C7	C8	C9
O-01	holistic	46.0	28.0	65.0	22.0	48.0	80.0	65.0	69.0	58.0
	EM	68.3	31.5	69.4	59.4	70.0	100.0	83.6	84.2	37.7
	DRM	75.0	41.7	75.0	54.2	56.3	100.0	85.4	87.2	53.1
O-02	holistic	66.0	54.0	77.0	65.0	65.0	77.0	73.0	70.0	67.0
	EM	44.6	29.4	93.6	56.1	27.7	95.6	44.7	83.1	88.4
	DRM	58.3	40.7	90.0	62.1	36.6	92.5	62.2	77.0	80.9
O-03	holistic	55.0	50.0	80.0	60.0	70.0	90.0	65.0	60.0	75.0
	EM	94.5	56.6	84.2	59.4	64.3	97.8	96.2	94.3	74.8
	DRM	88.6	56.1	88.3	67.9	70.1	94.5	91.7	89.2	73.3
O-04	holistic	65.0	40.0	80.0	35.0	50.0	95.0	75.0	90.0	75.0
	EM	60.6	33.7	87.1	69.1	59.0	100.0	60.9	94.0	85.3
	DRM	73.1	42.7	86.4	71.7	67.1	100.0	74.6	92.4	80.3
O-05	holistic	55.0	50.0	90.0	75.0	70.0	80.0	85.0	65.0	60.0
	EM	64.6	32.1	85.2	63.7	73.1	81.2	92.7	75.3	47.5
	DRM	68.5	38.6	88.5	64.3	63.1	84.5	90.7	79.4	59.0
O-06	holistic	40.0	30.0	90.0	50.0	50.0	80.0	40.0	60.0	70.0
	EM	9.1	1.7	66.4	22.9	53.6	29.0	58.1	13.4	10.4
	DRM	15.3	4.3	69.2	25.3	47.3	41.3	52.3	24.3	25.3

The holistic and decomposed evaluations of every respondent in this thesis were subject to comparisons using Pearson's product-moment and Spearman's rank-order correlations as shown in Tables 37. Most of the correlations range from moderate to strong showing that the decomposed model reasonably captures the holistic evaluations preferences.

Table 37: Correlations between Holistic and Decomposed Evaluations Taken Across Company Profiles

	Correlation between Holistic and Decomposed (EM weights) Evaluations		**Correlation between Holistic Decomposed (DRM weights) Evaluations**	
	Pearson's coefficient.	Spearman's rank coefficient	Pearson's coefficient.	Spearman's rank coefficient
Insiders				
I-01	0.792	0.933	0.914	0.950
I-02	0.688	0.807	0.896	0.904
I-03	0.782	0.900	0.765	0.933
I-04	0.601	0.833	0.739	0.867
I-05	0.829	0.867	0.870	0.867
I-06	0.958	0.933	0.888	0.967
I-07	0.651	0.550	0.824	0.833
I-08	0.752	0.567	0.820	0.683
Outsiders				
O-01	0.695	0.833	0.831	0.811
O-02	0.711	0.733	0.794	0.852
O-03	0.356	0.411	0.481	0.445
O-04	0.796	0.811	0.849	0.943
O-05	0.845	0.833	0.822	0.800
O-06	0.364	0.529	0.606	0.582

(Source: Computed by Author)

The project profiles used to validate the Project Attractiveness index are shown in Table 38. The assumption is that these profiles reflect the performance (quality) level of different projects from the viewpoint of one company.

Table 38: Hypothetical Project Profiles

Project Attractiveness Attributes	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**P8**	**P9**	**P10**
Ability of the Private Partner to Fund the Project	6	7	4	7	8	6	8	5	6	6
Certainty of Revenues	8	8	5	8	7	7	7	6	6	7
Taking Periodic and Constant Financial Audits	5	6	4	7	8	7	8	5	6	7
Ability to Provide Quality Product/Service	7	9	7	8	7	6	8	6	7	8
Ability to Provide a Feasible Project Plan	5	8	3	9	6	6	7	3	5	7
Abil. Prov. an Adequate Oper-Transfer Pack.	7	9	5	8	7	6	7	3	6	6
Prompt, Stable and Reliable Service Delivery	7	9	6	8	8	4	3	2	6	7
Efficient Channel of Communication	6	8	8	5	7	5	6	5	7	6
Certainty Time and Cost Saving	6	8	6	7	7	6	6	4	5	8
Efficient Stakeholder Management Framework	5	7	7	5	7	5	5	5	8	6
Risk Allocation in Contractual Agreement	7	8	4	8	8	7	5	3	6	8
Risk Allocation in Operational Agreement	5	7	8	5	6	4	7	6	7	7
Fair and Efficient Legal framework	7	9	5	7	8	6	4	2	3	8
Political Environment	8	8	3	9	8	7	5	2	3	7

(Source: Computed by Author)

Table 39 shows the outcomes provided by the holistic evaluations of insiders and outsiders together with their decomposed evaluations

Table 39: Results for Holistic and Decomposed Evaluations Performed by Insiders on the Project Profiles

		P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
I-01	holistic	55.0	90.0	15.0	62.0	70.0	38.0	40.0	5.0	34.0	65.0
	EM	46.8	89.0	36.4	65.9	78.2	37.3	36.7	11.3	46.0	65.3
	DRM	54.4	92.1	29.7	76.1	81.9	43.3	47.6	13.1	41.7	70.5
I-02	holistic	80.0	100.0	70.0	90.0	90.0	70.0	75.0	50.0	75.0	90.0
	EM	50.0	91.6	67.3	48.8	76.1	32.3	47.0	18.8	62.7	65.3
	DRM	58.0	93.1	57.1	65.2	80.2	40.9	54.4	20.8	58.9	73.0
I-03	holistic	85.0	95.0	70.0	80.0	90.0	72.0	73.0	5.0	75.0	87.0
	EM	52.4	89.1	56.1	60.4	79.1	34.9	40.4	14.8	54.2	70.2
	DRM	58.4	90.7	46.7	71.9	80.5	49.4	55.9	15.2	50.5	77.8
I-04	holistic	69.0	90.0	45.0	79.0	85.0	65.0	80.0	40.0	70.0	73.0
	EM	20.8	66.2	11.9	43.6	32.6	13.0	25.4	1.7	15.0	32.2
	DRM	24.5	68.9	12.2	50.8	41.6	16.9	33.0	2.6	15.8	38.6
I-05	holistic	45.0	90.0	65.0	55.0	75.0	20.0	25.0	15.0	35.0	60.0
	EM	71.6	96.5	41.9	84.4	90.7	66.9	74.9	41.3	71.5	78.4
	DRM	69.8	95.8	49.5	79.9	88.9	62.7	68.4	38.6	69.5	79.7
I-06	holistic	40.0	90.0	30.0	45.0	85.0	50.0	42.0	25.0	40.0	55.0
	EM	67.6	94.7	68.6	73.5	83.9	60.0	68.4	39.5	69.7	80.1
	DRM	69.6	94.1	62.0	79.9	85.4	62.0	68.6	35.5	67.0	82.8
I-07	holistic	72.0	90.0	60.0	79.0	86.0	61.0	70.0	50.0	65.0	79.0
	EM	59.8	92.9	68.7	55.1	80.3	43.2	49.8	23.0	59.5	65.1
	DRM	65.5	94.3	59.4	69.2	85.7	51.7	53.8	24.1	58.0	74.2
I-08	holistic	50.0	90.0	25.0	75.0	80.0	45.0	40.0	10.0	30.0	60.0
	EM	45.7	80.9	29.2	54.9	57.2	27.4	27.4	5.9	30.5	59.7
	DRM	42.7	78.6	23.4	59.9	49.9	27.4	29.5	7.9	29.2	49.0

Table 39 (cont): Results for Holistic & Decomposed Evaluations Performed by Outsiders on Project Profiles

		P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
O-01	holistic	48.0	85.0	27.0	76.0	69.0	50.0	28.0	20.0	58.0	62.0
	EM	93.0	98.9	72.7	98.2	94.9	81.0	92.6	63.7	85.7	99.5
	DRM	90.7	99.2	59.8	95.6	94.2	78.0	88.6	47.4	80.5	99.6
O-02	holistic	63.0	79.0	54.0	71.0	73.0	58.0	61.0	41.0	59.0	69.0
	EM	19.4	33.6	3.4	30.3	48.5	11.8	32.4	0.0	4.0	20.1
	DRM	18.0	43.0	4.6	31.0	45.9	10.4	25.3	0.0	6.7	26.0
O-03	holistic	55.0	85.0	35.0	75.0	83.0	70.0	45.0	25.0	45.0	80.0
	EM	57.1	79.7	32.0	70.7	76.0	55.6	50.8	19.2	53.2	66.9
	DRM	58.1	83.2	37.8	73.8	78.0	51.7	56.0	20.3	53.4	68.6
O-04	holistic	65.0	90.0	25.0	62.0	85.0	50.0	45.0	10.0	22.0	75.0
	EM	72.8	86.8	33.3	88.4	96.0	81.9	63.3	14.9	33.7	89.4
	DRM	67.8	87.7	37.0	83.8	92.5	72.2	70.1	20.6	47.7	86.1
O-05	holistic	75.0	90.0	65.0	85.0	80.0	53.0	55.0	50.0	60.0	70.0
	EM	56.3	95.2	53.5	72.0	78.0	37.8	49.1	18.3	56.9	73.3
	DRM	65.8	95.9	38.4	83.2	82.9	51.0	52.8	17.4	47.0	78.8
O-06	holistic	70.0	80.0	40.0	80.0	90.0	70.0	90.0	50.0	60.0	60.0
	EM	23.0	61.7	25.1	50.0	45.3	11.6	14.4	2.1	11.9	35.1
	DRM	31.0	74.4	33.1	63.6	53.0	15.4	28.7	6.1	29.2	42.6

(Source: Computed by Author)

Table 40 presents the correlations between the holistic and decomposed approaches. It is interesting that although the PA index is composed of 14 attributes and the CC index is composed 9, on average, the correlations obtained from the evaluations of project profiles are higher than the ones given by the evaluations of company profiles. One possible explanation for this fact is that the project attributes capture the respondents' preferences better than those for companies. But in general, that the decomposed model reasonably captures the holistic evaluations preferences.

Table 40: Correlations between Holistic and Decomposed Evaluations Taken Across Project Profiles

	Correlation between Holistic & Decomposed (EM weights) Evaluations		Correlation between Holistic & Decomposed (DRM weights) Evaluations	
	Pearson's coefficient.	Spearman's rank coefficient	Pearson's coefficient.	Spearman's rank coefficient
Insiders				
I-01	0.946	0.939	0.982	0.988
I-02	0.801	0.657	0.956	0.939
I-03	0.832	0.830	0.892	0.976
I-04	0.821	0.927	0.865	0.903
I-05	0.557	0.697	0.703	0.733
I-06	0.819	0.721	0.817	0.867
I-07	0.821	0.651	0.947	0.912
I-08	0.936	0.855	0.952	0.952
Outsiders				
O-01	0.778	0.830	0.794	0.830
O-02	0.810	0.903	0.912	0.964
O-03	0.942	0.970	0.914	0.920
O-04	0.934	0.867	0.938	0.903
O-05	0.898	0.891	0.883	0.879
O-06	0.457	0.438	0.495	0.368

(Source: Computed by Author)

Group results, for the holistic and decomposed evaluations, are calculated by averaging the individual responses. Table 41 provides the group outcomes of the evaluations performed by insiders and outsiders on the different company and project profiles. The charts on Figures 21 and 22 plot the group results of the holistic and decomposed evaluations for company and project profiles.

Table 41: Company and Project Profile Evaluations - Group Results

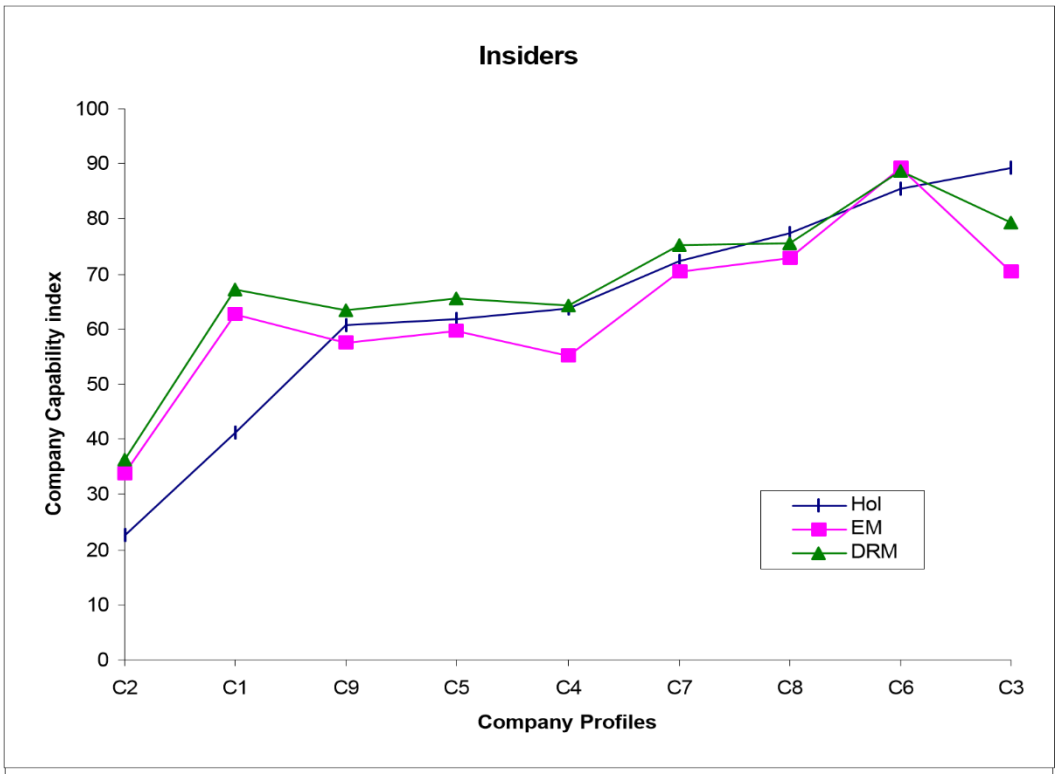
	Insiders			Outsiders		
	Hol.	EM	DRM	Hol.	EM	DRM
Company Profiles						
C1	41.3	62.6	67.2	54.5	56.9	63.1
C2	22.5	33.9	36.2	42.0	30.8	37.4
C3	89.4	70.3	79.4	80.3	81.0	82.9
C4	63.8	55.1	64.4	51.2	55.1	57.6
C5	61.9	59.7	65.6	58.8	57.9	56.7
C6	85.5	89.3	88.8	83.7	83.9	85.5
C7	72.3	70.6	75.2	67.2	72.7	76.2
C8	77.4	72.9	75.5	69.0	74.1	74.9
C9	60.9	57.7	63.4	67.5	57.4	62.0
Project Profiles						
P1	62.0	51.8	55.4	62.7	53.6	55.2
P2	91.9	87.6	88.4	84.8	76.0	80.6
P3	47.5	47.5	42.5	41.0	36.7	35.1
P4	70.6	60.8	69.1	74.8	68.2	71.8
P5	82.6	72.3	74.3	80.0	73.1	74.4
P6	52.6	39.4	44.3	58.5	46.6	46.4
P7	55.6	46.3	51.4	54.0	50.4	53.6
P8	25.0	19.5	19.7	32.7	19.7	18.6
P9	53.0	51.1	48.8	50.7	40.9	44.1
P10	71.1	64.5	68.2	69.3	64.1	67.0

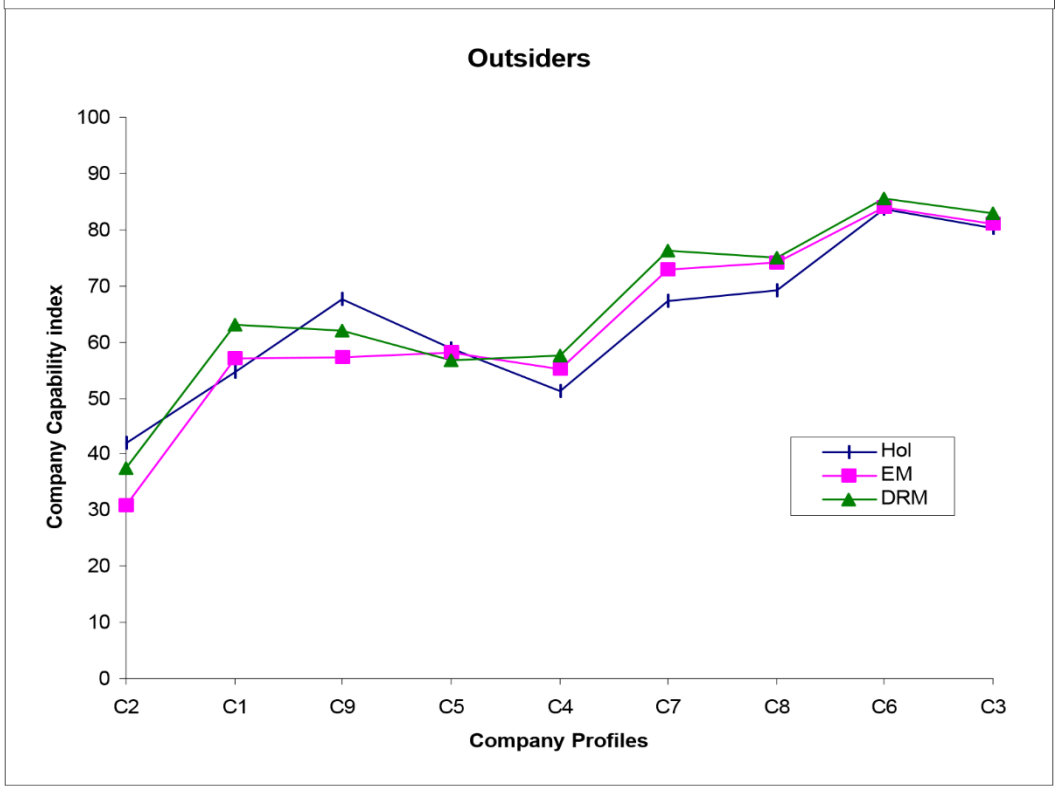
(Source: Computed by Author)

Figure 23 displays the capability index provided by the insiders and the outsiders on every company profile. Figure 24 displays the attractiveness index provided by the insiders and the outsiders on each project profile. In each figure, every company (project) profile is associated with three columns. The column on the left displays information on the capability (attractiveness) index for experts evaluating a company (project) using the holistic approach, the middle column provides similar information for experts using the "EM," the column on the right contains information for experts using the "DRM."

For each profile, the bottom of each of the three columns indicates the minimum value of the desirability index for the set of insiders (top chart of Figure 22 and 23) and outsiders (bottom charts). Analogously, the top of the columns indicates the maximum value of the desirability index for the corresponding set of respondents. The line in the middle of the darker region reflects the group results (i.e., the arithmetic average of the individual indexes). The darker region represents one half standard deviation (above and below the corresponding average) of the individual evaluations.

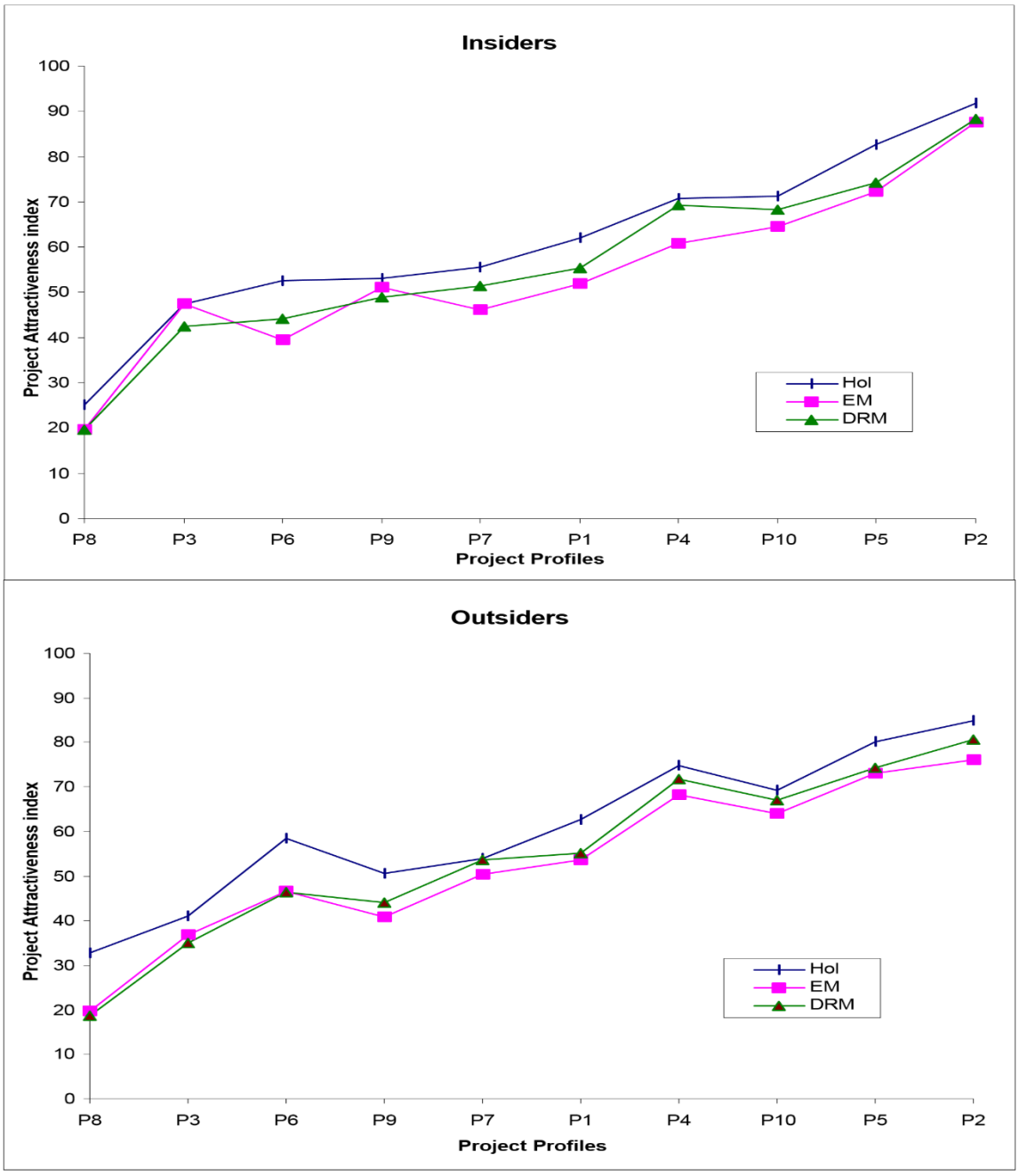
Figure 21: Results of the Evaluations Performed on the Company Profiles





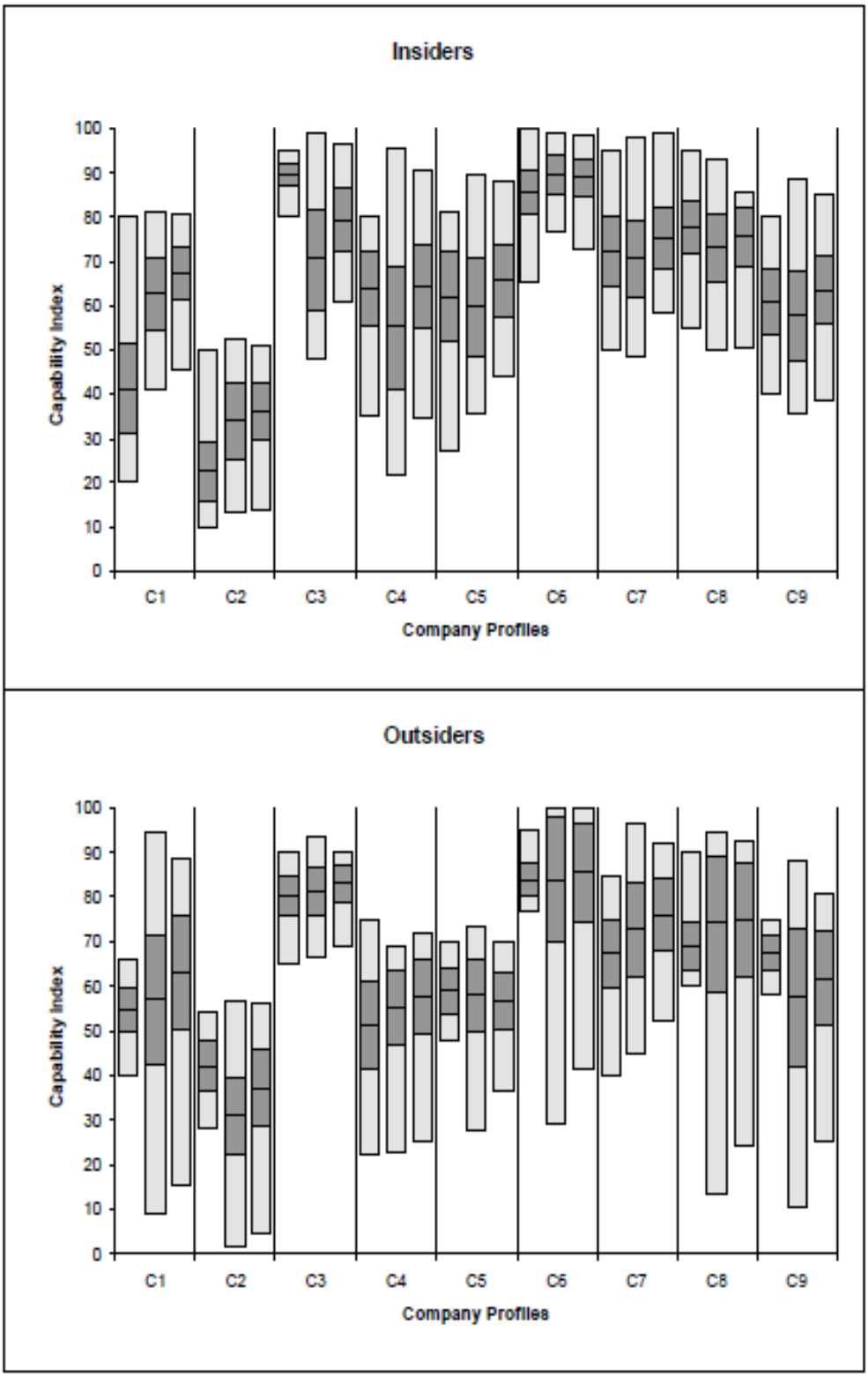
(Source: Computed by Author)

Figure 22: Results of the Evaluations Performed on the Project Profiles



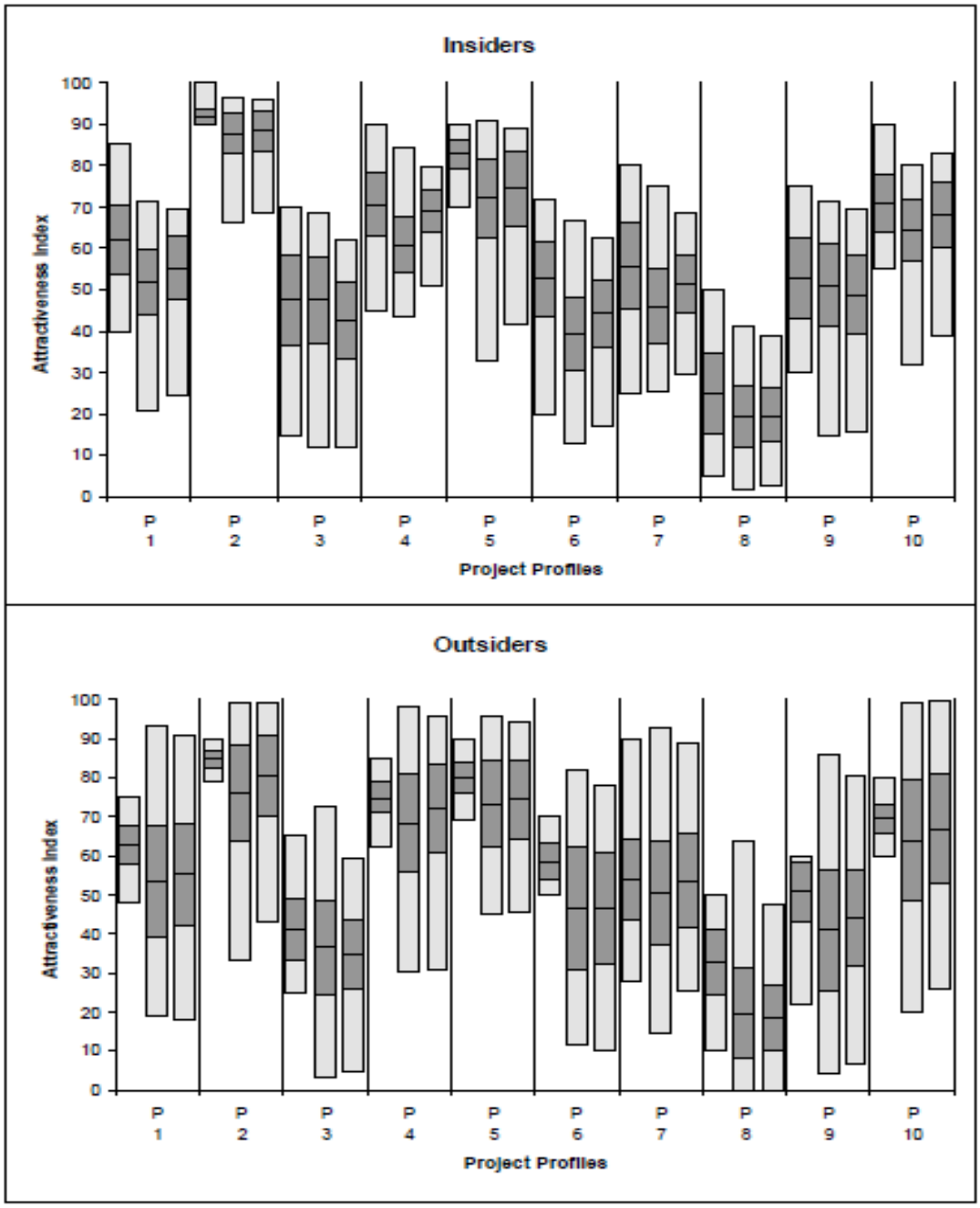
(Source: Computed by Author)

Figure 23 : Group Average and Range of Individual Capability Indexes for the Nine Company Profiles Used in the Model Validation



(Source: Computed by Author)

Figure 24 : Group Average and Range of Individual Attractiveness Indexes for the Ten Project Profiles Used in the Model Validation



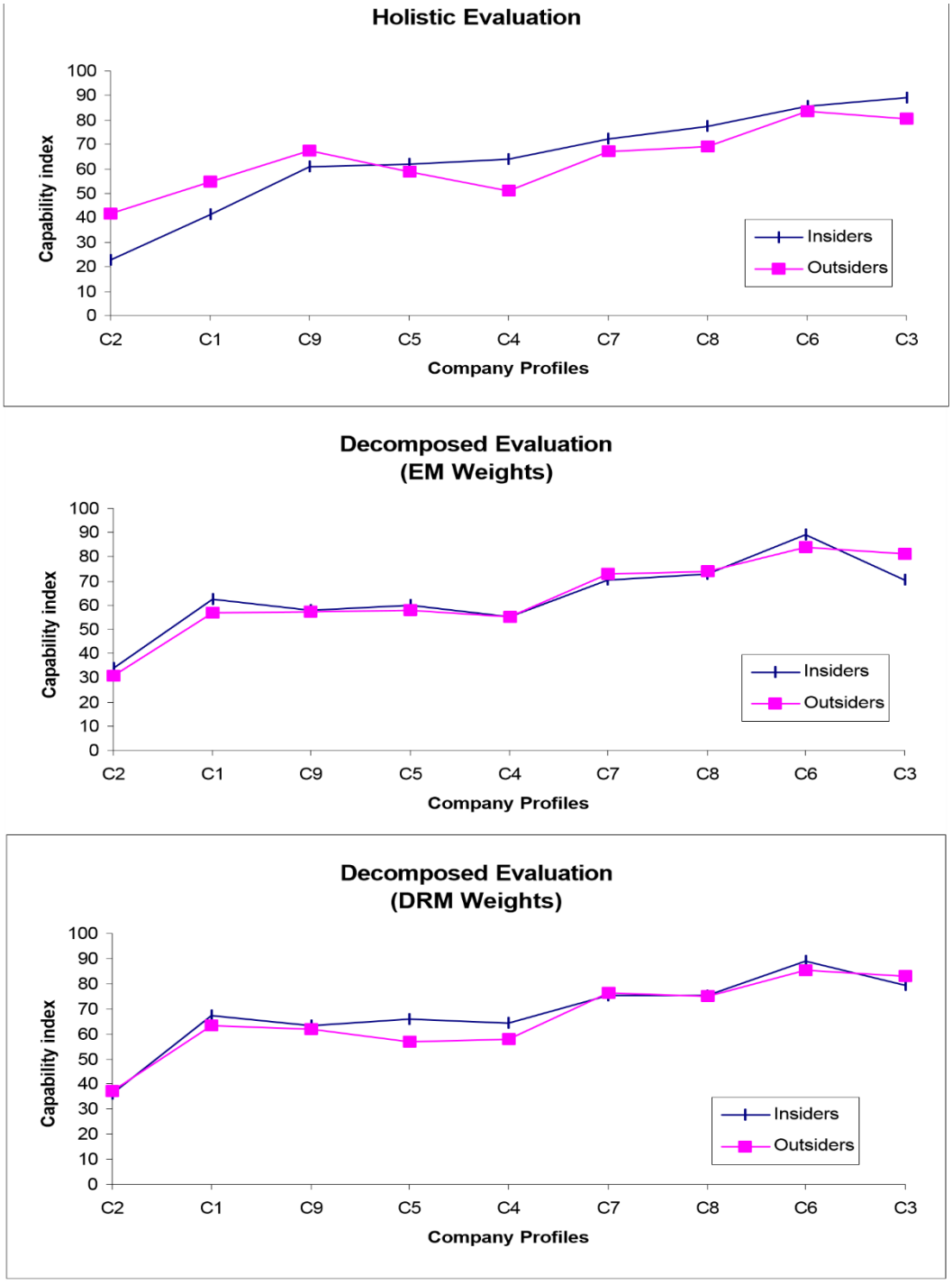
(Source: Computed by Author)

Differences and Similarities between Insiders and Outsiders

This thesis also checks on the differences and similarities of the participants (insiders and outsiders) in validating if they see the promotion of conservation PPP projects together with their risks and mitigation measures from similar or different points of view.

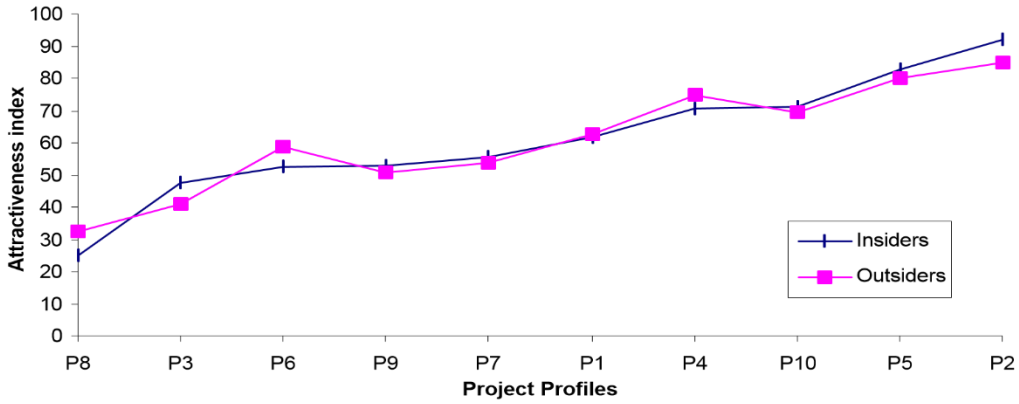
Figures 25 and 26 displays (for each evaluation procedure) the results from the group of insiders and that of outsiders about the different company and project profiles. They exhibit that both groups provide responses that follow a similar trend and are closely related. The correlation coefficients between both groups are shown in Table 42.

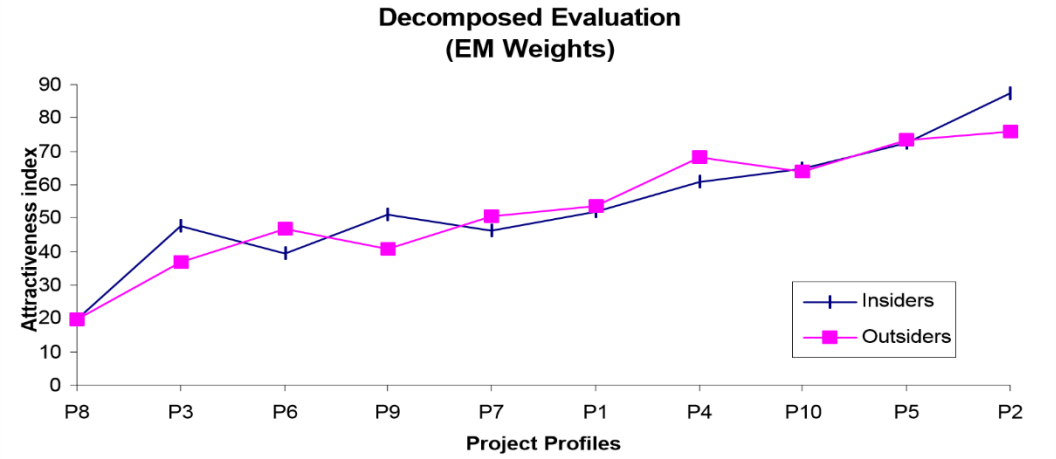
Figure 25: Comparison between the Results Provided by the Group of Insiders and the Group of Outsiders on the Company Profiles

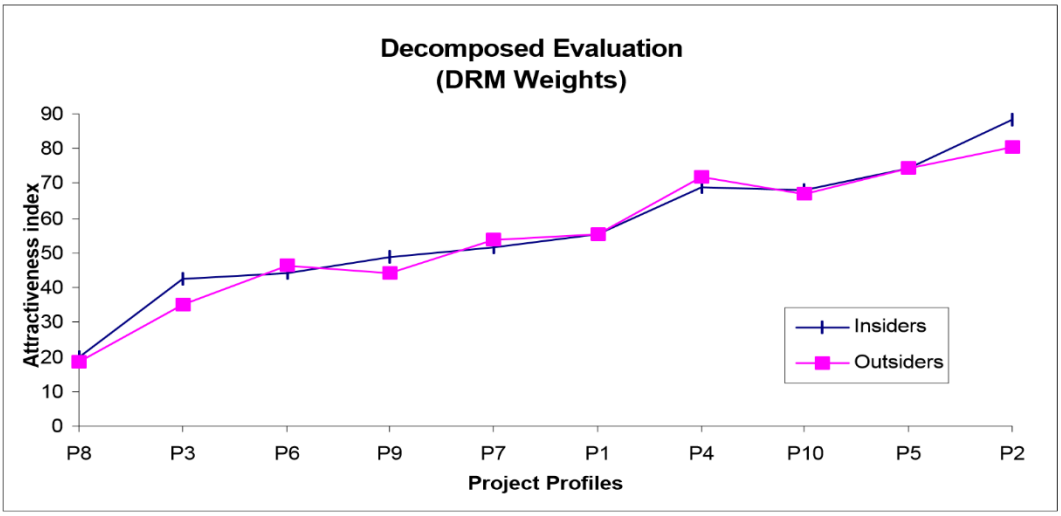


(Source: Computed by Author)

Figure 26: Comparison between the Results Provided by the Group of Insiders and the Group of Outsiders on the Project Profiles







(Source: Computed by Author)

Table 42: Correlations between the Outcomes Provided by the Insiders and the Outsiders (Taken Across Company and Project Profiles)

	Correlations taken across Company Profiles			Correlations taken across Project Profiles	
	Pearson's cor. coef.	Spearman's rank cor. coef.		Pearson's cor. coef.	Spearman's rank cor. coef.
Holistic	0.969	0.952	**Holistic**	0.897	0.817
Decomposed (EM)	0.922	0.891	**Decomposed (EM)**	0.955	0.900
Decomposed (DRM)	0.980	0.988	**Decomposed (DRM)**	0.965	0.917

This information leads to the conclusion that insiders and outsiders provide similar evaluations when they agree on the attribute performance levels being analysed. The validation results indicate that the Desirability Model captures the preferences of insiders and outsider

6.5 EVALUATION OF EXISTING CONSERVATION PROJECTS

The information above leads to the conclusion that insiders and outsiders provide similar evaluations when they agree on the attribute performance levels of the companies and projects being analysed. The respondents then assessed three well known regional ZPWMA projects in conservation as case studies, namely:

Umfurudzi Safari Area (ZPWMA)

Chipinda pools (ZPWMA)

Charara Wilderness (ZPWMA)

Testing for consistence in evaluating procedure (EM and DRM): Group answers are displayed in Table 43. Results from three projects are obviously sufficient to draw general conclusions on the state of risk and performance in conservation PPP projects both locally and regionally, However it appears that differences do exist (i.e., the two groups evaluate the project from different points of view.). When evaluating a project, the range of outcomes provided by the insiders' and outsiders' decomposed models does not appear to be smaller than the spread observed from their holistic evaluations. Figure 22 and 23 show the range of responses provided by the insiders and outsiders when evaluating the company and project profiles used in this study.

	Umfurudzi Safari Area		Charara Wilderness		Chipinda Pools	
	Group of Insiders	**Group of Outsiders**	**Group of Insiders**	**Group of Outsiders**	**Group of Insiders**	**Group of Outsiders**
4.1. Ability of the Private Partner to Fund the Project	6.33	7.00	4.24	5.69	6.42	7.08
4.2. Certainty of Revenues	6.17	7.00	2.65	3.26	6.86	7.34
4.3. Taking Periodic and Constant Financial Audits	5.00	6.50	2.88	4.39	5.88	6.59
5.1. Ability to Provide Quality Product/Service	6.50	7.17	3.36	5.12	6.53	7.46
5.2. Ability to Provide a Feasible Project Plan	5.67	7.50	4.61	5.52	6.69	7.58
5.3. Abil. Prov. an Adequate Oper-Transfer Pack.	6.00	6.83	4.40	2.81	6.42	6.88
6.1. Prompt, Stable and Reliable Service Delivery	5.50	7.50	2.57	3.44	6.53	7.68
6.2. Efficient Channel of Communication	6.00	7.50	3.08	4.52	6.83	7.50
6.3. Certainty Time and Cost Saving	4.00	5.67	4.00	5.67	6.54	6.82
6.4. Efficient Stakeholder Management Framework	5.67	6.00	5.67	6.00	6.89	7.26
7.1. Risk Allocation in Contractual Agreement	4.67	7.83	4.28	6.82	6.66	7.94
7.2. Risk Allocation in Operational Agreement	6.33	6.67	4.30	6.66	7.62	7.89
7.3. Fair and Efficient Legal framework	6.17	7.33	6.10	6.98	7.44	7.86
7.4. Political Environment	5.83	7.33	5.81	7.25	7.83	7.92
Holistic Judgments	55.83	70.00	38.39	56.00	71.83	89.00
Decomposed Evaluations						
EM	57.53	67.30	41.32	53.40	73.32	86.34
DRM	58.38	65.62	42.26	51.42	74.22	84.82

Table 43: Attribute Performance Levels and Holistic and Decomposed Evaluations for ZPWMA PPP conservation project *(Source: Computed by Author*)

Results:

From the results from table 43 above: The small differences between the responses given by the group decomposed evaluations and the average holistic judgments confirm the fact that the Project Attractiveness index captures the preferences of the decision makers. Insiders seems to assume a more conservative position than outsiders perhaps because they have more at stake than the outsiders do.

For the group of insiders, the differences between the decomposed evaluations for Umfurudzi Safari Area, using the EM and the DRM, and the holistic judgments were, respectively, 1.70 and 2.55 index points. For the group of outsiders, the differences were 2.70 and 4.38 index points.

For the group of insiders, the differences between the decomposed evaluations for Charara wilderness, using the EM and the DRM, and the holistic judgments were, respectively, 2.93 and 3.87 index points. For the group of outsiders, the differences were 2.60 and 4.58 index points.

For the group of insiders, the differences between the decomposed evaluations for Chipinda Pools, using the EM and the DRM, and the holistic judgments were, respectively, 1.49 and 2.39 index points. For the group of outsiders, the differences were 2.66 and 4.23 index points.

The validation results indicate that the Desirability Model appears to capture the preferences of both insiders and outsiders and produce valid judgement.

What Drives the Action in the Desirability Model, Importance Weights or Worth Scores?

To determine the driving force in the Desirability Model all the three projects are considered as shown in Table 44 (shows the Project Attractiveness index values from respondents). The indices are computed based on three different alternatives: (1) individual attribute importance weights (using the DRM), individual P1 and P2 assessments, individual attribute performance levels; (2) group importance weights, individual P1 and P2 assessments, individual attribute performance levels; and (3) individual importance weights, group average P1 and P2 assessments, group average attribute performance levels.

	Alternatives										Alternatives								
	X1	**X2**	**X3**	**Y1**	**Y2**	**Y3**	**Z1**	**Z2**	**Z3**		**X1**	**X2**	**X3**	**Y1**	**Y2**	**Y3**	**Z1**	**Z2**	**Z3**
I-01	43.0	44.7	38.2	34.3	44.8	33.1	44.8	54.9	39.7	**O-01**	83.0	88.6	74.1	85.2	98.6	66.6	77.1	89.0	61.9
I-02	50.3	56.2	50.3	51.2	49.0	52.6	45.9	48.3	42.6	**O-02**	2.9	8.8	11.1	3.4	10.6	21.2	81.3	66.4	71.2
I-03	14.7	28.8	11.0	16.9	18.6	11.4	44.4	39.8	44.7	**O-03**	42.8	38.9	33.3	45.9	65.7	44.3	77.9	65.7	58.7
I-05	73.7	72.0	69.6	65.7	70.3	56.8	45.2	53.6	42.0	**O-05**	74.6	83.2	72.6	70.4	70.2	59.0	85.8	88.9	89.8
I-06	76.5	69.3	76.2	70.2	84.8	74.6	39.7	42.9	38.1	**O-06**	99.2	94.9	97.1	98.9	89.6	77.7	80.8	96.5	69.2
I-07	92.1	88.6	83.2	89.6	73.5	83.0	37.0	44.8	36.2	**O-07**	91.2	88.5	90.2	90.7	73.7	82.4	78.8	92.1	98.6
Average	58.4	59.9	54.8	54.6	56.8	51.9	42.8	47.4	40.6	**Average**	65.6	67.2	63.1	65.7	68.1	58.5	80.3	83.1	74.9
Std. Dev.	28.0	31.2	27.8	26.2	28.5	23.3	3.6	3.8	3.2	**Std. Dev.**	36.4	25.9	32.3	35.8	31.1	28.6	3.2	3.6	2.4
Cof. Var.	0.48	0.36	0.41	0.48	0.41	0.36	0.08	0.09	0.04	**Cof. Var.**	0.55	0.46	0.52	0.54	0.37	22.9	0.04	0.05	0.04

Note:

Alternative X1 — individual attribute importance weights (using the DRM) , individual P1 and P2 assessments, individual attribute performance levels (Umfurudzi Safari Area)

Alternative X2— individual attribute importance weights (using the DRM), individual P1 and P2 assessments, individual attribute performance levels (Charara Wilderness)

Alternative X 3— individual attribute importance weights (using the DRM), individual P1 and P2 assessments, individual attribute performance levels (Chipinda Pools)

Alternative Y1 — group importance weights, individual P1 and P2 assessments, individual attribute performance levels (Umfurudzi Safari Area)

Alternative Y2— group importance weights, individual P1 and P2 assessments, individual attribute performance levels (Charara Wilderness)

Alternative Y3 — group importance weights, individual P1 and P2 assessments, individual attribute performance levels (Chipinda Pools)

Alternative Z1 — individual importance weights, group average P1 and P2 assessments, group average attribute performance levels(Umfurudzi Safari Area)

Alternative Z2 — individual importance weights, group average P1 and P2 assessments, group average attribute performance levels (Charara Wilderness)

Alternative Z3— individual importance weights, group average P1 and P2 assessments, group average attribute performance levels(Chipinda Pools)

Table 44: PA indexes for Umfurudzi, Chipinda Pools and Charara Wilderness Projects **(***Source: Computed by Author*)

Results:

An examination of the results obtained by using alternative Z (Z1, Z2, Z3) shows that the PA indices do not present much variability when the attribute worth scores (i.e., P1 and P2 assessments and attribute performance levels) are held constant and the attribute importance weights are allowed to vary. For example, on Z1, the insiders, the coefficient of variation is 0.08 and for the outsiders, it is 0.04. In contrast, results from alternative B (variable worth scores and constant attribute importance weights) present almost the same variability of the results from alternative A (where both worth scores and importance weights can change) and a much higher variability than alternative Z. For the insiders, the coefficient of variation is 0.48 for alternative B and 0.48 for alternative A. For outsiders, the coefficients of variation are, respectively, 0.54 and 0.55.

At What Level Is the Company Competence or Project Attractiveness Index Good Enough for Conservation Project Promotion and Risk mitigation?

The purpose of calculating the CC (PA) index for a project is not to simply verify if it surpasses a certain threshold where an organisation is considered capable to participate in the promotion of a conservation project. This section provides some basic index values to signal the quality levels of the projects.

In questionnaire four, respondents were asked to place each company and project profile in one of four quality intervals: high, medium-high, medium-low, and low. Points were assigned to the profiles according to the interval they had been placed by the respondents (i.e., a profile placed on "high" got 4 points, on "medium-high" 3 points, on "medium-low" 2 points, and on "low" 1 point.) Next, the profiles were averaged across insiders and outsiders and were reclassified into the quality intervals. Then, profiles within the same intervals had their "quality points," group holistic and decomposed evaluations averaged. Table 45 to 47 shows the averages obtained at each interval for the projects. Finally, two "thresholds" were calculated by linearly interpolating the averaged profile evaluations. Profiles with indices above the "3.50" threshold may be considered as of having high quality, profiles with indices between the "3.50" and the "2.50" thresholds may be considered as medium-high quality, and profiles with indices below the "2.50" threshold may be considered as low quality. The thresholds displayed in Tables 45 to 47 are very crude estimates and used in this thesis only as reference points.

	Quality Intervals				Thresholds	
	High	Med-high	Med-low	Low	"2.50"	"3.50"
Insiders						
Company Profiles	C3, C6	C4, C5, C7, C8, C9	C1	C2		
Quality Interval Average	3.88	2.81	1.81	1.13		
Evaluation Averages						
Holistic	87.44	67.23	41.25	22.50	59.1	80.3
EM	79.81	63.20	62.59	33.88	63.0	73.9
DRM	84.10	68.80	67.18	36.20	68.3	78.7
Project Profiles	P2, P5	P1, P4, P10	P3, P6, P7, P9	P8		
Quality Interval Average	3.88	3.00	2.08	1.13		
Evaluation Averages						
Holistic	87.25	67.92	52.19	25.00	59.4	79.0
EM	79.94	59.05	46.07	19.51	52.0	71.0
DRM	81.36	64.23	46.76	19.72	54.7	74.0
Outsiders						
Company Profiles	C3, C6	C5, C7, C8, C9	C1, C2, C4			
Quality Interval Average	3.90	2.93	2.03	0.00		
Evaluation Averages						
Holistic	82.00	65.63	49.22	0.00	57.8	75.3
EM	82.46	65.52	47.62	0.00	57.0	75.5
DRM	84.18	67.45	52.69	0.00	60.4	77.3
Project Profiles	P2, P5	P1, P4, P6, P10	P3, P7, P9	P8		
Quality Interval Average	3.90	3.00	2.07	1.40		
Evaluation Averages						
Holistic	82.42	66.33	48.56	32.67	56.8	75.3
EM	74.56	58.14	42.66	19.71	49.8	67.3
DRM	77.48	60.12	44.25	18.64	51.6	69.8

Table 45: Crude Estimates for PA Index Thresholds (Chipinda Pools)
(Source: Computed by Author)

	Quality intervals				Thresholds	
	High	Med-high	Med-low	Low	"2.50"	"3.50"
Insiders						
Company Profiles	C3	C4, C8,	C6, C5,C7	C1, C2, C9		
Quality Interval Average	3.76	2.62	1.96	1.11		
Evaluation Averages						
Holistic	87.44	67.48	41.20	32.50	58.1	82.3
EM	79.81	64.31	51.59	33.08	53.0	74.4
DRM	84.10	68.77	57.08	36.27	61.3	77.7
Project Profiles		P9, P4,	P7, P8, P10, P5, P1,	P3, P6, P2		
Quality Interval Average	0.00	3.02	2.11	1.13		
Evaluation Averages						
Holistic	0.00	57.90	52.19	25.70	59.4	79.4
EM	0.00	55.01	46.07	19.31	52.0	66.0
DRM	0.00	62.29	46.76	19.22	54.7	75.6
Outsiders						
Company Profiles		C8, C3	C6, C5, C7	C1, C4, C9, C2		
Quality Interval Average	0.00	2.93	2.03	1.10		
Evaluation Averages						
Holistic	0.00	60.13	49.22	54.62	57.8	85.3
EM	0.00	58.32	47.62	53.25	57.0	85.8
DRM	0.00	64.40	52.69	56.87	60.4	87.3
Project Profiles		P4, P10	P9, P8, P1, P5,	P3, P2, P6, P7		
Quality Interval Average	0.00	3.00	2.07	1.40		
Evaluation Averages						
Holistic	0.00	66.33	56.56	32.67	56.5	85.3
EM	0.00	58.44	52.96	19.71	49.8	77.9
DRM	0.00	60.12	54.25	18.64	51.0	79.8

Table 46: Crude Estimates for PA Index Thresholds (Charara Wilderness)
(Source: Computed by Author)

	Quality Intervals				Thresholds	
	High	Med-high	Med-low	Low	"2.50"	"3.50"
Insiders						
Company Profiles	C7, C8,	C4	C1, C3, C5,	C2, C9, C6		
Quality Interval Average	3.79	2.60	1.72	1.23		
Evaluation Averages						
Holistic	87.49	77.21	41.65	33.00	59.8	71.3
EM	79.01	73.20	59.50	33.09	65.2	64.7
DRM	84.11	78.81	57.12	35.66	68.9	68.8
Project Profiles		P3, P9, P2	P1, P6, P7,P10	P8, P5, P4		
Quality Interval Average	0.00	3.20	2.18	1.20		
Evaluation Averages						
Holistic	0.00	87.90	72.19	34.21	78.6	69.0
EM	0.00	79.54	66.77	33.09	73.5	71.7
DRM	0.00	84.23	66.76	44..28	74.7	74.3
Outsiders						
Company Profiles	C3,	C8, , C6	C1, C4, C5, C7	C9, C2		
Quality Interval Average	3.83	2.90	2.15	1.19		
Evaluation Averages						
Holistic	72.10	44.61	49.20	33.42	78.8	46.2
EM	62.91	45.52	48.62	33.22	76.4	45.7
DRM	74.76	47.43	52.69	41.67	80.5	48.9
Project Profiles	P2, P10	P1, P6	P3, P9, P8, P5	P7, P4		
Quality Interval Average	3.80	3.11	2.17	1.18		
Evaluation Averages						
Holistic	62.12	56.33	88.52	35.67	65.3	84.2
EM	64.52	48.54	72.64	33.45	59.2	78.3
DRM	77.38	50.42	84.36	49.64	63.4	78.9

Table 47: Crude Estimates for PA Index Thresholds (Umfurudzi Pools)
(Source: Computed by Author)

Results:

Chipinda Pools: Considering this conservation project both the insiders and the outsiders consider the Chipinda Pools, according to the information contained on tables 43 and 45 as a "medium-high" quality project and also better performing. This is because most of its indices lie in the range above the threshold of "2.5". Furthermore, there is no difference in the holistic judgements by the respondents.

Charara Wilderness: This project endeavour has most of it indices in the "medium low" meaning it not that much profitable and affected by risks. Both the insiders and outsiders provided consistent judgements that showed low project quality and prone to losses. Most of its indices lie in the threshold region below "2.5".

Umfurudzi Safari Area: Both the insiders and the outsiders consider the Umfurudzi Safari Area, according to the information contained on tables 43 and 47 as a "medium-low" quality project and not very well performing even though it is almost of "medium high" quality. Most of the attribute indices are almost averaging the "2.5" threshold though they are lower.

6.6 SUMMARY

All of the evaluation methods used in this chapter to evaluate risks and mitigation measures associated with PPPs thus the Direct Rating Method and the Eigenvalue Method, pointed out all risks analysed in this chapter are essential for consideration in terms of PPP performances and profitability though some are less threatening. In this regard ***Country Risks, Stakeholder Risks, Financial Risks*** and ***Inadequacy Concession Contract*** proved to be the most threatening risks. All the respondents appreciated that ***stakeholder satisfaction, appropriate risk allocation and legal frameworks*** are vital for enhancing PPP performance and risk mitigation. Technical risk evaluations and financial risk evaluations were not to be ignored looking at the PPP project attractiveness

This chapter also presented the outcomes provided by the experts that participated in the development of the Desirability Model. The results show that company attributes such as ***Organisational Characteristics, Service and Production Capability, Resources Availability and Constraints*** are important attributes to look at when looking at PPP performance and risk mitigation in conservation projects.

The provisions necessary for appropriate ***risk allocation and legal frameworks*** included conducive political environment and risk allocation in the contractual and operational agreement. For stakeholders' satisfaction, efficient channel of communication, stakeholder management framework, prompt stable and reliable service delivery showed to be essential in enhancing PPP performance in conservation

Lastly, the case study of the three conservation (Umfurudzi, Chipinda Pools and Charara Wilderness) showed that the ZPWMA projects are not performing due to inefficiencies in ***stakeholder satisfaction, appropriate risk allocation and legal frameworks.*** Hence the next chapter discusses and interprets these results

CHAPTER 7:
DISCUSSION AND INTERPRETATION OF RESULTS

7.0 INTRODUCTION

This chapter comprises of the discussion and interpretation of the results. It provides the explanation of all the results obtained from the data analysis and research findings. It focuses on how the objectives of this thesis have been achieved through interpreting the results. It gives a detailed explanation on the effect of stakeholder satisfaction, legal framework and risk allocation on the performance of conservation projects. It lays out the risks and mitigation measures associated with PPPs so as to engage into successful conservation projects. This section takes great consideration to the ZPWMA context and other related studies.

It also explains and lays out a sensitivity analysis on the Desirability Model showing how much the attributes (mitigation measures) contribute to the Project Attractiveness (PA) indices and Company Competence (CC) indices. Thus, it further aligns and compares the results to the objectives of the thesis by giving the risks and mitigation measures to be expected in conservation projects under PPPs, the mitigation measures and assess how much these mitigation measures contribute to the performance of the projects. The performance results of ZPWMA projects and other related in the previous chapter are discussed in terms of risks and performances.

7.1 OBJECTIVE ONE: RISKS TO BE CONSIDERED FOR PPP PERFOMANCE IN CONSERVATION

This thesis had brought about an effective risk analysis that established risks to be considered to engage into successful PPPs in conservation projects. These factors have been analysed in this thesis from literature review, data analysis and results. These are from the ZPWMA context and other related studies. These risks have been noted as:

Country risks- lack of legal frameworks, political environment (unstable government)
Financial risks- lack of audits, losses, inadequate cash flow, no possibility of profitability
Construction risks – inefficiencies in constructing conservation infrastructure, poor time and resource management
Inadequacy in concession contract- exit clause not done, risk allocation not done, major terms not included
Stakeholders' risk- stakeholder dissatisfaction, poor information feedback to stakeholders
Operation and maintenance risks- unstable and unreliable service, incompetent management team, lack of operate transfer packages
Market risks – change in market trend
Management risks-Changes in key management personnel

The data analysis and the results established that all 8 risks are valid since they are all affecting the performance of ZPWMA. The data analysis shows that Country Risks, Stakeholders' Risks, Financial Risks and Inadequacy in Concession Contract are the most prominent risks affecting the conservation projects. The results are shown in table 29 for the weighting of these risks. For the Insiders, Eigenvalue Method (EM) weights ranged from 0.124 to 0.612 and Direct Rating Method (DRM) weights ranged from 0.162 to 0.596. For the Outsiders, Eigenvalue Method weights ranged from 0.158 to 0.592 and Direct Rating Method weights ranged from 0.144 to 0.611. These prominent risks had weights ranging from 0.500 to 0.650 proving that they are the most prominent in ZPWMA conservation projects.

In a discussion of these results with one of the conservationists he commented that:

Conservation is essential especially in these days where tourism is taking centre stage. With these risks still around performance is an issue that must be address. For sure these risks are haunting PPPs and we hope and put our faith in more and more research for them to be addressed.

7.2 OBJECTIVE 2: RISK MITIGATION MEASURES FOR TURNING PERFORMANCE OF PPP PROJECTS

In the Desirability Model the risk mitigations were grouped into two. Thus, Company Competence mitigation strategies (***Organisational Characteristics, Service and Production Capability, and Resources Availability and Constraints***) and Project Attractiveness mitigation strategies (***Financial Assessment, Technical Evaluation, Stakeholder Satisfaction Assessment, Appropriate Risk Allocation and Legal Frameworks).*** This implied that there are certain company and project attributes that are effective in mitigating PPP risks in conservation projects. These have been analysed using several methods and the interpretation of results is as follows:

The DRM (Direct Rating Method) and EM (Eigenvalue Method) showed some consistence in the results for the importance (weights) of the CC and PA factors (mitigation strategies). All the categories were deemed significant to project performance and risk mitigation. Considering the CC factors in table 30, the ***Resources Availability and Constraints*** category was the most significant in mitigating risks because it had EM and DRM weight values that where above 0.500 for both Insiders and Outsiders. This was followed by ***Organisational Characteristics*** and ***Service & Production Capability*** respectively which had EM and DRM weights which were ranged 0.170 to 0.300 for both Insiders and Outsiders**.**

The results for PA factors showed that ***Stakeholder Satisfaction Assessment*** is the most important risk mitigation measures with EM and DRM weights ranging from 0.300 to 0.550 since conservation projects are driven by different stakeholders. This is followed by ***Appropriate Risk Allocation and Legal Frameworks*** (with EM and DRM weights ranging from 0.220 to 0.260*),* ***Technical Evaluation*** (with EM and DRM weights ranging from 0.120 to 0.250*)* and ***Financial Assessment*** (with EM and DRM weights ranging from 0.120 to 0.210) respectively**.**

Each of the 3 categories under Company Competences had some attributes which had the greatest DRM and EM weight. These were ***Expertise of Management Personnel, Sufficiency of Specialised knowledge and Profitability Margin.*** This means that according to both the insiders and outsiders' response, these are the most important company attributes that have to be considered in reducing risk in conservation projects and boost performance. In addition, each of the 4 categories under Project Attractiveness also had some attributes which had the greatest DRM and EM weight. These were ***Certainty of Revenues, Feasible Project Plan, Efficient Channel of Communication and Political Environment.*** These are risk mitigation measures that both insiders and outsiders deemed efficient in risk reduction, increased performance and profitability

Value Function and Delta Dimension results also measured the relative importance of the attributes under CC and PA. They showed consistence with DRM and EM. They confirmed that the results under DRM and EM are valid. In the questionnaires filled one of the Directors of ZPWMA commented on the applicability and importance of these risk mitigation measures, he responded as follows:

"These are industrious and innovative strategies that can bring life and sanity to the conservation sector. They are all factors with a great significance and each one of them needs to be embraced for a great revival in PPPs."

7.2.1 Performance of ZPWMA projects

The previous chapter of research findings shows the performance results of Chipinda project, Umfurudzi project and Charara project. These projects where measure using performance thresholds between 2.50 and 3.50. They were ranked "medium high", "medium low" and "medium low" quality projects respectively. These projects performance were measured using the Desirability Models together with risk and performance indices.

The medium high performance and quality in the Chipinda was attributed to the overall performance of the private partner and the Project Attractiveness indices as shown in Table 43. Results for both the EM and DRM weights show that the indices (risk mitigation attributes) ranged from 5.88-7.92 for both insiders and outsiders and for Umfurudzi and Charara projects the weights ranged from 2.58 – 7.83 showing their "medium low" performance. This is attributed to legal frameworks, stakeholder satisfaction and risk allocation.

Some studies in the literature, eg Grigorescu (2008) also pointed out favourable legal frameworks (in some instances referred to as political environment) as a contributing factor in reducing risks and increased PPP performance. Even though legal frameworks, stakeholder satisfaction and risk allocation have not been exhausted and had several gaps in the literature' One of the industrialists commented in a questionnaire that:

> *"Several economies in the developed countries have embraced stakeholders as vital determinants of PPP engagements and have led to the success of major conservation projects, think of the Romanian tourism models for conservation, or the Kruger National Park in under SANparks. If we borrow these ideas with good risk allocation concepts added, our projects can flourish locally."*

7.3 OBJECTIVE 3 AND 4: EXTENT AND CONTRIBUTION OF DESIRABILITY MODEL ATTRIBUTES TO PPP PERFORMANCE AND RISK MITIGATION

The contribution of the Desirability model attributes consists of developing the attribute importance weights, creating the attribute value curves, and determining the dominant attributes as done in data analysis and research findings. Once the model parameters have been defined, one needs to evaluate the performance level of all the model attributes, to verify if any dominant attribute has a performance level below point "P1," and to compute the PA index. If, a project presents a delta parameter smaller than zero (i.e., one or several dominant attributes have very low performance levels), one should seek strategies that boost the performance of these attributes and should not proceed until the delta parameter is set to zero.

Using the information provided by insiders and outsiders, a graphical illustration of the actual and maximum attribute contributions to the index, as shown in Table 49, helps to clarify the information contained in the index value. The shaded part of a column represents the actual contribution of the attribute to the index. The attributes can be identified by its initials placed just below the columns. Each box on top of a shaded column (shown with a dotted-line border) represents the extra contribution provided by that particular attribute if its performance level increases by 0.5. The numbers on the top of an attribute column represent the incremental contribution an attribute can provide to the index (i.e., the height of each dotted-border box) and its maximum "extra" contribution (i.e., its contribution if the performance level goes from the actual level and reaches point "P2").

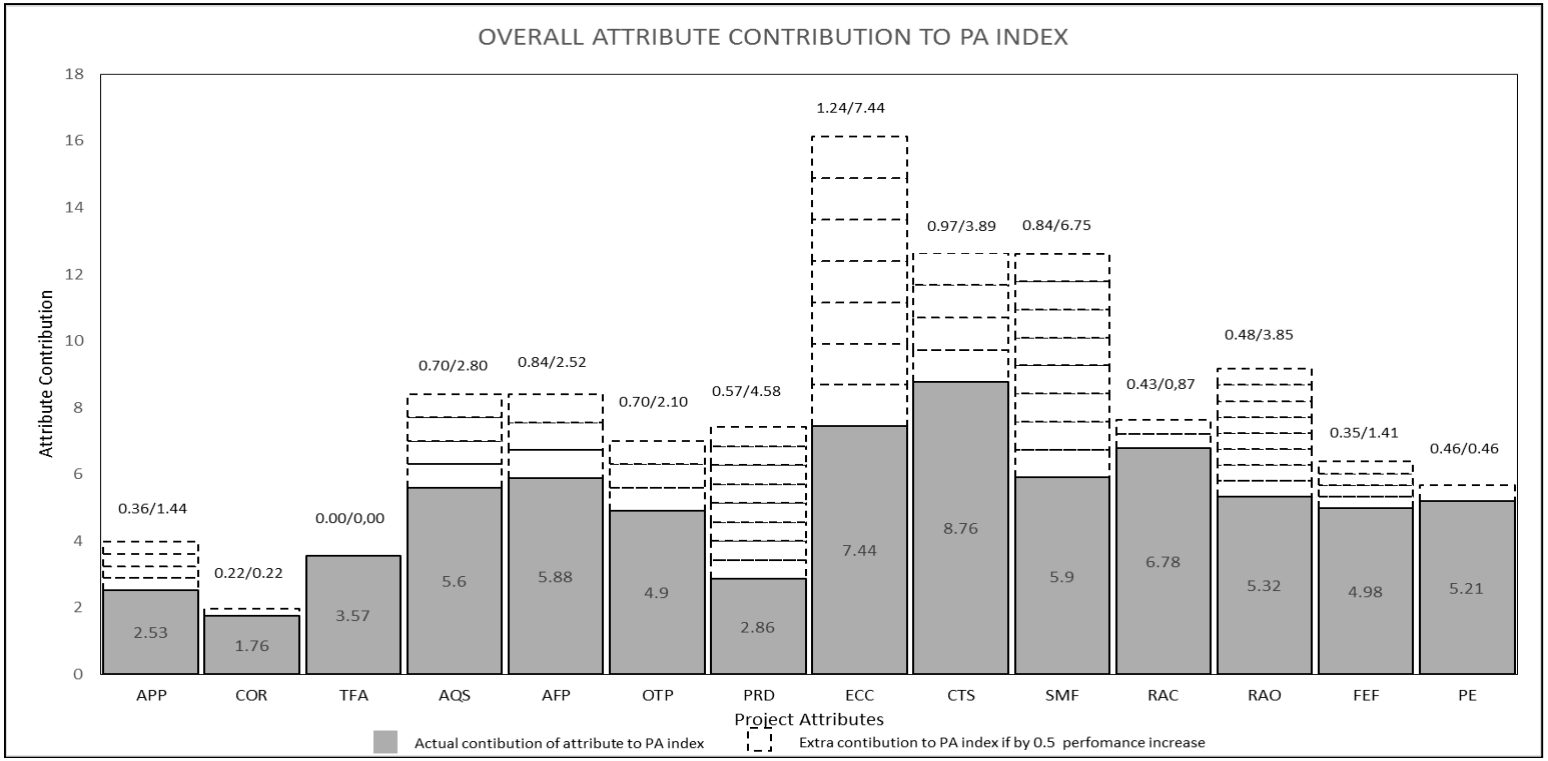
Sensitivity analysis is be performed to verify how different incentives and risk mitigation strategies influence the model attributes. The use of the model improves the understanding of the weaknesses and strengths of the project and hence, allows for better decision making. For instance, an inspection on Table 49 reveals the PA attributes that would

contribute most to the improvement of the index, they are: ***Efficient Channel of Communication, Certainty of Time and Cost Saving, Efficient Stakeholder Management Framework, Risk Allocation in Operational Agreement, and Prompt Stable & Reliable Service Delivery***. Therefore, efforts to improve the quality of the project should aim at increasing the performance level of these attributes. One of the conservationists commented in questionnaire 2 that:

> *"Some of the strategies that can enhance the performance of these attributes include provision of a minimum-revenue guarantee, supply of long-term financing by the monetary institutions, utilization of local companies (in order to build some rapport between the local community and the project owning company*)"

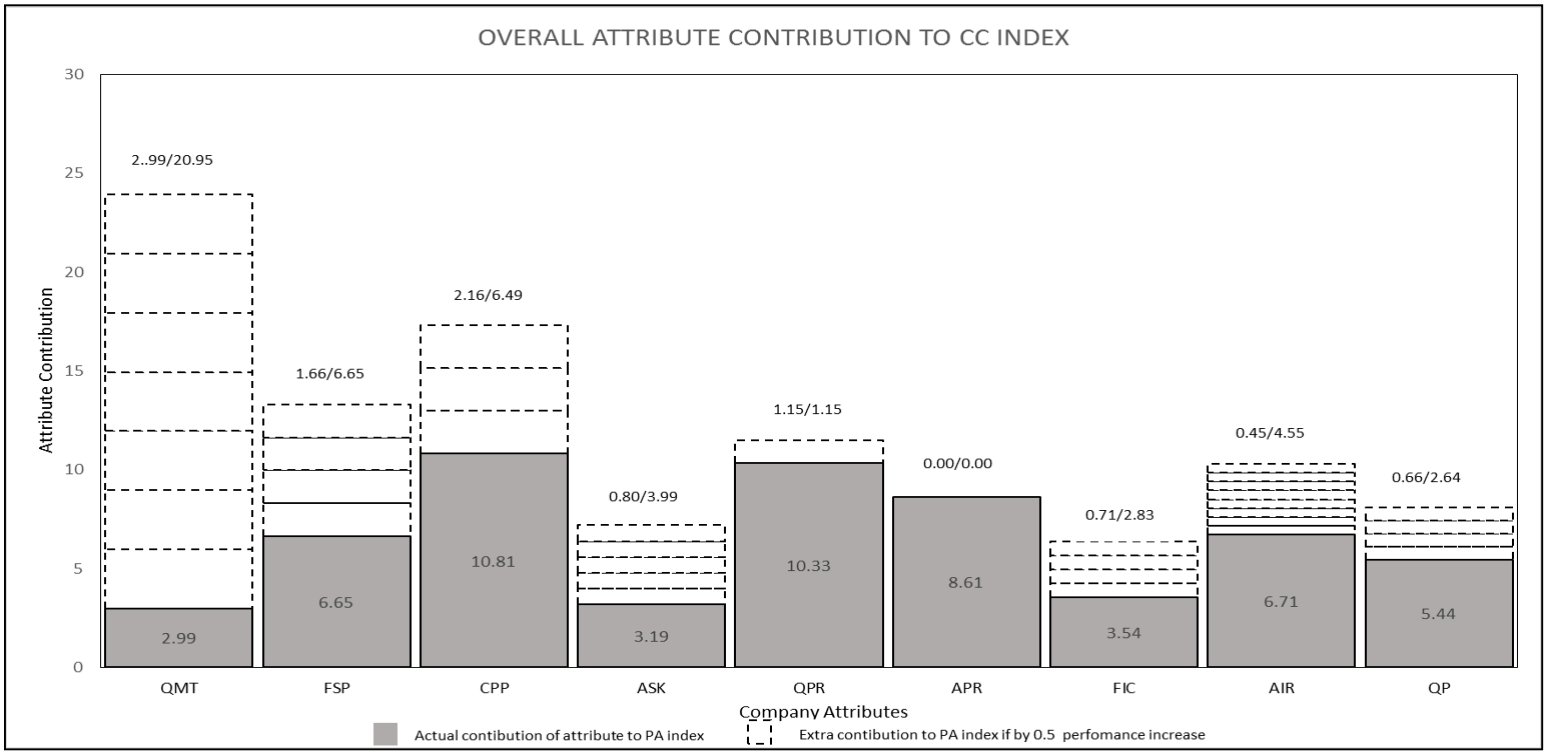
In this regard, there are also several CC attributes in the Desirability Model that need to be taken into consideration for a turnaround in the performance of ZPWMA projects and mitigation of risk. These include ***Compatibility with Project Partners, Overall Quality of Productive Resources, Availability of Productive Resources*** and ***Ability to Identify project Risks.*** Besides, the sensitivity analysis showed that ***Expertise of Management Personnel,*** is the attribute that would contribute the most to the improvement of the CC index. It implies that if taken into consideration the competence of the ZPWMA needs quality management team that is capable of minimising risks and enhance profitability.

Table 48: Overall contribution of attributes to PA index



(Source: Computed by Author)

Table 49: Overall contribution of attributes to CC index



(Source: Computed by Author)

The analysis of PA attributes is not enough for a company to decide about participating in the promotion of a project. Concomitantly with the analysis of the project parameters, the company should analyse it's own capability for promotion. For instance, suppose the company is interested in a high-quality project. An analysis of its attributes (see table 49) quickly points out the company's deficiencies, mainly in the ***Availability to Supply Capital for the Project*** and the ***Expertise of Management and*** demonstrates its inadequacy to promote the project. Therefore, there must be a good match between the characteristics of companies and projects. A good company will not make a potential unsuccessful project into a successful one, and a good project will not be successful if it is not managed and implemented by quality companies

7.3.1 Implications of results for risk and performance of PPPs:

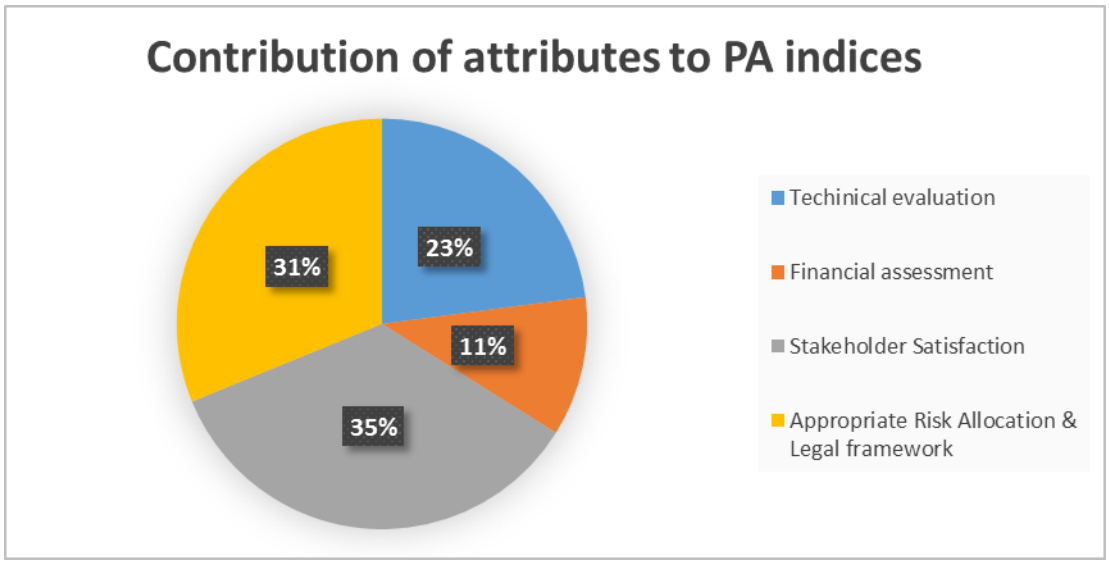
a) Effectiveness and contribution of stakeholder satisfaction, legal framework and risk allocation in PPP performance and risk mitigation

The DRM and the EM both suggested that ***Stakeholder Satisfaction, Appropriate Risk Allocation and Legal Framework*** are effective and efficient risk mitigation and performance factors. All responses from both the insiders and the outsiders shown that considering PA (Project Attractiveness) indices they are ranked above technical evaluation and financial assessment. This shows they are essential in conservation projects for risk mitigation and raising the performance of PPPs.

By taking at a look at the results for the value functions and the Delta functions (table 33 and 34) it showed ***Stakeholder Satisfaction, Appropriate Risk Allocation and Legal Framework*** are also dominant attributes in mitigating risks in PPP projects for conservation. This is because some risk mitigation measures under these categories could fetch EM and DRM values that are above 20.00 while others are as low as 2.00. For example, ***Efficient Stakeholder Management Framework. Efficient Channel of Communication, Risk Allocation in Contractual Agreement and Fair and Efficient Legal framework*** had peak weights of 20.66, 17.63, 19.29 and 9.79 respectively.

These elements have not been considered in the day to day running of the ZPWMA projects and this thesis has proven that they must be taken into consideration for an effective turnaround in profitability and overall performance (thus risk mitigation). The figure 27 below was computed from the holistic and decomposed judgements and shows that these factors actually contribute to PA indices than technical and financial factors. Even attributes in these categories shown in figure 27 shows that they are of paramount importance.

Figure 27: Contribution of stakeholder satisfaction, legal framework and risk allocation to PA indices



(Source: Computed by Author)

b) Sensitivity analysis of the Desirability Model

Sensitivity analysis can be performed to verify how different incentives and risk mitigation strategies influence performance of different PPP projects. The use of the model improves the understanding of the weaknesses and strengths of the project and hence, allows for better decision making. For instance, an assessment on Table 48 and 49 reveals the attributes that would contribute to significant risk mitigation and most to the improvement of the Project Attractiveness index and Company Competence index respectively.

Table 48 shows that the most sensitive risk mitigation strategies in PPPs when considering the Project Attractiveness index are ***Effective Channel of Communication, Effective Stakeholder Management Framework and Prompt, Stable and Reliable Service Delivery.*** Table 49 reveals that the most sensitive risk mitigation strategies when considering the Company Competence Index are ***Expertise of Management personnel, Feasible strategic planning, Sufficient Specialised Knowledge and Ability to Identify Project Risks.*** This sensitivity is shown by the graphs of these attributes which grow double or more in their effectiveness when the responses of the interviewees (technical experts) are inserted in the model.

7.4 SUMMARY

This chapter comprised of the discussion and interpretation of the analysed data and results. In addition, explanations were provided on all the results obtained from the data analysis and research findings. ***Stakeholder satisfaction, legal framework and risk allocation*** showed that they are necessary on the positive performance and profitability of PPP conservation projects. These are one of the critical risk mitigation strategies both locally and abroad and must be given attention. The chapter also laid out the risks associated with PPPs to engage into successful and profitable projects. This section takes great consideration to the ZPWMA context and other related studies.

The performance results of Umfurudzi project, Chipinda pools and Charara Wilderness showed that all the risk mitigation measures pointed out in the thesis had a significant contribution to the performance and profitability of PPPs under conservation. The sensitivity analysis on the Desirability Model showed how much the attributes (mitigation measures) contribute to the Project Attractiveness (PA) indices and Company Competence (CC) indices. Thus, it aligns

and compares the results to the objectives of the thesis by giving the risks to be expected in conservation projects under PPPs, the mitigation measures and assess how much these mitigation measures contribute to the performance of the projects. The PA indices showed that ***Financial Viability, Certainty of Time and Cost Saving, Efficient Stakeholder Management Framework, Risk Allocation in Operational Agreement, and Prompt Stable and Reliable Service Delivery have the most contribution.*** The CC indices prove also that the companies must perfect on ***Availability to Supply Capital for the Project*** and the ***Quality of the Management Team.*** This chapter therefore leads to the conclusion and recommendations of this thesis

CHAPTER 8:
CONCLUSIONS AND RECOMMENDATIONS

8.0 INTRODUCTION

There are questions in today's economy about the government's ability to operate, maintain and finance PPP projects, as facilities have been inefficiently operated and inadequately maintained, social needs have been neglected, and governments have been bearing more of the burden of expenditure than they can reasonably be expected to manage. The private promotion of conservation and infrastructure projects is a key mechanism for providing new facilities with advantages for the public and private sectors. From the government's perspective, private promotion provides new sources of project finance, has the potential to improve the quality and efficiency of services and facilities, encourages better risk sharing between the public and private sectors, and provides access to technology, management expertise and financial skills that would not be available otherwise. For the private sector it provides new business with the possibility of high returns. The procurement processes for privately promoted projects have been complex, costly, and long, leaving many promoters apprehensive about the benefits of pursuing these types of projects. The results of this study suggest that these procurement processes can be enhanced.

From a list of possible factors that lead private-sector companies to pursue the promotion of PPP conservation or infrastructure projects stakeholder satisfaction, appropriate risk allocation, financial and legal factors prove to be also highly important for their decision to promote projects. They placed great importance on the possibility of having a long and healthy stream of project income. Therefore, this chapter of the thesis provides the deduction from the findings and gives the recommendations.

8.1 CONCLUSIONS

In the development of the importance weights for the risk mitigation measures that constitute the private company-competency index, all experts (insiders and outsiders) indicate the ***financial constraints ca***tegory as the most important, with the management (***organisational characteristics)*** then ***service and production capability*** categories coming as second and third. These results seem to suggest that a private company's ability to fund the procurement process and to provide its own resources to finance part of the project coupled with the quality of the investment in terms of potential return is of vital importance for the promoter in its decision to pursue performing PPPs. The relatively low importance given to the production-related category appears to indicate that potential promoters are not as concerned with the availability of their own resources and/or the adequacy of their technical expertise as they can rely on third parties to bring the necessary resources and expertise to have the project developed and implemented.

Among the categories that compose the project-attractiveness index, insiders and outsiders indicate that the ***stakeholder satisfaction assessment*** category is the most important in risk mitigation. Thus, a favourable stakeholder satisfaction assessment is essential to attract private promoters and enhance project performance. According to these experts, the second most important category is ***appropriate risk allocation and legal frameworks*** for the project to materialize and to be operated. Although both insiders and outsiders agree with these rankings, there is a notable difference in their weights for the ***managerial, technical, and financial*** categories. Insiders input money in the process and are liable to lose their investment if the project fails. They appear to be confident about their ability to manage and to provide technical solutions to the project. Therefore, they place a high importance on the project's ability to provide an adequate return on their investment and a low importance to the categories that they have more control over. Outsiders provide

services, mainly management and legal expertise to principals and promoters, and thus put less emphasis on the financial assessment (although it is still the most important category) and assign more importance on the management and technical categories perhaps indicating their concerns that some promoting companies have in the past performed poorly in this respect.

The holistic evaluations performed by respondents on several company and project profiles are highly correlated with the outcomes obtained from the additive decomposed models. This suggests that the Desirability Model captures the preferences of insiders and outsiders and can be used as a substitute for the direct assessment of individuals and groups in the evaluation of (a) the capability of companies to participate in the promotion of projects with minimum risk and (b) the feasibility of projects to be pursued through a private-sector promotion procedure end realising profits.

The indices obtained from the group evaluations of insiders and outsiders on companies/projects are comparable. There is no evidence that they would produce different indices when the performance (quality) levels of the attributes that characterize these companies/projects are the same. In contrast, the individual evaluations of either insiders or outsiders provide different indices primarily because their subjective assessment of the performance (quality) levels of the attributes differ. In this case, it appears that, as a group, insiders are more conservative than outsiders as they tend to rate projects lower.

Study results also suggest that (a) both weighting procedures, the eigenvalue method and the direct rating method, yield comparable importance weights, and that (b) the indices produced by the Desirability Model may be more sensitive to the worth scores (i.e., the non-dimensional numbers that measure the values of attributes in a specific company/project) than to the importance weights of the attributes. Therefore, special attention should be in the creation of the value curves for each model attribute.

PPP risk mitigation and projects performances

This thesis took strong cognisance of the problems faced by the ZPWMA, empirical literature, models and theories to come up with several critical factors that contribute to the desirable performance in PPP setups. These factors are strong risk profiles that need to be arrested for performance and efficiencies to be witnessed in PPP engagements. Zimbabwe is a country under the threat of several risk factors that are threatening the viability of PPP projects. Political risk, currency risks, stakeholder risks and the absence of a legal framework that is sustainable to the PPP projects are some of the high-profile risks.

As reported by the World Bank and IMF, in 2012 alone the PPP projects contributed about 48% of total inflow of FDI in major economies, Zimbabwe and other countries in the developing world have no bragging rights to that contribution since its PPPs are crippled by massive under performances due to poor risk allocation, lack of legal frameworks and failure to uphold stakeholder satisfaction in its PPP endeavours. This has been witnessed by the revenue made by the ZPWMA under PPP projects and the problems the organisation is facing.

Through the aid of interviewed experts in the bringing up of the Desirability Model other critical success factors or risk mitigation strategies that came out include private company competences financially, managerially, service and production capability. These factors contribute to performances of PPP projects since they bring out the competence, ability and experience in the private partner. These where some other factors the ZPWMA overlooked.

The thesis shows that risk mitigation is also pivoted on ***stakeholder satisfaction assessment appropriate risk allocation and favourable legal frameworks.*** These factors enhance performance and returns as seen in the case study of Umfurudzi Safari Area, Chipinda Pools and Charara Wilderness. Therefore, conservation PPP projects must pay attention to these factors

This thesis took a deduction from empirical evidence and outlive several risk mitigation strategies that included identifiable and visible senior management support for the project, explicit policies which are clearly communicated to all, adoption of a transparent and repeatable framework of activities, existence of a culture that supports and understands the concepts of controlling risk, management process and regular reviews to ensure the benefits of the processes are realized and lessons are learned for future projects. In addition, the performance of PPP projects is favourable under judicious government control and issuance of government guarantee which is lacking in the ZPWMA and Zimbabwean context

8.2 RECOMMENDATIONS

This thesis has revealed that the major problem bedevilling the emerging PPP arrangements in Southern Africa and particularly Zimbabwe is the absence of an appropriate legal and regulatory frameworks. Hence, the need for these countries to put in place a sound legal and regulatory framework that are pertinent to country circumstances and relevant for PPP arrangements. In the formulation of these legal frameworks there is need for meaningful public participation both in the formulation and implementation for them to be acceptable and sustainable.

Moreover, countries are required to establish or improve their institutional public acceptancy, with special emphasis on developing appropriately skilled human capital required in the negotiating implementation and monitoring of PPP contracts. The setting up of PPP units as a stand-alone entity either separately or within a government ministry would help facilitate an enhanced capacity building on PPP related issues, including financial and human resources and a sharpened process approach to PPP that help develop human analytical skills to ensure that the right project is delivered at the right time and price to both government and citizens.

Finally, regional economic communities (RECs), regional think-tanks and development partners should help countries with learning forums through exchanging of ideas and experiences and help conduct research for deeper understanding of PPPs and how these can be used in the delivery of modalities for the much-needed public goods and services in the sub-region. Indeed, the UNECA and the RECs have pledged to facilitate forums for the sharing of ideas, learning from one another and bringing lessons from other regions for adoption by Southern Africa's developing partners thought processes. This is a welcome support which member States should take advantage of.

The study also recognized the impact of failure to consider stakeholder management, the need for stakeholder involvement, collaborative or integrated approaches with early identification and participation of stakeholders in project delivery. Stakeholder Interests should be taken into account and hence the need for a sustainable Stakeholder Management Framework. Key stakeholder's management principles to be considered at various stages may include firstly early identification of stakeholders to be initiated from the time the project is conceived, need to consider legitimacy, power and urgency of stakeholders. Secondly, programming where overall guidelines and principles formulated, the management of stakeholders is agreed upon through the form of procurement. Appraisal is then done where assessment of key project factors from key stakeholders' viewpoint. This will be complimented by implementation by bringing together different group of professionals in the supply chain and facility management. Client's influence is taken into account. The Specialist Task organization (STO) approach that allows for upper and

lower management through integrated product development. External stakeholders are engaged, and communication enhanced. Finally, facility management is done because this phase is crucial and should be included in the overall stakeholder management.

The study recommends that before the Government or organisations such as the ZPWMA ventures into any partnership, it should carry out appropriate research and evaluation to ensure that the benefits to be achieved outweigh risks. It is further recommended that the Zimbabwe government must formulate a formal policy on PPP. The policy should include types of services or projects which it will consider in PPP ventures, forms of PPP it will consider, level of risk it is willing to accept as well as how the government intends to manage the risk. The government must outline the risk it is not prepared to accept, criteria for determining whether PPP is a viable method of the service delivery and how stakeholders will be involved throughout the process, such as consultation, engagement and decision-making. Some important sociological aspects including transparency and accountability should be addressed.

For the purposes of viability and posterity it is also recommended if it is feasible to either of the parties (private/public) to be allocated the risks if they are able and willing to face them as highlighted in the PFRAM by the IMF and World Bank. If not, so appropriate risk allocation should be done in the contractual agreement phase and operational phase to enhance the performances of the PPP engagement

8.3 SCOPE FOR FURTHER RESEARCH

This thesis paves way for the documentation of supplementary studies and as a reference point for improvement for several PPP in Zimbabwe it would also provide analysis, mathematical and multi-attribute comparison procedures for new variables and determinants in the PPP field.

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APPENDIX SECTION

		Insiders Groups							
		I-01	**I-02**	**I-03**	**I-04**	**I-05**	**I-06**	**I-07**	**I-08**
Company Competencies									
Category comparisons									
IOC vs.	SPC	4	1/5	5	1	7	1	7	1/6
IOC vs.	FRC	1/3	1/7	1/7	1/3	3	4	1/4	1/8
SPC vs.	FRC	1/5	1/5	1/8	1	1/3	3	1/8	1/7
Category weights									
	IOC	0.280	0.067	0.178	0.221	0.669	0.458	0.260	0.055
	SPC	0.094	0.219	0.058	0.319	0.088	0.416	0.056	0.188
	FRC	0.627	0.715	0.763	0.460	0.243	0.126	0.684	0.758
Project Attractiveness									
Category comparisons									
FA vs.	TE	1	1/3	1/6	1	7	1/3	1	4
FA vs.	SSA	1/3	1/7	1/9	1/5	3	1/7	1/8	1
FA vs.	AAL	1	1/5	1/9	4	3	1/3	1/3	1/6
TE vs.	SSA	1	1/5	1/8	1/3	1/5	¼	1/8	1/5
TE vs.	AAL	1	1/3	1/7	5	1/3	2	1/3	1/7
SSA vs.	AAL	2	3	5	6	3	5	8	1/5
Category weights									
	FA	0.122	0.055	0.031	0.171	0.525	0.063	0.065	0.147
	TE	0.227	0.118	0.082	0.203	0.056	0.196	0.065	0.050
	SSA	0.424	0.565	0.620	0.569	0.279	0.609	0.717	0.164
	AAL	0.227	0.262	0.267	0.056	0.139	0.132	0.152	0.639

Legend:		
	IOC	Internal Organization Characteristics
	SPC	Service and Production Capability
	FRC	Financial Resources and Constraints
	FA	Financial Assessment
	TE	Technical Evaluation
	SSA	Stakeholder Satisfaction Assessment
	AAL	Appropriate Risk Allocation & Legal Frameworks

Appendix 1: Insiders' Category Weights (Comparisons Performed under the EM)

		Outsiders Groups					
		O-01	**O-02**	**O-03**	**O-04**	**O-05**	**O-06**
Company Competencies							
Category comparisons							
IOC vs.	SPC	1/7	6	1/5	7	1/5	7
IOC vs.	FRC	1/9	4	1/5	5	1/7	1/7
SPC vs.	FRC	1/3	4	1	1/5	1/5	1/7
Category weights							
	IOC	0.055	0.694	0.091	0.715	0.067	0.203
	SPC	0.290	0.210	0.455	0.067	0.219	0.055
	FRC	0.655	0.096	0.455	0.219	0.715	0.742
Project Attractiveness							
Category comparisons							
FA vs.	TE	1/5	6	5	5	1/3	1/5
FA vs.	SSA	1	4	1/3	7	1/7	1/7
FA vs.	AAL	1/3	2	3	1/3	7	1/7
TE vs.	SSA	1/5	1/4	1/7	3	1/5	1/5
TE vs.	AAL	3	1	6	1/6	7	1/3
SSA vs.	AAL	7	2	1/3	1/7	7	1/7
Category weights							
	FA	0.131	0.530	0.264	0.304	0.122	0.038
	TE	0.250	0.072	0.195	0.092	0.216	0.115
	SSA	0.497	0.234	0.353	0.048	0.623	0.243
	AAL	0.122	0.164	0.188	0.557	0.039	0.605

Legend:		
	IOC	Internal Organization Characteristics
	SPC	Service and Production Capability
	FRC	Financial Resources and Constraints
	FA	Financial Assessment
	TE	Technical Evaluation
	SSA	Stakeholder Satisfaction Assessment
	AAL	Appropriate Risk Allocation & Legal Frameworks

Appendix 2: Outsiders' Category Weights (Comparisons Performed under the EM)

		Insiders Groups							
		I-01	**I-02**	**I-03**	**I-04**	**I-05**	**I-06**	**I-07**	**I-08**
Company Competencies									
Category comparisons									
	IOC	15	10	10	20	60	30	30	10
	SPC	10	20	20	10	10	15	10	20
	FRC	20	30	80	40	40	10	40	80
Category weights									
	IOC	0.333	0.167	0.091	0.286	0.545	0.545	0.375	0.091
	SPC	0.222	0.333	0.182	0.143	0.091	0.273	0.125	0.182
	FRC	0.444	0.500	0.727	0.571	0.364	0.182	0.500	0.727
Project Attractiveness									
Category comparisons									
	FA	10	10	10	20	55	10	10	20
	TE	12	20	30	20	10	25	10	10
	SSA	13	40	45	40	50	50	50	20
	AAL	12	30	40	10	40	20	20	30
Category weights									
	FA	0.213	0.100	0.080	0.222	0.355	0.095	0.111	0.250
	TE	0.255	0.200	0.240	0.222	0.065	0.238	0.111	0.125
	SSA	0.277	0.400	0.360	0.444	0.323	0.476	0.556	0.250
	AAL	0.255	0.300	0.320	0.111	0.258	0.190	0.222	0.375

Legend:		
	IOC	Internal Organization Characteristics
	SPC	Service and Production Capability
	FRC	Financial Resources and Constraints
	FA	Financial Assessment
	TE	Technical Evaluation
	SSA	Stakeholder Satisfaction Assessment
	AAL	Appropriate Risk Allocation & Legal Frameworks

Appendix 3: Insiders' Category Weights (Comparisons Performed under the DRM)

		Outsiders Groups					
		O-01	**O-02**	**O-03**	**O-04**	**O-05**	**O-06**
Company Competencies							
Category comparisons							
	IOC	10	30	10	50	10	40
	SPC	70	20	20	10	30	10
	FRC	80	10	20	30	40	80
Category weights							
	IOC	0.063	0.500	0.200	0.556	0.125	0.308
	SPC	0.438	0.333	0.400	0.111	0.375	0.077
	FRC	0.500	0.167	0.400	0.333	0.500	0.615
Project Attractiveness							
Category comparisons							
	FA	10	40	20	30	20	10
	TE	50	10	20	15	30	60
	SSA	50	30	30	10	40	60
	AAL	30	20	10	40	40	40
Category weights							
	FA	0.071	0.400	0.250	0.316	0.154	0.059
	TE	0.357	0.100	0.250	0.158	0.231	0.353
	SSA	0.357	0.300	0.375	0.105	0.308	0.353
	AAL	0.214	0.200	0.125	0.421	0.308	0.235

Legend:		
	IOC	Internal Organization Characteristics
	SPC	Service and Production Capability
	FRC	Financial Resources and Constraints
	FA	Financial Assessment
	TE	Technical Evaluation
	SSA	Stakeholder Satisfaction Assessment
	AAL	Appropriate Risk Allocation & Legal Frameworks

Appendix 4: Outsiders' Category Weights

		Insiders Groups							
		I-01	**I-02**	**I-03**	**I-04**	**I-05**	**I-06**	**I-07**	**I-08**
Internal Organization Characteristics									
Attribute comparisons									
QMT vs.	FSP	5	5	3	5	1/5	7	5	5
QMT vs.	CPP	2	3	1/5	7	7	3	7	7
FSP vs.	CPP	1/5	1/3	1/7	3	7	1	5	6
Local attribute weights									
	QMT	0.559	0.637	0.188	0.731	0.240	0.682	0.715	0.708
	FSP	0.089	0.105	0.081	0.188	0.701	0.103	0.218	0.230
	CPP	0.352	0.258	0.731	0.081	0.059	0.216	0.067	0.062
Service and Production Capability									
Attribute comparisons									
ASK vs. QPR		5	3	5	1	6	1/3	7	4
ASK vs. APR		7	5	5	4	7	3	4	6
QPR vs. APR		5	1/3	1	4	4	5	1/3	3
Local attribute weights									
	ASK	0.715	0.651	0.714	0.444	0.743	0.258	0.705	0.691
	QPR	0.218	0.127	0.143	0.444	0.187	0.637	0.084	0.218
	APR	0.067	0.223	0.143	0.111	0.070	0.105	0.211	0.091
Financial Resources and Constraints									
Attribute comparisons									
FIC vs.	AIR	5	3	5	3	3	3	4	7
FIC vs.	QP	1/5	1/5	7	1/5	4	1/5	1/6	1/3
AIR vs.	QP	1/7	1/7	5	1/7	5	1/5	1/7	1/7
Local attribute weights									
	FIC	0.218	0.188	0.715	0.188	0.596	0.202	0.187	0.304
	AIR	0.067	0.081	0.218	0.081	0.308	0.097	0.070	0.063
	QP	0.715	0.731	0.067	0.731	0.096	0.701	0.743	0.633

Legend:				
	QMT	Expertise of Management Personnel	APR	Avail. of Prod. Resources
	FSP	Feasible Strategic Planning	FIC	Abil. Fund Init. Proj. Costs
	CPP	Compatibility with Potential Partners	AIR	Ability to Identify Project Risks
	ASK	Sufficiency of Specialised knowledge		
	QPR	Overall Quality of Productive Res.	QP	Profitability Margin

Appendix 5: Insiders' Local Attribute Weights (Comparisons Performed under the EM)

	Insiders Groups							
	I-01	**I-02**	**I-03**	**I-04**	**I-05**	**I-06**	**I-07**	**I-08**
Financial Assessment								
Attribute comparisons								
APP vs. COR	2	1/3	1/5	1/6	1	3	1/7	1/7
APP vs. TFA	1/3	3	1/7	5	4	4	1/5	3
COR vs. TFA	¼	5	1/3	8	3	1	5	8
Local attribute weights								
APP	0.238	0.258	0.072	0.193	0.458	0.634	0.067	0.153
COR	0.136	0.637	0.279	0.747	0.416	0.192	0.715	0.777
TFA	0.625	0.105	0.649	0.060	0.126	0.174	0.218	0.070
Technical Evaluation								
Attribute comparisons								
AQS vs. AFP	2	5	1/9	1	3	1	1	1/3
AQS vs. OTP	3	5	1/9	1	4	3	1	4
AFP vs. OTP	2	3	5	1	3	3	1	5
Local attribute weight s								
AQS	0.540	0.701	0.046	0.333	0.614	0.429	0.333	0.280
AFP	0.297	0.202	0.711	0.333	0.268	0.429	0.333	0.627
OTP	0.163	0.097	0.243	0.333	0.117	0.143	0.333	0.094

Legend:		
	APP	Ability of the Pvt Partner to Fund the Project
	COR	Certainty of Revenues
	TFA	Taking Periodic & Constant Financial Audits
	AQS	Ability to Provide a Quality Product/Service
	AFP	Ability to Provide a Feasible Project Plan
	OTP	Ability to Provide an Adequate Operational-Transfer Package

Appendix 5 (cont): Insiders' Local Attribute Weights (Comp. Performed under the EM)

			Insiders groups							
			I-01	**I-02**	**I-03**	**I-04**	**I-05**	**I-06**	**I-07**	**I-08**
Stakeholder Satisfaction Assessment										
Attribute comparisons										
PRD	vs.	ECC	1	1/5	1	1	1/7	1/5	1/7	1/3
PRD	vs.	CTS	¼	1/5	3	1	1/5	1/5	1/4	8
PRD	vs.	SMF	¼	1/5	1	1	1/9	1/6	1/4	3
ECC	vs.	CTS	1	7	3	1	1	2	7	8
ECC	vs.	SMF	1	1	1	1	1/7	3	7	5
CTS	vs.	SMF	1	1/5	1/3	1	1/7	1	1	1/8
Local attribute weight s										
		PRD	0.089	0.055	0.300	0.250	0.037	0.057	0.051	0.271
		ECC	0.178	0.439	0.300	0.250	0.147	0.468	0.683	0.547
		CTS	0.303	0.121	0.100	0.250	0.130	0.240	0.133	0.036
		SMF	0.430	0.385	0.300	0.250	0.686	0.235	0.133	0.146
Appropriate Risk All & legal framework										
Attribute comparisons										
RAC	vs.	RAO	4	1/7	1/7	7	7	1	4	1
RAC	vs.	FEF	3	1	1/5	7	7	2	1	1
RAC	vs.	PE	1/5	1/7	1/7	7	3	2	1/3	3
RAO	vs.	FEF	1/3	5	3	1	5	1	1/6	1
RAO	vs.	PE	1/7	1	1	1	3	1	1/7	3
FEF	vs.	PE	1/5	1/5	1/3	1	1/5	1	1	3
Local attribute	weights									
		RAC	0.211	0.067	0.047	0.700	0.611	0.346	0.170	0.300
		RAO	0.055	0.427	0.395	0.100	0.205	0.205	0.053	0.300
		FEF	0.112	0.079	0.163	0.100	0.044	0.163	0.295	0.300
		PE	0.621	0.427	0.395	0.100	0.139	0.286	0.482	0.100

Legend:				
PRD	Prompt, Stable and Reliable Service Delivery	RAC	Risk Allocation in Contractual Agreement
ECC	Efficient Channel of Communication	RAO	Risk Allocation in Operational Agreement
CTS	Certainty of Time and cost Saving	FEF	Fair and Efficient Legal framework
SMF	Efficient Stakeholder Management Framework	PE	Political Environment

Appendix 5(cont): Insiders' Local Attribute Weights (Comp. Performed under the EM)

		Outsiders Groups					
		O-01	**O-02**	**O-03**	**O-04**	**O-05**	**O-06**
Internal Organization Characteristics							
Attribute comparisons							
QMT vs.	FSP	5	4	1/3	7	9	4
QMT vs.	CPP	1/7	4	3	3	1/7	1
FSP vs.	CPP	1	1	3	1/5	1/9	1
Local attribute weights							
	QMT	0.266	0.661	0.281	0.649	0.205	0.203
	FSP	0.172	0.131	0.584	0.072	0.044	0.055
	CPP	0.561	0.208	0.135	0.279	0.751	0.742
Service and Production Capability Attribute comparisons							
ASK vs.	QPR	1/3	1	5	1	7	6
ASK vs.	APR	1/3	1	5	3	7	4
QPR vs.	APR	1	¼	7	3	1	2
Local attribute weights							
	ASK	0.143	0.184	0.672	0.429	0.778	0.707
	QPR	0.429	0.232	0.257	0.429	0.111	0.170
	APR	0.429	0.584	0.070	0.143	0.111	0.123
Financial Resources and Constraints							
Attribute comparisons							
FIC vs.	AIR	1/7	1	6	3	1	2
FIC vs.	QP	1/7	¼	1	1/7	1	2
AIR vs.	QP	1	¼	1/6	1/9	1	2
Local attribute weights							
	FIC	0.067	0.167	0.357	0.149	0.333	0.493
	AIR	0.467	0.167	0.075	0.066	0.333	0.311
	QP	0.467	0.667	0.567	0.785	0.333	0.196

Legend:				
	QMT	Expertise of Management Personnel	APR	Avail. of Prod. Resources
	FSP	Feasible Strategic Planning	FIC	Abil. Fund Init. Proj. Costs
	CPP	Compatibility with Potential Partners	AIR	Ability to Identify Project
	ASK	Sufficiency of Specialised knowledge		Risks
	QPR	Overall Quality of Productive Res.	QP	Profitability Margin

Appendix 6: Outsiders' Local Attribute Weights (Comparisons Performed under the EM)

		Outsiders Groups					
		O-01	**O-02**	**O-03**	**O-04**	**O-05**	**O-06**
Financial Assessment							
Attribute comparisons							
APP vs.	COR	1/5	4	4	3	1/7	1/4
APP vs.	TFA	5	4	1/4	1/7	5	1/4
COR vs.	TFA	5	1	1	1/8	9	1
Local attribute weights							
	APP	0.234	0.667	0.286	0.153	0.173	0.109
	COR	0.685	0.167	0.143	0.070	0.772	0.345
	TFA	0.080	0.167	0.571	0.777	0.055	0.547
Technical Evaluation Attribute comparisons							
AQS vs.	AFP	5	2	1	3	1	1/6
AQS vs.	OTP	7	¼	1	3	7	1
AFP vs.	OTP	1	2	1	3	7	6
Local attribute weights							
	AQS	0.747	0.260	0.333	0.584	0.467	0.099
	AFP	0.134	0.328	0.333	0.281	0.467	0.745
	OTP	0.119	0.412	0.333	0.135	0.067	0.156

Legend:		
	APP	Ability of the Pvt Partner to Fund the Project
	COR	Certainty of Revenues
	TFA	Taking Periodic and Constant Financial Audits
	AQS	Ability to Provide a Quality Product/Service
	AFP	Ability to Provide a Feasible Project Plan
	OTP	Ability to Provide an Adequate Operational-Transfer Package

Appendix 6 (cont.): Outsiders' Local Attribute Weights (Comp. Performed under the EM)

		Outsiders Groups					
		O-01	**O-02**	**O-03**	**O-04**	**O-05**	**O-06**
Stakeholder Satis. Assessment							
Attribute comparisons							
PRD vs.	ECC	1/7	1/6	1/6	1/7	1	1
PRD vs.	CTS	1/3	¼	1/4	1/7	1	1/5
PRD vs.	SMF	1/5	¼	1/6	1/7	1	1/3
ECC vs.	CTS	9	6	4	1	1	1/7
ECC vs.	SMF	7	4	1	1	1	1
CTS vs.	SMF	1	1	1/4	3	1	3
Local attribute weights							
	PRD	0.050	0.058	0.054	0.043	0.250	0.095
	ECC	0.701	0.616	0.406	0.303	0.250	0.118
	CTS	0.111	0.157	0.134	0.417	0.250	0.595
	SMF	0.139	0.170	0.406	0.236	0.250	0.191
Appropriate Risk all. & legal con							
Attribute comparisons							
RAC vs.	RAO	1	2	6	3	9	1/5
RAC vs.	FEF	3	1	4	1/3	7	1/3
RAC vs.	PE	1/7	1/6	2	1/5	1	1/3
RAO vs.	FEF	1	1	1/6	1/5	1/7	1
RAO vs.	PE	1/3	1	1/6	1/5	1/9	1
FEF vs.	PE	1/5	¼	1/6	3	1/5	1
Local attribute weights							
	RAC	0.157	0.132	0.449	0.123	0.453	0.086
	RAO	0.139	0.129	0.046	0.061	0.033	0.333
	FEF	0.096	0.195	0.131	0.492	0.114	0.291
	PE	0.609	0.543	0.374	0.324	0.400	0.291

Legend:				
	PRD	Prompt, Stable and Reliable Service Delivery	RAC	Risk Allocation in Contractual Agreement
	ECC	Efficient Channel of Communication	RAO	Risk Allocation in Operational Agreement
	CTS	Certainty of Time and Cost Saving	FEF	Fair and Efficient Legal framework
	SMF	Efficient Stakeholder Management Framework	PE	Political Environment

Appendix 6 (cont): Outsiders' Local Attribute Weights (Comp. Performed under the EM)

		Insiders Groups							
		I-01	**I-02**	**I-03**	**I-04**	**I-05**	**I-06**	**I-07**	**I-08**
Internal Organization Characteristics									
Attribute comparisons									
	QMT	20	30	20	30	40	18	40	50
	FSP	10	10	10	20	50	10	20	30
	CPP	18	20	50	10	10	13	10	10
Local attribute weights									
	QMT	0.417	0.500	0.250	0.500	0.400	0.439	0.571	0.556
	FSP	0.208	0.167	0.125	0.333	0.500	0.244	0.286	0.333
	CPP	0.375	0.333	0.625	0.167	0.100	0.317	0.143	0.111
Service and Production Capability									
Attribute comparisons									
	ASK	30	30	20	20	40	10	40	30
	QPR	20	10	10	20	20	16	10	20
	APR	10	20	10	10	10	12	20	10
Local attribute weights									
	ASK	0.500	0.500	0.500	0.400	0.571	0.263	0.571	0.500
	QPR	0.333	0.167	0.250	0.400	0.286	0.421	0.143	0.333
	APR	0.167	0.333	0.250	0.200	0.143	0.316	0.286	0.167
Financial Resources and Constraints									
Attribute comparisons									
	FIC	20	20	40	20	30	14	20	30
	AIR	10	10	20	10	20	10	10	10
	QP	30	40	10	30	10	16	50	40
Local attribute weights									
	FIC	0.333	0.286	0.571	0.333	0.500	0.350	0.250	0.375
	AIR	0.167	0.143	0.286	0.167	0.333	0.250	0.125	0.125
	QP	0.500	0.571	0.143	0.500	0.167	0.400	0.625	0.500

Legend:				
	QMT	Expertise of Management Personnel	APR	Avail. of Prod. Resources
	FSP	Feasible Strategic Planning	FIC	Abil. Fund Init. Proj. Costs
	CPP	Compatibility with Potential Partners	AIR	Ability to Identify Project
	ASK	Sufficiency of Specialised knowledge		Risks
	QPR	Overall Quality of Productive Res.	QP	Profitability Margin

Appendix 7: Insiders' Local Attribute Weights (Comparisons Performed under the DRM)

		Insiders Groups							
		I-01	**I-02**	**I-03**	**I-04**	**I-05**	**I-06**	**I-07**	**I-08**
Financial Assessment									
Attribute comparisons									
	APP	12	30	10	20	20	20	10	20
	COR	10	20	40	40	20	10	40	50
	TFA	15	10	50	10	10	18	20	10
Local attribute weights									
	APP	0.324	0.500	0.100	0.286	0.400	0.417	0.143	0.250
	COR	0.270	0.333	0.400	0.571	0.400	0.208	0.571	0.625
	TFA	0.405	0.167	0.500	0.143	0.200	0.375	0.286	0.125
Technical Evaluation									
Attribute comparisons									
	AQS	15	40	10	10	30	12	10	20
	AFP	12	20	70	10	20	12	10	30
	OTP	10	10	50	10	10	10	10	10
Local attribute weight s									
	AQS	0.405	0.571	0.077	0.333	0.500	0.353	0.333	0.333
	AFP	0.324	0.286	0.538	0.333	0.333	0.353	0.333	0.500
	OTP	0.270	0.143	0.385	0.333	0.167	0.294	0.333	0.167

Legend:		
	APP	Ability of the Pvt Partner to Fund the Project
	COR	Certainty of Revenues
	TFA	Taking Periodic & Constant Financial Audits
	AQS	Ability to Provide a Quality Product/Service
	AFP	Ability to Provide a Feasible Project Plan
	OTP	Ability to Provide an Adequate Operational-Transfer Package

Appendix 7 (cont): Insiders' Local Attribute Weights (Comp. Performed under the DRM)

		Insiders Groups							
		I-01	**I-02**	**I-03**	**I-04**	**I-05**	**I-06**	**I-07**	**I-08**
Stakeholder Satisfaction Assessment									
Attribute comparisons									
	PRD	10	20	20	10	10	10	10	60
	ECC	12	40	20	10	50	20	50	80
	CTS	14	10	10	10	30	17	20	10
	SMF	15	40	20	10	100	17	20	40
Local attribute weights									
	PRD	0.196	0.182	0.286	0.250	0.053	0.156	0.100	0.316
	ECC	0.235	0.364	0.286	0.250	0.263	0.313	0.500	0.421
	CTS	0.275	0.091	0.143	0.250	0.158	0.266	0.200	0.053
	SMF	0.294	0.364	0.286	0.250	0.526	0.266	0.200	0.211
Appropriate Risk all. & Legal con.									
Attribute comparisons									
	RAC	20	10	10	30	40	16	20	20
	RAO	10	30	40	10	30	15	10	20
	FEF	15	10	20	10	10	10	25	20
	PE	30	30	40	10	20	13	30	10
Local attribute weights									
	RAC	0.267	0.125	0.091	0.500	0.400	0.296	0.235	0.286
	RAO	0.133	0.375	0.364	0.167	0.300	0.278	0.118	0.286
	FEF	0.200	0.125	0.182	0.167	0.100	0.185	0.294	0.286
	PE	0.400	0.375	0.364	0.167	0.200	0.241	0.353	0.143

Legend:		
	PRD	Prompt, Stable and Reliable Service Delivery
	ECC	Efficient Channel of Communication
	CTS	Certainty Time and Cost Saving
	SMF	Efficient Stakeholder Management Framework
	RAC	Risk Allocation in Contractual Agreement
	RAO	Risk Allocation in Operational Agreement
	FEF	Fair and Efficient Legal framework
	PE	Political Environment

Appendix 7 (cont): Insiders' Local Attribute Weights (Comp. Performed under the DRM)

	Outsiders Groups					
	O-01	**O-02**	**O-03**	**O-04**	**O-05**	**O-06**
Internal Organization Characteristics						
Attribute comparisons						
QMT	40	30	15	30	40	20
FSP	10	10	15	10	10	10
CPP	40	20	10	20	80	20
Local attribute weights						
QMT	0.444	0.500	0.375	0.500	0.308	0.400
FSP	0.111	0.167	0.375	0.167	0.077	0.200
CPP	0.444	0.333	0.250	0.333	0.615	0.400
Service and Production Capability Attribute comparisons						
ASK	20	10	20	15	30	40
QPR	40	15	15	15	10	20
APR	10	20	10	10	10	10
Local attribute weights						
ASK	0.286	0.222	0.444	0.375	0.600	0.571
QPR	0.571	0.333	0.333	0.375	0.200	0.286
APR	0.143	0.444	0.222	0.250	0.200	0.143
Financial Resources and Constraints						
Attribute comparisons						
FIC	10	10	20	15	10	20
AIR	50	10	10	10	10	20
QP	60	30	22	30	10	10
Local attribute weights						
FIC	0.083	0.200	0.385	0.273	0.333	0.400
AIR	0.417	0.200	0.192	0.182	0.333	0.400
QP	0.500	0.600	0.423	0.545	0.333	0.200

Legend:				
	QMT	Expertise of Management Personnel	APR	Avail. of Prod. Resources
	FSP	Feasible Strategic Planning	FIC	Abil. Fund Init. Proj. Costs
	CPP	Compatibility with Potential Partners	AIR	Ability to Identify Project
	ASK	Sufficiency of Specialised knowledge		Risks
	QPR	Overall Quality of Productive Res.	QP	Profitability Margin

Appendix 8: Outsiders' Local Attribute Weights (Comparisons Performed under the DRM)

		Outsiders Groups					
		O-01	**O-02**	**O-03**	**O-04**	**O-05**	**O-06**
Financial Assessment							
Attribute comparisons							
	APP	40	30	15	15	20	10
	COR	40	10	10	10	40	20
	TFA	10	10	15	40	10	20
Local attribute weights							
	APP	0.444	0.600	0.375	0.231	0.286	0.200
	COR	0.444	0.200	0.250	0.154	0.571	0.400
	TFA	0.111	0.200	0.375	0.615	0.143	0.400
Technical Evaluation Attribute comparisons							
	AQS	60	30	10	30	30	10
	AFP	50	20	10	20	30	20
	OTP	10	10	10	10	10	10
Local attribute weights							
	AQS	0.500	0.500	0.333	0.500	0.429	0.250
	AFP	0.417	0.333	0.333	0.333	0.429	0.500
	OTP	0.083	0.167	0.333	0.167	0.143	0.250

Legend:		
	APP	Ability of the Pvt Partner to Fund the Project
	COR	Certainty of Revenues
	TFA	Taking Periodic and Constant Financial Audits
	AQS	Ability to Provide a Quality Product/Service
	AFP	Ability to Provide a Feasible Project Plan
	OTP	Ability to Provide an Adequate Operational-Transfer Package

Appendix 8 (cont): Outsiders' Local Attribute Weights (Comp. Performed under the DRM)

		Outsiders Groups					
		O-01	**O-02**	**O-03**	**O-04**	**O-05**	**O-06**
Stakeholder Satisfaction Assessment							
Attribute comparisons							
	PRD	10	10	10	10	10	10
	ECC	80	40	22	30	10	20
	CTS	70	20	12	30	10	20
	SMF	70	20	20	30	10	20
Local attribute weights							
	PRD	0.043	0.111	0.156	0.100	0.250	0.143
	ECC	0.348	0.444	0.344	0.300	0.250	0.286
	CTS	0.304	0.222	0.188	0.300	0.250	0.286
	SMF	0.304	0.222	0.313	0.300	0.250	0.286
Appropriate Risk all & Legal Frameworks							
Attribute comparisons							
	RAC	10	20	20	15	30	10
	RAO	30	10	10	10	10	10
	FEF	30	25	15	25	20	10
	PE	50	30	15	20	30	10
Local attribute weights							
	RAC	0.083	0.235	0.333	0.214	0.333	0.250
	RAO	0.250	0.118	0.167	0.143	0.111	0.250
	FEF	0.250	0.294	0.250	0.357	0.222	0.250
	PE	0.417	0.353	0.250	0.286	0.333	0.250

Legend:		
	PRD	Prompt, Stable and Reliable Service Delivery
	ECC	Efficient Channel of Communication
	CTS	Certainty Time and Cost Saving
	SMF	Efficient Stakeholder Management Framework
	RAC	Risk Allocation in Contractual Agreement
	RAO	Risk Allocation in Operational Agreement
	FEF	Fair and Efficient Legal framework
	PE	Political Environment

Appendix 8 (cont): Outsiders' Local Attribute Weights (Comp. Performed under the DRM)

	I-01	I-02	I-03	I-04	I-05	I-06	I-07	I-08
Internal Organization Characteristics								
1.1. Expertise of Management Personnel	15.64	4.26	3.36	16.15	16.06	31.21	18.55	3.86
1.2. Feasible Strategic Planning	2.48	0.70	1.44	4.17	46.96	4.69	5.67	1.25
1.3. Compatibility with Project Partners	9.85	1.73	13.03	1.79	3.92	9.88	1.73	0.34
Service and Production Capability								
2.1. Sufficiency of Specialised knowledge	6.69	14.22	4.17	14.17	6.53	10.75	3.97	13.00
2.2. Overall Quality of Productive Resources	2.05	2.77	0.83	14.17	1.64	26.50	0.47	4.09
2.3. Availability of Productive Resources	0.63	4.86	0.83	3.54	0.62	4.36	1.19	1.72
Financial Resources & Constraints								
3.1. Ability to Fund Initial Project Costs	13.69	13.46	54.55	8.67	14.45	2.55	12.77	23.05
3.2. Ability to Identify Project Risks	4.19	5.79	16.68	3.72	7.48	1.22	4.81	4.75
3.3. Profitability Margin	44.79	52.22	5.10	33.61	2.33	8.83	50.82	47.95

Appendix 9: Insiders' EM Composite Weights for the Attributes that Belong to the CC Index (x 10 E-2)

		I-01	I-02	I-03	I-04	I-05	I-06	I-07	I-08
Financial Assessment									
4.1	Ability of the Private Partner to Fund the Project	2.92	1.43	0.22	3.31	24.06	4.01	0.44	2.25
4.2	Certainty of Revenues	1.67	3.52	0.86	12.78	21.86	1.22	4.66	11.40
4.3.	Taking Periodic and Constant Financial Audits	7.65	0.58	1.99	1.03	6.62	1.10	1.42	1.03
Technical Evaluation									
5.1	Ability to Provide Quality Product/Service	12.25	8.23	0.38	6.77	3.47	8.39	2.17	1.40
5.2	Ability to Provide a Feasible Project Plan	6.74	2.37	5.83	6.77	1.52	8.39	2.17	3.14
5.3.	Abil. to Prov. an Adeq. Oper-Transfer Package	3.71	1.14	2.00	6.77	0.66	2.80	2.17	0.47
Stakeholder Satisfaction Assessment									
6.1	Prompt, Stable and Reliable Service Delivery	3.77	3.11	18.61	14.24	1.04	3.49	3.62	4.44
6.2	Efficient Channel of Communication	7.54	24.82	18.61	14.24	4.10	28.46	48.98	8.96
6.3.	Certainty Time and Cost Saving in the Project long run	12.83	6.84	6.20	14.24	3.62	14.61	9.56	0.59
6.4.	Efficient Stakeholder Management Framework	18.23	21.73	18.61	14.24	19.12	14.31	9.56	2.39
Appropriate Risk Allocation & Legal Frameworks									
7.1	Risk Allocation in Contractual Agreement	4.80	1.75	1.26	3.94	8.52	4.58	2.60	19.18
7.2	Risk Allocation in Operational Agreement	1.26	11.20	10.54	0.56	2.86	2.71	0.80	19.18
7.3	Fair and Efficient Legal framework	2.54	2.07	4.34	0.56	0.62	2.16	4.49	19.18
7.4	Political Environment	14.11	11.20	10.54	0.56	1.94	3.77	7.35	6.39

Appendix 9 (cont): Insiders' EM Composite Weights for the Attributes that Belong to the PA Index (x 10 E-2)

	O-01	O-02	O-03	O-04	O-05	O-06
Internal Organization Characteristics						
1.1. Expertise of Management Personnel	1.46	45.87	2.55	46.39	1.37	4.11
1.2. Feasible Strategic Planning	0.94	9.10	5.31	5.14	0.29	1.12
1.3. Compatibility with Project Partners	3.08	14.45	1.23	19.94	5.02	15.04
Service and Production Capability						
2.1. Sufficiency of Specialised knowledge	4.14	3.87	30.56	2.86	16.99	3.92
2.2. Overall Quality of Productive Resources	12.42	4.88	11.69	2.86	2.43	0.94
2.3. Availability of Productive Resources	12.42	12.29	3.20	0.95	2.43	0.68
Financial Resources & Constraints						
3.1. Ability to Fund Initial Project Costs	4.37	1.59	16.25	3.25	23.82	36.60
3.2. Ability to Identify Project Risks	30.59	1.59	3.41	1.44	23.82	23.06
3.3. Profitability Margin	30.59	6.37	25.79	17.16	23.82	14.52

Appendix 10: Outsiders' EM Composite Weights for the Attributes that Belong to the CC Index (x 10 E-2)

		O-01	O-02	O-03	O-04	O-05	O-06
Financial Assessment							
4.1	Ability of the Private Partner to Fund the Project	3.07	35.34	7.53	4.65	2.12	0.41
4.2	Certainty of Revenues	8.98	8.83	3.77	2.14	9.44	1.30
4.3.	Taking periodic and constant financial audits	1.05	8.83	15.06	23.57	0.67	2.06
Technical Evaluation							
5.1	Ability to Provide Quality Product/Service	18.65	1.86	6.51	5.37	10.06	1.13
5.2	Ability to Provide a Feasible Project Plan	3.33	2.35	6.51	2.58	10.06	8.57
5.3.	Abil. to Prov. an Adeq. Oper-Transfer Package	2.98	2.95	6.51	1.24	1.44	1.80
Stakeholder Satisfaction Assessment							
6.1	Prompt, Stable and Reliable Service Delivery	2.48	1.35	1.91	0.21	15.58	2.31
6.2	Efficient Channel of Communication	34.85	14.40	14.34	1.44	15.58	2.86
6.3	Certainty Time and Cost Saving	5.51	3.68	4.74	1.99	15.58	14.44
6.4.	Efficient Stakeholder Management Framework	6.91	3.97	14.34	1.13	15.58	4.64
Appropriate Risk Allocation & Local Frameworks							
7.1	Risk Allocation in Contractual Agreement	1.91	2.17	8.44	6.85	1.76	5.19
7.2	Risk Allocation in Operational Agreement	1.70	2.12	0.87	3.40	0.13	20.14
7.3	Fair and Efficient Legal framework	1.17	3.21	2.46	27.40	0.44	17.57
7.4	Political Environment	7.42	8.93	7.02	18.04	1.55	17.57

Appendix 10 (cont): Outsiders' EM Composite Weights for the Attributes that Belong to the PA Index (x 10 E-2)

	Insiders Groups							
	I-01	**I-02**	**I-03**	**I-04**	**I-05**	**I-06**	**I-07**	**I-08**
Internal Organization Characteristics								
1.1. Expertise of Management Personnel	13.89	8.33	2.27	14.29	21.82	23.95	21.43	5.05
1.2. Feasible Strategic Planning	6.94	2.78	1.14	9.52	27.27	13.30	10.71	3.03
1.3. Compatibility with Project Partners	12.50	5.56	5.68	4.76	5.45	17.29	5.36	1.01
Service and Production Capability								
2.1. Sufficiency of Specialised knowledge	11.11	16.67	9.09	5.71	5.19	7.18	7.14	9.09
2.2. Overall Quality of Productive Resources	7.41	5.56	4.55	5.71	2.60	11.48	1.79	6.06
2.3. Availability of Productive Resources	3.70	11.11	4.55	2.86	1.30	8.61	3.57	3.03
Financial Resources & Constraints								
3.1. Ability to Fund Initial Project Costs	14.81	14.29	41.56	19.05	18.18	6.36	12.50	27.27
3.2. Ability to Identify Project Risks	7.41	7.14	20.78	9.52	12.12	4.55	6.25	9.09
3.3. Profitability Margin	22.22	28.57	10.39	28.57	6.06	7.27	31.25	36.36

Appendix 11: Insiders' DRM Composite Weights for the Attributes that Belong to the CC Index (x 10 E-2)

		I-01	I-02	I-03	I-04	I-05	I-06	I-07	I-08
Financial Assessment									
4.1	Ability of the Private Partner to Fund the Project	6.90	5.00	0.80	6.35	14.19	3.97	1.59	6.25
4.2	Certainty of Revenues	5.75	3.33	3.20	12.70	14.19	1.98	6.35	15.63
4.3.	Taking Periodic and Constant Financial Audits	8.63	1.67	4.00	3.17	7.10	3.57	3.17	3.13
Technical Evaluation									
5.1	Ability to Provide Quality Product/Service	10.35	11.43	1.85	7.41	3.23	8.40	3.70	4.17
5.2	Ability to Provide a Feasible Project Plan	8.28	5.71	12.92	7.41	2.15	8.40	3.70	6.25
5.3.	Abil. to Prov. an Adeq. Oper-Transfer Package	6.90	2.86	9.23	7.41	1.08	7.00	3.70	2.08
Stakeholder Satisfaction Assessment									
6.1	Prompt, Stable and Reliable Service Delivery	5.42	7.27	10.29	11.11	1.70	7.44	5.56	7.89
6.2	Efficient Channel of Communication	6.51	14.55	10.29	11.11	8.49	14.88	27.78	10.53
6.3	Certainty Time and Cost Saving	7.59	3.64	5.14	11.11	5.09	12.65	11.11	1.32
6.4.	Efficient Stakeholder Management Framework	8.14	14.55	10.29	11.11	16.98	12.65	11.11	5.26
Appropriate Risk Allocation & Local Frameworks									
7.1	Risk Allocation in Contractual Agreement	6.81	3.75	2.91	5.56	10.32	5.64	5.23	10.71
7.2	Risk Allocation in Operational Agreement	3.40	11.25	11.64	1.85	7.74	5.29	2.61	10.71
7.3	Fair and Efficient Legal framework	5.11	3.75	5.82	1.85	2.58	3.53	6.54	10.71
7.4	Political Environment	10.21	11.25	11.64	1.85	5.16	4.59	7.84	5.36

Appendix 11 (cont): Insiders' DRM Composite Weights for the Attributes that Belong to the PA Index (x 10 E-2)

	Outsider Groups					
	O-01	**O-02**	**O-03**	**O-04**	**O-05**	**O-06**
Internal Organization Characteristics						
1.1. Expertise of Management Personnel	2.78	25.00	7.50	27.78	3.85	12.31
1.2. Feasible Strategic Planning	0.69	8.33	7.50	9.26	0.96	6.15
1.3. Compatibility with Project Partners	2.78	16.67	5.00	18.52	7.69	12.31
Service and Production Capability						
2.1. Sufficiency of Specialised knowledge	12.50	7.41	17.78	4.17	22.50	4.40
2.2. Overall Quality of Productive Resources	25.00	11.11	13.33	4.17	7.50	2.20
2.3. Availability of Productive Resources	6.25	14.81	8.89	2.78	7.50	1.10
Financial Resources & Constraints						
3.1. Ability to Fund Initial Project Costs	4.17	3.33	15.38	9.09	16.67	24.62
3.2 Ability to Identify Project Risks	20.83	3.33	7.69	6.06	16.67	24.62
3.3. Profitability Margin	25.00	10.00	16.92	18.18	16.67	12.31

Appendix 12: Outsiders' DRM Composite Weights for the Attributes that Belong to the CC Index (x 10 E-2)

		Outsiders Groups					
		O-01	**O-02**	**O-03**	**O-04**	**O-05**	**O-06**
Financial Assessment							
4.1	Ability of the Private Partner to Fund the Project	3.17	24.00	9.38	7.29	4.40	1.18
4.2	Certainty of Revenues	3.17	8.00	6.25	4.86	8.79	2.35
4.3.	Taking Periodic and Constant Financial Audits	0.79	8.00	9.38	19.43	2.20	2.35
Technical Evaluation							
5.1	Ability to Provide Quality Product/Service	17.86	5.00	8.33	7.89	9.89	8.82
5.2	Ability to Provide a Feasible Project Plan	14.88	3.33	8.33	5.26	9.89	17.65
5.3.	Abil. to Prov. an Adeq. Oper-Transfer Package	2.98	1.67	8.33	2.63	3.30	8.82
Stakeholder Satisfaction Assessment							
6.1	Prompt, Stable and Reliable Service Delivery	1.55	3.33	5.86	1.05	7.69	5.04
6.2	Efficient Channel of Communication	12.42	13.33	12.89	3.16	7.69	10.08
6.3	Certainty Time and Cost Saving	10.87	6.67	7.03	3.16	7.69	10.08
6.4.	Efficient Stakeholder Management Framework	10.87	6.67	11.72	3.16	7.69	10.08
Appropriate Risk Allocation & Local Frameworks							
7.1	Risk Allocation in Contractual Agreement	1.79	4.71	4.17	9.02	10.26	5.88
7.2	Risk Allocation in Operational Agreement	5.36	2.35	2.08	6.02	3.42	5.88
7.3	Fair and Efficient Legal framework	5.36	5.88	3.13	15.04	6.84	5.88
7.4	Political Environment	8.93	7.06	3.13	12.03	10.26	5.88

Appendix 12 (cont): Outsiders' DRM Composite Weights for the Attributes that Belong to the PA Index (x 10 E-2)

	I-01		I-02		I-03		I-04		I-05		I-06		I-07		I-08	
	P1	P2	P 1	P2	P 1	P2	P 1	P2	P 1	P2	P 1	P2	P 1	P2	P 1	P2
Internal Organization Characteristics																
1.1. Expertise of Management Personnel	6.0	7.5	3.0	8.0	3.5	7.0	7.0	9.0	4.0	7.0	3.5	7.5	4.0	8.0	3.5	6.5
1.2. Feasible Strategic Planning	4.0	6.5	3.0	7.0	5.0	5.5	4.0	6.5	2.0	6.0	3.0	7.0	3.0	7.0	3.5	5.5
1.3. Compatibility with Project Partners	5.0	7.0	3.0	7.0	4.0	6.0	7.0	9.0	2.5	6.0	3.5	7.5	3.0	7.0	4.0	7.0
Service and Production Capability																
2.1. Sufficiency of Specialised knowledge	6.0	7.5	3.0	8.0	3.0	7.0	5.0	8.0	3.5	6.0	3.0	7.5	3.0	8.0	6.5	7.5
2.2. Overall Quality of Productive Resources	3.5	6.5	3.0	7.0	4.0	5.5	7.0	9.0	2.0	7.0	2.5	7.5	3.0	7.5	3.5	5.5
2.3. Availability of Productive Resources	2.5	6.0	3.0	7.0	3.0	6.5	4.5	7.5	2.0	7.0	2.5	7.5	3.0	7.0	7.0	8.0
Financial Resources & Constraints																
3.1. Ability to Fund Initial Project Costs	4.0	7.0	4.0	8.0	2.0	8.0	5.0	7.5	4.0	8.0	2.5	7.0	2.5	6.5	3.0	7.0
3.2. Ability to Identify Project Risks	3.0	7.0	3.0	7.0	3.0	7.5	6.0	9.0	3.0	8.0	3.0	8.0	2.5	6.5	3.0	5.5
3.3. Profitability Margin	6.5	8.0	5.0	9.0	3.0	7.0	5.0	9.0	4.0	6.5	2.5	8.0	4.0	8.0	7.0	8.5

Appendix 13: Location of Points P1 and P2 in the Performance Scale of the Attributes that Belong to the CC index — Insiders' Assessments

	I-01		I-02		I-03		I-04		I-05		I-06		I-07		I-08	
	P1	P2	P 1	P2	P 1	P2	P 1	P2	P 1	P2	P 1	P2	P 1	P2	P 1	P2
Financial Assessment																
4.1 Ability of the Private Partner to Fund the Project	4.0	7.5	3.0	7.0	3.0	6.0	6.0	8.5	4.0	7.0	2.5	8.0	3.0	7.5	3.0	6.0
4.2 Certainty of Revenues	6.0	7.5	3.0	7.0	4.0	7.0	6.0	8.5	4.0	7.5	3.0	7.5	3.5	8.0	6.5	8.5
4.3. Taking Periodic & Constant Financial Audits	4.0	7.5	3.0	7.0	4.5	8.0	5.5	8.0	2.0	6.0	3.0	7.0	3.5	7.5	4.5	5.5
Technical Evaluation																
5.1 Ability to Provide Quality Product/Service	4.5	7.0	4.0	8.0	4.5	7.0	5.5	8.0	2.5	8.0	2.0	8.0	3.0	7.5	6.5	8.5
5.2 Ability to Provide a Feasible Project Plan	4.0	7.5	4.0	7.0	4.0	7.5	4.0	7.5	2.5	7.5	2.5	7.5	3.0	7.5	7.5	8.5
5.3. Abil. to Prov. an Adeq. Oper-Transfer pack	4.0	7.5	3.0	7.0	2.5	7.0	5.5	8.5	2.0	8.0	2.5	7.5	3.0	7.5	4.5	5.5
Stakeholder Satisfaction Assessment																
6.1 Prompt, Stable and Reliable Service Delivery	5.5	8.0	5.0	8.0	4.5	8.0	7.0	9.0	3.5	8.0	1.5	8.0	3.0	8.0	7.0	8.5
6.2 Efficient Channel of Communication	6.5	8.0	5.0	8.0	4.0	8.5	7.0	9.0	3.5	8.5	2.0	8.0	4.0	8.5	7.0	8.5
6.3 Certainty Time and Cost Saving	5.5	8.0	4.0	8.0	4.0	8.0	7.0	9.0	2.5	6.5	1.5	8.0	3.0	7.0	6.5	7.5
6.4. Efficient Stakeholder Management Framework	5.5	8.0	4.0	8.0	4.0	8.0	7.0	9.0	3.0	7.5	1.5	9.0	3.0	7.5	7.0	9.0
Appropriate Risk Allocation & Local Frameworks																
7.1 Risk Allocation in Contractual Agreement	5.5	8.0	3.0	7.0	4.0	7.0	7.0	8.0	3.0	8.5	1.5	8.0	3.5	8.0	3.5	7.0
7.2 Risk Allocation in Operational Agreement	3.5	7.0	4.0	8.0	4.5	8.0	4.5	7.0	2.5	7.0	2.5	8.0	2.5	6.5	5.5	8.0
7.3 Fair and Efficient Legal framework	5.5	8.0	3.0	7.0	3.5	6.5	4.5	7.0	4.0	7.5	2.5	7.5	3.5	8.0	6.0	8.0
7.4 Political Environment	5.5	8.0	4.0	8.0	3.5	6.5	4.5	7.0	4.0	8.5	2.5	7.5	3.0	8.0	6.5	8.5

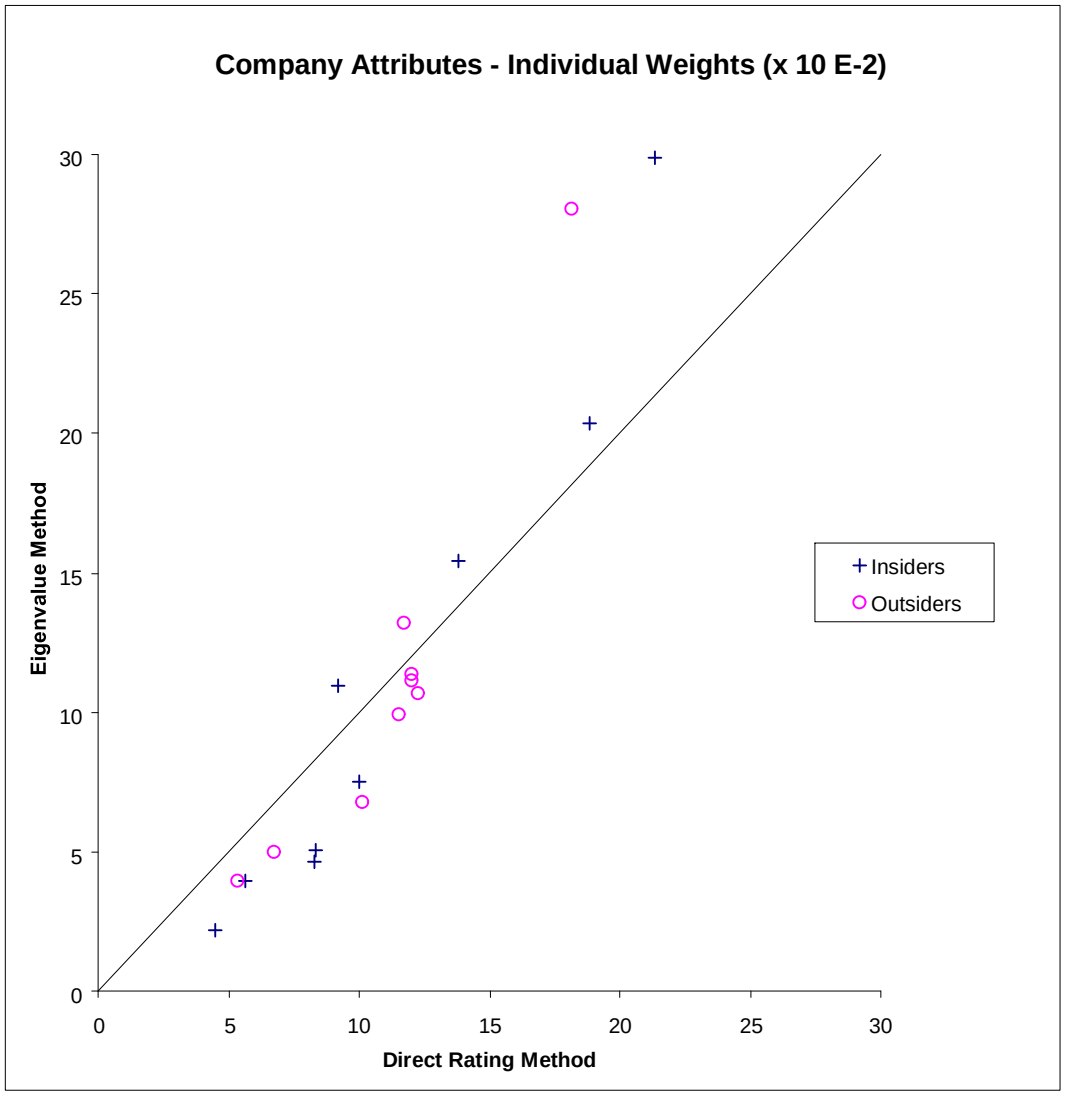
Appendix 13 (cont): Location of Points P1 and P2 in the Performance Scale of the Attributes that Belong to the PA index — Insiders' Assessments

Company Competencies	O-01		O-02		O-03		O-04		O-05		O-06	
	P1	P2	P1	P2	P1	P2	P1	P2	P1	P2	P1	P2
Internal Organization Characteristics												
1.1. Expertise of Management Personnel	4.5	6.5	6.5	8.0	2.5	7.5	4.0	8.0	4.0	8.0	6.5	7.5
1.2. Feasible Strategic Planning	4.5	5.5	4.0	7.0	3.5	7.5	3.0	6.0	2.0	6.0	4.5	6.5
1.3. Compatibility with Potential Partners	4.5	5.5	5.0	7.0	3.5	7.5	3.0	7.0	3.0	8.0	7.5	8.5
Service and Production Capability												
2.1. Sufficiency of Specialised knowledge	3.5	6.5	3.5	6.5	3.5	7.0	3.0	7.0	4.0	8.0	5.5	7.5
2.2. Overall Quality of Productive Resources	4.5	6.5	3.5	6.5	3.5	7.5	3.0	7.0	3.0	8.0	5.5	7.5
2.3. Availability of Productive Resources	3.5	4.5	3.5	6.5	3.5	7.5	2.0	6.0	3.0	8.0	4.5	6.5
Financial Resources & Constraints												
3.1. Ability to Fund Initial Project Costs	4.5	6.5	7.5	8.5	3.0	7.0	4.0	7.0	4.0	8.0	7.5	8.5
3.2. Ability to Identify Project Risks	4.5	5.5	5.0	7.0	3.5	7.0	2.0	6.0	4.0	8.0	7.5	8.5
3.3. Profitability Margin	6.5	7.5	7.0	8.0	3.5	7.0	4.0	8.0	3.0	8.0	6.5	8.5

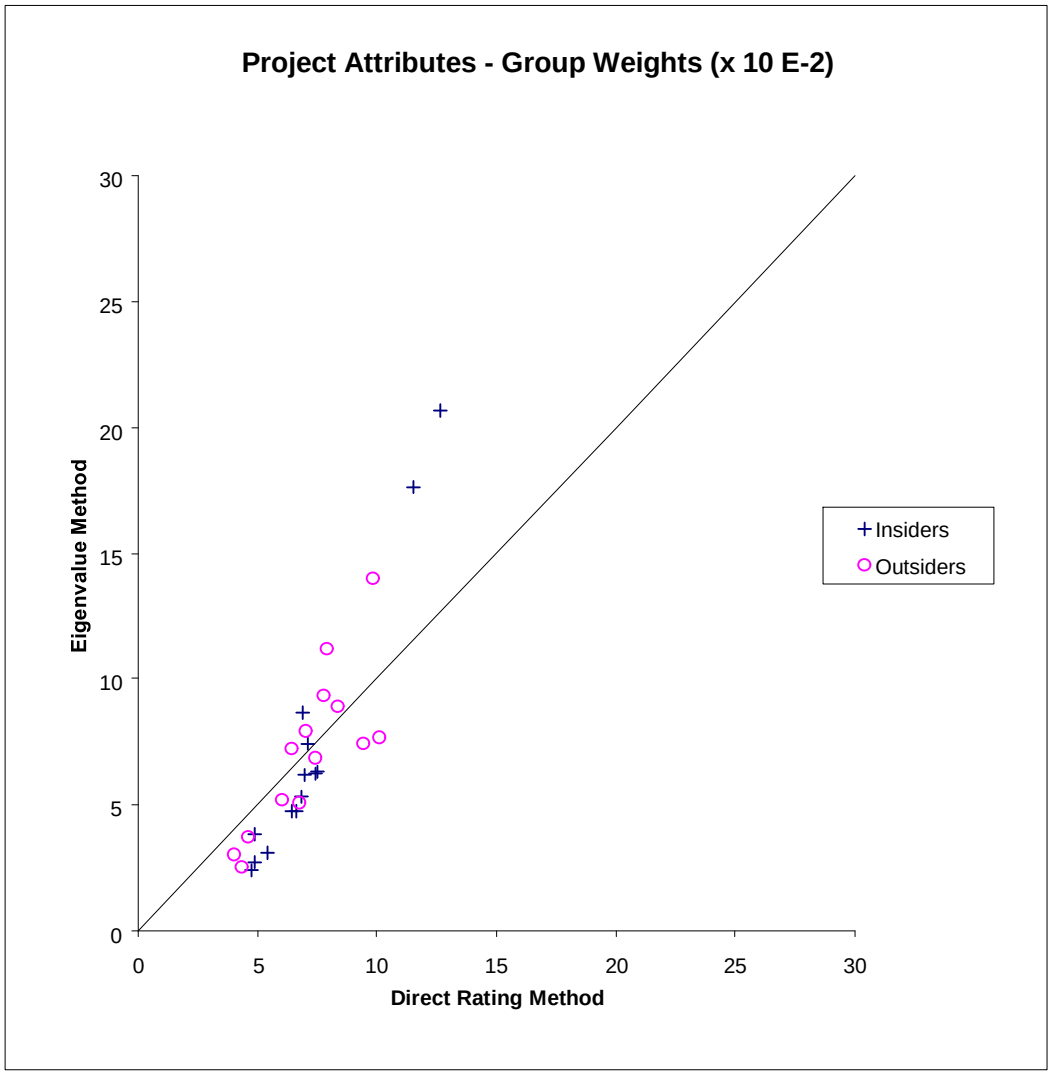
Appendix 14: Location of Points P1 and P2 in the Performance Scale of the Attributes that Belong to the CC index — Outsiders' Assessments

Project Attractiveness	O-01		O-02		O-03		O-04		O-05		O-06	
	P1	P2	P 1	P2	P 1	P2	P 1	P2	P 1	P2	P 1	P2
Financial Assessment												
4.1 Ability of the Pvt Partner to Fund the Project	4.5	5.5	7.5	8.5	3.0	7.0	4.0	8.0	4.0	8.0	6.5	8.5
4.2 Certainty of Revenues	4.5	5.5	6.0	7.5	3.0	7.5	3.0	7.0	4.0	8.0	5.5	7.5
4.3. Taking Periodic & Constant Financial Audits	6.5	7.5	6.5	8.0	3.0	6.5	4.0	8.0	4.0	8.0	4.5	7.5
Technical Evaluation												
5.1 Ability to Provide Quality Product/Service	5.5	7.5	8.0	9.0	4.5	7.0	3.0	8.0	4.0	8.0	5.5	7.5
5.2 Ability to Provide a Feasible Project Plan	3.5	4.5	8.0	9.0	4.5	6.0	3.0	8.0	4.0	8.0	7.5	8.5
5.3. Abil. to Prov. an Adeq. Oper-Transfer Pack.	4.5	5.5	7.0	8.0	4.0	8.0	3.0	7.0	4.0	8.0	5.5	8.5
Stakeholder Satisfaction Assessment												
6.1 Prompt, Stable and Reliable Service Delivery	4.5	5.5	8.0	9.0	4.0	8.0	4.0	7.0	4.0	8.0	5.5	7.5
6.2 Efficient Channel of Communication	2.5	3.5	8.5	9.0	5.0	9.0	5.0	8.0	4.0	8.0	4.5	8.5
6.3 Certainty Time and Cost Saving	2.5	3.5	6.5	8.0	5.0	7.0	3.0	7.0	4.0	8.0	4.5	7.5
6.4. Efficient Stakeholder Management Framework	1.5	2.5	6.5	8.0	7.0	9.0	4.0	8.0	4.0	8.0	4.5	7.5
Appropriate Risk Allocation & Local Frameworks												
7.1 Risk Allocation in Contractual Agreement	3.5	4.5	7.0	8.5	5.0	7.0	3.0	7.0	4.0	8.0	7.5	8.5
7.2 Risk Allocation in Operational Agreement	4.5	6.5	7.0	8.0	4.0	8.0	4.0	7.0	3.0	7.0	7.5	8.5
7.3 Fair and Efficient Legal framework	4.5	6.5	6.0	8.0	3.5	7.0	3.0	6.0	3.0	7.0	7.5	8.5
7.4 Political Environment	4.5	5.5	6.5	8.0	5.5	7.5	4.0	7.0	4.0	8.0	7.5	8.5

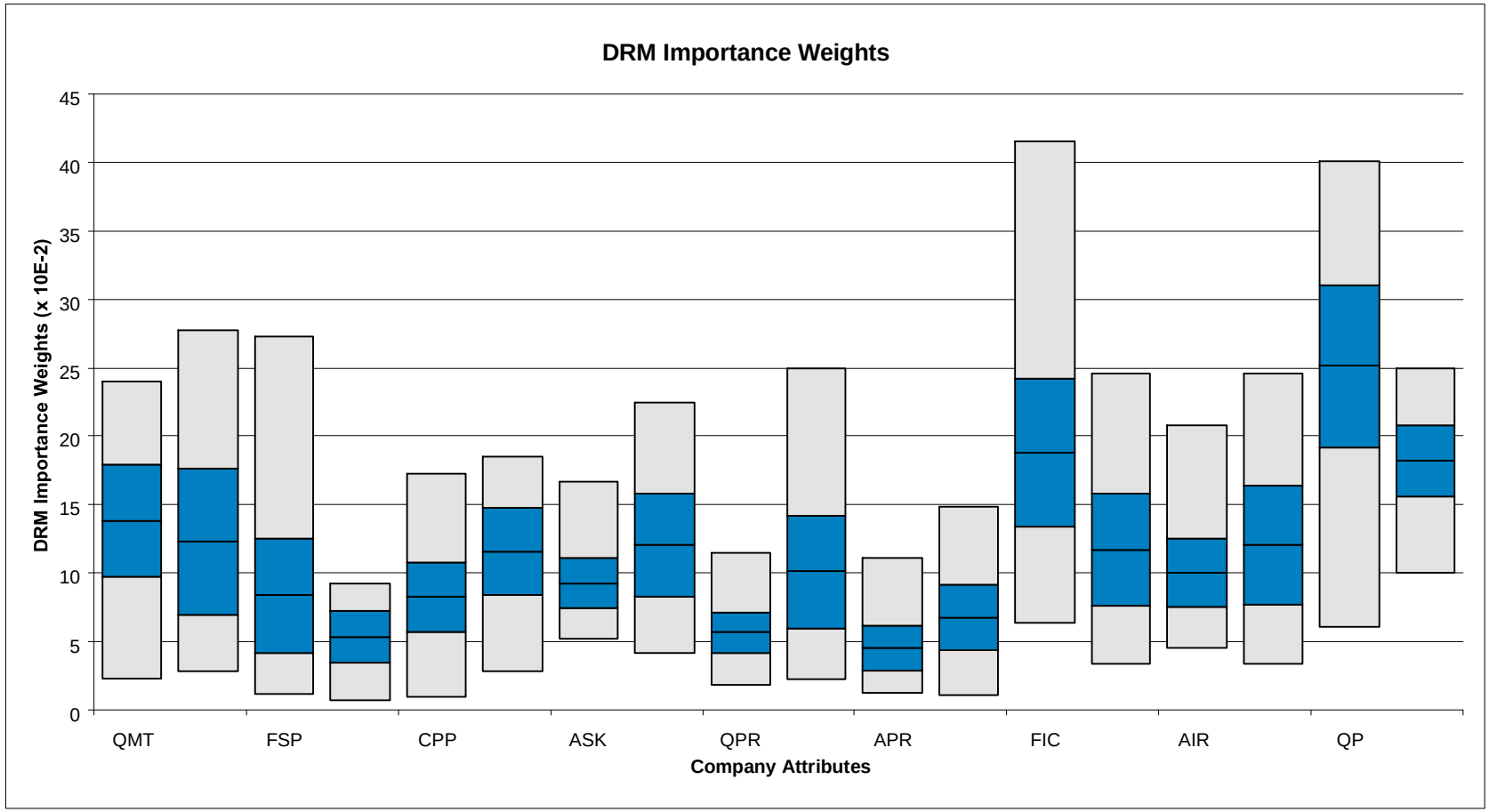
Appendix 14 (cont): Location of Points P1 and P2 in the Performance Scale of the Attributes that Belong to the CC index — Outsiders' Assessments



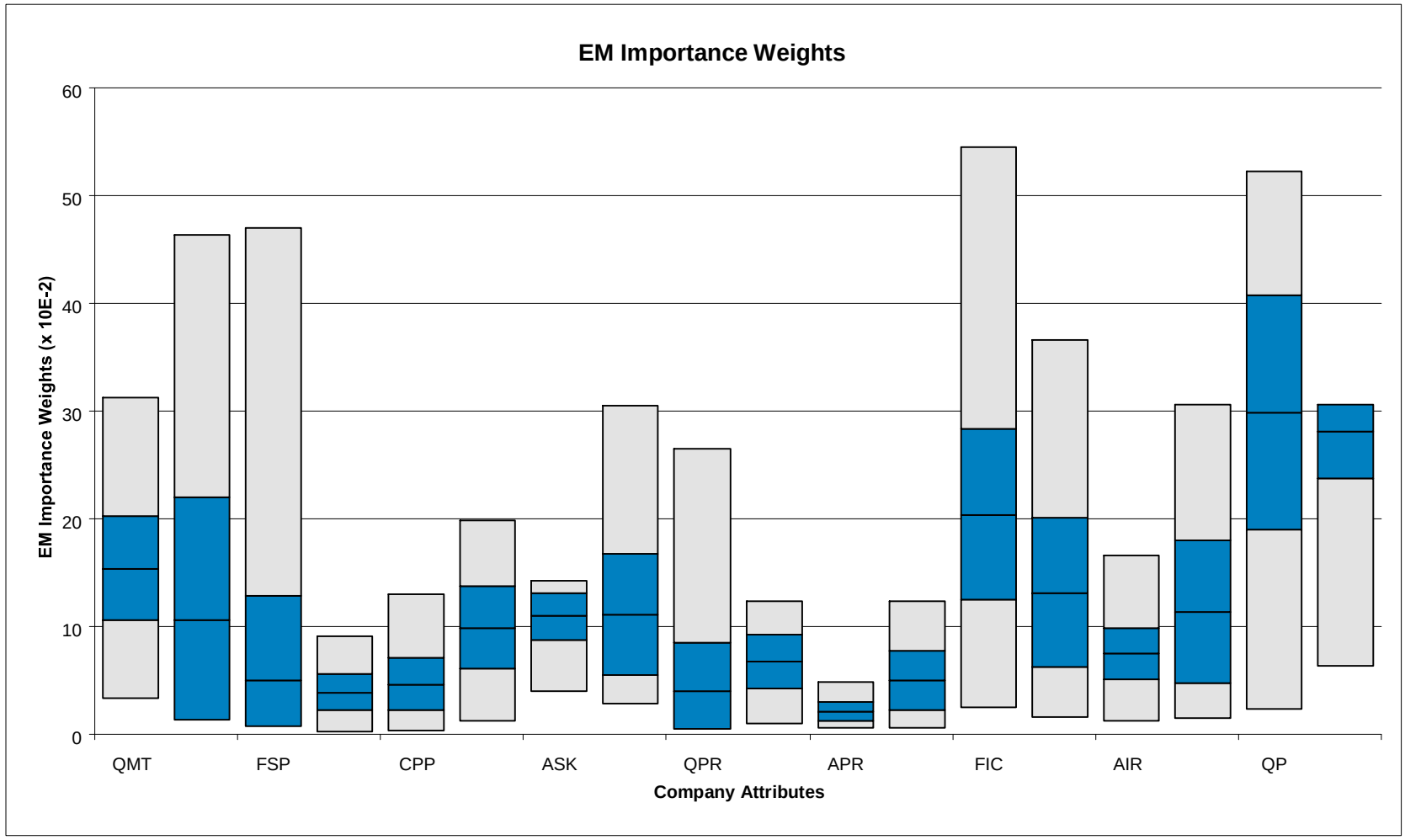
Appendix 15: Equivalence between the GROUP Weights Obtained from the DRM and the EM for the Company Attributes



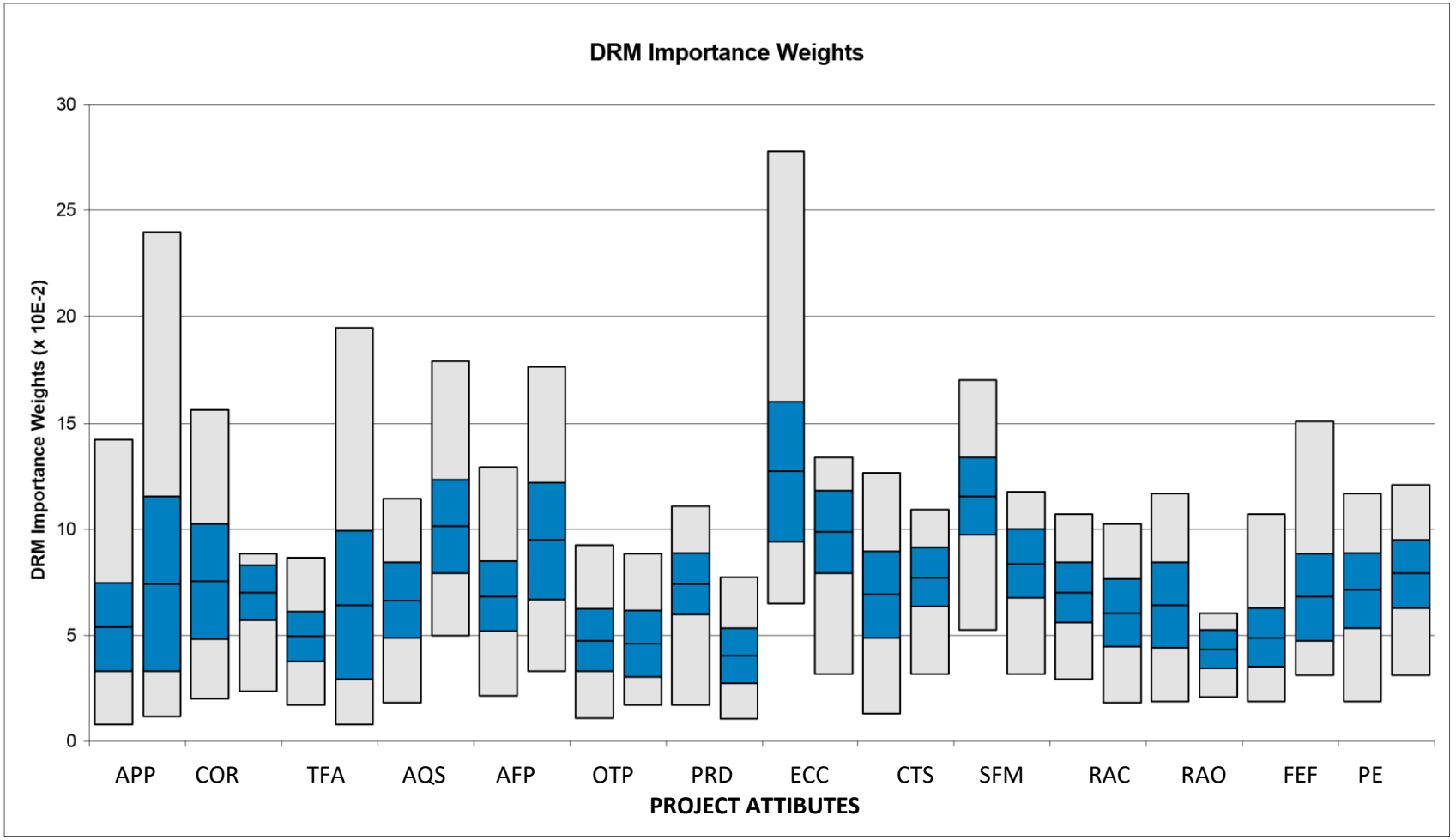
Appendix 16: Equivalence between the GROUP Weights Obtained from the DRM and the EM for the Project Attributes



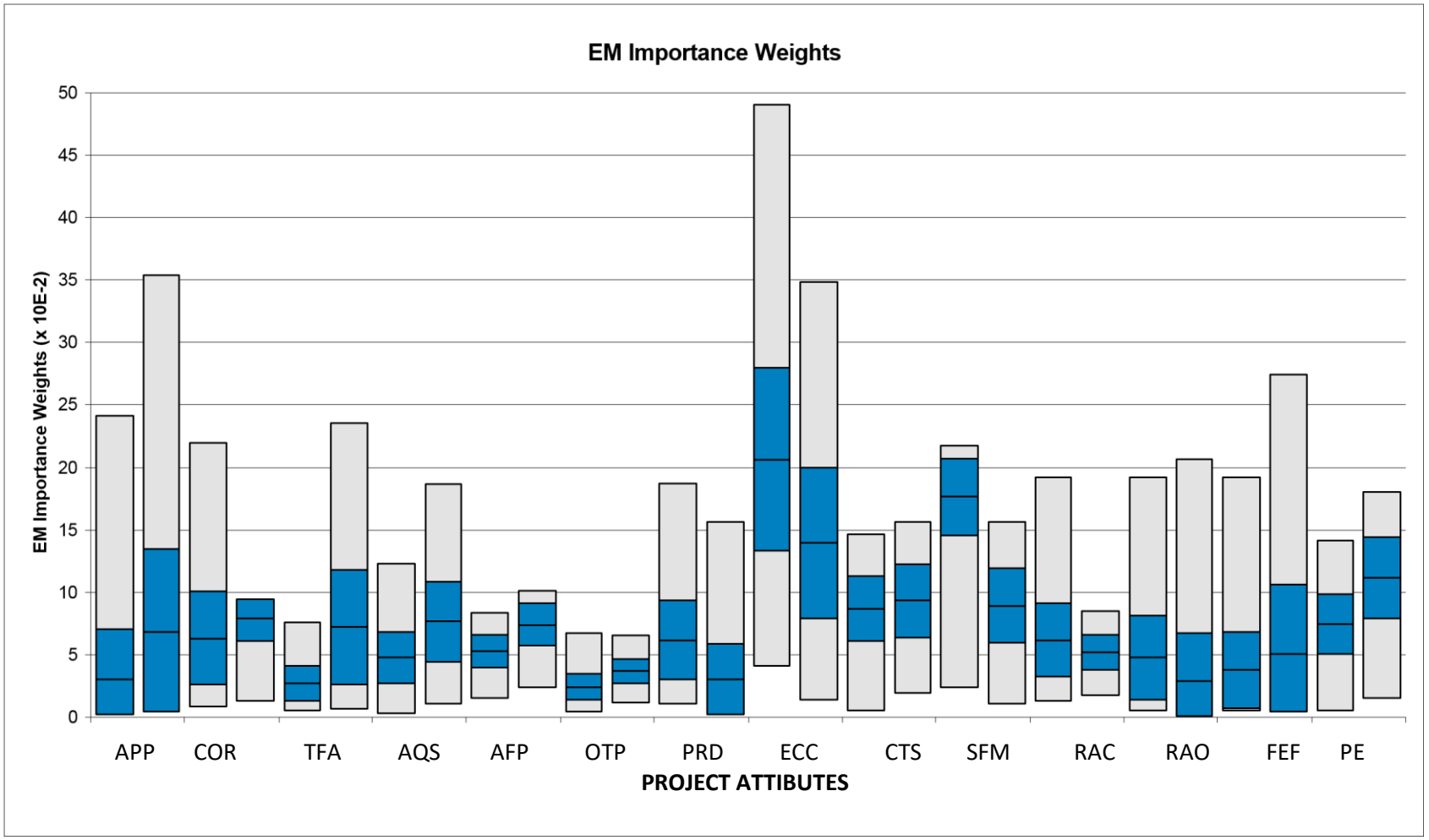
Appendix 17: Group Weights and Range of Individual Weights for the Attributes Belonging to the CC Index (within each attribute, the column on the left displays information provided by the insiders and the column on the right contains outsiders' information)



Appendix 18: Group Weights and Range of Individual Weights for the Attributes Belonging to the CC Index (within each attribute, the column on the left displays information provided by the insiders and the column on the right contains outsiders' information)



Appendix 19: Group Weights and Range of Individual Weights for the Attributes Belonging to the PA Index (within each attribute, the column on the left displays information provided by the insiders and the column on the right contains outsiders' information)



Appendix 20: Group Weights and Range of Individual Weights for the Attributes Belonging to the PA Index (within each attribute, the column on the left displays information provided by the insiders and the column on the right contains outsiders' information)

Appendix 21: Questionnaire 1

This questionnaire is for determining the relative importance of several project attributes for the evaluation of the profitability of PPP projects. These attributes are divided into two classes which are:

- **Company Competences (CC)**
- **Project Attractiveness (PA)**

These classes have been further divided into three and four categories respectively.

1) Company Competences (CC) Internal Organization Characteristics (IOC)
   Service and Production Capability (SPC)
   Financial Resources and Constraints (FRC)
2) Project Attractiveness (PA) Financial Assessment (FA)
   Technical Evaluation (TE)
   Stakeholder Satisfaction Assessment (SSA)
   Appropriate Risk Allocation & Legal Frameworks (AAL)

Instructions

Please attend to all questions

Don't hesitate to ask for clarity if any difficulties are encountered

Definition of terms are given at the end of the questionnaire

Comment or give opinions whenever necessary

Section A

In this section questionnaire attendants are required to respond to the questions below. Figure A1 below shows how to fill in this section of the questionnaire.

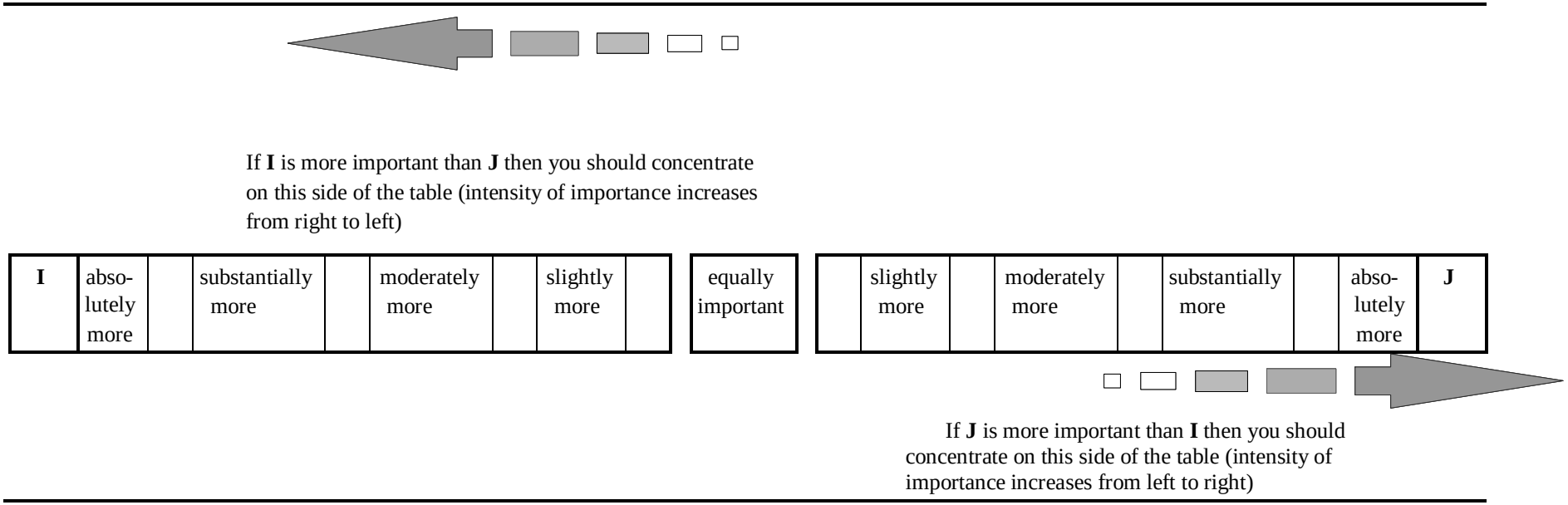


Figure A1: The completion instruction

Question 1 (Tick where appropriate)

When evaluating the profitability and performance of PPP conservation projects which of the following Company Competences (CC) categories are more important to consider:

a) IOC vs SPC

IOC	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantiall y more		Abso-lutely more	**SPC**

b) IOC vs FRC

IOC	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantiall y more		Abso-lutely more	**FRC**

c) SPC vs FRC

SPC	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantiall y more		Abso-lutely more	**FRC**

Question 2 (Tick where appropriate)

When evaluating the profitability and performance of PPP conservation projects which of the following Project Attractiveness (PA) categories are more important to consider:

a) FA vs TE

FA	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Abso-lutely more	**TE**

b) FA vs SSA

FA	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Abso-lutely more	**SSA**

c) FA vs AAL

FA	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Abso-lutely more	**AAL**

d) TE vs SSA

TE	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Abso-lutely more	**SSA**

e) TE vs AAL

TE	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Abso-lutely more	**AAL**

f) SSA vs AAL

SSA	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Abso-lutely more	**AAL**

SECTION B

Question 1

This question requires respondents to identify the least important category, then assign a value of 10 to it. After that, assign values to other categories that reflect their relative importance to the least important category (e.g., a category with a value 30 is considered three times as important as the least important category)

a) Write the name of the least important Company Competence (CC) category in the space below

……..

b) Assign values to other Company Competence (CC) categories to reflect their relative importance

category	**Assigned value (Tick where appropriate)**																
	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95

a) Write the name of the least important Project Attractiveness (PA) category in the space below

……..

Assign values to other Project Attractiveness (PA) categories to reflect their relative importance

category	**Assigned value (Tick where appropriate)**																
	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95

Section B

Comments

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Appendix 22: Questionnaire 2

This questionnaire is for determining the relative importance of several project attributes for the evaluation of the profitability of PPP projects. These attributes are from the seven categories analysed in questionnaire 1 as outlined below:

Company Competences:

- **Internal Organization Characteristics (IOC) -** Expertise of Management Personnel (QMT)
  Feasible Strategic Planning (FSP)
  Compatibility with Project Partners (CPP)
- **Service and Production Capability (SPC) -** Sufficiency of Specialised knowledge (ASK)
  Overall Quality of Productive Resources (QPR)
  Availability of Productive Resources (APR)
- **Financial Resources and Constraints (FRC) -** Ability to Fund Initial Project Costs (FIC)
  Ability to Identify Project Risks (AIR)
  Profitability Margin (QP)

Project Attractiveness:

- **Financial Assessment (FA) - Ability** of the Private Partner to Fund the Project (APP)
  Certainty of Revenues (COR)
  Taking Periodic and Constant Financial Audits (TFA)
- **Technical Evaluation (TE) -** Ability to Provide Quality Product/Service (AQS)
  Ability to Provide a Feasible Project Plan (AFP)
  Abil. Prov. an Adequate Oper-Transfer Pack. (OTP)

Stakeholder Satisfaction Assessment (SSA) - Prompt, Stable and Reliable Service Delivery (PRD)
Efficient Channel of Communication (ECC)
Certainty of Time and Cost Saving (CTS)
Efficient Stakeholder Management Framework (SMF)

Appropriate Risk Allocation & Legal Frameworks (AAL) - Risk Allocation in Contractual Agreement (RAC)
Risk Allocation in Operational Agreement (RAO)

Fair and Efficient Legal framework (FEF)

Political Environment (PE)

Instructions

Please attend all questions

Don't hesitate to ask for clarity if any difficulties are encountered

Definition of terms are given at the end of the questionnaire

Comment or give opinions whenever necessary

Section A

In this section questionnaire respondent are required to attend to the questions below. Figure A2 below shows how to fill in this section of the questionnaire.

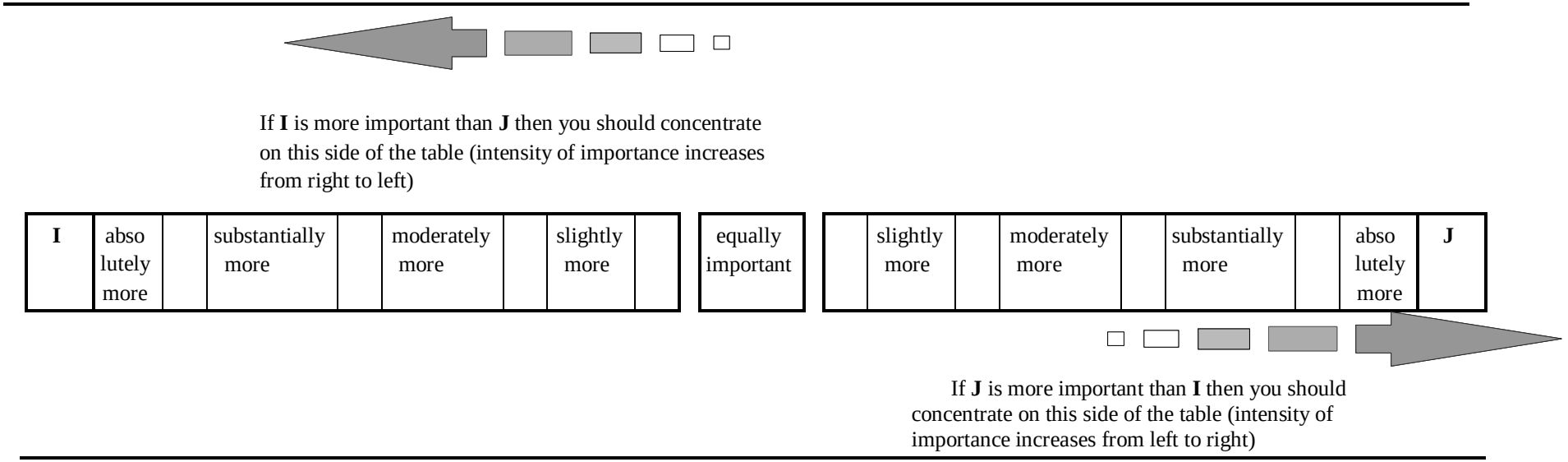

Figure A2: The filling instruction

Question 1 (Tick where appropriate)

Company Competence (CC)

a) When evaluating the profitability and performance of PPP conservation projects which of the following Internal Organization Characteristics (IOC) attributes are more important to consider:

QMT	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Absol utely more	**FSP**
QMT	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Absol utely more	**CPP**
FSP	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Absol utely more	**CPP**

b) When evaluating the profitability and performance of PPP conservation projects which of the following Service and Production Capability (SPC) attributes are more important to consider:

ASK	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Absol utely more	**QPR**
ASK	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Absol utely more	**APR**
QPR	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Absol utely more	**APR**

c) When evaluating the profitability and performance of PPP conservation projects which of the following Financial Resources and Constraints (FRC) attributes are more important to consider:

FIC	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		absol utely more	**AIR**
FIC	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		absol utely more	**QP**
AIR	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		absol utely more	**QP**

Question 2 (Tick where appropriate)

Project Attractiveness (PA)

a) When evaluating the profitability and performance of PPP conservation projects which of the following Financial Assessment (FA**)** attributes are more important to consider:

APP	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		absol utely more	**COR**
APP	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		absol utely more	**TFA**
COR	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		absol utely more	**TFA**

b) When evaluating the profitability and performance of PPP conservation projects which of the following Technical Evaluation (TE) attributes are more important to consider:

AQS	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Abso-lutely more	**AFP**
AQS	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Abso-lutely more	**OTP**
AFP	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Abso-lutely more	**OTP**

c) When evaluating the profitability and performance of PPP conservation projects which of the following Stakeholder Satisfaction Assessment (SSA) attributes are more important to consider:

PRD	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Abso-lutely more	**ECC**
PRD	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Abso-lutely more	**CTS**
PRD	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Abso-lutely more	**SMF**
ECC	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Abso-lutely more	**CTS**
ECC	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Abso-lutely more	**SMF**
CTS	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Abso-lutely more	**SMF**

d) When evaluating the profitability and performance of PPP conservation projects which of the following Appropriate Risk Allocation & Legal Frameworks (AAL) attributes are more important to consider:

RAC	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Absolutely more	**RAO**
RAC	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Abso-lutely more	**FEF**
RAC	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Abso-lutely more	**PE**
RAO	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Abso-lutely more	**FEF**
RAO	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Abso-lutely more	**PE**
FEF	Abso-lutely more		Substantially More		Moderately more		Slightly more		Equally important		Slightly more		Moderately more		Substantially more		Abso-lutely more	**PE**

SECTION B

Question 1

This question requires respondents to identify the least important attributes, then assign a value of 10 to it. After that, assign values to other categories that reflect their relative importance to the least important attributes (e.g., an attribute with a value 30 is considered three times as important as the least important category)

Company Competences

c) Write the name of the least important attributes of the following categories in the spaces below:

- Internal Organization Characteristics (IOC): …….
- Service and Production Capability (SPC) ……
- Financial Resources and Constraints (FRC)……

d) Assign values to other Company Competence (CC) categories to reflect their relative importance

Attribute	**Assigned value (Tick where appropriate)**																
	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95
IOC																	
SPC																	
FRC																	

Project Attractiveness

a) Write the name of the least important attributes of the following categories in the spaces below:

- Financial Assessment (FA): ……..:
- Technical Evaluation (TE): ……
- Stakeholder Satisfaction Assessment (SSA): ……..
- Appropriate Risk Allocation & Legal Frameworks (AAL): ……

b) Assign values to other Company Competence (CC) categories to reflect their relative importance

Attribute	**Assigned value (Tick where appropriate)**																
	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95
FA																	
TE																	
SSA																	
AAL																	

Section B

Comments

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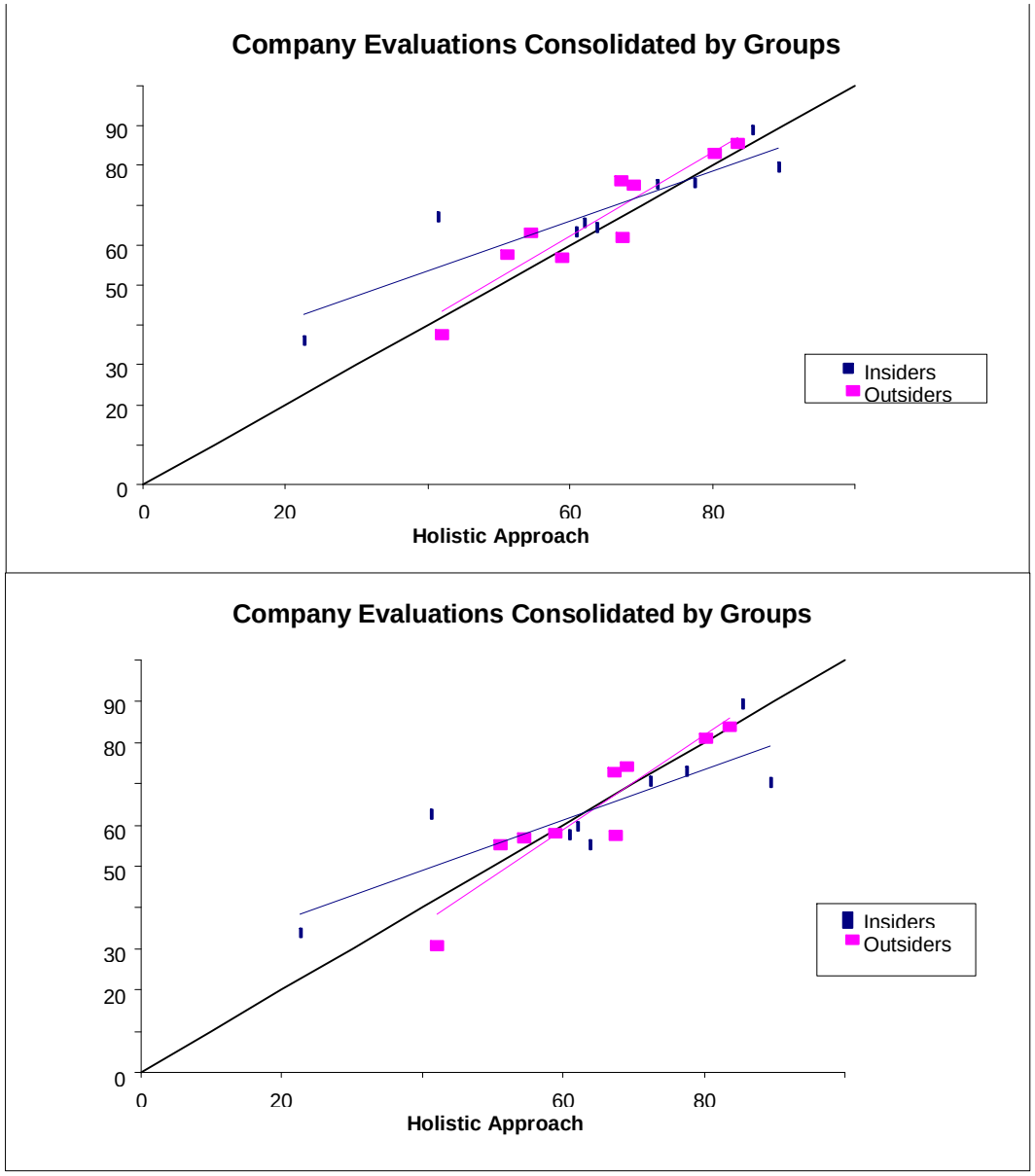
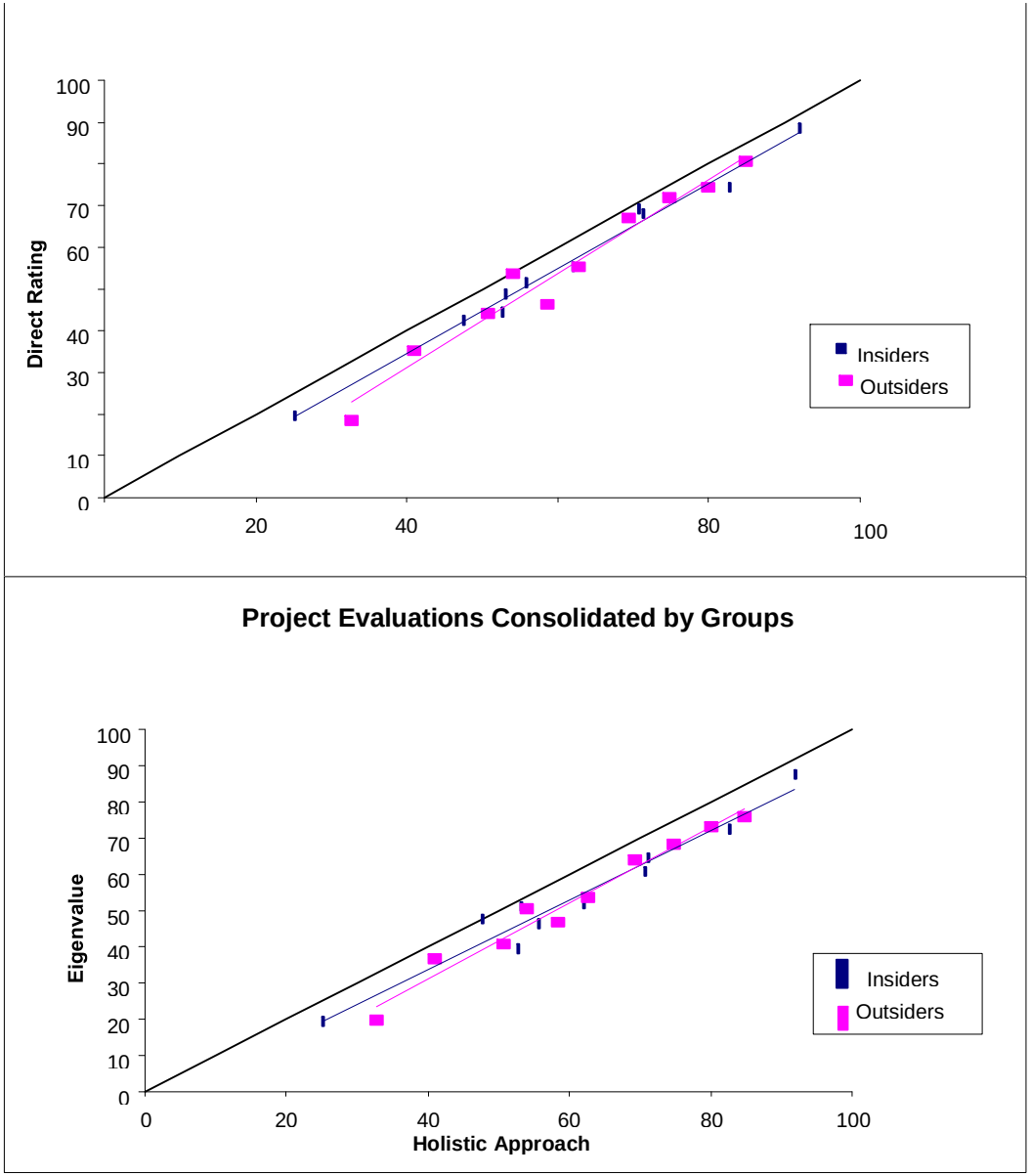


Appendix 23: Correlation Between the GROUP Results Obtained from the Evaluation of Company Profiles



Appendix 24: Correlation Between the GROUP Results Obtained from the Evaluation