

Benchmarking effective service delivery drivers in the South African civil construction industry

By

ERNEST VENTER

Mini-dissertation submitted in partial fulfilment of the requirements for
the degree *Masters of Business Administration*
at the Potchefstroom Campus of the North-West University

Supervisor: Prof RA Lotriet
November 2010

Acknowledgements

I am grateful that the Lord has given me the opportunity and the strength to do this mini-dissertation. There are also many who have contributed through support and encouragement during my research. A special word of gratitude to:

- Prof. Ronnie Lotriet, for his interest, encouragement, advice and patience.
- Dr. Suria Elis, from the Statistical Consultation Services of the North-West University, for her advice and statistical analysis.
- All the people from different companies who took part in the empirical study.
- Family and friends who supported me, but most importantly my wife, Belinda, for her love and support in everything I do.
- My employers for their financial support and encouragement.
- Mrs. Wilma Pretorius, for her help with the linguistic editing.
- Mrs. Hettie Rautenbach, for her help with the linguistic editing.

Ernest Venter

2010

Abstract

Identifying and prioritising effective service delivery drivers' in selected civil construction companies are more than merely satisfying customers' need. By successfully identifying and prioritising effective service delivery drivers within the selected civil construction companies, the companies will be able to achieve competitive advantage above their competitors.

This study, by using a questionnaire as a measurement instrument, established that a gap currently exist between what civil construction companies, their employees and their customers regards as effective service delivery drivers within the civil construction industry. By closing this gap, the civil construction companies will be able to generate or maximise profits for their shareholders as there will be common understanding of the level of performance to meet the customer's expectations. The company will also have engaged employees as they would know what is expected from them on a daily basis.

The study further highlights the benefits of managing these identified service delivery drivers and elaborate on the factors needed to successfully manage a service level agreement between a civil construction company and their customers.

Civil construction companies however will have to revisit these drivers on a continuous basis as client satisfaction is associated with continuous improvement, permanent assessment of service delivery drivers and the service delivery standards.

In essence, there are still a lot of challenges and opportunities when it comes to quality service delivery drivers in the civil construction industry. Each company needs to conduct a SWOT analysis to evaluate their competitiveness within the industry.

Keywords:

Identification, prioritization & effective service delivery drivers within civil construction companies

Opsomming

Die identifisering en prioritisering van effektiewe dienslewering dryfvere in geselekteerde siviele konstruksie maatskappye behels meer as slegs die bevrediging van die kliënt se behoeftes. Deur suksesvolle identifisering en prioritisering van effektiewe dienslewering dryfvere in die geselekteerde siviele konstruksie maatskappye sal die maatskappye in staat wees om 'n mededingende voordeel bo hul mededingers te behaal.

Hierdie studie, op grond van 'n vraelys as maatstaf, het vasgestel dat daar 'n gaping bestaan in die verwagting tussen die siviele konstruksie maatskappye, hul werknemers en hul kliënte, met betrekking tot effektiewe dienslewering dryfvere in die siviele konstruksie industrie. Deur die verkleining van die gaping, sal die siviele konstruksie maatskappye in staat wees om maksimale wins vir hul aandeelhouers te bewerkstellig deurdat daar in gemeenskaplike verstandhouding sal wees betreffende die diensleweringvlak met die oog op kliënte-tevredenheid. Die studie beklemtoon eerstens die voordele van die bestuur van die geïdentifiseerde dienslewering dryfvere. Verder brei dit uit oor die faktore wat nodig is vir die suksesvolle bestuur van die diensleweringvlak ooreenkomste tussen 'n siviele konstruksie maatskappy aan hulle kliënte.

Siviel konstruksie maatskappye sal noodwendig hierdie dryfvere van tyd tot tyd hersien, omdat kliënte-tevredenheid ten nouste verband hou met voortdurende verbetering, permanente assessering van dienslewering en die standarde vir dienslewering.

Kortom, daar is steeds heelwat uitdagings en geleenthede wanneer dit kom by dienslewering dryfvere in die siviele konstruksie industrie. Elke maatskappy behoort 'n SWOT – analise te loods ten einde hul mededingbaarheid in die industrie te evalueer.

Sleutelwoorde:

Identifisering, prioritisering & effektiewe dienslewering dryfvere binne siviele konstruksie maatskappye

TABLE OF CONTENTS:

Acknowledgements.....	i
Abstract.....	ii
Opsomming	iii
List of Figures	vi
List of Tables	vii
List of Abbreviations.....	viii
CHAPTER 1: NATURE AND SCOPE OF THE STUDY.....	1
1.1 Introduction	1
1.2 Problem Statement	3
1.3 Objectives of the study	4
1.3.1 Primary objective.....	5
1.3.2 Secondary objectives	5
1.4 Scope.....	6
1.4.1 Limitations of the study	7
1.5 Research Methodology	9
1.5.1 Literature study	9
1.5.2 Empirical study.....	9
1.5.3 Limitations	11
1.6 Layout of the study.....	12
CHAPTER 2: EFFECTIVE SERVICE DELIVERY DRIVERS	15
2.1 Introduction	15
2.2 The civil construction industry	16
2.3 The concept of service delivery.....	18
2.4 Service level agreements and effective service delivery drivers in the civil construction industry	26
2.5 Benefits of managing effective service level agreements within the industry	31
2.6 Factors needed for the successful management of SLA's	36
2.7 Conclusion	39

CHAPTER 3: EMPIRICAL STUDY 41

3.1	Introduction	41
3.2	Empirical research design	42
3.2.1	Goals of the empirical research.....	45
3.2.2	Limitations of the empirical study	46
3.2.2.1	The integrity of the research process	46
3.2.2.2	The target population	47
3.3	Data gathering through the questionnaire as a measuring instrument	47
3.3.1	Aspects regarding the questionnaire	49
3.3.1.1	Construction of the questionnaire.....	49
3.3.1.2	Pilot testing.....	50
3.3.1.3	Data rating	51
3.3.2	Target population	52
3.3.3	Rate of response.....	54
3.4	DATA CAPTURING	56
3.4.1	Statistical data capturing methods used.....	56
3.4.2	Analysis and interpretation of statistical results.....	58
3.7	SUMMARY.....	77

CHAPTER 4: CONCLUSIONS AND RECOMMENDATIONS 79

4.1	Introduction	79
4.2	Main findings	79
4.3	Recommendations	85
	References	87
	Annexures.....	92
	Annexure A – Questionnaire	92
	Annexure B – Mean and Standard deviation of the population	92
	Annexure C – Effect Sizes	92

List of Figures

Figure 1:	Flow diagram on the layout of the study	13
Figure 3.1:	Classification of research approaches by data collection method	44
Figure 3.2:	The role of the questionnaire in the research process	48
Figure 3.3:	Effective service delivery drivers from the market's / customer's perspective	62
Figure 3.4:	Indicates the gap between the market and management of selected construction companies	70
Figure 3.5:	Indicates the gap between management and employees	73
Figure 3.6:	Indicates the gap between the market management and the employees	76

List of Tables

Table 1:	Target population	7
Table 2:	Ten determinants to determine service quality and their definitions	23
Table 3.1:	Core business of end-users and construction firms asked to complete the questionnaire	52
Table 3.2:	Total number of respondents asked to complete the questionnaire	54
Table 3.3:	Rate of response	55
Table 3.4:	Identification and prioritization of effective service delivery drivers	59
Table 3.5:	Interpretation of the results and conclusions regarding the descriptive statistics	63
Table 3.6:	The identification and prioritization of the effective service delivery drivers from the market leader's perspective and the management of the selected civil construction companies	69
Table 3.7:	Indicates the identification and prioritization of the effective service delivery drivers from the management and employees of selected construction companies	72
Table 3.8:	The comparison of the three different interest groups' responses	75

List of Abbreviations

KPI's	-	Key performance indicators
KPA's	-	Key performance areas
SLA	-	Service Level Agreement
SWOT	-	Strengths, Weaknesses, Opportunities and Threats
SHERQ	-	Safety, Health, Environmental Regulation and Quality
SOW	-	Scope of Work
SH&E	-	Safety, Health and Environmental
QCP	-	Quality Control Package
FNB	-	First National Bank
Anon	-	Anonymous

CHAPTER 1: NATURE AND SCOPE OF THE STUDY

1.1 Introduction

The civil construction industry is one of the most booming industries in the world. This industry is mainly an urban based one concerned with preparation as well as construction of real estate properties. In an article written by Roy Cokayne, (2009) - *Civil construction stands tall as South Africa's best performing sector*, he stated that construction is the country's best performing economic sector, despite confidence levels falling to 60 on a 100-point scale in the first quarter of this year from 76 in the same quarter last year. This was according to the latest First National Bank (FNB) civil construction confidence index released. Business confidence in the civil construction industry remained well above the prevailing level in the building industry. Tendering competition had increased which attributed to a perception that companies needed to acquire and retain customers through service delivery.

According to Albaloushi *et al.* (2008: 53-71) the civil construction industry is characterized by its fragmentation and low productivity. There are more than enough companies in the industry, and they are fiercely competing with one another to get projects, mainly by lowering the price. Thus, lower price levels, currently dominates in the industry as the primary competitive advantage along with schedule compression, neglecting effective service delivery. If the civil construction industry wishes to deliver in reliability, responsiveness, credibility, quality and efficiency amongst others, it needs to radically improve the process through which it delivers service.

In an era of continuous change and increased complexity in the civil construction industry, it can be difficult for a company to truly understand and comply with the customer's needs regarding effective service delivery drivers. According to Louw *et al.* (2008: 57 (a)) leading and managing businesses today is increasingly more difficult because of the speed and complexity of change in the so-called 'new economy'. Effective service delivery drivers in the civil construction industry, as in any other industry are regarded as a vital marketing tool as part of the pricing strategy. When companies in the

civil construction industry implement effective service delivery drivers that other companies within the industry cannot duplicate, they have achieved a competitive advantage over the other companies. Even in the manufacturing sector, the way customer complaints and service issues are handled and what type of warranty customers need, have become the key marketing issues in the same way as the development of new products used to be. Increasing market competition and escalating customer service demand force organizations to re-engineer their service delivery processes to improve efficiency.

The identification of strengths and weaknesses is relative for effective service delivery. In other words, the identification of strengths and weaknesses depends on how well the organisation measures up to competitors or to its own performance in the past. The objective is to change behaviour and gain momentum for improvement and change. Benchmarking provides a tool for identifying relative strengths, weaknesses, opportunities and threats (Louw *et al.*, 2008: 168(b)). Companies rendering a service to clients should focus on effective service delivery drivers and are measured on how well they performed in the actual execution of the work. A major competitive advantage and strength to the company will be created in focusing on what the client wants and service quality, instead of what civil construction companies think clients want. This competitive advantage will enable the company to earn above average returns for its investors.

The PIMS (Profit Impact of Marketing Strategy) Principles, Buzzel *et al.* (1987: 9(a)) emphasized that there is a positive relationship between perceived service quality and profitability. It is concluded that a quality edge boosts profitability in two ways: Firstly, in the short run, excellent quality sustains premium prices. Secondly, in the long run, excellent quality leads to both market expansion and gains in market share. In short, successful quality management and the focus on service delivery drivers from the market's perspective ultimately pay off. However, closely related to competitive advantage is strategic survival – the extent to which a company can maintain and sustain competitive advantage over time. Companies need to follow a strategic management approach in identifying effective service delivery drivers.

This chapter will deal with introducing the theme by focussing on the identification and the prioritization of effective service delivery drivers.

1.2 Problem Statement

South Africa's civil construction industry promises to be at the forefront of the country's economic development as it is an industry that has the potential to employ a large number of people. Despite some slow periods, like the recent global financial crisis, it is encouraging that there is a good flow of work. The tendering process was more aggressive and there are no danger signs of things slowing down.

In general, the success of companies can be measured by the extent to which they generated or maximized profits for their shareholder. Success can also be determined by a company's strategic competitiveness. The civil construction industry therefore needs to focus on their ability to earn above-average returns for their investors and identifying effective service delivery drivers for their customers in order to meet their expectations and hopes. The civil construction industry needs to implement strategies prioritising effective service delivery drivers in order to achieve profit and wealth maximisation to retain their customers and stakeholders. If this new strategy is not successfully implemented, the civil construction industry will have to accept the inherent risk of dissatisfied stakeholders and a loss in market share. Should the companies in the civil construction industry continues to lose market share, there will be more than enough competitors to take over their portion of the market share, causing the company to close down. The level of dissatisfaction can be measured in terms of the level in which the service delivery has not been met.

Effective service delivery drivers in the civil construction industry vary between different markets such as the private and public sector. Both the private and public sector value different effective service delivery drivers more important than others and this will have a major impact on the satisfaction level that a client will experience during the execution of the project. Therefore, it is important to identify and to prioritize effective service delivery drivers, both from a civil construction company and their customers' perspective, in order

to conduct a gap analysis. Dissatisfied customers just switch from one service provider to another without complaining about poor service delivery. Satisfied customers refer new customers, thus acquiring and retaining new customers and there with ensuring company growth and increased market share.

A number of challenges, including opportunities and threats, face the civil construction industry. If one of these challenges are overlooked, the company may stand the chance to set the service delivery standard incorrect. The identification and prioritization of effective service delivery drivers need to be explored in order to enable civil construction companies to maintain and sustain strategic survival.

1.3 Objectives of the study

The purpose of this study is to identify and prioritize effective service delivery drivers from the perspective of all stakeholders' in the civil construction industry i.e. civil construction companies and their customers. By successfully identifying, prioritizing and implementing strategies to accommodate these drivers, the company will ensure success and competitive advantage for their company.

Due to the competitiveness in the field of civil construction, companies are forced to make resources available to focus on what their customers demand. This may result in competitive advantage over other service providers operating in the same industry. Competitive advantage can be defined as the ability of a company to add more value for its customers than its competitors, and thus attain a position of relative advantage. It is important to note that even if a company achieves competitive advantage, it can normally only sustain it for a certain period of time and it is a key challenge for companies to create, maintain and sustain competitive advantage over a long period of time (Thompson *et al.*, 2005: 855). Thus it is clear that organisations continuously have to conduct strategic initiatives such as a SWOT analysis (Strengths, Weakness, Opportunity and Threats analysis) in order to ensure that they have identified and prioritized the most recent effective service delivery drivers for their customers.

This study will extend the civil construction industry's understanding of the importance of identifying and prioritizing the major drivers for effective service delivery for the industry with specific reference to selected civil construction companies. The impact of competitive advantage as a result of identifying and prioritizing the effective service delivery drivers will also be discussed, as increasing market competition and escalating customer service demand this focus.

1.3.1 Primary objective

The primary objective of this study is to identify and to prioritize effective service delivery drivers for selected civil construction companies.

The drivers for effective service delivery from the industry's perspective will be identified and prioritized in order to enable civil construction companies to set the service level on the envisaged standard. Different populations of interest have participated in this study.

1.3.2 Secondary objectives

Secondary objectives will also be derived for the study:

- Key performance areas (KPA's) that will have a definite impact on service delivery are highlighted. New challenging environments exist and need to be explored in order to maximize client satisfaction. The objective is to discover these areas as far as possible in order to provide the organization with as much information as possible to help set service delivery standards.
- A gap-analysis will be performed to align the companies and their customers' expectations of effective service delivery drivers in the civil construction industry. The study determined if a gap exists.

These objectives will be dealt with in other subsequent chapters, and derivation within chapters may contribute to some practical conclusions.

1.4 Scope

The scope of the study essentially examines the effective service deliver drivers in selected civil construction companies by using a questionnaire as a measurement instrument to prioritize service delivery drivers.

The target population and the stakeholders selected to participate in this research study include (see table 1, page 7):

- Selected market leaders, i.e. customers in the civil construction industry. Drivers for effective service delivery need to be identified and prioritized from this perspective in order for the civil construction companies to ensure customer satisfaction.
- Management of selected civil construction companies. Management of construction companies was asked what they perceived to be the most important effective service delivery drivers. This study assisted in establishing whether there was any alignment between the civil construction companies' perspective and that of their customers. This would also indicate if management is focusing on the correct aspects, or if valuable management time is wasted on factors that the customers do not rate as important for effective service delivery.
- Employees of selected civil construction companies. The same questions asked to the management of the respective companies were asked to the employees of the companies. This would establish whether there is alignment between the company and its employees in their daily activities. It would also indicate whether the employees, interacting and rendering a service to these customers, share the same commitment to service delivery. Employees are the front-office personnel, interacting with clients on a day to day basis. If management and their employees are not aligned and lose focus on the identified drivers, the company stands a risk of having disengaged customers.

Table 1 is used to illustrate the target population selected for this study.

Table 1: Target population

Customers of selected civil construction companies	Management of selected civil construction companies	Employees of selected civil construction companies
• Sasol Secunda (Sasol 2 & 3); • Anglo American • BHP Billiton	• OTB Construction • Lynco Construction • Basil Reed Construction	• OTB Construction • Lynco Construction • Basil Reed Construction

1.4.1 Limitations of the study

A key challenge during this process involves selecting sample elements so that they are representative of the entire population and dealing with sampling error. Once the sample plan was in place and the questionnaire had been designed and tested, the fieldwork could finally start.

In this study, a sample (a subset of the population) was used and not a census in the civil construction industry. A sample was used due to the following reasons:

- It was not feasible to conduct a census to obtain the desired information.
- A census would have taken more time to conduct and analyze than was available.

- More accurate information would be obtained through a sample than with a census.

This approach means that certain population elements were excluded from the sample. This exclusion causes what is known as a sampling error. In other words, it is the difference between a result based on a sample and the result that would have been obtained had the entire population been studied (Tusten *et al.*, 2005: 337(c)). Only selected civil construction companies and their customers were part of the target population and not the whole industry.

The extent of the questionnaire also had geographical boundaries in that the sample selected was only South Africa based. The target population was therefore selected on what constitutes a representative sample of the population considering the content and time frame of the study. The target population was also chosen on the basis of them being readily available and accessible i.e. the selection was done on the basis of convenience (See chapter 3). These sampling methods are called “non-probability sampling” and can also be seen as a limitation to the study.

The quality of a sample on which the subsequent analysis is based is a major determinant of the quality of research conclusion. Other limitations to this study will be discussed in chapter 3.

The design of the sample plan is critical and practical. However, with the above mentioned population of interest meaningful, credible and generalized results were produced.

1.5 Research Methodology

1.5.1 Literature study

In order to establish a sound theoretical background on the subject, a broad literature study of existing service level agreements, service quality management and total quality management was done where definitions, models and its role in the industry were investigated.

The internet and various text books, articles, journals and other relevant scientific sources have been studied in order to retrieve the possible scenarios (see chapter 2).

1.5.2 Empirical study

The empirical study was done through structured and non-structured means. In the empirical study, a questionnaire had been used to collect primary data (see chapter 3). According to Hague *et al.* (1996:107) as cited in Tusten *et al.* (2005: 385 (e)) a questionnaire is a structured sequence of questions designed to draw out facts and opinions and which provides a vehicle for recording the data. Open-ended and close-ended questions were formulated for this questionnaire. The questionnaire was self-administered via electronic means.

The questionnaire is the central mechanism through which primary data is generated in the empirical research process. The questionnaire is a data collection instrument that sets out the questions to be asked in a formal way in order to produce the desired information.

The questionnaire contained open ended and close ended questions and statements relating to the criteria for effective service delivery drivers from various perspectives. The questionnaire also contained different key performance areas (KPA's) and key performance indicators (KPI's) as criteria on which service delivery could be measured.

The questions and statements were formulated as simple and concise as possible to ensure that the answers were definite. The language used suited the target group. Selected customers, civil construction companies and their employees (as described under the scope of the study) were part of the target population. They were asked to rate the importance of each criteria based on his or her own perception against a selected scale.

The purpose of this questionnaire was:

- To identify and prioritize the main drivers for effective service delivery.
- To identify if a gap exists between the different stakeholders (as mentioned in section 1.4). This will assist management to shift their focus and to achieve commitment from their employees.

After the completion of the questionnaire, a raw data set was available that needed to be processed to extract meaningful data. This data should be relevant to the research objectives; therefore the data analysis is an important part of this research. According to Tustin *et al.* (2005: 451 (f)) the first step in analyzing the data in completed questionnaires is known as data preparation and involves three operations: editing, coding and data capturing. Next, by a process of summation or reduction the researcher tabulated the data, thus rendering it easier to manage and interpret.

The statistical analysis was interpreted and conclusions made on the major drivers for effective service delivery in the civil construction industry.

Through the literature study, case studies and the study of different service level agreements and consulting with experts in the industry, the questionnaire was designed to provide valuable information on what the market demanded from civil construction service providers. The major aspects that needed to be addressed to ensure effective service delivery from the market's perspective were included in the questionnaire.

1.5.3 Limitations

The civil construction industry has two components in its business nature: the manufacturing-related aspect and the service delivery-related aspect. Manufacturing-related activities include planning and designing a project, purchasing materials and equipment, and performing the construction of the project. Service delivery-related activities are about how the manufacturing related activities are performed rather than what the outcome is. Corbin. (1992: 70) claims that the formulas of productivity that traditionally measure efficiency will soon be outmoded. They will be replaced by measures of effectiveness involving the process of accomplishing a task. Only a number of companies in the civil construction industry have paid attention to the process of accomplishing a task.

The management of service delivery quality and identifying effective service delivery drivers are required by the industry's future trend to obtain positive effects. Edward Scoville (1992: 9) already emphasized a few years ago that customer focus is the way of the future. If civil construction companies do not pay attention to what their customers want, as opposed to what the company thinks they want, and improve their process and the quality of their services, then they won't be around in five or ten years.

One limitation is gaining a deeper understanding of the competitive environment of the civil construction industry with a view of becoming a stronger, more effective competitor through creating and sustaining competitive advantage. In order to create a competitive advantage the company should identify the effective service delivery drivers. However, the majority of these drivers form part of the service level agreement between the construction company and its clients providing a competitive platform. Due to this competitive platform and the sensitivity around it, it is not always possible to have access to companies within the industry's service level agreements. The service level agreements normally contains sensitive information like the best cost manufacturing which is the ultimate competitive instrument, technology, innovations and styling. It also contains detail about customer service, brand, reputation and marketing strategies. Competitors can easily acquire equivalent technology, tooling and copy processes to give them a competitive edge over their competitors.

Another limitation is that companies need to continuously stay ahead of new innovations and have to look for improvements as customer needs differ and change continuously and they need to look for discontinuous opportunities. Customers will have different perceptions on what is most important when measuring service delivery drivers for specific projects. The private sector for instance, will not have the same drivers as that of government projects. Government might focus more on employment equity statistics where private users may focus more on price.

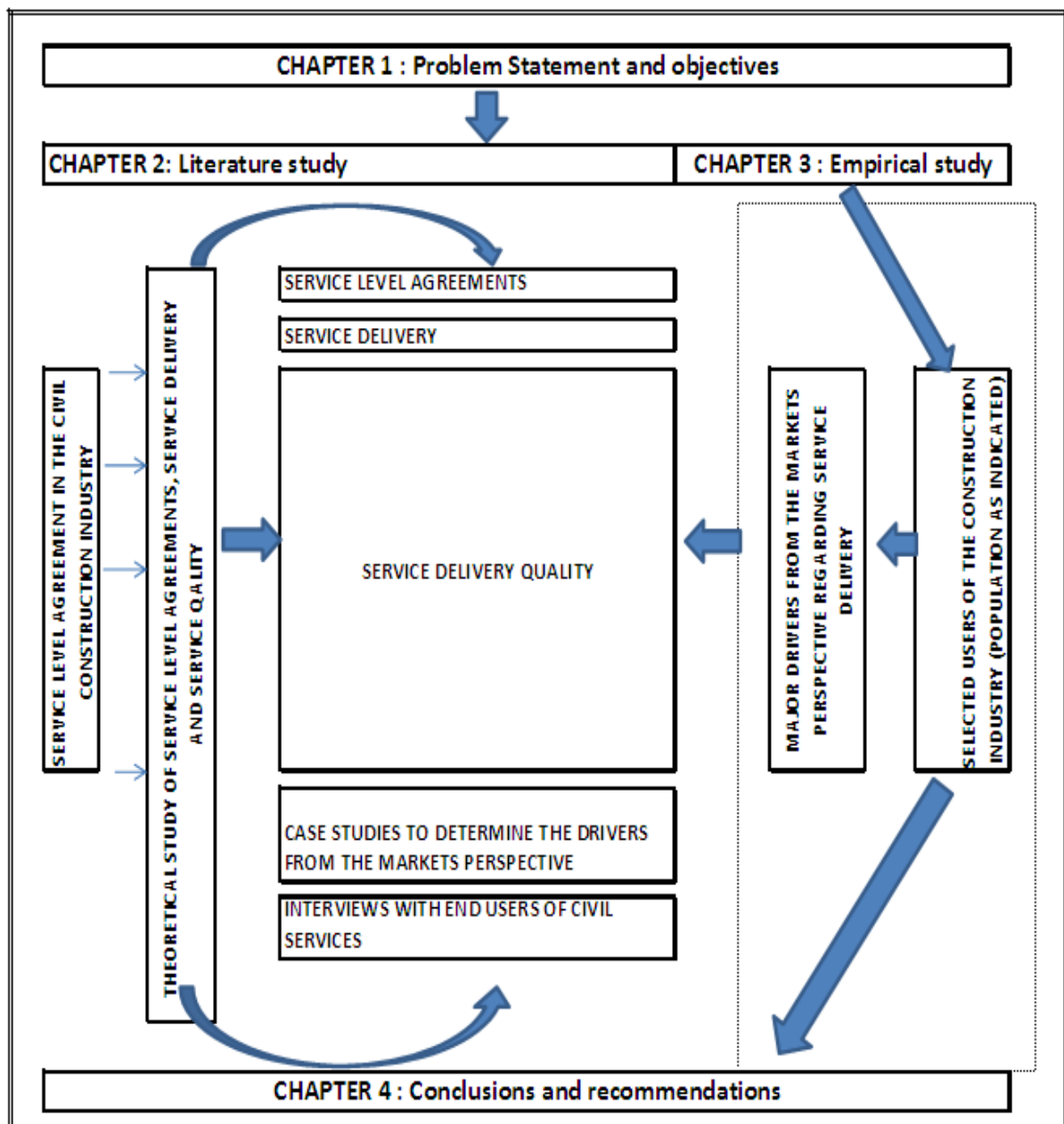
1.6 Layout of the study

A short overview of the content of each chapter is given below and in figure 1. The relationships between the chapters are also illustrated to investigate the effective service delivery drivers in the civil construction industry.

- **CHAPTER 1: NATURE AND SCOPE OF THE STUDY** – In this chapter the problem statement and objectives were set.
- **CHAPTER 2: EFFECTIVE SERVICE DELIVERY DRIVERS** – A literature study on service level agreements, service delivery and service quality were done to provide definitions and theoretical overviews are given. Case studies, interviews with role players from the markets perspective and investigations were done to determine the drivers from the markets perspective. These determined drivers were then used to compile the questionnaire in chapter 3. A broad summary of the literature study is enclosed.
- **CHAPTER 3: EMPIRICAL STUDY** – The design of the questionnaire is discussed and a statistical analysis from the data enclosed. Empirical results were interpreted and discussed to determine the major drivers from the markets perspective. A summary of this is also provided.

- CHAPTER 4: CONCLUSION AND RECOMMENDATIONS – Practical conclusions are made and a brief evaluation is done to confirm that objectives were met. Recommendations and a list of issues for further research are enclosed.

Figure 1: Flow diagram on the layout of the study



This chapter essentially introduced the civil construction industry as one of the best performing industries. Given that the industry features both opportunities and threats, companies within the civil construction industry need to establish what effective service delivery drivers are in order to maintain and sustain competitive over a period of time. This question, an overview of the civil construction industry and other aspects of effective and quality service deliverables are examined next.

CHAPTER 2: EFFECTIVE SERVICE DELIVERY DRIVERS

2.1 Introduction

There is abundant recognition that the environment in which business operates has changed significantly over the years. Business is faced with new opportunities and threats in addressing the needs and claims of stakeholders, rather than just aiming to make profit.

There are three competitive advantages for the civil construction industry namely lower price levels, shorter schedules, and better quality of work. However, many companies are suffering from the reality that all three factors cannot easily be achieved at the same time. It has been the common rule in the past that the sum of price, schedule, and quality of work remains constant: $\text{Constant} = \text{Price} + \text{Schedule} + \text{Quality of Work}$. In addition, the civil construction industry is saturated by companies offering the same level of services in terms of price, schedule, and quality of work. In the future, this constant will be changed to allow a fourth component, named effective service delivery. The civil construction industry environment requires companies to offer another value, which is effective service delivery drivers, in order to break the equation above and keep the price higher. Excellent quality of effective service delivery will increase productivity of the industry and enable civil construction companies to obtain a competitive advantage over their competitors.

Effective project delivery starts with effective service delivery (Richard., 2005: 275). Effective service delivery on projects can only be achieved if effective service delivery drivers were identified and prioritised and companies acknowledge that they need to manage the business accordingly, even if it means that they need to change the way they conduct business.

Fundamental to the delivery of services is the proper management of the most important professional asset of any company – that being the talent and commitment of a dedicated staff. The consequences of failing to identify the service delivery drivers will

result in the failure to deliver a quality project on time and at budget. The civil construction industry within South Africa is able to deliver and perform according to customer's expectation in most of the innovative and complex projects.

The purpose of this chapter is to provide an overview of the civil construction industry in South Africa. The concept of service level agreements, service delivery drivers and the benefits of successful management of these drivers will be discussed.

The concepts discussed in this chapter will assist companies within the civil construction industry to understand the key focus areas when it comes to identifying and prioritizing key effective service delivery drivers. All issues researched in the process, had been empirically tested by means of an empirical investigation in the next chapter (see chapter 3).

2.2 The civil construction industry

The civil construction industry consists of companies, individuals and resources involved in planning, designing, and constructing infrastructure. Construction is a broad term and can involve bulk earthmoving and civil engineering projects such as constructing a bridge or road (Anon., 2010 (e)). Construction can also refer to general construction works involving building of real estates. Lastly, construction can mean involving speciality trades like building up of specialised items such as electrical works. The career scope within the civil construction industry includes: civil engineers, plant operators, civil construction workers, project managers, estimators, site managers, foremen, designers, specialist contractors and consultants.

The construction industry as a concept was coined in an article prepared by CSIR (*A Review of the South African Construction Industry Part 3: The Built Environment Professions, 2004* Boutek) where mention was made that the constructing industry comprising both the building (residential and non-residential) and civil engineering sectors – plays a vital role in the South African economy. The industry is responsible for the delivery of the infrastructure that is central to the continuing development of South

Africa and, increasingly, of the region as a whole. The activities and products affect the lives of the communities that it serves both present and future. Its role is critical to the government's programme of providing infrastructure in underdeveloped areas. Lately, institutions such as the World Bank have reiterated their belief that infrastructure investment is a core component of poverty alleviation. No wonder, then, that the government of South Africa seeks to get the construction industry to play a more strategic role in social development and economic growth in the future.

The outputs of the construction industry are predominantly capital investment goods, i.e. buildings, facilities and infrastructure that others use in the creation of goods and services. When the demand for goods and services decreases, the demand for supporting facilities also decreases, with the obvious exception being the government sector. At the outset one must note that the construction industry's share of national income in South Africa is below that of some developed countries. During 2002 a total of R57.5 billion was spent on construction works, which includes civil works (R24.542 billion) non-residential (R16.247 billion) and residential (R16.768 billion). The construction sector has shown a continuous decline in its percentage contribution in GDP of 59,3 percent since 1980, reaching its lowest level in 20 years during 2001 and 2002 (Anon., 2004 (f)). Significantly, government's contribution to GDP has declined 15,9 percent since 1992 whilst the private sector has increased its contribution. It is clear that the downturn in government's spending is not due to a decline in demand but rather to its macroeconomic policy aimed at reducing public debt as a percentage of GDP (Boutek, 2004).

Herewith some extracts from the same article prepared by Roy Cokanya, (2009) on certain confidence levels for the construction sector with reference to the recent global financial crisis:

- *“Mike Wylie, the chairman of listed Wilson Bayly Holmes-Ovcon, stressed that it was "not doom and gloom by any means" in the sector. Tendering competition had increased, which he attributed to a perception that companies needed to secure work because things might not get better and there was probably less work available than this time last year, due to mining cutbacks. But in these circumstances of a global financial crisis it is encouraging that there is a good flow of work and we're still operating at 100 percent”.*
- *“Marius Heyns, the chief executive of listed Basil Read Holdings, said work volumes were "very acceptable" but tendering was more aggressive. Heyns added that there were "no danger signs of things slowing down”.*
- *“Bruggemans said respondents expected business conditions to improve in the second quarter, although companies expressed concern that demand could soften over the medium term as the current adverse global developments affected the domestic economy”.*

2.3 The concept of service delivery

The concept of service and service delivery is still an elusive concept (Irene., 2010). There are extensive literature discussing service and service level agreements as service activities are diversified, not to mention the diverse fields of service level agreements.

Service level agreements (frequently abbreviated as “SLA”) are a part of a service contract where the level of service is formally defined as the contracted delivery time of the service or the performance thereof (Anon., 2009 (a)). Service level agreements are customized according to the client's requirements and essentially differ from case to case. However, important aspects of the agreement fundamentally remain the same and include:

- Description of the services being promised;
- Methods through which the services will be delivered;
- Criteria through which delivered services will be measured;
- Quality standards of the services promised;
- Line of action in case of failure of delivery.

Before elaborating more about the nature of service and service level agreements, this fundamental question needs to be answered: *What is a service?* Answering this question will make it easier to understand the concept of service level agreements and the nature of service.

There are various definitions of “*service*” suggested by researchers and practitioners:

- Service is an activity or series of activities of more or less intangible nature that normally, but not necessarily, take place in interactions between the customer and service employees and/or physical resources or goods and/or systems of the service provider, which are provided as solutions to customer problem (Gronroos, 1990: 27). These activities should be captured in a service level agreement in order to create a common understanding about all the service delivery drivers and should define the level of service for each driver.
- Service, with reference to “customer service” is a task, other than proactive selling, that involves interactions with customers in person, by telecommunications, or by mail. It is designed, performed, and communicated with two goals in mind: operational efficiency and customer satisfaction (Lovelock, 1991: 263).
- Service is useful labour that does not produce a tangible commodity’ or a ‘facility supplying some public demand’ or ‘one providing maintenance or repair’ (Janson, 1989: 129-144).

Most of those are strictly based on the so called service industry, and narrowly focus on selling / buying activities.

From the above mentioned definitions it is clear that service is the minimum performance criteria or service delivery driver a provider promises to meet when delivering a service. Service is an integral part in any business partnership as it defines the relationship between the provider and the customer. This partnership should be agreed upon between the parties before commencement of the project, as it determines the service drivers including responsibilities, deliverables, priorities and warranties. The ability to deliver a high-quality service that meets the needs and expectations of customers, is key to building a competitive advantage.

The definitions of service suggest that services are characterized by the fact that they are intangible, cannot be stored and that the participation of the customer is indeed required in the process. These characteristics do not apply to all services, as there are some aspects of construction that are very tangible. From the above mentioned definitions it is agreed that whoever has contact with customers, by whatever means and for whatever reason, effects the customer's evaluation and perception of service. Whoever has contact with customers become part of customer service delivery whether or not they are considered service personnel or essential for service. Promptness of the start of delivery involves not only service representatives, who actually have contact with customers, but also so-called back-office personnel in billing or delivery sections who do not keep in touch with customers on a normal basis. Service quality and the measure of service delivery are of utmost importance as it has an integral impact on how the customer will evaluate the service received. All parties in the organization are involved in service delivery whether they are assigned to it or not.

Customer care and quality of service, which has a direct influence on effective service delivery, are often measured in terms of issues that have a direct impact on the experience of the customer. From this perspective, only issues that produce a negative effect on the goods and services received by the customer come under scrutiny. Many companies go to great lengths to generate as low a percentage of customer effecting errors as possible. In general, corporations in many industries seek to have a 2 percent or less error rate as part of their overall customer care strategy.

Quality service can be described as whatever the customer says it is and whatever the customer perceives it to be. This is the simplest definition of service quality. However, there is neither an accepted nor best definition of quality for every situation. Excellence, conformance to standards or specifications and fitness for purpose has all been criticized as definitions of quality (Buzzel *et al.*, 1987: 111(b)).

Lewis. (1995: 273) categorized service quality into the following three dimensions:

- hygiene factors – those aspects expected by the customer and will cause dissatisfaction when not delivered;
- enhancing factors – those aspects which may lead to customer satisfaction but, when not delivered, do not necessarily cause dissatisfaction and ;
- dual threshold factors – those aspects which, when delivered above a certain level of adequacy, lead to satisfaction, but when delivered at a performance level perceived to be below that threshold, cause dissatisfaction.

The concept of “*service*” and “*service delivery*” has such complicated and unique characteristics that the model to evaluate service quality should be more elaborate than that of goods. Service cannot be perceived or evaluated based only on its outcome especially since customers or clients participate in the service delivery process. Customers tend to rely more on the way it is delivered and problems are handled.

Research was conducted by Parasuraman *et al.* (1984 - 1996) on the ten determinants used by customers to evaluate service quality. Through focus group interviews, they identified the ten determinants used by customers to evaluate service quality as an effective service delivery driver (see table 2). The ten determinants are Reliability, Responsiveness, Competence, Access, Courtesy, Communication, Credibility, Security, Understanding/Knowing the customer and Tangibles. These ten determinants have been tested over decades and can still be applied as the determinants to evaluate service quality as an effective service delivery driver even in the modern business environment. These ten determinants are summarized in Table 2 with examples of customers' questions.

These service quality determinants will be used as the foundation to prioritise effective service delivery drivers in the civil construction industry as they were identified by customers as determinants to evaluate service quality. Service quality has a direct impact on effective service delivery drivers as mentioned above.

Table 2: Ten determinants to determine service quality and their definitions

Determinant	Definition	Example of customer's question
1. Reliability	Consistency of performance and dependability	When a service provider says he will call me back in 15 minutes, does he do so?
	The firm performs the service right the first time	
	The firm honours its promises	
	Accuracy in billing	
	Keeping record correctly	
	Performing the service at the designated time	
2. Responsiveness	Willingness and readiness of employees to provide service	Are charges for returned merchandise credited to my account promptly?
	Time lines of service	
	Mailing a transaction slip immediately	
	Calling the customer back quickly	
	Giving prompt service	
3. Competence	Possession of the required skills and knowledge to perform the service	Is the service provider able to process my requests without fumbling around?
	Knowledge and skill of operational support personnel	
	Research capability of the organization	

Determinant	Definition	Example of customer's question
4. Access	Approachability and ease of contact	Is the service provider always available to handle my requests?
	The service is easily accessible by telephone	
	Waiting time to receive service is not extensive	
	Convenient hours of operation	
	Convenient location of service facility	
5. Courtesy	Politeness, respect, consideration, and friendliness of contact personnel	Does my service provider refrain from acting busy or being rude when I ask questions?
	Consideration for the customer's property	
	Clean and neat appearance of public contact personnel	
6. Communication	Keeping customers informed in a language they can understand and listening to customers	Does my service provider avoid using technical jargon?
	The firm has to adjust the language for different customers	
	Explaining the service itself	
	Explaining how much the service will cost	
	Explaining the tradeoffs between service and cost	
	Assuring the customer that the problem will be handled	

Determinant	Definition	Example of customer's question
7. Credibility	Trustworthiness, believability, honesty	Does the service provider have a good reputation?
	Having the customer's best interest at heart	
	Company name	
	Company reputation	
	Personal characteristics of the contact personnel	
	The degree of hard sell involved in interactions with the customer	
8. Security	Freedom from danger, risk, or doubt	Is it safe for me to use the service provider?
	Physical safety	
	Financial security	
	Confidentiality	
9. Understanding/Knowing the customer	Effort to understand the customer's needs	Does my service provider recognize me as a regular customer?
	Learning the customer's specific requirements	
	Providing individual attention	
	Recognizing the regular customer	

Determinant	Definition	Example of customer's question
10. Tangibles	Physical evidence of the service	Is my statement or invoice easy to understand?
	Physical facilities	
	Appearance of personnel	
	Tools or equipment of the service	
	Other customers in the service facility	

Parasuraman *et al.*, (1984-1996: 13-14)

End-users often participate in helping to evaluate the quality of service offered by a company. Customers may respond to customer care surveys and questionnaires as part the evaluation process. Within the company, employees and others with a vested interest in the success of the company, may participate in evaluations of various systems and offer input on ease of use, speed and general accuracy of the technology used in the operation of the company. In both cases the purpose is to ensure the quality of service is maintained at the highest level possible.

2.4 Service level agreements and effective service delivery drivers in the civil construction industry

Because it is difficult for the civil construction industry to gain a sustainable competitive edge just by offering new products, product features and by providing a track record of successful projects, attention is increasingly being focused on identifying and prioritising effective and quality service delivery drivers to enable the industry to render a quality service. These service drivers should be agreed upon and form part of a signed service level agreement.

The service level agreement (SLA) defines the guidelines and parameters to be followed between the service provider and/or contractor and the client. The purpose of a service level agreement is to indicate how and where the required service will be delivered, managed and measured and what service delivery targets will be applicable and will reflect the minimum levels of service that is required. The SLA is an agreed upon document that will serve as an agreement between the contracting parties and will embody the following (Anon., 2010 (b)):

- The SLA will define the scope of services to be delivered to the client. In the civil construction industry the scope of services will include the execution of various civil works for instance, bulk earthworks, the erecting of formwork, the fixing of steel reinforcement, the casting of concrete structures, the construction of buildings to meet the clients requirements and the construction of roads, bridges or storm water systems. The scope of work can include any form of civil construction work. What is important is that the scope of work needs to be followed in order to meet quality requirements.
- The SLA will stipulate the quality and safety requirements of the services to be delivered. Some quality and safety requirements of the civil construction industry includes the execution of the scope of work (SOW); compliance with the minimum quality standards set by the client; safety performance; SH&E (Safety, Health and environment) plan is signed by the relevant safety officer and end-user or client; ensuring that the SH&E plan is a live working document; ensuring that risk assessments are done and adhered to at the workplace; adhering to permit conditions and systems; ensuring good housekeeping at the workplace; ensuring safe working conditions to prevent any incidents or accidents; the responsibility of the service provider to submit safety reports to the end-user or client; conducting of internal and external safety audits as specified; compliance with the quality requirements as stipulated in the quality control package (QCP).

- The SLA will also stipulate the implications to be faced by the contracting parties if non-compliance or non-performance occurs during the contracting period. The implications of non-compliance or non-performance for civil construction companies can be a costly exercise; scheduled non-compliance can cause the civil contractor penalties for late completion or hand-over; penalties will need to be paid by the contractor for not meeting the scheduled end date; quality non-compliance can force the civil contractor to demolish the work and to re-start at own cost; cost overrun, if not agreed upon prior to the execution of the work, can lead to the work being done on the contractor's own cost.

In the civil construction industry SLA records a common understanding about services, priorities, responsibilities, guarantees, and warranties. Each area of service should have the "*level of service*" defined. The SLA may specify the levels of availability, serviceability, performance, operation or other attributes of the service. The level of service can also be specified as the "*target*" and "*minimum*," which allows customers to be informed what to expect, whilst providing a measurable target value that shows the level of organization performance. In some civil construction contracts, penalties may be agreed upon in the case of non-compliance of the SLA. It is important to note that the agreement relates to the service the customer receives, and not how the service provider delivers the service.

The practice of implementing SLA's to measure service delivery has spread to such an extent that now it is now common for a customer to engage a service provider by including a service level agreement in a wide range of service contracts in practically all industries and markets. Internal departments in larger organizations have adopted the idea of using service level agreements with their internal customers (users in other departments within the same organization). A benefit of this can be to enable the quality of service to be benchmarked with that agreed to across multiple locations or between different business units. This internal benchmarking can also be used to provide a value comparison between an in-house department and an external service provider.

Service level agreements are output based. The result of the service as received by the customer is the subject of the agreement. The service provider can perhaps demonstrate his value by organizing it with ingenuity, capability and knowledge to deliver the service required, in an innovative way. In the civil industry, organizations can also specify the way the service is to be delivered through a specification (a service-level specification) and using subordinate "*objectives*" other than those related to the level of service. This type of agreement is known as an "*input*" SLA

The civil construction industry is expected to constantly deliver a higher level of customer satisfaction. The industry needs to deliver higher quality projects at a lower cost and in a shorter time to establish a competitive advantage. Effective service delivery standards and service delivery drivers have become a major factor, leading to organizational success and company growth. Furthermore, high levels of quality service, identified by effective service delivery drivers in the industry will lead to higher levels of customer satisfaction and higher levels of loyalty.

The economics of customer retention suggest that retained customers will be important to service providers for two reasons (Anon., 2008 (c)):

- Firstly, retained customers are usually cheaper to serve because the company already knows something about them and their needs, and the level of marketing expenditure required to keep customers is much lower than the cost of acquiring new customers.
- Secondly, loyal customers can generate more revenue because they tend to be less price-sensitive. They are likely to buy additional products and services and will engage in positive word of mouth. While recognizing that some aspects of this argument may be oversimplified, there are good grounds for believing that loyal customers can generate higher profits. The delivery of a high-quality service is essential to ensure that customers maintain a productive relationship with a service provider. In that sense, service quality can be expected to have a positive impact on organizational performance.

Another major issue in the civil construction industry is the client satisfaction through continuous improvement and permanent assessment of service delivery drivers and service delivery standards. Construction firms are making a great success of the ability and suitability of their resources such as schedule time and the planned cost to fulfil the client's requirements (Al-Momani., 1996: 311-317). In many developing countries current construction practices and technical failures are minute compared to the enormous client dissatisfaction that arise from low efficiency and productivity. This makes the planning and the development of future civil construction projects extremely challenging and difficult.

A survey done by Al-Momani, (1999: 1-9) points out that many projects are not achieving the expected results. The failures of many public projects are due to many reasons such as cost overrun, time delay and disputes that require immediate attention from both the client and contractor. To guarantee a successful civil construction project, one has to apply proper planning, user involvement, good communication, proper monitoring, budget expectations, scheduled timescale, and user requirements. However, little research has directly examined the client's satisfaction.

Morris *et al.* (1987: 108-112) identified a number of criteria for project success such as project functionality, delivering to budget, conveying technical specification, profitability to contractor, reasonable and effective termination and being on schedule. This was followed by an extensive study conducted by Turner (1993: 34-56) on major criteria for project success such as achieving the project purpose, satisfactory benefit to the owner and users, meeting the related objectives, constructed to specification, within budget and on time, and satisfying the needs of the project team.

Kometa *et al.* (1995: 57-72) have highlighted the most important needs in the civil construction process concerning building: functionality, safety, quality and completion time. They concluded that if clients and consultants understand the fundamental needs of each other and if they are prepared to take an active role in construction processes, the chances of producing successful projects will improve. The bottom line in service delivery performance measurement is "customer satisfaction."

Among the complaints are those about:

- the difficulty of access to the service required;
- speed/promptness of response or actual delivery (the service provider usually takes long to respond to or fulfill customer demand);
- complexity of service rendering procedure;
- the rudeness/surly attitudes of service providers;
- the lack of transparency in handling cases and;
- the inadequacy or unreliability of information.

In the next section the benefits of identifying and prioritizing effective service delivery drivers and managing them in service level agreements will be discussed.

2.5 Benefits of managing effective service level agreements within the industry

Agreeing on effective service delivery drivers in the civil construction environment, can be advantageous to both the client as well as the service provider. The SLA may give the service provider a competitive edge over its competitors. The SLA lays down the basic rules and becomes a point of reference in case of discrepancies.

Some of the major advantages of managing SLA's (Anon., 2008 (c)):

- the SLA is evidence of the agreement between the two parties,
- the SLA enables service management;

- the SLA sets a criteria for quality of services provided;
- the SLA paves the way for methods to be followed for delivery of services;
- the SLA makes the terms and conditions clear in case of discrepancies between both parties;
- the SLA clarifies goals to be achieved;
- the SLA creates a standard in the level of service and it becomes a point of comparison for service improvement.

There are a number of other additional benefits of managing a well-implemented service level agreement (Harris., 2008):

- it creates harmony between the user and the organization;
- a service level agreement is a give-and-take relationship between the parties and they need to articulate their expectation in order to get the necessary support;
- efficiency of the customer's operations;
- by agreeing on the service delivery drivers, the organization can allocate enough resources towards the agreed expectations and time schedule;
- improved user satisfaction;
- both parties will have an opportunity to set realistic expectation in an agreed SLA.

The above mentioned benefits will ensure that the companies satisfy their customers as they know what drivers were agreed upon.

When the target population (see table 1) were asked how they would benefit by managing a well implemented service level agreement their responses varied as follows:

- Companies will retain their current customers. Attracting new customers cost more than retaining existing customers. A satisfied customer stays with a company longer, spends more and may deepen the relationship. For example, a happy customer who requested services of R100 000 may later come back for an invoiced job of R 300 000.
- This is an easy “sell”, compared with direct marketing campaigns, television advertisements and other sophisticated and expensive approaches to attract new customers.
- Customer’s needs will be understood and met.

How can you meet your customer’s needs if you don’t know them? To understand your customer’s needs, just listen to the “voice of the customer” and take action accordingly.

Customer listening can be done in many ways, for example feedback forms, mystery shopping and satisfaction surveys. Some companies involve senior employees in customer listening, to ensure decisions benefit the customer as much as the company.

- The importance of good process and product design will be understood.

Good quality customer service is only one factor in meeting customer needs. Well designed products and processes will meet customers' needs more often. Quality movements, such as Six Sigma, consider the "cost of quality" resulting from broken processes or products. Is it better to service the customer well than to eradicate the reason for them to contact you in the first instance?

- There will be consistency in customer service.

Customers expect consistent quality of customer service with a similar, familiar look and feel whenever and however they contact the company.

- Employees are customers too and they should know what is expected from them.

The quality management movement brought the concept of internal and external customers. Traditionally the focus was on external customers with little thought given to how internal departments interacted. Improving relationships with internal customers and suppliers assists delivery of better customer service to external customers, through reduced lead-times, increased quality and better communication.

Over worked and under-trained employees will not deliver good quality customer service driving customers away. Equal effort as is made for customers, must be made in attracting, motivating and retaining employees ultimately delivering improved shareholder returns. Better shareholder returns mean more money is available to invest in employees and so the circle continues.

- All communication channels will be open

The customer wants to communicate in different ways – face to face, by mail, phone, fax and email - and will expect all of these communication channels to be open and easily inter-mingled.

This presents a technical challenge, as it requires an integrated and streamlined solution, providing the employee with the information he needs to effectively service the customer.

- Every customer contact is a chance for the company to acquire and to retain customers.

If a customer contact concerns a broken process, then empowered employees should be able to resolve the complaint swiftly, possibly enhancing the customer's perception of the company. Feeding back this information allows corrective action to be made, stopping further occurrences of the error.

If customers are informed about new products or services when they communicate with the company, the company may make a valuable sale, turning the cost centre into a profit centre. This is only possible when the company has a good relationship with their customer, and understand their specific needs. A targeted sales pitch will have a good chance of success, as the customer is pre-sold on the company's reputation.

- People expect good customer service everywhere.

People become frustrated when their expectations are not met and increasingly demand higher service quality in more areas of their lives. Providing outstanding customer service at the right price is the competitive edge for most companies.

Managing effective service level agreements is beneficial to both the company and the customer as indicated above. However, there are other factors that should be present to successfully manage service level agreements which will be dealt with in the next section.

2.6 Factors needed for the successful management of SLA's

In order to successfully manage a SLA, measurements related to the service level targets need to be specified in the SLA. These performance targets should be acceptable in the industry as practical and achievable by conducting industry benchmarking. The SLA constantly needs to be re-evaluated to keep up with the ever changing environment of the civil construction industry.

The following measurements with respect to the management of the SLA's performance are critical (Anon., 2009 (d)):

- End-user satisfaction rating - a measurement derived from periodic surveys asking users how satisfied they are with the service provided by the company.
- Attainment of service level targets - a measurement of how often the company was able to achieve the service level targets documented in the SLA.
- Availability of essential service performance measures - service level planning sessions are vital to ensure that the measures are available.
- Industry performance benchmarks on hand to validate set targets - companies will naturally set a low target, whereas users will always ask for a high target. Industry benchmarks assist in the service level negotiation process because they provide objective values that have been achieved elsewhere. Service targets based on industry benchmarks should be more easily acceptable to both companies and users.

- Users appreciate the costs of desired service levels - users always ask for more than what the company can provide. The company therefore has to make the users aware that the cost will be paid, directly or indirectly. By doing this ,the company require users to evaluate their needs against what the company can afford.

The following organizational factors are critical to the success of service level management (Anon., 2009 (d)):

- Support from senior management - the SLA should be a covenant between the highest management of both the organization and the users. This ensures that it will be backed by the proper focus, attention and resource allocation.
- The representation of all users during negotiations - since the aim of a SLA is to cover all services provided to users, it is but fair that all user groups are represented. If one or two are neglected, sooner or later their complaints will reach senior management, and you will have to redo your SLA. This is because any additional service provided to users will impact the organization's overall capability of meeting the entire SLA.

Considering the above mentioned critical measurements, companies and their customers will be in a position to successful manage the agreed upon service level agreement.

Apart from the typical office productivity tools needed during the creation of the SLA, many of the tools required for Service Level Management measure specific service targets. It is difficult to manually measure it from the user's point of view - either users must perform the measurements themselves or a representative must go to the user location, interrupt the user and perform the measurement. There are a few helping tools; those that are available simulate user keystrokes and record response times. These automated measurement tools must be deployed judiciously, as too many online measurements can degrade system performance.

The following tool-related issues are critical to the successful management of service level agreements:

- Accessibility of service level document to all users - the SLA should be read and understood by all members of the organization, as it forms the basis for how they will be judged by the users. Users should also have access to this document, in case they would like to know more about the system that they use and what to expect (e.g., when the application is available and how fast it should run.)
- Measurement of service level targets done with minimal intervention – when staff find themselves too busy (as is often the case), they set aside monitoring and measuring activities all too often. Measurement should be automated whenever possible as there is a greater risk of error, whether accidental or intentional, if measurements are performed manually.

When the target population was asked how they ensured that SLA's were successfully managed, they responded as follows:

- A variety of staff are used to monitor customer service on a regular and consistent basis;
- The service provider knows and can clearly state the customer groups;
- The service provider listens to the customers about products and pro-actively seek to redress issues;
- The service provider notices and congratulates the people and teams on good performance;
- Senior management is fully and visibly engaged in customer activities;
- The service provider's employees enjoy the challenge of changes;
- The service provider's management and the employees have aligned values;

- The customers find dealing with the service provider easy and pleasurable;
- The service providers know how their employees feel about working for the organization and always respond to improve it;
- The service provider has teams and individuals who can respond promptly to changed circumstances, whatever they are.

It is evident that SLA's can only be successfully managed if the factors stated in the previous and in this section are considered.

2.7 Conclusion

In order to understand the nature of the demand for physical infrastructure and professional services in the civil construction industry, companies need to understand who their customers are and should dialogue to establish their expectations and understand their business or operating environments.

Major civil construction industry companies have global businesses and reference points - they are better informed (more so than many service providers) and more demanding of civil construction services and products. Part of the service level agreement will be to ensure that the service provider-client relationships deliver added-value to the client's downstream operations and, on occasion, to share the risks and returns involved in those ventures. Customers will, in short, expect their service providers to understand and meet their objectives. A crucial part of the objectives will be to get their assets to deliver more value. This insistence on better value for money and quality will trickle down to occasional and individual householder clients as well. Life-cycle costs and the enhancement of health and safety are all included in their assessment of value for money.

International trends and national objectives are putting extraordinary pressure on the civil construction industry. In the process, the industry will have to reinvent itself if it wishes to remain competitive, deliver acceptable products to an increasingly demanding customer and deliver the required financial returns to its shareholders. The building environment professions will not remain untouched by this transformation. Significant changes will be required with regard to education, training, skills development, knowledge enhancement and service delivery.

Much of this is undermined by inadequate remuneration – unravelling whether poor remuneration is a consequence of poor performance, or whether poor performance is the consequence of inadequate remuneration – and correction of this will be crucial to establishing a way forward.

What is indisputable, however, is the need for all the industry participants to collaborate on improving the products for which they are responsible for the benefit of the society they serve. Everyone stand to benefit from high quality infrastructure that is constructed efficiently and satisfies the aspirations of the community it serves.

In chapter 3 the issues pertaining to effective service delivery will be empirically investigated.

CHAPTER 3: EMPIRICAL STUDY

3.1 Introduction

In the previous chapter, “Effective service delivery drivers” and other related concepts were introduced as a frame of reference for the identifying and prioritising of effective service delivery drivers. This chapter, “Empirical study”, the issues pertaining to effective service delivery will be empirically investigated.

The essence of marketing research methods that the results achieved are only approximations of the truth with varying degrees of probability. For this reason the method and the limitations of the results and findings are explained in this section.

Selected market leaders, as customers, and service providers, were asked to participate in the questionnaire in order to identify and prioritize the effective service delivery drivers in the civil construction industry. The outcome of the empirical study will enable the civil construction companies to set the service level on the correct standard and to identify if any gap exists between the companies and their customers expectations of effective service level agreements.

In the context of the empirical investigation, the aim of this chapter, therefore, is to identify and to prioritize effective service delivery drivers for the civil construction industry in order to enable civil construction companies to set the service level on the envisaged standard. Different target populations have participated in this study.

As a point of departure an overview will be given on the selected market leaders who participated in the investigation.

3.2 Empirical research design

Only selected market leaders were asked to complete the questionnaire, as there are thousands of civil construction and service provider companies within South Africa and it was not possible to reach each and every one of them. Therefore the empirical study was performed on selected large organizations in the South African context.

The following selected market leaders were asked to complete the questionnaire due to their success in the South African economic sector:

- Sasol 2&3 Secunda (Sasol Synfuels Management Building and Sasol Technology Civil department)
- Anglo American (Procurement Department)
- BHP Billiton (Contracts Department)

These market leaders were asked to prioritise the identified (see section 2.3) effective service delivery drivers. The results of the questionnaire will enable other companies to have access to best practice benchmarking as effective service delivery drivers would have been identified and prioritised by the market leaders. The above mentioned organizations are market leaders in their respective industries and perform operations globally.

The following civil construction service providers were asked to complete the questionnaire:

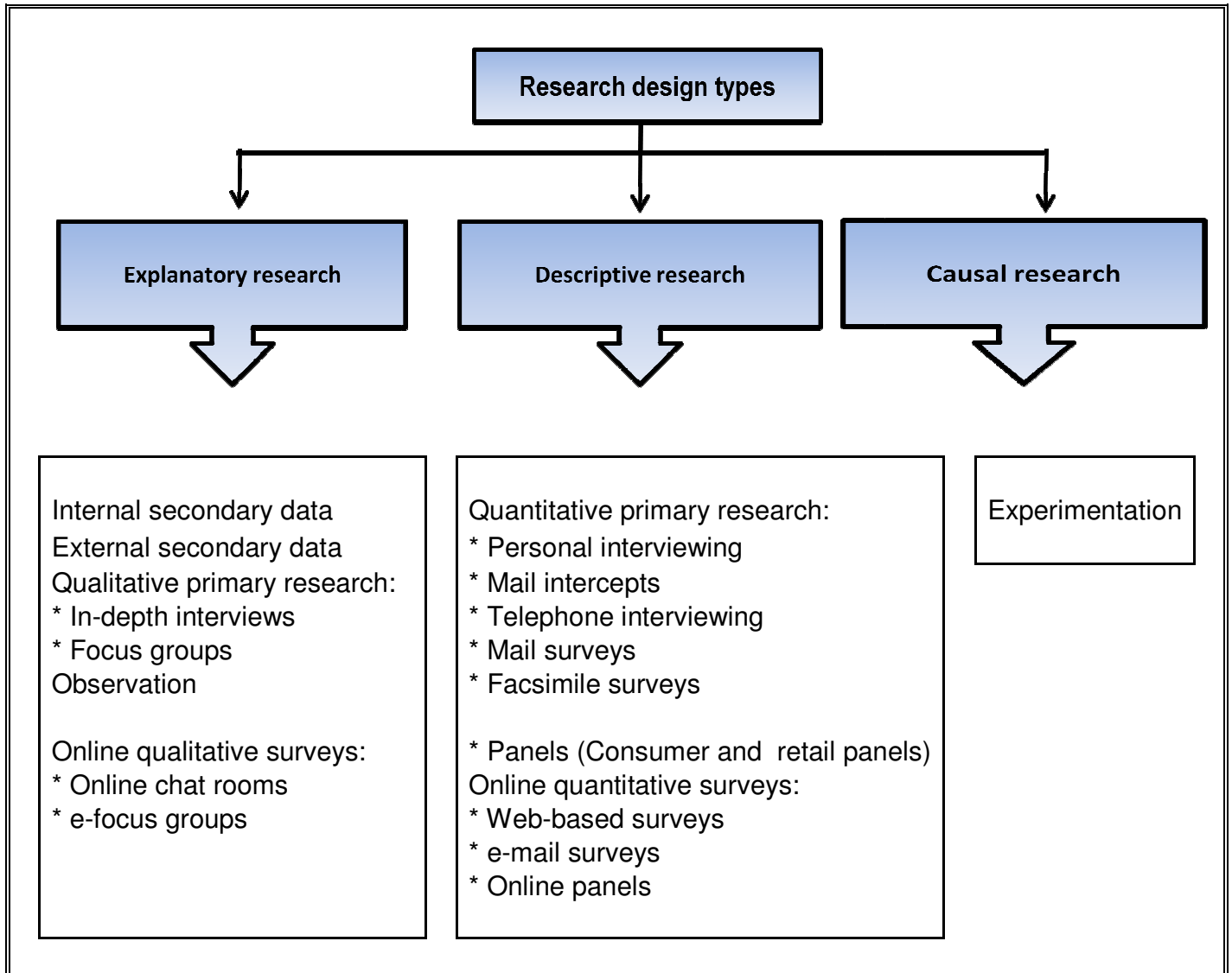
- OTB Construction (Senior Management and employees)
- Lynco Construction (Senior Management and employees)
- Basil Reed Construction (Senior Management and employees)

These companies were asked to complete the questionnaire as they render services to the selected market leaders and are recognised for their sustainability and experience in the civil construction field. Valuable information can be derived from the questionnaire as these service providers need to ensure that the quality of the service rendered are aligned with the end-user's expectations. The essence of their success and competitive advantage depends on their ability to perform their service delivery on the standard required by the client.

Section 3.2 provides a discussion and framework on the research design and the conclusions that can be drawn. The research design is the plan to be followed in order to realize the research objectives of this study.

The classification of various research approaches and the data collection methods that accompany each design are shown in figure 3.1:

Figure 3.1 Classification of research approaches by data collection method



(Source: Tusten et al., 2005: 83)

Figure 3.1 classifies research designs under three categories, namely explanatory, descriptive and casual research. For this study, the descriptive research design is used as the underlying relationship of the problem is understood.

With a descriptive focus, the aim is to provide a summary of the sample or population in terms of the variables of interest. A number of statistical techniques can be used to undertake a descriptive analysis. These include frequency distributions, location measures (mode, median and mean), variability measures (index of diversity, range, variance, standard deviation) and skewed and kurtosis measures.

3.2.1 Goals of the empirical research

In order to reach the goal of prioritizing the identified effective service delivery drivers in the civil construction industry and to enable civil construction service providers to set their service level on the correct standard, the empirical study investigates the following issues:

- Importance of different measurements of service delivery – Key Performance Indicators (KPI's);
- Severity of factors that will have an impact on service delivery standards;
- Identifying the drivers from the market's perspective for excellent service delivery;
- To establish if a gap exists between the perceptions of the customers or end user; the management of construction companies and the employees of the construction companies.

3.2.2 Limitations of the empirical study

Completing a questionnaire requires a respondent to devote time, attention and thought to a subject. Some subjects, although of interest to the researcher, may not be of interest to the respondent. Here are some limitations identified whilst conducting the research:

3.2.2.1 The integrity of the research process

The business environment is increasingly being exposed to the importance of business ethics and has become a key issue in the marketing research process. Ethics has become central to the effective execution of market research projects.

Sparks *et al.* (1998: 97) identified the following ethical issues as the most demanding that marketing research practitioners encounter:

- Maintaining their research integrity by not deliberately withholding information, falsifying figures, altering research results, misusing statistics, or ignoring pertinent data;
- Treating outside clients fairly by not passing hidden charges onto clients;
- Maintaining research confidentiality by not sharing information with subsidiaries in the same corporation or using background data obtained in a previous project to reduce the cost of the current project.

From the above, it is clear that business ethics can be a limitation to this study, as researchers are faced with professional integrity. The population approached to complete the questionnaire might not share in professional integrity as they might perceive that the information may be used for a competitive bid. Even though the respondents were given sufficient information explaining the purpose of the questionnaire, the ethical issue of how much information to give and whether to participate, remained a difficult aspect.

3.2.2.2 The target population

Only a sample of market leaders / customers and service providers were approached to complete the questionnaire.

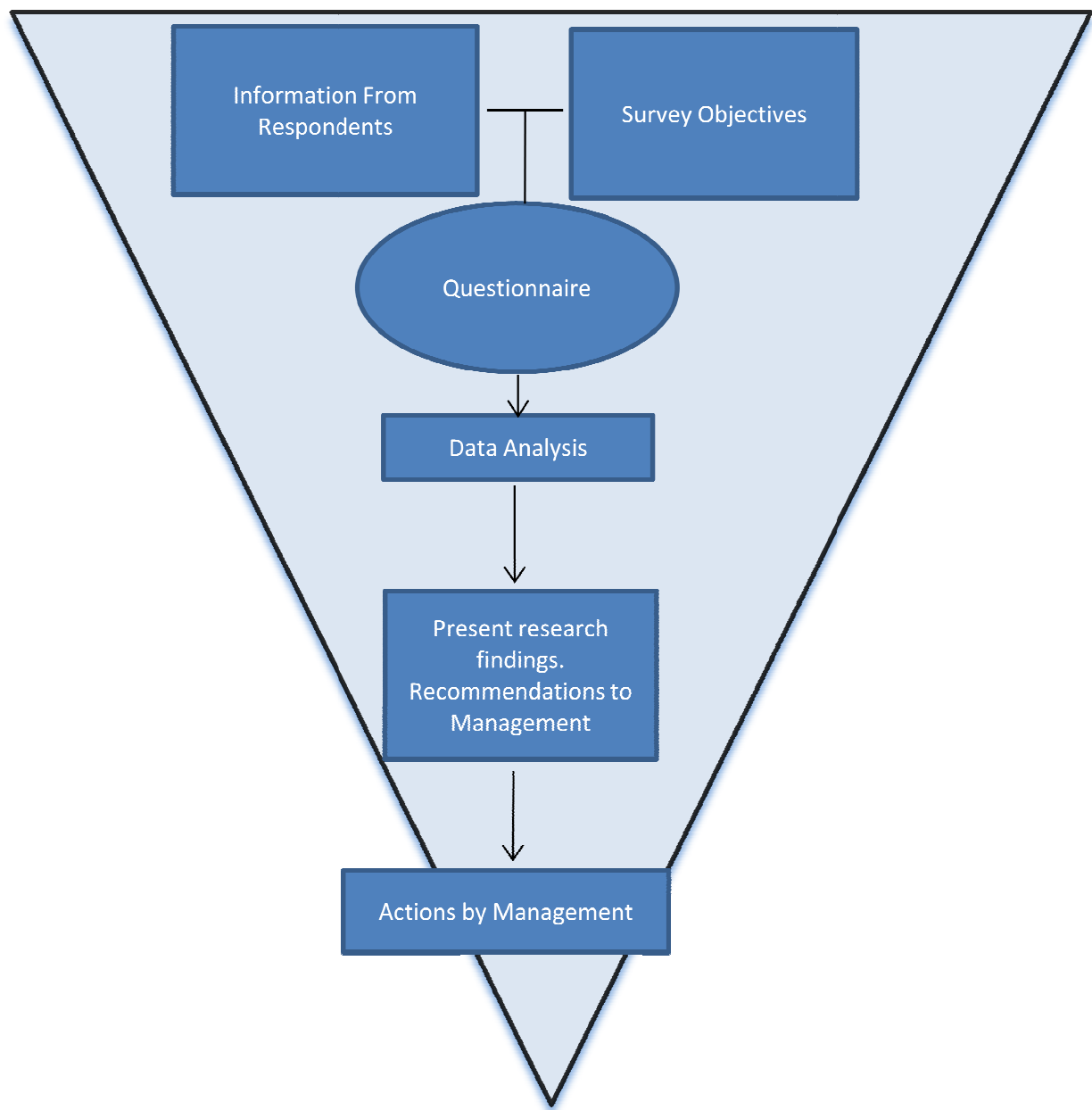
In the section to follow, the focus will be on the questionnaire as a measurement instrument and the role of the questionnaire in the research process.

3.3 Data gathering through the questionnaire as a measuring instrument

Paper and computer based questionnaires are used as a self-administrated survey. The questionnaire (see annexure A) is the central mechanism through which primary data are generated in this research process. The use of a questionnaire ensures that the research is carried out consistently. The questionnaire is simply a data-collection instrument that sets out questions to be asked in a formal way in order to produce the desired information.

Tusten et al. (2005: 385 (e)) illustrates in figure 3.2 the central role of questionnaire design in marketing research. The questionnaire is positioned between the survey objectives derived from the management problem and the information collected from respondents. The survey objectives are translated into specific questions not only to achieve the objectives, but also to facilitate the processing and analysis of data.

Figure 3.2: The role of the questionnaire in the research process



(Source: Tusten *et al.*, 2005: 385 (e))

The remaining of section 3.3 deals with the questionnaire design as an important component in the market research process.

3.3.1 Aspects regarding the questionnaire

The quality of data is largely determined by the design of the questionnaire and the questions it contains. The survey objectives form the framework in which the questionnaire is constructed as well as the content of the questions. The survey objections were translated into specific questions, not only to achieve the objectives, but also to facilitate the processing and analysis of data. Paper and electronic based questionnaires were sent to the target population.

A well-constructed and well-administered questionnaire of limited length, will generally yield higher response rate (see table 3.3 for the response rate).

The following concerns were identified while designing the questionnaire:

- How to keep the questionnaires simple, short and related to the objectives;
- The time factor to complete such a questionnaire;
- How to improve the rate of response.

Since the questionnaire is the core component of the research, it is essential that each facet of the document is critically examined before being finalised for dispatch.

3.3.1.1 Construction of the questionnaire

To attain the study objectives, careful considerations were made in preparing the questionnaire (attached as annexure A). Conducting a literature study (Chapter 2) provided the necessary knowledge to present statements to which respondents had to respond to according to their perception of each statement. These statements were structured to determine the importance of different factors contributing to effective service delivery. These statements were verified, and given validity, through interviews during the pilot testing phase with experts in the civil construction industry.

A total number of twelve key performance areas (KPA's) were used under which the statements for key performance indicators (KPI's) were summarized. The respondents were asked to rate the importance of the KPI's, on a Likert Scale from 1 to 10 (with 1 being least important and 10 being most important). After the KPI's were rated and prioritised, it was possible to identify the major drivers for effective service delivery in the civil construction industry.

To differentiate between the different target groups (market, management and employees) questionnaires were marked on the front of each group's questionnaire beforehand.

3.3.1.2 Pilot testing

Pilot testing is essential if the researcher want to be satisfied that the questionnaire will perform its function. The researcher who avoids or neglects to pilot test and tabulation a questionnaire is either naive or a fool. The pilot -testing is the most inexpensive insurance the researcher can buy to assure the success of the questionnaire and the research project (Churchill *et al.*, 2002: 253).

The questionnaire was pre-tested amongst members of the target population. It was subjected to a pilot test to identify weaknesses in the construction, formulation of the statements, the assessment of the validity and comprehension.

In addition, the pilot testing was done to determine whether the instructions for completing the questionnaire were clear, as well as assessed response and non-delivery rates. Feedback on the content was carefully considered and suggestions were incorporated before the final questionnaire was distributed.

3.3.1.3 Data rating

In order to meet the study objectives, three different target groups (see 3.3.2) were identified to complete the questionnaire, namely:

- Group A – Selected market leaders i.e. customers in the civil construction industry in South Africa;
- Group B – Management of selected civil construction companies;
- Group C – Employees of selected civil construction companies.

Group A rated the response according to the selected market leaders, i.e. customers, perspective. The responses were used to identify and prioritize the effective service delivery drivers from the customer's perspective.

Group B rated the response according to management's perspective. Management in terms of this study would be the management of the selected civil construction companies asked to participate in the questionnaire. The responses gained were used to identify if a gap exists between the customer's perceptions and management's perceptions regarding the identification and prioritization of effective service delivery drivers.

Group C rated the response according to the employee's perspective. Employees in terms of this study would be the subordinates of the management of the selected civil construction companies asked to participate in the questionnaires.

The responses gained from group a, b and c were used to identify if a gap exists between what the management and employees of the same organization perceive the effective service delivery drivers to be.

3.3.2 Target population

The study population is the group from which the sample is drawn. The study population included all the people or establishments whose opinions, behaviour, preferences and attitudes would yield information for answering the research questions.

Table 3.1 indicates the core business of each of the selected market leaders, i.e. customers, and selected civil construction companies asked to participate in the empirical study. Understanding their core business are essential to develop a sense of what the organisation stands for, and need to be asserted explicitly and made real in order to gain a competitive edge.

Table 3.1: Core business of end-users and construction firms asked to complete the questionnaire

Name	Department	Core business
Users of civil construction and engineering services		
Sasol 2&3 Secunda (Sastech / Engineering services)	Sasol synfuels management and Sasol technology civil department	Leader in the design and construction of petrochemical plants through unique technology.
Anglo American (Gold Mining)	Procurement department	American gold mining company in South Africa and globally
BHP Billiton	Contracts department	Australian coal mining company in South Africa and globally (Mining of coal for ESKOM)

Civil construction and engineering companies rendering a service to the above mentioned end-users		
OTB Construction	Senior management and employees	Construction company based in Secunda Mpumalanga specializing in earthworks, steel construction, civil construction, plant hire and piping. Main client actions performed for: Sasol Secunda
Lynco Construction	Senior management and employees	Construction company based in Secunda Mpumalanga specializing in earthworks and plant hire. Main client actions performed for: Sasol Secunda
Basil Reed Construction	Senior management and employees	Leading road construction company working mostly for the South African government.

Table 3.2 presents the total respondents within the population asked to complete the questionnaire.

Table 3.2: Total number of respondents asked to complete the questionnaire

Group	Number of respondents asked to complete the questionnaire
Group A – Selected market leaders i.e. customers	93
Group B – Management of selected civil construction companies	72
Group C – Employees of selected civil construction companies	82
Total	247

Table 3.2 indicates that the study population contains a fixed number of 247 members. Conducting a census is not always feasible to obtain the desired information and consequently only some of the population elements were included in the study.

3.3.3 Rate of response

Fieldwork for hard copies and electronic based questionnaires were largely self-administrated. The respondents were asked to complete and to return the questionnaires.

Table 3.3 indicates the response rate after the survey questionnaires have been completed, returned and edited.

Table 3.3: The rate of response

Group	Number of respondents asked to complete the questionnaire	Number of questionnaires received back	Rate of Response
Group A – Selected market leaders i.e. customers	93	69	74.19%
Group B – Management of selected civil construction companies	72	57	79.17%
Group C – Employees of selected civil construction companies	82	57	69.51%
Total Average	247	183	74.09%

The response rates for all the questionnaires sent to the respective groups were sufficient to do data analysis. The total response rate was on average 74.09%. Even though the study population is limited to a selected number of market leaders, the response rate indicates a true reflection of the perceptions of the study population. The high response rate was a major benefit for the empirical study and consequently, due to the high response rate, the results of the empirical study may be a true reflection of the whole population.

The following were reasons for questionnaires not completed:

- Respondents received the questionnaire to complete but went on leave without returning the questionnaire for processing;
- Respondents indicated that they do not have the time to give a thoughtful and true reflection of their perceptions, due to their current work load;
- Respondents were afraid that the information provided by the questionnaire, will take away their competitive advantage if they disclose all of the information;

- A number of respondents of the selected civil construction companies did not want to provide information as they are in competition with the next service provider in the same environment;
- Respondents did not respond to the questionnaire after several reminders. They were unavailable to complete the questionnaire.

3.4 DATA CAPTURING

The next phase was to transfer all the responses into computer readable format and then to capture all the data. Computer data capturing packages included spreadsheets (Excel or Quattro), or Statistical Package for Social Science (SPSS) Data entry (software package).

3.4.1 Statistical data capturing methods used

The data collected from the 183 completed questionnaires were submitted to the statistical consultancy services at the North West University for processing by using Excel spreadsheets, where standard Excel functions and the program PHStat2 version 2.5 were used to analyse data. The usefulness of this spreadsheet became apparent when the typical format of a spreadsheet was visualised.

Descriptive statistics were used in the calculation of the mean and standard deviation of the population. (*See annexure B*). Each statement was marked by all response groups and therefore it was not necessary to calculate the median. If some of the statements were not marked, a zero value would have been allocated to the specific response. This zero data point might have had an impact on the mean, thus the median would then be preferred to describe the central tendency. For the purpose of this study it was not necessary and therefore no calculations on the median were done. The mean would thus be used to describe the central tendency.

A thorough understanding of the measures is necessary to interpret the results:

- **Mean** – This is the most common used measure of central tendency. It acts as a balancing point so that smaller data balance out larger ones. The mean's computation is based on every data point. Due to all the statements being marked by the respondents and no zero points were in the data, the mean would be used as the measure for central tendency. The mean (also called the average) is defined as the sum of set values divided by their number (Levine *et al.*, 2005: 116-118)
- **Standard deviation** – This is the primary measure of variation with the value in the original units of the data. In other words, the standard deviation indicates whether a set of data is distributed around its mean. The only time the standard deviation can be zero is when there is no variation at all in the data: that means that each response in the sample is exactly the same and therefore equal to the sample mean. A large standard deviation will indicate that the data is quite dispersed, where concentrated data will have a small standard deviation (Levine *et al.*, 2005: 116-118)

Effect sizes were used in determining if a gap exists between the different groups. In order to meet the secondary objectives of the study, it would be important to indicate if a gap exists between:

- The selected market leaders i.e. customers and management of selected civil construction companies (Group A and Group B);
- The management of selected civil construction companies and employees of selected civil construction companies (Group B and Group C).

One of the advantages of drawing a random sample is that it enables one to study the properties of a population with the time and money available (Ellis *et al.*, 2010).

Statistical inference reaches conclusions about the population from which a random sample was drawn, using the descriptive measures that have been calculated. Instead of only reporting descriptive statistics in these cases, effect sizes can be determined. Practical significance can be understood as a large enough difference to have an effect in practice (*See annexure C*).

3.4.2 Analysis and interpretation of statistical results

In order to interpret the statistical results, one needs to look at the objectives of the study.

The primary objective of the study was to:

- Identify and prioritize the effective service delivery drivers in the South African civil construction industry.

The secondary objectives of the study were to:

- Highlight the key performance indicators (KPI's) that will have a definite impact on service delivery. The objective would be to discover these areas as far as possible in order to provide the organization with as much information as possible to help set service delivery standards;
- Perform a gap-analysis would be performed to evaluate if the selected market leaders i.e. customers, management of construction companies and employees of construction companies, perceptions of effective service delivery drivers were aligned.

Descriptive statistics were used to identify and prioritize the effective service delivery drivers in the South African civil construction industry. Table 3.4 indicates the descriptive statistics derived from the selected market leaders i.e. customers perspective, to prioritize the identified effective service delivery drivers. From this table, different interpretations can be deduced. The ranges of the descriptive statistics also give an indication of the positive tendency respondents had in making their responses.

Table 3.4: Identification and prioritization of effective service delivery drivers / KPA's

Description	Mean
Security	9.57
Project Orientated	9.36
Safety Performance (SHERQ)	9.35
Communication	9.27
Understanding/Knowing the customer	9.18
Reliability	9.12
Courtesy	8.91
Access	8.88
Credibility	8.61
Responsiveness	8.58
Competence	8.56
Tangibles	8.40

The top four key performance areas (KPA's) rated by the selected market leaders are security, project orientated, safety performance (SHERQ) and communication. The most important key performance indicators (KPI's) were rated from high to low in each key performance area (KPA):

- Security (Ranked first)
 1. Financial security
 2. The firm will treat the relationship with extreme confidentiality

3. Freedom from danger (There is no risk or doubt when dealing with this company)
 4. Physical safety
- Project orientated (Ranked second)
 1. The project ensures owners' preferences at optimum cost
 2. The project meets the related objectives
 3. Achieving the project purpose
 4. Constructed within the agreed time
 - Safety performance (SHERQ) (Ranked third)
 1. Adhere to all safety requirements
 2. Ensure safe working conditions to prevent any accidents
 3. Shall conduct internal and external safety audits
 4. Reporting of incidents immediately
 - Communication (Ranked forth)
 1. Assuring the customer that the problem will be handled
 2. Explaining how much the service will cost
 3. Explain the tradeoffs between service and cost
 4. Explain the service itself

The least important key performance areas (KPA's) rated by the selected market leaders are tangibles, competence, responsiveness and credibility. The least important key performance indicators (KPI's) were rated from high to low in each key performance area (KPA):

- Tangibles (Least important of all)
 1. Physical evidence of the service
 2. Equipment of the service
 3. Physical facilities
 4. Appearance of personnel

- Competence (Second least important of all)
 1. Possession of the required knowledge to perform the service
 2. Possession of the required skills to perform the service
 3. Knowledge of the operational support personnel
 4. Research capability of the organization

- Responsiveness (Third least important of all)
 1. Giving prompt service
 2. Willingness of employees to provide service
 3. Calling the customer back quickly
 4. Time lines of service

- Credibility (Forth least important of all)
 1. The firm needs to be trustworthy
 2. Company reputation
 3. Having the customers best interest at heart
 4. Personal characteristics of the contact personnel

Figure 3.3 plots the prioritization as indicated in table 3.4 from the selected market leaders i.e. customer's perspective. From this figure it is evident what the market demands and requires from service providers. The key performance areas (KPA's) on which the service provider must focus are ranked from left to right, from most important to least important.

Figure 3.3: Effective service delivery drivers from the market’s perspective

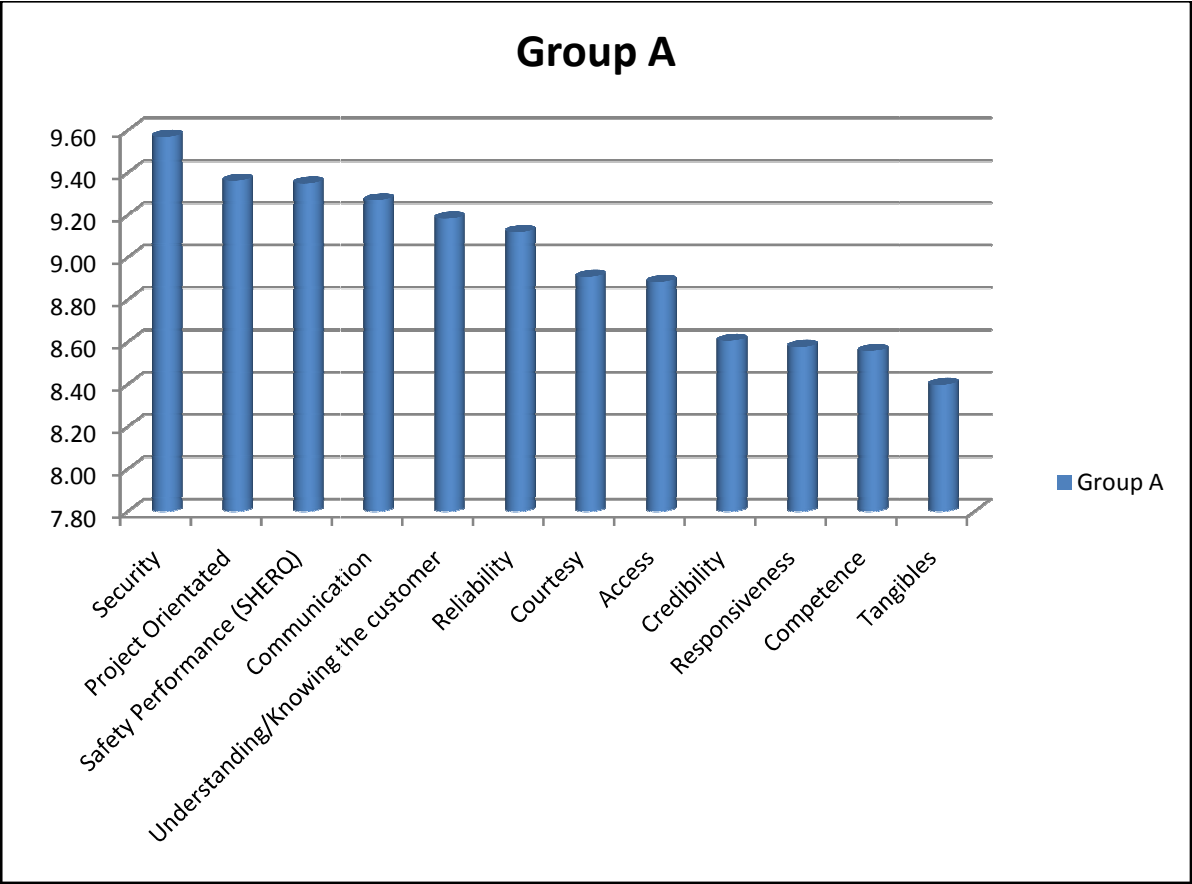


Table 3.5 provides a thorough interpretation of the results and conclusions regarding the descriptive statistics. Each key performance area (KPA), as prioritised from the selected market leader’s perspective, is listed in the table from most important to least important. The key performance indicators (KPI’s) that had a significant impact on the prioritization of the key performance area will be discussed.

Table 3.5: Interpretation of the results and conclusions regarding the descriptive statistics

Description	Some interpretations and conclusions regarding the results
KPA 1: Security (The firm will treat the relationship with extreme confidentiality and freedom from danger. In other words there is no risk or doubt when dealing with the company)	The market was asked to rate the KPI's under each KPA in order to establish the effective service delivery drivers. The security-related KPA was ranked first and it received the highest average mean with a value of 9.56 and a standard deviation of 0.71. The KPI indicating financial security received the highest mean of 9.77 with a standard deviation of 0.43. The KPI's that followed were: the firm will treat the relationship with extreme confidentiality (9.52) and freedom from danger in other words there is no risk or doubt when dealing with this company (9.49).
KPA 2: Project Orientated (Project-related factors that will have a direct impact on the project success or project deliverables. The project needs to ensure owners preferences at optimum cost, constructed within the agreed time and constructed within agreed budget)	The project orientated KPA was ranked second with an average mean of 9.36 and a standard deviation of 0.76. The KPI indicating that the project needs to ensure the owner's preferences at optimum cost received the highest mean of 9.85 with a standard deviation of 0.67. KPI's that followed were: the project meets the related objective (9.52), achieving the project purpose (9.46) and constructed within the agreed time (9.43).

Description	Some interpretations and conclusions regarding the results
KPA 3: Safety Performance (SHERQ) (Company safety performance in safety, health and environmental regulation. Ensure safe working conditions to ensure no incidents and accidents. Zero harm to environment and employees)	The safety performance KPA received the third highest average mean with a value of 9.35 and a standard deviation of 1.12. The KPI indicating that the service provider should adhere to all safety requirements received the highest mean of 9.59 with a standard deviation of 0.83. The KPI's following the first ranked KPI were: service providers need to ensure safe working conditions to prevent accidents (9.57), service providers will conduct internal and external safety audits (9.51), service providers will report all incidents immediately (9.38) and service providers will take accountability for sub-contractors (9.32)
KPA 4: Communication (Explain the service itself, how much the service would cost, the trade-offs between service and cost and assuring the customer that the problem would be handled)	The communication KPA was ranked fourth by the market with an average mean of 9.27 and a standard deviation of 0.85. The KPI of ensuring the customer that the problem will be handled received the highest mean of 9.48 with a standard deviation of 0.66. The KPI's that followed were that the service cost will be explained to the customer (9.46) as well as the trade-offs between service and cost (9.42)

Description	Some interpretations and conclusions regarding the results
KPA 5: Understanding/Knowing the customer (Customer knowledge, learning the customer's specific requirements and providing individual attention)	The understanding/Knowing the customer KPA received the fifth highest average mean with a value of 9.18 and a standard deviation of 0.84. The KPI indicating that the service provider needs to provide individual attention received the highest mean of 9.20 with a standard deviation of 0.83. The KPI's that followed were: learning the customer's specific requirements (9.19) and recognizing the regular customer (9.16)
KPA 6: Reliability (The firm needs to be consistent in its performance and dependability. The company needs to honour its promises and billing needs to be accurate at all times)	The reliability KPA was ranked sixth by the market with an average mean of 9.12 and a standard deviation of 0.87. The KPI indicating that the firm need to perform the service at the designated time received the highest mean of 9.52 with a standard deviation of 0.72. The KPI's that followed were that billing must be accurate at all times (9.32), records must be kept correctly at all times (9.28) and the firm needs to be consistent in its performance (9.07).
KPA 7: Courtesy (The politeness, respect, consideration and friendliness of the contact, consideration of the customer's property and clean and neat appearance of the public contact personnel)	The courtesy KPA was ranked seventh by the market with an average mean of 8.91 and a standard deviation of 0.92. The KPI indicating that the service provider should have consideration for the customer's property received the highest mean of 9.96 with a standard deviation of 0.78. The KPI's that followed were: the politeness, respect, consideration and friendliness of the contact personnel (8.96) and the clean and neat appearance of public contact personnel (8.57)

Description	Some interpretations and conclusions regarding the results
KPA 8: Access (The company is approachable for contact, convenient hours of operation and convenient location of service facility)	The access KPA was ranked eighth by the market with an average mean of 8.88 and a standard deviation of 0.90. The KPI indicating that the waiting time to receive service is not extensive received the highest mean of 9.12 with a standard deviation of 0.58. The KPI's that followed were that the service is easily accessible by telephone (8.93), the firm is approachable for contact (8.84) and the location of service facility is convenient (0.83)
KPA 9: Credibility (Brand name, having the customer's best interest at heart, the company reputation and trustworthiness of the company)	The credibility KPA was ranked ninth by the market with an average mean of 8.61 and a standard deviation of 1.33. The KPI stating that the firm needs to be trustworthy received the highest mean of 9.52 with a standard deviation of 0.66. The KPI's that followed were: the company's reputation (9.36) and having the customer's best interest at heart (8.88).
KPA 10: Responsiveness (Willingness of employees to provide the service and providing prompt service)	The responsiveness KPA was ranked tenth by the market with an average mean of 8.58 and a standard deviation of 1.14. The KPI of giving prompt service received the highest mean of 8.86 and a standard deviation of 1.20. The KPI's that followed were: the willingness of employees to provide the service (8.78) and calling the customer back quickly (8.77).

Description	Some interpretations and conclusions regarding the results
KPA 11: Competence (Possession of the required skill and knowledge to perform the service, knowledge of the operational support personnel)	The competence KPA was ranked second last by the market with an average mean of 8.56 and a standard deviation of 1.47. The KPI of possession of the required knowledge to perform the service received the highest mean of 9.32 and a standard deviation of 0.98. The KPI's that followed were the possession of the required skills to perform the service (9.07) and knowledge of the operational support personnel (8.80).
KPA 12: Tangibles (Physical facilities, appearance of the personnel, equipment of the service)	The last ranked KPA was tangibles from the market with an average mean of 8.40 and a standard deviation of 1.28. The KPI of physical evidence of the service received the highest mean of 9.28 and a standard deviation of 0.80. The KPI's that followed were the equipment of the service (8.91) and physical facilities (7.91) Due to the nature of the service, tangibles will be the lowest rated service delivery driver in the civil construction industry.

The market rated competence lower than what was expected. The expectation was that competence would be rated amongst the top five key performance areas (KPA's). Experts in the field were consulted to find the reason for this low rating. The following comments were made:

- Possession of the required skill to perform the service – mean of 9.07
According to the experts, the possession of the required skills to perform the service is important as competence encompasses as individual's technical and interpersonal skills e.g. does the person know what he or she is talking about? Customers are unlikely to listen to or depend on someone whose abilities are not respected.

- Possession of the required knowledge to perform the service – mean of 9.32
According to the industry's experts this was just as important as the first rated key performance area. Required knowledge and the management thereof is increasingly important today as intellectual assets i.e. knowledge, are as important as physical or financial assets. Organizations and their customers who can quickly and efficiently tap into the employee's collective experience and wisdom, are most likely to "outsmart" their competition.
- Knowledge of the operational support personnel – mean of 8.80
Little importance was connected to the knowledge of the operational support personnel. The experts argued that skill and knowledge on the actual work site outweighs the knowledge of the support personnel. However, support personnel should understand the organizations mess. There needs to be a strategic partnership between support personnel and the rest of the company, by participating in the process of defining business strategy.
- Research capability of the organization – mean of 7.04
The research capability of the organization was of little importance to the market. The experts indicated that the research needs to come from the market and that the service provider only needs to execute what is instructed.

The conclusion can be made that the market view competence as very important for the success of all the other key performance areas (KPA's), even though the market did not rate competence very high on their priority list . Knowledge of the operational support personnel and research capability of the organization had a major impact on the total average mean. The market view competence as an inherent job requirement, for the success of all the other key performance areas.

A gap-analysis was performed by means of the deviations identified from the stakeholders perception, in other words, between the selected market leaders i.e. customers (mean A), and the management of selected construction companies (mean

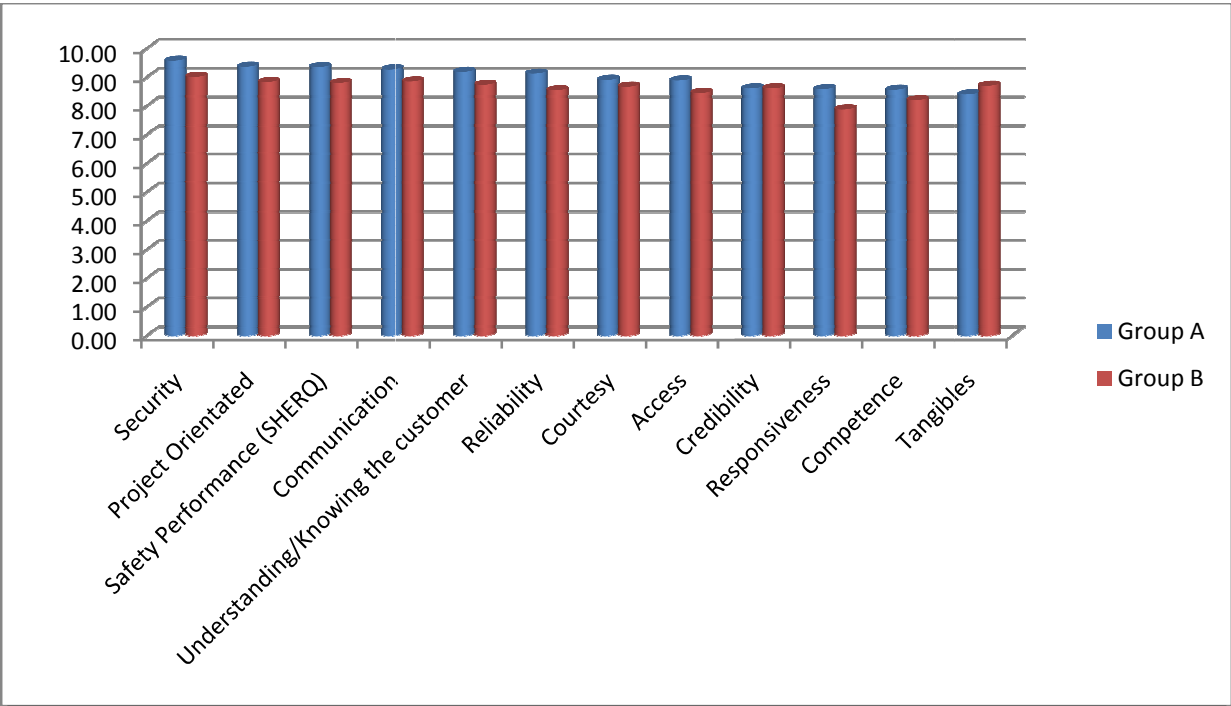
B) on the identification and prioritization of effective service delivery drivers in the civil construction industry. Table 3.6 indicates the gaps identified.

Table 3.6: The identification and prioritization of the effective service delivery drivers from the selected market leader's perspective and the management of the selected civil construction companies

Effective service delivery drivers (KPA's)	Mean A Market / Customers	Mean B Management of selected companies	Deviation
Security	9.57	9.01	0.56
Project Orientated	9.36	8.83	0.53
Safety Performance (SHERQ)	9.35	8.79	0.56
Communication	9.27	8.85	0.42
Understanding/Knowing the customer	9.18	8.73	0.45
Reliability	9.12	8.54	0.58
Courtesy	8.91	8.67	0.24
Access	8.88	8.45	0.43
Credibility	8.61	8.61	0.00
Responsiveness	8.58	7.87	0.70
Competence	8.56	8.20	0.36
Tangibles	8.40	8.70	-0.30

Figure 3.4 provides a graphical illustration of the findings of table 3.6.

Figure 3.4: Indicates the gap between the market and management of selected construction companies



From the response as illustrated in figure 3.4 and table 3.6 it can be derived that a gap exists between the market (mean A) and management of selected construction companies (mean B). A concern can be raised with the gaps identified i.e. the management of the construction companies rated all of their responses lower than that of the market, with the exception of tangibles. A standard deviation of 0.378 was present between the responses from the two interest groups. In other word, the management of the selected civil construction companies rated their responses on average 0.378 lower than that of the market.

The possible reasons for the difference in the prioritization of the effective service delivery drivers are:

- The effective service delivery drivers were not identified and agreed upon when the initial contract was awarded;

- The effective service delivery drivers were not part of the contract and were not recognized in the tender phase of the project;
- No service level agreement exists between the client and the service provider.

As indicated in the chapter 2 this may become an area of concern. The perceptions for effective service delivery drivers need to be aligned between that of the market and management. If the service delivery drivers are not aligned between the market and management, effective service delivery cannot be assured and this can influence competitiveness and sustainability within the civil construction industry. Delivering a high quality of service will not be possible if the focus is on different effective service delivery drivers. *For example*, If the management of a construction company places no focus on security, they will not drive their employees to make sure that the security requirements are achieved. This may cause the market/client to experience poor quality of service as he rates the security of transactions the highest. The market/client will demand a better security service, but the service provider will not be able to supply the service immediately, as they are not capable or trained to do so. The market/client may be so frustrated by the inability to deliver the service from the service provider's perspective, that it may result in the customer moving the business to another firm who can provide a better service.

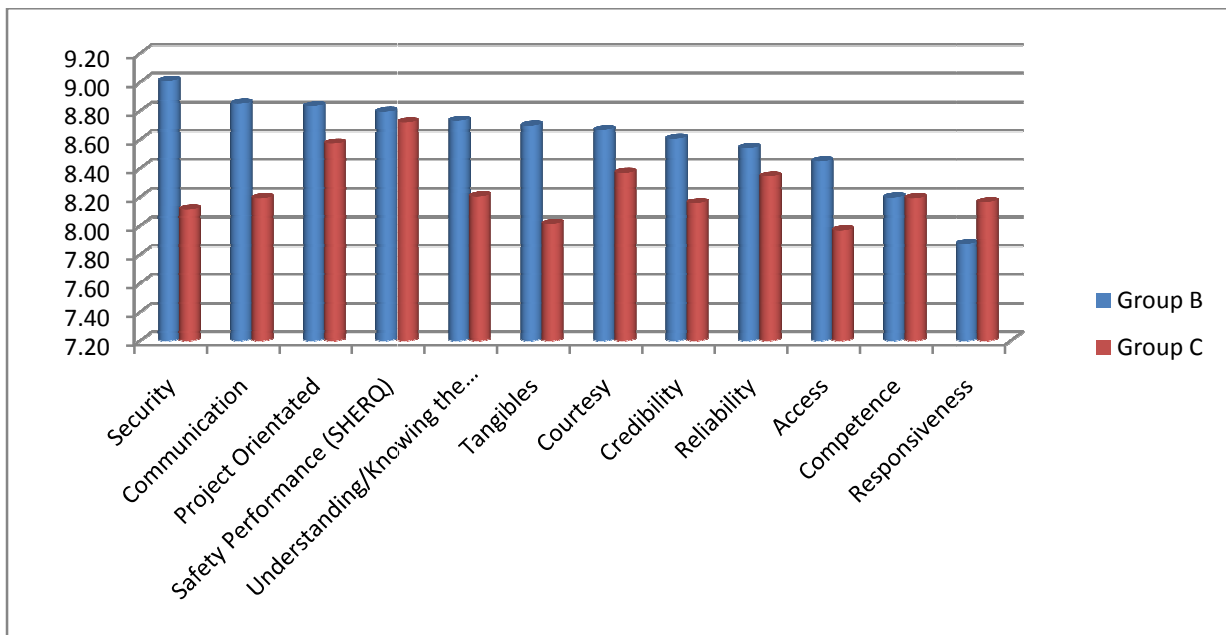
Table 3.7 explains the identification and prioritization of the effective service delivery drivers from the management of selected construction companies (mean B) and their employees (mean C). This table will indicate the existing gaps that exist between the parties.

Table 3.7: Indicates the identification and prioritization of the effective service delivery drivers from the management of selected construction companies and the employees of selected construction companies.

Effective service delivery drivers (KPA's)	Mean B Management of selected companies	Mean C Employees of selected companies	Deviation
Security	9.01	8.11	0.89
Communication	8.85	8.19	0.66
Project Orientated	8.83	8.57	0.26
Safety Performance (SHERQ)	8.79	8.72	0.07
Understanding/Knowing the customer	8.73	8.20	0.53
Tangibles	8.70	8.01	0.68
Courtesy	8.67	8.37	0.30
Credibility	8.61	8.16	0.45
Reliability	8.54	8.34	0.20
Access	8.45	7.97	0.48
Competence	8.20	8.19	0.00
Responsiveness	7.87	8.16	-0.29

From the response illustrated in table 3.7 it can be derived that a gap exists between the management and their employees. Management rated their response considerably higher than that of their employees. A standard deviation of 0.353 was present between the responses from the two interest groups. Figure 3.5 provides a graphical illustration of the findings of table 3.7.

Figure 3.5: Indicates the gap between management and employees



The possible reasons for the difference in the prioritization of the effective service delivery drivers are:

- A lack of communication exists between management and their employees;
- The effective service delivery drivers are not defined within the company;
- Management and employees are not aligned in their commitment towards effective service delivery. The employees might be disengaged and demotivated;
- Management is not sure what the market expects from them as indicated through table 3.7 and figure 3.5. Management cannot communicate the effective service delivery drivers to their employees, as they do not know what it is. Employees focus on what they perceive to be important as there are no fixed rules and regulations and performance agreements set by management regarding service delivery.

Service delivery drivers cannot be measured by management if it is not defined and communicated to their employees. The standard deviation (gaps) between management and the market was 0.378 and the standard deviation (gaps) between management and employees was 0.353. This indicates that a larger gap exists between management and the market than the gap between management and their employees. The employees rated their responses on average 0.353 lower than that of management.

Employees are generally the front office personnel interacting with the market on a daily basis. A standard deviation of 0.731 exists between the responses of the employees and that of the market. In average the employees rated their responses 0.731 lower than that of the market.

Table 3.8 and figure 3.6 indicate the comparison of the three different interest groups' responses. The table was constructed to provide a graphical representation of the gaps between the three interest groups. The conclusions drawn will be discussed after the gaps were illustrated.

Table 3.8: The comparison of the three different interest groups responses

Description	Mean A Market / Customer	Mean B Management of selected companies	Mean C Employees of selected companies
Security	9.57	9.01	8.11
Project orientated	9.36	8.83	8.57
Safety performance (SHERQ)	9.35	8.79	8.72
Communication	9.27	8.85	8.19
Understanding/Knowing the customer	9.18	8.73	8.20
Reliability	9.12	8.54	8.34
Courtesy	8.91	8.67	8.37
Access	8.88	8.45	7.97
Credibility	8.61	8.61	8.16
Responsiveness	8.58	7.87	8.16
Competence	8.56	8.20	8.19
Tangibles	8.40	8.70	8.01

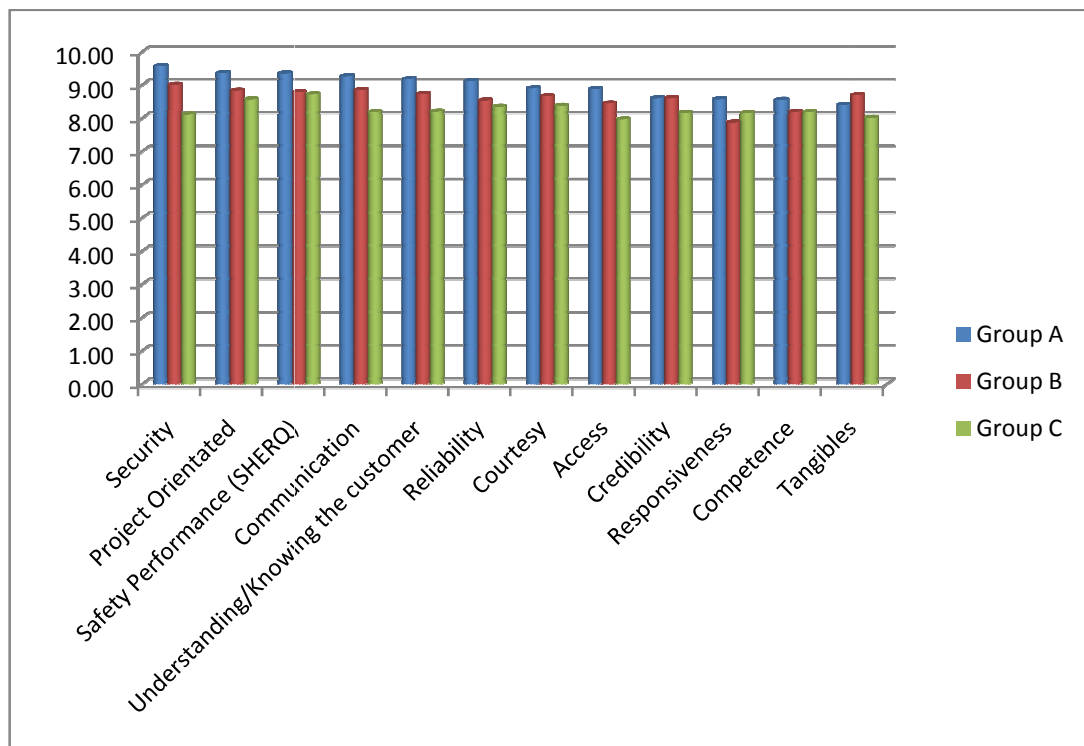
From the response illustrated in table 3.8 it can be derived that:

- The market rated their responses higher in all of the key performance areas except in the tangibles area;
- A definite gap exists between the market, management and their employees;
- It is clear that the service delivery drivers between the three interest groups are not aligned;
- A larger gap exists between management and the market than between the management and their employees;

- The market, management and employees rated the effective service delivery drivers in a different sequence. This means that all the different interest groups will focus on different service delivery drivers.

Figure 3.6 provides a graphical illustration of the findings of table 3.8.

Figure 3.6 Indicates the gap between the market, management and the employees



In the section that follows the chapter will be summarised.

3.7 SUMMARY

The purpose of the empirical study and the primary objective of the study were to identify and prioritize effective service delivery drivers from all stakeholders' perspective in the civil construction industry i.e. civil construction companies and their customers. By successfully identifying, prioritizing and implementing strategies to enable civil construction companies to set the service level on the correct standard will ensure success and competitive advantage for companies in the civil construction industry.

To determine how aligned customers' expectations of the delivery of service delivery drivers from civil construction companies currently in the civil construction industry are, a gap analysis was done. It was evident that a gap exist between mean a, b and c.

A number of challenges had derived from the gaps identified for civil construction companies. The companies need to conduct a SWOT analysis in order to set the service delivery standards according to the customer's expectations. This will enable construction companies to maintain and sustain strategic survival and to attract and retain customers.

However, the construction companies first need to close the gaps identified between management and their employees. The company can close this gap by focussing on organisational behaviour. Changing organisational behaviour can contribute to improving the companies' performance by showing management how employee attitudes and behaviour are associated with customer satisfaction. Management therefore need to create a customer-responsive culture. Organisation behaviour can also provide considerable guidance in helping managers creating such cultures – cultures in which employees are friendly and courteous, accessible, knowledgeable, prompt in responding to customer needs, and willing to do what's necessary to please the customer.

If the construction companies succeed in closing these gaps they will acquire and retain new customers, ensuring company growth and increased market share with engaged employees.

Chapter 4 concludes this study and makes certain recommendations pertaining to effective service delivery drivers for companies in the civil construction industry.

CHAPTER 4: CONCLUSIONS AND RECOMMENDATIONS

4.1 Introduction

To conclude the study, a practical approach to conclusions was made, since conclusions in the previous chapters were made in relation to the objectives of the study. Even though there were limitations to the study, the study will assist the civil construction companies in understanding the importance of identifying and prioritizing the major drivers for effective service delivery for the industry. The impact of competitive advantage as a result of identifying and prioritizing the effective service delivery drivers will be visible if companies implement strategies accordingly. A brief evaluation was made to confirm that the objectives were met, and recommendations for the study provided.

4.2 Main findings

This section summarise the main findings of the study and discuss the contributions of successfully achieving the primary and secondary objectives.

The primary objective of this study was to prioritise the identified effective service delivery drivers for the civil construction industry. An empirical investigation was performed by using the questionnaire as a measurement instrument. Selected market leaders, their employees and customers prioritized the identified effective service delivery drivers. Key performance areas (KPA's) were identified and prioritized by rating the key performance indicators (KPI's) under each KPA. A total of 247 respondents were asked to complete the questionnaire and the response rate was on average 74.09%. This response rate can be seen as representative of the civil construction industry.

The high response rate was due to the respondent's vested interest in the outcome of the study. The outcome of the study will enable civil construction companies to maintain and sustain strategic survival and to attract and retain customers. Employees will be

more engaged as they will know what is expected from them and the customer's expectation of effective service delivery will be met.

Descriptive statistics were used during the empirical investigation and the service delivery drivers, and more specifically the key performance indicators (KPI's) were prioritised as indicated below (from most to least important):

- Security

Financial security plays an important role for the customer in choosing a contractor. There must be no risk involved, such as non-compliance to schedule and/or budgeted, when dealing with the contractor and the relationship between the customer and contractor / service provider must be treated with extreme confidentiality.

- Project - orientated

The scope, level of quality, budget, and schedule must be well defined for a project to be successful and for the project team to be effective. If the project objective is to be achieved, each team member must have the same vision of the project result. Each person on the project needs to have a strong commitment to achieving the project objective(s) and deliverables.

- Safety performance (SHERQ)

Safe working conditions and the prevention of any incidents or accidents needs to be ensured by the contractor. Safety requirements need to be adhered to at all times and all incidents should be reported immediately. Proof must be provided of the competence of the staff and accountability for the subcontractors must be taken.

- Communication

Sufficient and open communication will contribute to increase the margin of profits for the contractor. Important aspects to ensure proper communication channels are to avoid technical jargon and to adjust the language depending on the owner's knowledge. This attitude avoids unnecessary repetition of work resulting from misunderstanding, and consequently reduces the cost. An explanation of the trade-offs between cost and service is also important. Customers need to feel as if they have initiative in choice, by explaining the trade-offs honestly, since people feel satisfied when they feel initiative is on their side. Thus, hard selling attitudes should be avoided by implementing a transparent communication plan.

Poor communication occurs when team members lack knowledge about what is happening on the project and individuals do not share information. Companies need to have regular project status review meetings with a published agenda with their customers.

- Knowing the customer

Knowing the customer's objectives are essential. Unless the customer's preferences are met, high credibility cannot be achieved. Thus, it is necessary to try to understand the customers' interest from the customers' stand point. Although customers' cannot be classified by types of projects or buying behavior, contractors have a chance to utilize past experience to understand the customer's interest.

- Reliability

High reliability means accuracy of various documents submitted to the customers, and timeliness and correct performance on a consistent basis. Because it cannot be built in a day, high levels of reliability takes longer for the customer to realize.

- Courtesy

Courtesy is totally dependent on contact personnel's attitude and appearance. The courtesy of contact personnel and workers affects the evaluation of tangibles and credibility.

- Access

Accessibility is less significant throughout the project because most services usually do not require the presence of the owner. However, once a problem occurs, this determinant variable becomes an important factor in service quality. In this regard, access seems to affect the evaluation of communication and responsiveness. Employee's "role clarity" may help achieve the customer's high evaluation of this determinant.

- Credibility

Credibility includes the company's reputation and name, which is difficult for the company to manipulate, since good reputation and name depends on word-of-mouth. This advertisement method is a distinct characteristic of the construction industry. Carefully listening and consideration of the customer's needs is vital in acquiring high credibility. A contact person's attitude towards the customer, namely politeness, respect, consideration and friendliness, plays an important role in determining credibility. These four aspects are also constructs of courtesy.

- Responsiveness

Responsiveness means timeliness. During the construction phase, change orders and shop drawings are time-sensitive and can often extend the projects duration. Both operational efficiency and the contact person's sincere attitude to achieve high responsiveness are required. Task standardization and information systems that are designed to shorten the procedure time are also needed.

- Competence (owner)

Competence in this phase means the actual high quality performance as communicated to the owner. It requires the involvement of subcontractors to achieve since they actually perform the construction.

- Tangibles

In the construction industry, unlike other industries, tangibles cannot be easily displayed or introduced publicly.

The drivers for effective service delivery from the customers' perspective were prioritized to enable civil construction companies to set their service level on the correct standard. From the empirical study performed and the summary above it is evident to conclude that the primary objectives of the study were met.

The secondary objectives of the study were to highlight the key performance indicators (KPI's) that will have a definite impact on service delivery as new challenging environments exist and maximisation of customer satisfaction need to be explored and to perform a gap analysis to identify whether a gap exist between what civil construction companies, their employees and customers perceive to be effective service delivery drivers.

The 4 most important key performance area's (KPA's) and indicators (KPI's) identified by the respondents that will have an impact on service delivery were security (financial security), project-orientated (the project ensures owner's preferences at optimum cost), safety performance (adherence to all safety requirements) and communication (assuring the customer that the problem will be handled).

A gap-analysis was performed to align the companies and their customers' expectations on effective service delivery drivers in the civil construction industry. The outcome of the gap analysis indicated:

- A gap was determined between the selected customer and the selected civil construction company's management. Management rated the effective service delivery drivers on average 0.378 lower than that of the market leaders. This indicated that a gap exists between the civil construction companies and their customers.
- A gap was determined between the management of the selected civil construction company and their employees. The employees rated the effective service delivery drivers on average 0.353 lower than that of the management of the selected companies. This indicated that a gap exists between the management of the selected companies and their employees.

In conclusion the calculated gaps were as follows:

- 0.378 – between the selected market leaders / customers and management of the selected civil construction companies.
- 0.353 – between the management of the selected civil construction companies and their employees.
- 0.731 – between the selected market leaders / customers and the employees of the selected civil construction companies performing a service.

The gap analysis clearly indicated that there is currently limited alignment between the services provided and meeting the customer's expectations. A number of challenges are derived from the gaps identified for civil construction companies. Civil construction companies need to set the service delivery standards according to the customer's expectations. This will enable construction companies to attract and retain customers.

From the above it is evident that the secondary objectives of the study were met i.e. the key performance area's that will have an impact on service delivery were identified and prioritised and a gap analysis was performed with identified gaps.

In the next section recommendations for the study are discussed.

4.3 Recommendations

The effective service delivery drivers were identified and prioritized through the use of the empirical study. From the empirical study it became evident that a gap exists between the selected market leaders i.e. customers, management of selected civil construction companies and the employees of the selected civil construction companies.

Recommendations for civil construction companies:

- Create awareness of the importance of effective service delivery drivers within training programs.
- Continue with research to validate the importance of effective service delivery drivers within the civil construction industry in South Africa and globally.
- Ensure that management of civil construction companies understand customer demands regarding effective service delivery drivers to ensure effective service delivery as this may vary from project to project.
- Align the commitment between management and their employees towards effective service delivery drivers.
- A vital element to the effective performance of a project is to communicate the service level deliverables. Communication takes place between the project team and the customer, among the project team members, and between the project-team and its upper management. Discussions with numerous successful people have confirmed that communication skills are crucial for success. Communication types and different channels i.e. oral communication, written communication, and listening skills often make the difference between the very successful person and the person who is not as successful. Without an effective

communication plan, projects are often doomed to failure hence it is important to conduct a market research of effective communication skills.

- The project management process i.e. planning the work and then working the plan using the prioritization of effective service level deliveries as foundation. The front-end effort in managing a project must be focused on establishing a baseline plan that provides a road map for how the project scope will be accomplished on time and within budget. There needs to be steps identified to assist the companies and their customers to plan accordingly.
- The effectiveness of the civil construction company's resources i.e. the project leader with the project team, need to meet the customer's expectation in terms of effective service delivery drivers. Characteristics associated with an effective project team include: a clear understanding of the project objective, clear expectations of each person's role and responsibilities, a results orientation, a high degree of co-operation and collaboration and a high level of trust. The company can develop a checklist for rating the effectiveness of a project team to see if the gaps as identified in this study are closing. Team members need to complete this assessment instrument periodically during the project. Barriers to team effectiveness should be identified and an action plan implemented in order to avoid the gap identified increasing.

A project awarded to a civil construction company is an endeavour to accomplish a specific objective through a unique set of interrelated tasks and the effective utilisation of resources. It has a clearly defined objective stated in terms of scope, schedule, and cost captured in a service level agreement. The responsibility of the company is to ensure that the project objective is accomplished and that the work scope is completed in a quality manner, within budget and on time, to the customer's satisfaction.

References

- ALBALOUSHI, H & SKITMORE, M. 2008. Supply chain management in the UAE. *International Journal of Construction Management*. 8 (1), p 53-71.
- AL-MOMANI, A. 1996. Construction cost prediction for public school building in Jordan. *Construction management and economics*. 14 (1), p 311-317.
- AL-MOMANI, A. 1999. Construction delay: a quantitative analysis. *International journal of project management*. 4 (1), p 1-9.
- ANONOMOUS. 2009. (a) *Service Level Agreement (SLA)*. Web Available: http://www.ucertify.com/article/service-level-agreement/99_43_33.htm. Date of access: 11th Aug 2010.
- ANONOMOUS. 2010. (b) *Service agreements and contracts templates*. Web Available: http://www.businessballs.com/service_agreements_contracts_templates.htm. Date of access: 9th May 2010.
- ANONOMOUS. 2008. (c) *Establishing Service Level Agreements* . Web Available: <http://www.nkarten.com/sla.html>. Date of access: 1st September 2010.
- ANONOMOUS, 2009. (d) *Build your SLA with these five points in mind*. Web Available: <http://articles.techrepublic.com.com/5100-6333-1049067.html>. Date of access: 3de September 2010.
- ANONOMOUS. 2010. (e) *The owners' perspective*. Web Available: <http://www.pmbook.ce.cmu/01.html>. Date of access: 15th September 2010
- ANONOMOUS. 2004. (f) *A review of the South African Construction industry*. Web Available: <http://buildnet.co.za/akani/2004/mar/pdfs/ci.html>. Date of access: 1st September 2010

BERRY, L.L., LEONARD, L., VALARIE, A., ZAITHAML, V.A., & PARASURAMAN, A. 1985. Quality counts in services, too. *Business Horizons*, Vol 28.

BUZZEL, R.D., & GALE, B.T. 1987. (a) *The PIMS (Profit Impact of Market Strategy) principles: Linking strategy to performance*. New York: Free Press.

BUZZEL, R.D., & GALE, B.T. 1987. (b) *The PIMS (Profit Impact of Market Strategy) principles: Linking strategy to performance*. New York: Free Press.

CHURCHILL, G.A., & LACOBUCCI. 2002. *Marketing research: Methodological foundations*. 8th ed. Ohio: South-Western Thomson Learning. p 253.

COKAYNE, R. 2009. *Civil construction stands tall as South Africa's best performing sector*. Web Available: <http://www.busrep.co.za/index.php>. Date of access: 9th July 2010.

CORBIN, C. MARCH 9, 1992. The winds are shifting. *Engineering news record*. 1 (1), p 70.

CSIR (BOUTEK). 2004. *A review of the South African construction industry Part 3*. Web Available: <http://www.csir.co.za/alkani>. Date of access: 15th July 2010.

ELLIS, S.M., & STEYN, H.S. 2010. Suria.Ellis@nwu.ac.za. Effect sizes.

GRONROOS, C. 1990. *Service management and marketing: Managing the moments of truth in service competition*. Lexington: Lexington Books. p 27.

HAGUE, P., & JACKSON, P. 1996. *Marketing research: a guide to planning, methodology and evaluation*. London: Kogan Page. p 107.

HARRIS, K. 2008. *Measuring for service level management*. Web Available: http://articles.techrepublic.com.com/5100-22_11-5388735.html. Date of access: 7th September 2010.

IRENE, C.L. 2010. *Segmentation by value*. Web Available: <http://www.value-basedservicesystem.blogspot.com.htm>. Date of access: 15th September 2010.

JANSON, R. 1989. Achieving service excellence in the financial services industry. *National productivity review*. 8 (2), p 129-144.

KOMETA, S.T., OLOMOLAIYE, P.O., & HARRIS, F.C. 1995. An evaluation of clients' needs and responsibilities in the construction process. *Engineering construction and architectural management*. 2 (1), p 57-72.

LEVINE, D.M., STEPHAN, D., KREHBIEL, T.C. & BERENSON, M.L. 2005. Statistics for managers using Microsoft Excel. 4th ed. New Jersey: Pearson Prentice Hall. p 116-118.

LEWIS, B.R. 1995. *Managing service quality*. Chichester: John Wiley & Sons. p 273.

LOUW, L., & VENTER, P. 2008. (a) *Strategic management: Winning in the South African workplace*. South Africa: Oxford University Press Southern Africa (Pty) Ltd, Cape Town. p 57.

LOUW, L., & VENTER, P. 2008. (b) *Strategic management: Winning in the South African workplace*. South Africa: Oxford University Press Southern Africa (Pty) Ltd, Cape Town. p 168.

LOVELOCK, C.H. 1991. *Services marketing*. 2nd ed. New York: Prentice Hall. p 263.

MORRIS, P.W.G., & HOUGH, G.H. 1987. *The anatomy of major projects: A study of the reality of project management*. London: John Wiley & Sons. p 108-112.

PARASURAMAN, A., LEONARD, L., ZAITHAML, B., & ZAITHAML, V.A. 1984. (a) A conceptual model of service quality and its implications for future research. *The ten determinants used by customers to determine service quality*. Report No. 84-106, p 130 - 144.

PARASURAMAN, A., LEONARD, L., ZAITHAML, B., & ZAITHAML, V.A. 1984. (b) *A conceptual model of service quality and its implications for future research*. Cambridge: Marketing Science Institute. Report No. 84-106. p 13-14.

PARASURAMAN, A., LEONARD, L., ZAITHAML, B., & ZAITHAML, V.A. 1984. (c) *An empirical examination of relationships in an extended service quality model*. Cambridge: Marketing Science Institute. Report No. 90-122.

PARASURAMAN, A., LEONARD, L., ZAITHAML, B., & ZAITHAML, V.A. 1984. (d) A conceptual model of service quality and its implications for future research. *The ten determinants used by customers to determine service quality*. Report No. 84-106, p 130 - 144.

PARASURAMAN, A., ZAITHAML, V.A., & BERRY, L.L. 1990. *Delivering quality service: Balancing customer perceptions and expectations*. New York: Free Press. p 22.

PERTH, B.D. 2009. *What is Customer focus*. Web Available: <http://www.thatscustomerfocus.com/>. Date of access: 11th September

RICHARD, A. 2005. Journal of professional issues in engineering education and practice. 1 (1), p 275.

SCOVILLE, E. 1992. Marketing research in practice. 3rd ed. New York: Marketing Science Institute. p 9.

SPARKS, J.R., & HUNT, S.D. April 1998. Marketing researcher ethical sensitivity: conceptualization, measurement and exploratory investigation. *Journal of marketing*.

THOMPSON, J., & MARTIN, F. 2005. *Strategic Management: Awareness and Change*. 5th ed. London: Thomson. p 855.

TURNER, J.R. 1993. *The handbook of project-based management*. London: McGraw-Hill. p 34-56.

TUSTEN, D.H., LIGTHELM, A.A., MARTINS, J.H., & Van Wyk, H de J. 2005. (a) *Marketing research in practice*. South Africa: Unisa Press. p 83.

TUSTEN, D.H., LIGTHELM, A.A., MARTINS, J.H., & Van Wyk, H de J. 2005. (b) *Marketing research in practice*. South Africa: Unisa Press. p 335.

TUSTEN, D.H., LIGTHELM, A.A., MARTINS, J.H., & Van Wyk, H de J. 2005. (c) *Marketing research in practice*. South Africa: Unisa Press. p 337.

TUSTEN, D.H., LIGTHELM, A.A., MARTINS, J.H., & VAN WYK, H de J. 2005. (d) *Marketing research in practice*. South Africa: Unisa Press. p 351.

TUSTEN, D.H., LIGTHELM, A.A., MARTINS, J.H., & Van Wyk, H de J. 2005. (e) *Marketing research in practice*. South Africa: Unisa Press. p 385.

TUSTEN, D.H., LIGTHELM, A.A., MARTINS, J.H., & Van Wyk, H de J. 2005. (f) *Marketing research in practice*. South Africa: Unisa Press. p 451.

ZAITHAML, V.A., VALARIE, A., BERRY, L.L., & PARASURAMAN, A. 1997. *Communication and control process in the delivery of service quality*. Report No. 87-100, Cambridge, Marketing science institute.

Annexures

Annexure A – Questionnaire

Annexure B – Mean and Standard deviation of the population

Annexure C – Effect Sizes

Dear respondent,

Annexure A

This questionnaire (see attached "Annexure A") is compiled for a mini dissertation in "Effective service delivery drivers in the civil construction industry".

The purpose of the questionnaire is to establish the importance of service delivery drivers through the identification of effective service delivery drivers, balancing this with optimum customer service and negotiating optimum price, product and service package to meet customers needs. The outcome of this questionnaire will ensure that sound business relationships between the parties (supplier and buyer) will exist and to maximise short and long term revenue for the civil construction industry.

Please answer all the questions in the questionnaire truthfully. The questionnaire should not take more than 15 minutes of your time. Feedback may be provided upon request.

INSTRUCTIONS:

Effective service delivery drivers for the civil construction industry has been identified in the questionnaire attached.

Please indicate on the scale from 1 - 10 (where 1 is least important and 10 is most important) how important each one of the service delivery drivers are for you as a customer. Please mark your answer with an x under the appropriate number. For example:

- * If you perceive the statement to have "no importance" for effective service delivery, you would rate it "1"
- * If you perceive the statement to be of "utmost importance" for effective service delivery, you would rate the statement "10".

Statement		Perception on the importance of this statement for effective service delivery									
											
		One is the least important and ten is the most important									
Number	Statement	1	2	3	4	5	6	7	8	9	10
1	Deliver the project within the budget				x						

At the end of each section, space is provided if you may feel that an important aspect have been missed that will be crucial for effective service delivery in the civil construction industry.

**Effective service delivery drivers in the civil construction industry
2010**

Number	Statement	Perception on the importance of this statement for effective service delivery									
											
		One is the least important and ten is the most important									
A	Reliability	1	2	3	4	5	6	7	8	9	10
1	The firm needs to be consistent in its performance										
2	The firm needs to be consistent on its dependability										
3	The firm need to performs the service right the first time										
4	The firm need to honor its promises										
5	Billing must be accurate at all times										
6	Records must be kept correctly at all times										
7	Firms need to perform the service at the designated time										
8	Any additional remarks and/ or suggestions regarding ' <i>Reliability</i> ' as an effective service delivery driver:										
B	Responsiveness	1	2	3	4	5	6	7	8	9	10
1	Willingness of employees to provide service										
2	Time lines of service										
3	Mailing a transaction slip immediately										
4	Calling the customer back quickly										
5	Giving prompt service										
6	Any additional remarks and/ or suggestions regarding ' <i>Responsiveness</i> ' as an effective service delivery driver:										
C	Competence	1	2	3	4	5	6	7	8	9	10
1	Possession of the required skills to perform the service										
2	Possession of the required knowledge to perform the service										
3	Knowledge of the operational support personnel										
4	Research capability of the organization										
5	Any additional remarks and/ or suggestions regarding ' <i>Competence</i> ' as an effective service delivery driver:										
D	Access	1	2	3	4	5	6	7	8	9	10
1	The firm is approachable for contact										
2	The service is easily accessible by telephone										
3	Waiting time to receive service is not extensive										
4	Convenient hours of operation										
5	Convenient location of service facility										
6	Any additional remarks and/ or suggestions regarding ' <i>Access</i> ' as an effective service delivery driver:										

Number	Statement	Perception on the importance of this statement for effective service delivery									
											
		One is the least important and ten is the most important									
E	Courtesy	1	2	3	4	5	6	7	8	9	10
1	The (politeness, respect, consideration, and friendliness) of contact personnel										
2	Consideration for the customer's property										
3	Clean and neat appearance of public contact personnel										
4	Any additional remarks and/ or suggestions regarding courtesy as an effective service delivery driver:										
F	Communication	1	2	3	4	5	6	7	8	9	10
1	Explaining the service itself										
2	Explaining how much the service will cost										
3	Explaining the tradeoffs between service and cost										
4	Assuring the customer that the problem will be handled										
5	Any additional remarks and/ or suggestions regarding "Communication" as an effective service delivery driver:										
G	Credibility	1	2	3	4	5	6	7	8	9	10
1	The firm needs to be trustworthy										
2	Having the customer's best interest at heart										
3	Company name (Brand name)										
4	Company reputation										
5	Personal characteristics of the contact personnel										
6	Any additional remarks and/ or suggestions regarding "Credibility" as an effective service delivery driver:										
H	Security	1	2	3	4	5	6	7	8	9	10
1	Freedom from danger (There are no risk or doubt when dealing with this company)										
2	Physical safety										
3	Financial security										
4	The firm will treat your relationship with extreme confidentiality										
5	Any additional remarks and/ or suggestions regarding "Security" as an effective service delivery driver:										
I	Understanding/Knowing the customer	1	2	3	4	5	6	7	8	9	10
1	Learning the customer's specific requirements										
2	Providing individual attention										
3	Recognizing the regular customer										
4	Any additional remarks and/ or suggestions regarding "Understanding/Knowing the customer" as an effective service delivery driver:										

Number	Statement	Perception on the importance of this statement for effective service delivery									
											
		One is the least important and ten is the most important									
J	Tangibles	1	2	3	4	5	6	7	8	9	10
1	Physical evidence of the service										
2	Physical facilities										
3	Appearance of personnel										
4	Equipment of the service										
5	Any additional remarks and/ or suggestions regarding "Tangibles" as an effective service delivery driver:										
K	Project Orientated	1	2	3	4	5	6	7	8	9	10
1	Satisfies the needs of the project team										
2	Constructed within the agreed time										
3	Achieving the project purpose										
4	Satisfactory benefit to the owner										
5	The project meets the related objectives										
6	The project is of superior quality										
7	Constructed within budget										
8	Conveying the technical specification										
9	The project recognizes the need of the client										
10	The project ensures owners preferences at optimum cost										
11	Any additional remarks and/ or suggestions regarding "Project Orientated" as an effective service delivery driver:										
L	Safety Performance (SHERQ)	1	2	3	4	5	6	7	8	9	10
1	Ensure good housekeeping in the workplace at all times										
2	Ensure safe working conditions to prevent any accidents										
3	Shall conduct internal and external safety audits										
4	Responsible to submit safety reports										
5	Adhere to all safety requirements										
6	Provide proof of competence of staff										
7	Reporting of incidents immediately										
8	Take accountability for subcontractors										
9	Any additional remarks and/ or suggestions regarding "Safety Performance (SHERQ)" as an effective service delivery driver:										
M	Customer service										
1	Do you have any suggestions on how customer service can be improved?										
2	What would make your service provider a service provider of choice?										
3	Which dimensions of customer service would you like to see an improvement on?										

Number	Statement	Perception on the importance of this statement for effective service delivery	
			
		One is the least important and ten is the most important	
N	General		
1	Any other factors that also needs to be addressed?		
2	What would you single out as the most important factor in service delivery drivers?		
3	What do you expect to be the future drivers of success within this context		
4	Any other suggestions?		

THANK YOU FOR YOUR COOPERATION
MAKING YOUR SERVICE PROVIDED YOUR PREFERRED PROVIDER EXPERIENCE
 Any queries can be directed to:
 Mr. EN Venter
 Tel: 082 319 4711

Annexure B

Number	Statement	Group A		Group B		Group C	
A	Reliability	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
1	The firm needs to be consistent in its performance	9.07	0.91	8.39	1.10	8.30	1.85
2	The firm needs to be consistent on its dependability	8.91	0.72	8.37	1.01	8.30	1.69
3	The firm need to performs the service right the first time	8.71	1.10	8.18	1.49	8.44	2.04
4	The firm need to honor its promises	9.03	0.87	8.93	1.05	8.37	1.76
5	Billing must be accurate at all times	9.32	0.70	8.91	1.04	8.26	1.96
6	Records must be kept correctly at all times	9.28	1.04	8.63	1.06	8.30	1.96
7	Firms need to perform the service at the designated time	9.52	0.72	8.39	1.16	8.44	1.88
B Responsiveness							
1	Willingness of employees to provide service	8.78	1.01	8.63	1.10	8.23	1.84
2	Time lines of service	8.75	0.91	8.12	1.23	8.23	1.74
3	Mailing a transaction slip immediately	7.72	1.51	5.40	1.98	7.95	1.87
4	Calling the customer back quickly	8.77	1.06	8.56	1.23	8.19	1.91
5	Giving prompt service	8.86	1.20	8.65	1.14	8.23	1.70
C Competence							
1	Possession of the required skills to perform the service	9.07	1.09	8.72	1.00	8.33	1.63
2	Possession of the required knowledge to perform the service	9.32	0.98	8.72	1.15	8.12	1.96
3	Knowledge of the operational support personnel	8.80	1.59	8.67	0.91	8.37	1.52
4	Research capability of the organization	7.04	2.21	6.68	2.14	7.95	1.89
D Access							
1	The firm is approachable for contact	8.84	1.07	8.32	1.12	7.98	1.83
2	The service is easily accessible by telephone	8.93	0.94	8.75	1.18	8.12	1.82
3	Waiting time to receive service is not extensive	9.12	0.58	8.51	1.07	7.95	1.65
4	Convenient hours of operation	8.71	0.81	8.56	1.56	7.91	1.72
5	Convenient location of service facility	8.83	1.08	8.11	1.50	7.88	1.63
E Courtesy							
1	The (politeness, respect, consideration, and friendliness) of contact	8.96	1.08	8.65	1.09	8.37	1.47
2	Consideration for the customer's property	9.20	0.78	8.58	1.13	8.61	1.52
3	Clean and neat appearance of public contact personnel	8.57	0.90	8.77	1.20	8.12	1.76
F Communication							
1	Explaining the service itself	8.71	1.10	8.98	0.86	8.02	1.67
2	Explaining how much the service will cost	9.46	0.83	8.86	0.83	8.40	1.90
3	Explaining the tradeoffs between service and cost	9.42	0.81	8.47	1.02	7.84	2.02
4	Assuring the customer that the problem will be handled	9.48	0.66	9.09	1.12	8.51	1.57
G Credibility							
1	The firm needs to be trustworthy	9.52	0.66	9.23	1.02	8.68	1.54
2	Having the customer's best interest at heart	8.88	1.21	9.25	1.01	8.30	1.60
3	Company name (Brand name)	7.10	2.54	7.91	1.76	7.74	1.99
4	Company reputation	9.36	0.77	8.77	0.98	8.30	1.67
5	Personal characteristics of the contact personnel	8.16	1.48	7.88	1.46	7.77	1.75
H Security							
1	Freedom from danger (There are no risk or doubt when dealing with	9.49	0.80	8.86	1.20	8.02	2.04
2	Physical safety	9.45	0.83	9.05	1.03	8.09	2.14
3	Financial security	9.77	0.43	8.91	0.83	8.23	1.99
4	The firm will treat your relationship with extreme confidentiality	9.52	0.80	9.21	1.08	8.12	1.64
I Understanding/Knowing the customer							
1	Learning the customer's specific requirements	9.19	0.84	8.77	0.80	8.16	1.70
2	Providing individual attention	9.20	0.83	8.54	0.95	8.21	1.53
3	Recognizing the regular customer	9.16	0.85	8.88	0.89	8.25	1.77
J Tangibles							
1	Physical evidence of the service	9.28	0.80	8.86	0.90	7.98	1.96
2	Physical facilities	7.91	1.18	8.26	1.38	7.61	1.99
3	Appearance of personnel	7.49	2.25	8.75	1.07	7.98	1.71
4	Equipment of the service	8.91	0.90	8.91	0.87	8.47	1.81
K Project Orientated							
1	Satisfies the needs of the project team	9.20	0.80	8.82	0.93	8.35	1.64
2	Constructed within the agreed time	9.43	0.79	8.88	0.91	8.47	1.64
3	Achieving the project purpose	9.46	0.72	8.63	0.99	8.63	1.53
4	Satisfactory benefit to the owner	9.36	0.59	8.82	0.83	8.33	1.85
5	The project meets the related objectives	9.52	0.70	9.12	1.04	8.74	1.26
6	The project is of superior quality	9.33	0.87	8.72	0.77	8.74	1.45
7	Constructed within budget	9.39	0.77	8.84	1.13	9.12	1.32
8	Conveying the technical specification	9.38	0.79	8.86	0.90	8.11	1.76
9	The project recognizes the need of the client	8.96	0.95	8.84	0.80	8.60	1.44
10	The project ensures owners preferences at optimum cost	9.58	0.67	8.79	0.84	8.63	1.33
L Safety Performance (SHERQ)							
1	Ensure good housekeeping in the workplace at all times	8.97	1.31	8.32	1.02	8.82	1.32
2	Ensure safe working conditions to prevent any accidents	9.57	0.93	9.14	0.95	8.93	1.39
3	Shall conduct internal and external safety audits	9.51	0.99	8.58	1.00	8.23	1.45
4	Responsible to submit safety reports	9.28	1.07	8.51	0.89	8.60	1.41
5	Adhere to all safety requirements	9.59	0.83	8.63	0.96	8.84	1.45
6	Provide proof of competence of staff	9.19	1.31	9.11	1.06	8.91	1.33
7	Reporting of incidents immediately	9.38	1.21	9.26	1.01	8.82	1.36
8	Take accountability for subcontractors	9.32	1.28	8.81	1.04	8.60	1.39

Annexure C

Statement	Difference between Group A and B	Difference between Group B and C
Reliability		
The firm needs to be consistent in its performance	0.63	0.05
The firm needs to be consistent on its dependability	0.54	0.04
The firm need to performs the service right the first time	0.36	0.13
The firm need to honor its promises	0.09	0.32
Billing must be accurate at all times	0.39	0.33
Records must be kept correctly at all times	0.61	0.17
Firms need to perform the service at the designated time	0.98	0.03
Responsiveness		
Willingness of employees to provide service	0.14	0.22
Time lines of service	0.51	0.06
Mailing a transaction slip immediately	1.17	1.28
Calling the customer back quickly	0.17	0.19
Giving prompt service	0.17	0.25
Competence		
Possession of the required skills to perform the service	0.32	0.24
Possession of the required knowledge to perform the service	0.52	0.31
Knowledge of the operational support personnel	0.08	0.20
Research capability of the organization	0.16	0.59
Access		
The firm is approachable for contact	0.47	0.18
The service is easily accessible by telephone	0.15	0.35
Waiting time to receive service is not extensive	0.57	0.34
Convenient hours of operation	0.10	0.38
Convenient location of service facility	0.48	0.14
Courtesy		
The (politeness, respect, consideration, and friendliness) of contact	0.28	0.19
Consideration for the customer's property	0.55	0.02
Clean and neat appearance of public contact personnel	0.17	0.37
Communication		
Explaining the service itself	0.25	0.58
Explaining how much the service will cost	0.73	0.24
Explaining the tradeoffs between service and cost	0.93	0.31
Assuring the customer that the problem will be handled	0.35	0.37
Credibility		
The firm needs to be trustworthy	0.29	0.35
Having the customer's best interest at heart	0.30	0.59
Company name (Brand name)	0.32	0.09
Company reputation	0.60	0.28
Personal characteristics of the contact personnel	0.19	0.06
Security		
Freedom from danger (There are no risk or doubt when dealing with	0.53	0.41
Physical safety	0.39	0.45
Financial security	1.03	0.34
The firm will treat your relationship with extreme confidentiality	0.29	0.66
Understanding/Knowing the customer		
Learning the customer's specific requirements	0.49	0.36
Providing individual attention	0.70	0.22
Recognizing the regular customer	0.32	0.36
Tangibles		
Physical evidence of the service	0.46	0.45
Physical facilities	0.25	0.33
Appearance of personnel	0.56	0.45
Equipment of the service	0.00	0.24

Statement	Differance between Group A and B	Differance between Group B and C
Reliability		
Project Orientated		
Satisfies the needs of the project team	0.41	0.29
Constructed within the agreed time	0.61	0.25
Achieving the project purpose	0.84	0.00
Satisfactory benefit to the owner	0.65	0.26
The project meets the related objectives	0.38	0.31
The project is of superior quality	0.71	0.01
Constructed within budget	0.49	0.21
Conveying the technical specification	0.58	0.43
The project recognizes the need of the client	0.12	0.17
The project ensures owners preferences at optimum cost	0.94	0.12
Safety Performance (SHERQ)		
Ensure good housekeeping in the workplace at all times	0.50	0.38
Ensure safe working conditions to prevent any accidents	0.45	0.15
Shall conduct internal and external safety audits	0.93	0.24
Responsible to submit safety reports	0.72	0.06
Adhere to all safety requirements	1.01	0.15
Provide proof of competence of staff	0.06	0.15
Reporting of incidents immediately	0.09	0.32
Take accountability for subcontractors	0.40	0.15