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THE IMPACT OF PROJECT SUCCESS ON BUYER-SELLER RELATIONSHIPS IN THE PROFESSIONAL SERVICES INDUSTRY

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

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ABSTRACT

Professional services are one of the fastest growing industries, accounting for over US$330 billion in revenue, globally. The industry is also characterised by stiff competition among professional consulting firms. Thus, in order to survive and grow sustainably, consulting companies need to, not only deliver high quality services which surpass their clients' expectations but, also nurture strong relationships with them.

This study sought to understand the relationship between project delivery success and the strength of client-consultant relationships. It used the engineering consulting industry, focusing on public sector clients and consulting firms in South Africa. The methodology used focused on first establishing as to whether clients and consultants measure project delivery success and relationships using the same factors. It then tested the relationship between project delivery success and client-consultant relationships using the identified set of factors.

Through a detailed literature review, project delivery factors were categorised into project success and project management success factors. In order to capture the different dimensions involved in project delivery and client-consultant relationships, frameworks were developed to adequately classify these factors. These frameworks were used in the design of the data collection instrument.

The findings from the study indicated that clients and consultants measure project delivery success using fairly similar factors, which they also rated in a fairly similar way. However, the study established that clients and consultants neither evaluate relationships using the same factors, nor rate the factors in a similar way. It was also found that project delivery success does not necessarily result in strong client-consultant relationships.

On the basis of these findings, the study established that product delivery success is results from the interaction of many factors within and beyond project boundaries. It also involves a variety of stakeholders with different expectations. Project success is more difficult to measure than project management success. Client-consultant

relationships depend on the types of clients and consultants involved as well as the model of engagement used. These factors also influence the choice and priority given to different measurement factors.

Thus, the study recommended the importance of active client-consultant engagement for clients and consultants to and understand these complex context-specific environments in structuring and defining problems and design relevant solutions.

Key words: project success, project management success, client-consultant relationships, professional service industry, engineering consulting industry.

DECLARATION

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

Maxwell Nyarirangwe

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LIST OF ABBREVIATIONS

CCS	Customer-Centric Strategy
CRM	Customer Relationship Management
MCA	Multi-Criteria Analysis
PMS	project management success
PS	project success
SA	South Africa

1 INTRODUCTION TO THE RESEARCH PROBLEM

1.1 Background

Professional services is a fast growing industry, which according to Haverila, Bateman and Nauman (2011), accounts for over US$330 billion of revenue globally. According to Appelbaum (2009), in Canada, over 70% of all businesses and government organisations use management consulting services at least once every 5 years.

The industry is, however, characterised by stiff completion. (Jaafar, Aziz and Wai, 2009; Nikolova, Reilhlen and Schlapfner, 2009). Meng, (2011) noted that client-consultant interaction is the most important factor that influences the success and survival of consulting companies. Therefore, it is imperative to understand the critical success factors involved and how they influence the strength of the client-consultant relationships. This is important, as a basis for client retention strategies as well as in influencing the customer's share of wallet and future procurement decisions (Cooil, Keiningham and Hsu, 2005).

Ritcher and Nieweim (2009) also noted that, notwithstanding the influence of the nature and sensitivity of different projects, clients are generally more willing to procure services from consultants with whom they have well established and good relationships. Only in exceptional circumstances, will they consider engaging new consultants. These exceptional cases include situations where the client needs an external independent view or a generic solution, or when working on referrals. Therefore, a good buyer-seller relationship is a very important factor in client's procurement decisions.

A successful project delivery process is central to the development and nurturing of a good client-consultant relationship (Almahmoud, Doloi and Panuwatwanich, 2012; Appelbaum, 2009; Jaafar, Aziz and Wai, 2009; Geoghegan and Dulewicz, 2008; Yang and Peng, 2008). What the above researchers did not explain was whether successful project delivery directly results in a good client-consultant relationship.

This is the knowledge gap which this study focuses on. It investigates whether project success relates to good client-consultant relationships.

Research has shown that project success is a highly elusive concept. (Appelbaum, 2009; Barry and Uys, 2011; Jaafar, Aziz and Wai, 2009; Haverila, Bateman and Nauman, 2011; Ritcher and Nieweim, 2009). Such ambiguity implies that clients and consultants may perceive and measure project success differently, which may ultimately affect their relationships. This research investigated whether consultants and their clients measure and perceive project success in the same way or not. The study used a list of success factors that were identified in the past studies above, against which both consultants and clients were required to indicate whether they consider them valid or not. Clients and consultants were also required to rate these factors, thereby indicating the level of importance they placed on each of them. The same process was used for measures of good client-consultant relationships.

1.2 Research Problem

The professional services industry is highly competitive. (Jaafar, Aziz and Wai, 2009; Nikolova, Reilhlen and Schlapfner, 2009). This makes good client-consultant relationships a critical factor in the survival of professional service firms. (Nikolova, Reilhlen and Schlapfner, 2009). Project delivery is one way consultants can showcase their capabilities and win clients. However, given the elusive nature of project success, it is important to establish whether clients and consultants measure and perceive it in the same way and how that perception impacts of the health of their relationship. This research investigated how project delivery success relates to a good client-consultant relationship.

1.3 Research Purpose

Based on the research problem, the purpose of this study was to investigate whether successful project delivery leads to a good client-consultant relationship or not. Past research established that good client-consultant relationships are central to the survival of professional service firms. The findings from this research contribute to the project management and marketing body of knowledge by providing insights into

the success factors for buyer-seller relationships and competitiveness of professional service firms.

1.4 Research Aim

The study aimed at establishing whether successful project delivery leads to a good buyer-seller relationship in the professional services industry. The study is based on findings from the engineering consulting industry.

1.5 Research Objectives

In order to achieve the research aim, the study sought to address the following objectives:

- To establish whether consultants and their clients measure project delivery success using the same factors;
- To establish whether consultants and their clients place the same levels of importance on the project delivery success factors;
- To investigate whether consultants and their clients use the same factors for assessing the strength of their relationship;
- To establish whether consultants and their clients place the same levels of importance on the relationship measurement factors; and
- To analyse whether successful project delivery results in a good client-consultant relationship.

1.6 Research Motivation

The rationale for this research was derived from a number of factors. These factors are explained under the following questions:

1.6.1 Why professional services firms?

Existing literature has shown that the professional services industry is growing rapidly. (Haverila, Bateman and Nauman, 2011). Therefore, it is a critical industry which can contribute to economic growth, wealth creation and employment generation. In South Africa, unemployment is a significant problem and a good

understanding of the dynamics involved in high growth sectors such as this, is very important. Secondly, research has also shown that professional services are depended on the collaborative interaction between buyers and sellers. (Ritcher and Nieweim, 2009). Based on these views, a good understanding of the impacts of project delivery on the strength of these interactions is critical. To the best knowledge of this researcher, this has not been covered in previous research. Thus, this research sought to establish the link between project delivery and the strength of client-consultant relationships.

1.6.2 Why engineering consulting industry?

The choice of the engineering consulting industry was merely for the convenience of the researcher. The researcher is employed in the same industry, and hence has access to key information and respondents. Furthermore, past research reviewed to date, have not directly focused on the engineering consulting industry, regarding the focus of this study. This makes this research relevant because it addresses not only general issues in the professional services industry but also specific aspects in the engineering consulting environment.

1.6.3 Why South African context?

The choice of South Africa (SA) as the research setting was also for the convenience of the researcher. The researcher acknowledged the fact that project management and buyer-seller relationships are not new themes. They have been researched widely. Therefore, it is possible to make generalisations across different spatial contexts. However, being resident in South Africa makes the research more achievable in terms of scale and the logistics involved in data collection, such as time and cost.

1.7 Report Structure

The report is structured as follows:

- **Chapter 1** introduces the topic by way of some background, motivation, rationale and structure of the research.

- **Chapter 2** provides a review of existing prior research which was considered relevant to this research's topic. This was done in order to establish the necessary theoretical constructs upon which the investigations were based.
- **Chapter 3** formalises the research questions, propositions and hypotheses that were investigated in the study.
- **Chapter 4** provides an outline of the research methodology, strategy and approaches that were used to collect and analyse the required data.
- **Chapter 5** consolidates and provides a descriptive presentation of the study findings in the form of tables and graphs.
- **Chapter 6** provides the detailed analysis and discussion of the key findings and pertinent issues that emerged from the results, in the light of previous studies.
- **Chapter 7** summarises and concludes the report, highlighting the way forward in terms of areas for future research, based on findings and questions which were beyond the scope of this research.

2 LITERATURE REVIEW

2.1 Overview

This chapter reviews relevant literature from past research. It provides a theoretical base upon which the relationship between project success and good buyer-seller relationships in the professional services industry were explored. The first part of the review provides a brief background to the consulting industry.

The aim of this assessment is to establish the industry's main characteristics and the nature and importance of the relational issues involved. It also provides a theoretical foundation, upon which an assessment of the main categories of project critical success factors and the measurement criteria was developed.

Critical success factors of good client-consultant relationships were identified and categorised, based on the findings from this review. The last exercise focused on establishing whether project delivery influences the health of client-consultant relationships. The structure of the literature review is summarised thematically in **Figure 1**.

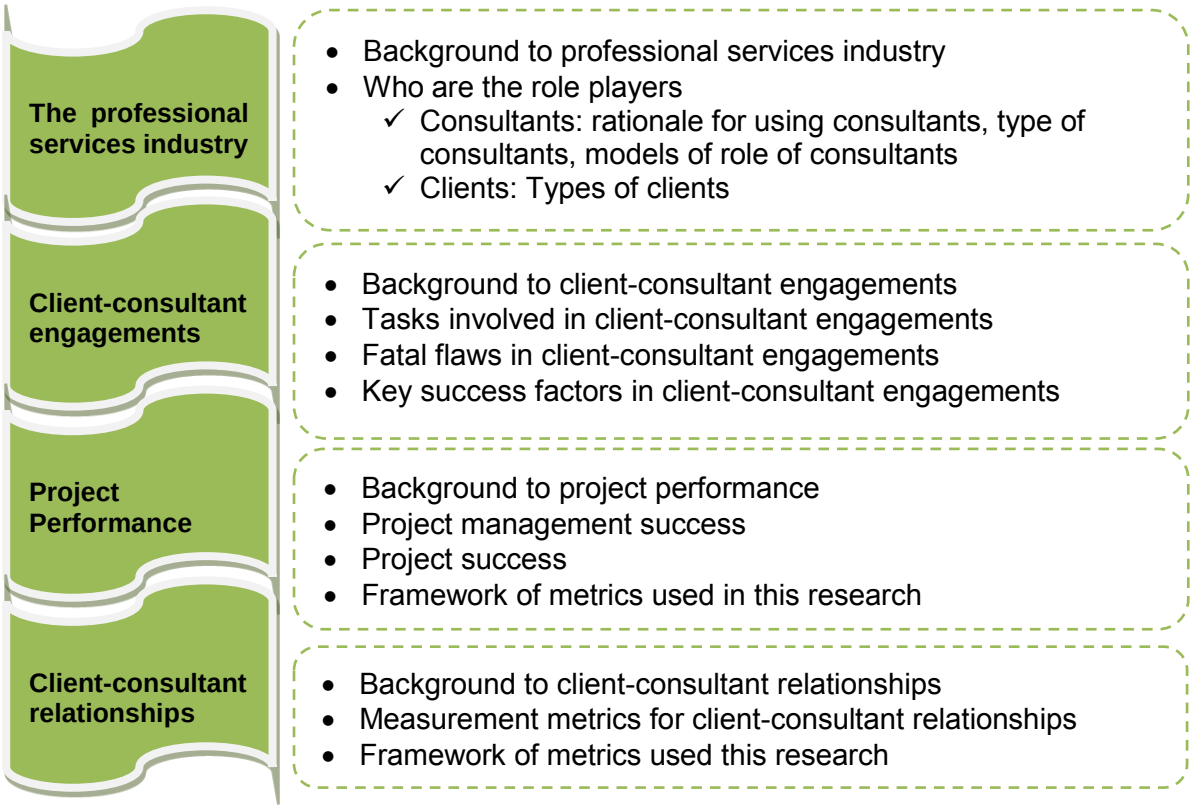

Figure 1: Structure of Literature Review

2.2 Background to the Professional Service Industry

The main professional service disciplines include information technology, finance, business management, law, human resource management, engineering, research and education. (Haverila, Bateman and Nauman, 2011). According to Appelbaum (2009), the professional services sector is one of the fastest growing industries globally. It accounts for over US$330 billion of global revenue. (Haverila, Bateman and Neumann, 2011). Its survival depends on the uniqueness of its service offerings, which focus on providing external, specialised and nonrecurring expert knowledge-intensive solutions to clients' problems. (Ritcher and Nieweim, 2009).

Another reason for the industry's growth is that clients' challenges demand cutting-edge knowledge-intensive and sometimes industry-specific solutions, which are not readily available in-house. (Haverila, Bateman and Neumann, 2011). For instance, in

Canada, over 70% of all businesses and government organisations procure external management consulting services at least once every 5 years. (Appelbaum, 2009).

2.3 Key Players in the Professional Services Industry

Professional consulting service firms use qualified personnel from well-defined disciplines to provide clients with knowledge-intensive solutions to specific problems. (Jaafar, Aziz and Wai, 2009). An understanding of the main players in the industry is important in unearthing the nature of client-consultant engagements involved and how this impacts on resultant relationships. According to Appelbaum (2009), the main players in the professional services industry are consultants and clients. The following section briefly describes these key players, thereby providing the basis for the analysis of the nature of their interactions.

2.3.1 Consultants

Rationale for procuring professional services consultant services

The rationale for companies (clients) to procure the professional services of consultants is derived from a number of factors. According to Appelbaum (2009) and Ritcher and Nieweim (2009), the most common reasons as to why firms procure the services of consultants are that they:

- Provide critical and specific competences for problem solving, which are not usually available in-house;
- Have varied experience outside the client organisation's capabilities;
- Have more time to study problems in detail and design suitable solutions than clients;
- Are professionals in specific fields and expertise;
- Are independent and, hence more likely to provide solutions which are not *"polluted"* by client organisational politics and inertia; and
- Have the ability to generate follow-up actions based on the recommendations from their analytical findings.

Therefore, client organisations find it more efficient, though sometimes not necessarily effective, to procure the services of consultants to address their problems, plan and deliver projects, rather than doing it in-house. (Ritcher and Nieweim, 2009; Kakabadse, Louchart and Kakabadse, 2006).

The role of consultants

In explaining the role consultants play in the professional services industry, Appelbaum (2009) and Kakabadse, Louchart and Kakabadse (2006) used three models (*purchase-of-expert model*, *doctor-patient model* and *process consultation model*). These models are summarised below.

The purchase-of-expertise model

This model states that clients need consultants to provide them with independent perspectives on specific challenges. Under this type of engagement, the role of consultants is not to build any relationship with the client but just to provide the required expertise in a detached manner. (Appelbaum, 2009; Kakabadse, Louchart and Kakabadse, 2006).

The doctor-patient model

This model adopts a diagnostic approach where the role of the consultant is to examine the client's organisational challenges. Based on this diagnosis, which is usually based on distinct experience, knowledge and abilities, the consultant identifies and highlights the client's strategic and organisational challenges. (Appelbaum, 2009)

The process consultation model

Under this model the consultant's role is that of a facilitator. The client actually provides much of the relevant expertise. There is usually a clear definition of roles, which allows the client to make the final decision on what to do with the problem. The consultant, hence, provides the framework and methodology for defining the problem as well as alternative solutions. (Appelbaum, 2009; Kakabadse, Louchart and Kakabadse, 2006).

Therefore, the consultant plays different roles under different situations, depending on the client's needs. The general trend is a move away from the *purchase-of-expertise* model towards the *doctor-patient diagnostic* and *process consultation* models, which are more engaging than detached. (Appelbaum, 2009, Ritcher and Nieweim, 2009). This view was shared by Jaafar, Aziz and Wai (2009) and Kakabadse, Louchart and Kakabadse, (2006), who noted the importance of client-consultant collaboration as critical success factors for project success and good relationships. The type of role and nature of engagement is critical in influencing consultant-client relationships.

Types of consultants

Professional services consultants have been categorised into five different classes depending on the nature of their services and models of engagement with clients. (Appelbaum, 2009; Haverila, Bateman and Nauman, 2010; Kakabadse, Louchart and Kakabadse, 2006). These different categories are discussed in the following sections.

Mental adventurers

These types of consultants analyse complex problems such as long term scenarios through the application of rigorous methods and models. They also utilise and leverage on their unique experience and knowledge bases to provide clients with required solutions, largely in a detached manner. (Appelbaum, 2009; Kakabadse, Louchart and Kakabadse, 2006).

Strategic navigators

According to Appelbaum (2009), these consultants base their contribution on the use of rich quantitative models to better understand complex situations such as market and competition dynamics. They use this information to recommend courses of action without necessarily paying much regard to the client's point of views or perspectives. They are not necessarily intimate advisors to the clients but just crucial sources of information and strategic decisions.

These consultants are also called "*guru consultants"* who view their role as that of informing the client what they know with little regard to the latter's specific needs or requirements. (Kakabadse, Louchart and Kakabadse, 2006). Therefore, these consultants consider their roles as that of educating and enlightening clients, because they are considered experts in particular fields. These consultants are largely preferred by visionary clients who need to be stimulated in terms of how they view problems and alternative solutions. However, these consultants are usually not preferred by results-oriented clients who sometimes see them as being too academic. (Kakabadse, Louchart and Kakabadse, 2006).

Management physicians

These types of consultants derive their recommendations from an in-depth understanding of the internal dynamics of the client's organisation. Appelbaum (2009) noted that these consultants invest a lot of time and resources in order to gain a realistic perspective on what is achievable. In order to achieve their objective, they have to work in close collaboration with the client. (Kakabadse, Louchart and Kakabadse, 2006; Haverila, Bateman and Nauman, 2010).

Systems architects

These consultants assist their clients to re-design their processes, routines and systems in order to improve efficiency and reduce cost. In order to accomplish these interventions, the consultants need to continuously engage and collaborate with the clients. (Appelbaum, 2009). Therefore, a good understanding of the client organisational culture, capabilities, competences, structures and processes, and how they impact on the organisation's performance is required before changes can be introduced. (Haverila, Bateman and Nauman, 2010

Friendly co-pilot

In this capacity, the consultant acts as a counsellor to client organisation's senior managers. The consultant plays a more facilitatory role than that of an expert, with very limited motivation and intention to provide the client with new knowledge.

(Appelbaum, 2009). However, the consultant works closely with the clients, understand their problems and needs and then advice accordingly.

Servant consultants

These consultants execute exactly what is required from them by the clients. They pay special attention to intricate client details and deliver solutions that precisely address the client's requests. These consultants are mostly found in large consulting companies where they are trained to work closely with clients and establish long term relationships. (Kakabadse, Louchart and Kakabadse, 2006). This operating model works well where the clients clearly understand their problems and just need somebody with the necessary specialist skills to help them in designing suitable solutions.

The main challenge with such a model is that most clients usually do not understand their challenges well and, hence, require the consultant to assist in structuring the problems and devise solutions. So often what the clients ask for would not be exactly what they really need. (Kakabadse, Louchart and Kakabadse, 2006).

The consultant psychologist

This type of consultant helps the client see what they need to see. (Kakabadse, Louchart and Kakabadse, 2006). They ask challenging questions and establish what the client wants, from interpreting the responses given. They also deduce meaning from what the client does not say and attempt to clarify the difference between client needs and wants. *Consultant psychologists* often focus on trying to understand the context within which the problem is taking place rather than focusing on the problem itself. *Results-oriented* clients sometimes get frustrated by this approach, although at the end usually they tend to value it when their problems become clearer. (Kakabadse, Louchart and Kakabadse, 2006).

Therefore, companies procure the services of consultants for different purposes, ranging from knowledge acquisition to problem solving and strategic decision advice. Depending on the clients' needs and challenges, different types of consultant services will be required. The wide and growing variety of consulting services has

helped the professional services industry to grow rapidly over the past few years. (Appelbaum, 2009; Haverila, Bateman and Nauman, 2011; Kakabadse, Louchart and Kakabadse, 2006).

2.3.2 Clients

Type of clients

Just like consultants, there is a multiplicity of professional services clients. (Appelbaum, 2009; Haverila, Bateman and Nauman, 2011; Kakabadse, Louchart and Kakabadse, 2006). Their distinction can be explained in terms of their needs, the associated hierarchy within their organisational settings and the required level of interaction with consultants. (Appelbaum, 2009; Haverila, Bateman and Nauman, 2011).

This distinction influences the nature and extent to which these different clients interact with consultants. (Jaafar, Aziz and Wai, 2009; Ritcher and Nieweim, 2009; Barry and Uys, 2011). It also determines the amount of effort consultants will need to invest in nurturing relationships with the different types of clients. (Kakabadse, Louchart and Kakabadse, 2006). Appelbaum (2009) and Kakabadse, Louchart and Kakabadse (2006) came up with different categories for classifying clients. These are explained under the following sections.

Contact clients

These clients are usually the first point of contact with consultants to whom they present requests, questions or issues. They can either act on their own behalf or represent other primary client organisations. Therefore, in the former case they are partly consultants themselves, acting as middlemen between the consultant and primary clients. (Appelbaum, 2009). Their choice of consultants is often guided by referrals or past engagements with the consultants. (Jaafar, Aziz and Wai, 2009; Barry and Uys, 2011).

Intermediate clients

These clients are not continuously involved throughout the duration of a project. Rather they only get involved to represent either their own or other stakeholder interests in the project or upon being invited at different stages of the project. (Appelbaum, 2009; Kakabadse, Louchart and Kakabadse, 2006). In the engineering consultancy environment they can include institutions such as environmental watchdogs during the design and implementation of construction projects.

Primary clients

These are the owners or funders of the projects being worked on. They are usually the ones who pay the consultant's fees for the project. Their budgets are used to fund the project costs. (Appelbaum, 2009; Kakabadse, Louchart and Kakabadse, 2006). It is imperative that consultants deliver results that the *primary clients* will be satisfied with to avoid premature termination of contracts. Consultants also aim at building a strong relationship with the *primary client*, unless when contracted through indirect clients, where focus will be on collaborating with the latter. (Jaafar, Aziz and Wai, 2009; Barry and Uys, 2011; Ritcher and Nieweim, 2009). Therefore in the latter case the consultant's interaction with the primary client may be limited. (Appelbaum, 2009).

Unwitting clients

These are members of the client organisation, who are directly related to the primary client, such as employees, suppliers, etc. (Appelbaum, 2009). They would be affected by the outcomes of the consultant's interventions, although they might not be aware of the impacts. In order to generate sufficient client satisfaction, consultants need to also understand the impacts of the project on the *unwitting clients* by conducting holistic evaluations. This assists in enhancing the associated benefits or minimising any harm involved. (Jaafar, Aziz and Wai, 2009; Ritcher and Nieweim, 2009).

Indirect clients

These are members of the primary client organisation who, unlike the *unwitting clients*, would be aware of how the project affects them, but are unfortunately unknown to the consultant. (Appelbaum, 2009). The consultant will need to collaborate closely with the *primary client* in order to understand the needs of the indirect clients and how the project impacts on them. Such effort is critical in building critical client-consultant relationships. (Ritcher and Nieweim, 2009; Jaafar, Aziz and Wai, 2009).

Ultimate clients

These are end users of the project's outputs, outcomes and impacts. They largely lie outside the immediate boundaries of the *primary client* organisation e.g. community members. (Appelbaum, 2009). They can also lie within the extended boundary of the *primary client*, such as in the holding or parent company. These are the clients who the consultant must care most about because they consume and judge the project's deliverables based on medium and long term impacts, outputs and outcomes.

It can be, therefore, concluded that the concept of *"client"* is equally as diffuse as the *"consultant"* and *"project success".* (Appelbaum, 2009; Jaafar, Aziz and Wai, 2009; Barry and Uys, 2011; Ritcher and Nieweim, 2009). One *"client"* may take different forms depending on the needs and challenges to be addressed. (Appelbaum, 2009). It is equally possible that within a given project there can be many different *"clients"* with varied expectations, needs, influence and degrees of participation. (Appelbaum, 2009).

This diffuse nature of clients creates a complex environment for project success measurement and evaluation, which ultimately impacts on client-consultant relationships. (Appelbaum, 2009; Prabhakar, 2008). Consultants need to invest more time in understanding these complex dimensions regarding their clients, largely on a project-by- project and client-by-client basis. This is critical for the consultants to differentiate themselves and provide unique and relevant services, particularly in the highly competitive professional services industry. (Jaafar, Aziz and Wai, 2009).

2.4 Client-consultant engagements

Traditionally, professional consulting services were delivered through transaction-based approaches (Ritcher and Nieweim, 2009). However, current trends highlight the importance of strong client-consultant interactions and relationships, built and sustained over long periods of time, as a critical success factor and survival strategy. (Appelbaum, 2009; Jaafar, Aziz and Wai, 2009). Therefore, over and above delivering quality products to satisfy clients' needs, it is also critical to build and nurture good client-consultant relationships. (Appelbaum, 2009).

The professional services industry is characterised by stiff competition and rapidly evolving client expectations. (Jaafar, Aziz and Wai, 2009). Therefore, in order to survive, practicing firms have to aggressively market their services and invest in building and nurturing good relationships with their clients. These relationships are critical in generating sufficient demand, sustaining profitable growth and work volumes. Consulting firms, hence, try to surpass client expectations, through interactive relationships with their clients. (Ritcher and Nieweim, 2009).

This is in contrast to the transactional models where consulting firms rarely have dedicated marketing and customer relationship departments or personnel. (Jaafar, Aziz and Wai, 2009; Ritcher and Nieweim, 2009). The current business environment demands dedicated effort and resources aimed at building and sustaining good long term client-consultant relationships. This study sought to establish whether quality project delivery influences the development and growth of these relationships, based on findings about consultants' and clients' understanding, measurement and perception of project success and good relationships.

2.4.1 Common fatal flaws in client-consultant engagements

Research identified common fatal flaws that destroy client-consultant engagements. (Appelbaum, 2009; Kakabadse, Louchart and Kakabadse, 2006; Aziz and Wai, 2009; Ritcher and Nieweim, 2009). Firstly, the engagements suffer if projects are only defined in terms of the work the consultants are expected to do or product/

service they are expected to deliver. Projects must rather be defined in terms of the specific goals that the client would like to be accomplished.

Secondly, client-consultant engagements suffer when the project scope is determined mainly by the subject to be studied or problem to solved, with little regard to the client's readiness for change. (Appelbaum, 2009). This results in internal resistance by client organisation employees and poor acceptance of the project outcomes and outputs. (Kakabadse, Louchart and Kakabadse, 2006). The consultant will not receive the necessary support such as access to crucial proprietary information, which ultimately affects project success and damage relationships. (Aziz and Wai, 2009; Ritcher and Nieweim, 2009).

Thirdly, client-consultant engagements are negatively affected when a project aims at achieving one *"grand solution"* rather than incremental success. (Appelbaum, 2009). Such an approach kills the morale of the project team, client and consultant. *"Low hanging fruits"* or quick wins enable the project team to celebrate and get motivated to press forward, than when the goal is too distant and invisible. Team members are likely to be disengaged and in the process, relationships can be damaged. (Aziz and Wai, 2009; Ritcher and Nieweim, 2009).

Fourthly, client-consultant engagements can be damaged if projects involve sharp divisions of responsibilities between clients and consultants. (Appelbaum, 2009). This kills the spirit of partnership, information sharing, ideas exchange and collaboration. (Ritcher and Nieweim, 2009). It can also propagate a blame-game, as no one would like to be associated with failure. There will also be no sharing of risks, with the weakest people likely to be delegated with the most risky parts of the project. (Appelbaum, 2009). Therefore, while responsibilities must be allocated between consultants and clients, the process must also promote collaboration and joint accountability and equitable and fair risk sharing. (Ritcher and Nieweim, 2009).

Lastly, engagements are negatively affected in cases where projects focus on labour intensive utilisation of consultants rather than leveraging on their core competences and capabilities. (Appelbaum, 2009). The learning curve will be destroyed. Therefore, client-consultant engagements must be well planned with a *"win-win"* and

"gain-gain" mind-set. This is important in generating a sense of ownership and shared responsibilities. (Ritcher and Nieweim, 2009; Aziz and Wai, 2009).

2.5 Project Performance

2.5.1 Background

Professional service work is largely project-based (Appelbaum, 2009). In line with this characteristic, research has emphasised the centrality of performance evaluation in influencing client satisfaction, and ultimately client-consultant relationship building and sustainability (Appelbaum, 2009; Jaafar, Aziz and Wai, 2009; Geoghegan and Dulewicz, 2008; Yang and Peng, 2008).

Project performance is an outcome of a multiplicity of factors. (Abdullar, Rahman, Harun, Alashwal and Beksin, 2010). This is a result of the interconnectedness of processes, stakeholder interests and objectives that define project success. (Prabhakar, 2008, Zhai, Xin and Cheng, 2009). It is also a product of the different dimensions of clients and consultants which were discussed in the foregoing sections.

Service quality is intertwined with other factors such as technical performance, specifications and functional objectives. According to Prabhakar (2008), in an attempt to evaluate these factors, different stakeholders end up with variations in results and perceptions. There is, hence, neither a universally accepted definition nor measurement criteria about what constitutes project delivery success, among past research (Proverbs and Olomolaiye, 2008; Geoghegan and Dulewicz, 2008; Appelbaum, 2009). A review of this past research also shows that the link between project success and client-consultant relationship is largely unknown.

The different interpretation and measurement of project delivery success creates ambiguity among different stakeholders. This ambiguity affects how buyers and sellers measure, perceive and evaluate project performance and ultimately their relationships. (Ritcher and Nieweim, 2009; Barry and Uys, 2011). This is a real problem given the central role played by project delivery measurement on client and

consultant organisations' business strategy. Consultants and clients use project delivery evaluation to assess the extent to which they have achieved their overall organisational objectives. (Prabhakar, 2008; Ika, 2009; Shao, Muller and Turner, 2012).

For instance clients are usually evaluated in terms of the performance of projects which are administered under their departments. Therefore, the success of these projects, as measured using certain metrics and standards, has a bearing on their organisational performance. The careers of consultant project managers are also influenced by how well their projects have performed and impacted on the organisational goals. (Prabhakar, 2008).

Consultants often aim at achieving excellent project delivery and performance in order not only to convince clients to pay, but also as a marketing tool for future appointments and a basis upon which they can build their reputations and brands. (Ritcher and Nieweim, 2009). Therefore, a shared view of project delivery measurement metrics between the client and consultant is critical in the development and growth of their relationship. Clients and consultants need to understand the contextual issues involved in project delivery and agree upfront on what measurement factors to use in evaluating project delivery success. It is more critical for the consultant given the fact that the professional services industry is highly competitive. Good project delivery helps consultants to differentiate themselves and generate the necessary customer lock-on.

According to Prabhakar (2008), project evaluation must be looked at in terms factors related to the overall project, those to do with project managers and team members, the client and consultant organisation, as well as the external environment. Therefore, this diversity of considerations makes it difficult to holistically exhaust all measurement metrics. He noted that what matters more is the project's impact on the ultimate client, who in most cases is not concerned about the time, cost and functional specifications, but the project's medium to long term outputs and impacts.

In an attempt to deal with the ambiguity, researchers distinguished between project success and project management success (Prabhakar, 2008; Ika, 2009; Shao,

Muller and Turner, 2012). This study fully supports this distinction as it provides a more comprehensive analysis of the two terms, thereby allowing a more holistic measurement and evaluation of project delivery.

2.5.2 Project management (PM) success

Project management success covers the more straight forward and objective measures, which are largely under the responsibility of the project manager and team. (Ika, 2009). It focuses more on technical performance, efficiency of execution, functionality and the *"golden triangle"* metrics (time, cost and quality). (Appelbaum, 2009; Prabhakar, 2008; Shao, Muller and Turner, 2012).

These metrics are often considered objective enough as they measure project delivery against important benchmarks of schedule, financial performance, scope and functionality. However, research has since established the weaknesses associated with solely relying on these metrics. They fall short of addressing other dimensions of project delivery, which are more subjective but considered critical by the different client categories. These softer issues include factors such as safety, job creation, business impact, organisational reputation, environmental impact, gender equality, political buy-in, etc. (Samiaah, Hassen, Al-Tmeemy, Abdul-Rahman and Harun, 2010; Eriksson and Westerberg, 2010; Bryde and Robinson, 2005).

Focusing only on project management success metrics also created challenges in terms of alignment with the clients' long term organisational goals, which spanned beyond the *"golden triangle".* (Samiaah, Hassen, Al-Tmeemy, Abdul-Rahman and Harun, 2010). Research also established that although project management may lead to project success, there is no guarantee that it can avoid failure, due to the complexity and multiplicity of factors involved, which creates subjectivity in terms of measures and how they are interpreted. (Ika, 2009; Barry and Uys, 2011).

Despite these deficiencies, project management success metrics remain very important in evaluating and measuring project delivery and performance. This study supports their use as an integral part of project delivery performance.

2.5.3 Project success (PS)

Project success is much broader than project management success. It evaluates project performance against a broader range of factors, and is hence more difficult to conduct. This usually prompts most executives to just focus on project management success evaluation. (Prabhakar, 2008; Geoghegan and Dulewicz, 2008; Appelbaum, 2009; Ika, 2009; Shao, Muller and Turner, 2012).

However, as was noted above, project management success leaves out softer issues which clients consider critical. In leaving out these projects success metrics, consultants and their clients risk focusing on different metrics in evaluating the success of a project. This affects the resultant client-consultant relationship. According to the Ika (2009), the end of projects rarely coincides with service delivery. Therefore, evaluating project delivery based on project success metrics provides a holistic basis for considering downstream effects.

Project success is measured against the overall objectives of the project in terms of the needs and views of the different stakeholders or clients. (Prabhakar, 2008, Appelbaum, 2009). It extends beyond the project implementing organisation's boundaries to also include ultimate clients.

In terms of measurement, project success is more complex and difficult to measure. (Shao, Muller and Turner, 2012; Yang and Peng, 2008; Chen, Liao, Lu and Mortis, 2010; Prabhakar, 2008). This is so, mainly due to the wide variety of stakeholders involved, whose perspectives, expectations and needs are equally diverse.

Common project success measures identified in different literature include such factors as client organisational empowerment, relevance to client organisational context, skills transfer, client's overall satisfaction with final product, relevance to community context, project impact on community and environment, positive legacy, political buy-in, gender equality, etc. (Prabhakar, 2008; Geoghegan and Dulewicz, 2008; Appelbaum, 2009; Ika, 2009).

This research acknowledges the dynamics and complexities associated with project success measurement. In order to be more comprehensive, the study used a framework which covers the critical dimensions of project delivery success as highlighted in literature. (Samiaah, Hassen, Al-Tmeemy, Abdul-Rahman and Harun, 2010; Eriksson and Westerberg, 2010; Bryde and Robinson, 2005). The framework is discussed below.

2.5.4 Framework of metrics used this research

Given the centrality of project performance evaluation in client satisfaction and the development of good buyer-seller relationships (Appelbaum, 2009; Jaafar, Aziz and Wai, 2009; Geoghegan and Dulewicz, 2008; Yang and Peng, 2008; Meng, 2011), this research supports the need to separate project management success metrics from project success metrics. This study used a combination of project management success and project success metrics to address the identified research questions and test the associated hypotheses.

Due to the multiplicity of factors involved in project delivery measurement, it was impossible to use all of them. However, in order to ensure a well-balanced coverage of the metrics, this study adopted a framework developed by Samiaah, Hassen, Al-Tmeemy, Abdul-Rahman and Harun (2010). They recommended that project success must be assessed in terms of multiple dimensions including:

- Hierarchical dimensions (i.e. owner, designer and contractor's perspectives);
- Time dimensions of organisational goals (short, medium and long term),
- Project delivery stages (i.e. during and post-delivery phases),
- Project scale (i.e. micro and macro levels); and
- Objective and subjective measures.

Their view was based on the argument by (Prabhakar, 2008; Geoghegan and Dulewicz, 2008; Appelbaum, 2009; Ika, 2009) that project management success does not necessarily lead to project success. They noted that it is a better situation for project success to be achieved without project management success, as

compared to the reverse because it implies that the failure by the project manager was insignificant in the longer term.

Therefore, the framework captures the different dimensions that were highlighted as critical in a holistic evaluation of project delivery and performance. The project delivery and performance metrics were grouped into three categories as follows:

Project management success measurement metrics:

- Project execution which adheres to appointment budget;
- Project execution which adheres to agreed schedule or time;
- Project execution in accordance with agreed or promised quality targets;
- Positive organisational impact;
- Positive environmental impact;
- Positive social impact; and
- Good project team conduct.

Product success measurement metrics:

- Project execution in accordance with technical requirements;
- Project execution in accordance with functional specifications; and
- Client satisfaction with final product.

Market success measurement metrics:

- Project execution which positively impacts on market share;
- Project execution which positively impacts on revenue and profitability;
- Project execution which positively creates competitive advantage; and
- Project execution which positively impacts on reputation.

A schematic presentation of the framework, as adopted from Samiaah, Hassen, Al-Tmeemy, Abdul-Rahman and Harun (2010) is provided in **Figure 2.**

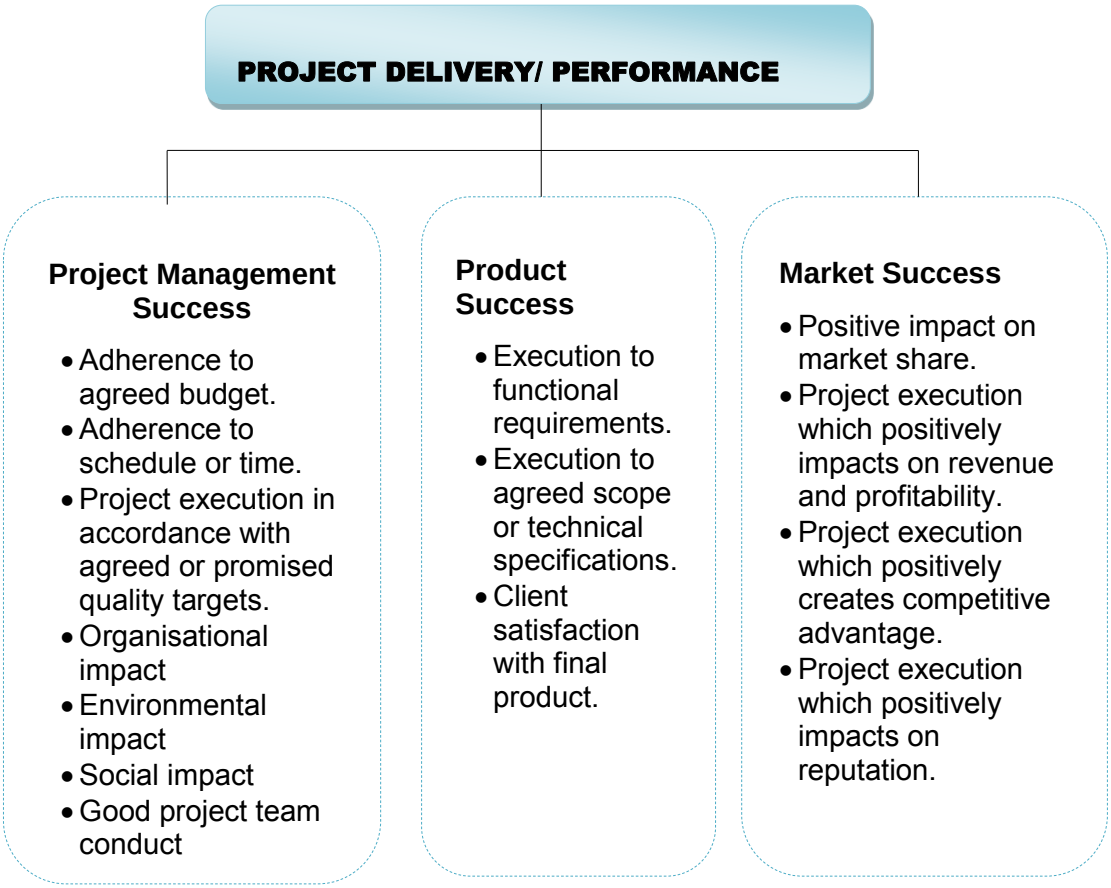

Figure 2: Framework of project delivery metrics used in this research

(Source: Adopted from Samiaah, Hassen, Al-Tmeemy, Abdul-Rahman and Harun, 2010)

The framework above was used to identify critical project delivery and performance metrics and to categorise them into themes that addressed the perceptions of both buyers and sellers. Consultants and clients were then requested to confirm if they considered these factors as good metrics and also to rate them in order of importance. These metrics were then used together with relationship measurement metrics in analysing and describing the link between project success and client-consultant relationships.

2.5.5 Section summary

From the above literature review, it was concluded that project success is much broader than project management success. It evaluates project performance against a broader range of factors, and is hence more difficult to measure. Research has

shown that this complexity usually prompts most consultant executives to just focus on project management success evaluation, thereby missing out on other measures considered critical by clients. (Prabhakar, 2008; Geoghegan and Dulewicz, 2008; Appelbaum, 2009). This may result in consultants and their clients focusing on different metrics in evaluating the success of a project, and ultimately affect their relationship.

According to the Ika (2009), the end of projects rarely coincides with service delivery. Therefore, evaluating project delivery based on both project management and project success metrics helps in addressing both immediate and downstream project outputs and outcomes. The most effective way is for consultants and clients to actively collaborate throughout the project delivery process and evaluate each phase based on agreed metrics. These metrics must be agreed upfront before the commencement of the project. A transaction-based approach is not adequate to achieve this holistic approach. An interaction-based buyer-seller approach will be required, where consultants and clients work together in close partnerships.

2.5.6 Client-consultant relationships

Background to client-consultant relationships

The professional service industry is characterised by a close interaction between buyers and sellers. In order to survive, sellers have to develop distinct client-oriented services and processes. According to Nikolova, Reilhlen and Schlapfner (2009) and Meng, (2011), buyer-seller interactions are the most important factors that influence the success of consulting projects and survival of consulting companies.

Therefore, consultants invest time and resources to adequately understand clients' needs and problems, and then tailor their offerings to satisfy those wants. This is in line with the marketing philosophy of "*profitably satisfying the client's needs and wants"*. (Jaafar, Aziz and Wai, 2009). Kotler and Keller (2009) (pp.170) referred to this approach as "*positioning"*, that is *"the act of designing the company's offerings and image to occupy a distinctive place in the minds of the target market".*

According to Appelbaum (2009), buyer-seller relationships are influenced by a multiplicity of critical success factors. Firstly, the buyer must have enough confidence in the consultant's competency in delivering the project. Secondly, the consultant must emphasis the client's needs in the project results and deliverables, as well as consider the client's state of readiness to adapt proposed solutions. Thirdly, there must be constant collaboration and clear communication of assumptions, expectations and outcomes. Fourthly, the client-consultant engagement must be well supported at management levels. Lastly, the consultant must undertake upfront investment in learning the client's business environment and involve the latter throughout the project to ensure ownership.

Nikolova, Reilhlen and Schlapfner (2009), used three models to explain the nature of buyer-seller relationships in the professional service industry. These models provide useful insights in better understand the nature of these relationships, especially given the central role they play in survival of consulting firms.

The Expert Model

Under this model, the consultant is an expert who provides concrete solutions based on scientific theories and techniques, to client problems. The consultant would have access to unique knowledge not readily available to the client, and hence possesses monopoly powers to identify and structure problems, and to develop effective solutions, on behalf of the clients. (Nikolova, Reilhlen and Schlapfner, 2009).

This model, however, propagates an unbalanced power balance, in favour of the consultant. Clients are relegated to "*information suppliers"* with no active involvement in problem identification and design of solutions. Such a dichotomy of roles breeds dissatisfaction with project results and blocks collaboration. (Nikolova, Reilhlen and Schlapfner, 2009).

In order to promote collaboration and ultimately build and sustain strong consultant-clients, the *expert model* is not a sustainable approach. As was discussed above, project success is so elusive a concept that clients and consultants need to work closely to adequately evaluate it. Such close collaboration and sharing of

responsibilities and accountability to project outputs and outcomes is important. (Nikolova, Reilhlen and Schlapfner, 2009, Prabhakar, 2008; Jaafar, Aziz and Wai, 2009).

The Critical Model

This model contrasts the *expert model* by acknowledging the fact that knowledge is socially-generated and dependent upon acceptability rather than on scientific objectivity alone. Science only gives substance to professional knowledge. (Appelbaum, 2009). Therefore, consultants need to make their knowledge relevant by actively engaging with their clients. Project processes and solutions must be effectively communicated and mutually acceptable between the consultants and clients. (Nikolova, Reilhlen and Schlapfner, 2009). In some cases this extends beyond the boundaries of consultants and clients, to include other external stakeholders. (Appelbaum, 2009, Meng, 2011).

The engagement process ensures that consultants not only deliver unique solutions within budget and time schedules, but also manage the clients' impressions and expectations. (Nikolova, Reilhlen and Schlapfner, 2009). This is in line with the project success perspective, which provides a more comprehensive evaluation of project delivery as compared to the "*golden triangle"*. (Appelbaum, 2009).

The Social Learning Model

This model places both consultants and clients at the centre of the project delivery, problem diagnosis and solution generation. The model critiques the traditional view of consultant as *expert advisors* to clients. It notes that, it is not adequate for consultants to tailor abstract knowledge to meet the clients' specific needs, because the latter also possess valuable knowledge critical in problem identification and solutions. Therefore, both parties must jointly diagnose the client's problems and develop solutions together. This creates a balanced interaction, characterised by trust, which must be supported by effective communication, join commitment and sharing of assumptions behind success perceptions. (Nikolova, Reilhlen and Schlapfner, 2009).

Collaborative problem structuring and solution generation also influences project management success. For instance scope management is only possible if consultants and clients agree upfront in terms of the problem to be solved and the boundaries of the required solutions. Such collaboration ensures that expectations are shared between the client and consultant. Without such agreement, project boundaries will be fluid, thereby affecting delivery time, quality and cost. (Appelbaum, 2009; Prabhakar, 2008; Yang and Peng, 2008).

Implication of models

While these models provide a useful basis for understanding the nature of buyer-seller relationships, they fall short in terms of explaining the measures which can be used to evaluate the health of such a relationship. Additionally, given the nature of the professional services industry, where the output is project-based, (Ritcher and Nieweim, 2009), the models do not address the nature of interaction between project delivery and buyer-seller relationships. Therefore, a descriptive analysis is required to establish how such an interaction exists. The following section briefly analyses the proxy measures for buyer-seller relationships which this study used in assessing and describing the relationship between project delivery and client-consultant relationship.

Measurement metrics for client-consultant relationships

According to Ritcher and Nieweim (2009), buyer-seller relationships are characterised by open-endedness, repeated interactions, trust and loyalty, which extend beyond mere business transactions. The boundaries between the buyer's and seller's organisations usually become blurred and porous to ensure efficient information flow. The extent to which buyers' and sellers' organisations freely exchange information, particularly the sensitive and proprietary information, determine the strength of the relationship.

Clients usually prefer those consultants with whom they have long lasting relationships, to undertake tasks involving such sensitive information. (Ritcher and Nieweim, 2009). The degree of this freedom of information exchange and porosity of

organisational boundaries depends on the relationship model used. It is limited under the *expert model* and increases towards the *social learning model*.

Haverila, Bateman and Nauman (2011) pointed out that the strength of buyer-seller relationships can be evaluated based on client's service procurement decisions. Apart from the consulting firm's reputation, referrals and recommendations, the strength of buyer-seller relationship plays an important part in clients' procurement decisions. On the other hand, procurement decisions by clients also influences the relationship between clients and consultants.

Haverila, Bateman and Nauman (2011) noted that existing relationships and referrals account for 70 percent of most consultants' future appointments. The main reason is that under such circumstances, the client would already have a good perception of the consultant's experience, expertise and competence, and also the likelihood of adhering to contractual and administrative requirements. This view was also shared by Cooil, Keiningham, Aksoy and Hsu (2007). They noted that a client-consultant relationship is positively related to the former's re-buy decisions.

Another measure of the strength of buyer-seller relationships is customer loyalty. Hu, Kandampully and Jawaheer (2009) noted that customer loyalty is influenced by the client's perceived service quality, satisfaction, value and consultants' corporate image. Therefore, by delivering high quality services and creating superior customer value, consultants can yield higher customer satisfaction and ultimately brand loyalty. They noted the importance of good buyer-seller relationships and value perceptions in motivating customers to resist competitor offerings. (Hu, Kandampully and Jawaheer, 2009).

Consultants are more likely to gain customer loyalty, retention and a good buyer-seller relationship if the quality of their services is not debatable. Hu, Kandampully and Jawaheer (2009) noted that customers evaluate services received by creating a balance in terms of perceived value and cost. Where such a balance is questionable, relationships will be strained. However, when such a balance is established the client-consultant relationship will be strengthened.

However, it can also be argued that where consultants and clients already enjoy a good existing relationship, the cost of services will be the last thing the latter will be worried about. The more important aspect will be value-addition. Clients are likely to be critical of consultant charges if the relationship is not good. They are forced to make trade-offs between quality, cost and delivery schedules. (Hu, Kandampully and Jawaheer, 2009).

Another measure of buyer-seller relationship is customer share of wallet or budget. According to Cooil, Keiningham, Aksoy and Hsu (2007), there is a positive relationship between good consultant-client relationships and the latter's share of wallet or budget. Therefore, the nature and trends in the client-consultant relationship are positively related to share of wallet or budget a client allocates to a particular consultant over time. This supports the view by Ritcher and Nieweim (2009) that clients are more inclined to work with consultants with whom they have long and good relationships, depending on the nature of services required.

Framework of success used in this research

Based on the review of the above literature, this study acknowledged the diversity of relationship measurement success factors. Therefore, it was impossible to capture all the individual metrics identified by different authors. In order to create a good balance among the different factors, this study categorised them into those which are associated with consultants' competences, client satisfaction and client-consultant engagements. (Appelbaum, 2009; Prabhakar, 2008). Based on these categories, this study developed a framework, which identified and categorised the metrics into three classes summarised below:

Category A: Client satisfaction

- When client prioritises value over adherence to schedule.
- When client prioritises value over adherence to budget; and
- When client prioritises value over adherence to scope or technical specifications.

Category B: Client-consultant engagement

- When operations are driven by trust;
- When consultant adheres to terms and procedures;
- When client proprietary information is shared;
- When clients and consultants work in partnership.

Category C: Procurement decision factors

- When the consultant is prioritised in client's procurement decisions;
- When the consultant is repeatedly appointed by the client; and
- When the consultant is prioritised in the client's share of budget.

A schematic presentation of this framework as developed by the researcher based on factors derived from the various studies discussed above (Nikolova, Reilhlen and Schlapfner, 2009; Prabhakar, 2008, Appelbaum, 2009; Cooil, Keiningham, Aksoy and Hsu, 2007) is provided in **Figure 3**.

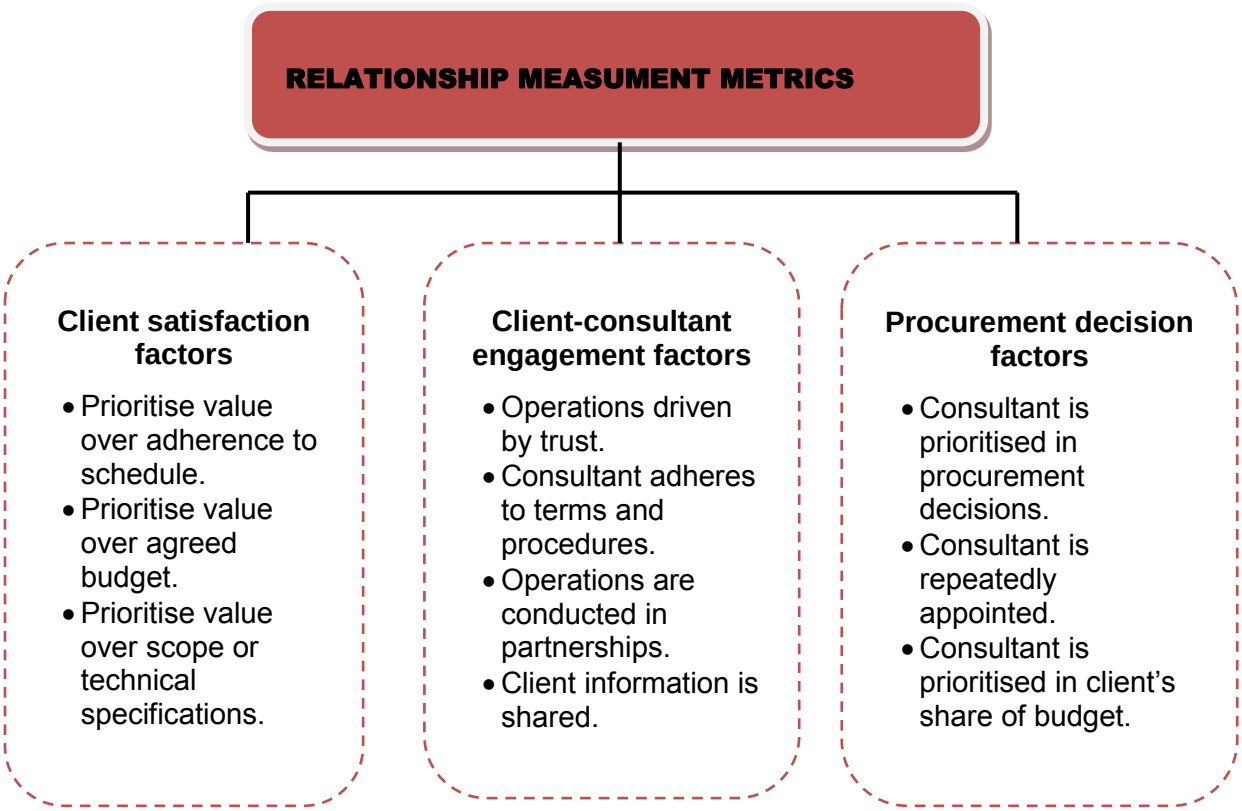

Figure 3: Framework of project delivery metrics used in this research

(Source: Adopted from Nikolova, Reilhlen and Schlapfner, 2009; Prabhakar, 2008, Appelbaum, 2009; Cooil, Keiningham, Aksoy and Hsu, 2007).

Both clients and consultants were required to indicate whether they confirmed these measures as good metrics for evaluating the strength of consultant-client relationships. They were also required to rate these metrics in terms of the level of importance they placed on each of them.

2.5.7 Section summary

From the above review, a number of conclusions can be drawn. Firstly, project delivery is not easy to measure and evaluate due to the elusive nature and multiplicity of factors involved. Project management success is more objective than project success. The latter involves a broader set of stakeholders, factors and metrics as well as a great measure of subjectivity. This creates a risk of consultants and their clients focusing on different metrics in evaluating the performance of a project. In order to minimise this risk and the associated negative impacts on the

relationship between clients and consultants, it is imperative that the two work and collaborate closely together.

The relationship between consultants and clients is strengthened by a multiplicity of factors. The conclusion that was drawn from an analysis of the three models used to explain the nature and dynamics of these relationships is that a transaction-based approach to project delivery is not sustainable. In as much as consultants are experts in their fields, they should engage with their clients, jointly define and structure problems and design suitable solutions. This is critical in building trust, which not only positively affect project delivery but also influences clients' future procurement decisions involving the consultant.

Therefore, the link between project delivery and client consultant relationships is not unidirectional. Good project delivery influences the growth and sustainability of the relationship. On the other hand, a good relationship positively influences the consultant's project delivery process and leads to success, which further cements the relationship.

3 RESEARCH QUESTIONS AND HYPOTHESES

3.1 Introduction

The purpose of this research is to determine whether successful project delivery leads to a strong relationship between consultants and clients in the professional service industry. Through a detailed review of available literature, project delivery was defined in terms of project management success, product success and market success factors. The main success measurement factors or metrics were also identified, categorised and explained.

The review also explained the nature and importance of good consultant-client relationship in the professional services industry. The main measurement factors were also identified, categorised and explained. The study then analysed whether project delivery as measured by the project delivery success leads to a good client-consultant relationship.

3.2 Research Questions

The outcome of the research analysis focused on answering the questions, under each objective as summarised in **Figure 4**.

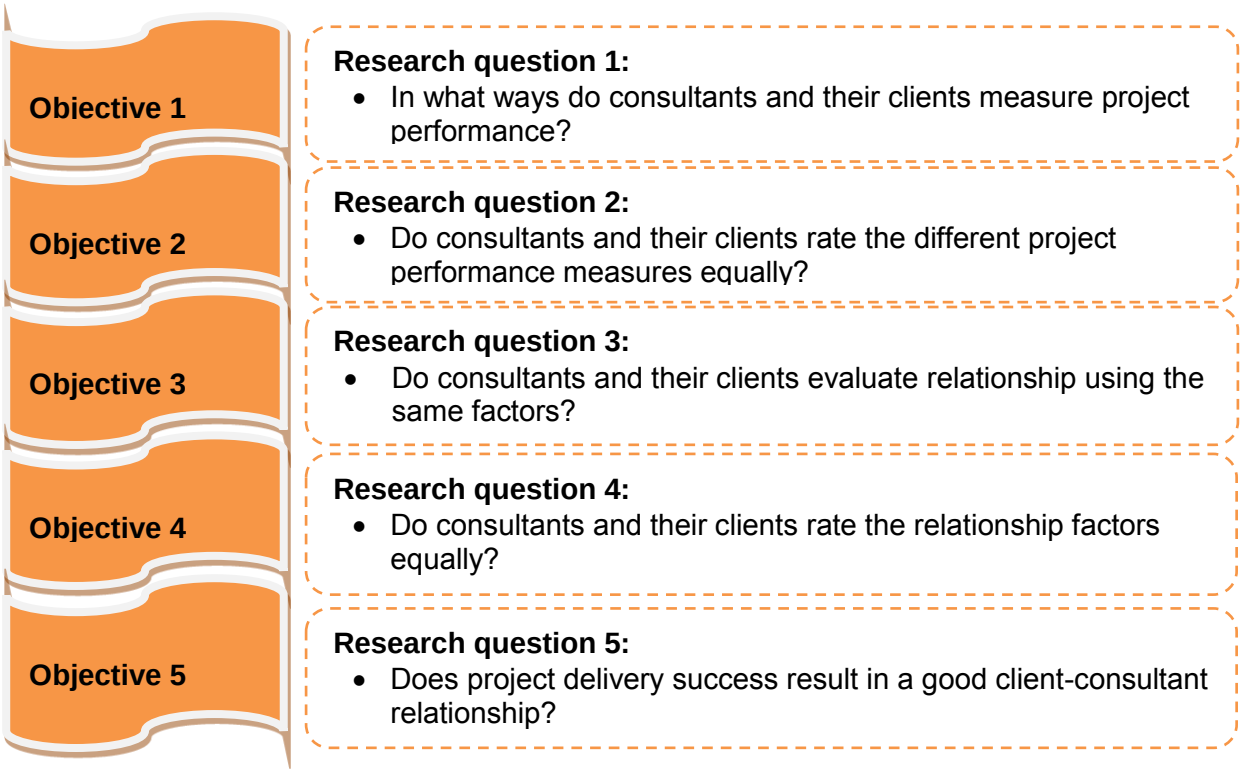

Figure 4: Research questions

3.3 Research Hypotheses

According to Page and Meyer (2005, pp.166), hypothesis testing is required to determine whether the patterns visible in a sample exist in the population at large. Hypothesis testing involves the null hypothesis (H_0) and the alternative or research hypothesis (H_1). Berenson and Levine (1999, pp. 413) noted that the null hypothesis always depicts the status quo. The alternative hypothesis represents a conclusion which can be reached by rejecting the null hypothesis if there is sufficient evidence from the sample data to decide that the null hypothesis is unlikely to be true.

Page and Meyer (2005, pp.167), noted that the purpose of hypothesis testing is to determine which of the two (H_0 or H_1) is best supported by the data. Thus, if the probability of obtaining the data under null hypothesis is small (less than 5% or 0.05) then the null hypothesis is unlikely to be true and hence will be rejected. (Page and Meyer, 2005, pp.166; Berenson and Levine, 1999, pp. 413).

In order to address each of the research questions stated under section 3.2, this study developed and tested a set of five corresponding hypotheses. These hypotheses are listed below.

3.3.1 Hypothesis 1

The Null Hypothesis (H_0) states that consultants and their clients evaluate project performance using the same measurement metrics.

$$H_0 : CONS_{MC} = CLIENT_{MC}$$

Where: H_0 is the Null Hypothesis, $CONS_{MC}$ is consultants' project success measurement criteria and $CLIENT_{MC}$ is clients' project success measurement criteria

The Alternative Hypothesis (H_1) states that consultants and their clients do not evaluate project performance using the same measurement metrics.

$$H_1 : CONS_{MC} \neq CLIENT_{MC}$$

Where: H_1 is the Alternative Hypothesis, $CONS_{MC}$ is consultants' project success measurement criteria and $CLIENT_{MC}$ is clients' project success measurement criteria

3.3.2 Hypothesis 2

The Null Hypothesis (H_0) states that consultants and their clients rate the project performance evaluation metrics equally.

$$H_0 : CONS_{MR} = CLIENT_{MR}$$

Where: H_0 is the Null Hypothesis, $CONS_{MR}$ is consultants' project success measurement criteria rating and $CLIENT_{MR}$ is clients' project success measurement criteria rating

The Alternative Hypothesis (H_1) states that consultants and their clients do not evaluate project performance using the same measurement metrics.

$$H_1: CONS_{MR} \neq CLIENT_{MR}$$

Where: H_1 is the Alternative Hypothesis, $CONS_{MR}$ is consultants' project success measurement criteria rating and $CLIENT_{MR}$ is clients' project success measurement criteria rating

3.3.3 Hypothesis 3

The Null Hypothesis (H_0) states that consultants and their clients use the same metrics evaluate good consultant-client relationships.

$$H_0: CONS_{EC} = CLIENT_{EC}$$

Where: H_0 is the Null Hypothesis, $CONS_{EC}$ is consultants' relationship evaluation criteria and $CLIENT_{EC}$ is clients' relationship evaluation criteria.

The Alternative Hypothesis (H_1) states that consultants and their clients do not use the same metrics to evaluate good consultant-client relationships.

$$H_1: CONS_{EC} \neq CLIENT_{EC}$$

Where: H_1 is the Alternative Hypothesis, $CONS_{EC}$ is consultants' relationship evaluation criteria and $CLIENT_{EC}$ is clients' relationship evaluation criteria.

3.3.4 Hypothesis 4

The Null Hypothesis (H_0) states that consultants and their clients place equal importance (rating) on the buyer-seller relationship evaluation metrics.

$$H_0: CONS_{RER} = CLIENT_{RER}$$

Where: H_0 is the Null Hypothesis, $CONS_{RER}$ is consultants' relationship evaluation criteria rating and $CLIENT_{RER}$ is clients' relationship evaluation criteria rating.

The Alternative Hypothesis (H_1) states that consultants and their clients do not place equal importance (rating) on the buyer-seller relationship evaluation metrics.

$$H_1 : CONS_{RER} \neq CLIENT_{RER}$$

Where: H_1 is the Alternative Hypothesis, $CONS_{RER}$ is consultants' relationship evaluation criteria rating and $CLIENT_{RER}$ is clients' relationship evaluation criteria rating.

3.3.5 Hypothesis 5

The Null Hypothesis (H_0) states that there is a direct relationship between project performance and client-consultant relationship.

$$H_0: PS_G = CCR_G$$

Where: H_0 is the Null Hypothesis, PS_G is good project delivery and CCR_G is a good consultant-client relationship.

The Alternative Hypothesis (H_1) states there is a no direct relationship between project performance and client-consultant relationship.

$$H_1: PS_G \neq CCR_G$$

Where: H_1 is the Alternative Hypothesis, PS_G is good project delivery and CCR_G is a good consultant-client relationship.

4 RESEARCH APPROACH AND METHODOLOGY

4.1 Introduction

This section outlines the process which was used in carrying out the research. The process adopted the *"research onion"* approach *(*Saunders and Lewis, 2012, pp.103), which covers the philosophy, approach, strategy, time horizon and data collection method used. This process is summarised in **Table 1**, where the highlighted approaches were used in this study.

Table 1: Research process

Layer	Approach
Research philosophy	Positivism, realism, interpretivism, **pragmatism**
Research approaches	**Deductive** and **inductive**
Research design	**Quantitative** and qualitative
Research strategies	Experiment, **survey**, case study, action research, grounded theory, ethnography and archival research
Choices	Mono method, **mixed methods**, multi-method
Time horizons	Cross-sectional and longitudinal
Data collection method	**Data collection and data analysis**

(Source: adopted from Saunders and Lewis, 2012)

4.2 Research Philosophy

According to Saunders and Lewis (2012, pp.104), *research philosophy* refers to the *"development of knowledge and the nature of that knowledge in relation to research".* The main paradigms are *positivism, realism, interpretivism* and *pragmatism*. This research adopted the pragmatism paradigm. Saunders and Lewis (2012, pp.107) explained that pragmatism argues that the most important factors in the choice of a research philosophy are the study's research questions or propositions or hypotheses and objectives. This philosophy is suitable because the study is quantitative and descriptive in nature. It hence, focused on testing the identified hypotheses and achieving the list of objectives which were identified in the preceding sections.

4.3 Research Approach

According to Saunders and Lewis (2012, pp.108-109), a research approach can either be *deductive* or *inductive* or a combination of the two. A *deductive approach*

involves the *"testing of theoretical propositions, using a research strategy designed to perform the test".* (Saunders and Lewis, 2012, pp.108). Therefore, under this approach, it is important to describe the relationships between variables, in order to provide reasons and explanations behind certain behaviour. Based on this view, this research described the relationship between project delivery success and buyer-seller relationships, as these were found to be central in the professional service industry.

Induction involves the development of theory from the analysis of data already collected. (Saunders and Lewis, 2012, pp.109). In this study, this was done through a detailed literature review of past research, which focused on the professional service industry. The theoretical constructs which were established were then tested deductively. Therefore, this research used a combination of both deductive and inductive approaches.

4.4 Choice of Research Design

The study is quantitative and descriptive in nature. (Saunders and Lewis, 2012, pp.111-113). Descriptive research answers the questions *"what, where, when* and *how".* In this research the "how" questions were used to describe the relationship between project delivery success and buyer-seller relationships.

The *"how"* questions are:

- How do consultants and their clients measure project performance?
- How do consultants and clients rate project performance metrics?
- How do consultants and their clients measure a good client-consultant relationship?
- How do consultants and clients rate relationship measurement metrics?
- How does good project performance result in a good client-consultant relationship?

4.5 Research Strategy

From Table 1, there are many research strategies which can be used. The choice of a strategy must be related to the research questions which the study seek to answer, propositions and hypotheses to be tested and objectives to be achieved. Based on the objectives and hypotheses for this study, the survey strategy was used.

According to Saunders and Lewis (2012, pp.115), a survey involves *"a structured collection of data from a sizeable population"* using different tools such as questionnaires, observations and interviews. The study used questionnaires to collect primary data from target respondents in the engineering consulting industry.

Apart from the fact that surveys were considered to be the best method to collect data that would address this research's objectives and test the associated hypotheses, the advantages associated with this strategy were also noted. According to Saunders and Lewis (2012, pp.116), one of the main advantages of surveys is that they give the researcher some control over the process, without interfering with the data collection process and introducing researcher bias.

4.6 Research Scope

The research scope for this study was informed by the review of related literature, covered in Chapter 2. Whereas past research focused on describing project success and consultant-client relationships, the scope of this study was to describe the relationship between project success and the client-consultant relationships.

The study also explores what constitutes project success. Focus was however, limited to the engineering consulting industry in South Africa. The choice of the engineering consulting industry as well as South Africa was merely for the convenience of the researcher.

Although existing literature has indicated the importance of contextual issues in project delivery (Shao, Muller and Turner, 2012), no sufficient evidence was provided to suggest that project success measurements and buyer-seller relationships would change as a result of different contexts. Therefore, this researcher considered any

possibility of spatial issues in South Africa significantly influencing the findings of this research to be beyond the scope of this study. He however acknowledges that it is an area for possible future research. This was explained in detail in Chapter 7. **Table 2** provides a summary of what is within and outside the scope of this research.

Table 2: Issues that are within and outside the scope of this study

Determinant	Within the scope of the study	Outside the scope of the study
Identification and categorisation of metrics used to measure project delivery	✓	
Rating of project delivery metrics by clients and consultants	✓	
Identification and categorisation of metrics used to measure client-consultant relationship health	✓	
Rating of relationship health metrics by clients and consultants	✓	
Description of the relationship between project delivery and good client-consultant relationship	✓	
Causal analysis of relationship between project delivery and good client-consultant relationship		✓
Analysis of the impact of spatial issues on project delivery and client consultant relationships		✓

4.7 Unit of Analysis

The unit of analysis for the study consists of individuals selected from consulting engineering firms and public sector clients. The selection of the unit of analysis creates a balanced view about project success and the nature of buyer-seller relationships based on the views of both consultants and clients.

4.8 Study Population

The study population consisted of primary and secondary groups. The primary group consists of engineering consulting companies in South Africa and client organisations mainly from the public sector.

The secondary group consist of project managers, principals, administrators and procurement officers from consulting companies and clients. The split was necessary in ensuring that a broad view of about project delivery and client-consultant relationships are captured from both direct and indirect practitioners.

4.9 Sampling Method

According to Saunders and Lewis (2012, pp.132-133), sampling involves the drawing out of subgroups of units from the complete set (population). This can be done in a probabilistic or non-probabilistic way. Under probability sampling, units are randomly selected from a complete list of the population. Non-probabilistic sampling involves drawing the units from an incomplete list of the population.

This study used a non-probability sampling method, mainly because it was not considered feasible to quantify and to survey the entire population (all engineering consulting firms and clients) due to budgetary and time constraints. The population groups, description, sampling units and sampling methods which were used in carrying out the surveys are summarised in **Table 3** below.

Table 3: Sampling methods for different populations and sampling units

Population	Population description	Sampling unit	Non probability sampling method
Primary population	Engineering consulting companies and public sector clients in South Africa • Engineering consulting companies were mainly involved in transport, water, energy and construction projects. • Public sector clients ranged from national government departments, national agencies, provincial governmental departments, metropolitan, district and local municipalities.	Primary sampling unit	Quota sampling method
Secondary population	Project managers, principals, administrators and procurement officers from engineering consulting firms and public sector clients in South Africa. • Respondents had either direct or indirect involvement in project execution. • Respondents who were directly involved in project execution were the project managers and principals • Respondents who were indirectly involved in project management were project administrators and procurement officers	Secondary sampling unit	Judgement and snowball sampling methods

(Source: adopted from Saunders and Lewis, 2012)

4.9.1 Primary sampling unit

The primary sampling unit was used to select the primary population. Quota sampling was used for this purpose, targeting engineering consulting companies and public sector clients. Saunders and Lewis (2012, pp.137) explained that quota sampling ensures that the selected sample represents certain characteristics in the population, which the research considers important. Therefore, for this study, quota sampling was used to ensure that only targeted respondents, (engineering consulting companies and public sector clients) were included. The study did not target other forms of consulting such as management, information technology, etc.

The researcher acknowledged the fact that while such a sampling approach provides the benefit of convenience and ease of accessing respondents, there are also challenges involved. The main disadvantage is that it limits the extent to which variability and bias can be measured. The researcher addressed this by including different engineering consulting companies and a variety of public sector clients (agencies, national and provincial government, as well as district, local metropolitan municipalities).

4.9.2 Secondary sampling unit

For the secondary sampling unit, judgemental and a snow ball sampling methods were used. According to Carole and Page (2005, pp.99), judgement sampling focuses on *"respondents who, in the judgement of the researcher, will best supply the necessary information"* required to fulfil the research goals.

For this study, it was important to target project managers, principals, administrators and procurement officers from consulting engineering firms and clients. The reason was that these incumbents deal directly with project and client relationship management issues. The inclusion of project administrators and procurement officers was considered important. This was done in order to capture the views of those practitioners who do not necessarily deal with clients or consultants but are responsible for the financial (in terms of project performance) and procurement decisions. It was considered that specialist engineers and non-project management and non-marketing professionals would not be able to provide the needed insights.

Snow ball sampling was used in order to send the questionnaire to as many respondents as possible. According to Sanders and Lewis (2012, pp.139), snow ball sampling is used when it is difficult to identify members of the research population. For this study, the researcher did not know where to locate these professionals and hence relied on referrals from other specialists in the same field.

This researcher depended on respondents that fell within his data base of consultants and clients to reach those outside the data base. All respondents who were in the data base were requested to forward the questionnaire to individuals

within their organisations who fell within the identified categories (project managers, principals, administrators and procurement officers).

This researcher acknowledged the potential for bias associated with snowball sampling. However, he believed that the possibility of any response being influenced was limited given the fact that no one was required to identify themselves. Moreover, despite the fact that respondents were required to forward uncompleted questionnaires to their colleagues who were outside the researcher's data base, their responses were sent directly to the researcher. This eliminated any possible influence among the respondents.

4.10 Sample Size

The researcher acknowledged that it was not possible to have a balanced number of respondents across the two categories. The main reason was that the number of consulting companies surveyed was higher than that of client organisation. By nature public sector organisations are fewer than private consulting companies in any given location in South Africa. Therefore, the sample sizes which were used were not the same across the consultant and client organisations.

According to Carole and Page (2005, pp.108), sample size refers to the number of responding units. The requirement is that proportionally the number of responses per question item must be a minimum of seven. Given the unbalanced distribution of respondents across the three categories, the research targeted a total of 150 respondents, distributed as shown in **Table 4**.

Table 4: Sample sizes for different respondent categories

Respondent category	Sample size
Engineering consultant project principals, managers, administrators and procurement officers	90
Client project principals, managers, administrators and procurement officers	60
Total	**150**

Carole and Page (2005, pp.108), explained that, the actual sample size is determined by dividing the number of targeted responding units by the expected response rate. Out of the 150 questionnaires which were sent out, the researcher

assumed a response rate of 60%. Based on that assumption, a total of about 90 responses were expected, which was considered sufficient to conduct statistical. The *golden sample size* is 30 responses, although this should be the bare minimum upon which parametric statistical tests can be performed. Otherwise one would have to settle for non-parametric tests. (Carole and Page, 2005, pp.108-9).

4.11 Data Collection Instrument

This research used the survey strategy to collect data. According to Saunders and Lewis (2012, pp.141), under the survey strategy, the main instruments which can be used to collect data are questionnaires, interviews and observations. Saunders and Lewis (2012, pp.116) also defined a questionnaire as a written set of standardised questions. The questionnaire was deemed the most appropriate instrument for this study, based on the following reasons:

- Population characteristics: the population was considered to be of an acceptable level of literacy and also to have access to emails and the internet;
- High likelihood of reaching the rightful respondent;
- High likelihood of the respondents' answers not to be contaminated or distorted because they would be sent directly to the respondent; and
- Allows possibility of reaching out to a large sample size. In this study, snowball sampling was used to reach as many respondents as possible.

4.11.1 Questionnaire design

Past research has shown that project success is an elusive concept with no single definition or measurement criteria. (Proverbs and Olomolaiye, 2008; Geoghegan and Dulewicz, 2008; Appelbaum, 2009). Thus, different researchers used different metrics to measure project delivery success both in the short-term and long term.

This study acknowledged this challenge and adopted the model by Samiaah, Hassen, Al-Tmeemy, Abdul-Rahman and Harun (2010), which was developed based on a detailed review of the different project success dimensions raised by other researchers i.e. the hierarchical and time dimensions, project delivery stages, as well as objective and subjective measures. This model was considered

comprehensive enough to develop scales and appropriate constructs and scales for data collection and to address the critical issues involved in project delivery evaluation. The framework which was used to define the scales for data collection is presented in **Figure 2** in Chapter 2.

Scale design

The framework (**Figure 2**) was used in the design of scales. It categorised the project delivery metrics into three broad classes, namely project management success, product success and market success. (Samiaah, Hassen, Al-Tmeemy, Abdul-Rahman and Harun, 2010). Under each broad class, sub-categories were populated based on metrics used in different literature (Proverbs and Olomolaiye, 2008; Geoghegan and Dulewicz, 2008; Appelbaum, 2009; Prabhakar, 2008), and those presented in the model by Samiaah, Hassen, Al-Tmeemy, Abdul-Rahman and Harun (2010). The metrics were modified into constructs that best suited the context of this study.

Past research (Nikolova, Reilhlen and Schlapfner, 2009; Ritcher and Nieweim, 2009; Hu, Kandampully and Jawaheer, 2009; Appelbaum, 2009; Prabhakar, 2008) was used to identify the appropriate factors for measuring relationships. These factors were categorised into three broad categories, namely client satisfaction, client-consultant engagement and procurement decision factors (**Figure 3** in Chapter 2).

Overall, the project delivery success and relationship measurement constructs used in the design of the questionnaire are summarised in **Table 5** below.

Table 5: Measurement scales and factors used in this research

Measures	Factor Category	Constructs/ scales
Project success measures	Project management success	Adherence to agreed budget
		Adherence to schedule or time
		Project execution in accordance with agreed quality targets
		Positive organisational impact
		Positive environmental impact
		Positive social impact
		Good project team conduct
	Product success	Adherence to functional specifications
		Adherence to technical requirements/ scope
		Client satisfaction with the final product
	Market success	Positive impact on market share
		Project execution which positively impacts on revenue and profitability
		Project execution which creates competitive advantage
		Project execution which positively impacts on reputation
Relationship measurement factors	Client satisfaction	Prioritise value over adherence to schedule
		Prioritise value over agreed budget
		Prioritise value over scope or technical specifications
	Client consultant engagement	Operations driven by trust.
		Consultant adheres to terms and procedures
		Operations are conducted in partnerships
		Client information is shared
	Procurement decision	Consultant prioritised in procurement decisions
		Consultant is repeatedly appointed
		Consultant is prioritised in client's share of budget

(Source: constructed by researcher based on factors from: Samiaah, Hassen, Al-Tmeemy, Abdul-Rahman and Harun, 2010; Nikolova, Reilhlen and Schlapfner, 2009; Ritcher and Nieweim, 2009; Hu, Kandampully and Jawaheer, 2009; Appelbaum, 2009; Prabhakar, 2008)

4.11.2 Questionnaire distribution

According to Saunders and Lewis (2012, pp.140), questionnaires can be distributed to respondents in different ways. These distribution alternatives include via the web, emails, post, by hand, telephonically and through face to face interviews. For this study, the questionnaires were distributed and received through email. Initially the plan was to make use of *Survey Monkey* (www.surveymonkey.com).

However, when the questionnaires were pre-tested respondents indicated that they were struggling to tick and save their response. This posed the risk of poor response

rates. Therefore, the researcher used the feedback to change the distribution method and resorted to emails. This worked well and supported the use of snowball sampling method in cases where respondents were not part of the researcher's data base.

Some of the benefits associated with the use of emails include its speed of data collection, round the clock access, (as long as the respondents had access to their emails), low cost and limited chances of interviewer influencing the responses.

According to Carole and Page (2005, pp.99), apart from the sampling method used, the research instrument is important in influencing the research findings' reliability and validity. Reliability is achieved when the *"research employs data collection methods and analysis procedures which produce consistent findings".* (Saunders and Lewis, 2012, pp.128). *Validity, on the other hand* is proven *"when it can be shown that the instrument accurately measures what it is supposed to measure*". (Saunders and Lewis, 2012, pp.142).

Validity was also explained in terms of content and construct validity. In the former, the survey instrument must provide enough data to adequately answer the research questions and meet the identified objectives. The latter refers to the extent to which the questions asked result in the collection of the data about which they were intended to measure. (Saunders and Lewis, 2012, pp.142).

For this research the questionnaire was considered a good instrument in achieving the required reliability levels. The collected data was captured in *MS Excel spreadsheets*, before being analysed using *SPSS* software. The data analysis methods were also considered good enough to achieve acceptable levels of reliability.

4.11.3 Pretesting of the questionnaire

Saunders and Lewis (2012, pp.169-170), recommended that questionnaires be pre-tested before they are sent out. Therefore before committing to a large scale study, the questionnaire must be tested for three main things:

Reliability

The questionnaire must be tested to address the following questions:

- Do the questions sound right?
- Do respondents understand the questions?
- Are all ambiguous, double-barrelled or leading questions eliminated?
- Does the questionnaire retain the respondent's attention throughout?

Validity

The questionnaire should also be pre-tested for validity in terms of answering the following questions?

- Are the response codes provided sufficient?
- Do the response codes provide adequate discrimination?
- Do the questions and responses answer the brief?

Error testing

Pre-testing the questionnaire also helps the researcher to establish whether it adequately addresses potential sources of error by answering the following critical questions:

- Have mistakes been made?
- Does the technology work?
- How long does it take the respondent to complete the questionnaire?

For this study, the questionnaire was pre-tested among project managers, principals and administrators in SSI Engineers and Environmental Consultants. The comments received such as challenges with *Survey Monkey* were used to inform the subsequent questionnaire distribution decision. Minor adjustments were also made to the wording of questions, before the final questionnaire was distributed.

4.12 Data Analysis

The analysis of quantitative data used in this research was informed by the process in Saunders and Lewis (2012, pp.169-170), which emphasises the following critical stages:

- Preparation of the data for analysis;
- Selecting suitable methods for summarising the data and presenting the data; and
- Selecting appropriate statistical tools to describe and examine relationships and trends in the data.

4.12.1 Data preparation

This was necessary in order to prepare the data for quantitative analysis. Each question was coded based on whether it generated numerical or categorical data. The data was captured in *MS Excel spreadsheets*. *SPSS* software was then used to analyse the data. The preparation process helped in identifying any missing data, errors and inconsistencies, which according to Saunders and Lewis (2012, pp.142), might have affected the analysis process.

During the design of the data collection instrument, it was considered appropriate to only focus on respondents who were directly involved in project management, administration and procurement. These respondent categories not only dealt directly with projects but were also involved in client-consultant engagements. All other respondents who were not involved in these responsibilities were excluded from the survey based on a screening criterion in the questionnaire.

The screening criteria used the first two questions in the questionnaire, which required respondents to indicate whether they were or had been involved in project management, administration or procurement. Those who answered *"no"* to both questions were automatically considered ineligible to participate in the survey, and were requested not to answer any of the subsequent questions. Thus, the data cleaning process was used in order to ensure that all responses from non-qualifying respondents were excluded from analysis.

After cleaning, the data was then organised into a matrix consisting of respondent's answers to two the different groups of questions. The groups of questions focused on project delivery measures and relationship measurements, which corresponded with the scales under the selected categories. Respondents were required to choose either *"Yes/No"* for each of the items and then later on rank each of the items in the two groups of questions described above on a 1 to 5 *Likert-type scale*.

The questionnaire also allowed respondents to identify, list and rate any other metrics, which they considered to be important, but could have been excluded in the subscales for both project delivery and relationship measurements. The follow-up questions resulted in additional constructs which did not fall under any of the above project delivery success and relationship measurement factors. A *factor analysis* was used to appropriately group the factors and also test for internal validity. *Cronbrach's alpha* was used to test for internal consistency reliability among for factors in each group.

Factor Analysis

Factor analysis was used to appropriately group the factors and also test for internal validity. The purpose of factor analysis is to identify the underlying key factors in a data set in order to ensure that the theoretical constructs that the research intends to measure are would in fact have been measured. (Hair, Anderson, Tatham and Black, 1998). According to Hair, Anderson, Tatham and Black (1998), *factor analysis* is based on the inter-correlation between variables. Frodel (2008) noted that a *factor analysis* is undertaken to eliminate factors and criteria which would not be contributing significantly to the study's distinguished focus components.

In this study, the sample consisted of two independent categories and hence did not allow for all the items to be entered into a single factor analysis. Thus, it was decided to perform two factor analyses, one for the project delivery success factor items and the other for the relationship measurement factor items, in accordance with Hair, Anderson, Tatham and Black (1998).

Since the questionnaire allowed respondents to list and rate any other project delivery success and relationship measurement factors they considered important, a large set of new factors were recorded. In order to investigate the grouping of items and their correspondence to the original theoretical scales and also eliminate those not significantly contributing to the study focus components (Frodel, 2008), a principal axis factor analysis with a direct oblimin rotation was then performed on the scale items.

Testing for internal consistency (reliability) among factors

Cronbach's alpha was used to test for internal consistency reliability among for factors in each group. According to Rossi (2009), *Cronbach's alpha* quantifies the degree of internal consistency (reliability) of a set of items. It helps in understanding the extent to which factors hold together to measure a common dimension. Page and Meyer (2005, pp. 197) noted that a *Cronbach's alpha* of 0.7 is preferred. However, Rossi (2009) also noted that an alpha coefficient of 0.65 is also acceptable, particularly for exploratory studies.

4.12.2 Statistical description and examination of data

This research used descriptive statistics to understand and compare variables numerically. Descriptive statistics, which the study used, include those to describe central tendency and dispersion of the data. Therefore, means, standard deviations, and cross tabulation tables were used to describe the distribution of the variables under project success factors and buyer-seller relationship measurement factors.

Statistical inference and hypothesis testing

This process used the relevant statistical analyses to examine relationships in the data. A set of five hypotheses was tested in order to examine these relationships. According to Page and Meyer (2005 pp.166), hypothesis testing is required to determine whether the patterns visible in a sample exists in the population.

Thus, the purpose of hypothesis testing was to determine which of the null hypotheses (H_0) and alternative or research hypotheses (H_1) were supported by the

data. The main focus of the hypothesis testing in this research was to examine how project success impacts on buyer-seller relationships. The statistical methods which were used in data analysis and hypothesis testing are:

Cross tabulation and Chi-square test

Cross-tabulation and *Chi-square tests* were used to test Hypothesis 1 and Hypothesis 3.The research focused on establishing and describing the relationship between project delivery and client-consultant relationship. According to Welman, Kruger and Mitchel (2008, pp. 236) in order to present the relationship between two variables, a cross-tabulation is appropriate.

In this study, *cross-tabulation* was used present the responses by clients and consultants in relation to the *"Yes/ No"* response categorical variables. After the *cross-tabulation*, in order to test whether there was in fact a significant relationship between the categorical variables, *Chi-square analysis* was used. According to Welman, Kruger and Mitchel (2008 pp. 236) *Chi-square analysis* is used to study differences when the data can be divided into different categories.

According to Page and Meyer (2005, pp.167), in a *Chi-square analysis*, the *p-value* shows the *"probability of obtaining results which are not supportive of the null hypothesis than those found in the sample when the null hypothesis is true".* Thus, if the *p-value* is less than 0.05, it is most unlikely that the null hypothesis is true.

Independent samples t-test and Levene's test for equality of variances

According to Welman, Kruger and Mitchel (2008, 236) an *independent samples t-test* is used to determine whether two groups have different or equivalent mean scores. The output of the test is descriptive statistics which compare the mean scores of the two different groups. In this study, an *independent samples t-test* was used to investigate the relationship between clients' and consultants' responses to rating questions in the questionnaire regarding the different project delivery success and relationship measurement factors. This was done in order to test Hypothesis 2 and Hypothesis 4. *Levene's test* was used to test whether there was a significant difference in the variances between the two groups.

Pearson's correlation

The *Pearson correlation* was used in this study to investigate the relationship between project delivery success and relationship measurement factors, in order to test Hypothesis 5. According to Welman, Kruger and Mitchel (2008, pp.234-235) and Albright, Winston and Zappe (2000, pp.667) *Pearson's correlation coefficient* reflects the degree of linear relationship between two scale variables.

Sanders and Lewis (2012, pp.182-183) noted that correlations can vary in magnitude from −1 to 1. A *correlation coefficient* of −1 indicates a perfect negative linear relationship, which means that as one variable increases, the other decreases. A *correlation coefficient* of 1 indicates a perfect positive linear relationship, which means that as one variable increases, the other also increases. A *correlation coefficient* of 0 indicates that there is no linear relation between two variables. The study used the interpretation recommended by Sanders and Lewis (2012) which is summarised in **Table 6**.

Table 6: Description and interpretation of Pearson's correlation coefficients

Coefficient description	Interpretation of relationship
1	perfect positive correlation
Between 0.8 and 1	very strong positive correlation
Between 0.6 and 0.8	strong positive correlation
Between 0.35 and 0.6	moderate positive correlation
Between 0.2 and 0.35	weak positive correlation
Between 0 and 0.2	no correlation
Between 0 and -0.2	no correlation
Between -0.2 and -0.35	weak negative correlation
Between -0.35 and -0.6	moderate negative correlation
Between -0.6 and -0.8	strong negative correlation
Between -0.8 and -1	very strong negative correlation
-1	perfect negative correlation

(Source: adopted from Sanders and Lewis: 2012)

The statistical methods which were used for each hypothesis are summarised in **Table 7**.

Table 7: Propositions and proposed statistical analysis methods

Proposition	Statistical Analysis Method
Hypothesis 1	*Cross tabulation* and *Chi-square test*
Hypothesis 2	*Independent samples t-test* and *Levene's test for equality of variances*
Hypothesis 3	*Cross tabulation* and *Chi-square test*
Hypothesis 4	*Independent samples t-test* and *Levene's test for equality of variances*
Hypothesis 5	*Pearson correlation*

4.12.3 Exploring and presenting data

This process was conducted in order to gain more understanding of the data and provide the context for further analysis. Key aspects which the researcher considered include frequency distributions, ranges of variables, distribution of means and standard deviations. Graphs and tables were used to explore and present the data. This process is described in greater detail in Chapter 5.

5 RESULTS

5.1 Introduction

This chapter summarises results as obtained from statistical analyses conducted. The structure of the chapter is provided in **Table 8**.

Table 8: Chapter Summary

Section	Rationale
Sample description (responses)	This is provided in order to give an overview of the response rate as well as the number of respondents who were eliminated from the survey after failing to fulfil the entry requirements
Respondents description	This was done in order to provide a high level overview of the respondents in terms of their organisations, project management capacities, age, gender and race.
Psychometric properties of the scales	This was done to measure internal consistency reliability for each scale categories.
Descriptive statistics per factor category	This provided the mean, median and standard deviation of the composite scales used to measure project delivery and client-consultant relationships.
Descriptive statistics on the percentage of respondents who responded positively and negatively to each item of the various scale dimensions	This was done to show the split of responses for the different scale measurements for project delivery and client-consultant relationships
Hypothesis 1 • Null Hypothesis (H_0): consultants and their clients evaluate project performance using the same measurement metrics. • Alternative Hypothesis: (H_1): consultants and their clients do not evaluate project performance using the same measurement metrics.	• *Cross tabulations* were run between clients and consultants and each item in the project delivery measurement scale to establish the similarities and differences in responses. • *Chi-square tests* were also run to establish the significance of any differences between clients and consultant responses.
Hypothesis 2 • Null Hypothesis (H_0): consultants and their clients rate the project performance evaluation metrics equally • Alternative Hypothesis (H_1): consultants and their clients do not evaluate project performance using the same measurement metrics	• *Independent sample t-test* and *Levene's test for equality of variances* were used to establish the level of significance in the differences in ratings of each item under the three scale categories of project delivery measures between clients and consultants. • A *symmetrical analysis* was also used to test the size of this significance in difference.

Section	Rationale
Hypothesis 3 • Null Hypothesis (H_0): consultants and their clients use the same metrics to evaluate good consultant-client relationships. • Alternative Hypothesis (H_1): consultants and their clients do not use the same metrics to evaluate good consultant-client relationships.	• *Cross tabulations* were run between clients and consultants and each item in the relationship measurement scale in order to establish the similarities and differences in the responses. • *Chi-square test* was also run to establish the significance of any differences between clients and consultant responses.
Hypothesis 4 • Null Hypothesis (H_0): consultants and their clients place equal importance (rating) on the buyer-seller relationship evaluation metrics • Alternative Hypothesis (H_1): consultants and their clients do not place equal importance (rating) on the buyer-seller relationship evaluation metrics.	• *Independent sample t-test* and *Levene's test for equality of variances* were used to establish the level of significance in the differences in ratings of each item under the three scale categories of project delivery measures between clients and consultants. • A *symmetrical analysis* was also used to test the size of this significance in difference.
Hypothesis 5 • Null Hypothesis (H_0): there is a direct relationship between project performance and client-consultant relationship. • Alternative Hypothesis (H_1): there is no direct relationship between project performance and client-consultant relationship.	• *Pearson's correlation* was run across all items under the project delivery and the relationship measurement scales. The process was repeated between project delivery and relationship measurement scale categories. This was done in order to test for internal correlation between items under the different scales as well as between the project delivery and relationship measurement scale categories.

5.2 Sample Description (Responses)

The survey targeted a minimum sample size of 150 respondents. Out of that total, 109 responded to the questionnaire, representing a 76.22% response rate. This response rate was higher than the 60%, which was expected when the questionnaires were distributed. Out of these 109 respondents, three were excluded from the analysis because they failed to fulfil the criteria as set out in the questionnaire, which is they answered "no" to both screening questions 1 and 2. This screening process left 106 usable responses which were then analysed.

5.3 Respondents Description

5.3.1 Sample Description (Demographics)

The questionnaire also included demographic responses on response categories (client or consultant), type of organisation, project management capacity, and total number of months spent in project management capacity, age, gender and race. The data capturing, cleaning and analysis required approximately ten hours.

The respondents' demographic profiles were analysed under the following sub-headings.

5.3.2 Respondent categories

Respondents were broadly categorised as either consultants or clients. Clients constituted 43.44% and consultants the remaining 56.56%. Therefore the response rate from clients was higher than expected at the time of questionnaire distribution. That for consultants was lower than expected. When the questionnaire was distributed a split of 60% for consultants and 40% for clients was expected from the total sample.

5.3.3 Type of organisation

Consulting companies constituted 56.56%, while client organisations constituted the 43.44% of the respondents. The latter consisted of metropolitan municipalities (26.26%), district municipalities (7.6%), local municipalities (4.4%), provincial government (4.4%), national government (2.2%) and national government agencies (2.2%). Thus the majority of client respondents were from metropolitan municipalities, while the least number of responses came from national government departments and agencies.

5.3.4 Project management capacity

Figure 7 shows the distribution of respondents in terms of their project management capacity. The majority of respondents are project managers (46.2%) and project

principals (36.8%). Project administrators and procurement officers were 8.5% and 8.5% of the sample, respectively.

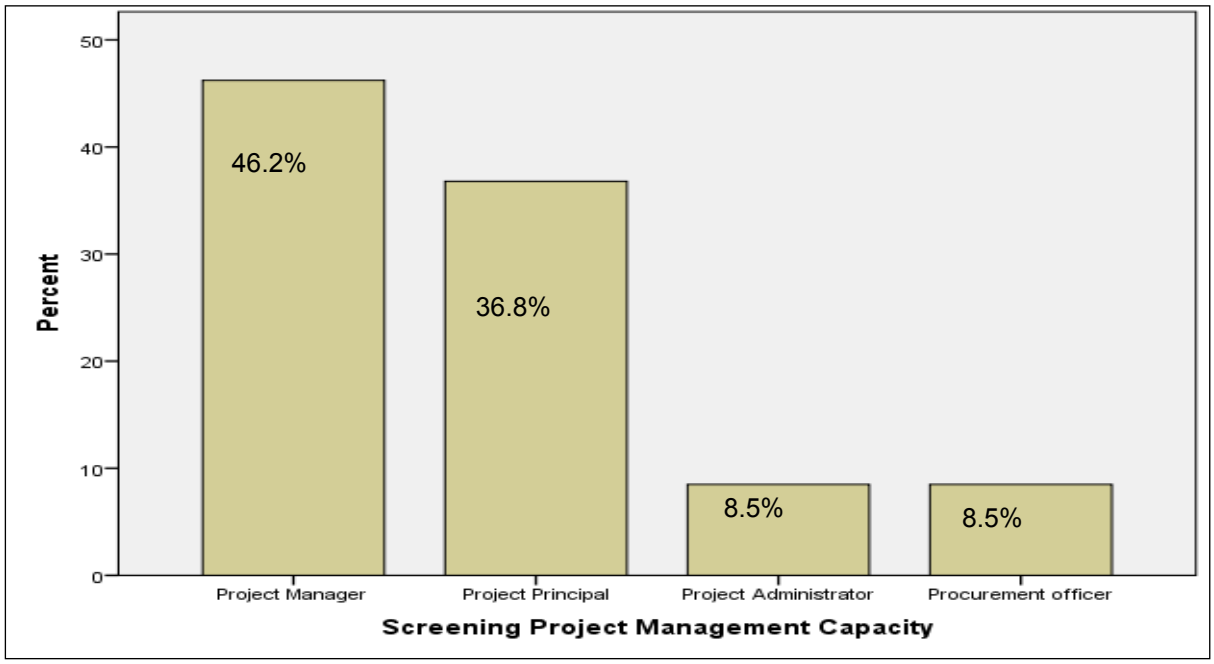

Figure 5: Distribution of respondents by project management roles

5.3.5 Number of months in the project management capacity

The distribution of respondents in regarding their tenure in project management capacity is provided in **Figure 8**.

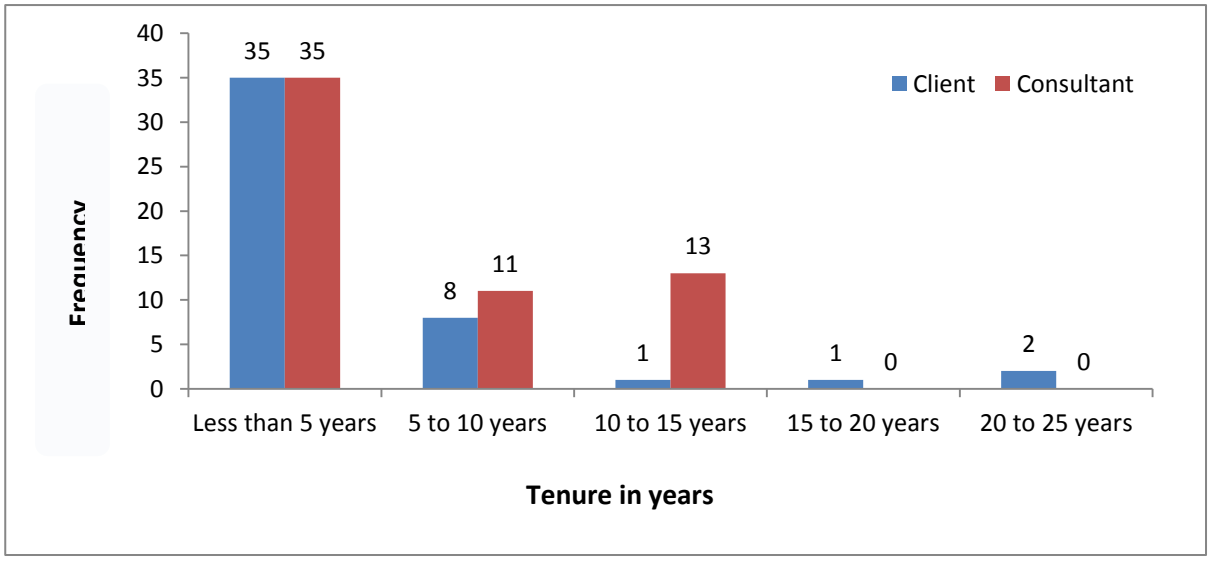

Figure 6: Distribution of respondents by project management tenure

For both clients and consultants, the highest number of respondents was involved in project management roles for less than five years. However, the proportion of consultants who have worked in project management roles for more than 5 years was higher than that of clients, up to 15 years. Beyond that tenure, no consultants reported that they worked in project management capacity.

5.3.6 Age

The distribution of respondents according to age is provided in **Figure 9** below.

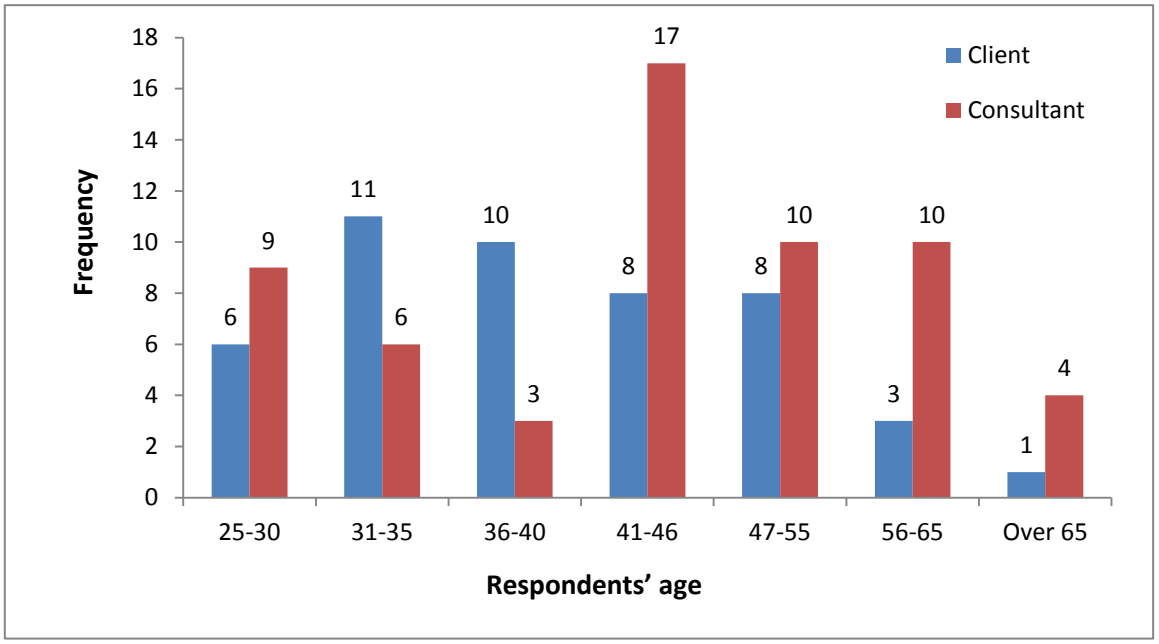

Figure 7: Respondents' age distribution

For consultants, the highest number of respondents was aged between 41 and 46 years. For the clients, the highest number of respondents was aged between 31 and 35 years. Overall, consultants are on average older than clients. From the researcher's experience, young engineers, particularly black professionals spend a short period of their careers in consulting firms before joining government and municipalities as middle and senior managers. This can be a possible reason for this

distribution, although this can be better confirmed through future research as it was beyond the scope of this study.

5.3.7 Gender

The dominant gender group among the respondents were males (76.7%) as compared to females (24.3%). The distribution was consistent across clients and consultants.

5.3.8 Race

Figure 10 shows the distribution of respondents by race for both clients and consultants.

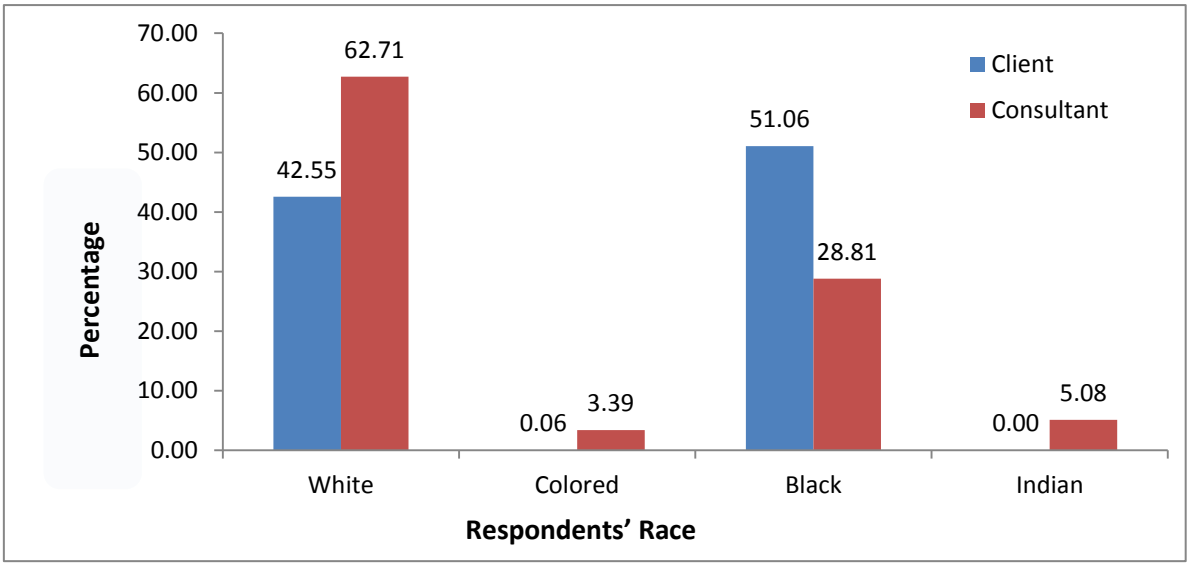

Figure 8: Distribution of client and consultant respondents by race

For clients, the majority of respondents (51.06%) were blacks, followed by whites (42.55%). Indians and coloureds were very few. For consultants, whites (62.71%) dominated the distribution of respondents, followed by blacks (28.81%). Indians and coloureds were again very few.

5.4 Psychometric Properties of the Scales

The data collection process was initially based on factors and scales that were obtained from existing literature. However, the factors that came out after data collection were no longer in line with the frameworks developed from literature.

A *factor analysis* was used to re-classify and test for validity among the factors. The *internal consistency reliability* of the factors was also tested using *Cronbach's alpha*. The *factor analysis* results validity for the project delivery success factors and the associated *Cronbach's alpha* coefficients are provided in **Table 9**.

Table 9: Results of factor analysis for project delivery success factors

Metrics	Factor Category		Cronbach's alpha	Decision
	1	2		
Project execution in accordance with technical requirements.	0.971		0.905	Use in analysis
Project execution which adheres to appointment budget.	0.931			
Project execution which adheres to agreed schedule or time.	0.865			
Project execution in accordance with functional specifications.	0.612			
Project execution which positively creates competitive advantage.		-0.101	0.281	Discard and do not use in analysis
Project execution which positively impacts on market share.		0.637		
Project execution which positively impacts on reputation.		0.311		
Client is satisfied with final product		-0.230		
Project execution in accordance with agreed or promised quality targets.		-0.184		
Project execution which positively impacts on revenue and profitability.		-0.112		

The *factor analysis* results for relationship measurement factors and the associated *Cronbach's alpha* coefficients are provided in **Table 10**.

Table 10: Results of Factor Analysis for relationship measurement factors constructs

Metrics	Factor category			Cronbach's alpha	Decision
	1	2	3		
When consultant provide technically excellent service.	0.738			0.712	Use in analysis
When client prioritises value over adherence to scope or technical specifications	0.682				
When client prioritises value over adherence to budget	0.657				
When client prioritises value over adherence to schedule	0.708				
When operations are driven by trust	0.304				
When the consultant is prioritised in client's procurement decisions		0.718		0.670	Use in analysis
When the consultant is repeatedly appointed by the client;		0.717			
When the consultant is prioritised in the client's share of budget		0.615			
When clients and consultants work in partnership		0.350			
When consultant adheres to terms and procedures		-0.332			
When client proprietary information is shared		0.259			
Consultant provides innovative solutions			0.406	0.302	Discard and do not use in analysis
Consultant is appointed through Unsolicited bids			-0.382		
Consultant's solutions give clients value for money			-0.206		
Lessons and feedback are shared			-0.211		
Consultant is flexible to accommodate changes			-0.187		

5.4.1 Selected scales for data analysis

Project delivery success factors

Based on the *factor analysis* and associated *internal consistency reliability test* results, the four factors under category 1 were retained while those under category 2 were discarded. The retained category of factors was renamed *"Project Management Success Factors"* because most of the factors involved are short term and fall under the responsibility of the project team. The factors are provided in **Table 11**.

Table 11: Project management success factors used for the analysis of research results

Measurement	Categories	Factors	Cronbach's alpha
Project delivery success factors	Project management success factors	Project execution in accordance with technical requirements. or scope	0.905
		Project execution which adheres to appointment budget.	
		Project execution which adheres to agreed schedule or time.	
		Project execution which adheres to functional specifications	

From **Table 11**, the project management success factor has a very good level of internal consistency reliability (*Cronbach's alpha*) and the factors were therefore considered suitable to conduct detailed analysis. The results suggested a new framework with a different set of factors from that drawn from the literature review in Chapter 2. The new framework is provided in **Figure 9**.

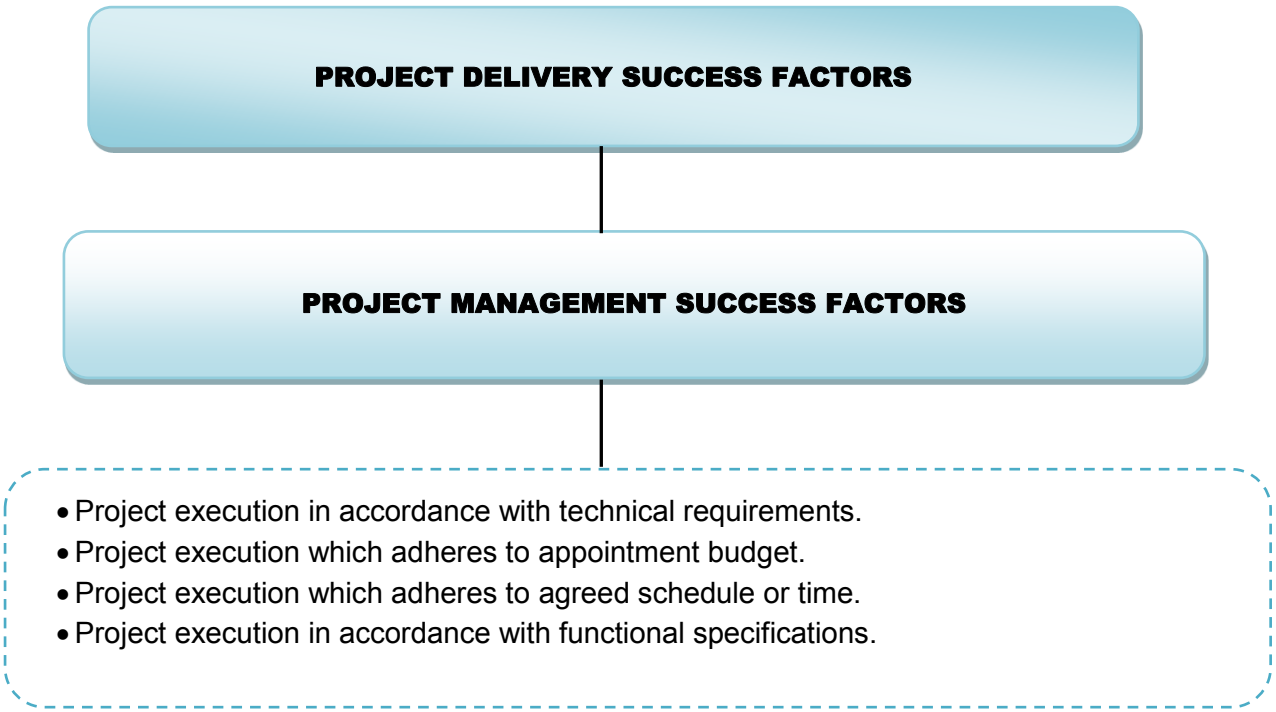

Figure 9: Framework of project delivery success factors suggested by research findings.

Relationship measurement factors

Based on the factor analysis and associated internal consistency (*Cronbach's alpha*) test results, the factors under categories 1 and 2 were retained while those under category 3 were discarded. The retained factor categories were renamed *"Client satisfaction factors*" and *"Client-consultant engagement factors",* respectively. The retained factors are provided in **Table 12**.

Table 12: Cronbach's alpha coefficients for relationship measurement factors

Measurement	Categories	Factors	Cronbach's alpha
Relationship measurement factors	Client satisfaction factors	When consultant provide technically excellent service.	0.712
		When client prioritises value over adherence to technical specifications.	
		When client prioritises value over adherence to budget.	
		When client prioritises value over adherence to schedule	
		When client prioritises value over adherence to scope	
		When operations driven by trust.	
	Client-consultant engagement factors	Consultant prioritised in procurement decisions	0.670
		Consultant is repeatedly appointed	
		Consultant is prioritised in client share of budget	
		Operations are conducted in partnerships	
		Consultant adheres to terms and procedures	
		Client information is shared	

Cronbach's alpha coefficients of 0.712 and 0.670 were recorded for client satisfaction factors and client-consultant engagement factors respectively. The *Cronbach's alpha* coefficients were acceptable and hence the factors were suitable for use in the detailed analysis.

The results from the study suggested a new framework with a different set of relationship measurement factors from the one which was developed using factors from previous studies that were reviewed and discussed in Chapter 2. The new framework is provided in **Figure 10**.

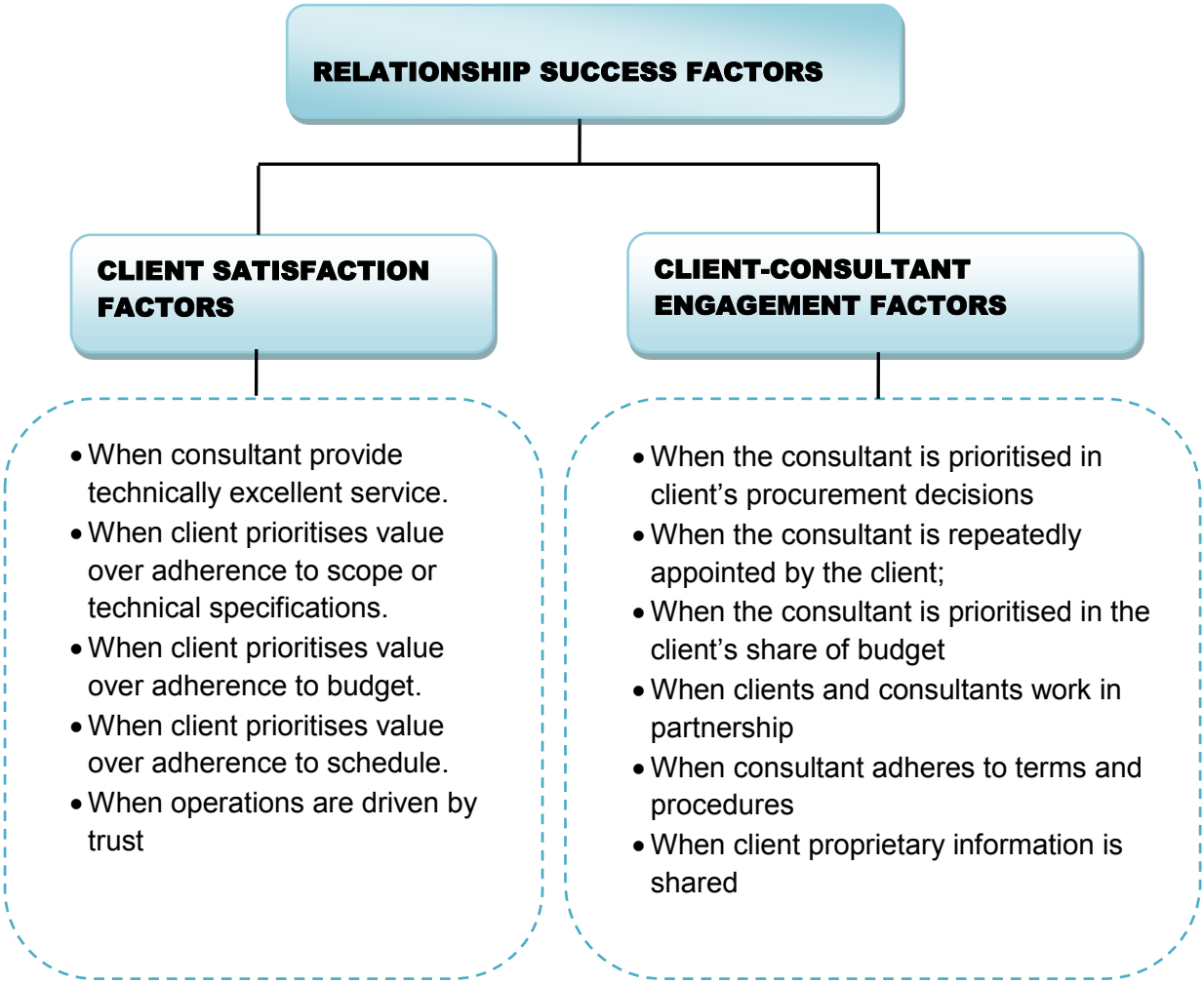

Figure 10: Framework of relationship measurement factors suggested by research findings

5.5 Descriptive Statistics (Individual Factors)

The statistical descriptive summary for the project delivery success scales used in the study is provided in **Table 13**. All the mean scores for the project delivery success measures are below two. In data collection, the *Likert-type scale* used placed the most importance on 1 and least importance on 5. Therefore, the mean scores indicate that both clients and consultants rated all the items under the project delivery success as important to very important i.e. ratings ranging from 1.59 to 1.95.

Table 13: Descriptive statistical summaries of project delivery success scales

Category	Factors	N	Min.	Max.	Mean	St. Dev.
Project management success factors	Project execution in accordance with technical requirements.	106	1	5	1.59	1.102
	Project execution which adheres to appointment budget.	106	1	5	1.66	1.129
	Project execution in accordance with functional specifications.	106	1	5	1.86	1.183
	Project execution which adheres to agreed schedule or time.	106	1	5	1.95	1.230

A descriptive summary of the relationship measurement factors used in the study is provided in **Table 14**. From **Table 14**, all the mean scores are between two and three except *"client's priority of value over adherence to schedule"*, indicating that respondents considered these factors as important.

The mean scores show that both clients and consultants rate relationship measurement factors between just important (a rating of 3) and highly important (a rating of 2). *"Project execution in accordance with technical requirements"* is rated highest (1.59) while *"adherence to project schedule/ time"* is rated lowest, among all the factors.

Table 14: Descriptive statistical summaries for relationship measurement factors

Category	Metrics	N	Min	Max	Mean	St. Dev.
Client satisfaction factors	When client prioritises value over adherence to schedule	106	1	5	1.43	0.498
	When consultant provide technically excellent service.	106	1	5	2.11	1.055
	When operations are driven by trust	106	1	5	2.29	1.129
	When client prioritises value over adherence to scope or technical specifications	106	1	5	2.97	1.291
	When client prioritises value over adherence to budget	106	1	5	3.27	1.276
Client-consultant engagement factors	When clients and consultants work in partnership	106	1	5	2.05	1.275
	When consultant adheres to terms and procedures	106	1	5	2.13	1.070
	When client proprietary information is shared	106	1	5	2.43	1.265

Category	Metrics	N	Min	Max	Mean	St. Dev.
	When the consultant is repeatedly appointed by the client	106	1	5	2.61	1.284
	When the consultant is prioritised in client's procurement decisions	106	1	5	2.80	1.290
	When the consultant is prioritised in the client's share of budget	106	1	5	3.07	1.207

5.6 Descriptive Summaries for Aggregate Factor Categories

The descriptive statistical summaries for the aggregate project delivery success and relationship measurement factors are provided in **Table 15**.

Table 15: Descriptive statistical summaries for aggregate project delivery success and relationship measurement factor categories

Measurement categories	Factor categories	N	Minimum	Maximum	Mean	Std. Deviation
Project delivery success factors	Project management success factors	106	1.00	4.75	1.77	1.03
Relationship measurement factors	Client-consultant engagement factors	106	1.33	4.33	2.79	0.77
	Client satisfaction factors	106	1.00	4.40	2.60	0.76

From **Table 15**, project delivery success factors are rated between highly important and very important (ratings 2 and 1 respectively in the questionnaire) by both clients and consultants. Relationship measurement factors are rated between just important and highly important (ratings 3 and 2 respectively in the questionnaire) by both clients and consultants. However, client satisfaction factors are rated more important (2.60) than client-consultant engagement factors (2.79).

5.7 Descriptive Statistics (Cross tabulation)

In order to compare the responses by clients and consultants the scales were cross tabulated for project delivery and relationship measurement factors. The results for project delivery are provided in **Tables 16**.

From **Table 16**, most of the mean scores range between 1 and 3, indicating that both sample categories rated the factors between just important (rating of 3) and very

important (rating of 1). For consultants, *"project execution with technical requirements or scope"* was given the highest importance rating (1.44) while *"project execution which adheres to agreed schedule or time"* received the lowest (1.71). The same pattern was observed for clients, with ratings of 1.81 and 2.26 respectively.

Table 16: Descriptive statistics of cross tabulated project delivery measures

Category	Scales	Sample Category	N	Mean	St. Dev.
Project management success factors	Project execution in accordance with technical requirements or scope	Clients	47	1.81	1.227
		Consultants	59	1.44	0.970
	Project execution which adheres to appointment budget.	Clients	47	1.89	1.220
		Consultants	59	1.47	1.023
	Project execution which adheres to functional specifications	Clients	47	2.06	1.223
		Consultants	59	1.69	1.133
	Project execution which adheres to agreed schedule or time.	Clients	47	2.26	1.375
		Consultants	59	1.71	1.051

Overall, consultants rated the factors more highly than clients across all the categories, as shown by their lower means across all the factors. There is also, on average, less variability among consultants as compared to clients, as depicted by lower standard deviation values for the former than the latter. The highest variation between clients' and consultants' responses was in respect of *"project execution which adheres to agreed schedule or time"* as depicted by a difference in standard deviations of 0.324. The lowest variation was recorded for *"project execution which adheres to functional specifications"* (0.090).

The same ratings were used for relationship measurement factors. The results are summarised in **Table 17**. From **Table 17**, most of the mean scores ranged between 1 and 4, indicating that there is a wide spread of views among the clients and consultants regarding how they rate the importance of the relationship measurement factors.

Table 17: Descriptive statistics of cross tabulated relationship measurement factors

Category	Scales	Sample Category	N	Mean	St. Dev.
Client satisfaction factors	When client prioritises value over adherence to schedule	Clients	47	1.22	0.18
		Consultants	59	1.13	0.15
	When consultant provide technically excellent service.	Clients	47	1.96	0.99
		Consultants	59	2.27	1.11
	When client prioritises value over adherence to technical specifications.	Clients	47	2.26	1.37
		Consultants	59	1.71	1.05
	When operations driven by trust.	Clients	47	2.49	1.14
		Consultants	59	2.14	1.11
	When client prioritises value over adherence to scope	Clients	47	3.23	1.20
		Consultants	59	2.76	1.33
	When client prioritises value over adherence to budget.	Clients	47	3.34	1.23
		Consultants	59	3.22	1.31
Client-consultant engagement factors	Consultant adheres to terms and procedures	Clients	47	2.32	1.11
		Consultants	59	2.10	0.98
	Operations are conducted in partnerships	Clients	47	2.55	1.23
		Consultants	59	2.03	0.96
	Client information is shared	Clients	47	3.04	1.35
		Consultants	59	1.95	0.96
	Consultant is repeatedly appointed	Clients	47	3.19	1.26
		Consultants	59	2.15	1.11
	Consultant prioritised in procurement decisions	Clients	47	3.28	1.23
		Consultants	59	2.42	1.22
	Consultant is prioritised in client share of budget	Clients	47	3.66	1.11
		Consultants	59	2.47	1.31

Thus, both sample categories rated them from not important (4) to very important (1). *"Client prioritisation of value over adherence to schedule"* was rated to be of highest importance by both the clients and consultants (1.22 and 1.13, respectively). The lowest rated factor by consultants was *"client prioritisation of value over adherence to budget"* (3.22). For clients, *"prioritisation of consultants in client share of budget"* was rated lowest" (3.66).

The highest variation of responses between clients and consultants was in respect of *"sharing of client information"* as depicted by a difference in standard deviations of 0.39. The lowest variation was with respect to *"consultant being prioritised in client*

procurement decisions" (0.01). Overall, there is not clear pattern in terms of comparison of level of variability of ratings between clients and consultants.

5.8 Testing the Hypotheses

Hypotheses 1 and 3 were tested using a comparison of responses of clients and consultants to the *"Yes/No"* category of questions. Hypotheses 2 and 4 were tested using a comparison of the clients' and consultants' responses to the ratings questions. Hypothesis 5 was tested using a *correlation analysis* of the ratings responses for project delivery and relationship measurement factors.

5.8.1 Hypothesis 1

- The Null Hypothesis (H_0) stated that consultants and their clients evaluate project performance using the same measurement metrics.

- The Alternative Hypothesis: (H_1) stated that consultants and their clients do not evaluate project performance using the same measurement metrics.

Cross tabulation was used to compare the responses of clients and consultants for each of the scale items. In order to establish the significance of any differences between the client and consultant responses, *Chi-square tests* were used. The size of the significance of differences was also tested using symmetric measures. The general guideline for interpreting *symmetric measures* is 0 - 0.3 (small), 0.3 - 0.5 (moderate) and 0.5 - 1 (large). (Cohen, 1988). The following findings came out of the analysis.

Project adheres to agreed technical/ scope requirements

Most respondents in both sample categories responded yes (85.1% of clients and 93.2% of consultants), while 14.9% of clients and 6.8% consultants responded no. The percentages of the two groups saying yes and no respectively were fairly similar.

The results from *Chi-square test* suggest that there is not a significant difference between clients and consultants with regard to their response to this measure (*p-value of 0.174 is > 0.05*). The effect size of the difference, from *symmetric measures*, is also very small (-0.132). Therefore, both clients and consultants consider this factor as a suitable measure of project delivery success.

The client and consultant responses are provided in **Figure 11.**

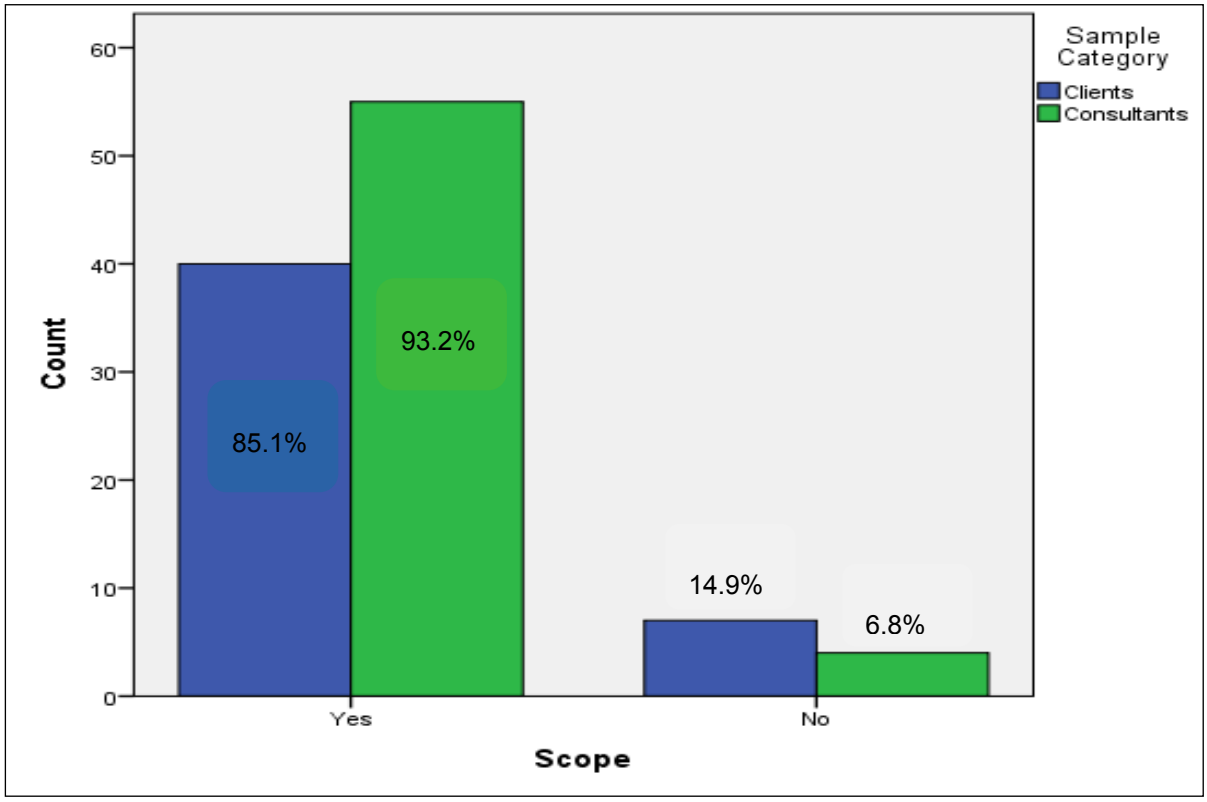

Figure 11: Responses to project adherence to technical/ scope requirements

Project execution adheres to budget

For this measure, most respondents in both sample categories responded yes (100% of clients and 93.2% of consultants), while only 6.8% of clients responded no. The percentages of the two groups saying yes and no respectively were fairly similar.

The results from *Chi-square test* suggest that there is not a significant difference between clients and consultants with regard to their response to this measure (*p-*

value of 0.69 >0.05). Thus, the results suggest that there is no sufficient evidence to reject the null hypothesis at the 95% confidence level. The effect size of the difference, from *symmetric measures* is correspondingly small (0.177). Therefore, both clients and consultants consider this factor as a suitable measure of project delivery success. The responses are provided in **Figure 12**.

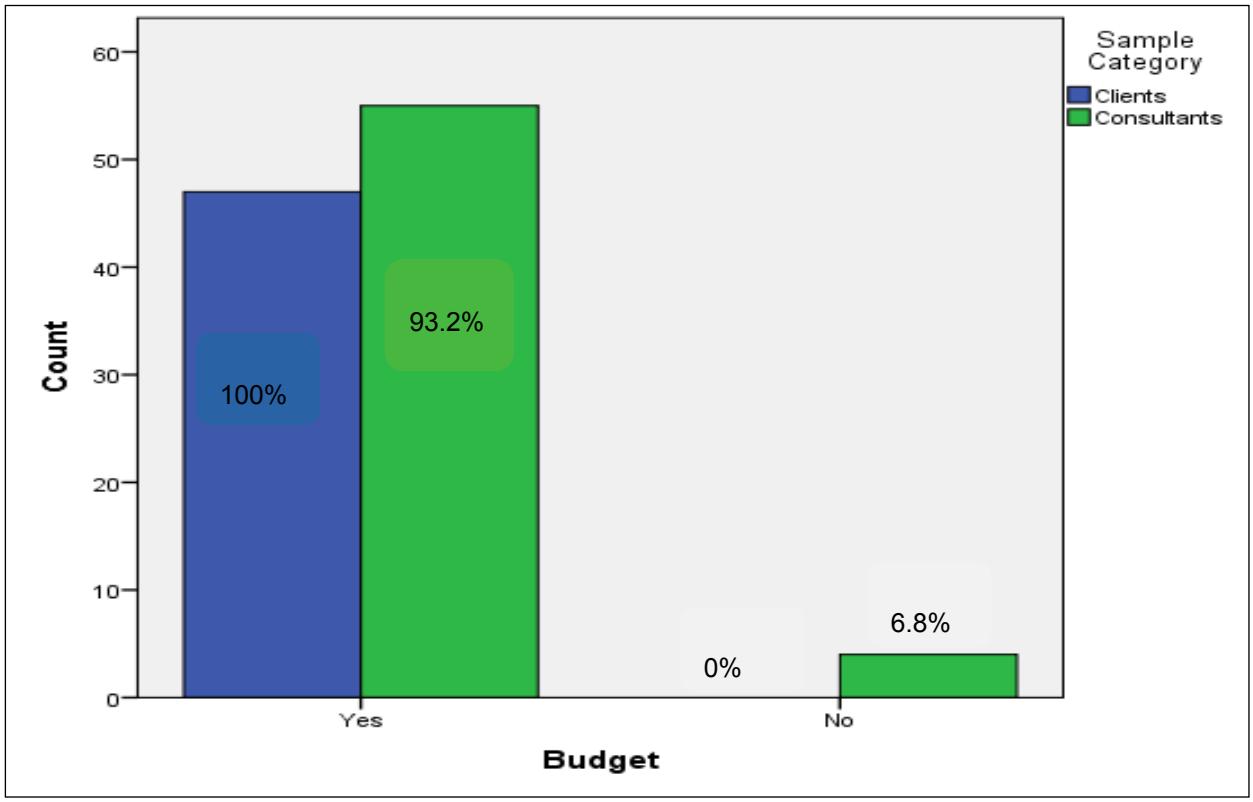

Figure 12 : Responses to project execution adherence to budget

Project execution adheres to project schedule/ time

For this measure, most respondents in both sample categories responded yes (83% of clients and 91.5% of consultants), while 17% of clients and 8.5% of consultants responded no. The percentages of the two groups saying yes and no respectively were fairly similar.

Chi-square test results suggest that there is not a significant difference between clients and consultants with regard to their response to this measure (*p-value of 0.183 >0.05).* Thus, the results suggest that there is no sufficient evidence to reject the null hypothesis at the 95% confidence level. The effect size of the difference,

from *symmetric measures*, is correspondingly small (-0.129). Therefore, both clients and consultants consider this factor as a suitable measure of project delivery success.

The client and consultant responses are provided in **Figure 13**.

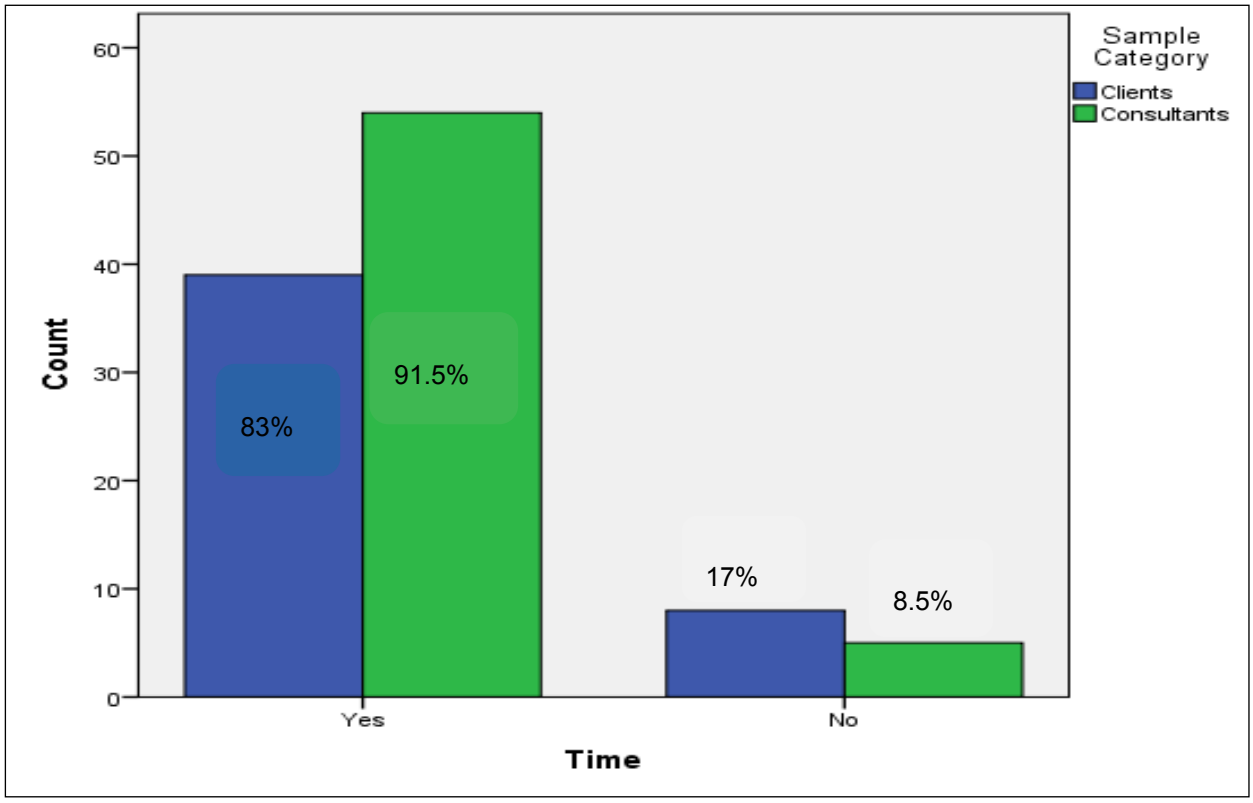

Figure 13: Responses to project execution adherence to schedule/ time

Project output adheres to functional specifications

For this measure, most respondents in both sample categories responded yes (100% of clients and 88.1% of consultants), while 11.9% of consultants responded no. The percentages of the two groups saying yes and no respectively were fairly different.

The results from *Chi-square test* suggest that there is not a significant difference between clients and consultants with regard to their response to this measure (*p-value of 0.055 > 0.05*). Thus, the results suggest that there is sufficient evidence to reject the null hypothesis at the 95% confidence level. The effect size of the

difference, based on the output of *symmetric measures*, is small (0.237). Therefore, both clients and consultants consider this factor as a suitable measure of project delivery success. The client and consultant responses are provided in **Figure 14**.

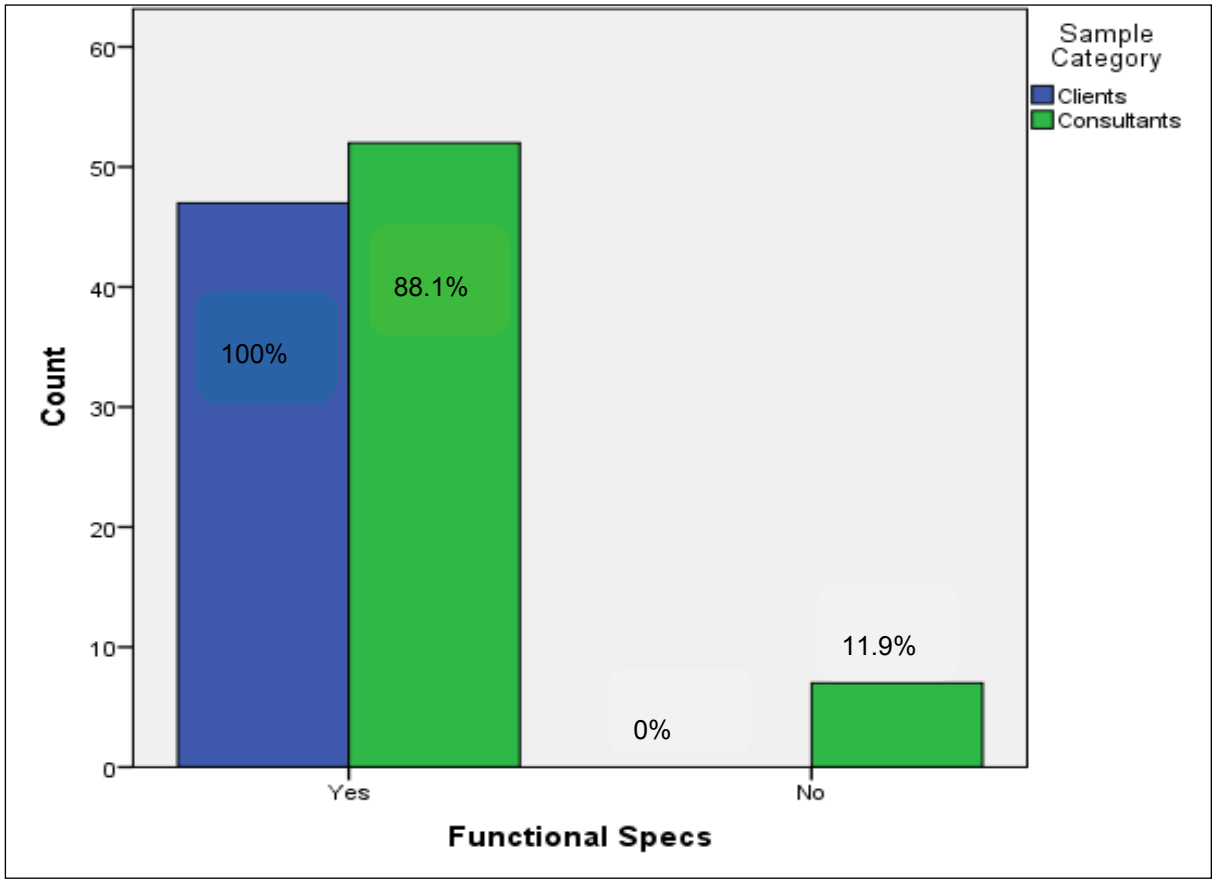

Figure 14: Responses to project execution according to functional specifications

Summary

A summary of the findings for each of the project delivery success measures is provided in **Table 18**. For all of the project management success factors, the results suggested that there was no sufficient evidence from the clients' and consultants' responses to reject the null hypothesis. Therefore, the results failed to reject the null hypothesis.

Table 18: Summary of significance of sample category response difference for project delivery measures

Category	Scales	Mean diff.	p-value	Sig. level	Symmetric measures	Effect size	Decision
Project Management Success	Project execution in accordance with technical requirements or scope	0.368	0.174	Not significant	0.237	Small	Failed to reject H_0
	Project execution which adheres to appointment budget.	0.419	0.069	Not significant	0.177	Small	Failed to reject H_0
	Project execution which adheres to agreed schedule or time.	0.543	0.183	Not significant	-0.132	Small	Failed to reject H_0
	Project execution in accordance with functional specifications	0.369	0.055	Significant	-0.129	Small	Failed to reject H_0

5.8.2 Hypothesis 2

The null and alternative hypotheses are stated as:

- The Null Hypothesis (H_0) stated that consultants and their clients rate the project performance evaluation metrics equally.

- The Alternative Hypothesis: (H_1) stated that consultants and their clients do not evaluate project performance using the same measurement metrics.

The analysis of hypothesis two was bases on the ratings by clients and consultants for the project delivery success and relationship measurement factors. *Independent samples t-test for equality of means* was used to test the differences between clients' and consultants' ratings of the different scales and also the significance of the differences.

Levene's test for equality of variances was used to select the suitable *independent samples t-test to use*. Where the significance value was smaller than 0.05, *"equal variance not assumed"* was used. Where the significance value was greater than

0.05, *"equal variance assumed"* was used. A summary of the findings from *independent samples t-test* for equality of means and *Levene's test for equality of variances* is provided in **Table 19.**

Table 19: Summary of results of hypothesis 2 tests

Factor categories	Factors	Levene's test for equality of variance			Independent samples t-test	Decision
		Type of test	Sig.	Test used	Sig. (2-tailed)	
Project management success factors	Adherence to technical specification/ scope	Equal variances assumed	0.040	✓	**0.088**	Failed to reject H_0
		Equal variances not assumed			0.097	
	Adherence to budget	Equal variances assumed	0.097		0.057	
		Equal variances not assumed		✓	**0.063**	Failed to reject H_0
	Adherence to schedule or time	Equal variances assumed	0.003	✓	**0.053**	Failed to reject H_0
		Equal variances not assumed			0.028	
	Adherence to functional specifications	Equal variances assumed	0.108		0.111	
		Equal variances not assumed		✓	**0.114**	Failed to reject H_0

A comparison of the mean differences for clients and consultants regarding project delivery factors is provided in **Table 20**.

Table 20: Mean differences for project success factors

Category	Scales	Sample category	N	Mean	Mean difference
Project Management Success	Project execution in accordance with technical requirements or scope	Clients	47	1.81	0.37
		Consultants	59	1.44	
	Project execution which adheres to appointment budget.	Clients	47	1.89	0.42
		Consultants	59	1.47	
	Project execution which adheres to functional specifications	Clients	47	2.06	0.37
		Consultants	59	1.69	
	Project execution which adheres to agreed schedule or time.	Clients	47	2.26	0.55
		Consultants	59	1.71	

Based on the above hypotheses tests and mean differences in **Tables 19 and 20**, the findings which came out of the analysis are as follows:

Project output adheres to technical specification/ scope requirements

The ratings by clients and consultants regarding *"project execution adherence to budget*" are marginally similar. The *independent samples t-test* suggests that there is not a significant difference between clients and consultants with regard to their response to this measure (*significance coefficient value of 0.088 > 0.05*).

The mean difference of 0.37 (**Table 20**) is moderate. Thus, the results suggest that there is no sufficient evidence to reject the null hypothesis at the 95% confidence level. This indicates that clients and consultants rate this measure with a fairly similar level of importance.

Project execution adheres to budget

The ratings by clients and consultants regarding project execution adherence to budget are marginally different. The *independent samples t-test* suggests that there is not a significant difference between clients and consultants with regard to their response to this measure (*significance coefficient value of 0.63 >0.05*). The mean difference of 0.42 (**Table 20**) is moderate.

Thus, the results suggest that there is no sufficient evidence to reject the null hypothesis at the 95% confidence level. This suggests that clients and consultants rate this measure with a fairly similar level of importance.

Project execution adheres to project schedule/ time

The ratings by clients and consultants regarding "project execution adherence to budget" are relatively the same. The independent samples t-test suggests that there is not a significant difference between clients and consultants with regard to their response to this measure (*significance coefficient value of 0.053 > 0.05*). Thus, the results suggest that there is no sufficient evidence to reject the null hypothesis at the 95% confidence level. The mean difference of 0.54 (**Table 20**) is moderate. This suggests that clients and consultants rate this measure with a fairly similar level of importance.

Project output adheres to functional specifications

The ratings by clients and consultants regarding project execution adherence to budget are marginally similar. The independent samples t-test suggests that there is not a significant difference between clients and consultants with regard to their response to this measure (*significance coefficient value of 0.11 >0.05*).

The mean difference of 0.37 (**Table 20**) is relatively small. Thus, the results suggest that there is no sufficient evidence to reject the null hypothesis at the 95% confidence level. This suggests that clients and consultants rate this measure with a fairly similar level of importance.

Aggregate project delivery success measurement factors category

The mean differences for the aggregate project delivery success measurement factors category are provided in **Table 21**.

Table 21: Project delivery success factors mean comparisons for clients and consultants

Measures	Factor category	Sample categories	N	Mean	Standard deviation
Project delivery success measurement factors	Project management success factors	Clients	47	2.0000	1.14327
		Consultants	59	1.5805	0.88625

From **Table 21**, consultants have slightly lower mean scores and lower variability than clients for the project delivery success factor categories. Consultants rate project delivery success measurement factors between highly important and very important (rating of 1.58) while client consultants also rate this factor category as highly important (rating of 2.0).

The significance of the differences in aggregate mean scores was tested using *independent samples t-test* for equality of means. *Levene's test for equality of variances* was used to select the suitable *independent samples t-test* to use based on whether there was a significant difference in the variances between the two groups. The results of the test are provided in **Table 22** below.

Table 22: Results tests for differences in mean scores for project management success factors

Factor Categories	Levene's test for equality of variances		Test used	Independent t-test for equality of means		Decision
	Type of test	Sig.		Sig. (2-tailed)	Mean Difference	
Project management success factors	Equal variances assumed	0.033	✓	0.052	0.419	Failed to reject H_0
	Equal variances not assumed			0.054	0.419	

From **Table 22**, the results of the *independent samples t-test for equality of means* suggest that there is not a significant difference between clients' and consultants' ratings (*significance level of 0.056 > 0.05*). The mean difference of 0.419 is moderate. The results suggest that there is not sufficient evidence to reject the null hypothesis (H_0) at the 95% confidence level. Therefore, it can be concluded that both clients and consultants measure project delivery success in a fairly similar way.

Summary

A summary of the study findings for differences between clients and consultant ratings for the project delivery measures which were discussed above, and the decisions on the null hypothesis test are provided in **Table 23**.

Table 23: Summary of project delivery measures

Category	Measure	Mean Difference	Sig. (2-tailed)	Hypothesis decision
Project management success	Adherence to budget	0.419	0.63	Failed to reject H_0
	Adherence to schedule/ time	0.543	0.053	Failed to reject H_0
	Adherence to functional specifications	0.369	0.114	Failed to reject H_0
	Adherence to technical specifications/ scope	0.368	0.0888	Failed to reject H_0

A summary of the study findings for differences between clients and consultant ratings for the aggregate project delivery measurement factor category is provided in **Table 24**.

Table 24: Summary of tests for project delivery success measurement factors

Measure	Factor Category	Mean Difference	Significance (2-tailed)	Hypothesis decision
Project delivery success factors	Project management success factors	0.41949	0.052	Failed to reject the null hypothesis H_0

The results suggest that there is not sufficient evidence to reject the null hypothesis (H_0) at the 95% confidence level based on a significance level of 0.052 > 0.05 and a moderate mean score difference of 0.419. Therefore, even when tests are conducted using aggregate measurement categories, it can be concluded that both clients and consultants measure project delivery success in a fairly similar way.

5.8.3 Hypothesis 3

The study used *cross tabulation* and *Chi-square test* to compare the difference between clients and consultant responses as to whether they consider the items under relationship measure scales as good measures. The null and alternative hypotheses are:

- The Null Hypothesis (H_0): consultants and their clients use the same metrics to evaluate good consultant-client relationships
- The Alternative Hypothesis (H_1): consultants and their clients do not use the same metrics to evaluate good consultant-client relationships.

The analysis was conducted for the different factors under the following relationship measurement factor categories:

- ✓ Client satisfaction factors; and
- ✓ Client-consultant engagement factors.

The findings are as follows:

Client satisfaction factors

Consultant provides a technically excellent service

The split for yes and no responses was different for the two sample categories. A higher proportion of client and a lower proportion of consultant responded yes (80.9% of clients and 44.1% of consultants), while 19.1% of clients and 55.9% consultants responded no. The percentages of the two groups saying yes and no are very different.

Chi-square test results suggest that there is a significant difference between clients and consultants with regard to their response to this measure (*p-value of 0.004 < 0.05*). Thus, the results suggest that there is sufficient evidence to reject the null hypothesis (H_0) at the 95% confidence level. The effect size of the difference, from *symmetric measures*, is moderate (0.374). Therefore, clients and consultants do not use this factor to measure the strength of their relationships in a similar way. The client and consultant responses are provided in **Figure 15.**

Figure 15: Response to consultant providing a technically excellent service

Client prioritises value over adherence to technical specifications/ scope

The split for yes and no responses was different for the two sample categories. A higher proportion of consultants and a lower proportion of clients responded yes (67.8% of consultants and 40.4% of clients), while 59.6% of clients and 32.2% consultants responded no. The percentages of the two groups saying yes and no are very different.

Chi-square test results suggest that there is a significant difference between clients and consultants with regard to their response to this measure (*p-value of 0.05 = 0.05*). Thus, the results suggest that there is sufficient evidence to reject the null hypothesis (H_0) at the 95% confidence level. The effect size of the difference, from

symmetric measures, is small (-0.274). Therefore, clients and consultants do not use this factor to measure the strength of their relationships in a similar way. The client and consultant responses are provided in **Figure 16**.

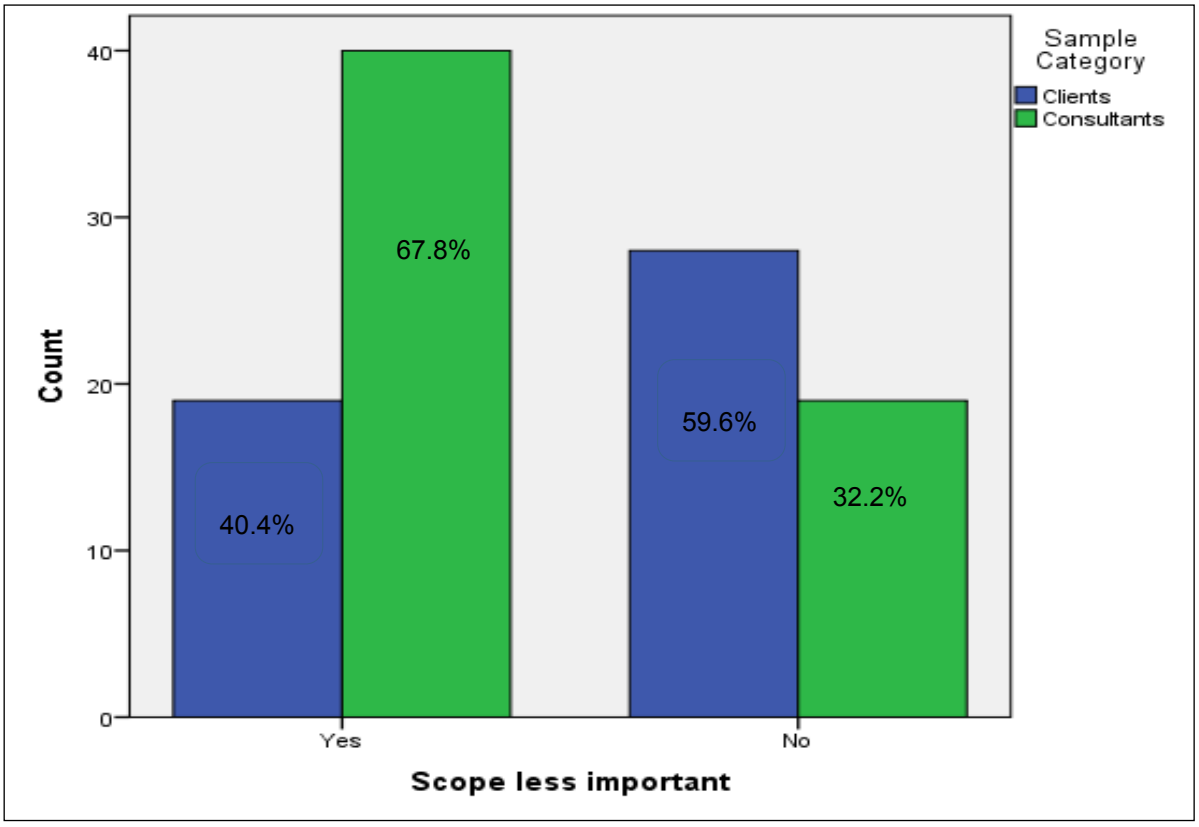

Figure 16: Response to client prioritising value over project scope

Client prioritises value over adherence to project budget

The split for yes and no responses was different for the two sample categories. A higher proportion of consultants and a lower proportion of clients responded yes (59.3% of consultants and 17% of clients), while 40.7% of clients and 83% consultants responded no. The percentages of the two groups saying yes and no are very different.

Chi-square test results suggest that there is a significant difference between clients and consultants with regard to their response to this measure (*p-value of 0.000 < 0.05*). Thus, the results suggest that there is sufficient evidence to reject the null hypothesis (H_0) at the 95% confidence level. The effect size of the difference, from

symmetric measures, is moderate (-0.428). Therefore, clients and consultants do not use this factor to measure the strength of their relationships in a similar way. The client and consultant responses are provided in **Figure 17**.

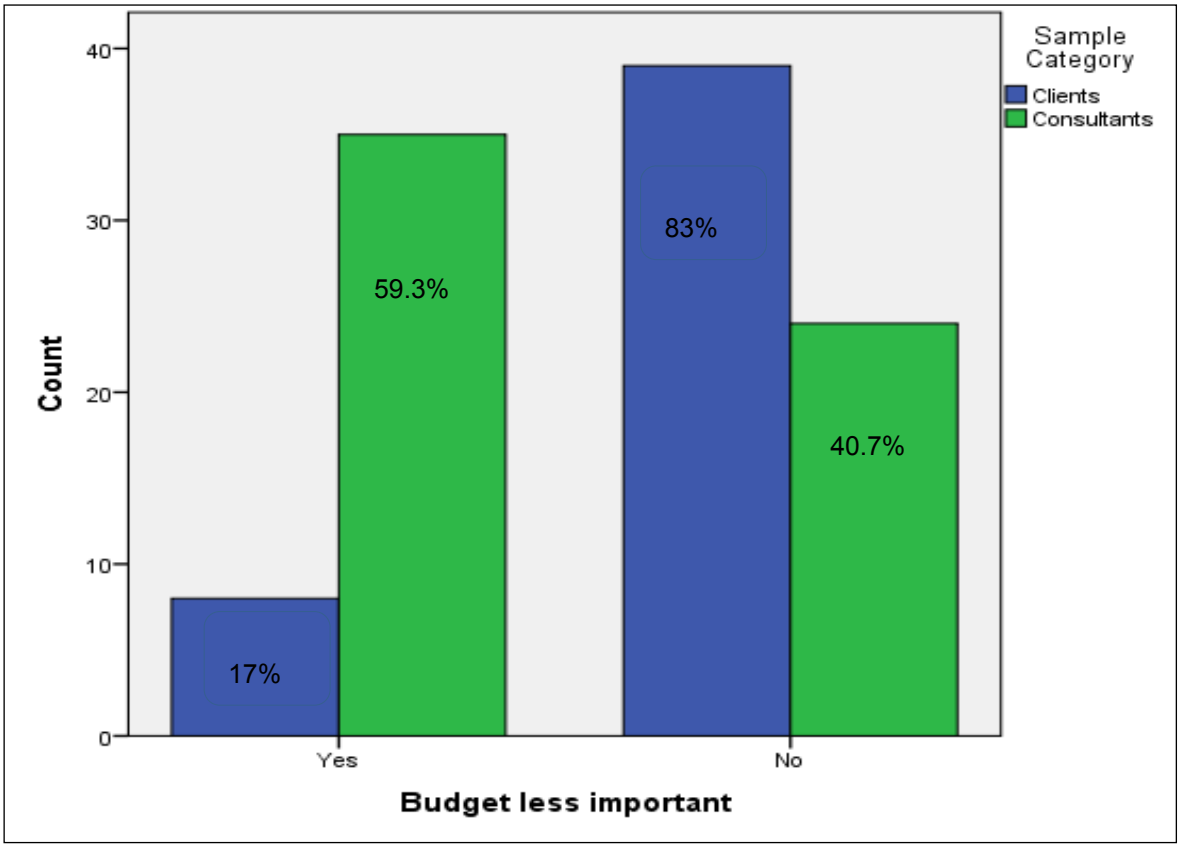

Figure 17: Response to client prioritising value over project budget

Client prioritises value over adherence to schedule/ time

The split for yes and no responses was fairly similar for the two sample categories. Nonetheless, a higher proportion of respondents in both sample categories responded yes (55.3% of clients and 57.6% of consultants), while 44.7% of clients and 42.4% consultants responded no. The percentages of the two groups saying yes and no respectively were fairly similar.

Chi-square test results suggest that there is a significant difference between clients and consultants with regard to their response to this measure (*p-value of 0.050 = 0.05*). Thus, the results suggest that there is sufficient evidence to reject the null

hypothesis (H_0) at the 95% confidence level. The effect size of the difference, from *symmetric measures*, is however very small (0.093). Therefore, clients and consultants do not use this factor to measure the strength of their relationships in a similar way. The client and consultant responses are provided in **Figure 18**.

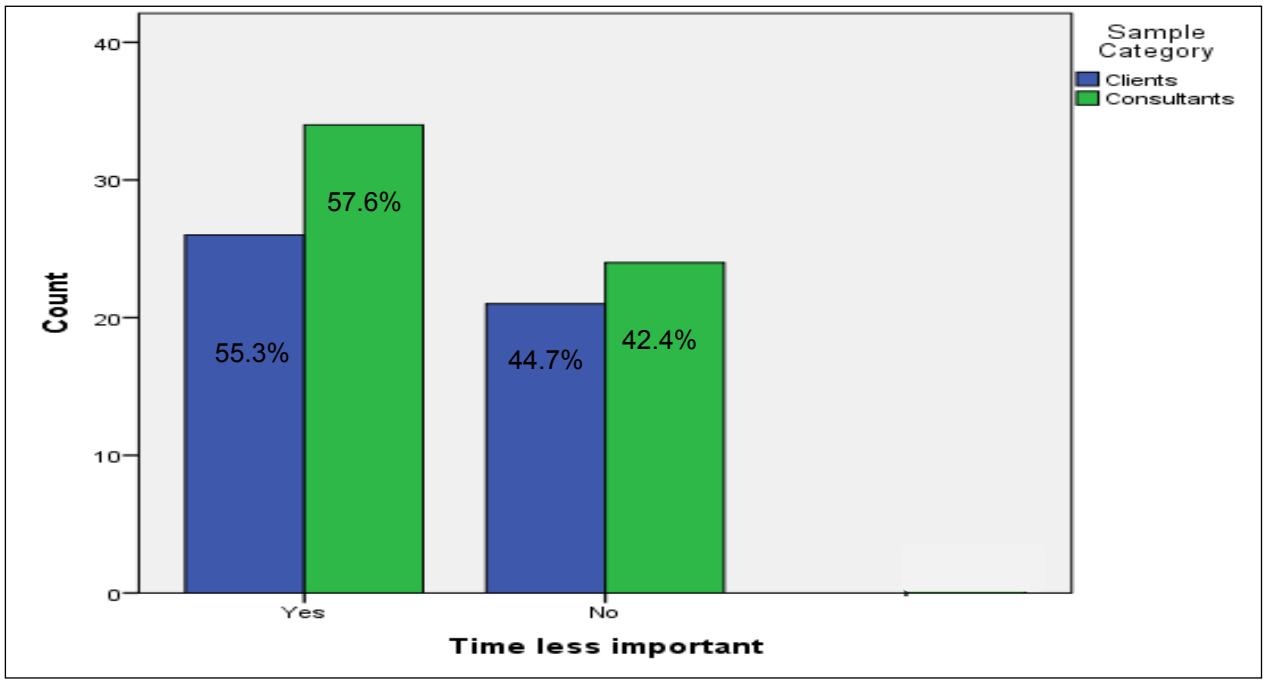

Figure 18: Response to client prioritising value over schedule/ time

Operations are driven by trust

A large proportion of respondents in both sample categories responded yes (67.4% of clients and 89.9% of consultants), while 32.6% of clients and 10.1% consultants responded no. The percentages of the two groups saying yes and no are different.

Chi-square test results suggest that there is a significant difference between clients and consultants with regard to their response to this measure (*p-value of 0.04 < 0.05*). Thus, the results suggest that there is sufficient evidence to reject the null hypothesis (H_0) at the 95% confidence level. The effect size of the difference, from *symmetric measures* is however small (-0.278). Therefore, clients and consultants do not use this factor to measure the strength of their relationships in a similar way. The client and consultant responses are provided in **Figure 19**.

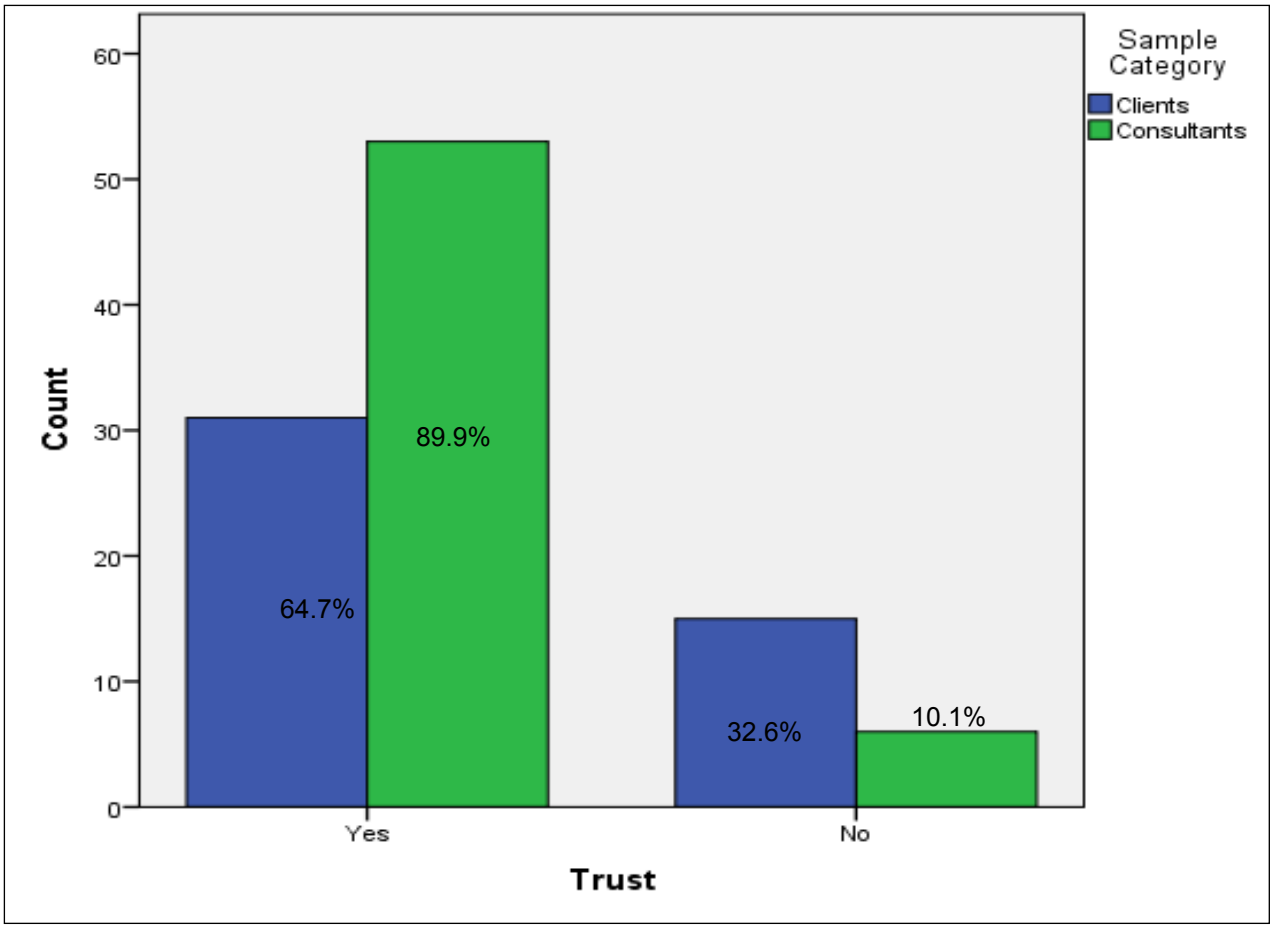

Figure 19: Responses for operations driven by trust

Client-consultant engagement factors

Consultant is prioritised in client's procurement decisions

The split for yes and no responses was different for the two sample categories. There was a lower proportion of clients and a higher proportion of consultants who responded yes (43.5% of clients and 62.7% of consultants), while 56.5% of clients and 37.3% consultants responded no. The percentages of the two groups saying yes and no are different.

Chi-square test results, however, suggest that there is a significant difference between clients and consultants with regard to their response to this measure (*p-value of 0.05 = 0.05).* Thus, the results suggest that there is sufficient evidence to reject the null hypothesis (H_0) at the 95% confidence level. The effect size of the

difference, from *symmetric measures*, is however insignificant (-0.192). Therefore, clients and consultants do not use this factor to measure the strength of their relationships in a similar way. The client and consultant responses are provided in **Figure 20.**

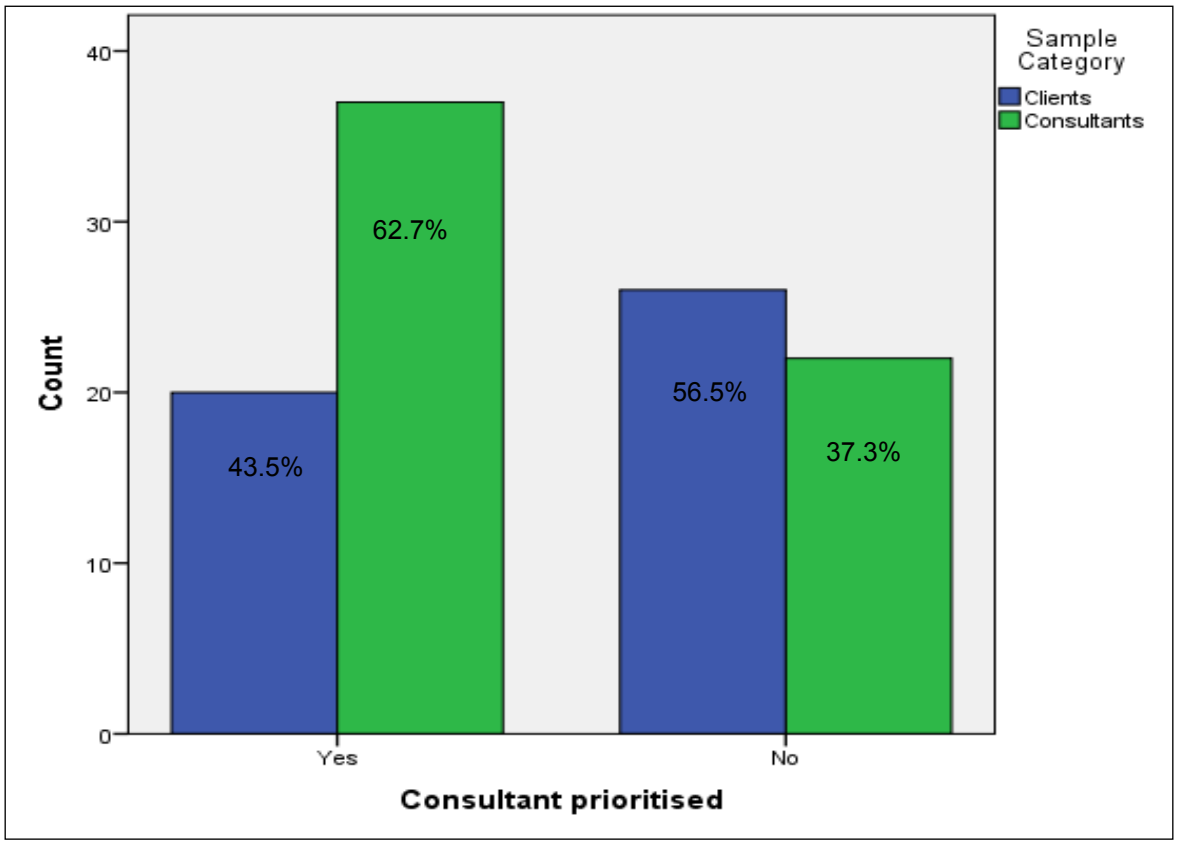

Figure 20: Response to clients prioritising consultants in procurement decisions

Consultant gets repeat appointments from the client

The split for yes and no responses was different for the two sample categories. There was a lower proportion of clients and a higher proportion of consultants who responded yes (57.4% of clients and 84.7% of consultants), while 42.6% of clients and 15.3% consultants responded no. The percentages of the two groups saying yes and no are different.

Chi- square test results, suggest that there is a significant difference between clients and consultants with regard to their response to this measure (*p-value of 0.000* <

0.05). Thus, the results suggest that there is sufficient evidence to reject the null hypothesis (H_0) at the 95% confidence level. The effect size of the difference, from *symmetric measures*, is moderate (-0.428). Therefore, clients and consultants do not use this factor to measure the strength of their relationships in a similar way. The client and consultant responses are provided in **Figure 21**.

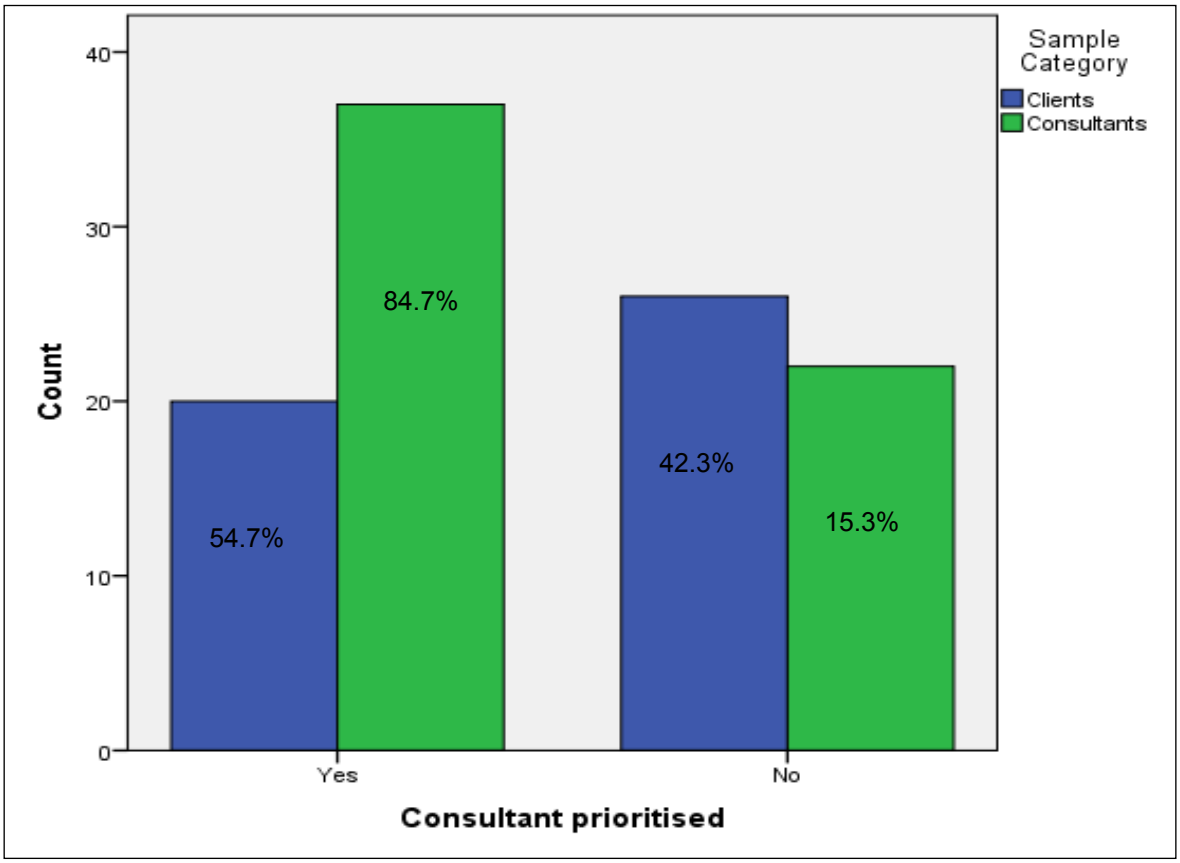

Figure 21: Responses to consultants being prioritised in procurement decisions

Consultant is prioritised in the client's share of budget

The split for yes and no responses was different for the two sample categories. There was a lower proportion of clients and a higher proportion of consultants who responded yes (17% of clients and 59.3% of consultants), while 83% of clients and 40.7% consultants responded no. The percentages of the two groups saying yes and no are different.

Chi-square test results, suggest that there is a significant difference between clients and consultants with regard to their response to this measure (*p-value of 0.000 < 0.05*). Thus, the results suggest that there is sufficient evidence to reject the null hypothesis (H_0) at the 95% confidence level. The effect size of the difference, from *symmetric measures*, is moderate (-0.304). Therefore, clients and consultants do not use this factor to measure the strength of their relationships in a similar way. The client and consultant responses are provided in **Figure 22**.

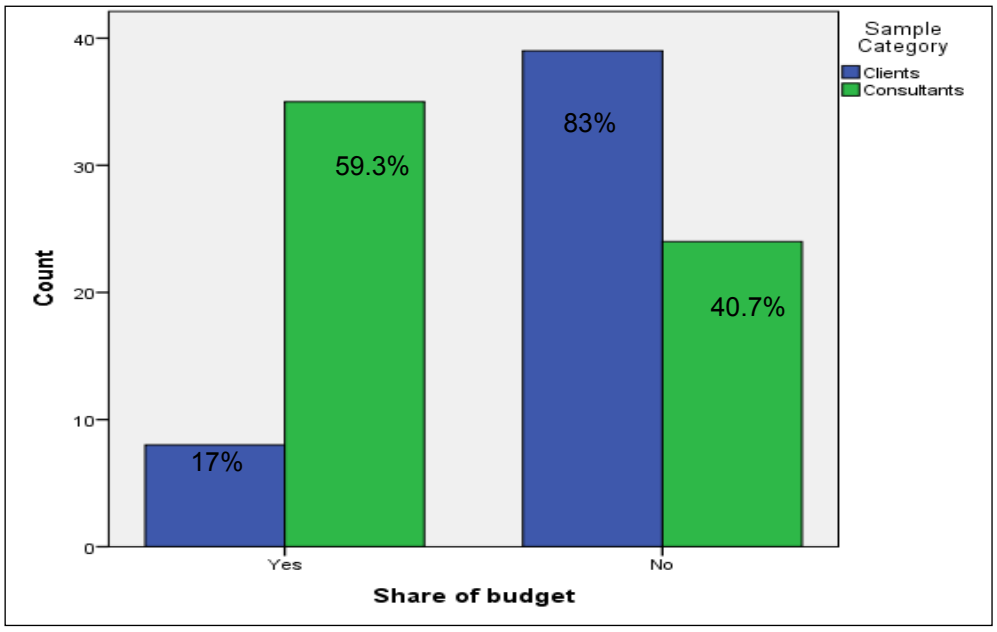

Figure 22: Response to consultant being prioritised in client's share of budget

Operations conducted in partnerships

A large proportion of respondents in both sample categories responded yes (74.5% of clients and 83.1% of consultants), while 25.5% of clients and 16.9 % consultants responded no. The percentages of the two groups saying yes and no are relatively similar.

Chi-square test results suggest that there is a significant difference between clients and consultants with regard to their response to this measure (p-value of 0.029 < 0.05). Thus, the results suggest that there is sufficient evidence to reject the null hypothesis (H_0) at the 95% confidence level.The effect size of the difference, from symmetric measures is however, small (-0.105). Therefore, clients and consultants do not use this factor to measure the strength of their relationships in a similar way. The client and consultant responses are provided in **Figure 23**.

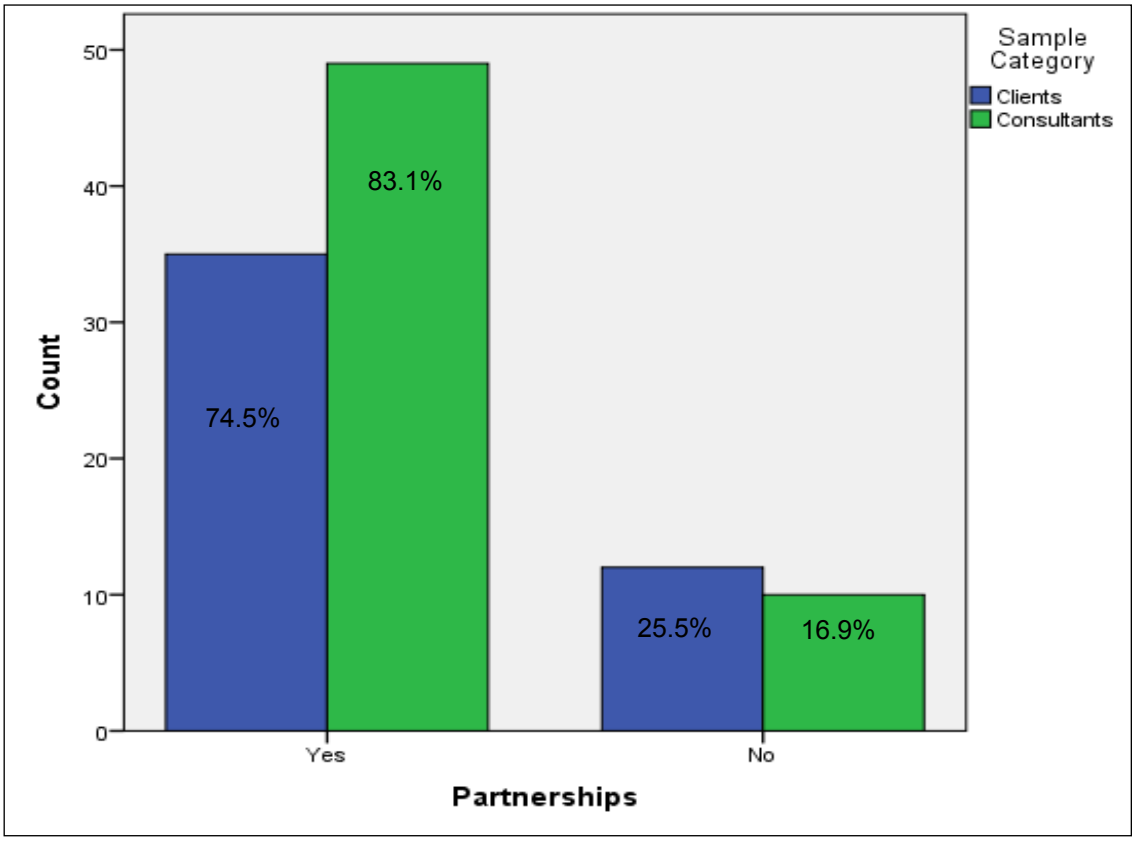

Figure 23: Response to operations being conducted in partnership between consultants and clients

Consultant adheres to agreed project terms and procedures

The split for yes and no responses was different for the two sample categories. There was a higher proportion of consultants and a lower proportion of clients who responded yes (66.1% of consultants and 40.4% of clients), while 59.6% of clients and 33.9% consultants responded no. The percentages of the two groups saying yes and no are also different.

However, *Chi-square test* results suggest that there is a significant difference between clients and consultants with regard to their response to this measure (p-value of 0.038 < 0.05). Thus, the results suggest that there is sufficient evidence to reject the null hypothesis (H_0) at the 95% confidence level. The effect size of the difference, from *symmetric measures*, is however, small (-0.256). Therefore, clients and consultants do not use this factor to measure the strength of their relationships in a similar way. The client and consultant responses are provided in **Figure 24**.

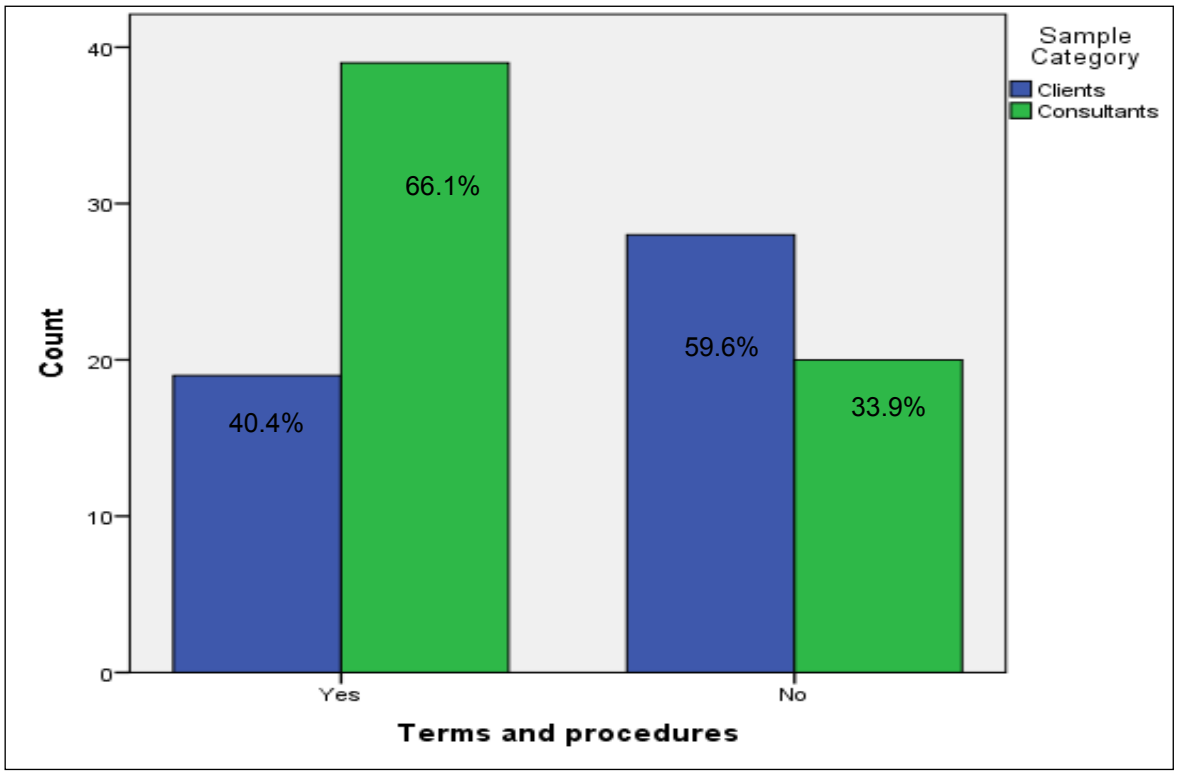

Figure 24: Response to consultant adhering to agreed terms and procedures

Client proprietary information is shared

The split for yes and no responses was different for the two sample categories. There was a lower proportion of clients and a higher proportion of consultants who responded yes (44.7% of clients and 71.2% of consultants), while 55.3% of clients and 28.8% consultants responded no. The percentages of the two groups saying yes and no are different.

Chi-square test results suggest that there is a significant difference between clients and consultants with regard to their response to this measure (p-*value of 0.047 < 0.05*). Thus, the results suggest that there is sufficient evidence to reject the null hypothesis (H_0) at the 95% confidence level. The effect size of the difference, from symmetric measures is however, small (0.268). Therefore, clients and consultants do not use this factor to measure the strength of their relationships in a similar way. The client and consultant responses are provided in **Figure 25**.

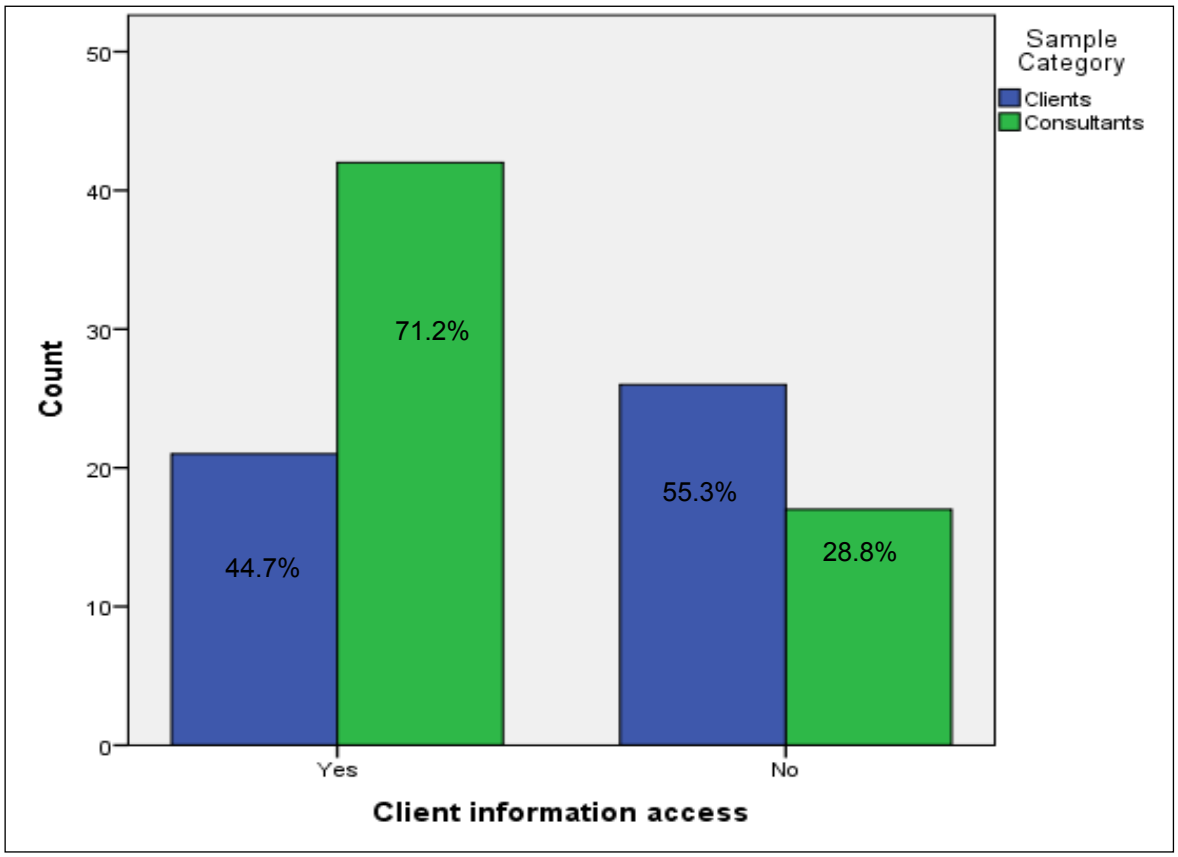

Figure 25: Response to sharing of client's proprietary information

Summary

A summary of the findings for each of the project delivery success measures is provided in **Table 25**. The results suggest that there is sufficient evidence to reject the null hypothesis for most of the relationship measurement factors (*p-values* < *0.05*). Therefore, it can be concluded that clients and consultants do not use the measures under this category to measure the strength of their relationships in a similar way.

Table 25: Summary of findings for relationship measurement factors

Category	Scales	p-value	Sig. level	Symmetric Measures	Effect size	Null Hypothesis Decision
Client satisfaction factors	Consultant provides a technically excellent service	0.004	Significant	0.374	Medium	Reject H_0
	When client prioritises value over adherence to budget.	0.000	Significant	-0.428	Medium	Reject H_0
	When operations driven by trust.	0.040	Significant	-0.278	Small	Reject H_0
	When client prioritises value over adherence to technical specifications/ scope	0.050	Significant	-0.274	Small	Reject H_0
	When client prioritises value over adherence to schedule.	0.050	Not significant	0.093	Small	Reject H_0
Client-consultant engagement factors	Consultant is repeatedly appointed	0.000	Significant difference	-0.428	Medium	Reject H_0
	Consultant is prioritised in client share of budget	0.000	Significant difference	-0.304	Medium	Reject H_0
	Consultant prioritised in procurement decisions	0.050	Significant difference	-0.192	Small	Reject H_0
	Client information is shared	0.047	Significant difference	-0.268	Small	Reject H_0
	Consultant	0.038	Not	-0.256	Small	Reject H_0

Category	Scales	p-value	Sig. level	Symmetric Measures	Effect size	Null Hypothesis Decision
	adheres to terms and procedures		significant difference			
	Operations are conducted in partnerships	0.029	Significant difference	-0.105	Small	Reject H_0

5.8.4 Hypothesis 4

The null and alternative hypotheses are as follows:

- The Null Hypothesis (H_0) stated that consultants and their clients place equal importance (rating) on the buyer-seller relationship evaluation metrics.

- The Alternative Hypothesis: (H_1) stated that consultants and their clients do not place equal importance (rating) on the buyer-seller relationship evaluation metrics.

A comparison was made to establish whether clients and consultants consider the different relationship scale items as good measures. *Cross tabulations* and *independent samples t-test for equality of means* were used to test the differences between clients' and consultants ratings of the different scales as well as the significance of the differences.

Levene's test for equality of variances was used to select the suitable *independent samples t-test* to use based on whether there was a significant difference in the variances between the two groups. Where the significance value was smaller than 0.05, "*equal variance not assumed*" was used. Where the significance value was greater than 0.05, "*equal variance assumed" was used*. The results of the tests are provided in **Table 26**.

Table 26: Summary of test results for hypothesis 4

Factor categories	Factors	Levene's test for equality of variance			Independent samples t-test		Decision
		Type of test	Sig.	Test Used	Sig. (2-tailed)	Mean diff.	
Client satisfaction factors	When client prioritises value over adherence to schedule/ time	Equal variances assumed	0.43		0.010	0.599	
		Equal variances not assumed		✓	**0.049**	0.599	Reject H_0
	When client prioritises value over adherence to technical specifications/ scope	Equal variances assumed	0.40		0.88	0.368	
		Equal variances not assumed		✓	**0.032**	0.368	Reject H_0
	When consultant provide technically excellent service.	Equal variances assumed	0.26		0.134	-0.314	
		Equal variances not assumed		✓	**0.028**	-0.314	Reject H_0
	When operations driven by trust.	Equal variances assumed	0.22		0.019	0.354	
		Equal variances not assumed		✓	**0.031**	0.354	Reject H_0
	When client prioritises value over adherence to budget.	Equal variances assumed	0.08		0.056	0.120	
		Equal variances not assumed		✓	**0.040**	0.120	Reject H_0
Client-consultant engagement factors	Operations are conducted in partnerships	Equal variances assumed	0.02	✓	**0.034**	0.527	Reject H_0
		Equal variances not assumed			0.035	0.527	
	Client information is shared	Equal variances assumed	0.01	✓	**0.000**	1.093	Reject H_0
		Equal variances not assumed			0.000	1.093	
	Consultant is prioritised in client share of budget	Equal variances assumed	0.09		0.000	1.185	
		Equal variances not assumed		✓	**0.000**	1.185	Reject H_0
	Consultant is repeatedly appointed	Equal variances assumed	0.23		0.000	1.039	
		Equal variances not assumed		✓	**0.000**	1.039	Reject H_0
	Consultant is prioritised in procurement decisions	Equal variances assumed	0.98		0.000	0.853	
		Equal variances not assumed		✓	**0.001**	0.853	Reject H_0
	Consultant adheres to terms and procedures	Equal variances assumed	0.23		0.028	0.217	
		Equal variances not assumed		✓	**0.0290**	0.217	Reject H_0

The mean differences between clients and consultants for relationship measurement factors are provided in **Table 27.**

Table 27: Mean differences for relationship measurement factors

Category	Scales	Sample category	N	Mean	Mean difference
Client satisfaction factors	When client prioritises value over adherence to budget.	Clients	47	3.34	0.02
		Consultants	59	3.22	
	When client prioritises value over adherence to schedule	Clients	47	1.22	0.09
		Consultants	59	1.13	
	Consultant adheres to terms and procedures	Clients	47	2.32	0.22
		Consultants	59	2.10	
	When consultant provide technically excellent service.	Clients	47	1.96	0.31
		Consultants	59	2.27	
	When operations driven by trust.	Clients	47	2.49	0.35
		Consultants	59	2.14	
	When client prioritises value over adherence to scope	Clients	47	3.23	0.47
		Consultants	59	2.76	
	When client prioritises value over adherence to technical specifications.	Clients	47	2.26	0.55
		Consultants	59	1.71	
Client-consultant engagement factors	Operations are conducted in partnerships	Clients	47	2.55	0.52
		Consultants	59	2.03	
	Consultant is prioritised in procurement decisions	Clients	47	3.28	0.86
		Consultants	59	2.42	
	Consultant is repeatedly appointed	Clients	47	3.19	1.04
		Consultants	59	2.15	
	Client information is shared	Clients	47	3.04	1.09
		Consultants	59	1.95	
	Consultant is prioritised in client share of budget	Clients	47	3.66	1.19
		Consultants	59	2.47	

Based on the above hypothesis tests (**Table 26**) and the mean differences (**Table 27)**, the findings which came out of the analysis for the client satisfaction and client consultant engagement factors, are as follows:

Client satisfaction factors

When the consultant provides a technically excellent service

The ratings by clients and consultants regarding *"consultant provides a technically excellent service"* are fairly similar. The *independent samples t-test* suggests that there is a significant difference between clients and consultants with regard to their response to this measure (*a significance coefficient of 0.028 < 0.05*). Therefore, there is sufficient evidence to reject the null hypothesis. The mean difference of 0.31 is moderate **(Table 27)**. Thus, the results suggest that there is sufficient evidence to reject the null hypothesis (H_0) at the 95% confidence level. This indicates that clients and consultants rate this measurement factor with a fairly different level of importance.

When the client prioritises value over technical specifications/ scope requirements

The ratings by clients and consultants regarding project execution adherence to budget are similar. The *independent samples t-test* suggests that there is a significant difference between clients and consultants with regard to their response to this measure (*a significance coefficient of 0.032 < 0.05*). Therefore, there is sufficient evidence to reject the null hypothesis. The mean difference of 0.471 is moderate (**Table 27**). Thus, the results suggest that there is sufficient evidence to reject the null hypothesis (H_0) at the 95% confidence level. This indicates that clients and consultants rate this measurement factor with a fairly different level of importance.

When the client prioritises value over project budget

The ratings by clients and consultants regarding project execution adherence to budget are fairly similar. The *independent samples t-test* suggests that there is a significant difference between clients and consultants with regard to their response to this measure (*a significance coefficient of 0.040 < 0.05*). Therefore, there is sufficient evidence to reject the null hypothesis. The mean difference of 0.120 is however, small **(Table 27)**. Thus, there results suggest that there is sufficient

evidence to reject the null hypothesis (H_0) at the 95% confidence level. This indicates that clients and consultants rate this measurement factor with a fairly different level of importance.

When the client prioritises value over project time/ schedule

The ratings by clients and consultants regarding project execution adherence to budget are fairly different. The *independent samples t-test* suggests that there is a significant difference between clients and consultants with regard to their response to this measure (*a significance coefficient of 0.049 < 0.05*). Therefore, there is sufficient evidence to reject the null hypothesis. The mean difference of 0.599 is relatively big **(Table 27).** Thus, the results suggest that there is sufficient evidence to reject the null hypothesis (H_0) at the 95% confidence level. This indicates that clients and consultants rate this measurement factor with a fairly different level of importance.

When project processes are driven by trust

The ratings by clients and consultants regarding project execution adherence to budget are fairly similar. The *independent samples t-test* suggests that there is a significant difference between clients and consultants with regard to their response to this measure (*a significance coefficient of 0.031 > 0.05*). Therefore, there is sufficient evidence to reject the null hypothesis. The mean difference of 0.354 is moderate **(Table 27).** Thus, the results suggest that there is sufficient evidence to reject the null hypothesis (H_0) at the 95% confidence level. This indicates that clients and consultants rate this measurement factor with a fairly different level of importance.

Client-consultant engagement factors

When consultant is prioritised in procurement decisions

The ratings by clients and consultants regarding project execution adherence to budget are different. The *independent samples t-test* suggests that there is a significant difference between clients and consultants with regard to their response

to this measure (*a significance coefficient of 0.001 < 0.05*). Therefore, there is sufficient evidence to reject the null hypothesis. The mean difference of 0.853 is quite big **(Table 27).** Thus, the results suggest that there is sufficient evidence to reject the null hypothesis (H_0) at the 95% confidence level. This indicates that clients and consultants rate this measurement factor with a fairly different level of importance.

When consultant is repeatedly appointed

The ratings by clients and consultants regarding project execution adherence to budget are different. The *independent samples t-test* suggests that there is a significant difference between clients and consultants with regard to their response to this measure (*a significance coefficient of 0.000 < 0.05).* Therefore, there is sufficient evidence to reject the null hypothesis. The mean difference of 1.039 is very big **(Table 27)**. Thus, the results suggest that there is sufficient evidence to reject the null hypothesis (H_0) at the 95% confidence level. This indicates that clients and consultants rate this measurement factor with a fairly different level of importance.

When consultant is prioritised in the client's share of budget

The ratings by clients and consultants regarding project execution adherence to budget are different. The *independent samples t-test suggests* that there is a significant difference between clients and consultants with regard to their response to this measure (*a significance coefficient of 0.000 < 0.05*). Therefore, there is sufficient evidence to reject the null hypothesis. The mean difference of 1.185 is very big (**Table 27**). This indicates that clients and consultants rate this measurement factor with a fairly different level of importance.

When consultant and client work in close partnership

The ratings by clients and consultants regarding project execution adherence to budget are different. The *independent samples t-test* suggests that there is a significant difference between clients and consultants with regard to their response to this measure (*a significance coefficient of 0.034 < 0.05*). The mean difference of

0.527 is relatively big (**Table 27**). This indicates that clients and consultants rate this measurement factor with a fairly different level of importance.

When consultant adheres to agreed terms and procedures

The ratings by clients and consultants regarding project execution adherence to budget are fairly similar. The *independent samples t-test* suggests that there is a significant difference between clients and consultants with regard to their response to this measure (*a significance coefficient of 0.029 > 0.05*). Therefore, there is sufficient evidence to reject the null hypothesis. The mean difference of 0.217 is however, relatively small **(Table 27)**. This indicates that clients and consultants rate this measurement factor with a fairly different level of importance.

When client proprietary information is shared

The ratings by clients and consultants regarding project execution adherence to budget are different. The *independent samples t-test* suggests that there is a significant difference between clients and consultants with regard to their response to this measure (*a significance coefficient of 0.000 < 0.05*). Therefore, there is sufficient evidence to reject the null hypothesis. The mean difference of 1.093 is quite big **(Table 27)**. This indicates that clients and consultants rate this measurement factor with a fairly different level of importance.

Aggregate relationship measurement factor category

The hypothesis was also tested using aggregate relationship measurement factor categories. The results of the tests for the aggregate factor categories are provided in **Table 28**.

Table 28: Mean score differences for aggregate relationship measurement factors category

Measures	Factor category	Sample categories	N	Mean	Standard deviation
Relationship measurement factors	Client satisfaction factors	Clients	47	2.7745	0.82422
		Consultants	59	2.4610	0.68808
	Client consultant engagement factors	Clients	47	3.2589	0.67995
		Consultants	59	2.4237	0.63376

Although both sample categories rated client satisfaction between *"just important"* and *"highly important"* (ratings 3 and 2 from the questionnaire), consultants' rated this factor as more important (2.46) than clients (2.77). Consultants also rated client-consultant engagement factors as more important (2.42) (i.e. between *"just important"* and *"highly important"* or ratings 3 and 2 in the questionnaire), as compared to clients (3.25) (i.e. between *"low importance"* and *"just important"* or ratings 4 and 3 in the questionnaire).

The significance of these differences was tested using *independent samples t-test for equality of means*. *Levene's test for equality of variances* was used to select the suitable *independent samples t-test* to use based on significance of variance. The results of the tests are provided in **Table 29.**

From **Table 29**, the results of the *independent Samples t-test for equality of means* suggest that there is a significant difference between clients' and consultants' ratings for both client satisfaction factors (*significance level of 0.039 < 0.05*) and client-consultant engagement factors (*significance level of 0.000 < 0.05*). This is supported by the mean differences of 0.313 and 0.835, respectively, which are moderate and very big, respectively. Thus, the results suggest that there is sufficient evidence to reject the null hypothesis (H_0) at the 95% confidence level.

Table 29: Test results for aggregate relationship measurement factors category

Factor Categories	Levene's Test for Equality of Variances			Independent T-test for Equality of Means		Decision
	Type of test	Sig.	Test used	Sig. (2-tailed)	Mean Difference	
Client consultant engagement factors	Equal variances assumed	0.334		0.000	0.83514	
	Equal variances not assumed		✓	0.000	0.83514	Reject H_0
Client satisfaction factors	Equal variances assumed	0.093		0.035	0.31345	
	Equal variances not assumed		✓	0.039	0.31345	Reject H_0

Summary

A summary of the findings discussed above and decision from hypothesis 4 test is provided in **Table 30**.

Table 30: Summary of relationship measurement factors findings

Category	Measure	Mean difference	Significance (2-tailed)	Null hypothesis decision
Client satisfaction factors	Client prioritised value over budget	0.120	0.040	Reject H_0
	Consultant provides a technically excellent service	0.310	0.028	Reject H_0
	When operations driven by trust.	0.354	0.031	Reject H_0
	Client prioritised value over technical specifications/scope	0.471	0.032	Reject H_0
	Client prioritised value over schedule	0.599	0.049	Reject H_0
Client-consultant engagement factors	Consultant adheres to terms and procedures	0.217	0.029	Reject H_0
	Operations are conducted in partnerships	0.527	0.034	Reject H_0
	Consultant prioritised in procurement decisions	0.853	0.001	Reject H_0
	Consultant is repeatedly appointed	1.039	0.000	Reject H_0
	Client information is shared	1.093	0.000	Reject H_0
	Consultant is prioritised in client share of budget	1.185	0.000	Reject H_0

A summary of the findings for the aggregate relationship measurement factors category and the decision on Hypothesis testing is provided in **Table 31**.

Table 31: Aggregate relationship measurement factors test results

Measures	Factor categories	Mean difference	Sig. (2-tailed)	Null hypothesis decision
Relationship measurement factors	Client satisfaction factors	0.313	0.039	Reject H_0
	Client-consultant engagement factors	0.835	0.000	Reject H_0

The results from **Table 31** suggest that there is sufficient evidence to reject the null hypothesis (H_0) at the 95% confidence level. Therefore, it can be concluded that clients and consultants do not rate the relationship measurement factor categories in a similar way.

5.8.5 Hypothesis 5

The null and alternative hypotheses are as follows:

- The Null Hypothesis (H_0) stated that there is a direct relationship between project performance and client-consultant relationship.

- The Alternative Hypothesis: (H_1) stated that there is no direct relationship between project performance and client-consultant relationship.

In order to establish whether project delivery success leads to good client-consultant relationships, *Pearson's correlation* was run between the two groups of factors to test the null and alternative hypotheses. Based on the above hypotheses, the findings which came out of the analysis are provided in **Table 32**.

The *correlation analysis* results are provided in were summarised in the matrix provided in Annexure 2. An analysis of the results, comparing project delivery success factors and the different relationship measurement factor categories is provided in **Tables 32**.

From **Table 32,** there is no correlation between project delivery success and client-consultant relationship measurement factors. *Pearson correlation coefficients* across all of the factors range between zero and 0.1. The only exception is between *"consultant providing a technically excellent service"* (TES) and *"adherence to schedule or time"* (Sh), which has a *correlation coefficient* of -0.212. However, this is still a weak negative correlation although the results suggest that it is significant (*significance level of 0.029 < 0.05*).

Therefore, the results suggest that there is no correlation between project delivery success and strength of client-consultant relationships. The *t-test (sig. 2-tailed)* results for most of the factors also suggests that there is insignificant correlation between project delivery success and strength of client-consultant relationships (significance coefficients are greater than 0.05 for most factors), except for consultant providing a technically excellent service (TES) and adherence to agreed budget (B).

Table 32: Correlation and significance levels

Measurements	Factor Categories	Test	Project management success factors			
			TS	B	Sh	FS
Client satisfaction factors	TES	Pearson Correlation	-.141	-.160	**-.212**	.053
		Sig. (2-tailed)	.149	.102	**.029**	.593
	T/S	Pearson Correlation	-.189	-.164	-.121	-.115
		Sig. (2-tailed)	.053	.094	.217	.241
	VB	Pearson Correlation	-.092	-.060	-.095	-.081
		Sig. (2-tailed)	.351	.538	.333	.407
	VSH	Pearson Correlation	-.027	-.049	-.089	.003
		Sig. (2-tailed)	.781	.619	.365	.977
	T	Pearson Correlation	-.067	-.086	-.024	-.033
		Sig. (2-tailed)	.497	.382	.805	.738
Client- consultant engagement factors	CPD	Pearson Correlation	.051	.032	.084	.019
		Sig. (2-tailed)	.600	.746	.391	.848
	CRA	Pearson Correlation	.012	.040	.012	-.030
		Sig. (2-tailed)	.904	.685	.899	.759
	CSB	Pearson Correlation	.122	.137	.160	.089
		Sig. (2-tailed)	.215	.161	.101	.363
	P	Pearson Correlation	-.081	-.068	-.084	-.116
		Sig. (2-tailed)	.406	.488	.394	.238
	TP	Pearson Correlation	-.039	-.088	-.037	.116
		Sig. (2-tailed)	.691	.367	.703	.235
	CIS	Pearson	-.012	-.016	.050	.048

Measurements	Factor Categories	Test	Project management success factors			
			TS	B	Sh	FS
		Correlation				
		Sig. (2-tailed)	.902	.872	.611	.627

Key: Client provides a technically excellent service (TES), Adherence to agreed budget (B), adherence to Schedule (Sh), adherence to functional specifications (FS), adherence to technical requirements/ scope (T/S), client prioritises value over adherence to schedule (VSh), client prioritises value over adherence to budget (VB), client prioritises value over adherence to technical specifications or scope (VS), operations are driven by trust (T), consultant adheres to terms and procedures (TP), operations are conducted in partnerships (P), client information is shared (CIS), consultant prioritised in procurement decisions (CPD), consultant is repeatedly appointed (CRA) and consultant is prioritised in client share of budget (CSB).

Aggregate project delivery success and relationship measurement factors

Despite the findings from the analysis of disaggregated factors further analysis was conducted for the aggregate categories. *Pearson's correlation* was used to conduct the analysis. The results of the analysis are provided in **Table 33**.

Table 33: Results of Spearman's correlation analysis for aggregate factor categories

Categories	Factors	Project management success factors	Client satisfaction factors	Client consultant engagement factors
Project management success factors	Correlation Coefficient	1.000		
	Sig. (2-tailed)	-		
Client satisfaction factors	Correlation Coefficient	-0.092	1.000	
	Sig. (2-tailed)	0.350		
Client consultant engagement factors	Correlation Coefficient	0.018	0.258	1.000
	Sig. (2-tailed)	0.851	0.008	

There is no correlation between project delivery success and relationship measurements factors (correlation coefficients are between 0 and 0.1 and 0 and -

0.1). The correlation is also insignificant (significance levels are greater than 0.05). Therefore, there is not sufficient evidence to support the null hypothesis and is hence, rejected.

5.8.6 Chapter conclusions

A number of conclusions can be drawn from the findings in this chapter. Firstly, the response rate was quite good and higher than expected. The sample categories were also fairly balanced between clients (43.44%) and consultants (56.56%). Project managers and principals dominated the respondents regarding project management responsibilities. This was good for the research as these groups were the main targets of the study.

Gender distribution was biased more towards males. This was not considered a major issue to influence results as this study did not intend to investigate the role played by gender in project success and client-consultant relationships. None of the literature reviewed indicated the statistical significance of gender impacts on project success and client-consultant relationships.

In terms of race, consultant respondents were dominated by whites, while clients were dominated by blacks. Like gender, the study did not investigate the impact of race on project success and client-consultant relationships. Although the researcher acknowledges the racial dynamics associated with South Africa's past legacy, this aspect was considered to be beyond the scope of this study.

In terms of the five hypotheses, a number of conclusions were also drawn. For Hypothesis 1, there was not sufficient evidence from the research results to reject the null hypothesis at the 95% confidence level (p-values are less than 0.05). This implied that clients and consultants measure project delivery in a fairly similar way.

For Hypothesis 2, there was not sufficient evidence from the research results to reject the null hypothesis (H_0) at the 95% confidence level (p-values are less than 0.05 for both hypotheses tests which were conducted for individual and aggregate

scale results). This implied that clients and consultants rate the project delivery success factors in a fairly similar way.

For Hypothesis 3, the results suggested that there was sufficient evidence to reject the null hypothesis for most of the relationship measurement factors (p-values are less than 0.05). This implied that clients and consultants do not measure the strength of their relationship using similar factors.

For Hypothesis 4, the results suggested that there is sufficient evidence to reject the null hypothesis (H_0) at the 95% confidence level, based on significance levels which were less than 0.05) as well as moderate to high mean score differences. This implied that clients and consultants do not rate the different relationship measurement factors in a similar way.

For Hypothesis 5, the null hypothesis was rejected. The results also suggested that there was no correlation between project delivery success and good client-consultant relationship (correlation coefficients less than 0.2 and -0.2). The significance of the correlation was low across all the measures. This implied that successful project delivery does not necessarily result in a strong client-consultant relationship.

6 DISCUSSION OF RESULTS

6.1 Introduction

This chapter discusses the findings of the research as described in Chapter 5, in order to address the study objectives and research questions. In order for each objective and research question to be adequately addressed, the discussion focuses on each of the corresponding hypotheses, to provide insights and explanations for the findings in line with past research. The discussion addresses the findings for each of the hypotheses and refers to the literature review in Chapter 2 to draw parallels with findings from past research.

6.2 Addressing the Research Hypotheses

6.2.1 Hypothesis 1

Hypothesis 1 sought to address objective 1 and the corresponding research question 1, which were stated as:

Objective 1	**Research question 1**
To establish whether consultants and their clients measure project success using the same metrics.	In what ways do consultants and their clients measure project performance?

The null hypothesis and alternative hypothesis were stated as:

- Null Hypothesis (H_0): consultants and their clients evaluate project performance using the same measurement metrics.
- Alternative Hypothesis: (H_1): consultants and their clients do not evaluate project performance using the same measurement metrics.

Hypothesis 1 test results (decision: failed to reject the null hypothesis)

The study results in Chapter 5, as summarised in **Table 18**, failed to reject the null hypothesis. The results therefore, suggested that there is insufficient evidence from the data to conclude that clients and consultants measure project delivery success

using different factors. Therefore it is concluded that clients and consultants measure project delivery success in a fairly similar way.

Explanation of study findings based on past research

These findings are consistent with the findings from past research. Past research indicated that the factors above are largely project management success measures. (Prabhakar, 2008). According to Shao, Muller and Turner (2012), these factors are part of the *"golden triangle"* and generally acceptable between both clients and consultants as suitable measures for evaluating project success. The results summarized in **Figures 11** to **14**, suggest that both clients and consultants consider the factors as suitable measures for project delivery success.

According to Ika (2008), these factors fall under the responsibility of the project manager and project team. Therefore, failure to deliver has negative implications on the reputation of the whole project team, including clients and consultants. For instance budget and time overruns affect both clients and consultants and hence, must be managed strictly. Therefore, both clients and consultants largely view these factors as suitable measures.

Prabhaker (2008) explained that project management factors are more objective and easier to measure as compared to the more diffuse and subjective project success factors. He also noted that due to these qualities, most executives attempt to prefer using short-term project management success factors over the more diffuse and subjective project success factors. This is critical particularly, when attempting to align project delivery with their short term organisational goals, where a high level of objectivity would be required.

Research also supported the findings by noting that clients are usually evaluated in terms of the performance of projects administered under their departments. (Prabhakar, 2008). The success of the projects has a bearing on overall the organisational performance. Similarly, consultant project teams are also evaluated based on the performance of their projects. Thus, short term project management measures are not only more objective but also fall within the responsibility of the

team, thereby prompting both clients and consultants to view these factors as acceptable measures.

A critique of results based on past research.

Despite the consistency established between the study findings and past literature, research has also noted the weakness associated with the use of predominantly the *"golden triangle"* factors. Ika (2009), Barry and Uys (2011) and Jaafar, Aziz and Wai, (2009) noted that project management factors fall short in terms of addressing both immediate and downstream impacts of the project. They emphasise the need to balance both project management and project success factors in project delivery evaluations. In that context this study did not address this requirement, mainly because the project success factors which were identified were thrown out due to low internal validity and consistency reliability levels.

According to Samiaah, Hassen, Al-Tmeemy, Abdul-Rahman and Harun (2010) and Zhai, Xin and Cheng (2009) clients often tie project delivery success to their long term organisational strategies. Thus, more comprehensive project success factors such as overall organisational impact, impact on the environment, reputation, gender equality and political buy-in will be required. Ika (2009) explained that although project management success may also lead to much broader project success, there is no guarantee that it can avoid the latter's failure. Therefore, it is not sufficient to rely on project management success factors only.

These views are also consistent with the findings by Appelbaum (2009) who indicated how different types of clients and consultants influences both the model of engagement involved and the perception about project success. Primary clients are more inclined towards the short term measures, whereas ultimate clients are more interested in long term and much wider project success factors. The *"golden triangle"* hence falls short in addressing the associated expectations of the latter.

Lessons drawn from the study results

While the research results are consistent with literature, they fall short in providing a holistic picture as demonstrated by past research discussions above. Although the

study attempted to capture both project success and project management success factors in the methodology, most of the project success factors had very low internal validity (based on *factor analysis* results) and consistency reliabilities (*Cronbach's alpha*), and were hence thrown out from detailed analysis.

There are many stakeholders involved in the project cycle, whose views, expectations and goals differ widely. (Prabhakar, 2008; Appelbaum, 2009). Thus, the project success measures these different stakeholders consider critical also vary widely resulting in the low internal validity and consistency experienced in this study. One of the main lessons which can be drawn from these finding is that a descriptive quantitative research design may not be sufficient to analyse project delivery success due to the high levels of subjectivity involved. A combination of exploratory qualitative research and descriptive quantitative analysis may be a much better approach. However, the findings remain valid as confirmed by past literature regarding project management success factors. Future research may consider the combination approach suggested above, to unravel the complexities associated with project delivery success.

The issue of types of clients also provided an equally important lesson. According to Appelbaum (2009), the project delivery perceptions and measurement criteria depend upon the type of client involved. Primary clients are more interested in the short term success of a project while ultimate clients worry more about the long term outcomes and impacts. Thus, ultimate clients, who are the consumers of the project outcomes, are more likely to be concerned with project success than primary clients, whose interest is more on short-term project management success measures. (Prabhakar, 2008).

In this study, focus was on public sector project management professionals (clients), and engineering consultants. The former are largely primary clients (public sector officials). The high confirmatory responses as shown in Figures 11 to 13, suggest they view these factors as suitable measures, as explained by Appelbaum (2009). Thus, because of this reason, the results are considered valid and supported by literature, although a similar study but covering other types of clients both within the

public and private sectors is recommended. Therefore, this study has contributed into the body of knowledge by establishing that clients and consultants measure project delivery success using fairly the same factors.

6.2.2 Hypothesis 2

Hypothesis 2 sought to address objective 2 and research question 2, which were stated as follows:

Objective 2	Research question 2
To establish whether consultants and their clients place the same levels of importance on the project success metrics	Do consultants and their clients rate the different project performance measures equally?

The null hypothesis and alternative hypothesis 2 were stated as follows.

- Null Hypothesis (H0): consultants and their clients rate the project performance evaluation metrics equally.
- Alternative Hypothesis (H1): consultants and their clients do not evaluate project performance using the same measurement metrics.

Hypothesis 2 test results (decision: failed to reject the null hypothesis)

The study results in Chapter 5, as summarised in **Table 23**, rejected the null hypothesis. The results therefore, suggested that there is sufficient evidence from the data to conclude that clients and consultants rate the project delivery success factors in a fairly similar way.

Explanation of study findings based on past research

The results are consistent with past literature. According to Prabhakar (2008), both clients and consultants consider these factors to be critical because they form the basis upon which their performance is usually evaluated. This is shown in Table 20, where the mean score differences between the clients and consultants are small

across all the factors. Both clients and consultants rated the factors between *"highly important"* and *"very important".*

Prabhaker (2008) and Shao, Muller and Turner (2012) also noted that in terms of responsibility and accountability, these factors are relevant to the project manager and project team. They fall within the boundaries of the project being delivered and are hence easier to manage than project success measures which may transverse beyond both client and consultant boundaries. (Barry and Uys, 2011).

Ritcher and Nieweim (2009) and Ika (2009) noted the importance of having a shared view of the project evaluation factors between clients and consultants, to minimise conflicts. Thus, the results support this perspective as shown by the general similarity in ratings between the clients and consultants.

A critique of the study results from literature

Despite the fact that past literature supports the above research findings, Geoghegan and Dulewicz (2008) noted the importance of evaluating projects across their different dimensions. Zhai, Xin and Cheng also explained that instead of focusing only on factors under the control of the project team, it is important to also evaluate success based on impacts on the external environment. The study fell short of addressing other factors external to the project delivery boundary, as this was considered to be outside the research scope.

Appelbaum (2009) noted the different dimensions of clients, how they are impacted differently by projects and the importance of covering these issues in project success evaluation. He noted that despite the importance ascribed to achievement of the *"golden triangle"* as a measure of project success, what matters most is how the project impacts on the whole spectrum of clients. Although this study adopted the multi-dimensional approach based on the model by Samiaah, Hassen, Al-Tmeemy, Abdul-Rahman and Harun (2010) in identifying the appropriate measurement scales, the project success factors did not have the acceptable internal validity and reliability levels to be used in the analysis.

Proverbs and Olomolaiye (2008) noted that by focusing on project management, there is a risk to leave out softer and less objective but very critical project success measures. This has potential for clients and consultants focusing on different things when evaluating projects, which can result in conflicts. This study's results are in contrast to this view, as both clients and consultants consider the factors suitable (hypothesis 1) and also rate them with fairly the same level of importance. However, Ika (2009) cautioned that rarely does the end of a project coincide with service delivery, which makes a good understanding of downstream impacts important.

Overall, the findings by Shao, Muller and Turner (2012) and Proverbs and Olomolaiye (2008) are consistent with this study's findings. They indicated that it is largely impossible to exhaust all the factors in order to holistically address the needs of the different stakeholders. Instead, research must separate between project management success and project success factors in the analysis. This study attempted to use this recommended approach, although project success factors were thrown out due to low internal validity and reliability (consistency) levels. Thus, the study findings are supported by these authors' recommendation.

Lessons from the study findings

As under hypothesis 1, the main lesson has to do with research scope and design suitable to holistically cover the factors involved. There is need to create a balance between breadth and depth of analysis. While, this study addressed depth in focusing largely on project management factors, it is also important to cover breadth in terms of addressing project success factors which are more diffuse. The latter can be best addressed through a more exploratory and qualitative type of research.

The past literature which was consulted also failed to address the two dimensions together and largely concluded that there is no universally accepted definition or measurement criterion for project success. (Proverbs and Olomolaiye, 2008; Geoghegan and Dulewicz, 2008). This study has hence, contributed to the body of knowledge by empirically establishing that clients and consultants rate project delivery success factors in a fairly similar way.

6.2.3 Hypothesis 3

Hypothesis 3 sought to address objective 3 and research question 3, which were stated as:

Objective 3	Research question 3
To investigate whether consultants and their clients use the same metrics to measures the health of their relationship	Do consultants and their clients evaluate relationship using the same factors?

The null hypothesis and alternative hypothesis were stated as:

- Null Hypothesis (H0): consultants and their clients use the same metrics to evaluate good consultant-client relationships.
- Alternative Hypothesis (H1): consultants and their clients do not use the same metrics to evaluate good consultant-client relationships.

Hypothesis 3 test results (decision: rejected the null hypothesis)

The study results in Chapter 5, as summarised in Table 25, rejected the null hypothesis. The results therefore, suggested that there is sufficient evidence from the data to conclude that clients and consultants measure the strength of their relationships a fairly different way. This applies to both client satisfaction measures and client-consultant engagement factors.

Explanation of study findings based on past research

The rejection of the null hypothesis suggests that clients and consultants use different factors to measure the strength of their relationships. This is quite surprising, given the centrality that relationships play in the survival of consultants, in a highly competitive industry. (Jaafar, Aziz and Wai, 2009).

There are a number of explanations that can be drawn from literature regarding this. The first explanation can be linked to the client-consultant engagement model used. Appelbaum (2009) came up with two models which were found suitable to explain

the results, namely *"the purchase of expertise model"* and *"the process consultation model".*

The *"purchase of expertise model"* was consistent the results from this study. Under this model, the role of consultants is to just provide required expertise without building any relationship with the client. The client's procurement decisions are solely based on the competences of the consultant. There is no need for prior relationships. The relationship measurement factors which were proposed in this study will therefore not apply under this model. It would be therefore, reasonable to reject the null hypothesis when this model of client-consultant engagement is used. Thus, the study results are consistent with the requirements of this model.

The *"process consultation model"* on the other hand, emphasises the importance of collaboration and strong relationships between clients and consultants. Consultants would be required work closely with clients in understanding, structuring and defining problems as well as recommending suitable solutions. This model confirms the views of Jaafar, Aziz and Wai (2009) who noted that under the currently highly competitive consulting industry, consultants need to invest more into strong relationships with their clients to survive. Therefore, the findings from this study are not consistent with the requirements of this model.

Other explanations can be drawn from the findings by Nokolova, Reilhlen and Schlapfner (2009). They also used three models to explain the nature of engagement, namely *"the expert model", "the critical model"* and the *"social learning model"*. The *"expert model"* discounts the role of strong relationships in client-consultant engagements and hence supports the results. Emphasis under this model is that consultants are experts whose services will be always required by clients, whether there is an existing relationship or not. Thus, the findings from this study are consistent with the requirements of this model of engagement.

The other two models emphasise the need for clients and consultants to actively engage in strong relationships. This is important for the purpose of sharing information, ideas, learning from each other's experiences and assisting each other in defining and structuring problems. This view was shared by Ritcher and Niewiem

(2009). They noted the importance of strong client consultant relationships in avoiding conflicts in project delivery. Therefore, this study's findings are not consistent with the requirements of *"the critical model"* and the *"social learning model"*.

Despite some models concurring with the rejection of the null hypothesis, others seem to disapprove this position. There is a danger that, based on this dichotomy of views, clients and consultants may evaluate relationships differently and incorporate wrong metrics in their organisational strategies. For instance, under client satisfaction factors, **Figure 15** shows that while 80.9% of clients view *"technically excellent delivery of project"* as a suitable measure of a good relationship, about 55.9% of consultants disagreed. This indicates that consultants may wrongfully provide services that fall below the expectations of the clients while focusing their resource deployment on delivering on other factors thereby compromising on their relationships with clients.

Jaafar, Aziz and Wai (2009) highlighted the importance of technical excellence as a relationship measurement factor. They indicated that consultants can demonstrate technical excellence as a way to prove their competences to their clients. Clients also use technically excellent services they receive from consultants to measure whether they are receiving value for money.

Nokolova, Reilhlen and Schlapfner (2009) also noted that clients create trade-offs between cost and quality of service received. According to Hu, Kandampully and Jawahee (2009), as long as the client is satisfied with the quality of service received price becomes the last issue to be debated about. Thus, technically excellent services remove any client doubt about the consultant's capabilities and leads to good relationships. Thus, non-delivery on this measure compromises both clients and consultants. Therefore the study finding is not consistent with past literature.

Figure 17 also shows that there is a difference between clients' and consultants' views regarding *"priority of value over budget"*. The results suggest that consultants prioritise creativity and value-addition over budgetary issues. With this mind-set, consultants are likely to believe that clients are equally flexible to approve budget

adjustment as long as value-addition can be demonstrated. However, the results show that clients do not necessarily place equal priority on value-addition over agreed budget. Thus, it will be very difficult to convince clients to adjust budgets in response to the promised additional value.

In the public sector, which was the focus of this study, this is understandable, since projects funding is usually budgeted for during specific financial years. Thus, once the budget has been approved, it is not very easy for the client to motivate for more funding to cater for any value addition. Without an agreement upfront on these expectations, conflicts are likely to arise. (Ritcher and Nieweim, 2009).

Another area of contention from the study results regards *"operations being driven by trust"*. The results suggest that clients and consultants view this measure differently. Clients seem to discount the importance of trust based operations. These findings are supported by Geoghegan and Dulewicz (2008) and Proverbs and Olomolaiye (2008), who noted that where clients require generic solutions, trust or prior relationships with consultants may not be a major factor in making procurement and operational decisions. The client can deal with any consultant without necessarily having an existing relationship or through referrals. Appelbaum (2009) and Kakabadse, Louchart and Kakabadse (2009) concurred by referring to the diverse types of clients and consultants and how they influence the model of engagement used.

However, other researchers provided a different view. For instance Meng (2011) highlighted the importance of trust in building a good relationship. Halverila, Bateman and Nauman (2011) also explained how trust is critical in influencing the clients' future procurement decisions. They noted that close to 70% of all future consultants' appointments are usually from existing clients and referrals. The explanation was that the clients would have already known these consultants and trust their capabilities and competences. Cooil, Keiningham, Aksoy and Hsu (2007) also explained the importance played by trust in generating brand loyalty among clients.

Lessons drawn from the study results

The study findings help in illuminating the nature of complexities associated with client-consultant relationships. Appelbaum (2009) emphasised the role played by context in influencing clients' and consultants' decisions and perceptions about their relationships. Different types of consultants and clients hold different expectations regarding projects and hence use different models of engagements. They also evaluate project success differently as well as the factors which they consider suitable to evaluate their relationships. (Kakabadse, Louchart and Kakabadse, 2009).

Thus, what seem to be coming from this study's results as well as past literature is that there is no *"one glove fits all"* situation regarding client-consultant engagement. The experience with one client and/ or project cannot be easily replicated into another. According to Jaafar, Aziz and Wai (2009), consultants should invest time and resources into understanding their clients. They should take the roles of *"management physicians, systems architects, friendly co-pilots or servant consultants".* (Appelbaum, 2009, Kakabadse, Louchart and Kakabadse, 2009).

This will help the consultants to better understand the strategic focus and priority goals of the clients, which would then be used in tailoring solutions and managing relationships. This study hence, contributed into the body of knowledge by empirically establishing that clients and consultants do not necessarily measure the strength of their relationships using the same factors. However, the decision may depend on the model of engagement used.

6.3 Hypothesis 4

Hypothesis 4 sought to address objective 4 and research question 4, which were stated as:

Objective 4	Research question 4
To establish whether consultants and their clients place the same levels of importance on the relationship measurement metrics.	Do consultants and their clients rate the relationship factors equally?

The null hypothesis and alternative hypothesis were stated as:

- Null Hypothesis (H0): consultants and their clients place equal importance (rating) on the buyer-seller relationship evaluation metrics.
- Alternative Hypothesis (H1): consultants and their clients do not place equal importance (rating) on the buyer-seller relationship evaluation metrics.

Hypothesis 4 test results (decision: rejected the null hypothesis)

The study results, as summarised in Chapter 5, Table 30, rejected the null hypothesis. The results seem to suggest that there is sufficient evidence from the data to conclude that clients and consultants rate the relationship measurement factors differently. This applied to both client satisfaction and client-consultant engagement factors.

Explanation of study findings based on past research

There are a number of explanations for the rejection of the null hypothesis regarding the level of importance placed on the different factors. Given the central role relationships play in day-to-day client-consultants operations, a lot can be learnt from these results and explanations. These lessons are critical for consultants and clients in structuring their organisational strategies and in choosing suitable models of engagements.

The first explanation has to do with the types on clients and consultants involved. According to Appelbaum (2009, Kakabadse, Louchart and Kakabadse, 2009), the different types of clients and consultants warrant different engagement models. As a result, they also prefer and prioritise some measures over others. For instance

"*contact clients"* would prioritise consultant track record whether from previous engagements or from information obtained through referrals. Thus, factors such as partnerships and value addition may not be as critical to them. "*Intermediate clients"* only come into a particular stage of a project when required. Therefore, they are also less critical about most of the measures used in this study. Thus if these types of clients are involved, the findings from this study will be supported.

However, engagement with *"primary"* and *"ultimate clients"* requires strong relationships with consultants. (Appelbaum, 2009). Primary clients for instance are the project funders or owners and would be more interested in monitoring factors such as technical excellence, budget, technical specifications, etc. They would be more concerned about short-term project management measures. (Appelbaum, 2009).

Thus, with reference to this study's results, consultants cannot expect the same measurements to be used across the board. They should design evaluation methods which best suit the different types of clients. According to Hu, Kandampully and Jawaheer (2009) and Ika (2009), it is critical to agree upfront with clients regarding the criteria as this is critical in avoiding conflicts and building client trust and confidence, and ultimately, brand loyalty.

The mean score comparisons in **Tables 27** and **28** seem to suggest that on average consultants place more importance on all the factors as compared to clients. There is the danger that consultants will waste resources focusing on what clients do not necessarily consider as critical. Thus, the importance of engagement is important for consultants to achieve what Jaafar, Aziz and Wai (2009) termed *"profitably satisfying client needs and wants"*. This requires consultants to communicate with clients beyond project boundaries to better understand their needs, challenges, priority goals and state of readiness for particular project solutions. This engagement is also critical for effective deployment of resources as well as providing relevant solutions to client problems. (Prabhakar, 2008, Ika, 2009).

Lessons drawn from the study findings

The study findings and insights drawn from literature seem to point to the fact that using generic solutions do not apply in the consulting industry. Consultants should always prioritise understanding clients first before investing resources in building relationships or delivering solutions.

Investing in understanding client organisational needs, expectations, priority goals, and operational processes helps in the design and use of appropriate models of engagement and provision of relevant solutions which fit well with the client's needs. (Abdullar, Rahman, Harun, Alashwal and Beksin, 2010; Samiaah, Hassen, Al-Tmeemy, Abdul-Rahman and Harun, 2010). This study has, hence, contributed into the body of knowledge by empirically establishing that clients and consultants do not rate the relationship measurement factors in a similar way. It highlighted the role played by the different clients in defining appropriate relationship measurement factors and their prioritisation.

6.4 Hypothesis 5

Hypothesis 5 sought to address objective 5 and research question 5, which were stated as:

Objective 5	Research question 5
Does project delivery success result in a good client-consultant relationship?	To analyse whether successful project delivery results in a healthy client-consultant relationship.

The null hypothesis and alternative hypothesis were stated as:

- Null Hypothesis (H_0): there is a direct relationship between project performance and client-consultant relationship.
- Alternative Hypothesis (H_1): there is no direct relationship between project performance and client-consultant relationship.

Hypothesis 4 test results (decision: rejected the null hypothesis)

The study results in Chapter 5, as summarised in **Tables 32** and **33**, rejected the null hypothesis. The findings revealed that there is no sufficient evidence to support the null hypothesis (H_0) at the 95% confidence level. They seem to further suggest that there is no sufficient evidence from the data to conclude that successful project delivery can lead to strong client-consultant relationships. No correlation was established between the project delivery success and relationship measurement factors (correlation coefficients were below 0.2). Thus, according to the Saunders and Lewis (2012, pp. 183), Berenson and Levine (1999, pp.790) and Welman, Kruger and Mitchel (2008, pp.234) such low correlation coefficient show a very weak relationship between the factors. The results also showed that there was insignificant correlation between the project delivery success and relationship measurement factors (significance levels were greater than 0.05).

The same conclusions were drawn when *correlation analysis* was undertaken for aggregate factor categories (**Table 33)**. There was no correlation between the categories and the significance levels of the correlation were greater than 0.05. Thus the null hypothesis was rejected when it was tested under both disaggregated and aggregated levels.

Explanation of study findings based on past research

The rejection of the null hypothesis provides critical lessons particularly for project management practitioners and consulting executives. The question is *"if good project delivery is not appealing enough to boost relationships, particularly among clients, then what could be the explanation for this?"* The following insights which were drawn from past literature are used by this study to try and provide some explanations and answers to this question.

The first explanation can be derived based on the findings from the four hypotheses above. It is notable that whereas clients and consultants, to a large extent, agree on project success factors and their ratings, they largely disagreed on relationship measurement factors. This demonstrates the complexity associated with client-

consultant engagements, which brings into doubt the possibility of a clear-cut linear relationship between these factors.

Abdullar, Rahman, Harun, Alashwal and Beksin (2010) noted that project delivery success is a product of the complex interaction of many factors, both internal and external to the project environment. Zhai, Xin and Cheng (2009) also noted that the complexities are a result of the interconnectedness of project delivery processes with stakeholder interests, expectations and objectives. The extent to which a project manager or team can succeed in managing these complexities diminishes under the external factors. (Zhai, Xin and Cheng, 2009).

Prabhakar (2008) noted that the complexity associated with the project delivery processes and client-consultant relationships makes it very difficult to be exhaustive in the identification of all suitable factors. Proverbs and Olomolaiye (2008) and Geoghegan and Dulewicz (2008) noted that there is no universally accepted measurement criteria or definition of project success. According to Appelbaum (2009), different clients and consultants measure and rate both project delivery success and good relationships measurement factors differently. Thus, based on these explanations, it is possible that the complexities and associated divergences in clients' and consultants' views could have influenced the correlation between the project delivery and relationship measurement factors.

Another explanation could be that the poor correlation might have been associated the model used. While data collection was informed by the scales which were drawn from different literature and the framework adopted from Samiaah, Hassen, Al-Tmeemy, Abdul-Rahman and Harun (2010), the analysis was based on a revised framework which was developed based on the results of a factor analysis. Thus, the model was new and not pre-tested prior to use in this research.

Although the internal consistency reliability for the scales used was acceptable (*Cronbach's alpha* above 0.65), any possible inconsistencies that might have been associated with the model are largely unknown. It would have been more informative, if the model had been pre-tested and improved before being used in the analysis. Thus, based on this interpretation, the study recommends that future

researchers must pre-test any new hybrid models before using them in data analysis.

Thirdly, the problem could be associated with the quality of data, which might have been affected by response biases. This could be a possible source of inconsistencies, particularly with the rating process using the 5-point *Likert-type scales*. Thus, the responses were largely opinions whose objectivity is difficult to ascertain. Although the researcher cleaned the data before analysis, it is not always possible to pick all such inconsistencies. Thus, it is possible that small inconsistencies in the response data could have affected the results.

Lessons drawn from the study results

Based on the poor and insignificant correlation between the project delivery success and relationship measurement factors, the findings suggest that there is not sufficient enough evidence to support the null hypothesis. The researcher found the results acceptable, despite the challenges discussed above. The justification for acceptance is based on fact that the conclusions drawn from the results were based on hypothesis tests which were conducted at two levels. The first test used a disaggregate set of factors, while the second test used aggregate factor categories. Both test results showed that there was no correlation and no sufficient evidence of either a direct positive or negative correlation between the factors. Instead there was very strong internal correlation among project success factors as well as among relationship measurement factors.

However, the researcher recommends that any generalisations that can be drawn from the results must be qualified by a good understanding of unique client, consultant and project contextual factors in their associated environment. This is in line with the recommendation by Appelbaum (2009), that context plays a major role and must be understood before generalisations can be drawn.

This study therefore, contributed into the body of knowledge by empirically establishing that project delivery success does not necessarily result in strong client-consultant relationships. The research hence recommends that it is important to understand client priority needs and organisational goals and tailor offerings

accordingly. The results have demonstrated that project delivery alone, no matter how good is sufficient to improve and grow client-consultant relationships.

6.5 Chapter Conclusion

This research has investigated and contributed to the body of knowledge in four ways. Firstly, the study established that clients and consultants measure project success in fairly the same way. However, due to the multiplicity of factors involved, these measures must be treated on a case by case basis. Project success factors must also be explored and analysed in similar future studies.

The study also established that clients and consultants also rate project success factors in fairly the same way. However, the importance of context must always be taken into account before drawing generalisations. Different types of clients and consultants may view and rate the measures differently depending on the type of engagement model involved.

The study also established that clients and consultants neither use nor rate the strength of relationships using the same factors. Past research attributed this to the complexity associated with client-consultant engagement models and contexts. Different types of clients may prioritise different measurement factors over others.

The study also established that project delivery success does not necessarily result in good consultant-client relationships in general terms, but is rather context and project specific. Thus, any generalisations that can be drawn from the findings must be always qualified with a good understanding of the type of client, consultant and project context as well as the engagement models used.

Thus, consultants should invest in understanding their clients' organisational goals, priorities, needs and readiness before proposing solutions. They should also understand the type of clients and their preferred model of engagement as well as agree on the suitable evaluation metrics upfront.

Clients should also understand the different type of consultants and structure their procurement processes as well as engagement models accordingly. However,

overall, what was clear from this research's results and insights which were drawn from past literature, is the need for client-consultant engagement beyond project boundaries. Communication and exchange of ideas, experience and sometimes proprietary information is critical.

6.6 Proposed client-consultant engagement model

Based on the insight drawn from research findings, a model was developed to illustrate the complexity associated with client consultant engagements. The model highlights the importance of clients and consultant involvement in project execution and management as well as in influencing the nature of relationships involved. However, perceptions and interpretation of project results, impacts and outcomes as well as evaluation criteria used are informed by the contexts of their engagements. Clients and consultants constantly refer to the context of engagement and draw interpretations which they use to understand project deliverables and nature of their relationships. The model is presented in **Figure 26**

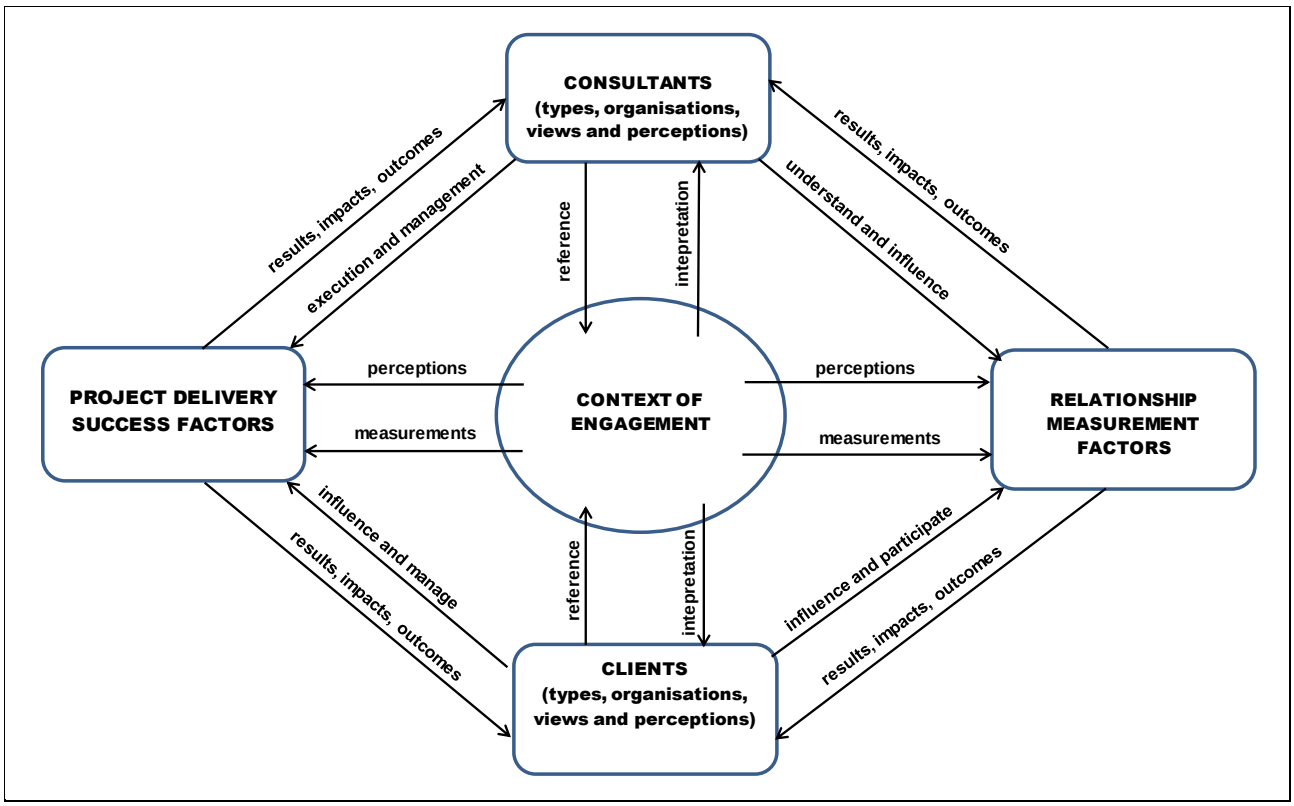

Figure 26: Client-consultant engagement model

7 CONCLUSIONS AND RECOMMENDATIONS

7.1 Introduction

This Chapter provides a summary of the main highlights from the study, key recommendations, limitations of research and the concluding statement.

7.2 Main Conclusions

This section provides the main conclusions that were drawn under each research question and associated hypothesis.

7.2.1 Research question 1

The research findings concluded that clients and consultants generally measure project delivery success using fairly the same factors. The factors which were used in the study are largely short-term project management factors as the more diverse project success factors were thrown out due to low internal validity and consistency reliabilities. The study findings were supported by past literature. The main explanation was that they fall within a project boundary and are hence, the responsibility of the project management team (client and consultant). These teams are most often evaluated based on these short term measures, and hence they found these factors as acceptable metrics.

Past research however criticised overreliance on short-term project management factors as they tend to overlook other softer issues associated with more diffuse and subjective project success factors. Research recommended a balanced approach which addresses both project management and project success factors. However, it was further noted that due to the multiplicity of factors involved, based on the diversity of clients and consultants, it is largely impossible to holistically exhaust all the factors.

This study attempted to use a balanced approach but the project success factors were thrown out due to poor internal validity and consistency reliability. Thus, it was concluded that a descriptive quantitative approach may not be sufficient to to assess a combination of project management success and project success factors. Instead,

a combination of exploratory qualitative and descriptive quantitative approach is recommended. The research also concluded that it is very important to consider the different types of clients and consultants in the choice of measurement factors to be used in any similar studies. This will help in eliminating any inconsistencies that may exist with respect to views regarding the suitable measures to be used.

7.2.2 Research question 2

The results of the study concluded that clients and consultants generally rate project delivery success factors with fairly the same level of importance. As was highlighted under research question 1, the factors used in this study fall within the boundaries of a particular project delivery process. They are hence, the responsibility of the project manager and project management team, whose performance is usually evaluated on the basis of such metrics. Thus both clients and consultants rated them between *"highly important"* and *"very important".*

The research findings however, recommended the need for consultants and clients to agree on these factors upfront in order to minimise any possible conflict in project success evaluation This was found to be critical given the diverse types of clients and consultants involved in any given project or context and the associated engagement models.

The findings were also critiqued based on insights drawn from past research. For instance the results cannot be easily generalised across different contexts because they do not extend beyond project boundaries to external environments and stakeholders. It was noted that what matters most is not only how the project would have been delivered but also its outputs and outcomes impact on a whole range of clients. Thus, project success factors should be given equal weighting in future similar studies.

7.2.3 Research question 3

The study concluded that clients and consultants do not use the same factors to measure the strength of their relationships. This is so, regardless of the important role played by relationships in the survival of consulting companies in a highly

competitive industry. The results were supported by client-consultant engagement models such as the "*purchase of the expertise" and the "expert"* models. However, the results were disputed under the "*process consultation", "the critical model"* and the *"social learning model*".

The insights from past research also emphasised the importance of sharing information, ideas, experiences and joint structuring and definition of problems between clients and consultants. The role of context was also emphasised, as a critical component in influencing the expectations, views and measurement criteria of different clients and consultants. Therefore, one of the key lessons which came out of the study findings and insights from past research was that generic *"one-size fits-all"* approach does not work in the consulting industry. Consultants must invest time and resources to understand their clients and tailor their engagement models and solutions accordingly.

7.2.4 Research question 4

The study also concluded that clients and consultants generally do not place equal importance on the different relationship measurement factors used in this study. On average consultants had higher ratings than clients. The explanation which came out of insights drawn from past research indicated the role played by the diverse type of clients and consultants in influencing their ratings.

The insights from past research this research's findings emphasised the role played by *"profitably satisfying client needs and wants"* (Jaafar, Aziz and Wai, 2009), which entails communication with clients, understanding their needs and the effective deployment of resources based on that understanding. The lesson which can be drawn from the different ratings by clients and consultants is that any *"blind resource deployment"* based on assumptions which are not qualified by a good understanding of the client context is a recipe for resource wastage and potential conflict.

7.2.5 Research question 5

The results concluded that there is no direct relationship between project delivery success and a strong client-consultant relationship. Drawing insights from the

research results and past studies, it was concluded that client-consultant relationships are influenced by many factors. Therefore, good project delivery alone is not sufficient to guarantee a good relationship.

Project management success alone falls short of addressing all the expectations of different types of clients. Many factors, interacting in complex ways, influence clients and consultants perceptions about what constitute project delivery success. In addition, relationships are a product of an equally complex interaction of variables. Thus, different clients and consultants in any given context may prefer and priorities different measurement factors over the others. It hence, becomes largely impossible to single out any one-on-one correlation relationship between any of the factors involved.

Therefore, before undertaking a similar study, it is recommended that a more detailed exploratory analysis be conducted to establish the nature of relationships among the various factors before running a correlation analysis on a selected few metrics. Past research also acknowledged the difficulty associated with dealing particularly with project success factors. Thus, it can be concluded that any generalisations which can be drawn from the findings under this hypothesis be qualified within specific contexts.

7.3 Research Contributions and Recommendations

7.3.1 Managerial

The study established that clients and consultants use fairly similar factors to measure project delivery success. However, given the complexities that are associated with project delivery and client-engagement contexts, the study recommends the importance of discussions and upfront agreements between clients and consultants regarding the success measures that will be suitable to evaluate project delivery. This is important in order to ensure that both clients and consulting practitioners use the same metrics and weightings to evaluate the projects and prevent conflicts.

The study also described the role played by different types of clients and consultants in influencing the models of engagements and their priority evaluation factors for measuring project success. The study highlighted the need for clients to understand these dynamics and incorporate them in their engagement models. This assists practitioners in the choice of suitable project success and relationship evaluation measures. It also helps in the planning and deployment of suitable resources during project delivery in order to adequately address the associated priority expectations of the different stakeholders.

The study also highlighted the fact that complexities associated with client-consultant relationship dynamics cannot be understood within the boundaries of one project. It is hence, important for consulting practitioners to profile their clients and invest resources to best understand the dynamics involved in the client organisations. This helps in ensuring that their interactions with the client do not conflict with their organisational dynamics. With this understanding project delivery can be tailored to best address the client's priority interests and expectations.

The study also highlighted the need to focus beyond delivery of particular projects as it does not provide enough understanding of the client environment. It was hence recommended that consulting practitioners and clients should always work in close partnerships to enhance information flow and shared responsibilities. This creates a learning loop where the clients will better understand the consultants' competences while the consultants will also better understand and match the clients' problems, priorities and expectations with strategic resource deployments. This is critical particularly, given the highly competitive nature of the professional services industry.

Without this conscious effort, clients will be dissatisfied and switch to other consultants who would be best able to address their concerns. Thus, the findings from this study provide critical insights for the development of customer-centric strategies by consulting companies and associated resource planning and deployment plans.

7.3.2 Academic

The study contributed to the academic body of knowledge in a number of ways. Firstly, it contributed into the body of knowledge by empirically establishing that clients and consultants measure project delivery success using fairly similar factors. Whereas other past research listed the key factors involved in project success factors, they did not test whether both clients and consultants viewed them as suitable measures. This study hence filled that dimension which was missing in existing literature.

Secondly, this study also contributed into the body of knowledge by empirically establishing that clients and consultants rate project delivery success in fairly the same way. This is based on the fact that acknowledgement of a factor to be suitable is not good enough. In order for consulting practitioners to know and single out the most important client touch points, they should be aware of the factors which the clients prioritise most in project delivery success evaluation. The findings are useful in the field of project management as they contribute in understanding the dimensions of project success which clients and consultants consider as priority.

Thirdly, the study contributed into the body of knowledge by empirically establishing that clients and consultants do not measure the strength of their relationships using similar factors. This is very important in understanding the dynamics associated with client-consultant engagements and resultant relationships.

This study also contributed to the body of knowledge by empirically establishing that clients and consultants do not rate the relationship measurement factors in the same way. The findings are critical in the customer relationship management (CRM) field and in designing customer-centric strategies. By understanding what clients and consultants prioritise as critical relationship measures, multi-criteria analysis (MCA) models can be developed based on the specific situations in given contexts, to inform customer-centric strategy (CCS).

This study also contributed into the body of knowledge by empirically establishing that project delivery success does not necessarily result in strong client-consultant

relationships. The findings highlight the importance of understanding the underlying assumptions behind clients approving or disapproving consultants, despite the latter having delivered technically excellent services. This understanding can only be generated by investigating the complex interaction of factors which influence client perspectives about relationship development and project delivery success. The results are useful in the field of marketing. When consultants design marketing strategies, it is important to understand what messages to pitch and in ways which best appeal to the client's priority needs and expectations. If low priority issues are emphasised the marketing strategy will not be successful.

The study also reinforced the findings by past studies that project success and relationship management are complex focus areas for academic research. The study established that it is difficult to holistically exhaust and quantify all the critical variables that influence these broad themes. In that context, the study also established that, although a quantitative analysis is very strong in analysing the nature and strength of relationships among the different variables, it is insufficient when it comes to explaining the complex interactions among the factors associated with the clients and consultants contexts.

The study also established the difficulty associated with attempts to generalise findings regarding the perceptions of clients and consultants, based on their engagements in a given project. The variety of clients and consultants make it difficult to generalise the findings. Most of the factors involved are context specific and hence, vary among clients and consultants groups.

Therefore, the study recommended that any future research focusing on project success and relationship management should be conducted using a combination of exploratory qualitative studies and descriptive quantitative analysis. Exploratory studies such as participatory approaches will be more suitable to capture variations associated with the different contexts and in illuminating the factors that give rise to the complex relationships. This understanding is important before empirically testing of the relationship between the identified factors, using quantitative statistical analyses.

7.4 Study limitations and suggestions for future research

7.4.1 Research methodology

The first limitation faced by the study had to do with the usual challenges associated with self-response research questionnaires. These challenges include both problems of response and non-response biases. Non response bias might have occurred through natural apathy by potential respondents towards surveys. Although the study used snowball sampling, which resulted in a fairly good response rate (over 60%) for both sample categories, there is always a chance that some respondents who might have provided useful insights might have been left out.

Response bias is associated with some respondents providing either deliberate false responses or those they think the researcher would like to hear or worse still their responses being affected by the personal or official views. Snowball sampling is susceptible to this bias particularly when junior personnel would have received the questionnaires through their superiors. In order to address the challenges associated with the fear of expressing personal views, a requirement was included in the cover letter, for the completed questionnaires to be forwarded directly via email to the researcher. However, the effectiveness of this intervention largely depended on the perceptions of respondents regarding the degrees of privacy associated with their particular organisations' IT policies.

The other limitation was that it is difficult to generalise or replicate the results of the inquiry due to the use of quota, judgemental and snow-ball sampling methods which are non-probability in nature. The fact that the questionnaire assessed respondents' *"perceptions"* regarding project delivery success and relationship measurement factors might also have introduced bias into the data in that other issues beyond the study focus might have subconsciously moderated the respondents' decision choices and ratings.

7.4.2 Research design

The research design was limited to quantitative analysis. The minimum exploratory analysis used was through literature review, out of which measurement factors were developed for the design of the data collection instrument and eventual quantitative analysis. It is however believed that a thorough qualitative method such as expert interviews could have provided more insight. However, though quantitative in nature, the questionnaire used allowed respondents the chance to list and rate any other additional factors they considered important. A *factor analysis* was then used to regroup the factor and screen them through testing for internal validity and consistency (reliability) before data analysis.

7.4.3 Design of the research instrument

The questionnaire used in the study was developed based on factors derived for past research. However, none of the studies used tested both relationship measurement and project success factors. This created a challenge in terms of establishing beforehand the extent to which the factors were internally consistent, despite the fact that acceptable Cronbach's alphas were recorded in the source documents. Thus, combined with new factors which came out of the study, a *factor analysis* and test for internal consistency (reliability) had to be run.

The problem with this approach was that a hybrid model was developed, which was then used in the analysis without having been pre-tested in previous studies. The impact of the new model on the results is therefore largely unknown. However, in order to generate the necessary confidence in the model, the researcher only used factor categories with acceptable internal validity based on *factor analysis* results as well as the acceptable *Cronbach's alpha* coefficients.

7.4.4 Sample of the study

The unit of analysis for the study was rather limited. The study focused on a small sample consisting of 160 experts (60 clients and 90 consulting engineering experts). Given the breadth of the marketing and project management disciplines, as well as the consulting industry, the lessons from study findings could have been improved

through much broader investigations based on a bigger sample and wider frame. However, by focusing on the two categories of responds, the study tried to create a balanced perspective.

The use of snowball sampling method was hence aimed at possibly increasing the sample size by reaching potential respondents to whom the questionnaire had not been directly sent. The higher than expected results show the important role that the snowball sampling method possibly played in improving the number of respondents reached. However, this was done with an appreciation of the possible associated risk of response bias which was discussed in the foregoing sections.

7.4.5 Context and scope of the study

The study focused only on engineering consulting, and excluded other service consulting sectors, which might have presented different perspectives to the study focus. However, the study's focus on the impact of project success on buyer-seller relationships is wide enough to permit drawing of generalisations across different sectors based on a good understanding of specific contextual issues involved. Time and resource limitations on the part of the researcher made it necessary to focus only on one sector. It was also considered logistically impossible to extend the study beyond one sector.

The study also focused only on South Africa and hence falls short in terms of contextual and situational comparisons with other countries. However, South Africa is one of the biggest economies in Africa and has drawn the interest of global consulting firms. Therefore, the clients and other consulting experts were generally expected to have the necessary exposure to the global trends in the industry. Their experience could, therefore be used to reasonably generalise the industry situation.

7.4.6 Suggestions for future research

This study identified a number of themes which could not be tested because they fell beyond the scope of the research. However, these themes were considered important and potential focus areas for future research.

The first recommended potential focus area is a comparison of project success factors and buyer-seller relationship measurements in different professional services sectors and industries. This is important to establish whether there are themes which are only peculiar to particular sectors and not necessarily applicable to others. For instance this study focused on engineering consultants and public sector clients. It was hence unclear whether the nature of engineering consulting services and products or type of clients influenced the nature of responses received and associated results. It would have been more informative if a comparison with private sector clients and other professional service consultants would have been undertaken.

Another possible area of focus for future research is to conduct a similar study which draws comparisons between different types of clients or consultants. It will be important to establish whether different results will be received based on responses from primary and ultimate clients. This will assist consulting practitioners in tailoring their strategies in accordance with the type of clients they would be dealing with. A comparison between different types of consultants under particular client-consultant engagement models will be also informative.

An exploratory sociological study focusing on the behaviour of respondents when responding based on their official and personal perspectives is also important. It will be informative to establish the conditions under which respondents are likely to express official or personal views and how this influences associated study findings. This will help in terms of the choice, design and deployment of research instruments under different situations.

Given the importance of the professional services industry and the fast rate of globalisation, similar studies can be conducted to compare results from different countries. This will assist professional service managers in developing appropriate entry strategies in different markets. For instance, where they cannot meet the client expectations and priority requirements directly, they may decide to go through acquisitions or partnerships. This will help the industry players by minimising failures and potential relationship damages.

7.5 Concluding Statement

The findings from this study concluded that professional service firms and their clients generally measure project delivery success using fairly similar factors. This is a critical finding which can be used in informing client-centric strategies by consulting firms. However, it was further established that due to the diverse nature of consultants and clients, generalisations regarding this study finding must be qualified through the assessment of specific project, client and consultant organisational contexts.

The study also established that clients and consultants place a fairly similar level of importance on the different project delivery factors. However, different contexts and the multiplicity of types of clients may play a role in influencing the levels of importance attached to different measurement factors. Thus, the study concluded that clients and consultants should agree upfront in terms of the metrics to be used in project success evaluation based on the convergence of their project expectations regarding their organisational goals and strategies.

The study further concluded that consultants and clients do not necessarily use the same metrics to evaluate the strength of their relationships. Due to the complex dynamics involved in relationship developments, clients and consultants rate the different metrics differently. The study recommended that the model of client-consultant engagements be informed by a good understanding of the underlying priorities and perceptions of clients and consultants. In order to achieve this, the study recommended that clients and consultant engagements be driven by partnerships rather than transaction-based approaches.

Lastly the study established that good project delivery alone is not sufficient for the growth and development of strong client-consultant relationships. It was recommended that consultants should invest time and resources in relationship building beyond individual project delivery. Clients and consultants should make their boundaries porous to promote information flow and sharing of ideas and challenges. It is through these active engagements beyond the project boundaries that enhance shared understanding. Therefore, the study findings are very important for the

development of client-centric strategies as well as delivery of relevant solutions which address the real challenges faced by clients.

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ANNEXURE 1: DRAFT QUESTIONNAIRE

INTRODUCTORY LETTER

Section 1: Background to research and respondent consent

As part of, and in partial fulfilment of, the requirements of an MBA degree at The Gordon Institute of Business Science (University of Pretoria), all students are required to submit a research dissertation. In that regard, this research seeks to establish the impact of project delivery success on customer consultant relationships in the professional services industry.

A questionnaire has been attached to this letter for you to respond to the list of questions presented. You can respond by either ticking or inserting an "X" against your preferred responses The questionnaire should at most take you not more than 15 minutes to complete. Your participation is voluntary. Should you wish not to continue, you are free to withdraw at any time.

I would also want to indicate that the questionnaire is also anonymous. This means that all the data that is gathered will be kept highly confidential. I request you to indicate neither your name nor your organisation's details. Thus, all data that will be gathered through this questionnaire will be averaged across all respondents, to enable me to obtain an overall view regarding the impact of project delivery success on customer-consultant relationships.

Should you wish to participate, I will be happy to share with you the full report once completed. I strongly believe that the report will provide you with useful insights as to how your service providers and or customers perceive and measure project delivery success as well as how this affects the subsequent relationship. By completing the questionnaire you indicate that you voluntarily participated in the research. Should you have any concerns you are well come to contact me or my supervisor, Howard Fox. Our contact details are provided below. I will be very grateful for your participation.

Yours sincerely,

Maxwell and Howard

	Researcher	**Supervisor**
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QUESTIONNAIRE

SECTION 1. SCREENING QUESTIONS TO DETERMINE ELIGIBILITY TO COMPLETE QUESTIONNAIRE.

1. In your current role, are you, or have you been responsible for managing consultant-based projects?

Yes	No

(If you answered Yes to Question 1, please proceed to Question 3).

2. If you answered NO to Question 1, please consider the following: are you in your current role, or have you in your past roles, been involved in the procurement of consultancy services in your organisation?

Yes	No

(Those who answered no to both questions will be excluded from the survey).

3. If you answered YES to either Question 1 or Question 2, please state the capacity in which you have been involved in consultant-delivered projects in your organisation. e.g. Project Manager, Project Principal, Project Administrator, etc, as well as how long you occupied that position.

Position	**How long have you been involved (months)?**

SECTION 2. PROJECT DELIVERY PERFORMANCE (PROJECT SUCCESS AND PROJECT MANAGEMENT SUCCESS).

4. Below are metrics which are commonly used to measure project performance. Please indicate whether you agree or not if they fulfil your criteria for measuring project performance.

Factor	Yes	No
Project is delivered according to agreed budget		
Project is delivered according to agreed scope		
Project is delivered according to agreed timeframe		
Project is delivered according to expected functional specifications		
Project delivery sufficiently supports the organisation's brand		
The project team's ability to effectively involve and manage stakeholders		
Project team's ability to demonstrate good leadership and integrity		
Project empowered our organisation and equipped us for the future		
Project delivered solutions which are relevant to our organisational context		
Project delivered solutions which are relevant to our community context		
Project has positive and sustainable impacts on our surrounding community		
Project capacitated and transferred skills to our organisation's staff		
Project enables us to protect the environment and enhance its sustainability		

5. Below are the same metrics you selected above. Can you now rate them in order of importance in accordance with your criteria for measuring project performance on a scale of 1 to 5, where 1 shows your highest importance rating and 5 your lowest.

Factor	1	2	3	4	5
Project is delivered according to agreed budget					
Project is delivered according to agreed scope					
Project is delivered according to agreed timeframe					
Project is delivered according to expected functional specifications					
Project delivery sufficiently supports the organisation's brand					
The project team's ability to effectively involve and manage stakeholders					
Project team's ability to demonstrate good leadership and integrity					
Project empowered our organisation and equipped us for the future					
Project delivered solutions which are relevant to our organisational context					
Project delivered solutions which are relevant to our community context					
Project has positive and sustainable impacts on our surrounding community					
Project capacitated and transferred skills to our organisation's staff					
Project enables us to protect the environment and enhance its sustainability					

6. If you have other factors outside the ones listed above, which you think are important, can you please list and rate them just as you did in question 5 above

Factor	1	2	3	4	5

SECTION 3. CONSULTANT-CLIENT RELATIONSHIPS.

7. Below are metrics which are commonly used to measure the strength of consultant-client relationships. I would like you to please indicate whether you agree or not if they fulfil your criteria for measuring the strength of consultant-client relationships.

Factor	Yes	No
When transactions are in the form of unsolicited bids		
When procurement decisions are driven by trust		
When the engagements are based on customer loyalty		
When the engagements are continuous and repetitive		
When the consultant is prioritised in the services procurement decisions		
When the consultant is prioritised in the customer's allocation of their share of budgets		
When the consultant is allowed access to the customers' sensitive proprietary information		
When the consultant retains the customer for at least 5 years		
When the customer and client work as partners in all transactions		
When project scope is less important than results and value addition		
When budget is less important than results and value addition		
When project timeframe is less important than results and value addition		

8. Below are the same factors you selected in question 7 above. I would like you to please rate them in order of importance in accordance with your criteria for measuring consultant-client relationships, on a scale of 1 to 5, where 1 shows your highest importance rating and 5 your lowest.

Factor	1	2	3	4	5
When transactions are in the form of unsolicited bids					
When procurement decisions are driven by trust					
When engagements are based on customer loyalty					
When our engagements are continuous and repetitive					
When the consultant is prioritised in the services procurement decisions					
When the consultant is prioritised in the customer's allocation of their share of budgets					
When the consultant is allowed access to the customers' sensitive proprietary information					
When the consultant retains the customer for prolonged periods					
When the customer and client work as partners in all transactions					
When project scope is less important than results and value addition					
When budget is less important than results and value addition					
When project timeframe is less important than results and value addition					

9. If you have other factors outside the ones listed above, can you please list and rate them just as you did in question 8.

Factor	1	2	3	4	5

SECTION 4. PROJECT PERFORMANCE AND CONSULTANT-CLIENT RELATIONSHIPS.

10. In your view, and based on your experience, can you please briefly explain how you think project performance directly influences consultant-client relationship?

    Client has to be comfortable with the consultant's skills ……..

11. Can you please identify and briefly explain what other factors you think lead to a good consultant-client relationship?

.....

.....

.....

SECTION 5. PERSONAL INFORMATION

Below are items relating to your involvement in consultant-executed projects. I would like you to please tick in the applicable boxes.

12. In what capacity are you, or have you been involved in consultant-executed projects

Consultant	Customer

13. Please state your job designation in which you are, or were involved in consultant-executed projects.

.....

.....

.....

14. Please state the number of years you have been in that role.

Number of years in the role	

15. In the table below are age ranges. I would like you to please indicate your age range by ticking the appropriate space.

Age **(please tick appropriate range)**	18-24	
	25-30	
	31-35	
	36-40	
	41-46	
	47-55	
	56-65	
	Over 65	

16. Could you please indicate you gender by ticking in the appropriate space in the box below.

Male	Female

17. In the table below are different races. I would like you to indicate your race

Race	**Selection**
White	
Coloured	
Black	
Indian	
Other	

18. In the table below I would like you to indicate the category of your organisation by ticking the appropriate space

Organisation category	**Selection**
Consulting company	
Metropolitan Municipality	
District Municipality	
Local Municipality	
Provincial Government	
National Government	
National Government Agency	
Other	

Thank you very much for your time

ANNEXURE 2: CORRELATION BETWEEN PROJECT DELIVERY AND CLIENT-CONSULTANT RELATIONSHIP

			Project management success factors				Client satisfaction factors					Client-consultation engagement factors					
Measurements	**Factor Categories**	**Test**	**TS**	**B**	**Sh**	**FS**	**TE**	**T/S**	**VB**	**Vsh**	**T**	**CPD**	**CRA**	**CSB**	**P**	**TP**	**CIS**
Project management success factors	TS	Pearson Correlation	1														
		Sig. (2-tailed)	-														
	B	Pearson Correlation	**.902**	1													
		Sig. (2-tailed)	**.000**	-													
	Sh	Pearson Correlation	**.844**	**.825**	1												
		Sig. (2-tailed)	**.000**	**.000**	-												
	FS	Pearson Correlation	**.629**	**.549**	**.513**	1											
		Sig. (2-tailed)	**.000**	**.000**	**.000**	-											
Client satisfaction factors	TE	Pearson Correlation	-.141	-.160	-.212	.053	1										
		Sig. (2-tailed)	.149	.102	.029	.593	-										
	T/S	Pearson Correlation	-.189	-.164	-.121	-.115	.161	1									
		Sig. (2-tailed)	.053	.094	.217	.241	.098	-									
	VB	Pearson Correlation	-.092	-.060	-.095	-.081	.134	**.415**	1								
		Sig. (2-tailed)	.351	.538	.333	.407	.172	**.000**	-								
	Vsh	Pearson Correlation	-.027	-.049	-.089	.003	.093	**.514**	**.471**	1							
		Sig. (2-tailed)	.781	.619	.365	.977	.343	**.000**	**.000**	-							
	T	Pearson Correlation	-.067	-.086	-.024	-.033	-.017	**.404**	**.235**	**.203**	1						

			Project management success factors				Client satisfaction factors					Client-consultation engagement factors					
Measurements	**Factor Categories**	**Test**	**TS**	**B**	**Sh**	**FS**	**TE**	**T/S**	**VB**	**Vsh**	**T**	**CPD**	**CRA**	**CSB**	**P**	**TP**	**CIS**
		Sig. (2-tailed)	.497	.382	.805	.738	.867	**.000**	**.015**	**.036**	-						
Client-consultation engagement factors	CPD	Pearson Correlation	.051	.032	.084	.019	-.181	.162	.097	**.316**	**.256**	1					
		Sig. (2-tailed)	.600	.746	.391	.848	.063	.096	.323	**.001**	**.008**	-					
	CRA	Pearson Correlation	.012	.040	.012	-.030	-.170	.051	.083	**.210**	.164	**.563**	1				
		Sig. (2-tailed)	.904	.685	.899	.759	.081	.605	.400	**.031**	.093	**.000**	-				
	CSB	Pearson Correlation	.122	.137	.160	.089	**-.244**	.120	.033	.140	**.206**	**.508**	**.367**	1			
		Sig. (2-tailed)	.215	.161	.101	.363	**.012**	.220	.736	.152	**.034**	**.000**	**.000**	-			
	P	Pearson Correlation	-.081	-.068	-.084	-.116	-.046	**.342**	**.325**	**.284**	**.380**	**.220**	**.343**	**.232**	1		
		Sig. (2-tailed)	.406	.488	.394	.238	.636	**.000**	**.001**	**.003**	**.000**	**.024**	**.000**	**.017**	-		
	TP	Pearson Correlation	-.039	-.088	-.037	.116	.122	-.003	.059	-.134	.007	.030	.187	.048	-.043	1	
		Sig. (2-tailed)	.691	.367	.703	.235	.212	.977	.545	.171	.943	.763	.055	.628	.660		
	CIS	Pearson Correlation	-.012	-.016	.050	.048	-.113	.031	.115	**.192***	.090	.170	.093	**.262**	.188	.028	
		Sig. (2-tailed)	.902	.872	.611	.627	.248	.753	.242	**.049**	.357	.082	.345	**.007**	.054	.774	

Key: Adherence to Budget (B), Adherence to Schedule (Sh), Adherence to Functional Specifications (FS), Adherence to technical requirements/ scope (S), Client prioritises value over adherence to schedule (VSh), Client prioritises value over adherence to budget (VB), Client prioritises value over adherence to technical specifications or scope (VS), Operations are driven by trust (T), Consultant adheres to terms and procedures (TP), Operations are conducted in partnerships (P), Client information is shared (CIS), Consultant prioritised in procurement decisions (CPD), Consultant is repeatedly appointed (CRA), Consultant is prioritised in client share of budget (CSB)