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UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

RESEARCH REPORT:

An Assessment of Construction Partnering Relationships amongst Major Contractual Parties in the South African Construction Industry.

By

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Submitted in Partial Fulfilment of the Requirements for the Degree of Master of Science (Building) In the field of Project Management

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October 2020

DECLARATION

I declare that this work is my own except where it has explicitly stated otherwise, and has never been submitted to any university or institution before, for award of any qualification.



08/10/2020

Signed: Mkateko L. Hobyani

Wits, Johannesburg
2020



ABSTRACT

Procurement systems are important for construction project delivery locally and globally. There is however a general consensus that traditional procurement methods are adversarial in nature and as a result affects effective project delivery. Although the South African Construction Industry (SACI) as suggested by previous studies is still being dominated by the traditional procurement system, there is also evidence of non-traditional procurement systems being adopted. This study seeks to investigate construction partnering relationships within the SACI in relation to parties involved, partnering development and partnering duration, all as per definition according to Construction Industry Institute's (1991). Questionnaires were sent out to 90 potential participants comprising of Clients, Contractors and Consultants, of which 72% responded. The study is limited to three Provinces in South Africa, namely; Limpopo, North-west and Gauteng. The findings which are analysed using a quantitative technique, indicates that partnering is developing in the SACI aside from the dominance of the traditional procurement system. The study found that there is a difference on each potential partner's preference amongst Clients, Contractors and Consultants. The study also revealed that participants prefer formal type of relationship development, contrary to the informal one as advocated by partnering. It is concluded that Clients, Contractors and Consultants prefer Dyadic relationship (Two-party) over Multi-party relationship in the SACI. Other Conclusion and findings in relations to partnering development, partnering duration and parties involved are discussed.

Key words: Procurement, Partnering relationship, Partnering arrangement, Clients, Consultants, Contractors

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DEFINITION OF TERMS

AAMP - Applicability Assessment Model of Partnering

AGC - Associated General Contractors of America

BBBEE - Broad-Based Black Economic Empowerment

CIDB - Construction Industry Development Board

CII - Construction Industry Institute

CSFs - Critical Success Factors

DPW - Department of Public Works

FIDIC - Fédération Internationale Des Ingénieurs-Conseils (International Federation of Consulting Engineers)

IDIs - In-Depth Interviews

JBCC – Joint Building Contracts Committee

PRP - Problem Resolution Process

PPPs - Public-Private Procurement systems

PFMA - Public Finance Management Act

SA - South Africa

SACI - South African Construction Industry

SAPOA - South African Property Owners Association

UK – United Kingdom

US – United States of America

1. Chapter 1: Introduction and background

A relative investigation of procurement approaches adopted within the building industry in South Africa was conducted by Oshungade and Kruger, (2015). The research finding using survey and interview techniques, concluded that the traditional approach of procurement is the most utilized technique in the South African construction environment for projects undertaking.

In the study focusing on the choices of procurement arrangements available in the South African Construction Industry (SACI), Thwala and Mathonsi, (2012) concluded using a questionnaire survey method, that there is need for the traditional procurement technique to be appended with modern procurement arrangements in a drive to meet innovative requirements within the building industry. The authors however did not identify such systems or even to recommend the suggested modern procurement systems to be used.

Generally within the construction industry, locally and abroad, an effectively completed project is the one which meets the duration target, within budget, to the required specifications, and key project objectives would have been achieved, if all of these are satisfactory (Oshungade and Kruger, 2015). This is interesting as the authors excluded other objectives such as quality, functionality, and aesthetics. Would a non-functional completed project be acceptable?

Furthermore, Oshungade and Kruger, (2015) citing Chan and Kumaraswamy (1997), stated that the achievement of these major project aims is perceived as a condition for project success. Such project success may be affected by the selected type of procurement technique (Oshungade and Kruger, 2015)

Procurement can be categorized as traditional and non-traditional arrangements (Thwala and Mathonsi, 2012). Traditional procurement arrangement is regarded as such because it is presence since the 18th century era (Oshungade and Kruger,

2015) citing (Mbanjwa, 2003), and has been the only choice for most clients for a long period (Thwala and Mathonsi, 2012).
Traditional procurement arrangement was further referred to as follows by Thwala and Mathonsi, (2012):

- Where a client enters into two agreements, one with the design professional expert and later with the builder following a successful bidding process phase, subject to design and contract papers organized by the consulting team.

Non-Traditional procurement system refers to newer diversified system that focuses beyond the design and building, but includes funding, operating and building management upon completion (Thwala and Mathonsi, 2012)

A view by Bennet and Peace (2006) in the book "*Partnering in the construction industry: a code of practice for strategic collaborative working*" stated that the traditional system has been unsuccessful because it provided no overall direction, causing participants within the project to defend interests of their own organisations only and not for the project.

According to Cheung *et al.*, (2003), traditionally, contractual projects gets awarded by means of competitive tendering processes and tends to be granted to the lowest tenderer. Furthermore, this type of the tender selection process normally gets criticised highlighting that it tends to lead to poor quality of work and in turn result in litigation among parties

Cheung *et al.,* (2003) citing Jannadia *et al.,* (2000), opined that the unbalanced risk allocation on the traditional client-contractor contracts and confrontational relationships amongst members has long been recognized as sources of construction challenges.

A further view by Cheung *et al.,* (2003) is that traditional contracting systems normally expresses their liabilities between the contracting parties through contracts and are of a view (Citing Piper, 2001) that such contracts provisions gets rigidly applied without taking into account the construction challenges.

Applying such contractual terms prevents solving of problems as parties revert back to their positions as per contract when problems arises. Furthermore, honesty become compromised and adversarial relations continues as a consequence (Cheung *et al.,* 2003). Eriksson *et al.,* (2008) are of a view that standard building contracts are not flexible, and as a result do not promote cooperation, risk sharing and responsibility.

Typical contractual terms examples:

JBCC Principal Agreement Contract (6.1 Edition –March 2014)
Clause 24: - "Penalty for late or non-completion"

> *"Where the contractor fails to bring the works or a section hereof [Calendar days] to practical completion by the date for practical completion [calendar days], or the revised date for practical completion, the contractor shall be liable to the employer for the penalty [calendar days]"*

FIDIC (Redbook) Conditions of contract for Construction (1st Edition – 1999)
Clause 8.7: - "Delay Damages"

> *"If the Contractor fails to comply with Sub - Clause 8.2(Time for Completion), the Contractor shall pay Delay Damages to the Employer for this default. The amount and limit for Delay Damages shall be as stated in the Appendix to Tender"*

It is to be noted that the contractor in such a contract(s) would strive to complete the project in order to avoid incurring costs paying penalties, which would reduce the profit. The rush to complete the project may compromise quality of work and ultimately the functionality of the building in the long run.

A study was conducted in the UK by Black, Akintoye and Fitzgerald, (2000) analysing the benefits and factors for success brought by the construction partnering

arrangement. Their research method used for data collection was questionnaires survey sent out to the contractors, consultants and clients.

Black, Akintoye and Fitzgerald, (2000) concluded that partners who are more confident about partnering are clients and contractors when compared to consultants. Black, Akintoye and Fitzgerald, (2000) further concluded that partnering's success is dependent on some requirements to be achieved, while making reference to, commitment, trust, parties clear understanding of their roles, communication, , uniformity, effort from all parties and an attitudes that can be changed.

Black, Akintoye and Fitzgerald, (2000) stated that the traditional adversarial approach is increasingly being recognized as ineffective, and the approach is taken to encourage poor performance by the parties. Cheung *et al.,* (2003) are of an opinion that the traditional procurement style which is often confrontational is becoming outdated, and that there is a need for a paradigm shift to a more effective method.

Eriksson, Nilsson and Atkin, (2008) opined that traditional procurement procedures which mainly focuses on the amount and competition instead of trust and cooperation is inappropriate. Moreover, Eriksson *et al.,* (2008) citing (Rooke *et al.,* 2004), highlighted that it is because of the competitive tendering brought by the traditional procurement that lead to contractors bidding low. This moves potential win-win cooperation position into a win-lose claim-seeking position (Eriksson *et al.,* 2008).

Lai and Lam (2009) undertook a study in Hong Kong about the perception of different criteria for performance among project participants. Moreover, Lai and Lam, (2009) structured the study on the nine performance criteria and concluded using a survey questionnaire that time was the most significant criterion for project performance, second to it being profits, then environment and quality. The overall ranking for the criteria importance for performance is quoted as follows:

Table 1: Performance Criteria Ranking (*Source: Lai and Lam, 2009*)

1. "Time"	2. "Profit"	3. "Environment"	4. "Quality"	5. "Safety"
6. "Effectiveness"	7. "No Claims/ Contractual disputes"	8. "Job Satisfaction"	9. "Generation of Innovative Ideas"	

Procurement according to Thwala and Mathonsi, (2012) citing Kerzner (2006), "*is a process that involves two parties with different objectives who interact in a given market segment"*. Based on the above author's views, it is important to understand the parties' objectives within a construction project undertaking.

Mbachu and Nkado, (2006) established a theoretical structure aimed at evaluation of requirements by client and their fulfilment during the construction development process. Within such theoretical structure, client's needs are categorized into stages such as design (Both for Engineering and Architectural), Management of also both the construction process and project cost and construction services.

Moreover, in their study undertaken to monitor client satisfaction, a descriptive survey method was adopted aiming at commercial building clients registered with the South African Property Owners Association (SAPOA) Mbachu and Nkado, (2006). The findings showed that clients satisfaction was average during construction development process and that a there is room for improvements for contractor and consultants services.

Bowen *et al.,* (2014) pointed at the significance of an effective client briefing process in achieving construction goals with regards to project duration, cost and quality. In their study aimed at determining the environment and how effective the project's briefing procedure is, Bowen *et al.,* (2014) concluded using a national questionnaire survey that there may be a need by clients to recognise and be more expressive on their requirement needs for the purposeful performance of their developments. In addition, more attention should be given to well-written project briefs and not rely on oral briefing which may be inconsistence.

Michell *et al*., (2007) researched about the stakeholder perceptions on the effectiveness of the contractor's duration, cost, and controlling of quality on construction developments in the SACI. Findings as a result of survey questionnaires concluded that construction consultants do not have a lot of faith on the efficiency of contractors' procedures on time management, quality controlling and monitoring.

Bryde and Robinson, (2005) undertook a practical research on the perspectives of clients against contractors on the success of projects. The research findings indicated that contractors pay more attention to reducing project costs and duration whilst the client emphasises on satisfying the other stakeholders.

It is evident that the project objectives, as per the authors above, are driven by the client's needs, his understanding of scope and ability to define it, while the consultants are to be able to translate it into the design and its management during execution. The contractor's objective is to deliver to the gratification of the client and his representatives.

The traditional approach as argued by Michell *et al.*, (2007) citing (Herbsman and Ellis, 1999) has been dominated by failure in project delivery as a result of delays on schedules, cost overruns, quality problems, increases in claims and litigations.

Cornick and Mather, (1999) stated that it is due to the forms of contracts often involved in the traditional approach that lead to its' failure. Furthermore, the lack of coordination required for planning and construction has been identified as one of approach's problem.

Due to the traditional procurement system challenges and failure, alternative ways for managing construction projects in a form of Partnering has been recommended over the years through studies (Cheung *et al*., 2003).

What is Partnering?

Partnering "is defined by the Construction Industry Institute (CII), 1991, as a long term commitment between two or more organisations for the purpose of achieving specific business objectives by maximizing the effectiveness of each participant's resources"

Scott, (2001) defined partnering "as a relationship between two or more companies or organizations which is formed with the express intent of improving performance in the delivery of projects".

Partnering "is a set of actions taken by the work teams that form a project team to help them cooperate in improving their joint performance" (Bennett and Peace, 2006).

Partnering is according to Black, Akintoye and Fitzgerald, (2000) said to be a construction management tool which can improve construction quality, time reduction, cost reduction and better relationship between contracting parties, effective communication.

The concept of partnering originated in North America, particularly in the manufacturing industry in the 1980's and 1990's following Japan's manufacturing industrial success (Bennett and Peace, 2006).

In a book titled "Partnering in Europe. *Incentive Based Alliancing for Projects*", Scott, (2001) stated that partnering's adoption in the building industry has been successful for a minimum for a decade. Although partnering was firstly used by the US and then adopted by the UK and has been increasingly used by the other parts of the world (Scott, 2001).

Phua (2005) argued in the study titled *"When is construction partnering likely to happen? An Empirical examination of the role of institutional norms"* that despite a wide interest and encouragement for the use of partnering and its benefits, there is no apparent trend that shows partnering as a dominant procurement choice internationally.

Furthermore, the study concluded that organisations that observe tough construction industry customs for the use of partnering are two times probable to adopt it than those who do not have such perception (Phua, 2005). The above conclusion was based on sampled data in a form of survey questionnaires sent out to firms in Hong Kong as a research method.

Cheng *et al.*, (2000) undertook a study in order to establish "*the critical success factors"* (CSFs) within construction partnering method. Using the literature review in

partnering, Cheng *et al.*, (2000) established a partnering structure in order to find such CSFs for parties undertaking construction partnering. Furthermore, the partnering structure focuses on the impact of the relative partnering characteristics and the supervisory abilities within partnering arrangements.

Moreover, Cheng *et al.*, (2000) highlighted, the relative characteristics as those which a partnering organisation should be clear and observe how the partnering arrangement communicates to its business undertaking. The contextual characteristics identified includes suitable resources, supervisory support, innovation, mutual trust, commitment for longer term, coordination and creativity.

The management skills part of the framework are those needed to convert the threats into opportunities to encourage partnering success (Cheng *et al.*, 2000). Furthermore, the skills for management required are positive communication and the ability to resolve conflicts.

A case study was used as a research method by (Cheng *et al.*, 2000). Their study established that construction partnering can actually improve organisational performance and subsequently project performance. Furthermore, the study determined that suitable management abilities (effective communication and an ability to solve conflicts) and context (reciprocal trust and longer-term commitment) are crucial for the success of partnering.

The benefits of partnering has been identified by Wong and Cheung, (2004) citing (Li *et al.,* 2000) as reduction to waste, improving quality, reducing project delays, improving efficiency in the working process as a result of improved coordination due to the partner's commitment as well as the management on site.

The benefits provided by partnering includes opportunities for innovation, equal sharing of risk among contracting parties, work efficiency, and cost effectiveness, stated by Cheung *et al*, (2003). These benefits were found by Cheung *et al*, (2003) on their research aimed at examining partnering efforts in terms of its performance on projects. They devised a partnering temperature index (PTI), which can be used as an online monitoring tool, which can be used by project participants for data input

and analysis anytime. Further benefits that can be realized from the adoption of partnering arrangement are listed below by Awodele and Ogunsemi, (2010) as applicable within the Nigerian Construction industry.

Table 2: Achievable benefits through project partnering's adoption in the Nigerian construction industry (by types of organisations) [C1-Consultant, C2-Contractor, C3-Client] (*Source: Awodele and Ogunsemi, 2010*)

				ANOVA[a]	
Benefits	*C1*	*C2*	*C3*	*F Statistics*	*Significance Level*
Reduction in costs and time of project implementation	*3.42*	*4.13*	*3.81*	*2.61*	*0.08*
Establishment of good and less adversarial relationship	*4.15*	*4.52*	*4.24*	*2.70*	*0.07*
Risk sharing	*3.19*	*3.77*	*3.29*	*2.90*	*0.06*
Operational savings	*3.11*	*3.45*	*3.62*	*1.58*	*0.21*
Increased implementation speed	*3.81*	*4.13*	*3.76*	*0.87*	*0.42*
Construction projects cost savings	*3.11*	*3.45*	*3.62*	*1.58*	*0.21*
Quality improvement	*3.73*	*3.68*	*3.67*	*0.02*	*0.98*
Improved design	*3.27*	*3.71*	*3.67*	*1.39*	*0.25*
Understanding of parties will be increased	*3.81*	*4.06*	*4.09*	*0.64*	*0.53*
Enhanced economic growth of a nation	*3.42*	*3.84*	*3.57*	*0.92*	*0.40*
Increased customer satisfaction	*3.85*	*4.45*	*4.24*	*2.70*	*0.07*
Enhanced facility maintenance	*3.38*	*3.71*	*3.38*	*0.32*	*0.73*
Improved return on resources	*3.35*	*3.55*	*3.38*	*0.31*	*0.73*
Increased revenue generation to the national development	*2.08*	*2.03*	*2.71*	*1.74*	*0.18*
Improved administration	*3.50*	*3.90*	*3.76*	*1.13*	*0.33*
It encourages financing option	*3.31*	*3.29*	*3.00*	*0.56*	*0.57*
Reduced risk exposure	*3.54*	*4.06*	*4.14*	*2.31*	*0.11*

Eriksson *et al.,* (2008) concluded in the study focusing on client views regarding challenges to partnering adoption, that cultural (such as change) and organisational attributes (such as resources, procedures and routine) are the most critical obstacles.

Bygballe, Jahre and Sw, (2010) conducted a literature review about partnering relationships in construction. Their study focused on exploring how literature relates the three characteristics of partnering relations in construction as identified in the

Construction Industry Institute's (1991)' definition: duration of the relationship, partners involved and the terms on how the relationships can develop.

Bygballe*et al.*, (2010) findings were summarised as follows:

a) On relationship duration – both the literature and practice has a habit of focusing more on project partnering than strategic partnering (which bears the same meaning as "strategic alliance" which refers to according to (Cheng *et al.*, 2004) the establishment of a formal longer term partnering relations by a set of organizations.

b) Relationship partners – neither type of these partnering relationships, a multiple party or a dyadic type dominates in literature. Bygballe*et al.*, (2010) further stated that there are fewer articles that discusses suppliers and subcontractors in partnering relationships

c) Relationship development – formal types of relationship development like contracts, tools and techniques are advocated mostly, although other publications debate for a mix type of relationships which includes informal dynamics or social aspects

Of the 87 articles reviewed by Bygballe *et al.*, (2010) which includes case studies, literature review, survey, etc., majority covers countries in Asia, UK and the US and nothing about partnering relations on the African perspective. It is also imperative to notice that partnering in the United Kingdom and Sweden arose as a response to critical government assessments in their respective building industries (Nystrom, 2008). Hosseini *et al.*, (2016) credits Statsbygg, a Norwegian Government's important consultant in building and property department for the initiation of partnering in the year 2001.

There is a need to understand the partnering relations in the African context. More recently, Awodele and Ogunsemi, (2010) conducted an ANOVA analysis of clients, consultants and contractors in Nigeria. While their study highlighted a formation of great and less confrontational relationship as one of the benefits of partnering, it did



not establish how the partnering relationship entails in terms of duration between partners and its development. Therefore, this study seeks to investigate how partnering relationships are, in terms of the preferred relationship type, its relationship development and duration among contracting parties within the South African construction sector.

1.1. Research Problem Statement

Adoption of the construction partnering has been gaining attention in many countries across the globe as evidently discussed in the background literature, however, there is little data that relates to the African construction industries on the project partnering subject. Since partnering strive on relationships, it is important to understand its nature amongst parties within the South African context, particularly amongst client, contractor and consultants. This study seeks to investigate this.

The associated **research question** is as follows:

How partnering relationships amongst major contractual parties within the SA construction sector are, in terms of relationship duration, the type of relationship, and how do such relationships develop?

1.2. Research Propositions

It is hypothesised that a formal relationship by partners in a multiple party relationship is preferred by parties, along with being in a strategic partnering arrangement.

1.3. Research objectives

The key objective of this research is to investigate construction partnering relationships, as a non-traditional procurement strategy in the South African Construction Industry. The study also seeks:

- To assess how developed is partnering arrangement as a procurement strategy in the South African Construction Industry (SACI)



- To assess parties' view on their ideal type of relationship development between a formal and informal type when undertaking partnering
- To assess parties' view on which partnering type is preferred the most between project partnering and strategic partnering
- To determine who are the preferred parties in partnering relationships

1.4. Rationale of the research

The construction partnering subject within the South African Construction Industry (SACI) is not as well established as compared to the UK, China, and the US. Conducting this research will add to the theoretical and tested knowledge within the SACI on the subject, and this necessitates why this research study should be conducted.

1.5. Limitations and assumptions of the study

The study is limited to construction partnering relationships view between the Client, Consultants and Contractors. It is assumed that the participants would have at least one project experienced on the construction partnering. Time constrains may be a challenge in terms of timely responses when conducting this study.

1.6. Methodology of research

Comprehensive literature review on construction partnering and other procurement methods is reviewed using journals and books. Quantitative research method was used and semi-structured questionnaires was sent out to the potential respondents. The questionnaires are chosen because are quick and easy to complete and to analyse. The samples were gathered through stratified random sampling to ensure equal chances of selection for the respondents from the population of consulting firms, Clients and Contractors.

1.7. Ethical consideration

No names were recorded in this study in an effort to assuring anonymity among participants, however their titles were recorded in order for conclusions to be made in relation to participants to be categorised for the purposes of this study.

Respondents on this thesis participated at freewill and no money or other incentives or gifts whatsoever were promised. Confidentiality was stated at the beginning of the questionnaires to ensure awareness and certainty among participants to provide their best possible view when participating on the study.

1.8. Analysis of Data

A descriptive statistical method was used in findings about the characteristics of the samples and the inferential statistical method will be used to enable the generalization of the findings. Conclusions and recommendations are done.

1.9. Structure of Research

The following is the research chapter outline:

The first chapter is the introduction and further describes the Problem statement, Hypothesis, Research objectives, Scope of the study, Limitations, Research Methodology and Data analysis.

This is followed by the second chapter that mainly comprises of literature review of the study. Chapter three highlights a detailed method in which the study is conducted. This is further followed by the fourth chapter where the collected data is analysed. Chapter Five is the conclusion and recommendations.

1.10. Chapter Summary

This chapter is an introduction into the study including the topic, main objectives and hypothesis. The following chapter focusses on the literature review.

2. Chapter 2: Literature Review

2.1. Introduction

On their critical review of procurement methods in construction which was conducted mostly by means of literature review, Naoum and Egbu, (2015) identified trends in procurement methods that can contribute towards modern principles of procurement like supply chain. Supply chain is defined by Khalfan, McDermott and Cooper, (2004) as a "*network of different organisations linked upstream or downstream in a chain, aiming to produce quality and value in the services and products for the end consumers through integrated processes and activities"*. Furthermore, upstream supply chain in construction relates to integration by client organisations while downstream relates to subcontractors and material suppliers. Other procurement trends identified by Naoum and Egbu, (2015), includes an electronic based systems such as e-procurement, sustainability, value engineering, and innovation.

Generally within the building industry, successful projects, are viewed as the ones that are finished within budget, on time, achieving acceptable quality standard, and to the satisfaction of client (Naoum and Egbu, 2015). Furthermore, the achievement or lack of these criteria above may be associated to a procurement method adopted on a project.

Ambrose and Tucker, (1999) are of a view that the choice of the procurement method can have an important contribution on the completion of a project successfully, but the challenge remains on the type procurement system most appropriate for the relevant project. Furthermore, the authors' views were revealed on their study titled "*Matching a procurement system to client and project needs: A procurement system evaluator"*, in which three hypothetical case studies were used in a three dimensional interaction matrix developed to link both the project characteristics and client needs. Using a computer system in analysing the cases, one can be able to see graphically which procurement system is better and why as this methodology provides greater sensitivity results.

Ojo, (2009) refers to a procurement method as numerous groupings of design processes and construction stages organised to deliver or implement a certain project. This is highlighted on the study conducted in the Nigerian construction industry, which focused on benchmarking construction procurement methods against the selection criteria. The study concluded using the traditional mean and standardized ratios based on a survey by participants that procurement performance is not based on selection criteria.

According to Oladinrin *et al.,* (2013) cited by Oshungade and Kruger, (2015) Construction procurement is a process or a technique adopted by clients to obtain a construction product.

On the study that focused on an assessment of procurement approaches in the Nigerian constructions sector, Babatunde, Opawole and Ujaddughe, (2010) revealed using questionnaires data analysed through descriptive and inferential statistics, that variables associated with the traditional procurement method were more dominant. Furthermore, Babatunde *et al.,* (2010) defined *"procurement method as the management of the total process involved in construction project delivery"*

Naoum and Egbu, (2015) defined a procurement system citing Love *et al.,* (1998) as "*an organizational system that assigns specific responsibilities and authority to people and organizations, and defines the relationships of various elements in the construction of a project*"

2.2. Types of procurement methods

According to Oshungade and Kruger, (2015), many researchers refer to the term procurement methods differently, such as procurement systems, procurement routes, procurement or project approach, contractual arrangement and project delivery method. In this study, the term procurement method shall be inclusive of all the other terms.

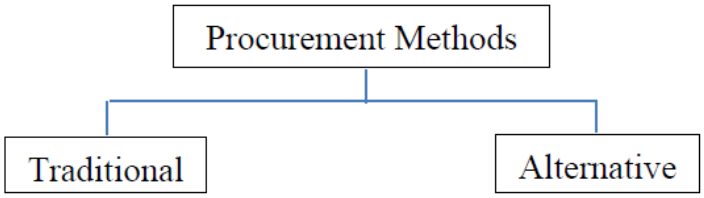


Figure 1: Classes of procurement methods (*Source: Oshungade and Kruger, 2015*)

Oshungade and Kruger, (2015) highlighted the classes of procurement approaches as per *figure.* 1 above, Traditional method and Alternative (Non-Traditional method).

2.2.1. Traditional Procurement

According to Babatunde *et al.,* (2010) the traditional procurement system is where the sequence of the building stages of design, tender and construction are seen as separated responsibilities. Thwala and Mathonsi, (2012) relate the term traditional to the fact that this method has long existed and that it remained the only procurement method obtainable to majority of developers in the construction sector for a lengthy period.

Thwala and Mathonsi, (2012) further stated that the traditional building approach is where a developer enters into two agreements with the design professional specialist and later with the contractor following a successful bidding process phase, founded on the design and contract documents arranged by the consulting team.

Ojo, (2009) citing Bennet and Grice, (1990) are of a view that the traditional method of procurement (design-bid-build) is sequential in its approach and it is where a client provides the consultants full responsibilities within the project circle sequentially.

Rashid *et al.*, (2006) conducted a study which focused on the effects of procurement systems on construction project performance, particularly on time, cost and quality. The study only reviewed literature and was limited to the traditional, design and build as well as management contracting procurement systems. Rashid *et al.*, (2006) concluded that, each procurement method yields a different effect on time, cost and quality, because each method has its distinctive processes on both pre and post tender activities.

Traditionally, according to Rashid *et al.*, (2006), the client briefs the consultants or designers to complete the working drawings before the tender or construction takes place. The tender process then follows and the system permits builders that feel capable to tender for project in a competitive environment (Babatunde *et al.,* 2010).

Figure 2 below demonstrates the distribution of responsibilities and tasks from the client, consultants and the contractor within a project lifespan regarding the chronological route of the traditional procurement arrangement (Rashid *et al.,* 2006)

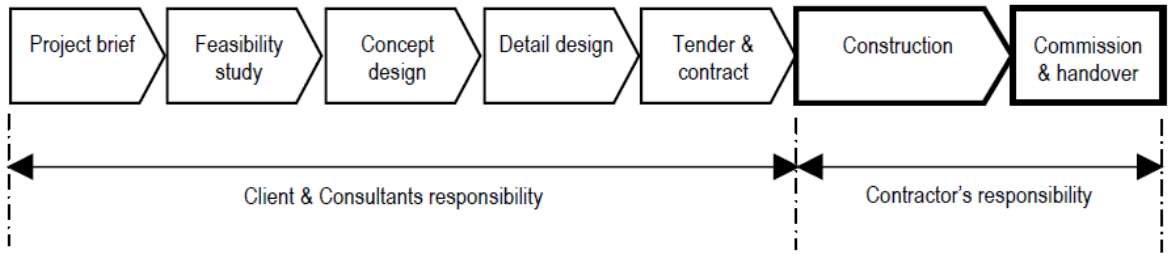


Figure 2: The sequential process of the traditional procurement system (*Source: Rashid et al., 2006*)

Rashid *et al.*, (2006) further stated the following on the traditional procurement arrangement:

> *Time* – Because of its sequential approach, the system is regarded as slow in terms of project delivery. It is also identified as preferable because of its clarity on accountability on design and construction.
>
> *Cost* – The system provides price certainty because of its competitive nature based on the tendering.
>
> *Quality* – The system provides quality certainty and functionality standards because of the opportunity the client has of combining the best design and construction expertise.

Ojo, (2009) is of an opinion that the traditional procurement system is widely criticized due to its separation procedure of the design and building phases. Furthermore, Ojo (2009) citing Ojo *et al.,* (2006) highlighted that view based on a

belief that the separation of the phases is ineffective for all categories of building projects.

2.2.2. Non-Traditional Procurement

According to Mohsini and Botros, (1990) alternative / non-traditional procurement evolved as a consequence of the traditional procurement method's inadequacy in reducing organizational challenges in the construction sector. A view by Thwala and Mathonsi, (2012) citing Lam, Chan and Chan, (2008) is that the alternative procurement method is proving to be more effective in overcoming the existing traditional procurement shortcomings.

Masterman, (2012) stated that notwithstanding the progressive commentary related with the alternative procurement systems, the system is not sufficient enough to lead to conclusion as to which procurement system is most appropriate for building projects.

The non-traditional procurement systems are as follows:

2.2.2.1 *Integrated Procurement System* – This system according to Rashid *et al.,* (2006) citing Ashworth, (2001) combines or integrates the duties of design and building, whereby both tasks are undertaken by an individual contracting company. On this system, the client only deals with one organisation (Thwala and Mathonsi, 2012), but commits to the costs for the building and design a lot earlier when compared to the traditional system (Babatunde *et al.,* 2010)

- ✓ *Design and Build System* – This fits well on the category of integrated procurement system, as the contractor is responsible for the design, cost proposal and the actual construction (Rashid *et al.,* 2006)
- ✓ Rashid *et al.,* (2006) further opined that there are variations or innovations on the design and build approach, and lead to the following procurement methods:

- *Package Deal (also referred to as "All In")* – The builder is in charge of everything including the design, preparation of briefs, sketches, final drawings, approvals from the building authorities, funding of the project, building, furnishing and commissioning and giving over to the customer.
- *Turnkey Contract ("All In")* – Also on this method, Rashid *et al.,* (2006) citing Ashworth, (2001) the contracting organisation is responsible for everything from design, preparation of briefs, authority approvals, financing, construction, commissioning, cleaning and handing over as a ready for use project.
- *Develop and Construct* - This method is more similar to the design and build technique as the design and construction is still undertaken by the contractor or by a single organisation. The difference on this system is that the customer has a design consultant responsible for the concept design, which gets taken and given to the builder who then develops detailed design and then develops the project.

Rashid *et al.*, (2006) further stated the following on the integrated procurement system:

Time – particularly on the design and build and turnkey methods, project duration gets substantially reduced due to the possibility of design free pre-tender process, with the design being conducted almost in parallel with construction.

Cost – Compared to the traditional procurement system, the costs are slightly higher on the integrated system. Lack of design may lead to some changes during detail design process and such risks normally gets priced in by the contractors as a financial risk. Despite the pricing

of uncertainty risks by the contractor, cost savings can be realised on this system by reduction in the project duration. The priced risks being set off against early financial returns, and reduction in loan interests.

Quality – The integration of design and construction method enables the builder to maximise his know how and expertise to grow an innovative construction process with an opportunity for improved quality in a more efficient project schedule. Furthermore, quality on this method tends to be compromised as the contractors often take short cuts for a maximum profits.

2.2.2.2 *Management Oriented Procurement System* – According to Rashid *et al.,* (2006) is a procurement approach where controlling of the building process including the design is handled by the builder who then performs a management consultant's role on behalf of the client. Furthermore, the management consultant duty is to supervise the design professionals as well as the specialists or subcontractors during the construction process. Rashid *et al.,* (2006) further identified the following methods under the management oriented procurement arrangements:

- *Management Contracting* - According to Ojo, (2009) citing Naoum, (1994) under this method, the contractor is contracted as a consultant at an early stage of pre-construction. The method is viewed by Rashid *et al.,* (2006) as a procedure of accelerating procurement method as the builder becomes a member of the client's representatives. Furthermore, the contractor is expected to offer advice based on his experience intended for the integration of the design and the building phases (Ojo, 2009)

- *Construction Management* – under this method as stated by Babatunde *et al.,* (2010), the construction manager is

contracted by the client to manage the contractor on his behalf. Furthermore, both the contractor and the construction manager are contracted to the client. Rashid *et al.,* (2006) stated that the uniqueness amongst management contracting and construction management is that in the former, the specialists or subcontractors are contracted to the builder in charge whilst in the latter, they are contracted to the client.

- *Design and Manage* – the design and supervision of the works is carried out by a consultant firm contracted to the client along with the specialists or subcontractors as members of the project team (Rashid *et al.,* 2006)

Rashid *et al.,* (2006) further stated the following on the management oriented procurement arrangement:

Time – The method allows for an early start on the project as compared to the traditional approach because the management contractor is able to contribute towards the design to allow for buildability.

Cost – Compared to other procurement systems, the costs are slightly lower on this system because the package contractor's prices become the contract sum, excluding the main contractor's profit margins. There are costs for the management fees to the management contractor or construction management consultant.

Quality – The construction management consultant or the management contractor tends to be stricter on quality and standards based on their experience and a need to deliver a quality product to the client.

2.2.2.3 *Collaborative/discretionary Procurement System* – According to

Thwala and Mathonsi, (2012) the client formulates the framework for overall project management and has the discretion on the type of the procurement system to adopt.

2.3. Overview of the commonly used procurement strategies in SACI

According to Thwala and Mathonsi, (2012) citing Rwelamila and Meyer, (1996) procurement systems have been around in SA for at least more than two decades. The procurement system in South Africa is centred on the model from Britain, since South Africa was a British colony (Thwala and Mathonsi, 2012).

The political challenges and instabilities in South Africa in the 1980's and 1990's lead to some changes in the SACI where, its focus changed from the first world into the developing world (Thwala and Mathonsi, 2012). Furthermore, Thwala and Mathonsi, (2012) citing the Department of Public Works (DPW), (May 1999) stated that these changes in the SACI are directed towards to the new construction policies focusing on economic growth, sustainable employment, stability and balancing of historic imbalances.

Thwala and Mathonsi, (2012) citing the Construction Industry Development Board CIDB (2005) are of a view that procurement systems used in South Africa are based on certain generic standards and terms that are competitive, transparent, equitable and reasonable like in other developing countries.

Similarly, the Public-Private Procurement systems (PPPs), which Fombad, (2013) argues' its existence as having being around since the Roman Empire's period, has been successfully used in South Africa as it does in other countries such as the UK and Australia. Fombad, (2013) conducted a study focusing on the challenges in relation to accountability in the South African PPPs - which is defined as "a variety of cooperative arrangements between the government and private sector or non-governmental organisations to improve infrastructure networks and enhance service delivery by means of out-contracting, out-sourcing donating or privatizing public goods". The South African National Treasury, PPP Unit, (2005) defined PPPs

according to the South African law as *"a contract between a government institution and a private party, where the private party performs an institutional function and/or uses state property in terms of output specifications. Substantial project risk (financial, technical and operational) is transferred to the private party and the private party benefits through unitary payments from government budgets and/or user fees*".

It is worth highlighting that the South African PPP's are regulated by the South Africa's Public Finance Management Act (PFMA) of 1999 which was enacted to oversee good governance on public procurement for goods and services through Regulation 16 (Farrugia, Reynolds and Orr, 2008). Furthermore, the PPP Unit was established in South Africa in order to develop policy and regulatory framework. However, the goal for the PFMA legislation, is ensuring transparency, fair and equitable undertaking of PPP projects. Fombad, (2013) identified a number of concluded projects in SA based on the PPPs, such as Gauteng Rapid Rail Link, Albert Luthuli Hospital and the Department of Trade and Industry campus concession, however, challenges that relate to transparency, disclosure and participation remain..

Oshungade and Kruger, (2015) are of a view that South Africa has many socio-economic challenges based on its industrialised economy, which affects the SACI. As a result of these challenges, Oshungade and Kruger, (2015) citing Mbanjwa, (2003) primary project objectives are no longer considered the only objectives on public projects. There are now secondary objectives which include *inter alia*, skills transfer, community empowerment, upliftment of the previously disadvantaged individuals.

In South Africa, both the above types of objectives should be deliberated when choosing the correct kind of procurement technique, but it also be subject to the kind of customer (Private or Public sector) (Oshungade and Kruger, 2015). Moreover, these project objectives differ among public and private sector clients. Oshungade and Kruger, (2015) citing Mbanjwa, (2003) further stated that public sector development goals includes both the primary and secondary goals although the private sector's project goals are only the primary ones.

It is vital to note that the South African public sector's procurement objectives were introduced in order to address the discriminatory and unfair practices of the past, whereby certain groups of people were prevented from participating in government contracts (Bolton. 2006). Furthermore, Bolton (2006) highlighted that prior 1994 which is pre-democratic South Africa, it was difficult for newly established business to participate in the procurement system, as a result, a constitutional framework of preferential procurement policy including its regulations was enacted, as a Preferential Procurement Policy Framework, 2000 (Act No.5 of 2000) – hereafter the Procurement Act. In it, the Procurement Act defines "B-BBEE" as broad-based black economic empowerment, which has since been enacted as Broad-Based Black Economic Empowerment Act, 2003 (Act No.53 of 2003) – hereafter the B-BBEE Act.

In order to achieve the broad-based black economic empowerment, according to the B-BBEE Act, its core objectives are: to promote economic transformation by means of major participation by black people in the economy; to achieve a meaningful change in the racial composition of ownership and management within both the existing and new enterprises. Bolton, (2006) argued in the study focusing on government procurement as a policy tool that such a policy was justified in South Africa, provided it is implemented within the context of the B-BBEE Act's framework.

Emuzi and Adlam, (2013) concluded on their empirical study focusing on the implementation of the B-BBEE in SACI that the generic framework of B-BBEE affects the construction sector. Firstly, in its implementation with regard to commercial impediments faced by contractors, or corporate difficulties in terms of exploitations, that B-BBEE is subject to fronting practices – which according to the B-BBEE Amendment Act, 2013 (Act No.46 of 2013) "means a transection, arrangement or other act or conduct that directly or indirectly undermines or frustrates the achievement of the objectives or the implementation of the B-BBEE Act"

The study conducted by Thwala and Mathonsi, (2012) revealed that there are aspects that impact the choice of procurement systems in SA. Furthermore, such aspects are categorised as internal and external. External aspects include *inter alia*

markets, regulations, information technology and natural causes. Internal factors, are split between the client characteristic factors (which includes *inter alia*: project risk, funding arrangements, political situations, public or private sector, client's familiarity of the procurement arrangements) and project characteristic factors (which includes *inter alia*: time, cost, quality, project size, project complexity)

Grobler and Pretorius, (1999) concluded in their empirical study focusing on the assessment of the design and build procurement technique for both civil and building engineering work in SA, that the traditional procurement arrangement at 62% is the mostly used system in SA trailed by the design and build technique at 28.6% and others at 9.4%.

Mbanjwa and Basson, (2003) as cited by Thwala and Mathonsi, (2012) also concluded from their empirical study focusing on the adoption of construction management as a procurement method within SACI that the traditional procurement method ranked the most as a favoured technique, ahead of construction management, then, contract management on 3rd, and design and build on 4th.

The conclusion is similar on the empirical study conducted by Oshungade and Kruger, (2015) which focused on the comparison of the procurement approaches in SACI, that traditional procurement technique is the most preferred within SACI at 62% followed by design and build method at 29% with construction management at 1%.

As much as the traditional procurement system is widely used within SACI as concluded by the authors above, there are other unidentified procurement methods, with an average weighting of about 10% as concluded by Grobler and Pretorius (1999) and about 8% as concluded by Oshungade and Kruger, (2015).

Despite its popularity and use, the traditional procurement system according to Ojo, (2009) is mostly criticized for separating the design and construction phases, which is believed not effective for all types on construction projects. A further view by Mohsini and Botros, (1990) is that because of the traditional procurement's inadequacy to

meet all construction's organisational challenges, alternative procurement systems evolved.

According to Conley and Gregory, (1999) traditional technique of supervising and running building projects is confrontational in nature. The authors view emanates from their study aimed at sharing partnering benefits based on small private and public construction projects. Data was sourced on various universities' management research, practices and experience of the U.S Army Corps of Engineers. Conley and Gregory, (1999) concluded that there is a reduction on schedule duration, cost claims and an increase in value engineering on all types of projects where construction partnering is used, however, it is only recent that the construction industry has started supporting partnering on small construction projects.

Larson, (1997) opined citing the US Army Corps of Engineers (1990), that the owners and construction contractors' relationship is adversarial and negatively effects construction success within the whole building industry because of the environment that it has created. The above author's view arises from a statistical research on construction partnering projects conducted by the author, which concentrated on the relationship between partnering activities and project success. Using questionnaires for data collection, Larson, (1997) concluded that actions for project success were discovered to be positively related to all major activities of partnering.

Akintoye and Black, (1999) are of a view that the traditional adversarial system is increasingly being recognized as ineffective as it is taken to encourage poor performance by the parties. The same sentiments are advocated by Bennett and Peace, (2006) stating that the traditional approach provides no overall direction, resulting in project participants to defend their individual corporate's interest through competitive tendering.

Traditional procurement method is further viewed as not providing opportunities to the parties to find common goals (Conley and Gregory, 1999). In addition, Conley and Gregory, (1999) citing Design, (1986) opined that major contributors in the failure of the traditional method, includes lack of communication and legal arrogance.

2.4. Synthesis of traditional procurement

The traditional procurement system's major problems and challenges according to the above authors can be summarised as follows:

- ✓ It separates the design and building stages which may contribute to the delays of project's construction;
- ✓ Lack of communication and trust;
- ✓ Traditional procurement procedures mainly focuses on the finances and competition instead of trust and corporation;
- ✓ Traditional contracting systems normally provide rigid types of contracts in terms of liabilities between the contracting parties;
- ✓ There is unbalanced risk allocation on the traditional client-contractor contracts brought by the adversarial nature of the relationships between parties;

There is a procurement approach to reduce a fragmented nature of the adversarial traditional construction process by means of involving parties in the project before the designs begin which can reduce existing problems and it is called a *partnering method* (Bayramoglu, 2001). The author's opinion transpires from the study focusing on partnering in Construction, subtitled "*Improvement through integration and collaboration"*, in which problems related to time, cost and quality on the traditional building process are analysed. Based on literature review, Bayramoglu, (2001) explains how partnering can improve on problems associated with coordination of project's different phases, which is often addressed by different parties on the project. The author also put emphasis on fostering strategic partnering based on experience from one project to the next one. Conley and Gregory, (1999) further stated that traditional construction management approaches that are without some concepts of partnering, often yields developments that are behind schedule and more costly for the owners.

2.5. Construction Partnering Overview as a Procurement Strategy

2.5.1. *What's Partnering?*



According to the Construction Industry Institute (1991), partnering is a "*long term commitment between two or more organisations for the purposes of achieving specific business objectives by maximizing the effectiveness of each participant's resources*".

In partnering, each partner achieves their individual objectives, while both accomplishing the client's project's goal (Himes, 1995). This assertion made by Himes, (1995) is from an article titled "*Partnering in the construction process: the method for the 1990's and beyond*", here the author explains the partnering process covering amongst others, headings such as when and why there a need for partnering, how to implement partnering and what the benefits of partnering are. The author further concluded that projects can benefit from a prescribed and planned partnering procedure, however, it needs, *inter alia*, hard work, trust, commitment, time and additional resources.

Partnering's definition by Larson, (1995) citing the members at the Session on Construction Partnering at the University of Kentucky in November 1992, highlights that the formation of the special association among contracting members inspire change for the better from the existing traditional adversarial types of relations to a more cooperative one .

Partnering should be differentiated from other conventional forms of collaboration such as joint ventures, as joint ventures generally requires a legal partnership (Barlow and Jashapara, 1998). Furthermore, the above view by Barlow and Jashapara, (1998) was expressed on their research aimed at exploring the role of construction partnering in its improvement of closer relationships among organisations. Using case studies as their research method, they observed more than 40 contractors, big clients and suppliers discuss issues which can impact the transfer of information and knowledge sharing between firms. They concluded that there is a need for organisations to become learning organisations and that communication and trust is key for relationship development.

Scott, (2001) defined partnering "*as a relationship between two or more companies or organizations which is formed with the express intent of improving performance in the delivery of projects*". "*Partnering is a set of actions taken by the work teams that form a project team to help them cooperate in improving their joint performance"* (Bennett and Peace, 2006).

Partnering inspires the creation of great quality project teams' development, where such teams can be brought together on multiple projects as repeat of business is quite common between parties in a partnering relationship (Bayramoglu, 2001). It is believed to promote learning among participants (Barlow and Jashapara, 1998). Furthermore, organisations usually start as project partners and ultimately shift in the direction of strategic partnering – long term partnering relationships (Bayramoglu, 2001).

Partnering is regarded by Cheung *et al.,* (2003) as a management tool that has gained public attention and it is vital for quality improvement, programme and reduction in confrontations between project parties when disputes arises. It further enhances an environment for open communication which is often non-confrontational (Cheung *et al.*, 2003).

The concept of partnering originated in North America, in the manufacturing industries in the decade between 1980's and 1990's following Japan's manufacturing industrial success (Bennett and Peace, 2006). Mathews, Pellew, Phua, Rowlinson, (2000) stated citing Womack and Jones, (1996) that it is the manufacturing observers that recognised the positive results of quality products influenced by closer working relationships among suppliers.

Partnering has then been adopted in construction and has over a decade been successful in the building industry in countries such as the UK, US and other parts of the world (Scott, 2001). Furthermore, Partnering was implemented in the building industry due to the failure of the traditional approach in delivering building projects. This failure of the traditional adversarial relationships, particularly between clients and contractors results in a lose-lose situation for them, other than the legal representative, who gains as a result of litigations (Larson, 1995).

Cornick and Mather, (1999) stated that it is the lack of coordination by means of separate responsibilities for the actual building and design in the traditional method that contributes to the approach's failure.

2.5.2. Partnering Conceptual Model

Cheng and Li, (2004) established a theoretical model of partnering initially by Cheng on unpublished work in (2001) and later by Cheng and Li, (2001). It is a three stage model which encompasses partnering formation, application and completion (*refer to figure.3 below*).

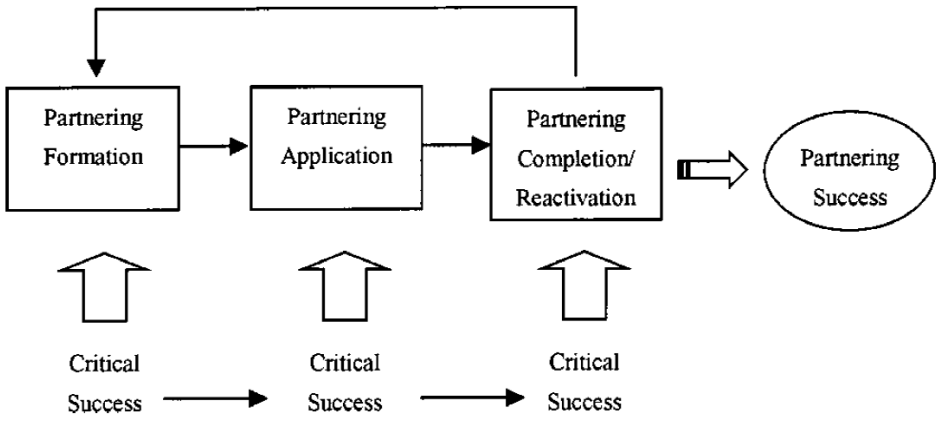


Figure 3. Conceptual Model of Partnering (Cheng and Li, 2005)

The above three stage condition has been proposed as a must achieve for the success of partnering relationships to be realized (Cheng and Li, 2004). Cheng and Li, (2001) further expanded on these stages as follows:

Partnering Formation – References a contract made indirectly or clearly by all main members of the construction organisations, to create an informal relationship for the purposes of achieving common goals and objectives. On this phase of the model, Cheng and Li, (2001) citing Wilson *et al.*, (1995) organisations examine their current operational culture in order to decide on how partnering can ameliorate their project performance.



Partnering Application - References the implementation of the informal relationship with an intent of achieving common goals and objectives in relation to the building project. This is a platform to experience and learn newly implemented ideas on partnering. On this stage, Cheng and Li, (2001) citing Das and Teng, (1999) the partnering relationship is functioning to apply its impact to the development.

Partnering Completion and reactivation – References the same organisations' intent to readopt informal relationships in undertaking new projects together upon completion of the current one. Furthermore, if different team members are part of the relationship, the process will not be a reactivation, a new partnering process will be required.

2.5.3. The Partnering Process

The initial stage in creating partnering development is to conclude if the builder is prepared to form part of a partnering plan (Conley and Gregory, 1999). Furthermore, determining the contractors will in participating in partnering arrangement is done normally by the owner's organisation top management, by contacting the contractor's top management to propose such arrangement.

Once the contractor is on board, additional key stakeholders must be identified for the initial partnering workshop to convene, where team spirit, open and honest communication, project goals and partnering charter can be developed (Conley and Gregory, 1999).

Cheng and Li, (2002) concluded on an empirical study examining the customized construction partnering model with an intent of highlighting the CSFs and the individual partnering process stages. The results of the study provided empirical support that partnering establishment should be viewed as a three stage process that includes, partnering formation, partnering application and partnering reactivation. Cheng and Li, (2002) further explained the process (*figure.4*) as follows:

- During the partnering formation stage, top management of the participating organisation must express full support of partnering formation as this will assure sufficient provision of the required resources. A facilitator is hired to

arrange all meetings including an initial meeting amongst parties, which acts as an orientation of the representatives where they get to know each other. A workshop is initiated to increase mutual understanding and an induction on open communication amongst parties is required. Upon parties reaching consensus on common vision of the partnering, a partnering team is established which in turn agrees and signs a partnering formation (agreement), also referred to as a partnering charter containing common goals to be achieved.

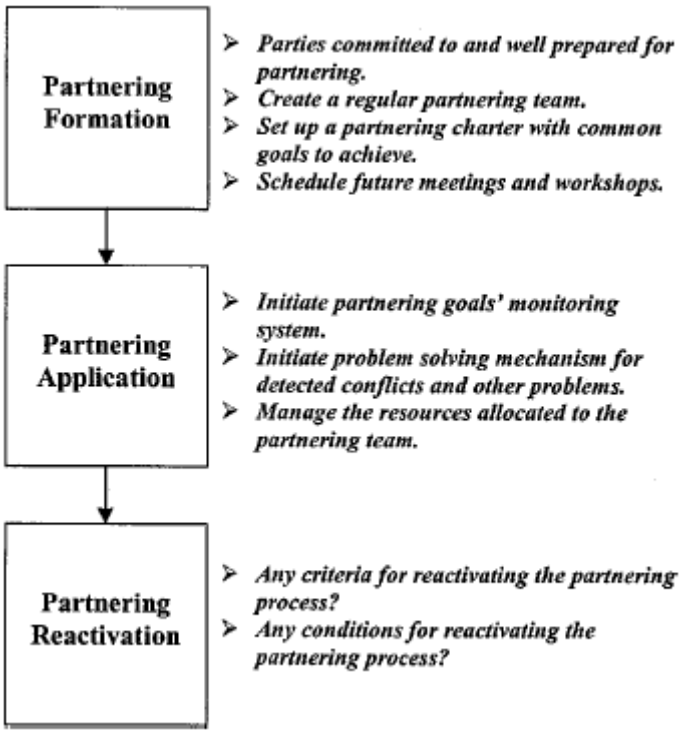


Figure 4. Planned activities for partnering (*Source:* Cheng and Li, *2002*)

- Upon partnering formation, the parties' top management continue with their influential involvement by ensuring that there is adequate resources while the partnering team members build mutual trust through partnering workshops and meetings in line with the partnering goals. Where problems are encountered, they get persistently solved until the attainment of the partnering goals
- A partnering relationship can be reactivated, upon top management's willingness to do so, for which its measure can be associated with the

identification of the CSF such as two-way communication and effective coordination.

Cheung *et al.*, (2003) stated that the partnering method can be viewed as an arrangement formed by inter-relationship between the project's goals, processes, performance and feedback. Furthermore, in such a system, partnering outcome would be compared with the project's goals as a way to assess progress.

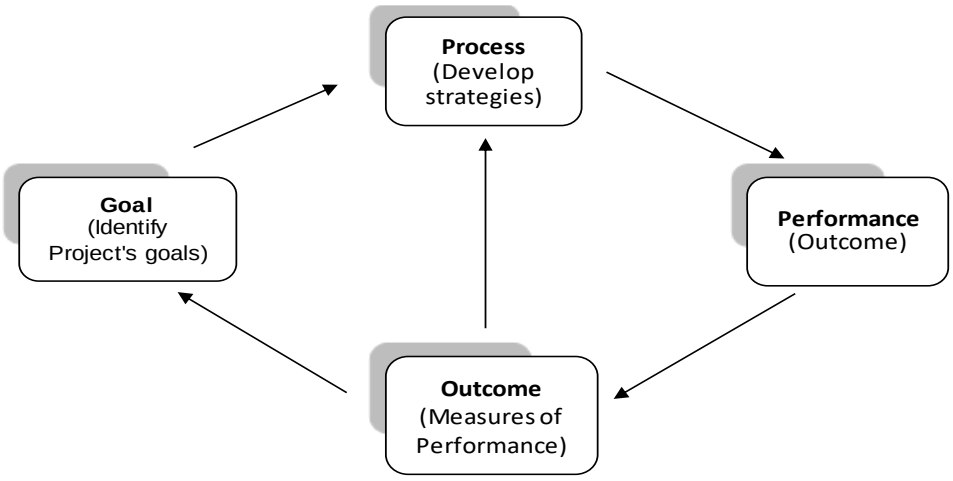


Figure 5. The partnering System (*Source: Cheung et al, 2003*)

Figure 5 above models the partnering system highlighting the key elements, i.e.: Project Goals, the processes involved, performance and feedback. Cheung *et al.*, (2003) stated that developing the overall project's goals should be the first action within projects undertaken by the partnering approach. In addition, this should be followed by developing strategies that can help enhance the achievement of goals, for which performance should be compared to as the last step of the partnering system.

It is vital to measure performance throughout the project based on what has been agreed at the first partnering workshop, which forms the bases of the measure (Chan *et al.*, 2004) Furthermore, Chan *et al.*, (2004) citing CIB's report by the working group 12 (1997), stated that it is important for evaluation to be undertaken by the project team after receiving feedback within the set time intervals. The writers view emanates from their empirical study which focused on discovering critical success



factors for Hong Kong's partnering building projects. Data gathered by the writers was through questionnaires, and the relationship between partnering success factors and perception of partnering success were analysed using regression and factor analysis. Chan *et al.*, (2004) established that partnering's success is dependent on certain requirements, such as communication, conflict resolution process, win-win attitudes, clear definitions of responsibilities and continuous project monitoring that must be met.

When measuring project performance within the partnering system, the process should be a reflection of the project's goals, considering that each partnering project is uniquely different, hence the set of procedures used should be based on such project's goals, as per figure 5 (Cheung *et al.*, 2003).

Lai and Lam, 2010 citing Krima *et al,* (2007) defines project criteria as a "*commonly shared mechanism for monitoring and demonstrating project success*" and further stated that their use, citing El-Mashalek *et al,* (2001) allows participants to recognize their individual competitive positions with a chance to ameliorate their deliverable outcome.

2.5.4. Why Partnering?

Himes, (1995) posed a question on how many building projects are without conflicts, cost overruns, delays, disputes, disruptions, claims and schedule overruns? Furthermore, it is through these questions that partnering has been established or is required (Himes, 1995).

(Chan, Chan, and Ho, 2003) citing Slater, (1998) are of a view that partnering does not provide solutions to all the construction industry problems, it is just a management tool for which its success depends on the parties who actually drive the project. The authors' assertion emanates from their empirical survey conducted in Hong Kong, with an intention of exploring partnering problems. A survey questionnaire targeting contractors, consultants and clients identified 31 problems hindering the adoption of partnering. The author concluded that there are three

problems to which the participants agreed as most important on partnering projects. The identified problems are partnering experience among participants, compromised partnering attitude due to commercial pressure and unbalance commitment level amongst members (Chan *et al.,* 2003).

Eriksson, (2010) describes partnering citing Cheung *et al.,* (2003) “as an attempt to establish non-adversarial working relationships among project participants through mutual commitment and open communication”. It is partnering’s attitude that promotes the advancement of a winning culture by all parties within the relationship (Conley and Gregory, 1999).

Hartmann and Bresnen, (2011) conducted a study looking at an activity theory on the development of construction partnering in practice. The authors argued that partnering discussions are dominated by prescriptive approaches and there is little multiple perspective approach in terms of organisations, social, economic and institutional context. Using an ethnographical case study as a research method, the authors concluded that partnering is transformative in its nature, however the transformation is dependent on individuals, organisations and the activities related to the social interaction between participants.

Partnering concept has mostly been recommended as a way of overpowering adversarial relationships in the building sector (Hartmann and Bresnen, 2011). The transformation of such hostile and adversarial client-contractor relationships to a collaborative one is what brought partnering its attention in the building industry (Larson, 1997).

Cheung *et al.*, (2003) further stated that for partnering to be more effective, it is imperative that there should be a change on the established traditional ways of doing business as well as change in project participants’ attitudes towards partnering.

The clients (such as BP and McDonald) in a case study referred to by Barlow and Jashapara, (1998) chose partnering in projects with particular needs which could not be realized by means of the traditional competitive procurement approaches. In

addition, also because of their previous negative experiences on the traditional method, particularly with regards to escalation costs. In many events, partnering was recommended by the clients; contractors and suppliers were uninformed about the idea prior to their project participation (Barlow and Jashapara, 1998).

The partnering approach as stated by Bresnen, (2007) citing Barlow *et al*, (1997) aims at substituting competition and conflict amongst the contracting parties involved with a relationship that is based on trust and creating equal opportunities through cooperation. In addition Bresnen, (2007) defines integration as the bases that create conditions that help to eliminate exploitation and opportunistic behaviour, thereby reflecting equality.

It is important to note that the difference between the traditional construction processes and partnering is with regards to project integration (Bayramoglu, 2001). Moreover, the traditional construction procedures such as bidding has been substituted with another procurement route including interviews.

Bayramoglu, (2001) highlighted that partnering reduces other elements related with competitive bidding and recognises that the cheapest tenderer does not essentially provide the best cost-effective resolution. Although, the traditional construction route normally involve lengthy lists of tenderers and the selection process is centred on the lower price bidder, in partnering, contractor selection can even be by means of interviews – even though builders might be requested to provide quotes, however the ultimate choice may be based on aspects like compatibility, ability, partnering understanding and quality instead of the lower price (Bayramoglu, 2001).

Bayramoglu, (2001) opined that where the choice of the most appropriate builder in partnering is considered, the following should be done:

- Unqualified contractors are eliminated,
- Reduce the burden on the contractors to provide the lower tender price,
- Reduce the monetary risk that the builders are normally subjected to,
- Possibly increase quality assurance and customer gratification,
- Decrease applications for extra funding.

Cheng, Li and Love, (2000) used literature review to establish critical success factors (CSFs) for ensuring successful partnering's application. The authors argued that despite literature's existing general knowledge about construction partnering's initiation, there is close to no consideration of critical factors that can improve project performance, and needs to be addressed. The writers identified critical success factors as: Sufficient resources, Supervisory support, Reciprocal trust, commitment for a longer period, Creativeness, Effective communication, Conflict management, Perceived satisfaction of partner's expectation and Like-minded goals.

Furthermore, Cheng *et al.,* (2000) opined that the three circumstances that can be a motivation for the establishment of partnering:

- ✓ Bidding new contracts – Organisations can use partnering to reinforce their competences by means of balancing talents earmarked for the project undertaking. The adoption of partnering for tendering stops upon contract award. The parties will be delivering the project as per their agreed roles and duties in accordance to the terms of the awarded contract.

- ✓ Executing contracts –Cheng *et al.,* (2000) citing Loraine (1994); Munns (1996); Love *et al.,* (1998) argues that project specific partnering is ineffective because there is no enough time for trust and commitment to develop.

- ✓ Organisational Growth – Organisations that enter partnerships do not need to be in a legal binding type of relationship or have a same project together. They can have knowledge and one another's strategic operational direction so partnering can be beneficial in sharing resources like knowledge, abilities, the know-how, vision, concepts and information.

2.5.5. Partnering Development

To achieve maximum partnering benefits, an early start by key members (such as the design organisation, contractor and others) in partnering process is vital on an intended project (Himes, 1995).

Participants in partnering relationships are provided with a setting that permits them to enhance and advance fresh skills and innovation in a manner which is more manageable and poses minimum risk (Barlow and Jashapara, 1998).

Organisations entering in to a partnering arrangement should not have doubts as to why they are doing so and precisely scrutinise how partnering communicates to its company policy (Cheng *et al.,* 2000). Furthermore, additional questions should include:

- Does the organisation want to grow its possibilities to win more contracts as a competitive advantage?
- Cheng *et al.*, (2000) citing Abudayyeh, (1994) Does the organisation enter into a partnering relationship as a mechanism to reduce or eliminate claims and litigations?

On their study aimed at evaluating the applicability of construction partnering, based on literature review conducted, Lu and Yan, (2007) presented an Applicability Assessment Model of Partnering (AAMP). The model is aimed at assessing partnering use in terms of project requirements, management methods and organisations involved. A step by step application model involves four stages as follows: *Stage 1*: Identifying the owner's organisation requirements and project scales such as costs, time and resource availability; *Stage 2:* Compare project expectations versus potential partnering gains; *Stage 3:* Selection of partners based on their capabilities and expectations on the project; *Stage 4:* Management mechanism to be used in partnering procurement should be considered. Figure 6 below demonstrates the framework of the evaluation model

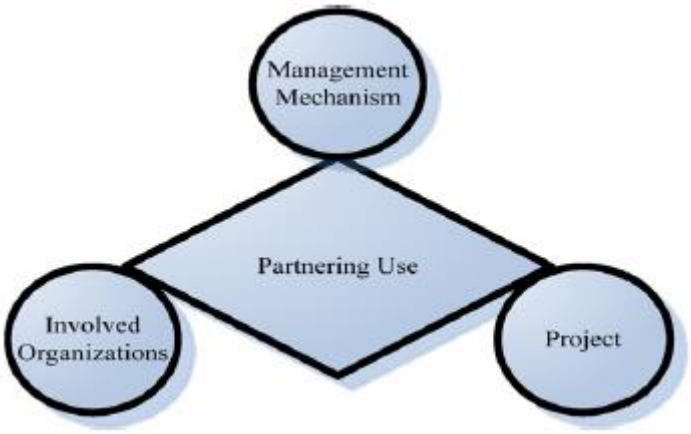


Figure 6: Framework of an evaluation model (*Source: Lu and Yan, 2007)*

According to Cheng *et al.,* (2000) the term “partnering” is often used in construction which represents “alliance” within supply chain. Furthermore, an alliance normally binds independent members with a formal contract while in construction partnering, the relationship is more in-formal than formal.

Partnering is not a prescribed agreement and does not result in a legally binding contract, it just decreases the confrontational relationship among the owners, contractors and other parties to which the relationship extends to (Conley and Gregory, 1999).

Partnering relationships are frequently entered into by good faith than official contracts (Lu and Yan, 2007). This is due to the fact that partnering promotes improvement and relations rather that litigation and liability (Cheng *et al.*, 2004). It is also different because conventionally, building agreements depends severely on formal standard contracts as stated by Eriksson, (2010) citing Cox and Thompson, (1997).

Attempts at partnering, at most includes the adoption of formal ways of ‘engineering’ the relationship (through, amongst others, contracts, charters, workshops, and performance incentives) as a form of developing trust (Bresnen, 2003). Furthermore, Bresnen, (2003) citing Bresnen and Marshall, (1999) argued that such ways contradicts a more organic environment for the development of trust which is a key factor in strategic partnering.

Lu and Yan, (2007) stated citing Crane *et al.*, (1997) that at the preparatory stage, it is important for partnering organisations to ensure that partnering is the best option to meet their business objectives and to assess their compatibility to partner in terms of their organisations' culture and work processes. The adjustment in culture and attitude in the direction of joint trust and understanding is crucial for partnering success (Thurairajah, Amaratunga and Haigh, 2007b)

As partnering is a formation of a longer period type of relationship, such involvement by organisations which lack understanding each other's goals and philosophy could have catastrophic results (Cheng *et al.*, 2004).

It is important that parties be completely voluntary when partnering is established, no party should be forced for any reason (Doudou and Liang, 2009). Furthermore, this is a starting point for all parties to accomplish a common objective of construction and benefit in their participation.

Partnering includes an assurance by members to collaborate in order to attain collective corporate goals and occasionally used to only refer to a long term commercial relationship while 'alliancing' refers to a cooperation on a particular project (Bresnen, 2003). Larson, (1997) gave examples of common business objectives on a client-contractor (dyadic) relationship, like finishing the development on the agreed duration and safely to avoid rework and avoiding litigation, which can be costly for either one of them resulting into a lose-lose situation.

Jointly, high position manager's participation and consensus is very vital in partnering in order to safeguard smooth implementation of the model and share risk, share resources, support and decision making (Doudou and Liang, 2009). Hartmann and Bresnen, (2011) suggests citing Bresnen, (2009) an activity based partnering theory approach, that will not only improve partnering's understanding by participants, but offers a practice-based exposure, then generating an insight of how partnering works and its possible development or evolvement over a period of time. This is because the existing working styles that individuals have internalized and are accustomed to, contradicts the need for a collaborative relationship brought by partnering relations.

Therefore, partnering development requires change from old working routines and behaviour and not only limited to adjusting existing working systems and learning new knowledge.

A view by Bresnen, (2003) citing Bresnen and Marshall, (2000c, 2000) is that in the partnering relationship dynamics, there exist numerous instances where the improvement of collaboration and trust is, at times easily be broken and, at worst non-existent. Radziszewska-Zielina, (2010) citing Glagola and Sheedy, (2002) stressed that trust is theoretically considered a vital element for a successful partnering on the study examining the development of partnering in Australia.

Brooke and Litwin, (1997) are of a view that although various projects commence with an idea and a set of action plans, it is through communication that organisations' success or failure can occur. Furthermore, Brooke and Litwin, (1997) citing a report by Associated General Contractors of America (AGC), (1991) stated that a partnering charter, which normally gets drawn up and signed at earlier partnering meeting, details the party's intention, goals, a way of dealing with conflicts, and deliverables objectives.

The view by Brooke and Litwin, (1997) emanates from their study about the need of mobilizing partnering participants and their organisations. Brooke and Litwin, (1997) highlighted that partnering is about drastic alteration from the traditional adversarial ways of procuring projects. Using data from project management practices and experts, critical management and influential practices necessary to successfully guide partnering relations were identified as follows for the former: performance objectives, feedback and recognition for innovation and for the latter: mission/vision, decision making and trust. The authors concluded that, because partnering requires cooporation from different organisations, mobilization strategies that promote common guidance to increase the effectiveness of the parties is vital.

The key success strategy in partnering is having a conflict resolution system which forms a foundation for the collaborative relations before any potential disputes and problems arise (Larson, 1997). Mustaffa and Bowles, (2007) advocates the inclusion



of problem resolution process (PRP) which should be defined in the partnering agreement. The authors view emanates from their investigation of the PRP elements of partnering and through a survey, they highlighted that the problems are the same between partnering and non-partnering projects. The only difference is how to deal with such problems that affects the project's outcome. Furthermore, Mustaffa and Bowles, (2007) concluded that there is no management approach that can stop prevalence of problems on construction projects, even though their survey responses agree with the notion that, partnering does limit occurrence of disputes. Moreover, problems are linked to relationship breakdowns and personality issues, and therefore even if the PRP is in place, such relationship breakdowns are rarely attributed to a defined procedure.

Although the partnering approach intends to be non-contractual and informal, partnering agreements intends to promote internal and relatively informal ways of problem solving without referring them to higher management levels (Mustaffa and Bowles, 2007).

Carefully planned workshops according to Åkerström and Lindahl, (2007) citing Kadefors, (2012) can be considered shortcut in creating trust in partnering relationships. Such workshop sessions can range between one to five days and should include key members (such as Engineers, Foreman, Lawyers, other consultants) from different organisations (Larson, 1997). In addition, workshop discussions should start with topics that demonstrates effective communication, teamwork and negotiations before it moves into the project implementation phase, where topics that debate features of respectable and bad project management is brought up.

Åkerström and Lindahl, (2007) further cited Kadefor, (2002) highlighting that in order to accomplish mutual trust in partnering project, guaranteeing competence and good attitude amongst parties involved was recommended. Thurairajah, Amaratunga and Haigh, (2006) concluded that joint trust and parties' consideration of each other's commitment is a prerequisite for changing the traditional construction practices to the shared culture of partnering although it is not an easy process. The authors'

assertion stems from their case study aimed at reviewing leadership linked to partnering complex relationship's behaviour and cultural change required.

It is worth noting that countless successful elements in partnering are in nature associated with behaviour or attitudes(Cheung *et al.*, 2003). In addition, some of these elements comprise of trust, collaboration, caring for the relationships, and commitment. Cheung *et al.*, (2003) further stated citing Moore, (1999) that partnering is about management of relationship based on trust . Cheung *et al.*, (2003) further stated citing (Black *et al.,* (1999); McAllister, (1990); Penning and Woiceshyn, (1987); Kempel *et al.,* (1985)) that parties who make expressive judgements founded on relationships created on trust, tend to express honest care and concern for the wellbeing of other parties, have faith in the inherent nature of the relationship and believe such attitudes will be reciprocated. It is therefore essential to comprehend exactly how trust development within construction partnering is, as per figure 7 below.

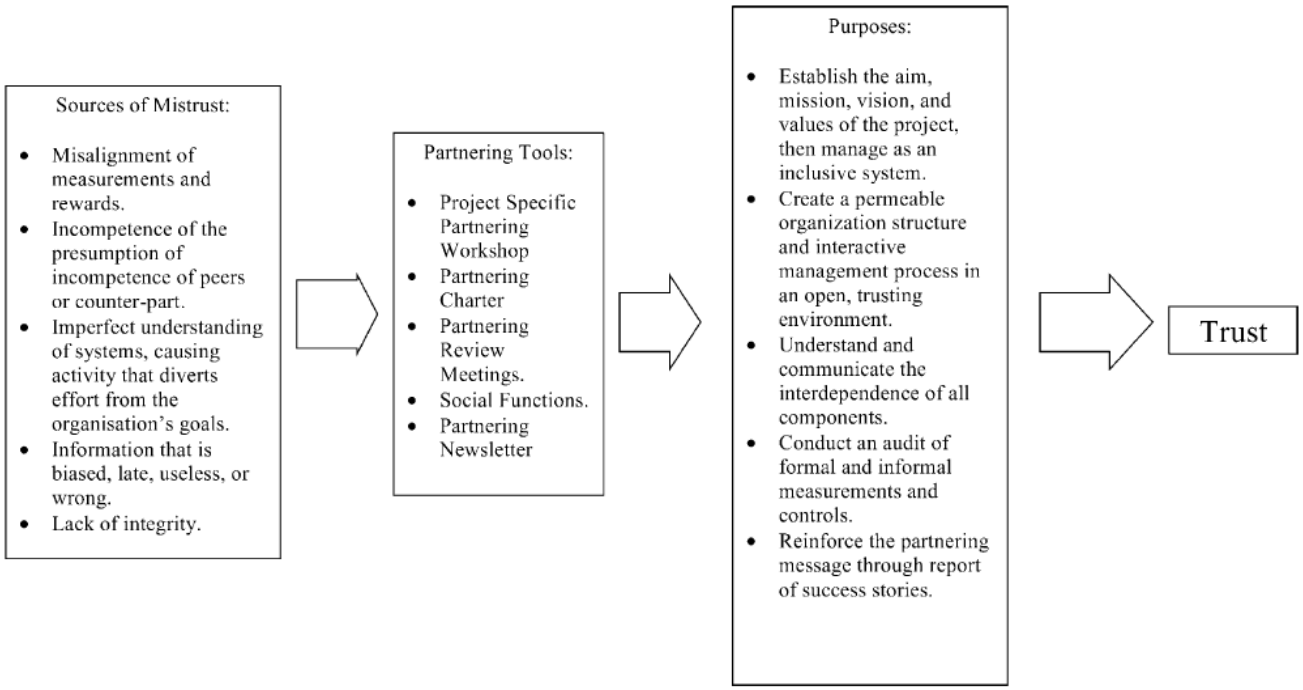


Figure 7: Development of trust in construction partnering (*Source: Cheung et al., 2003*)

2.5.6. Parties in Relationship

Conley and Gregory, (1999) citing Edelman *et al.*, (1991) stated that the US Army Corp of Engineers referred to “partnering as creation of a relationship between the owner and the contractor for the achievement of a mutually beneficial goals”.

Bresnen, (2003) citing Bennett and Jayes, (1998) book titled *The Seven Pillars of Partnering*, argued that there is a second generation of partnering approach developing, which presents a further passionate long term cooperation among clients and builders than before. Yeung *et al.*, (2007) stated that there is an increase in the amount of customer organisations observed introducing a partnering method in their building and construction work in both Hong Kong and internationally. The author’s view emanates from a study about the advancement of partnering performance index (PPI) for construction conducted in Hong Kong. Using a Delphi study method, the writers established a model to quantify partnering performance on projects using and identifying Key Performance Indicators (KPIs) which included: time, cost, quality, senior management, improvement, innovation, trust and effective communication.

Most work within construction partnering arrangement set up’s has been mostly between main contractor – client based, with slight reference of other members involvement such as subcontractors and suppliers (Mathews, Pellew, Phua, Rowlinson, 2000). The author’s observation comes from study exploring quality relationships in supply chain of construction partnering. Based on the interviews and questionnaires, the authors concluded that, in order for partnering’s quality impact to be measured, tangible systems should be included within a partnering charter.

Cheng *et al.*, (2004) opined that partnering relationships should preferably be created before agreements are signed and should have all key participants involving the:

- ✓ Client/ Owner,
- ✓ Designer / Architects,
- ✓ Surveyors,
- ✓ Engineers,

- ✓ General builder, and
- ✓ Key Subcontractors.

Radziszewska-Zielina and Szewczyck, (2014) developed a model for determining the impact of time, cost, quality and safety in construction projects. Furthermore, the authors identified and defined measures for partnering relations between the contractor-employer (client), contractor-subcontractors, contractor-designer (consultants) and contractor-supplier. The partnering relationship measures are as follows:

- Contractor and Employer (Client)
  - ✓ Agreeing on the site establishment – facilitation of site establishment by means of providing all the necessary requirement or sources such water, electricity, space, etc.
  - ✓ Keeping to the agreed the payment terms and amounts – paying the contractor in accordance to the agreed amounts and timelines.
  - ✓ Availability if the employer's representatives during acceptance and measurement of works
- Contractor and Designer (Consultants)
  - ✓ Communication – both oral and written is important as the designer is not always available on site, however the designer's availability is important for any communication
  - ✓ Quick response to design problems – this will facilitate the saving of time where the designer provides quick responses on any design alteration or required information
  - ✓ Adaptation of design solution (additional works, variation works) to the contractor's capabilities
- Contractor and Subcontractor
  - ✓ Participation by both the contractor and subcontractor in the development of site establishment documentation
  - ✓ Sharing of material and human resources (equipment and staff) in case of problems such as equipment failure or deadlines

- ✓ Sharing of no-material resources (such as knowledge, experience and information)
- ✓ Trust between the contractor and the subcontractor – their willingness to build trust
- ✓ Communication – both oral and written to ensure effective communication which will limit misunderstanding and disputes
- ✓ Unification and observance of standards and rules of conduct
- ✓ Keeping to agreed deadlines and amounts
- ✓ Scarceness of disputes and speed of their resolution
- ✓ Flexibility to change - in relation to subcontractor response to design changes and amount of work.

- Contractor and Supplier
  - ✓ Confidence in quality of materials – the contractor's believe that the materials delivered is of great quality will limit the amount of time on inspections required
  - ✓ Keeping the delivery deadlines and quick implementations of the new orders
  - ✓ Amounts of discounts - which reflects the willingness to continue doing business with the contractor by the supplier
  - ✓ Current technical support – the contractor should receive adequate support on the technology required and assistance when required.

Bayramoglu, (2001) stated that by getting the essential members including the Client, Architect, Engineers, and Builders (in other cases – specialty contractors and suppliers) at the beginning of the project, partnering will bring about a more integrated design phase of the project. On the study aimed at assessing the problems linked with time, cost and quality on the traditional building method, Bayramoglu, (2001) explained how such problems can be improved through strategic partnering, such as bringing the core team and early involvement by the team.

An early involvement by the team provides an opportunity for a brain session process which can bring about early solutions to potential project challenges (Bayramoglu,

2001). In addition, the availability of the client and contractor also provides design input to the Architect's design.

An early consultation have to be arranged where discussions of opportunities and objectives among parties should be discussed regarding the partnering relationship, an outside consultant may be engaged to facilitate and guide the procedure with and intention of reducing misinterpretations between the parties (Cheng *et al.*, 2004).

Larson, (1995) highlighted that other critics question bringing such consultant expert, fearing a bureaucratized partnering process which is supposed to be natural and informal. One such critic further stated "You can't manage trust and collaboration. It has to evolve naturally". The above writers' assertion stems from the study conducted on 280 construction projects, undertaken, in both traditional procurement and non-tradition procurement including partnering approaches. The author concluded using questionnaires for data collection and ANOVA for data analysis that, projects undertaken by partnering were showing superior results compared to the ones undertaken on a traditional adversarial way.

According to Åkerström and Lindahl, (2007) citing Kadefors, (2002) the main common elements during the process of implementation of a partnering project as viewed by researchers are; foundation of the relationship between the participants; mutual goals, a system for conflict resolution and a system to follow up on goals and to measure improvements.

It is important to choose appropriate partners in order to achieve success in partnering, a view stated by Åkerström and Lindahl, (2007) citing Egan, (1998); Bennett and Jayes, (1998); Black *et al.*, (1999). Members entering in a partnering relationship must have a joint purpose for their activities, adopt similar techniques, depend on common regulations in their dealings and agree on the splitting of duties (CIB W102, 2010)

Shek, Wong and Cheung, (2005) citing Cheung *et al.*, (2003) stated that it is vital noting that if construction project's partners attitude remains uncooperative and



adversarial like in traditional projects, then partnering will not become a success and potential benefits cannot be achieved (Shek, Wong and Cheung, 2005). The authors view stems from their empirical study aimed at establishing the relativeness of trust to performance for partnering success. Using questionnaires for data collection, diving into trust factors, the writers concluded that there is a progressive relationship between trust and parties' performance for partnering success.

An appealing idea about partnering's contribution may be in its intangible properties, where the partnering approach can be perceived as an affirmation of a determination to change towards more openness among several participants (Nystrom, 2008).

Brooke and Litwin, (1997) citing Benard, a chairman of Eurotunnel (1993) and Corbett, chief financial officer of Eurotunnel (1994) commented that time spent on partner assessment is the most valued but yet most ignored basis of performance enhancement on partnering relations. Furthermore, understanding of partnering must be communicated clear from beliefs to behaviours.

Partnering involves formation of inter-organisational relationships, and as a result, critical supervision skills are of paramount significance to successfully manage the relationship (Cheng *et al.*, 2004). Where parties can develop good working relationship early in the project, they have a great chance of discussing and sorting out issues before they reach a critical stage requiring expensive rework or litigation (Conley and Gregory, 1999).

Since partnering emphasizes on sharing of information, it is important that only participants share such information resources in a fair, honest and timely way so not to affect project design, progress and required quality (Doudou and Liang, (2009).

2.5.7. Partnering Duration

A distinction is often made in construction concerning long-term partnering, which lasts for a period of numerous projects and one-off project partnering of which its duration is for a single project (Barlow and Jashapara, 1998)

Cheng and Li, (2005) classified partnering in construction into project partnering and strategic partnering subject to the total of projects to which parties relationships are based.

Project Partnering

Hong *et al.*, (2012) defined project partnering citing (CII (1991); Li *et al.,* (2000); Walker *et al.,* (2002); Chan *et al.,* (2009)) as a relationship established by parties to undertake a single project. This arrangement generally involves a relationship that can run from the conceptual phase until completion or a relationship only in early stages of design and planning phase of a project (Barlow and Jashapara, 1998)

Calculating the accomplishment of partnering upon conclusion of a single project relationship, if there is no intention on undertaking another one, may not add value on the party organisations (Cheng and Li, 2001).

Strategic Partnering

Strategic alliancing interchangeably used with strategic partnering "*is a long term relationship between two (or more) organisations within a supply chain to develop mutually agreed strategies in terms of goals and objectives for the involved parties to pursue jointly"* (Cheng *et al.*, 2004).

A view by Bresnen, (2003) citing Bennett and Jayes, (1998) is that strategy echoes the emphasis found on the rational and long term philosophy supporting partnering initiatives and the joining of partnering with corporate objectives as well as specific project goals. Furthermore, strategic planning consequently becomes vital and long term visions set out within partnering charter should include long term objectives, business plans for long and short that relay partnerships to their strategic objectives and goals.

Continuity of personnel from project to project can provide learning experience particularly in long-term relationships (Barlow and Jashapara, 1998). According to Bygballe, Jahre and Sw, (2010) long term benefits of strategic partnerships are



achieved where the same project teams are brought together on more than one project.

Partnering requires implementation on a continuous manner in order for trust and commitment to develop (Cheng *et al.*, 2004). Moreover, for partnering to extend beyond a single project, top management of individual organisations should discuss their objectives, compatibility and inconsistent objectives at the strategic level. Long-term relationships provides a successful platform for more complex knowledge forms to be effectively shared and promoted between parties (Barlow and Jashapara, 1998).

The procurement process can be eliminated when organisations decide to become strategic partners and this will lead to reduction in costs and time because clients will be more willing and comfortable executing projects with the same partners that they previously worked with (Bayramoglu, 2001). Moreover, on the other hand, the contractors will have a sense of security for future projects, their core business mode of survival.

Cheng *et al.,* (2004) citing Pena-Mora and Harpoth, (2001); Sharma, (1998) stated that while data has shown that it is challenging to improve commitment in construction partnering, partners have a duty to create a dual commitment model for long term partnering relationships. Furthermore, Cheng *et al.*, (2004) highlighted that such strategic partnering should accommodate means for improving both employees and top management level of commitment.

In addition, Cheng *et al.*, (2004) stated that building commitment among employees and top management requires these four features: Investment in time and effort; Clear goals and organisational structure; Passion and enthusiasm for strategic partnering and Strong focus on staff. Cheng and Li, (2001) suggested that organisation parties should measure how is their partnering success upon project completion, if they intend to undertake further partnering relationship, as it will provide feedback on how improved their relations are for further project success.

Cheng *et al.*, (2004) further stated that there are commitment requirements for maintenance of strategic partnering, four management partnering polices should be implemented as demonstrated on (*figure 8)* below:

- Decentralized authority,
- Participative management,
- Adequate resources, and
- Social rewards.

Decentralized authority – Delegation of more power to the employees provides them with more responsibilities as they get involved in decision making and as a consequence, more commitment to the partnering relationship.

Participative management – Participation is imperative as it provides a cooperative work environment. Cheng *et al.*, (2004) further stated citing Brewer, (1996) that the core concept of strategic alliance is participation.

Adequate resources - Cheng *et al.*, (2004) further stated citing Anderson and Weitz, (1992) that studies have shown that committed partners contribute by bringing forward their valuable resources in a cooperative and reciprocal manner.

Social rewards - Partnering members with a good social relationship tends to have good faith on each other, respect and trust.

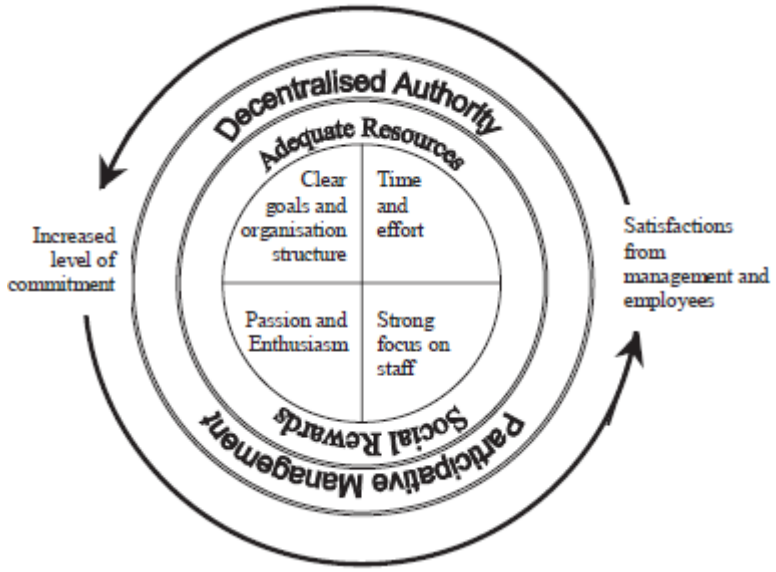


Figure 8: Long term commitment model

2.5.8. The Partnering Challenges

Chan *et al.*, (2003) highlighted the potential challenges on partnering such as discomfort in trust amongst the parties involved. Furthermore, the difficulty of working through the construction industries' adversarial attitudes is also a challenge. Chan *et al.,* (2003) further highlighted the difficulty of dealing with people or parties who normally intend to win in expense of others within a collaborative environment.

Decision making when dealing with large bureaucratic organisation become slow (MohammadHasanzadeh, Hosseinalipour and Hafezi, 2014). The authors view is informed by their study of collaborative procurement in the Iranian construction industry. Using six case studies and semi-structured interviews conducted with project senior participants, the authors concluded that partnering depends on two factors, being partner's performance and project performance and that clients are normally satisfied with high level of project quality as well as partnering performance. It is un-common for organisations to share their own resources as such resources are scarce and competitive. In addition, the resources include knowledge, technology, information, specific skills capital, etc. (Chan *et al.,* 2004).

According to Bresnen, (2007) there are contradictions that relate to the aspects of relationships caused by the tension between the collaborative and commercial part of the business. Brooke and Litwin, (1997) acknowledged that sharing is an important factor brought by resources in partnering.

The internal organisational differences may have an effect on the sustainability of the partnering (Bresnen, 2007) as the partners are used to working in oppositions focusing on their individual objectives (Eriksson *et al.*, 2008). Bennett and Peace, (2006) stated that partnering approach acknowledges that organisations do prioritise their corporate interest.

Brooke and Litwin, (1997) citing Hamel *et al.*, (1989) are of a view that being explicit about what and how things are to be transferred or shared at the beginning of the partnering arrangement can result in a partnering process that will not only be educational and also to safeguard the competitive power.

Cheng *et al*., (2000) stated that parties with incompatible goals & expectations have conflicting issues of which the influence of resolving can either be productive or destructive. MohammadHasanzadeh *et al.,* (2014) stated that challenges and barriers to implementing project partnering are brought by lack of training and guidance in its adoption.

Brooke and Litwin, (1997) stated that knowledge sharing is an important factor brought by resources in partnering. Communication can help parties with a platform of exchanging ideas and vision that can help mitigate misinterpretations and stimulate reciprocal trust (Cheng *et al*., 2000).

Although partnering is credited for shifting behaviours and attitudes, cultural change cannot be overlooked during this development although it is not easy to introduce cultural change amongst people (Thurairajah, Amaratunga and Haigh, 2006)

Also, amongst institutions, like governmental public works, most contract awards, are required to be procured through an open competitive low-bid process (Larson, 1995). It must also be noted that selection of contractors through the interview process as

partnering suggests, is not always possible as some public projects have been mandated by law for procurement to be through competitive tendering process, but this does not imply that partnering cannot be adopted on public projects (Bayramoglu, 2001). In addition, post award project-specific partnering method is suitable for situations requiring competitive tendering process.

This however poses doubts on whether partnering can be a success where contractors have not been chosen on the basis of their willingness to partner and established adherence to partnering principles (Larson, 1995)

Thurairajah, Amaratunga and Haigh, (2007) stated that partnering offers possible benefits which necessitates prudent establishment of critical success factors to be realized. Furthermore, failure to address potential partnering challenges may affect project performance. It is therefore vital to classify the method which will address partnering challenges through the use of suitable critical success factors as highlighted in (*fig 9)* below.

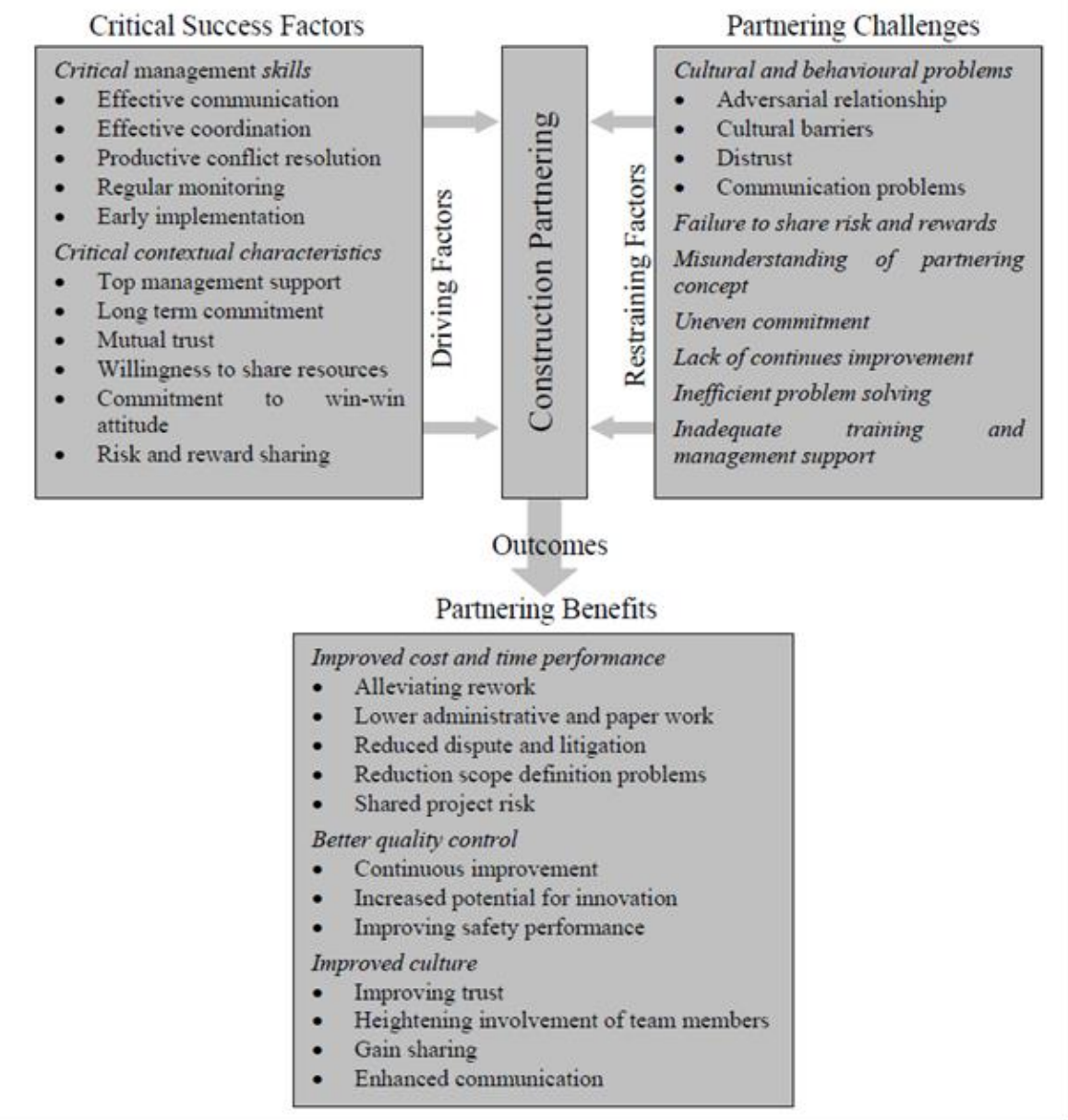


Figure 9: Overview of partnering benefits and challenges *(Source: Thurairajah et al, 2007)*

2.6. The Partnering Problems

Eriksson, (2010) stated that one of the partnering problems is that it doesn't have a universal definition on its concept and is not unified like other types of procurement. Furthermore, Eriksson, (2010) citing Saad *et al.,* (2002) suggest that such misunderstanding of the model causes confusion as to what really partnering is which hampers its implementation.

Cheng *et al.,* (2000) argued that, the formation of inter-organisational relationships in the building industry has always been a problem as communication often breaks down and other conflicts become very adversarial in nature.

Eriksson, (2010) citing Eriksson and Pesamaa, (2007) argue that a change from confrontational to a collaborative relationship necessitates a transformation from attitudes, processes, and structure

A view by Bresnen, (2007) is that the way in which individual organisations function and conduct business is influenced by their established internal culture. Bresnen, (2007) further suggested citing Phua and Rowlinson, (2003) that the management of change from the established adversarial attitudes to partnering may be part of the problem that results in the failure in matching the prescribed partnering approach with reality.

Chan, Chan, and Ho, (2003) stated the following are the common partnering problems, as presented by in figure 10 below:

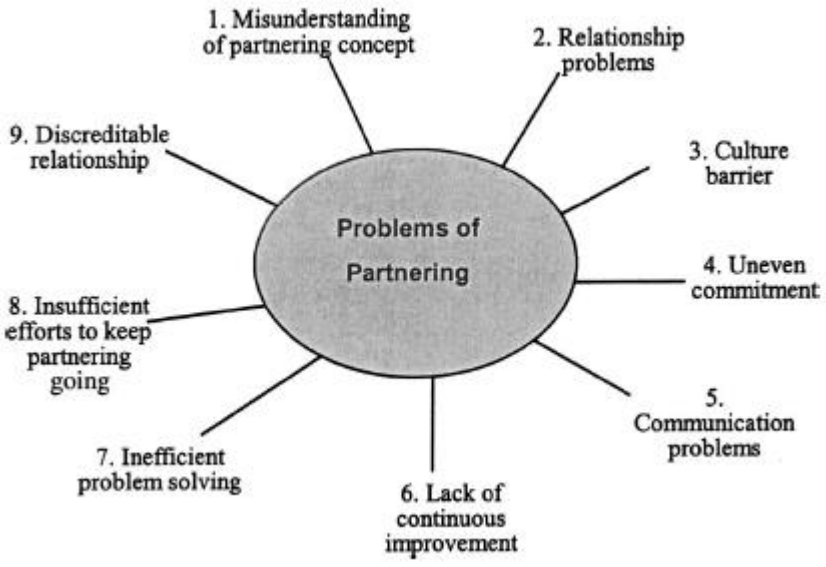


Figure 10: Summary of partnering problems (*Source*: Chan *et al.*, 2003)

Misunderstanding of the Partnering Concept

Lack of understand of the partnering model amongst members as stated by Chan *et al.*, (2003) citing Sanders and Moore (1992); Hartback *et al.*, (1994), may result in projects being unsuccessful. In addition, Chan *et al.*, (2003) citing Cook and Hancher (1990); CII (1991) stated that certain project members fail to comprehend in what way the competitive advantage upon getting work could be provided by the partnering approach. The motive of fair profit is also not entirely understood by the members, hence the lack of support for the partnering approach (Chan *et al.*, 2003)

Relationship Problems

Lack of change from the traditional adversarial attitudes prevent the development of good relationship among the parties involved (Chan *et al.*, 2003). Relationship difficulties are mainly as a result of disputes that arise from the project.

Chan *et al.*, (2003) citing Cowan *et al.*, (1992) stated that developing trust among members in a partnering arrangement maybe a risky task, although trust is an essential component of partnering. Furthermore, Chan *et al.*, (2003) citing Albanese, (1994); Hartback *et al.*, (1994); Lazar (1997), stated that even an environment that is conducive for trust to develop in a given project, can easily be altered due to past litigation experiences, dispute and the developed traditional contractual arrangement.

Adding to this is Chan *et al.*, (2003) citing Cook and Hancher, (1990); CII, (1991) with a view that parties generally find it challenging to split the risk equally as brought by the partnering development. Furthermore, the partnering approach creates dependency by one party from the other party. Chan *et al.*, (2003) stated the approach has been established with an intention to enhance the strength of the parties and not to compensate the weakness of any individual party.

Cultural Barriers

Brooke and Litwin, (1997) citing Wilson *et al.*, (1995) stated that partnering means a modification in the organisation's philosophy through the partnering process within

the industry. Eriksson *et al.*, (2008) citing Kululanga *et al.*, (1999) opined that an absence of an education culture, in an environment where current beliefs and values cannot be questioned is typical of the building industry and constitute an obstacle to change.

It is vital to note that there are a lot of activities that take place before parties are convinced about the approach's ability to provide desired results given the challenges of working with people from different organisations with different background, motivations, and different levels of partnering understanding including their individual agendas (Brooke and Litwin, 1997)

Change of culture is very difficult, stated by Chan *et al.*, (2003) citing CII (1996) and Hellard (1996). Furthermore, Chan *et al.*, (2003) citing Larson (1995); Larson and Drexler (1997); Hellard (1996); Ruff *et al.*, (1996), stated that the win-win thinking is vital for partnering to be a success. Various organisations are unwilling to change into integrated culture and this negatively affects the success of partnering (Larson and Drexler, 1997). This is due to a non-existence of trust among parties centred on their previous experiences and a fear of change to an unknown new environment of partnering (Chan *et al*, 2003).

Kwan and Ofori, (2001) citing Hildebrandt *et al,* (1991) opined that an application of an organisational culture is subjective to the type of a company, nature of the environment, distinctive character of the corporation and its personnel. It is easy for the parties to revert back to adversarial traditional approach when confronted with commercial pressure, than compromising attitudes towards partnering (Chan *et al.*, 2003).

Un-even Commitment

Partnering requires commitment by all parties and such commitment will overcome the perceived risk of trust (Chan *et al.*, 2003). Bresnen, (2007) stated that partnering in construction needs commitment by all members in order to achieve the project's business objectives.

Chan *et al.*, (2003) citing Moore *et al.*, (1992) stated that the difference among the project participant's goals is what brings about unevenness in the level of commitment in the development of partnering, yet for an effective partnering relationship, total commitment by the parties is essential.

Lack of commitment as stated by Chan *et al.*, (2003) citing CII (1991); Gardiner and Simmons, (1998) based on literature is a barrier to partnering success. Furthermore Chan *et al.*, (2003) citing Moore *et al.*, (1992) added that the members involved should put more effort in balancing commitment levels.

Communication Problems

According to Brooke and Litwin, (1997) partnering objectives must be communicated clearly as many projects start with defined visions and plan of actions. Furthermore, it is important for partners to notice that it is communication throughout the project which can affect project success or its failure (Brooke and Litwin, 1997).

Communication as provided by the partnering approach happens to be open timely as a result of a direct line of communication (Chan *et al.*, 2003; Chan *et al.*, 2004). Furthermore, for the client's requirements to be achieved, a vibrant and productive two way communication platform should be created.

Such communication platform can assist in enabling sharing of concepts and visions in order to ensure success when challenges are encountered (Chan *et al.*, 2004). Communication problems as provided by Chan *et al.*, (2003) citing Larson and Drexler, (1997), often results due to absence of trust and members unwillingness to communicate including sharing of data or information.

Inefficient Problem Solving

Chan *et al.*, (2003) citing Sanders and Moore, (1992); Brown (1994) highlighted the point that where there is a signed partnership charter by the parties in a partnering arrangement, it does not mean that conflicts or disputed are automatically going to disappear.

Inefficient effort to keep partnering going

According to Chan *et al.*, (2003) citing Albanese (1994); Mathews *et al.*, (1996); CII, (1996), one of the main explanations for the partnering to be unsuccessful during the implementation stage is due to inadequate training, which results in the staff not understanding the concept of the partnering approach.

Partnering needs to be understood by all parties at all levels and it is the top management's responsibility to support and train the staff within the respective organisations, as lack of support may result in the partnering concept being misunderstood (Chan *et al.*, 2003)

Cheung *et al.*, (2003) citing Jannadia *et al.*, (2000) stated that the risk allocation that is not balanced within the contract provisions together with the traditional adversarial relationship between the projects parties have long existed and been recognized as sources of the building challenges. In such an unbalanced situation, problem solving tends to be hindered as parties return to their adversarial confrontational position in accordance with the standard building contracts and as a result, effective communication and trustworthiness gets compromised.

Eriksson *et al*., (2008) further lists:

- *Organisational barriers*, such as lack of competence where relationships can become strained as a result,
- *Industrial barriers*, such as competitive pressures, government regulations and powerful unions

2.7. Partnering benefits

Charlett, (1996) stated that partnering supporters lists partnering benefits quoted as:

- "Improved efficiency",
- "Cost reduction",
- "Reliable quality",

- “Faster construction”,
- “On time project completion”,
- “Continuity of work”,
- “Sharing of risk”, and
- “Reliable flow of design information and lower legal cost”,

Other benefits identified by Mathews, Pellew, Phua, Rowlinson, (2000) citing Mathews, (1996) can be attained on the areas dealing with contractual situations, communication and information flow, levels of understanding, resource competence, financial position and quality.

Other perceived motivations to adopt partnering were concluded by (MohammadHasanzadeh, *et al.*, 2014) on their case study on partnering in the Iranian construction industry, over and above benefits as identified above, includes the will to go into new marketplaces and improve market advantage, innovation and to cover the weakness of the organisation including enhancing strengths and knowledge of engineering.

According to Mills, (1995) as cited by Charlett, (1996), there are other benefits which accumulate from the co-operative arrangement itself, quoted as:

- “Motivating innovation”,
- “Improving co-operation between design and implementing teams, giving rise to a product more suited to client needs”,
- “Increasing the willingness to solve design and site problems which will, in turn, reduce delays and inefficiencies”,
- “Encouraging the sharing of identified savings in time and costs”,
- “Reducing potential claims”,
- “Encouraging good service and improving subcontractor quality and timeliness”,
- “Speeding up of decision making”,
- “Establishing a relationship between parties that may lead to future work”

Thurairajah, Amaratunga and Haigh, (2007) are of a view that most studies presents cost reduction as the highest benefit of adopting partnering construction. In addition, (Thurairajah, Amaratunga and Haigh, 2006) citing (Albanese, (1994); Hellard, (1996); Chan *et al.*, (2003)) highlighted reasons for improving cost performance, amongst others, such as: lessening redoing of work; decreasing variations; decreasing change order rates; maximizing value engineering; lessening costs associated with the development of functioning relationships; reduces administration and paper work; decreasing schedules; lessening of in-scope description problems; productive way of addressing problems and mutual project risk.

According to Thurairajah *et al.,* (2006) citing Naoum, (2003) most partnering benefits are mentioned in relations of cost reduction and duration, further benefits linked team members and are hard to measure normally gets overlooked.

2.8. Chapter Summary

In summary, most writers as per above literature review, agree that the traditional procurement method has its challenges in terms of project delivery due to its adversarial nature. The traditional procurement method requires improvement for it to contribute towards modern principles of procurement such as supply chain, sustainability, value engineering, e-procurement and innovation. Non-traditional procurement system, partnering in particular, is showing to be more effective in overpowering the existing traditional procurement shortcomings. It is important noting that partnering success is reliant on firstly the existence of relationships between parties involved amongst other vital factors such as hard work, trust, commitment, time, additional resources, cooperation and communication. Trust and commitment are fundamentally crucial for partnering relationship development. Partnering does not create a legally binding contract, unlike joint-ventures, the relationship is more in-formal and often determined by good faith.

With the success of project partnering, which is a relationship based on a single construction project, organisations tends to move towards long term type of



relationship, and become strategic partners, undertaking more projects together to the future. Partnering encourages the establishment of project teams' development, and such teams can be brought together on multiple projects where opportunity of repeat of business arises.

In the context of the above summary, how are partnering relationships amongst major contractual parties within the SA construction sector, in terms of relationship duration, the type of relationship, and relationship development?

There is a general consensus amongst writers that indeed partnering can improve the traditional procurement method which is filled with challenges, however, traditional procurement still dominates the SACI. There is also little partnering literature in the African context with the exception of the Nigerian construction sector, in comparison to the US, China and the UK. Based on literature theories of construction partnering such as its development through the conceptual model for the relationship success, applicability assessment model of partnering (AAMP), activity theory and the partnering process, how is the partnering relations in SACI?

This chapter outlined an extensive literature review on the partnering arrangement subject, procurement methods, and an overview of commonly used procurement methods in SACI including the B-BBEE Act and PPP. The next chapter focusses on the research methods.

3. Chapter 3: Research Methodology

3.1. Introduction

Research methodology is viewed by Fellows and Liu, (1997) as "*principles and procedures of logical thought processes, which are applied to a scientific investigation*". The term research methodology is used to describe in details ways in which the study is to be conducted, which can be classified between the following approaches: Qualitative and Quantitative (Roberts, 2004). Qualitative research targets to attain a detailed understanding of situations and these include explanatory methods which attempt describing, decoding, translating and to derive meaning of certain logically occurring phenomena in the social world (Cooper and Schindler, 2008). Furthermore, Cooper and Schindler, (2008) citing Langer, (2001) indicates that qualitative approach is suitable for extracting feelings, emotions, motivation, perceptions, etc.

3.1.1. Quantitative Research

Quantitative research approach tend to relate to positivism and intend collecting realistic data and to study the relationship between facts and the way such facts and relationship accord with existing philosophies and literature gathered from earlier researches (Fellow and Liu, 2003).

This type of research uses the scientific technique of where by the primary study of concepts and literature yields aims, and objectives and proposition get tested (Fellows and Liu, 1997). Quantitative research is often used for theory testing thereby avoiding biased results by the researcher (Cooper and Schindler, 2008). Furthermore, quantitative research differing from the qualitative research, attempts precise measurement of something. In addition, in business research, quantitative methodologies often measure answers related to how much, how often, how many, when and who drawn from consumer opinions or attitudes, behaviour, etc. The approach's design includes the surveys, descriptive and experimental research (Roberts, 2004).

3.2. Data Sources

3.2.1. Survey

A survey "*is a measurement process used to collect information during a highly structured interview, with or without a human interviewer*" (Cooper and Schindler, 2008). A survey's aim is to develop comparable data across subsections of the selected sample.

The survey technique allows huge quantity of data to be collected from a large population in a most cost-effective way through asking questions to the willing participants (Leedy and Ormrod, 2005). Furthermore, the survey method is considered the dominant one under quantitative research. In addition, Saunders *et al*, (2003) stated that the survey technique is generally regarded as reliable and it is the reason it has been adopted in this research.

Due to the type of this research, which investigates some variables on the relations of partnering among parties (such variables associated with quantitative research), survey method for data collection is suitable, hence it has been adopted. The study's findings as derived from the examination of the theories on the subject matter of partnering through literature will then be analysed quantitatively. This provides an opportunity to test the findings with a higher degree of accuracy no matter how detailed or complex it is (Thomas, 2003).

The adoption of this method in this study is influenced by the techniques' nature of being flexible, making it easy to distribute the questions to a large number of participants within a small period of time as compared to individual interviews which are time consuming. The survey results and deductions can be projected to a bigger and diverse population.

3.2.2. Questionnaires

Target questions are the ones designed to address investigative questions of a specific study (Thomas, 2003). Such questionnaires occur in two forms, open and close ended, with open ended questions designed for the participants to respond in full in whatever form or context while close ended questions, participants are presented with fixed set of choices. Open ended questionnaires may result in the respondents missing the point of the question and making it difficult to analyse (Fellow and Liu, 2003) and for these reasons, close ended questions are adopted in this study.

Closed questions are quick to answer and short, this has an advantage of asking as many questions as possible compared to open ended questions. Close ended questions are sent to a total number of targeted respondents, such as clients, consultants and contractors

3.2.3. Sampling

Population is defined by Mcmillan, (1996) "*as a group of elements, or cases, whether individuals or objects that falls within a specific criteria in which research results can be generalized within*".

As acknowledged in chapter one of this study, the research population is restricted to the construction clients, consultants and contractors. Although other role players on partnering relationships as per literature includes suppliers, the focus on this study is limited to the parties identified above.

Sampling overview

Sampling is a method of choosing/selecting an individual or objects from a population, for which data can be drawn and generalised to the whole population (Mcmillan, 1996); Cooper and Schindler, (2008)).

The aim of sampling is to get a group of individuals or objects who will form a representative of a larger population or will provide specific information required on the study being conducted (Mcmillan, 1996).

While there are different types of sampling methods, this study adopted convenient sampling method. The reasons are as follows:

- Targeting the available respondents by the researcher with an intent of increasing possible response rate (others through referrals)
- Geographical area where the researcher can be able to travel to including saving cost
- It will be quicker to implement due to time constraints

3.2.3.1. Type of Sampling Method

✓ Non-Probability Sampling method

Non-Probability Sampling Method

Non-probability sample is where the probability of including all objects or individuals within the population is unknown (Mcmillan, 1996). Its where not all participants of the population has an equal chance to be selected. There are three types of this sampling method:

- *Convenient sampling* – this sampling method refers to the sample drawn for the convenience of the researcher because of the objects availability. As indicated in chapter one of this study, limitations such as time and cost has influenced the choice of this sampling technique in an effort to get a large quantity of completed questionnaires fast and cost effectively.

- *Judgement sampling* – Sometimes referred to as purposive sampling, is where the researcher selects informative individuals or objects of the population about the research subject (Mcmillan, 1996). Judgement is then made based on that element of the population.

- *Quota sampling* – is normally used where a researcher is unable to take a probability sample but wants a representative sample of the entire population. The population is then divided into segments and quota observation is drawn or collected from each segment.

Sample Frame and Size

A **sample frame** is the list of elements or individuals in the target population from which a sample of study may be drawn (Sekaran, 2003). Furthermore, examples such as a list of a telephone list represents a population frame.

An appropriate **sample size** is important consideration in judging the credibility of research (McMillan, 1996). Furthermore, most studies generally use a rule of thumb of about 30 objects for correlational research and about 15 objects for experimental research. The sample size should be large enough to accomplish the objective of the study.

In this study, a target population of individuals representing 30 consultants, 30 clients and 30 contractors' respondents have been targeted. The target geographical areas are North West Province, Gauteng Province and Limpopo Province. The reason of the selected Provinces is for the convenience of the researcher based on the availability of participants as described by the chosen convenience sampling method. Care was taken not to select a sample that would be biased to a certain mode of response based on their willingness to contribute. Potential errors introduced into the samples by chance were eliminated by cautiously ensuring an adequate sample size from all corporate entities.

Validity and Reliability

According to Ary *et al*., (2010), **validity** "*is an extent in which an instrument measures what it claims to measure*". Furthermore, the focus on the latest reviews on validity, has shifted from the instrument itself to the legitimacy of the analyses or



results emanating from the measuring tool. Validity is critical in the decision of selecting measuring tools (Sekaran, 2003).

In this study, the measuring instrument is questionnaires. The questionnaires content's validity has been established based on the reviewed literature. The pilot study was conducted and reviewed through peer review using a small sample of five participants which intended to check if the questionnaires were clear, precise, and unambiguous. On the basis of the returned response, improvements were prepared on the questionnaires. The intention of the pilot study was to ameliorate the quality of the questionnaires.

Reliability on the other hand is defined "*as a degree of consistency in which a measuring instrument measures whatever it is measuring"* (Ary *et al*., 2010). Its purpose is to address the effect of errors on the uniformity of the results

When conducting any measurements, there is always some form of error that may exist. Two types of errors are identified as: random and systematic errors of measurement. Ary *et al*., (2010), stated that the random errors of measurement may expand or decrease the subject's results in an unforeseen way while the systematic errors may inflate or depress in a foreseeable way. Furthermore, systematic errors negatively affect validity and random errors do the same for reliability.

Reliability measure as stated by Ary *et al*., (2010) "*may be defined as a ratio of the true score variance to the observed score variance in a set of scores*". This can be communicated by below formula as follows:

$$Rxx = \sigma t2 / \sigma x2, \text{ where}$$

Rxx = Reliability of the test
$\sigma t2$ = Variance of the true scores
$\sigma x2$ = Variance of the observed scores

The element of error is shown by a variance from the reliability coefficient of 1. When there is no error, the coefficient is 1 and its zero when measurement is error. A

coefficient of 0,7 on a test will represent that 70 percent in the observed variable in scores is correct, and 30 percent is inaccurate. The closer the reliability coefficient gets to 1, the better (Sekaran, 2003)

3.3. Data analysis

According to Sekaran, (2003) analysing data is a method with the following aims: getting a feel for the data, testing the goodness of the data and testing the hypothesis of the data. The feel for the data will provide a feel of how good the scales are. Testing of the data goodness can be achieved by submitting data for factor analysis through reliability tests, etc. Using a relevant statistical test, hypotheses can then be tested and substantiated using the results.

In this study, the adopted approach is a quantitative analytical technique. Data was organised into a manageable form into a frequency distribution. Frequency distribution "*is a systematic arrangement of individual measures from highest to the lowest*" (Ary *et al*., 2010). A frequency distribution histogram was then presented.

Variability of the gathered data as well as their relative positions were determined by means of calculating the variances and percentiles. Deviation scores showing the difference between the mean scores of the distribution and the raw collected data was used in order to calculate the variances. Percentile ranking was used in order to measure the findings relative position as it shows a fraction of results in a spread that falls beneath a certain point.

Results of the study are presented in terms of different charts, such as pie chart, column chart and line charts. Other results, such as the benefits of partnering are tabulated in order to present different number of participants and their responses.

3.3.1. Why the selected method?

The following reasons were considered in selecting the data analysis method:

- The type of research needed to address anticipated form of variables between contractors, consultants and clients.



- Analysis of variance's is mostly used by major writers on the partnering subject to analyse certain relationships.

- It is often easy for most people to understand percentiles rankings in showing a relative position of a subject.

- Respondents were requested to indicate their current position at their organisations in order for the researcher to further classify their views in terms of such positions. An assumption that participants in senior positions would represent their organisations with a better understanding as compared to participants in junior positions. This would therefore increase the response confidence level on the organisation's opinion through senior participants and experience.

3.4. Response Rate

The reply ratio means a proportion of the people who responds to the questionnaire assessment. The greater reply percentage the higher the representativeness of the population sample. The response rate is presented in the next chapter.

3.5. Confidentiality

The participants were guaranteed confidentiality in the course of this study and any details that could be linked to the respondents such as names, the companies they work for, were excluded on the questionnaires. It is to be noted that, with confidentiality guaranteed as indicated on the questionnaire issued, an assumption that the participants would provide their best opinion on the relevant questions was made.

3.6. Chapter Summary

This chapter discussed the research method adopted on this study including justification on why the adopted option have been chosen. The next chapter focusses on data analysis and relevant discussion on the findings.

4. Chapter 4: Data analysis & Discussion of Findings

4.1. Introduction

This chapter presents data that was gathered from the participants representing clients, consultants and contractors. Data is analysed using statistical methods where applicable and findings are presented and discussed.

4.1.1. Statistical Methods Adopted

Descriptive and inferential statistical analysis has been adopted as required for Quantitative data analysis which is the chosen method as indicated in the previous chapter.

According to Creswell, (2012) descriptive statistical analysis uses numerical data to describe measures of central tendencies, citing Vogt, (2005) which are summary of numbers representing a particular value in a spreading of scores (mean, mode, median) and the spread of scores such as variance, standard deviation and range

In addition, inferential statistical analysis uses the differences of the calculated general tendencies or variances to be able to make deductions about the sample in relation to the overall population (Creswell, 2012). Ordinal rating scale has been adopted for the interpretation of the results.

4.2. Data Capture Structure

The structure of the data collection instrument used was arranged into two (2) sections, specifically designed to address the objects of this study as highlighted in chapter one. The structure was as follows:

- *Section One* – This section aimed at addressing the research objectives. It started with participants being requested to fill their position within their organisations and their experience within the



building sector as a means of formulating background knowledge about the participants.

Subsequent questions intended to establish the type of organisations participants worked for as well as whether participants were familiar with the construction partnering concept, their preferred method of partnering, type of partnering and who they prefer to partner with. All the questions are in line with the sub-objectives of the study.

- *Section Two* – The second section of the data collection instrument was aimed at establishing whether the partnering benefits as advocated by many writers in the literature review in Europe, Asia and the US are perceived the same within the South African Construction Industry.

4.3. Challenges in data collection

Data collection period was planned for three months and a convenient sampling method was used for data collection. The method simply means gartering data from anyone who is convenient in the field of study. The researcher targeted participants were in Gauteng, Limpopo and North West Provinces. The researcher requested that such participants also refer him to other potential participants known to them as a way to maximize the response rate. As anticipated and highlighted in chapter one – limitations and assumptions of the study, this research, like other studies, also experienced challenges in collection of the data. Other targeted participants did not complete and return back questionnaires despite follow up emails and requests. Majority highlighted their schedules being the hindrance in providing information while others just did not respond.

4.3.1. Response Rate

As per chart below, figure 10, the overall response rate on the questionnaires was 72% of the target population. Only 28% of the targeted participants did not respond due to lack of will or due to time constraints. Two of the responses were rejected as

they were inconclusive on the data provided. Only the accepted results are presented below.

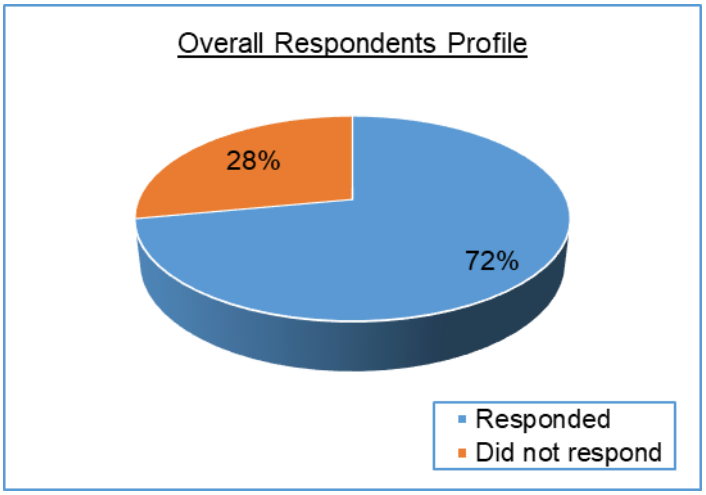


Figure 11: Overall Respondents Profile

4.4. Data Coding and Scoring

Preparing and organising data for analysis is the initial stage in the method of analysing measureable data (Creswell, 2012). It is for this reason the researcher has identified certain variables to be coded and others to be scored.

4.4.1. Data Codes Used

In line with Section One of the data collection instrument, responses were coded in order to provide an easier platform of conducting data analysis. The respondents have been coded as follows for the type of organisations they work for, for ease of reference on tables and graphical presentations:

C1 = Clients
C2 = Contractors
C3 = Consultants
S1 = Suppliers
S2 = Sub-contractors

Where questions are about partnering methods, the following coding has been applied:

PP = Project Partnering
SP = Strategic Partnering
PSP = Both Project and Strategic Partnering

Where questions are about partnering relationship development, the following coding has been applied:

FC = Formal Contract
IFSA = Informal Contract based on Social Aspects
FC/IFSA = Both Formal Contract and Informal based on Social Aspects

4.4.2. Data Scores Used

To enable the researcher to analyse the data with ease, data was scored by means of assignment of numeric score (or value) to each participant's response on section two (2) of the data collection instrument. Section one's data variables are small to be analysed using numerical scores.

The scoring values on the responses are as follows:

Agree = 3,
Disagree = 2, and
Not sure = 1.

4.5. Findings Presentation and Discussion

4.5.1. Category of Respondents

Since the target in terms of the category of respondents was identified, the table below (Table: 3) presents the response rate per category of targeted contributors. It is to be noted that two of the participants were working for multi-disciplinary

organisations and had indicated both contractor and consultant. The researcher has then removed their data not to distort the overall results.

Table.3: Category of Respondents

Type of Respondents	Target	No. of Respondents	% of Respondents
C1	*30*	*19*	*63%*
C2	*30*	*24*	*80%*
C3	*30*	*22*	*73%*
Total	***90***	***65***	***72%***

[*C1 – Clients; C2 – Contractors; C3 – Consultants*]

Discussion

Client *(C1)* participants were the lowest at 63% followed by consultants *(C3)* at 73% and contractors *(C2)* who had the highest response rate at 80%. Despite not achieving all the targeted number of respondents, the figures below are reasonable enough to draw conclusions that can represent the population.

4.5.2. Respondents Working Experience in Years

Table 4 below presents participant's construction industries' experience. The intention of collecting data in terms of experience was for the researcher to be able to determine the value of the respondent's input. One would think that the more participants with experience the more valuable their opinions and the less the experience would render their opinions a little less valuable.

Table.4: Respondents Years of Experience

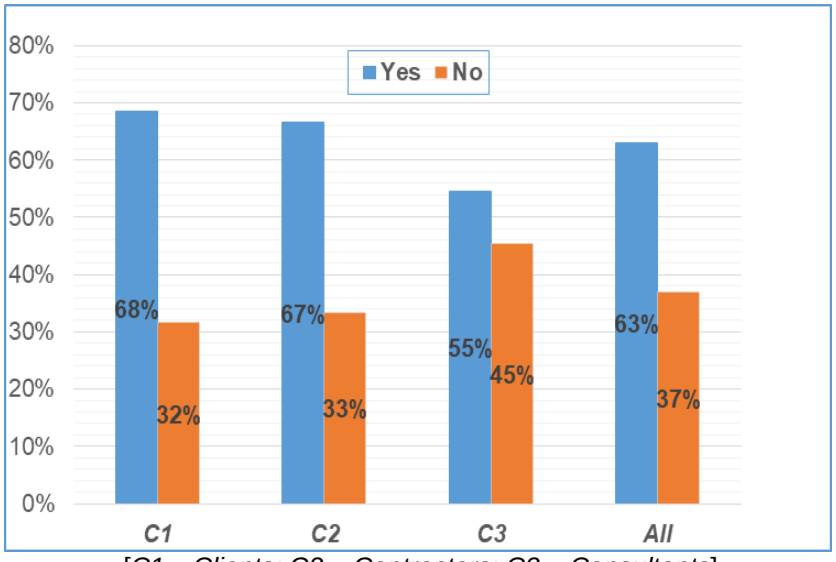
Years of Experience	Frequency	Percentage
0 - 5 Years	*10*	*15%*
6 - 10 Years	*19*	*29%*
10 - 15 Years	*26*	*40%*
> 20 Years	*10*	*15%*
Total	*65*	*100%*

Discussion

Majority of the respondents as per table above are experienced individuals within the construction industry as represented by a 40% value for individuals with experience range between 10 to 15 years, followed by 29% of experience range between 6 to 10 years. Vast experience is represented by 15% of participants who have 20 and more years in the construction industry. Participants averaging a little more than 6 years of experience are likely in middle to senior management with exposure to organisational affairs in terms of business development strategies and have a better understanding on how construction projects are run. This increases the study's confidence level on the participants' input. Majority of participants can be regarded as knowledgeable and their input is valuable.

4.5.3. Respondents Experience in Partnering Arrangement

Respondents were asked whether or not they've been part of a partnering arrangement. This question is straight in line with the first objective of the study. The aim of this question was to establish how developed partnering is as a procurement strategy in the SACI. Partnering experience amongst different parties would validate its development and existence within the SACI. The questionnaire was generally the same to all participants. The results below have both been presented according to categories or the types of organisations, but there is also an overall results of the participants.



[*C1 – Clients; C2 – Contractors; C3 – Consultants*]

Figure 12: Experience in Partnering Arrangement

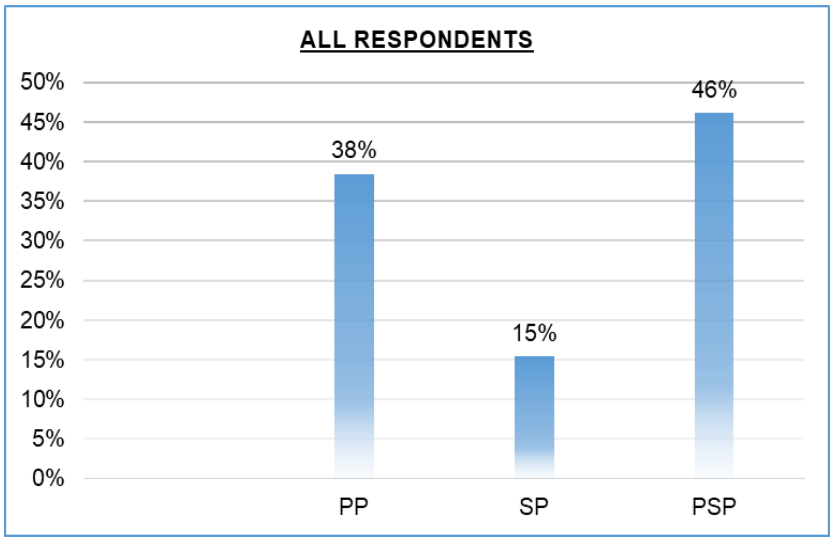
Discussion

The highest percentage of respondents with partnering experience as per figure 12 above are Clients (C1) as represented by 68%, followed by Contractors (C2) at 67%. Consultant participants are low at 55%. Overall results shows that 63% participants have been part of the partnering arrangement, while 37% indicated otherwise.

4.5.4. Respondents Preferred Partnering Method

Aim number three of the study seeks to establish which is the most preferred partnering method between project partnering and strategic partnering within the SACI.

Figure 13 below presents which of the partnering methods are preferred amongst the participants. On the results below, all participants opinoin as Clients, Contractors and Consultants have been combined with an intent to determine the overall representative view. A further detail presentation of categoric results amongst clients, contractors and consultants then follows.



[*PP – Project Partnering (Single Project); SP – Strategic Partnering (Multiple Projects); PSP – Both Project & Strategic Partnering*]

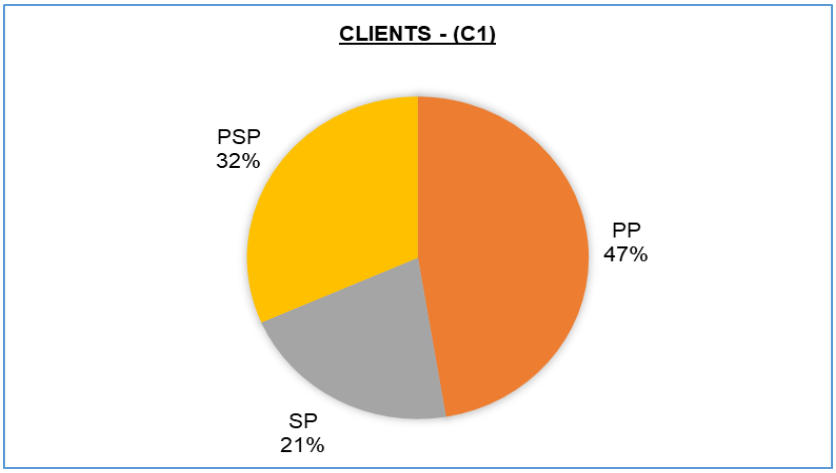
Figure 13: Respondent's Preferred Partnering Method

Discussion

Bulk of the participants prefer a combination of project partnering and strategic partnering *(PSP)* as presented by 46% as compared to project partnering *(PP)* at 38% and strategic partnering alone *(SP)* at 15%. As indicated, *PP* is a relationship based on a single project and *SP* is a relationship spanning more than one project. One would assume that based on the success of *PP*, participants would then be willing to be part of *SP.*

4.5.4.1. Client's Preferred Partnering Method

Respondent's views have been categorised and the results below presents the Client's *(C1)* preferred partnering method. These results are for all participant Clients, with and without partnering experience.



[*PP – Project Partnering (Single Project); SP – Strategic Partnering (Multiple Projects); PSP – Both Project & Strategic Partnering*]

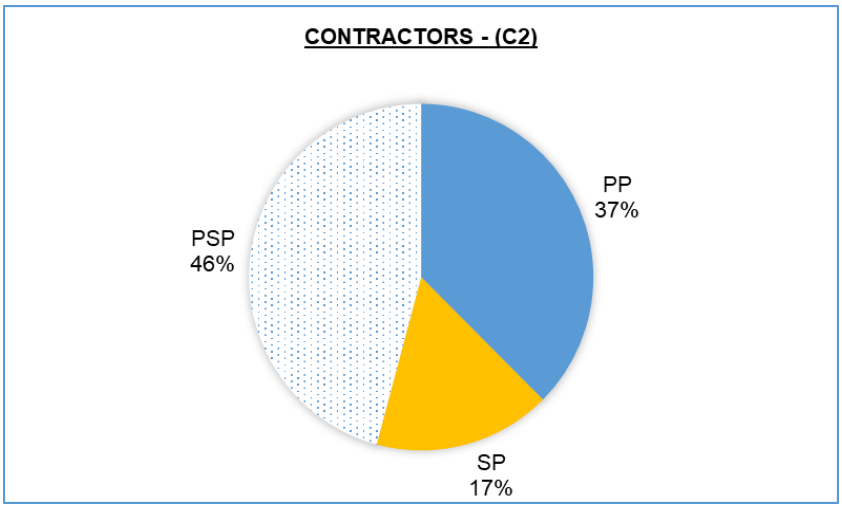
Figure 13(a): Clients' Preferred Partnering Method

Discussion

As per figure 13(a) above, Clients *(C2)* mostly prefer *PP* at 47% over *SP* as presented by 21%. The second most preference by clients is *PSP* 32%. A similar assumption can also be drawn that clients most probably upon the success of *PP*, then *SP* would be adopted or they don't mind any of the two available method.

4.5.4.2. Contractor's Preferred Partnering Method

Respondent's views have been categorised and the results below presents the Contractor's *(C2)* preferred partnering method.



[*PP – Project Partnering (Single Project); SP – Strategic Partnering (Multiple Projects); PSP – Both Project & Strategic Partnering*]

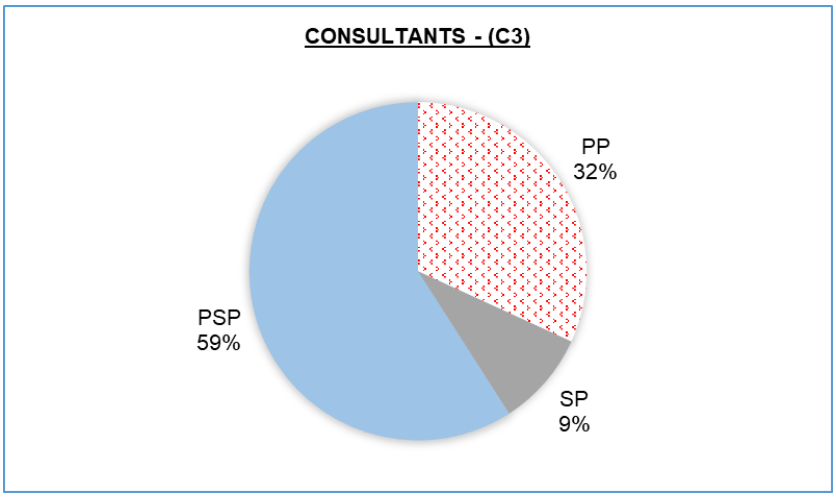
Figure 13(b): Contractors' Preferred Partnering Method

Discussion

It is evident from figure 13(b) above, that majority of the contractors prefer *PSP* as presented by a higher percentage of 46. The second preference by Contractors (*C2)* is *PP*. This is presented by 37%. The least preferred partnering method by contractors is *SP,* with a low percentage of 17. A similar assumption can also be drawn that also, contractors most probably upon the success of *PP*, then *SP* would be adopted or they don't mind any of the two available method. These results are for all participant Contractors, with and without partnering experience.

4.5.4.3. Consultant's Preferred Partnering Method

Respondent's views have been categorised and the results below presents the Consultant's *(C3)* preferred partnering method. These results are for all participant Consultants, with and without partnering experience.



[*PP – Project Partnering (Single Project); SP – Strategic Partnering (Multiple Projects); PSP – Both Project & Strategic Partnering*]

Figure 13(c): Consultants' Preferred Partnering Method

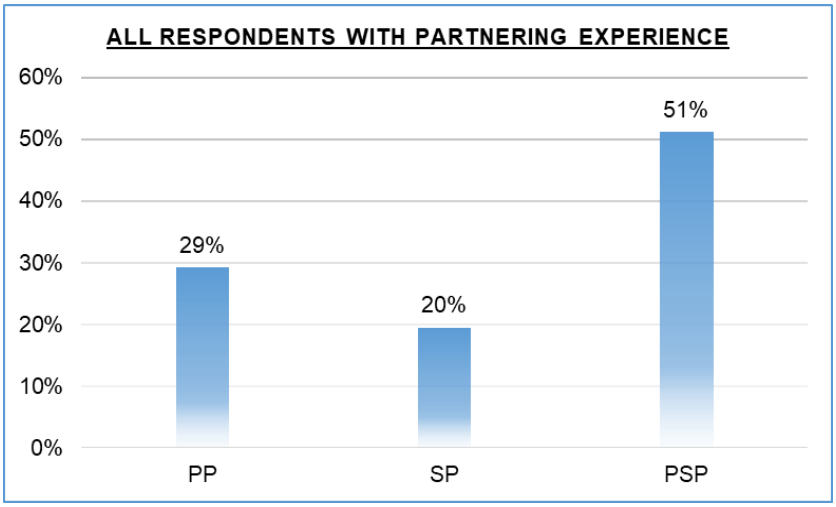
Discussion

The evidence from figure 13(c) above, suggests similar results to contractors preference as per figure 13(b) with *PSP* being the most preferred at 59%. Consultants prefers *PSP* a little more than the Contractors as their percentage is a bit higher at 59 versus 46. The second most preferred method by Consultants is *PP*, which is represented by 32%. The least preferred method by Consultants is *SP,* as presented by 9% above

Results of Respondents with Partnering Experience.

4.5.4.4. Preferred Partnering Method by Participants with Partnering Experience

A view by all respondents (*C1, C2 and C3)* with partnering experience was seen as necessary to be determined in order to enable the researcher to reinforce the conclusions regarding how developed partnering is in the SACI. Firstly, an overall view of the preferred partnering method by the participants as per figure 14 below has been determined.



[*PP – Project Partnering (Single Project); SP – Strategic Partnering (Multiple Projects); PSP – Both Project & Strategic Partnering*]

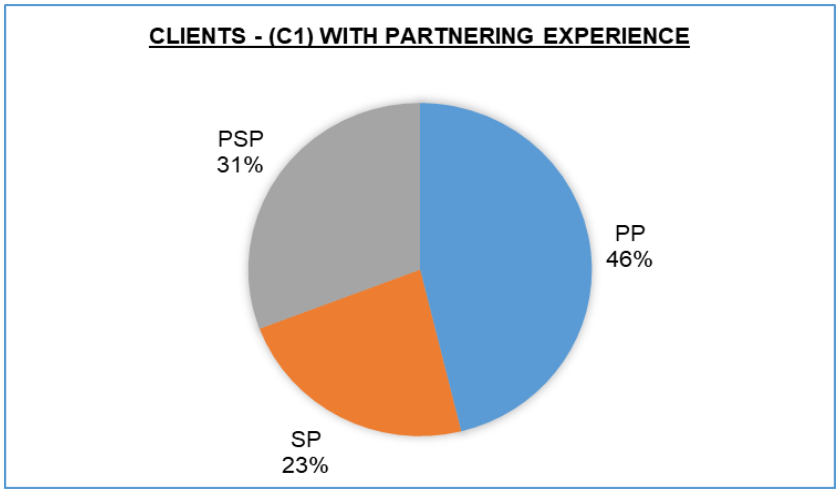
Figure 14: Partnering Experienced Respondent's Preferred Partnering Method

Discussion

As it can be seen from figure 14 above, participants with partnering experience prefers mostly *PSP* with a higher percentage of 51. Their second preference is *PP* at 29%, with the least preferred being *SP* at 20 percent. There seems to be a similar trend regarding partnering preference between participants with partnering experience and all participants as a direct comparison between fig 13 and 14. Both figures presents *SP* being the lowest followed by *PP* with *PSP* being the highest.

4.5.4.5. Partnering Experienced Client's Preferred Partnering Method

Figure 14 results above have been broken into the categories of Clients (*C1*), Contractors (*C2*) and Consultants (*C3*). Each category is presented below, starting with Clients.



[*PP – Project Partnering (Single Project); SP – Strategic Partnering (Multiple Projects); PSP – Both Project & Strategic Partnering*]

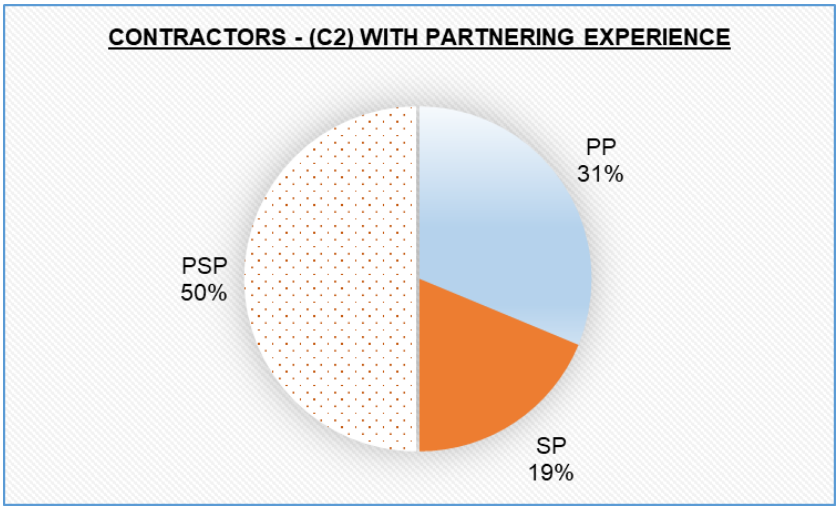
Figure 14(a): Partnering Experienced Clients' Preferred Partnering Method

Discussion

The Clients' results with partnering experience shows *PP* with higher percentage of 46. The second highest preferred method is *PSP* at 31%, with the least preferred being *SP* at 23%.

4.5.4.6. Partnering Experienced Contractor's Preferred Partnering Method

The contractors with partnering experience's preference is presented below on figure 14(b).



PP – Project Partnering (Single Project); SP – Strategic Partnering (Multiple Projects); PSP – Both Project & Strategic Partnering]

Figure 14(b): Partnering Experienced Contractors' Preferred Partnering Method

Discussion

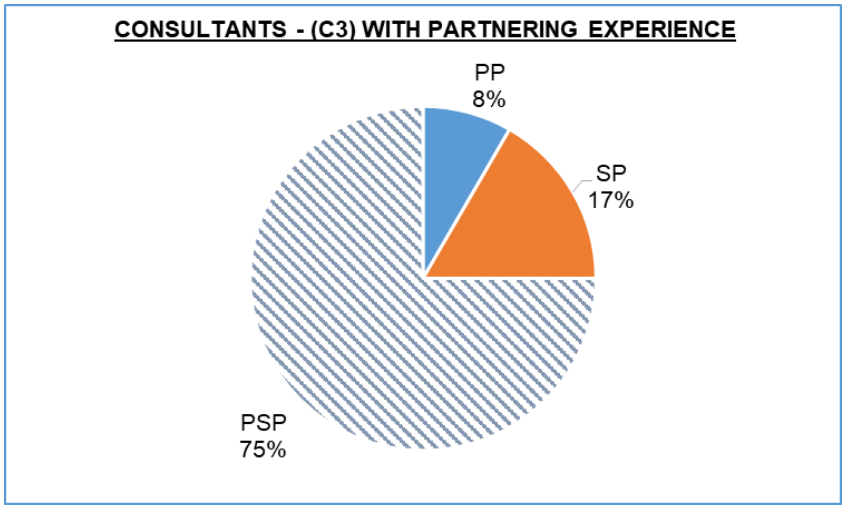
Contractors (*C2*) with partnering experience's results shows a higher percentage for *PSP* as shown by 50 as compared to the 31 percent for *PP.* The method with low percentage as chosen by contractors is *SP* which is at 19%.

4.5.4.7. Partnering Experienced Consultant's Preferred Partnering Method

An analysis on preference by consultants was also conducted, the results are as per figure 14(c) below.

Discussion

Consultants with partnering experience's results shows a higher percentage of *PSP* as shown below on figure 14(c) of 75 as compared to the 17 percent for *SP.* The lower percentage method by consultants is *PP* which is at 8%.

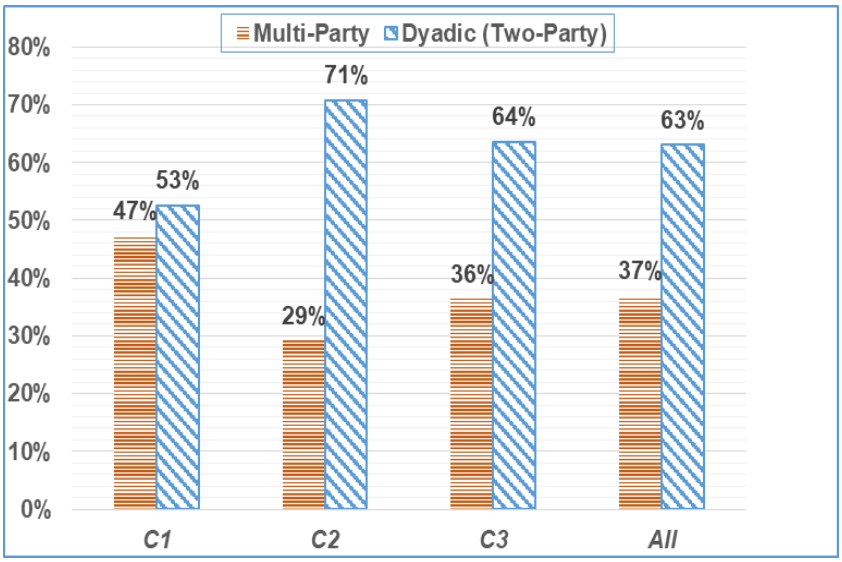


PP – Project Partnering (Single Project); SP – Strategic Partnering (Multiple Projects); PSP – Both Project & Strategic Partnering]

Figure 14(c): Partnering Experienced Consultants' Preferred Partnering Method

4.5.5. The Ideal Partnering Relationship Type

The second objective's intention of this study is to assess amongst participants, which is their ideal type of relationship when undertaking partnering arrangement in the SACI. The choice was between two types of relationships, a dyadic (two-party) relationship type and a multi-party type of relationship.



[*C1 – Clients; C2 – Contractors; C3 – Consultants*]

Figure 15: The Ideal Partnering Relationship Type (All Respondents)

Figure 15 above shows the results by all participants, with and without partneirng experience, about their ideal partnering relationship type.

Discussion

All participants' results as can be seen above. The combined results have a higher percentage of dyadic type of partnering relation over a multi-party type. This can be seen by a higher percentage of 63 as compared to 37 on figure 15 above.

Further results for *C1, C2* and *C3* can be seen on the above presentation. Like the overall results, all Clients (*C1)*, Contractors *(C2)* and Consultants *(C3)* have a higher percentage on dyadic type of relationship over multi-party type of relationship development. *C1* has 53% for dyadic and 47% for multi-party. *C2* has 71% for dyadic and 29% for multi-party. *C3* has 64% for dyadic and 36% for multi-party.

4.5.5.1. The ideal Partnering Relationship Type by Respondents with Partnering Experience

The results below on figure 16 are for participants with partnering experience. The results of their preference on the partnering relationship type is discussed below.

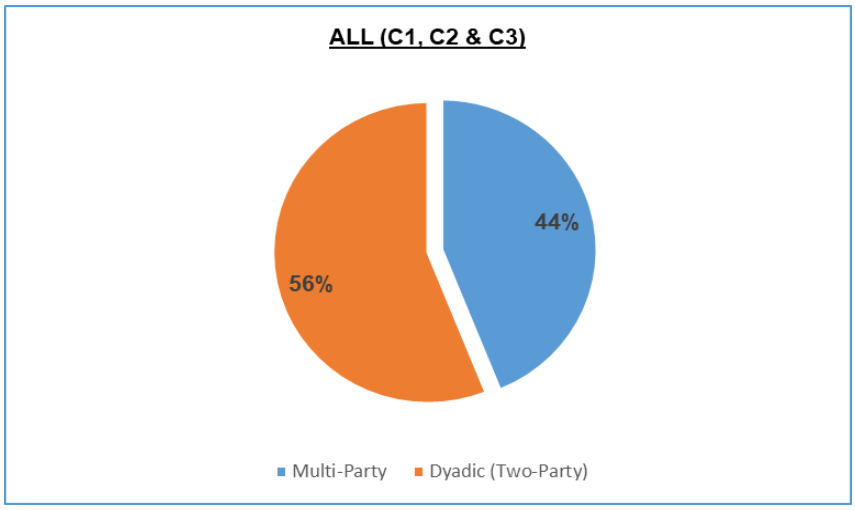


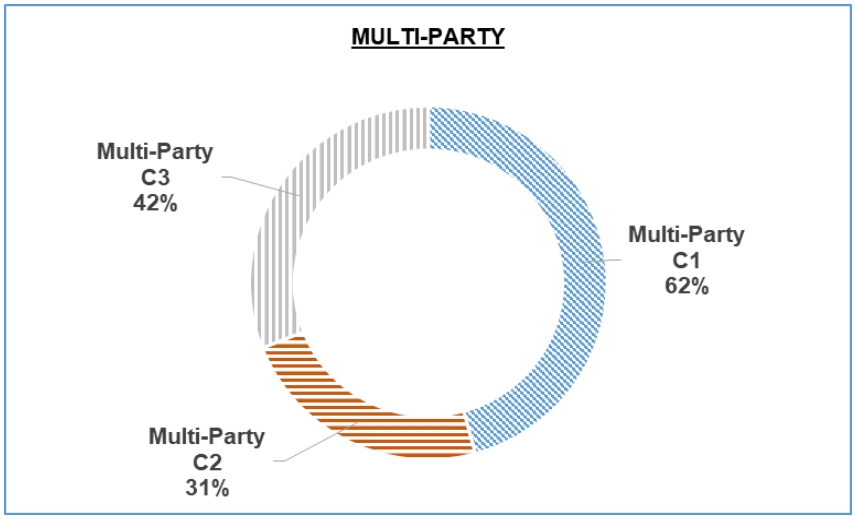
Figure 16: The Ideal Partnering Relationship Type (Respondents with partnering Experience)

Discussion

All participants as can be seen above, prefers the dyadic type of relationship as compared to the multi-party. Dyadic type has 56% and multi-type has 44%. The overall percentage margin by all participants on figure 16 is a little bit better at 44 and 56 as compared to the overall results by participants on figure 15 of 37 and 63 percentage.

4.5.5.2. The Multi-party Partnering Relationship Type by Respondents with Partnering Experience

It seemed necessary to establish amongst participants with partnering experience, who prefers the multi-party more than the others, between *C1*, *C2* and *C3*?. The results are shown below on figure 17.



[*C1 – Clients; C2 – Contractors; C3 – Consultants*]

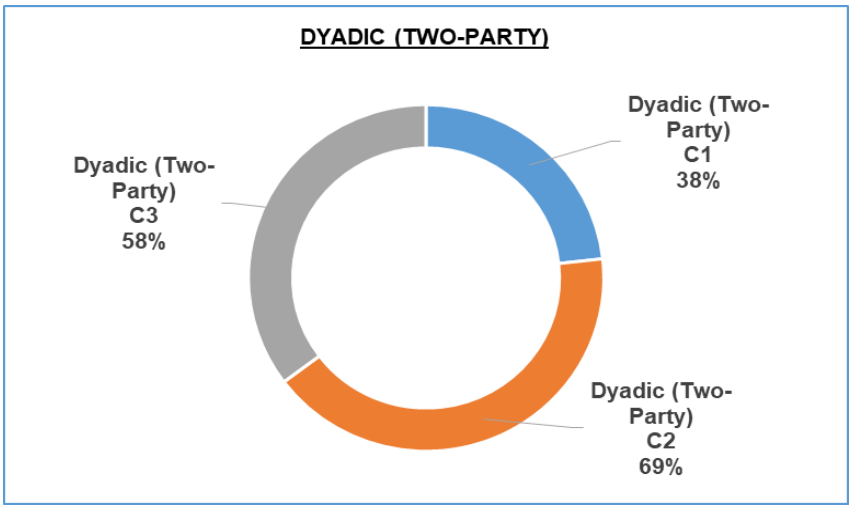
Figure 17: Who prefers the Multi-party Partnering Relationship Type the most

Discussion

The results above are for participants with partnering experience. *C1* has the highest percentage of 62 followed by *C3* with 42 %. *C2* has the lowest percentage among participants at 31.

4.5.5.3. The Dyadic (Two-Party) Partnering Relationship Type by Respondents with Partnering Experience

It was equally important for the researcher to assess who amongst participants prefers the dyadic partnering relationship type more than others. Figure 18 below presents such results.



[*C1 – Clients; C2 – Contractors; C3 – Consultants*]

Figure 18: Who prefers Dyadic Partnering Relationship Type the most

Discussion

The results above are for participants with partnering experience. *C2* has the highest percentage of 69 followed by *C3* with 58 %. *C1* has the lowest percentage among participants at 38.

4.5.6. The Ideal Relationship Development in Partnering

The second objective of this study is determining the best or ideal type of relationship development when parties are in a partnering arrangement. The participants were asked this question in order for the researcher to be able to form conclusions not only for all participants, but also in their respective categories as per table 5 below.

Table.5: The Ideal Relationship Development in Partnering

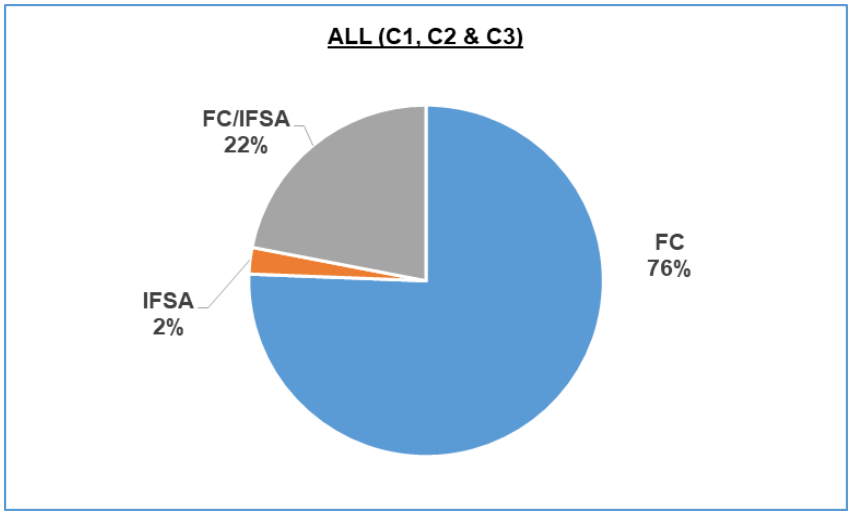
Type of Respondents	FC	IFSA	FC/IFSA
C1	89%	0%	11%
C2	75%	8%	17%
C3	73%	0%	27%
All (C1, C2 & C3)	78%	3%	18%

Discussion

The results above are for all categories of participants including the overall results. Starting with overall results (for *C1, C2 & C3)*, *FC* has the highest percentage of 78 followed by *FC/IFSA* which is at 18 percent. *IFSA* has the lowest percentage of 3%. *C1* category results, *FC* also has the highest percentage of 89 followed by *FC/IFSA*. *IFSA* has a zero percentage on *C1* category. Category *C2* and *C3* results are similar to category *C1* results, as they all have a higher percentage of *FC* at 75 and 73 respectively, and lowest percentage for *IFSA* at 8 and zero, respectively. The results for *FC/IFSA* for category *C2* and *C3* are 17% and 27% respectively.

4.5.6.1. The ideal Relationship Development in Partnering by Respondents with Partnering Experience

Results for participants with partnering experience were analysed, and the following figure 19 below shows the ideal relationship development in partnering by such participants.



[*FC – Formal Contract; IFSA – Informal Contract Based on Social Aspect; FC/IFSA – Both Formal Contract and Informal based on Social Aspects*]

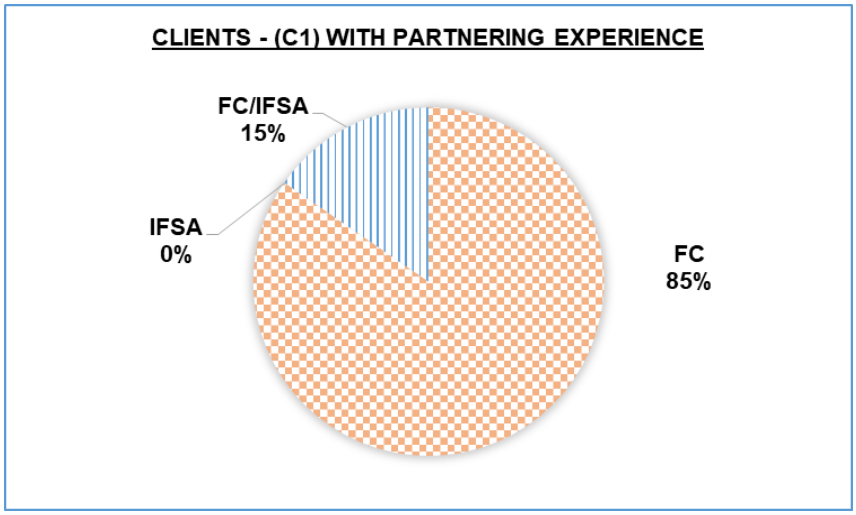
Figure 19: The Ideal Relationship Development in Partnering by respondents with partnering Experience.

Discussion

It is evident that majority of the respondent's ideal relationship development is *FC* as it has the highest percentage of 76. This is followed by *FC/IFSA* at 22%. The lowest option amongst participants is *IFSA* which carries 2%.

4.5.6.2. The ideal Relationship Development in Partnering by Clients with Partnering Experience

A further look by category of respondents was undertaken. Figure 19(a) below presents the results of clients with partnering experience.



[*FC – Formal Contract; IFSA – Informal Contract Based on Social Aspect; FC/IFSA – Both Formal Contract and Informal based on Social Aspects*]

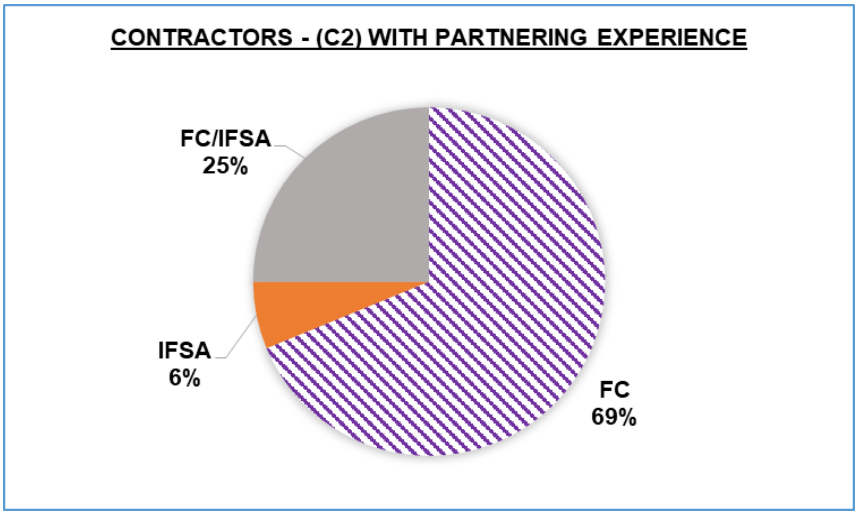
Figure 19(a): The Ideal Relationship Development in Partnering by Clients with partnering Experience

Discussion

Clients according to the results above selected *FC* the most at 85 percent. The second option which carries a lower percentage is *FC/IFSA* at 15%. *IFSA* has a zero percentage.

4.5.6.3. The ideal Relationship Development in Partnering by Contractors with Partnering Experience

Similar to the above category analysis, the contractors category of respondents were also analysed and the results are as per figure 19(b) below.



[*FC – Formal Contract; IFSA – Informal Contract Based on Social Aspect; FC/IFSA – Both Formal Contract and Informal based on Social Aspects*]

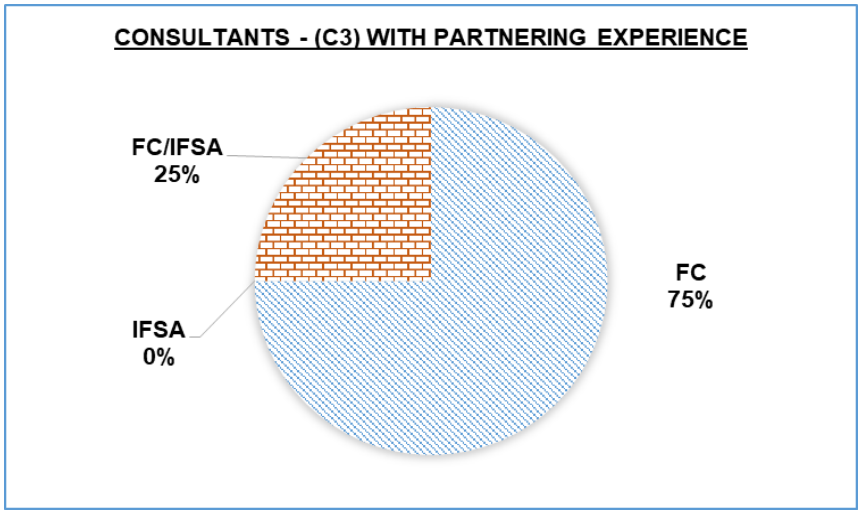
Figure 19(b): The Ideal Relationship Development in Partnering by Contractors with partnering Experience

Discussion

Similar to results as per figure 19 (a) for clients, contractors as per figure 19(b) above also mostly selected *FC* as the ideal relationship development in partnering at 69 percent, even though it is a little lower when compared to the results by clients, which is at 85%. The second option by contractors is a lower percentage for *FC/IFSA* at 25%. *IFSA* has a 6 percentage, low, but better than zero percent by clients.

4.5.6.4. The ideal Relationship Development in Partnering by Consultants with Partnering Experience

It was equally important for the researcher to analyse the consultant's responses and the results are as per the following figure 19(c) below. These are participants with partnering experience.



[*FC – Formal Contract; IFSA – Informal Contract Based on Social Aspect; FC/IFSA – Both Formal Contract and Informal based on Social Aspects*]

Figure 19(c): The Ideal Relationship Development in Partnering by Consultants with partnering Experience

Discussion

The results for consultants are similar to the results for clients and contractors, as they also have a higher percentage of *FC* at 75 followed by *FC/IFSA* at 25%. Like the results for clients, consultants also have a zero percent for *IFSA* while contractors have 6%.

4.5.7. Respondents Preferred Partner in a Partnering Arrangement.

The results of the preferred partner by category respondents are as per table 6 below. Different scores were calculated between the categories of participants, then ranking was used in order to be able to determine the position of each category of respondents.

Table.6: The Respondents Preferred Partner in a Partnering Arrangement

	CLIENTS		CONTRACTORS		CONSULTANTS	
Preferred Partner	**Score**	**Ranking**	**Score**	**Ranking**	**Score**	**Ranking**
All (C1, C2, C3, S1 & S2)	8.00	1	6.00	3	6.00	3
C2	7.00	2	6.00	3	12.00	1
C1	4.00	3	8.00	1	8.00	2
C3	4.00	3	2.00	5	5.00	4
S1	2.00	5	7.00	2	2.00	5
S2			2.00	5		



Discussion

As per table 6 above, it is evident that different category participants prefer to partner mostly with different partners. According to the rankings above, Clients prefer partnering with *All (C1, C2, C3, S1 & S2)* as it is ranked number one (1). Their second preference is *C2*, followed by *C3* and *C1* ranked equally at number three (3) and *S1* ranked fifth.

Contractors prefer partnering mostly with C1 as it is ranked number one on the table above. The second preferred partner by Contractors is S1 followed by C2 and *All (C1, C2, C3, S1 & S2)*, which are ranked equally at number three (3). *C3* and S2 are ranked fifth by Contractors.

Consultants ranked *C2* number one and *C1* number two. The third preference by Consultants is for *All (C1, C2, C3, S1 & S2)* ranked number three. *C3* is ranked number four, followed by *S1* at number five.

4.5.8. Respondents Preferred Partner by Participants with Partnering Experience

Below are the results of the preferred partner by participants with partnering experience.

Table.7: Respondents Preferred Partner by participants with Partnering Experience

	CLIENTS		CONTRACTORS		CONSULTANTS	
Preferred Partner	**Score**	**Ranking**	**Score**	**Ranking**	**Score**	**Ranking**
All (C1, C2, C3, S1 & S2)	6.00	1	6.00	1	5.00	1
C1	4.00	2	3.00	3	5.00	1
C2	4.00	2	3.00	3	4.00	3
C3	2.00	4	2.00	6	4.00	3
S1	1.00	5	5.00	2	1.00	5
S2			3.00	3		

Discussion

Participants with partnering experience's ranking for Clients is similar to the results on table 6, where category ranking for *All (C1, C2, C3, S1 & S2)* is number one. Like results on table 6, *C2* was ranked number two by the Clients above, but table 7, has

two rankings for number two by the Clients, *C1* and *C2*. *C3* is ranked number four by the Clients followed by *S1* at number five.

Unlike table 6's results above, the results on table 7 differs a lot for Contractors and Consultants. Contractor's ranking for category *All (C1, C2, C3, S1 & S2)* is number one on table 7, which differs to *C1* ranking as number one on table 6. *S1* is ranked the same at number two on tables 6 & 7 for Contractors, followed by *C1, C2* and *S2* which are all ranked number three on table 7. Contractors ranking for *C3* is number six.

Consultants ranking for *C1* and *All (C1, C2, C3, S1 & S2)* is number one on table 7 above. This is different to the ranking on table 6 by Consultants, where *C2* is ranked number one. Consultants' ranking for *C2* and *C3* on table 7 is number two, followed by *S1* at number five.

4.5.9. Respondents View on Partnering Benefits

Section two of the research instrument was included with an intent of determining whether the benefits of partnering as promoted by literature are viewed the same by participants in the SACI. The results below are for all participants.

Below is table 8, which presents a list of different partnering benefits and have been ranked according to the number of times they were selected. Furthermore, a score calculation was performed with an intention of determining which benefit has the highest score on the scoring results. All scores between the three categories have been ranked from the highest to the lowest. Client's ranking has been compared against the Contractors as well as the Consultant's ranking.

Table.8: Respondents' Benefits of Partnering

Benefits of Partnering	CLIENTS		CONTRACTORS		CONSULTANTS	
	C1		*C2*		*C3*	
	Total Score	Rank	Total Score	Rank	Total Score	Rank
Reduction in costs and time of project implementation	55.00	1	65.00	1	53.00	11
Construction projects cost savings	53.00	2	64.00	3	49.00	16
Work efficiency	53.00	2	64.00	3	60.00	3
Provides opportunities for innovation	53.00	2	63.00	12	61.00	2
Quality Improvements	52.00	5	62.00	16	53.00	11
Reduced waste	41.00	22	57.00	22	45.00	19
Improved design	50.00	6	64.00	3	59.00	5
Enhanced economic growth of a nation	50.00	6	64.00	3	52.00	15
Increased revenue generation to the national development	41.00	22	57.00	22	45.00	19
Reduced risk exposure	50.00	6	62.00	16	56.00	6
Operational Savings	48.00	11	64.00	3	49.00	16
Increased implementation speed	49.00	9	63.00	12	53.00	11
Effective communication between parties	48.00	11	62.00	16	54.00	9
Understanding of parties will be increased	49.00	9	63.00	12	60.00	3
Enhanced facility maintenance	44.00	18	62.00	16	41.00	22
Improved return on resources	44.00	18	64.00	3	46.00	18
It encourages financing option	44.00	18	62.00	16	43.00	21
It improved conflict resolution	45.00	17	64.00	3	55.00	7
Risk sharing	47.00	13	63.00	12	62.00	1
Improved administration	47.00	13	65.00	1	54.00	9
Establishment of good and less adversarial relationship	46.00	15	64.00	3	53.00	11
Increased customer satisfaction	46.00	15	64.00	3	55.00	7

Discussion

Participants' view on the partnering benefits are as per table 8 above. Client's results are ranked from number one to number twenty one. The ranking between *C1, C2* and *C3* differs substantially in terms of the ranking numbers. Contractor's ranking is from number one to number twenty one also, while the Consultants' ranking is from number one to number twenty two.

C1 ranked *Reduction in costs and time of project implementation* number one. *Construction project costs, Provides opportunities for innovation* and *Work efficiency was ranked* second by *C1.* Ranked fifth by *C1* is *Quality Improvements*. *C1* ranked the following at sixth position: *Improved design; Enhanced economic growth of a nation* and *Reduced risk exposure*.

C2 ranked two benefits at number one, *Reduction in costs and time of project implementation* and *Improved administration.* Ranked number three by *C2* are the following partnering benefits: *Construction projects cost savings; Work efficiency; Improved design; Enhanced economic growth of a nation; Operational Savings; Improved return on resources; It improved conflict resolution; Increased customer satisfaction* and *Establishment of good and less adversarial relationship.* Four partnering benefits were ranked number twelve and are as follows*: Provides opportunities for innovation; Risk sharing; Increased implementation speed* and *Understanding of parties will be increased.* Ranked on number sixteen are the following partnering benefits: *Quality Improvements; Effective communication between parties; Enhanced facility maintenance; It encourages financing option* and *Reduced risk exposure.*

C3 ranked *Risk sharing* number one on the partnering benefits. Ranked on number two by *C3* is the benefit, *Provides opportunities for innovation.* Third position ranking by *C3* is as follows: *Work efficiency* and *Understanding of parties will be increased*. Ranked fifth and sixth is: *Improved design* and *Reduced risk exposure*.



It is interesting to see respondents' ranking for number one quite different amongst the *C1*, *C2* and *C3* category, although *C1* and *C2* do have a common benefit ranked number one. A quick comparison for number one to number six looks as follows, *C1* and *C2* rankings for number one is the same for one benefit, *Reduction in costs and time of project implementation,* however, *C2* has another benefit ranked number one, *Improved administration,* which is ranked number thirteen by *C1*. *C3*'s number one ranking is ranked number thirteen by *C1* and number twelve by *C2.* Two of second ranked benefits by *C1* are ranked at number three by *C2* and are: *Construction projects cost savings* and *Work efficiency.* The other benefit ranked second by *C1* is *Provides opportunities for innovation*, this benefit is however ranked at number twelve by *C2*. *C3*'s ranking for the same benefit ranking as *C1 and C2* respectively is number sixteen, number three and number two. The fifth ranking by *C1* which is *Quality Improvements,* is ranked sixteen by *C2*. *C3*'s ranking for the same benefit is eleven.

The sixth ranking by *C1* are three benefits, and are ranked respectively third and sixteen by *C2*. *C1's* sixth ranked benefits are: *Quality Improvements, Enhanced economic growth of a nation,* and *Reduced risk exposure*. *C3*'s ranking of the same benefits are number, five, fifteen and six, respectively.

4.5.9.1. Reliability Test for the observed Data

A reliability test for the scored data was calculated as per formula suggested by Ary *et al*., (2010) defined "as a ratio of the true score variance to the observed score variance in a set of scores". This can be articulated in a formula as follows:

$Rxx = \sigma t2 / \sigma x2$, where: Rxx = Reliability of the test, $\sigma t2$ = Variance of the true scores and $\sigma x2$ = Variance of the observed scores

Table.9: Reliability test for Client's Data

Benefits of Partnering	CLIENTS																					Total Score	True Score Variance
	C1																						
	Mean																						
Reduction in costs and time of project implementation	2.89	3	3	3	3	2	3	3	3	3	3	3	3	3	3	2	3	3	3	3		55.00	0.09
Provides opportunities for innovation	2.79	3	3	1	3	3	3	3	3	3	3	3	3	1	3	3	3	3	3	3		53.00	0.38
Establishment of good and less adversarial relationship	2.42	3	3	3	3	1	1	3	3	3	3	3	3	1	3	2	3	3	1	1		46.00	0.77
Reduced waste	2.16	2	3	1	3	2	2	3	2	3	1	3	2	2	3	2	3	2	1	1		41.00	0.55
Risk sharing	2.47	3	3	3	1	3	3	3	3	3	3	1	2	3	3	2	3	1	1	3		47.00	0.67
Operational Savings	2.53	2	3	3	3	2	3	3	3	1	3	1	3	3	1	2	3	3	3	3		48.00	0.57
Increased implementation speed	2.58	3	3	2	3	1	3	3	3	3	1	3	3	3	1	2	3	3	3	3		49.00	0.56
Construction projects cost savings	2.79	2	3	3	3	2	3	3	3	3	3	3	2	3	3	2	3	3	3	3		53.00	0.17
Quality Improvements	2.74	3	3	3	3	1	3	3	3	3	3	1	3	3	3	2	3	3	3	3		52.00	0.40
Improved design	2.63	3	3	1	3	1	3	3	3	1	3	3	3	3	3	2	3	3	3	3		50.00	0.55
Effective communication between parties	2.53	2	2	1	3	2	2	3	3	3	3	3	3	1	3	2	3	3	3	3		48.00	0.46
Understanding of parties will be increased	2.58	2	2	2	3	2	2	3	3	3	3	3	3	1	3	2	3	3	3	3		49.00	0.35
Enhanced economic growth of a nation	2.63	3	2	2	3	3	3	3	2	3	2	1	3	3	3	2	3	3	3	3		50.00	0.34
Work efficiency	2.79	3	3	3	3	1	3	3	3	3	3	3	2	3	3	2	3	3	3	3		53.00	0.27
Increased customer satisfaction	2.42	3	3	1	3	1	2	3	3	3	3	3	2	3	3	2	3	1	3	1		46.00	0.66
Enhanced facility maintenance	2.32	3	3	3	3	1	2	3	3	3	3	1	2	1	1	2	2	2	3	3		44.00	0.64
Improved return on resources	2.32	2	3	3	3	2	2	3	3	1	3	1	3	1	3	2	2	1	3	3		44.00	0.64
Increased revenue generation to the national development	2.16	2	2	1	3	3	2	2	3	3	2	1	2	1	1	2	2	3	3	3		41.00	0.55
It improved conflict resolution	2.37	1	3	3	3	3	2	3	3	3	3	3	2	1	1	2	2	3	3	1		45.00	0.65
Improved administration	2.47	2	2	3	3	1	2	3	3	3	3	1	2	3	3	2	2	3	3	3		47.00	0.46
It encourages financing option	2.32	2	2	1	3	1	2	3	3	3	3	3	2	1	3	2	3	1	3	3		44.00	0.64
Reduced risk exposure	2.63	3	3	3	3	3	2	3	2	3	2	1	2	3	3	2	3	3	3	3		50.00	0.34
																					Total Score Variance	14.50	

Reliabilty = True Variation (true scores) / Total Variation (observed scores)	**0.74**	***Good Reliability***	***Total True Score Variance*** 10.71

Table.10: Reliability test for Consultants' Data

Benefits of Partnering	CONSULTANTS C3																								Total Score	True Score Variance
	Mean																									
Reduction in costs and time of project implementation	2.41	3	3	3	2	1	3	1	3	2	3	3	3	3	1	1	3	2	3	1	3	3	3	53.00	0.70
Provides opportunities for innovation	2.77	3	2	3	3	3	3	3	3	1	1	3	3	3	3	3	3	3	3	3	3	3	3	61.00	0.36
Establishment of good and less adversarial relationship	2.41	3	3	1	3	2	3	3	1	1	3	3	1	1	3	3	3	3	3	1	3	3	3	53.00	0.79
Reduced waste	2.05	3	2	3	2	3	1	1	1	2	1	3	1	2	2	2	3	1	3	2	3	3	1	45.00	0.68
Risk sharing	2.82	3	3	3	3	3	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	62.00	0.33
Operational Savings	2.23	3	1	3	2	1	3	1	1	2	3	3	1	3	3	1	3	1	3	2	3	3	3	49.00	0.81
Increased implementation speed	2.41	3	3	3	2	1	3	1	3	1	3	3	3	3	3	1	3	2	2	2	2	3	3	53.00	0.61
Construction projects cost savings	2.23	3	3	3	1	1	1	1	3	1	3	3	3	3	2	2	3	2	3	3	1	3	1	49.00	0.81
Quality Improvements	2.41	3	3	3	3	1	3	1	1	1	3	3	1	2	3	3	3	3	3	3	1	3	3	53.00	0.79
Improved design	2.68	3	3	3	3	3	3	1	1	2	3	3	1	3	3	3	3	3	3	3	3	3	3	59.00	0.49
Effective communication between parties	2.45	3	1	3	2	1	3	1	3	1	3	3	3	3	2	3	3	1	3	3	3	3	3	54.00	0.70
Understanding of parties will be increased	2.73	3	2	3	3	1	3	3	3	3	3	3	3	3	3	3	3	3	2	1	3	3	3	60.00	0.38
Enhanced economic growth of a nation	2.36	2	2	3	3	3	1	3	3	2	2	3	1	2	2	1	3	3	3	1	3	3	3	52.00	0.60
Work efficiency	2.73	3	2	3	3	3	3	1	1	2	3	3	3	3	3	3	3	3	3	3	3	3	3	60.00	0.38
Increased customer satisfaction	2.50	3	2	3	3	3	1	1	1	1	3	3	3	1	3	3	3	3	3	3	3	3	3	55.00	0.70
Enhanced facility maintenance	1.86	2	3	3	1	1	1	1	1	1	3	3	3	3	1	1	3	1	1	1	3	3	1	41.00	0.94
Improved return on resources	2.09	3	3	3	3	3	1	1	2	2	1	3	3	1	1	1	3	1	3	1	3	3	1	46.00	0.90
Increased revenue generation to the national development	2.05	2	3	3	3	1	1	3	1	1	1	3	1	3	1	1	3	1	3	1	3	3	3	45.00	0.95
It improved conflict resolution	2.50	2	2	1	3	2	3	3	3	1	3	3	1	3	3	3	3	3	3	1	3	3	3	55.00	0.61
Improved administration	2.45	3	2	1	3	2	1	3	2	2	3	3	2	3	3	3	3	2	3	1	3	3	3	54.00	0.52
It encourages financing option	1.95	2	1	1	1	3	1	1	3	2	1	3	3	1	2	1	3	1	3	1	3	3	3	43.00	0.86
Reduced risk exposure	2.55	3	3	3	3	3	2	1	3	3	1	3	2	3	2	2	3	3	3	3	3	3	1	56.00	0.52
																					Total Score Variance			34.05	
Reliabilty = True Variation (true scores) / Total Variation (observed scores)	**0.42**	***Poor Reliability***																			***Total True Score Variance***				14.43



Discussion

Table 9 and 10 above present data used on the calculation of reliability tests for the Client's data and a well as Consultants data. It has been highlighted on chapter 3 that a coefficient of 0,7 on a test will represents that 70 percent in the observed variable in scores is true, and 30 percent is error. The closer the reliability coefficient gets to 1, the better (Sekaran, 2003).

Therefore, Client's data as per reliability test above has yielded a coefficient of 0.74, this means that the data is good. The same cannot be said about the Consultant's data as the yielded coefficient is less than 0.7, at 0.42.

4.6. Chapter Summary

The collected data was analysed and presented in a form of tables, charts and figures. Various discussions at the end of presented results are conducted explaining the meaning of each of the results.

5. Chapter 5: Summary, Conclusion and Recommendation

5.1. Introduction

This chapter summarises the results, conclude and recommends areas for future research.

The overall objective of this study as highlighted in chapter one was to investigate partnering relationships in the SACI with the focus on Clients, Contractors and Consultants.

Literature review was conducted and various views' by different authors were reviewed and included as part of chapter two. Questionnaires were then formulated based on reviewed literature, data was gathered and analysed. Summary of the results are presented below.

5.2. Summary of the Results

The overall summary of results highlight the key findings as derived from chapter four and are as follows:

- The study revealed that majority of Clients, Contractors, and Consultants are aware of the concept and have experience in construction partnering as a procurement method.
- The study established that majority of contracting parties, particularly Contractors and Consultants, prefer both project partnering and strategic partnering, however, project partnering is more preferred compared to strategic partnering. Similar results were established for respondents with partnering experience.
- Clients, on the other hand also prefer mostly project partnering over strategic partnering.
- The study also found that Clients, Contractors and Consultants prefer Dyadic relationship (Two-party) over Multi-party relationship.

- Clients, Contractors and Consultants prefer formal contracts when in a partnering arrangement over informal contracts.
- The study revealed that there is a difference between each potential partners' preference amongst Clients, Contractors and Consultants. Clients prefer partnering with all potential partners, which includes, Consultants, Contractors, Suppliers, Subcontractors and other Clients. Similar results were also established by Clients with partnering experience.
- Contractors on the contrary prefer partnering mostly with the Clients on overall results, but a different preference was established for Contractors with partnering experience, who mostly preferred partnering with all potential partners, which include, Consultants, Contractors, Suppliers, Subcontractors and Clients.
- Consultants prefer partnering with Contractors on overall results, however, Consultants with partnering experience prefers partnering mostly with all potential partners, which include, Contractors, Suppliers, Subcontractors, Clients and other Consultants.

The principal aim of this study as highlighted above, was to explore partnering relationships within the South African Construction Industry and to achieve that, the following objectives were assessed:

- How developed the partnering arrangement as a procurement strategy in the South African Construction Industry (SACI) is.
- Parties' views on their ideal type of relationship development when undertaking partnering.
- Parties' views on which partnering type they preferred the most between project partnering and strategic partnering.
- Determining the preferred type of relationship between dyadic and multiparty as well as who the preferred parties in a partnering relationships are.

The statuses of these objectives as well as conclusions are discussed below as to whether or not have been achieved.

5.3. Conclusion

- It is the finding of this study that partnering arrangement as a procurement method is developing within SACI, particularly amongst the three Provinces in which the study was conducted, being Gauteng, Limpopo and the Northwest.

The above conclusion satisfies the first objective of this study. The point above can be regarded as part of “other” unidentified procurement methods available in SACI, with an average weighting of about 10% as concluded by Grobler and Pretorius (1999) and about 8% as concluded by Oshungade and Kruger, (2015).

- The study revealed that amongst all the respondents, 78% prefers formal contracts when in a partnering arrangement.

The above revelation satisfies the second objective of this study. It is however contrary to the general view about partnering which advocates informal contracts. According to Conley and Gregory, (1999) Partnering is not a legally binding contract, it is just an agreement with potential of reducing the confrontational relationship amongst the owners, contractors and extra parties to which the relationship extends to.

Partnering relationships are often determined by good faith than formal contracts (Lu and Yan, 2007). This is due to the fact that partnering promotes improvement and relations rather that litigation and liability (Cheng *et al*., 2004). It is also different because traditionally, construction dealings depend mostly on formal standard contracts as stated by Eriksson (2010) citing Cox and Thompson, (1997).

- ❖ This view by the respondents is in line with this research’s hypothesis that formal types of relationships are preferred, therefore that part of hypothesis cannot be rejected.

- The study revealed that respondents generally prefer project partnering over strategic partnering with an exception of Clients who favours strategic partnering over project partnering.

The third objective of the study is satisfied by the above point. Although both project partnering and strategic partnering can yield improved results as advocated by literature in comparison to traditional procurement method, there is a need for continuity on partnering relationships. According to Cheng and Li, (2001) evaluating achievements of partnering upon finishing a single project relationship, if there is no intention on undertaking another one, may not add value on the party organisations.

Partnering should be continuously implemented in order for trust and commitment to develop (Cheng *et al.*, 2004). Moreover, for partnering to extend beyond a single project, top management of individual organisations should discuss their objectives, compatibility and conflicting goals at the strategic level. Long-term relationships provides a successful platform for more complex knowledge forms to be effectively shared and promoted between parties (Barlow and Jashapara, 1998).

The procurement process can be eliminated when organisations decide to become strategic partners and this will lead to reduction in costs and time because clients will be more willing and comfortable executing projects with the same partners that they previously worked with (Bayramoglu, 2001). Moreover, on the other hand, the contractors will have a sense of security for future projects, their core business mode of survival.

- ❖ This view by the respondents does not completely supports this research's hypothesis that strategic partnering is preferred, therefore that part of hypothesis can partially be rejected.
- ❖ An exception is for the Clients, who favours strategic partnering, therefore the hypothesis cannot be completely rejected.

- The study established that Clients, Contractors and Consultants prefer Dyadic relationship (Two-party) over Multi-party relationship. The other revelation is that all parties do prefer partnering with one another.

The last objective of the study is achieved by the above bullet point. The bullet point above do not supports a view by Mathews *et al.,* (2000) that majority of work involve contractors and clients on construction partnering relationships , with little mention of other member's involvement such as subcontractors and suppliers. Cheng *et al.*, (2004) opined that partnering relationships should preferably be created prior to agreements being signed and to have all key participants included such as the: Client/ Owner, Designer / Architects, Surveyors, Engineers, General Contractor, and Key Subcontractors.

Bayramoglu, (2001) stated that bringing the core team including the Client, Architect, Engineers, and Contractors (in other cases – specialty contractors and suppliers) at the beginning of the project, partnering will bring about a more integrated design phase of the project.

- ❖ The preference of dyadic relationship by respondents does not support the hypothesis that a multi-party type of relationship would be preferred, therefore that hypothesis can be rejected.

5.4. Recommendations

Based on the literature and findings of this study, the following is recommended in relation to the subject of partnering:

- Partnering should be implemented on all government project undertaking as this will help towards the objectives of the BBBEE Act.
- Most Contracting parties should be educated about the partnering arrangement subject including its benefits, as this will result in both existing and new participants economically gaining beyond one project usually awarded through tendering.

5.5. Proposition for future study

On the basis of the findings on this study together with the reviewed literature, the following areas of additional research would be worth exploring:

- A case study research on partnering procurement within SACI would be of a great value as an opportunity for a well-documented partnering arrangement in action exists.

- This study was focussed on three provinces, a study that covers all nine provinces would be interesting to see whether similar results would be determined.

- Some respondents seemed confused by the partnering procurement method and as they often asked if it was the same as joint ventures. A study that compares the characteristics of joint ventures and partnering procurement method in SACI would not only be great for awareness but also for the underlying benefits and challenges associated with each method.

- As much as literature presents dominance of the traditional procurement systems within SACI, a study that would focus on a direct comparison between partnering procurement method's critical success factors in SACI and traditional procurement method would be interesting.

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ANNEXURE 1 : RESEARCH QUESTIONNAIRE

Dear Participant

RE: ASSISTANCE IN PROVIDING DATA FOR THE STUDY

Mr. Mkateko Hobyani is an MSc student at the School of Construction Economics and Management, University of the Witwatersrand, Johannesburg. He is currently undertaking a research entitled:

"An Assessment of Construction Partnering Relations amongst Major Contractual Parties in the South African Construction Industry"

In this regard, we kindly request you to assist him by answering the attached questionnaire to the best of your ability. Please note that the information obtained will be used solely for academic purposes and will not be released outside of the study.

We highly appreciate your time taken in completing this questionnaire and your contribution to the study.

Thank you.

Yours faithfully

Dr. S. Dlamini

Student Supervisor

School of Construction Economics & Management
Faculty of Engineering and the Built Environment
University of the Witwatersrand

QUESTIONNAIRE

Please note: Your responses are to be treated confidentially & are for the purposes of this study only.

SECTION ONE – ADDRESSES THE OBJECTIVES OF THE STUDY

Please TICK (x) the most appropriate box

1 Please fill in your current position at your organisation.....

2 What is your experience within the construction industry?

☐ [1] 0-5 years ☐ [2] 6-10 years ☐ [3]10-15 years
☐ [4] > 20 years

3 What type of an organisation do you work for in the construction sector?

☐ [1] Client ☐ [2] Contractor ☐ [3] Consultant

4 Have you been part of a construction partnering arrangement?

☐ [1] Yes ☐ [2] No

5 Which is your preferred partnering method?

☐ [1] Project partnering (single project) ☐ [2] Strategic partnering (Multiple projects)
☐ [3] or Both

6 What's your preferred type of partnering relationship?

☐ [1] Multi-party ☐ [2] Dyadic (Two party)

7 Which of the following options presents your ideal relationship development in partnering?

☐ [1] Formal Contract ☐ [2] Informal based on Social aspects
☐ [3] Mixed

8 Please tick who do you prefer to partner with in a partnering relationship?

[1] Client ☐ [2] Contractor ☐ [3] Consultants ☐ [4] Suppliers ☐ [5] Sub-contractor ☐ [6] All ☐

SECTION TWO: CONSTRUCTION PARTNERING BENEFITS

This section relates to your views regarding the partnering benefits within the South African Construction Industry.

Please TICK (x) the most appropriate box to reflect which of the following partnering benefits you agree or disagree with.

Not sure-1: Disagree-2: Agree-3

	1	2	3
Reduction in costs and time of project implementation			
Provides opportunities for innovation			
Establishment of good and less adversarial relationship			
Reduced waste			
Risk sharing			
Operational Savings			

Increased implementation speed			
Construction projects cost savings			
Quality Improvements			
Improved design			
Effective communication between parties			
Understanding of parties will be increased			
Enhanced economic growth of a nation			
Work efficiency			
Increased customer satisfaction			
Enhanced facility maintenance			
Improved return on resources			
Increased revenue generation to the national development			
It improved conflict resolution			
Improved administration			
It encourages financing option			
Reduced risk exposure			

COMMENTS & SUGGESTIONS