EXAMINING CUSTOMER-SUPPLIER RELATIONSHIPS: CUSTOMER SERVICE QUALITY IN A PRECAST CONCRETE MANUFACTURING COMPANY

Lehlohonolo Amos Masitenyane
Baccalaureus Technologiae Marketing Management

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Supervisor: Prof. M. Dhurup
Co-Supervisor: Dr. A.L. Bevan-Dye
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DECLARATION

This work has not previously accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

Signed …………………………………….
Date   …………………………………….

The dissertation is the result of my own independent work/investigation, except where otherwise stated. Other sources are acknowledged by giving explicit references. A bibliography is appended.

Signed …………………………………….

Date   …………………………………….

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L.A Masitenyane
Vanderbijlpark
2009

ABSTRACT

KEYWORDS: Cementitious products, Precast concrete, Construction, Manufacturer, Service quality, Customer satisfaction, Customer loyalty, Validity, Reliability, Factor analysis and Analysis of variance.

This study provides a framework for customer-supplier relationships and service quality measurement in a precast concrete manufacturing firm with the use of the universally accepted SERVQUAL model. Within an increasingly competitive precast concrete market, customer satisfaction is a critical goal for manufacturers of all types. Customer-supplier relationships and service quality were therefore investigated in this study.

A quantitative research approach was used in the study to analyse the data. This approach enabled the researcher to obtain an accurate measure of all constructs that relate to service quality improvement for the particular concrete manufacturing firm amongst contractors, civil consultants, government institutions and end users. A sample size of 246 respondents from Gauteng Province was used. Descriptive statistics were used to explain the characteristics of sample data. In addition, factor analysis was used to condense the variables into five factors in order to capture the essence of service quality within a cementitious products organisation. Five dimensions, responsiveness, problem- solving, physical aspects, service personnel and physical appearance were extracted to measure service quality.

Results showed that satisfied customers tend to re-patronise suppliers who enhance their service outputs provided to the customers. Thus it is imperative to enhance customer satisfaction and ultimately customer loyalty. These results suggest that improved service qualities can be useful for building customer loyalty and long-lasting relationships.

The reliability analysis produced a Cronbach alpha which ranged from 0.700 to 0.815 which were deemed acceptable. The Pearson correlation analysis showed that service

quality is associated with customers' future buying behaviour in terms of their decisions to purchase and recommend the supplier to others.

Customers felt that service personnel were friendly, courteous and possessed the knowledge to answer customer questions. They exhibited a favourable image of the company and its services. This service dimension was ranked first in terms of importance by the customers therefore, the precast concrete manufacturer ought not be complacent but rather seek innovative ways in maintaining the service personnel dimension of service quality.

The overall mean score of expectation of service quality by customers was 4.71. This indicates that the service provided by this company is satisfactory. It therefore suggests that, it is necessary for managerial intervention to prioritise in all these areas to develop a strategy of service quality improvement. Training of personnel is an essential component of service quality enhancement especially with complaints and the complaints-handling procedures. The management team of the organisation needs to play an active role in ensuring that all personnel are adequately trained and highly motivated to understand the user's specific problems and in the process to provide competent solutions to problems.

Based on literature and results emanating from the empirical survey, these findings may assist the organisation in the enhancement of its service-quality levels. Hence, service-quality levels should be monitored carefully on a continuous basis.

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ASOKA ENGLISH LANGUAGE EDITING

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DECLARATION

This is to certify that I have English Language edited the dissertation

 Examining Customer-Supplier Relationships: Customer Service Quality in a Precast Concrete Manufacturing Company.

Candidate name: Lehlohonolo Amos Masitenyane
Student Number: 9868445

Degree: M.Tech Marketing Management (Management Sciences)

Prof. D. Schauffer
SATI member number: 1001872

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CHAPTER 1

INTRODUCTION AND PROBLEM ORIENTATION

1.1   INTRODUCTION

Deregulation of the South African economy has opened the country up to intensive competition from the international business community. This increased intensity of competition has led many South African businesses to seek profitable ways of differentiating themselves from their competitors (Terblanche, 1998: 1). One strategy that has contributed to the success of businesses seeking to differentiate themselves is the delivery of high quality services (Berry, 1986: 3).

Within the precast concrete manufacturing market, competitiveness and a fight for market share are not new phenomenon with regard to cementitious products (that is, products containing cement). The cement shortage in South Africa in 2005 has contributed to the struggle for market share (Patel, 2006: 66). Patel further affirms that the situation had an undoubtedly significant impact on the industry, especially on emerging contractors who found it difficult to compete with larger contractors. Concurrent with the cement shortages experienced in 2005, there has been a dramatic increase in the demand for cementitious products in recent years (Poggiolini, 2007: 1). Poggiolini further submits that firms in this sector are currently enjoying a boom and that there appears to be a trend of consolidation of cementitious product manufacturers in South Africa.

The emergence of such trends in the precast manufacturing market means that survival will depend on astute marketing with special emphasis on building relationships and delivering superior service quality in meeting the needs of customers.

Service quality, which has been of interest to marketing academics, has received attention from service marketing researchers for the better part of the last fifteen years (Reynoso & Moores, 1995: 64). Whilst products, process quality and total quality emerged as concerns in the manufacturing sector, service quality is acknowledged as critical for all forms of organisation (Ennew, Reed & Brinks, 1993: 59). Service quality places more emphasis on quality and on the standard of the interaction between the service provider and the customers in order to ensure that the customer's expectations are met (Hernon, 2001: 11; Palmer, 2005: 64).

From a service quality perspective, operations within a manufacturing organisation seek to satisfy customers through developing five performance objectives. For example, if a customer particularly values low-priced products, the operation will put emphasis on its cost performance. If customers insist on flawless products or services, the operation will concentrate on its quality performance. A customer emphasis on fast delivery will make speed important within the operation, while a customer emphasis on reliability will make dependability important (Pycraft, Singh, Phihlela, Slack, Chambers, Harland, Harrison & Johnston, 2002: 77). If customers expect very innovative products and services, the operation must provide a high degree of flexibility in order to get its innovations to its customers before its rivals do so.

1.2   PROBLEM STATEMENT

Researchers have suggested that it is the presence of customers in the service production process that distinguishes service management from product management (Lentell, 2000: 2). Any buoyant market facing shortages of material and skills, like the precast concrete market within the construction industry, is prone to being infiltrated by companies from all over the world. According to Onyango (2006: 18) and Whitehurst (1991: 73), problems encountered by contractors within the precast concrete manufacturing sector are:

- Specified materials availability (i.e. cementitious materials availability)

- Delays in delivering products due to a lack of timely directions on field problems

- Lack of sufficient knowledge and awareness of the construction business

- Failure by suppliers to honour commitments

- Sales representatives lacking adequate knowledge to answer customers' questions

- Unavailability of stock

- Lack of communication to its customers.

Poor knowledge of the market and its various facets, for example, financial management, project management, corporate governance and tendering procedures, tend to play a major role in raising such concerns with customers.

When making purchasing decisions, buyers look for signs or evidence of good service (Lentell, 2000: 2; Zeithaml & Bitner, 2003: 283). It is thus essential for service managers to minimize uncertainty to customers. However, the quality of service performance is sometimes inconsistent and unpredictable and therefore varies from one service provider to another (Kotler, 2000: 448). This results in the non-standardisation of service (Kim & Reinschmidt, 2006: 955).

1.3   OBJECTIVES OF THE STUDY

1.3.1   Primary objective

The main purpose of this study is to evaluate customer service quality among clients purchasing precast concrete products from a manufacturing company.

1.3.2   Theoretical Objectives

In order to achieve the primary objectives, the following theoretical objectives have been formulated for the study:

- Conduct a literature study on the nature of precast concrete products within the construction industry.

- Carry out a review of the literature on customer services, service quality, satisfaction and loyalty.

1.3.3   Empirical objectives

The following empirical objectives have been formulated to support both the primary and theoretical objectives:

- Establish the generic dimensions influencing service quality that may be applicable within a precast concrete manufacturing company.

- Evaluate customer expectations of the quality of services provided by the company.

- Assess the overall level of customer satisfaction in terms of a company's service quality, with reference to precast concrete products.

- Assess customers' loyalty levels with reference to the relationship they have with the manufacturer.

1.4   RESEARCH DESIGN AND METHODOLOGY

The research design will encompass both a review of the literature and an empirical study.

1.4.1 Literature review

A literature study of the precast manufacturing and building construction sector, service quality and customer service will be undertaken. Textbooks, journals, magazines, newspapers and the Internet will be utilised as sources of information.

1.4.2 Empirical study

The following steps, as alluded to by Tustin, Ligthelm, Martins and Van Wyk (2005: 339), will be used in the sampling design procedure:

1.4.2.1 Target population

The research will be conducted among customers operating in the Gauteng province. The population statistics for this region will be extracted from the company's customer database.

1.4.2.2 Sampling technique

A probability sampling technique will be used in this study. According to Churchill (2001: 452), the advantage of using probability sampling is that each member of the population has a known zero chance of being included in the sample. The use of probability sampling allows for statistical inferences to be made about the target population from which the sample is drawn (Malhotra & Birks, 2003: 363). A combination of stratified and systematic random sampling techniques will be used. The client list will be used as the sample frame from which the sample will be drawn.

1.4.2.3　　　Sample size

The determination of a sample size is usually a subjective, intuitive judgment made by the researcher based on past studies (Zikmund, 2000: 519). Using the historical evidence approach, the sample size will be set at a minimum of 260 customers. The size of the sample was based on the studies undertaken by Kim and Jin (2002: 226) on service quality attributes.

1.4.2.4　　　Method of data collection

A quantitative research technique will be used in this study. In quantitative research, the data is quantified to apply statistical techniques in order to draw inferences (Malhotra & Birks, 2003: 766). The survey method will be used to obtain appropriate data through face-to-face interviews. Face-to-face interviews help to reduce the anxiety of the respondent, thereby increasing the response rate and decreasing the potential for measurement error (Tustin *et al.,* 2005: 344).

1.4.2.5　　　Measuring instrument

The study will gather data using a structured questionnaire. The questionnaire will be divided into four sections, namely demographics, expectations, satisfaction and loyalty.

1.5　　　　STATISTICAL ANALYSIS

Data will be analysed using descriptive and inferential statistics. Tables and figures will be used to make comparisons in the demographics data. Data captured on customers' perceptions will be analysed using measures of central tendency (mean) and measures of variability (standard deviation). Factor analysis will be used to establish relevant service quality dimensions. The reliability and validity of the measuring instrument will also be

tested. The Statistical Package for Social Sciences (SPSS), version 16.0 for Windows, will be used for the data analysis.

1.6 CHAPTER CLASSIFICATION

Chapter 2: Industry profile, customer services and service quality - This chapter will provide an overview of the dynamic nature of the precast concrete manufacturing industry. In addition, it will deal with managing customer relationships using customer services and methods of creating customer value. Service quality and customer satisfaction will also be highlighted.

Chapter 3: Research design - This chapter focuses on explaining the research methodology employed in the empirical section of the study. The sampling method and data collection method will be discussed. Data analysis and statistical techniques will be outlined.

Chapter 4: Analysis and interpretation of results - This chapter entails the analysis, interpretation and evaluation of the research findings.

Chapter 5: Recommendations - This chapter will present the recommendations based on the main objectives and findings of the study.

1.7 DEFINITIONS

The following definitions are relevant to this study:

1.7.1 Service is a process consisting of a series of more or less intangible activities that normally, but not necessarily always take place in interaction 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 problems (Grönroos, 2000: 46).

1.7.2 Service quality is "the consumers' evaluative judgment about an entity's overall excellence or superiority in providing desired benefits" (Arnauld, Price & Zinkha, 2002: 327).

1.7.3 Customer service "is anything we do for the customer that enhances the customers' experience" (Harris, 2000: 32).

1.7.4 Cementitious products are products containing cement (Patel, 2006: 66). The term cementitious refers to Portland cement on its own, or cement blended with an extender e.g. ground granulated blastfurnace slag (GGBS), silica fume and fly ash (http://www.cnci.org.za/info_stats.htm)

1.7.5 Precast concrete it is an old type of construction material made with concrete cast in a reusable mold or form and cured in a controlled environment; then transported to construction site and lifted into place for its purpose (Free Encyclopidia, 2008).

1.7.6 Customer satisfaction is consistently doing something of value for customers in a way they want or expect it to be done (Levy & Weistz, 2001: 152).

1.7.7 Customer loyalty according to Dick and Basu (1994: 100), "customer loyalty is viewed as the strength of the relationship between an individual's relative attitude and their repeat patronage".

1.7.8 Customer expectations may be defined as "beliefs about service delivery that function as standards or reference points against which performance is judged" (Zeithaml & Bitner, 2000: 48).

1.7.9 Validity is the ability of an instrument to measure what it is intended to measure (Zikmund, 1999: 222).

1.7.10 Reliability is the similarity of results provided by independent but comparable measures of the same object or construct (Churchill & Iacobucci, 2005: 295).

1.7.11 SERVQUAL is "a concise, multiple-item scale that organisations can use to better understand the service expectations and perceptions of consumers, and as a result, improve service" (Parasuraman, Zeithaml & Berry, 1988: 30).

1.8 SYNOPSIS

Marketing research is a tool that companies use to discover customer's perceptions and expectations in the quest to satisfy their needs. This chapter presented an overview of how the South African construction companies operate within the global market economy. Subsequently, the importance of competitiveness and a continuous fight for market share by these firms was highlighted. The importance of delivering quality services with the emphasis on ensuring customer satisfaction was outlined. Different problems encountered by customers within the precast concrete manufacturing sector were also mentioned. The objectives of the study and research design were outlined. Finally, the sequence which this study will follow was also indicated.

CHAPTER 2

INDUSTRY PROFILE, CUSTOMER SERVICES AND SERVICE QUALITY

2.1 INTRODUCTION

In the previous chapter, the effect of deregulation on the South African economy, which has opened the country up to intensive competition from the international business, was briefly discussed. The problem statement, objectives of the study and the research design were outlined.

In this chapter, a review of literature emanating from other related research and reports is presented in order to gain an insight into the precast concrete industry. Customer service and service quality will be discussed and analysed. Various related concepts such as expectations, perceptions, customer relationships and customer satisfaction will be presented. A discussion of service quality from both marketing and operations management perspectives will be explored.

In the next section, a generic perspective of the precast concrete industry will be discussed and highlighted, focusing on the transformational perspective of the entire set of activities necessary for delivering quality service to customers.

2.2 GENERIC PERSPECTIVE OF THE PRECAST CONCRETE INDUSTRY

The concrete industry is vital to economic development and employment in communities. It is a diverse industry consisting of thousands of concrete operations in more than 95 percent of concrete-related companies (Tolly, 2005: 4). Precast concrete in particular is

an old type of construction material made with concrete cast in a reusable mold or form and cured in a controlled environment; then transported to construction site and lifted into place for its purpose. In contrast, ancient Roman builders made use of concrete and poured materials into molds to build complex networks of aqueducts, culverts and tunnels (Woodruff, 1998).

Currently, a precast concrete application touches many aspects of lives. Key features that these elements offer are quality, value and performance. Although often considered part of the cement and concrete sector, the precast concrete industry is large and diverse. It can be considered a sector in its own right. Precast concrete products are manufactured to high quality standards of labour-intense and automated processes. Ó Murchú (2004: 3) states that the general advantages of precast concrete production are that:

- It has in-built fire resistance, does not burn, produce smoke, contribute to the fire load or produce poisonous gasses
- It has an inherent sound and vibration-reduction properties
- It delivers significant cost savings by reducing formwork by up to 70 percent and reliance on wet trades by up to 90 percent
- It involves fast production and high quality due to the industrialised production process
- It's quality control is efficient
- Production is independent of weather/season
- It involves reduced construction programmes, greater project control, greater accuracy and quality of finish and larger clear spans.

These advantages offer increased quality of the material, when formed in controlled conditions and the reduced cost of constructing large forms used with "poured-in-place" concrete (Woodruff, 1998). This also means that precast concrete elements arrive on site fully cured and at full strength. There is no pouring of concrete on site and therefore no risk of a forming or shoring collapse. In fact, there is little risk of any injury when building.

The industry is traditionally diverse and fragmented due to the wide variety of products and technologies made possible by the versatility of the material. This diversity can be a powerful driver of innovation and development, but needs a focal point to ensure that the complexity and flexibility of this material are communicated as a competitive advantage (Holton, 2005: 3). Despite all these diversities, the precast industry consistently follows the same goal: to manufacture products of high quality concrete components that satisfy the industrial, economical requirements and maintain profitability in the face of rising materials, labour and equipment costs during a period of falling prices (BASF, 2006: 2).

2.3 INTERNATIONAL PRECAST CONCRETE SECTOR PROFILE

Concrete is now the most widely used construction product in the world. The United Kingdom (UK) government has been making strides towards attaining sustainable construction with its policies and programmes also including publishing a sustainability strategy for the industry (Holton, 2005: 1). British Precast, an organisation representing the precast concrete production and masonry sectors for the UK construction industry, has identified some of the key advantages in specifying a precast concrete solution. These solutions include *inter-alia* the following:

- Excellent value

- Long spans

- Low maintenance

- Attractive finishes

- Reduced site waste

- Strength and Durability

- Lowest whole-life cost

- Sustainability

- Strength increases over time

Figure 1 reflects the worldwide cement production by region, while Figure 2 depicts the annual cement consumption of 16 European countries.

Figure 1:   Worldwide cement production by region – Evolution 2000-2006

Index 2000=100 (Metric Tons)
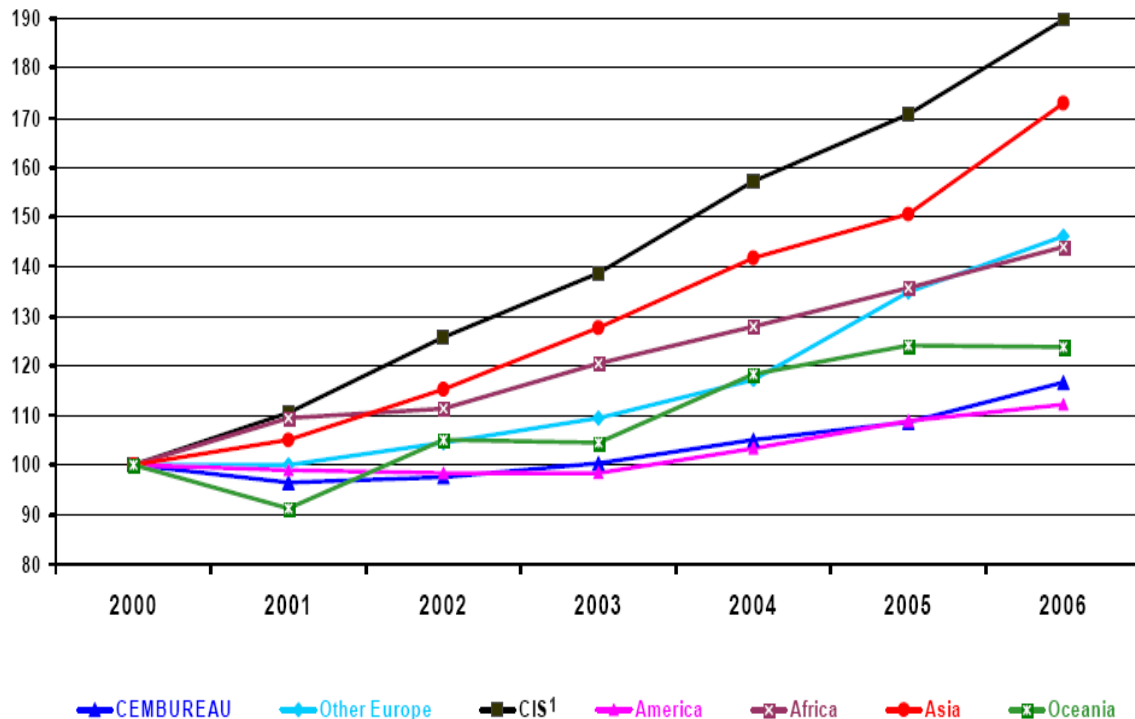
Source: (Cembureau, 2006: 2)

Figure 1 shows that worldwide cement production is lead by the European Commonwealth Independent States (CIS) countries with 190 metric tons (Mt) output of cement, followed by Asia with 173 (Mt) of production for the year 2006. This indicates how both regions dominate with the use of cement and cementitious products. Since the year 2002, the African region has seen considerable increase in the production of cement and this might have come as a result of the evident boom in the construction industry and more so in the southern hemisphere of the continent. From 2005 to 2006 cement production in the African region increased from 135 to 148 (Mt).

Figure 2:   Annual cement consumption of 13 European countries

(total cement = 199 metric tons)
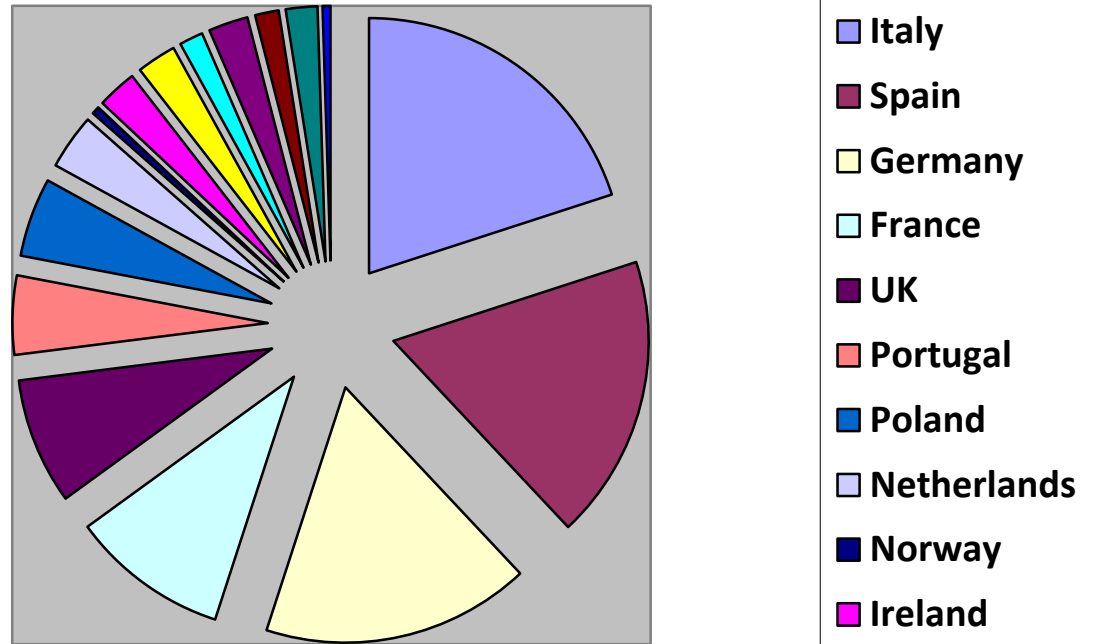
Source: (ECOserve: 2004: 33)

Figure 2 shows that countries like Italy, Spain and Germany dominate the consumption of cement as compared to other neighbouring countries. The use of concrete is expected to increase drastically as developed countries repair and rehabilitate their ageing civil infrastructure and put more emphasis on achieving economic and social development (Rehan, Nehdin & Simonovic, 2005: 100). As for the pre-cast concrete product applications, Figure 3 illustrates trends by some of the European countries from the year 1995 to 2003 as to how this form of product has been used.

Figure 3:   Trends for the application of precast concrete elements
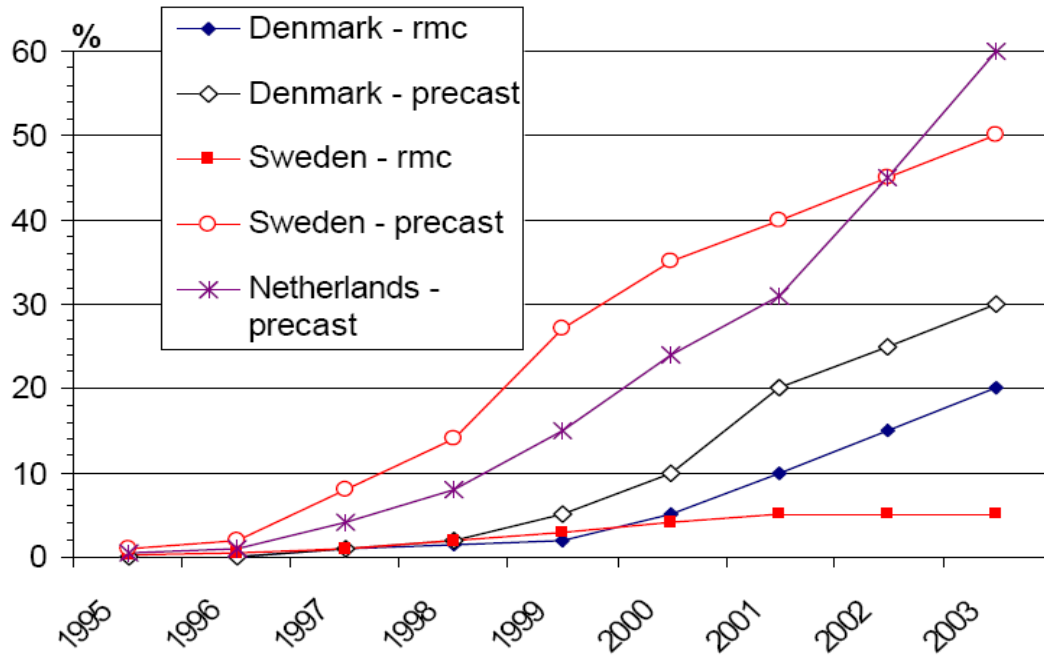
Source: (ECOserve, 2004: 46)

While the trends are predicted within a European context, a South African perspective of the precast concrete sector is discussed in the next section.

2.4   SOUTH AFRICAN PRECAST CONCRETE SECTOR PROFILE

Generally, markets have evolved over the years because of major societal forces such as technological advances, globalisation and deregulation (Kotler, 2000: 26). This is also true for the local South African market in terms of cementitious products within the concrete industry. Following the first democratically elected government 15 years ago, significant changes came about in the political and economic situation within the country, which brought about fundamental changes in the cement and concrete industry. These changes resulted in the broadening of concrete products and the range of concrete applications with respect to the requirements for physical and mechanical characteristics, quality of materials as well as durability. With the industry experiencing one of its

biggest growth rates in 2008, fuelled by the government's investment in infrastructure development, Housing, Gautrain project and the 2010 FIFA Soccer World Cup™ South Africa event as well as other commercial ventures, the current growth experienced may probably continue until well after 2012 (Poggiolini, 2007: 1).

One of the most affected players in the market is Eskom, the country's national electricity supplier. The parastatal is under increasing pressure to expedite its R150 billion capacity expansion plans to ensure reliable supply of electricity from the following projects: Arnot capacity increase, Ingula pumped storage, completion of return to service projects at Grootvlei, Camden and Komati, and new coal base station projects, Medupi and Project Bravo. Eskom also plans to erect 12,197km of transmission lines between 2007 and 2015. Overall peak demand for major infrastructure inputs for transmission and generation projects are expected to occur in 2008 and 2009 (Eskom, 2007: 9). The cementitious product demand within the seven end user sectors between the year 1999 and 2002 are illustrated in Table 1 below.

Table 1:   **Sales by end user sector between 1999 and 2002 (Volume in tons)**

End User Sector	1999	2000	2001	2002	% change 02 vs 01
Concrete Product Manufacturer	1 297 950	1 460 701	1 513 676	1 618 932	6.95
Ready-mix producers	1 076 051	1 142 686	1 036 998	1 209 762	16.66
Resellers	4 658 123	4 433 997	4 564 945	4 773 070	4.56
Civil Construction (Direct)	414 558	442 219	444 611	401 759	-4.34
Building Construction (Direct)	780 724	671 337	715 514	669 945	-9.64
Mining	246 520	224 323	221 988	232 430	4.70
Blenders	315 122	406 896	450 041	448 786	-0.28
Other	218 551	209 271	217 411	269 586	24.00
Total Sales	9 007 599	8 991 430	9 165 184	9624 270	5.01

Source: (C&CI, 2002: 23)

Cement Manufacturers Association (CMA) estimates that the growth within the concrete manufactured products market to be between 8 and10 percent for 2007 and 2008 and to

remain static for 2009 and 2010. A consistently high level of growth in the construction industry since 2001 has witnessed a concomitant surge in demand for precast concrete products. No let up seems likely as the build up to the 2010 World Cup ™ South Africa gathers pace, and several precast concrete manufacturers are increasing production capacity, either through the expansion of existing plant or through the addition of completely new factories (Beer, 2007:4). Table 2 reflects six major owner manufacturers in South Africa.

Table 2: **Company and ownership structure of cement companies, associations and organisations as at 31 March 2003**

Company	Holding company*
PPC Cement Ltd	PPC Group, which is owned by Barloworld Limited (71, 6%)
Lafarge South Africa	Lafarge Group, which is owned by Lafarge SA
Holcim South Africa	Altur Investments (Pty) Ltd [owned by Holcim Limited (54%), & Aveng Limited (46%)]
	100% Cimentos de Portugal SGPS S.A. (Cimpor)
Cimpor	75% Lafarge SA, 25% Roshcon (subsidiary of Eskom)
Ash Resources (Pty) Ltd	100% Holcim Limited
Slagment (Pty) Ltd	

Source: (Cement & Concrete Institute, 2006: 5)

Pretoria Portland Cement (PPC), Alpha, Lafarge SA (formally Blue Circle) and Natal Portland Cement (NPC) dominated the industry for years. Since 1988 much of the structure and capacity have remained the same. However, in 2002, NPC (with ownership equally split between Alpha, Lafarge and PPC Cement) was sold to Cimentos de Portugal (Cimpor). Recent developments include the takeover of all Blue Circle's production; blending and distribution facilities by Lafarge International as well as Holcim's 54 percent acquisition of Alfa (refer to Table 2). Ash Resources and Slagment are two

cement organisations that are part-owned by the major cement producers, Larfarge SA and Holcim Limited respectively. In 2004, cement sales (by mass, excluding exports) increased by 15.5 percent to 11.7 Mt – the highest volume sold in ten years. This scenario is reflected in Figure 4 while the provincial demand for cement sales is reflected in Figure 5.

Figure 4:   Regional sales (cementitious binders) 1995 – 2004
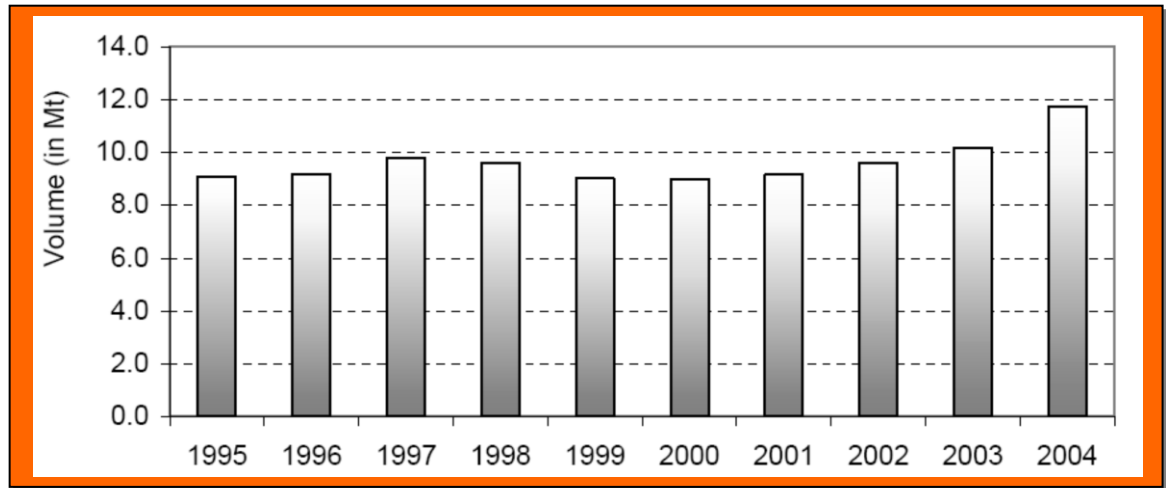
Source: (C&CI, 2006: 2)

Figure 5:   Actual cement sales by province 2004
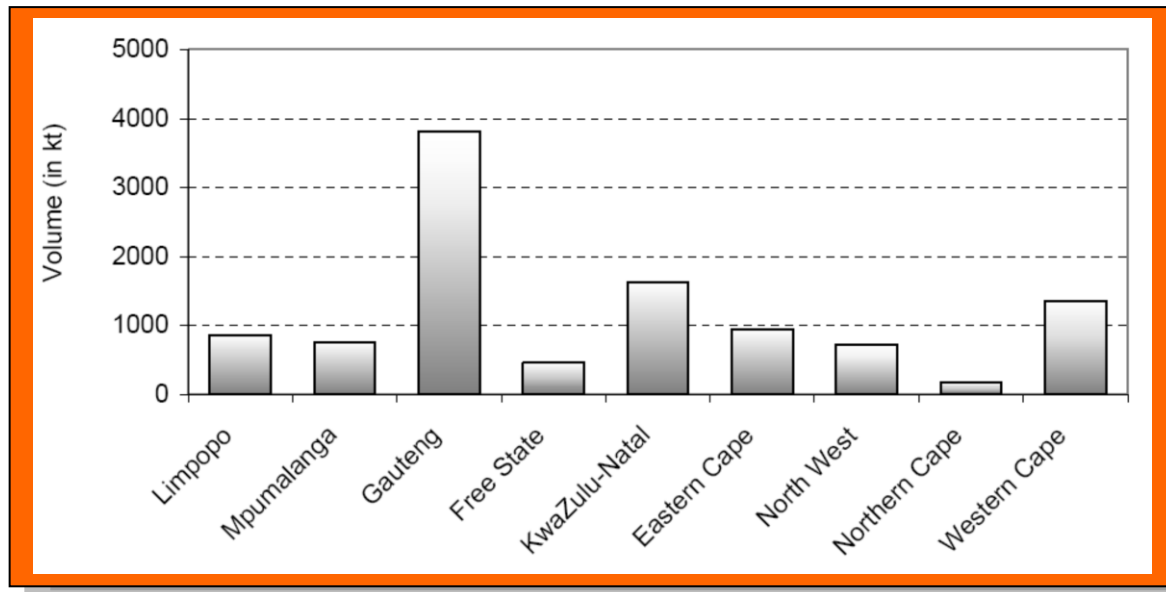
Source: (C&CI, 2006: 3)

Figure 5 shows how Gauteng province leads the other provinces with 3980 cement volume in Kilotons (kt) followed by KwaZulu Natal with 1800 (kt) and the third highest being Western Cape with 1600 kt cement volume. These figures indicate how the South African construction sector, consumes cement in the wake of the industrial boom leading to the year 2010.

Erasmus (2007: 35) stated that with the cement shortage, which began in 2004 and continues to feed an insecure South African construction sector, the dearth of cement can be attributed to two main factors:

- The unexpected boom in construction after a 30 year-long decline in cement sales.
- The apparently bottomless pit of the 2010 infrastructure programme, which has absorbed most of South Africa's cement supply.

In addition, a substantial increase in public sector infrastructure investment expenditure, estimated to amount to R415,8 billion for the period from 2007-2008 to 2009-2010, is a key driver of the Accelerated and Shared Growth Initiative for South Africa (Asgi-SA) a government programme intended to take construction within the following main areas:

- Eskom
- Transnet
- Gautrain
- Preparations for the 2010 FIFA World Cup™ South Africa
- Coega Industrial Development Zone
- Roads and Airports Infrastructure
- Expanded provision of Housing
- Municipal and Provincial Infrastructure
- Other investment by National Departments

The proposed increase in investment will substantially expand the demand for infrastructure inputs including construction materials especially cementitious products (National Treasury, 2007: 45).

In 2006 a shortfall was reported of five million tons of cement, with production of only 13 to 14 million tons by the country's four big producers, Natal Portland Cement, Pretoria Portland Cement, Lafarge and Holcim, who expected positive growth for the next 10 years taking into account government infrastructure development (C&CI, 2006: 3). All four producers were still importing cement, with three of them "frantically" building new plants.

NPC was building a 600 000 ton capacity kilonutons scheduled to have gone on stream in August 2007, PPC had a 1,25 million ton kiln scheduled for completion in the second quarter of 2008, while Lafarge planned to have a 1 million ton capacity kiln running later in 2008. These projects were completed on time and boosted the alleviation of cement shortage in the country.

The capacity increases came as a result of cement been in short supply with the construction of new soccer stadia for the 2010 FIFA Soccer World Cup ™, the Gautrain and a surge in Government Housing (RDP's) countrywide. Figure 6 shows a detail overview of production, milling or blending units and distribution points in the country (C&CI, 2006: 12).

Figure 6: **South African cement and concrete industry, networks of producing, milling and distribution units**

Milling / Blending Units

1	Polokwane – *Lafarge SA*
2	Potgietersrus – *Alpha*
3	Roodepoort – *Alpha*
4	Brakpan – *Alpha*
5	Kaalfontein – *Lafarge SA*
6	Jupiter – *PPC Cement*
7	Middelburg – *Alpha*
8	Nelspruit – *Lafarge SA*
9	Newcastle – *Natal Portland Cement*
10	Richards Bay – *Lafarge SA*
11	Bloemfontein – *Alpha*
12	Durban – *Natal Portland Cement*
13	Matsapha (**Swaziland**) – *Alpha*
14	Gaborone (**Botswana**) – *PPC Cement*

Production

1	Slurry – *PPC Cement*
2	Lichtenburg – *Lafarge SA*
3	Dudfield – *Alpha*
4	Dwaalboom – *PPC Cement*
5	Hercules – *PPC Cement*
6	Ulco – *Alpha*
7	Simuma – *Natal Portland Cement*
8	Port Elizabeth – *PPC Cement*
9	De Hoek – *PPC Cement*
10	Riebeeck – *PPC Cement*

Source: (C&CI, 2006: 12)

The Chief Executive officer of PPC Dr. Fenn, states that "it is doubtful whether anybody could have accurately predicted this astronomical growth in the demand for cement" (Poggiolini, 2007: 1). Table 3 below outlines various sectors in South Africa using cementitious products and their cement demand patterns measured in tons and percentages over a certain period, while Figure 7 shows the buying sectors of cementitious products in a percentage for the year 2006.

Table 3:   Buyers of cemetitious products (tons) – regional history in South Africa

Sector	2002	2003	2004	2005	2006	% Change 05 vs. 04
Mining	232785	252490	241840	269580	243738	-8.6
Concrete Product manufacturers	1621599	1664447	1968461	2073049	2393271	15.4
Ready mix producers	1190036	1274538	1547340	1890301	2295857	21.5
Resellers	4776806	5067927	5889771	6443772	7023248	9.0
Civil Construction (direct)	409222	428944	366949	539427	583877	8.2
Building Construction (direct)	665579	648150	704425	693396	672211	-3.1
Blenders	508294	606380	780609	833251	839577	0.8
Others	219367	220294	236605	232486	205258	-11.7
TOTALS	9,623,688	10,163,170	11,736,000	12975,262	14257,037	9.9
Growth	5.0%	5.6%	15.5%	10.6%	9.9%	

Source: (C&CI Review 2006: 4)

Figure 7: **Buying Sectors of Cementitious Products in a percentage format in 2006**

Concrete Products 17%

Readymix 16%

Mining 2%

Other 1%

Blenders 6%

Building 5%

Civil 4%

Resellers 49%
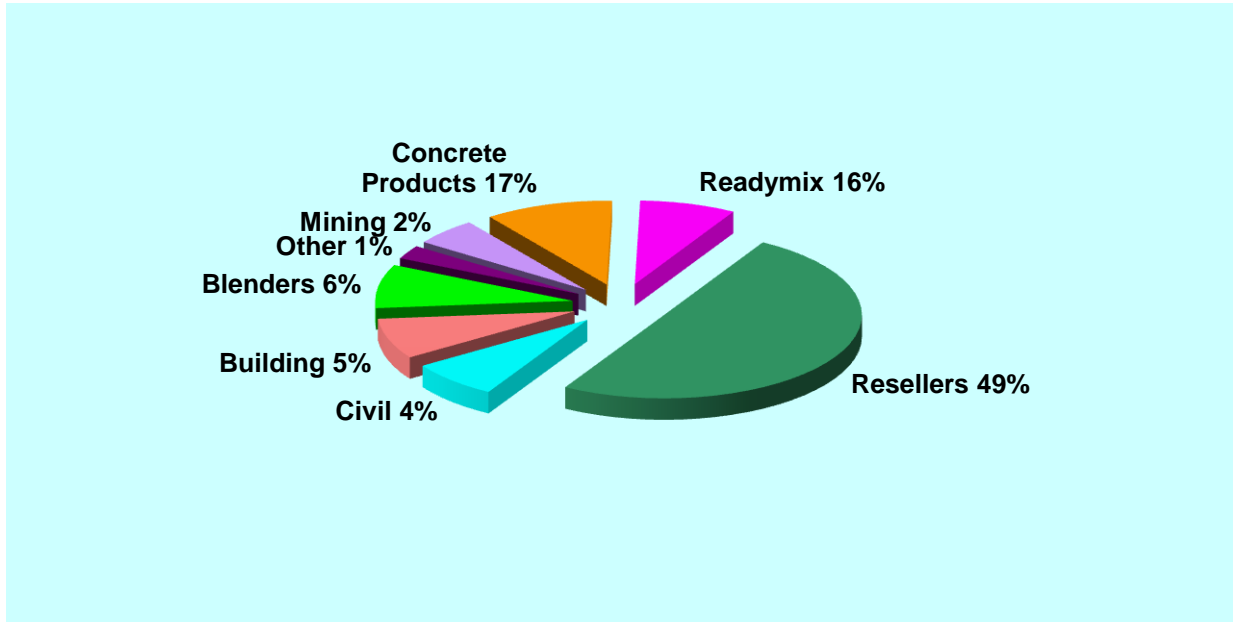
Source: (C&CI Review 2006: 4)

However, it is doubtful whether such a surge in cement growth rates will continue with the current economic crisis triggered in the USA, mainly through a large number of sub-prime housing loans made available to many American households, beyond the levels which people could afford. This economic crisis has subsequently filtered through to the rest of the world (Patel, 2006: 1).

Despite such developments, the need for high levels of customer service quality is expected from any service provider to remain strong and competitive. After examining the South African precast concrete industry's current profile, it can be seen that for any business involved within the construction industry, sustainability and competitiveness is of paramount importance for survival. Thus, the next section explores in detail the status quo of the organisation in the study.

2.5 COMPANY PROFILE

The following information on the company in question was extracted from the company's internal documents with management permission.

2.5.1 Background

The Company specialises in the manufacture and supply of precast concrete products and it is a family-owned company. The sales activities are carried out through multiple channels, telesales, regional sales representatives and key accounts salespeople. This activity is mainly focusing on customer contact.

Inside its factories, skilled, semi-skilled and unskilled staff transform selected natural ingredients into solid cast products which are distributed country-wide and beyond the borders of South Africa. Demand for these premium products has grown rapidly in excess of 35 percent per year, which has forced the operations department to examine ways of expanding capacity in order to meet the demand. At the same time the competitive need to continue to introduce new, improved types and shapes has created an ever-widening range of products for operations to produce, pack, store and distribute.

The company is a relatively small producer that makes more than 100 different precast concrete products in a vast range of specifications to suit its different niche markets. Operating on an area of 30 000 m² the company's main factory is equipped with 2 batch plants, vibration machinery and mould-making equipment used for the production of a multiplicity of different concrete products. The 370-employee company provides precast concrete products for road and storm-water infrastructure, power-supply infrastructure, water-reticulation systems and stadium sitting beams within the construction industry.

Over the last 3 years, the company has invested carefully to achieve improvements in productivity through automation, but at the same time it ensures that maximum flexibility

is build in at every stage of production. There are two basic methods of production used: Press Cast and Hand Moulding Cast. **Press Cast products** are manufactured using a wet cast press machine bought from Germany, which moulds them into appropriate solid products. The **Hand Cast products** department operates by mixing (cement, sand, stone and water) into a steel mate mould in different sequences and combinations to suit the individual product design. Owing to a wide variety of products made this way, planning is complex, with the sequence of products being critical to productivity, utilisation and quality.

The company has emerged as one of the strongest suppliers of precast concrete in the industry and it is currently one of the largest in the infrastructure sector in Southern Africa. The company continually strives towards modernisation and improvement in order to maintain its place in the market. It benefited greatly from the current construction industry boom and economic changes experienced in the country. These changes have lead to an upswing in the cement and concrete industry.

The company has experienced high growth in terms of sales volumes and order rates. The company remains optimistic about sustaining this growth over the next 5 years. Management at the company believes that the best way of achieving results is to give customers exactly what they want and also to treat each and every customer as an individual. The aim is to exceed customer expectations. Thus the company seeks to be seen as a very customer-oriented organisation even though the organisation maintains a small company mentality with great attention to detail.

The company aims to maintain and enhance a world-class service and it has realised that to achieve this, there is a need for a large amount of technological investment. There is an efficient support infrastructure and a high level of technology present which enables staff members to deliver the highest levels of service. This in turn will lead to improved productivity and increased long-term profitability.

On the 1st January 2007 a BEE company bought 51 percent company ownership shares and became the majority shareholder, while the company remained with a 49 percent share. The latter deal brought about a financial boost and added value in many forms. In its quest to improve operations capacity and the company's strategy of providing a wide range of high quality well-presented products, the company bought from Germany its third wet cast machine with a production capacity of 3000km of precast concrete kerbing per day in two shifts of eight hours respectively.

The organisation prides itself on advanced technologies, as it is the only company in Africa to be in possession of such technology. Flexibility, which was initially provided by skilled labour, has been supplemented and enhanced by automated lines, which allow both quick changeovers and alternative routings. More innovative products can be developed and brought quickly into production because of the inherent flexibility, which was designed into the lines.

2.5.2 Company's sales department and market segmentation

The salesperson's roles or activities vary according to whether or not sales involve goods or services, the firm's market characteristics and the location of customers. The salesperson functions as a territory manager, which requires planning, organising and executing activities that increase sales and profits in a given territory. The company's salespersons are expected to perform the following nine functions, as illustrated in Table 4.

Table 4:   Sales representatives' responsibilities

Sales representatives' responsibilities
• Create new customers
• Sell more to present customers
• Build long-term relationships with customers
• Provide solutions to customers' problems
• Provide service to customers
• Help customers resell products to their customers
• Help customers use products after purchase
• Build goodwill with customers
• Provide company with market information.

Source: (Company file: 2006)

The company deals with six regional markets and four targeted customer groups. These groups are listed below:

- Private Customers (home owners also termed 'domestic customers')
- General contractors
- Municipalities
- Consultants and Architects

2.5.3   Competition

During the past two decades, the global marketplace has changed and the South African precast concrete manufacturing sector is no exception. Manufacturers and supplier companies have had to deal with new competitors entering the market as a result of opportunities that surfaced after the new dispensation in 1994. For the company in the study it is no different, as it finds itself competing with a number of companies offering

the same products and services. Table 5 below illustrates a list of all major companies competing in the same market.

Table: 5   List of major competitors

COMPANY NAME	AREA OF OPERATION
Cape Concrete	Country wide
Blitz Concrete RSA	Country wide
Salberg Concrete	Country wide
Cast Industries	Country wide
Infraset	Country wide
Rocla	Country wide
Concor Technicrete	Country wide
Bosun Bricks	Country wide

Source: (Company file: 2006)

All these companies including the organisation in question are fighting for a market share in the South African construction industry boom. They compete with companies from the developed countries and some other developing countries in their programme of action to find and expand markets for their manufactured products (Makgetlaneng, 2005: 245). This author further states that, these suppliers can and do produce manufactured goods of high quality more cheaply because of their dominant position in research and development and advanced science-based production methods. They have effective access to small and large markets on an international scale, which the South African manufacturing companies do not have. Their dominant position in research and development and advanced technology enables them to have effective competitive advantage and to command higher prices for their products on the world market.

It is well known that service providers who intend to increase their customer base and compete for market share need to provide excellent customer service at all times. Keeping customers requires that service providers are continuously creative in matching

their needs and offer superior services to be able to acquire and retain support. Hence, a general perspective of customer service is discussed in the next section.

2.6 CUSTOMER SERVICE

2.6.1 Nature and definition of services

Services are a process consisting of a series of more or less intangible activities that normally, but not necessarily always take place in interaction 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 problems (Grönroos, 2000: 46; Lentell, 2000: 6).

Clark, Johnston and Shulver (2000: 72) define a service concept as 'Service in the Mind' a mental picture of the whole service that encapsulates the nature of the service business that captures the value, form and function, experience and outcomes of the service. Grönroos (1988: 10) claimed that "a service is not a thing but a series of activities or processes produced and consumed simultaneously at least to some extent". Furthermore, the author advocated that these activities take place in interaction between the customer and service employees of the service provider. While Mohr and Bitner (1995: 239) state that a service can be seen as an outcome or "what the customer receives".

Recently, the definition of services has aroused new interest and fresh interpretations. When trying to solve service quality problems, businesses are dealing with something far more complex than a relatively simple machine or automated production line – they are dealing with the complexities of the human brain in the form of staff attitudes and behaviour as well as the complexities of consumer perception (Kolb, 2004: 37).

Customer service is generally described in terms of the elements of the marketing mix of an organisation whereby certain elements of the marketing mix (product, place, price,

promotion) are intentionally manipulated to distinguish the service of one organisation from that of the others. Managers and academics have thus become more concerned with customer service in relation to its contribution towards service quality (Spreng & Mackoy, 1996: 201).

Harris (2000: 32) states that "customer service is anything we do for the customer that enhances the customers 'experience'". If customers do not receive the service they expect, they tend to go elsewhere (Graham, 1994: 25). For example, when a customer is used to receiving deliveries a week after placing an order and the service provider, in a quest to improve services, suddenly delivers within 24 hours after receipt of an order, that experience for the customer will go a long way as customer expectations are exceeded and chances of going elsewhere are reduced.

Understanding customer service is one essential priority for precast concrete manufacturing companies. Michel, Brown and Gallan (2008: 55) suggest that increasingly, companies are recognising that in a service context, customers are actually "co-creators" of the service and the value derived from services comes through usage and co-creation rather than exclusively through service provision or delivery in the traditional sense.

While merchandise can be held and examined, a service such as the assistance that is provided by a salesperson cannot. The intangibility makes it difficult objectively to evaluate customer service. When manufacturing precast concrete products for example, the quality of what is produced must be consistent from one item to another (Levy & Weitz, 2001: 587). It is thus imperative for companies to listen to what customers are saying in terms of consistency and standards of products and services (Pritchard, 2001: 142). Despite a wealth of research on the elements of customer service, the definition of customer service remains blurred: confusion regarding the meaning and relatedness of the relevant construct still exists (Winsted, 1997: 337). A customer's experience is of utmost importance in ensuring a long-lasting relationship or partnership between the service provider and the client. The

value of the product is directly related to the overall quality service the customer receives (Berry & Parasuraman, 1992: 5).

In the current market economy when a company's priority is to enhance its service quality, it is essential to identify the service quality characteristics that require improvement as well as the organisational features that could influence them. Unfortunately, for quite some time the emphasis in research has been on products and production processes rather than on service (Calif, 2001: 16).

2.6.2 Characteristics of customer services

A number of researchers agree on the four key characteristics of service (Schneider & White, 2004: 6; Lentell 2000: 15). Measuring service quality poses difficulties. This is also true in the precast concrete manufacturing sector as it is confronted by the unique characteristics that distinguish services from goods. This characteristic includes intangibility, heterogeneity, inseparability and perishability (Grönroos, 1998: 323). These characteristics are explained below.

Intangibility is the primary characteristic that differentiates a service from a product (MacKay & Crompton, 1988: 41). A pure service that cannot be seen, touched, held, or stored has no physical manifestation. Because of their intangibility, pure services do not result in anything that can be packaged and put in a bag to take home (Schneider & White, 2004: 6).

According to Lovelock and Gummeson (2004: 24-25), dimensions of intangibility are:
- Physical intangibility, which refers to that which is impalpable or that which cannot be touched.
- Mental intangibility, which points to the degree to which a service can be, visualised and can provide a clear and concrete image before purchase.

- The generality which encompasses the notions of accessibility versus inaccessibility to the sense, abstractness versus concreteness and generality versus specificity. Services cannot be seen, tasted or felt in the same manner in which physical goods can be sensed, they cannot be stored and they are difficult to duplicate (Kotler, 2000: 429).

Bateson (1979: 139) used the term "double intangible" and he makes a distinction between "physical intangibility" (that which cannot be touched) and "mental intangibility" (that which cannot be mentally grasped). Figure 8 below shows the differences between goods and services within the framework of tangibility and intangibility.

Figure 8: **The difference between goods and services**

Goods	Services
Tangible	Intangible
Homogenous	Heterogeneous
Production and distribution	Production, distribution, and consumption simultaneous
Nonperishable, can be kept in stock	Perishable, cannot be kept in stock
A thing	An activity or process
Core value produced in a factory	Core value produced in buyer-seller interaction
Customers do not (normally) participate in production	Customers participate in production
Transfer of ownership	No transfer of ownership

Source: **(Grönroos, 2000: 47)**

Tangibility-intangibility can be treated as dichotomous and it is clear that the dichotomy exists on a continuum (Laroche, Bergeron & Goutaland, 2001: 27). Goods and services actually form a continuum of products. Products have goods and services dimension

(Fitzsimmons & Fitzsimmons, 2004: 21). Lovelock and Gummeson (2004: 25) provide three dimensions of intangibility listed below:

- physical intangibility
- mental intangibility
- generality

Heterogeneity of services on the other hand suggests that deliveries may vary from time to time because people are involved in the supply and delivery of services, and each customer is different (Klassen, Russell & Chrisman, 1998: 1). These authors further claim that the intangible nature of services, products and interaction with customers and employees creates a problem with measurement of inputs. This draws attention to the fact that employees within a manufacturing company with the same qualities and capabilities may render services to customers differently.

Woodruff (1995: 19) states that because services are unique and intangible, there is limited scope for standardisation of services. Edvardsson, Gustafsson and Roos, (2005: 117) identify two ways of looking at heterogeneity:

- Service providers and service processes tend to be heterogeneous
- The production within a given company tends to be heterogeneous due to employee-induced variation and variation among customers in terms of needs and expectations. This characteristic focuses on the provider perspective rather than on the customer and value-in-use perspective.

Johnson, Menor, Roth and Chase (1999: 2) caution that, given the inherent differences between the production of goods and services - particularly the role of customer contact in service delivery - service heterogeneity of demand for services might not suffice in adequately describing how new services are optimally developed.

Inseparability refers to a service, which is both simultaneously produced and consumed. Lovelock and Gummesson (2004: 28) and (Kotler, 2000: 431) suggest that a group of

separable services exist that do not involve the customer directly: for example delivery of precast concrete products to sites. During the transportation of these goods, the consumer is not present and such a consumer will only be involved in the service when delivery takes place. Evaluation of services that are generally produced and consumed simultaneously; must be made during the process of consumption. Moreover, unlike goods, it is impossible to produce a service or see if there are any defects delivered to customers (Schneider & White, 2004: 7).

Perishability of services refers to the service which cannot be saved or stored for reuse at a later date (Lovelock & Gummesson, 2004: 37; Kotler, 2000: 432). A concern with this characteristic is how service companies can deal with issues related to perishability. Gaither and Frazier (1999: 820) considered three different schemes for producing and delivering services with respect to the application of production processes for services:

- *Quasi-manufacturing:* An example of this approach would be in a manufacturing plant of precast concrete (channels) products. In this case, physical goods are dominant over intangible services and there is little customer contact. The distinguishing feature of this scheme is that production of goods takes place along a production line with almost no customer involvement in the production process.

- *Customer as participant:* An example of this approach would be at factory service. Physical goods may be an essential part of the service and services may therefore be customised. The distinguishing characteristic of this approach may be customer involvement in the process of generating the service.

- *Customer as a product:* An example of this approach may be special request or product design by a customer. Such schemes provide customised services and a high degree of customer contact. The distinguishing feature of this approach is that the service is provided through personal attention to the customer. This can provide a perception of high quality.

Edvardsson *et al.* (2005: 115) concluded that service companies should not generalise the characteristics to all services, but use them for some services when they are relevant and in situations where they are useful and fruitful. Analysis of the concept of service and service characteristics shows that the definitions are too narrow and the characteristics are outdated as generic service characteristics.

It is evident from the above discussion that if customers continually receive good service from a service provider, they will develop levels of commitment and trust and eventually create an enduring relationship. The next section explains customer supplier relationships in detail.

2.7   CUSTOMER-SUPPLIER RELATIONSHIPS

Anderson and Narus (1991: 96) define relationships as a process where two firms "form strong and extensive social, economic, service and technical ties over time, with the intent of lowering total costs and/or increasing value, thereby achieving mutual benefit".

According to Davis (2008: 310), relationship-building attributes include: a desire to continue a commitment relationship; a belief that a relationship partner will be trustworthy and perform effectively; and finally there is an understanding of a client's problems. This author further states that relationships are not restricted to one type of partner and there are different modes of interaction within various areas of economic exchange. These relationships are described below:

- Relationships with customer: In order to be truly customer-oriented a firm needs to develop good working relationships with its customers because it is these relationships, which allow a firm to understand customer's needs and to serve them accordingly.
- Relationships with suppliers: No single firm produces products and services on its own for itself. Instead, firms are embedded in complex value-creating

systems, which only function competitively if good business relationships are developed.

Anderson and Narus (1991: 45) define cooperation as similar or complementary, coordinated actions taken by firms in interdependent relationships to achieve mutual outcomes or singular outcomes with expected reciprocation over time. Manufacturing companies stress that service never ends. According to Mathieu (2001: 40) the mission is not just to make the product work, but to help the client maximise all the different processes, actions and strategies that are associated with the supplier's product. Panayides and So (2005: 182) viewed relationship orientation as a philosophy of doing business and a culture that places the buyer-supplier relationship at the centre of an organisation's strategic and operational thinking. In addition, creating a dialogue situation will enable the parties to run their relations in a proper way. Furthermore, Prahalad and Ramaswamy (2004: 9) suggest that dialogue implies interactivity, deep engagement and the ability and willingness to act on both sides.

Thus in achieving the benefits of a long-term inter-dependent relationship, certain sacrifices need to be made at different times for the relationship to grow and flourish. For the relationship to continue, it relies on each party's understanding of what the relationship actually constitutes. Positive attitude and adaptation may be considered to have an impact on the well-being of the relationship.

The supplier's willingness to take part in various types of adaptations, whether or not they are economic or technical, means that they consider it beneficial for the relationship and that they are committed to its future (Håkansson & Gadde, 1992: 59). Morgan and Hunt (1994: 22) also believe that commitment and trust – not just one or the other - lead directly to cooperative behaviours that produce mutually desired outcomes. Lusch and Vargo (2006: 388-389) however cautioned that customers are not necessarily willing to invest time and effort to engage in close one-to one relationships with all firms they

interact with and can feel burdened by choice, as consumers do not have the cognitive resources to customise all the products they buy.

In business relationships, trust appears as a belief that a partner will subdue the chasing of one's own advantage in favour of mutual advantage. Trust is one of the attributes of partnering (Lehtonen, 2004: 30). A long-term relationship with a contractor may allow a supplier to offer customised services as well as special benefits. At times there are different levels of disagreements amongst the parties within a business relationship. Conflicts may arise between two suppliers and/or between a supplier and a customer. In most cases companies undertake a number of different relationships at any one time with varying degrees of conflict and co-operation characterising each relationship. However, within the precast concrete industry it has been common for a certain type of relationship to take precedence over others.

Erasmus (2007: 35) states that in 2006 one of the largest suppliers of cement in South Africa, sent out an alarming letter to its clients warning that "the reserve quantity of cement that is normally available in the supply chain 'pipeline' is now totally depleted" and that they would not be in a position to supply all as usual. While smaller and medium-sized businesses suffer losses in production, manpower and customers, the larger players receive supplies in the spirit of "we rather service one whole cow than a pack of little puppies". Erasmus further mentions that in this situation customer-supplier relationships are governed by the supplier's attempts to make their customers' fit into their plans and into the pursuit of their objectives.

Customers may also be bound to these relationships through longstanding ties, despite a lack of complementarities and a tendency towards conflict rather than mutual co-operation between firms. When a supplier operates under the conditions of customer-domination and imposed strategies, they become accustomed to only one type of relationship, namely an asymmetrical relationship, where the influence over the characteristics of the relationship is balanced in favour of one party rather than the other.

The different buyer-seller relationships are shown in Table 6 based on buyers and suppliers investments. Perez and Sanchez (2001: 29) point out that each of the different cells in the framework contains low and high-performing relationships. Each type of relationship can be well or poorly managed depending on how well they are maintained. Table 6 shows how the buyer and seller relationships correlate.

Table 6:   Buyer-Seller relationships

High		
	Captive buyer	**Strategic Partnership**
Buyer's specific Investments	**Market exchange**	**Captive Supplier**
Low		
	Low Supplier's specific investment High	

Source: (Perez & Sanchez, 2001: 29)

Parasuraman (1998: 315) produced a conceptual model suggesting that service quality deficiencies experienced by customers externally may be a function of four key internal customer service issues or gaps in business-to-business markets. The four gaps on the seller's side from the figure above can be defined as follows:

- *Market information gap*: Seller's incomplete or inaccurate knowledge of customers' expectations.
- *Service standards gap:* Seller's failure to translate accurately customers' service expectations into specifications or guidelines for company.

- *Service performance gap:* Lack of appropriate internal support systems that enable company personnel to deliver to service standards.
- *Internal communication gap:* Inconsistencies between what customers are told the service will be like and the actual service performance.

In a study undertaken by Keep, Hollander and Dickinson (1998: 31) the authors revealed that in each investigated case of business-to-business relationship they studied, dependence asymmetry was an essential force that influenced relationship development and they generally agreed that 'power' and 'dependence' are important concepts for the understanding of buyer-seller relationships. The two concepts will be elaborated below.

2.7.1 Dependence and power in buyer-seller relationships

Organisations are open systems which engage in exchanges and transactions with other organisations or elements of their environment and as a result, they inevitably become dependent upon their environment (Bourantas, 1989: 140).

Emerson (1962: 31) states that there is a close relationship between power and dependence and the role of power in social exchange. The author furthermore posits that the relative dependence between the customer and supplier in an exchange relationship that determines their power. For example, the South African cementitious sector is faced with high demands from all over the industry because of cement shortage and with the industry boom, the situation has undoubtedly had a significant impact on "small" players like emerging contractors, particularly as they have been at the receiving end of the shortage stick as they relied heavily on the producers (Poggiolini, 2007: 1).

A company becomes vulnerable when it looses control over resources to its exchange partners and finds itself dependent on its partner (Spekman & Strauss, 1986: 26). Dependency increases the organisation's vulnerability by creating problems or uncertainty but also it can allow direct transfer of benefits from the dependent to the

dominant partner (Bourantas, 1989: 140). The main sources of inter-organisational dependence include amongst others, switching of costs and valuable resources (Gulati, Nohria & Zaheer, 2000: 203).

McLoughin and Horan (2000: 289) claim that if one wanted to understand the process of exchange in one relationship, this could only be done by understanding the wider network of relationships within which the exchange takes place. Trustworthiness between the parties is necessary for repeat inter-firm transactions (Das & Teng, 1998: 491).

Galbreath, (2002: 11) uses three attributes in describing the interdependence within a relationship and the values that are created. These attributes are depicted in Table 7.

Table 7:   Relationship Interdependencies

Goal	Outcome	Key
Ingredients to Success		
□ Speed to market	□ Quality revenue grown	□ Electronic integration
□ Improved innovation	□ Profit improvement	□ Collaboration
□ Accelerated business velocity communications	□ Increased customer share	□ Continuous communication
□ Maximum quality	□ Fewer returns	
□ Efficient inventory management	□ Decrease costs	
□ Speed to market	□ Higher customer satisfaction	

Source: (Galbreath, 2002: 11)

Bourantas (1989: 145) is of the view that the negative effects of dependences on an organisation' efficiency and effectiveness usually takes on strategic dimensions. These dimensions are discussed below.

- Dependence endangers or restricts the organisation's autonomy since it is compelled for survival to comply with the demands of the dominant environmental elements on which it depends.

- Dependence increases greatly the organisation's vulnerability, uncertainty and future unpredictability. Any disturbance or discontinuity caused by a change in the dependence relationship can endanger the survival of the dependent organisation.

- The obligation on the dependent organisation to fulfil to a certain degree the demands of the dominant organisation usually implies the transfer of profits from the dependent to the dominant organisation.

- It is easily deduced that dependences can cause serious disadvantages for organisations in a competitive environment.

In each type of buyer-seller relationship, uncovering and understanding the conditions under which superior service is likely to be a source of sustainable competitive advantage is crucial (Parasuraman, 1998: 312). It is clear that within business relationships, sacrifices at times need to be made, not to compromise but rather to nurture the relations. Interdependence can be very detrimental within the relationship if it is not properly managed in pursuit of providing quality products or services to customers.

It is therefore imperative for the service provider to render customer services to its customers guided by a set of clearly defined objectives of how best to delivery good quality products and/or services quality at all times. Hence in the next section, a discussion on quality is pursued.

2.8 QUALITY

In improving business performance and achieving operational efficiency, quality of service has been recognised as a strategic tool to employ in pursuit of organisational objectives. This is important for the services sector too (Jain & Gupta 2004: 26). These

authors further stress that the unique importance of quality to service firms, has been demonstrated in its positive relationship with profits, increased market share, return on investment, customer satisfaction, and future purchase intentions.

According to Maloney (1990: 400), quality involves doing things the right way the first time. The work done must conform to specifications agreed upon for the project. Rapert and Babakus (1996: 43) state that quality should not be viewed as merely a problem to be solved; rather it is a competitive opportunity. In an era of increasing competition and potential additional government regulation, a strong quality orientation can serve as the means by which service providers can differentiate themselves from competitors.

Parry (1973: 15) views quality as satisfactory conformance to specifications and design, such that the product gives satisfaction, dependability and service reliability. Clarke (2004: 473) points out that quality relates to a subjective opinion where meaning is given to the word by the participants. Good quality reduces costs of rework, scrap, returns and most importantly good quality generates satisfied customers (Pycraft *et al.,* 2002: 611).

Furthermore, Pycraft *et al*. (2002: 611) categorise various definitions into five approaches to quality:

The transcendent approach views quality as synonymous with innate excellence. For example, a quality watch is a Rolex. Using this approach, quality is being defined as 'absolutely the best possible' in terms of the product's or service's specification.

The manufacturing-based approach is concerned with making products or providing services that are free of errors and that conform precisely to their design specification. For example, a Swatch watch, although not necessarily the best available, is defined as a 'quality' product provided it has been built or delivered precisely to its design specification.

The user-based approach focusses on the product or service which must be fit for its purpose. This definition demonstrates concern not only for its adherence to specification

but also with the appropriateness of that specification for the customer. For example, a watch that is manufactured precisely to its design specification but which falls to pieces after two days is clearly not 'fit for its purpose'.

The product-based approach views quality as a precise and measurable set of characteristics that are required to satisfy the customer. For example, a watch may be designed to run, without the need for servicing, for at least five years while keeping time correctly to within five seconds.

Finally **the value-based approach** takes the manufacturing definition a stage further and defines quality in terms of cost and price**.** The approach contends that quality should be perceived in relation to price.

Other product attributes can be both intrinsic and extrinsic and these include texture, quality, price, performance, service and brand name (Sinha & DeSarbo 1998: 236). The broad nature in which quality is defined suggests that the evaluation is based on the targets or features of a product or service, and the standards or criteria applied in the judgment of the evaluator or arbiter of quality (Chelladurai & Chang, 2000: 2). The authors also state that the definition of quality includes the following characteristics:

- Satisfying or delighting the customers or exceeding their expectations
- Product of service features that satisfy stated or implied needs
- Conformance to clearly specified requirements
- Fitness for use, whereby the product meets the customer's needs and is free of deficiencies.

These definitions of quality imply that the standards against which products or services are judged in terms of quality, are relatively enduring and linked to fundamental needs, desires or requirements of individual consumers. The level of quality, as determined by customers, from the service provider influences the level of service quality they will perceive. The next section provides a detailed analysis of service quality as perceived and expected by customers.

2.9 SERVICE QUALITY

Service quality evolves over time and relates to the customers' developed attitude towards a product or service. In everyday discussions and engagement, services provided by companies are targets of attack (Grönroos, 1990: 10). The type and manner in which service providers deliver their services are scrutinised and deliberated upon by their customers.

Service quality is currently a focus for many corporate and marketing strategies and a high level of service is seen as a means for an organisation to achieve a competitive advantage (Metha, Lalwani & Han, 2000: 01).

2.9.1 Emergence of service quality

Service quality for some industries began in the early 1960s. During the period 1980s to 1990s, the definition was expanded from the tradition definitions of product quality to include services surrounding the product. Brady and Cronin (2001: 44) are of the opinion that, despite endless research and debates around the concept of service quality, conceptual work on service quality can be described as divergent. Figure 9 illustrates the evolution of total quality.

Figure 9:   **Evolution of total quality**
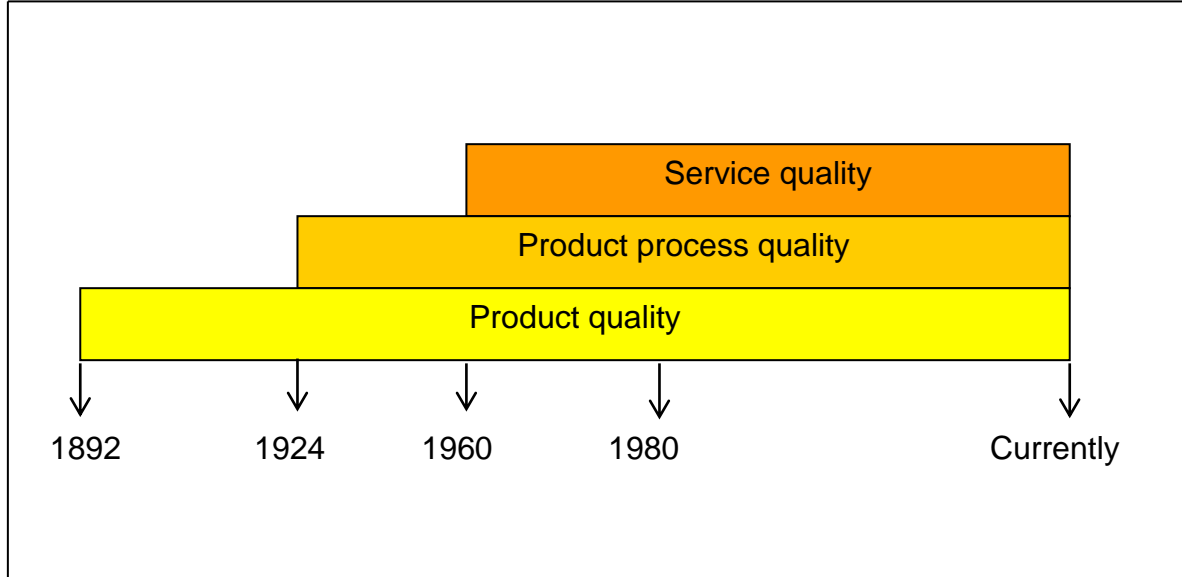
Source: (Wadsworth, Stephens & Godfrey, 2002: 101)

Kurtz and Clow (1998: 99) state that there are three underlying principles that should be borne in mind when examining service quality:

- Service quality is more difficult for the consumer to evaluate than the quality of the merchandise.
- Service quality is based on consumers' perceptions of the outcome of the service and their evaluation of the process by which the service is performed, and
- Service quality perceptions result from a comparison between what the consumer expected prior to the service and the perceived level of service received.

The most often used approach for measuring service quality has been to compare customers' expectations before a service encounter and their perceptions of the actual service delivered (Lewis & Booms, 1983: 100). The imperatives of quality in relation to other constructs will be reviewed. Challenges, difficulties and strategies for the improvement of service quality will also be highlighted in next section.

2.9.2 Defining service quality

In a highly competitive marketplace it has become more important to differentiate product offerings through providing superior service quality (Ndubisi, 2007: 98). Companies are focusing on areas in their operations that might give them an edge over their competitors and the key area has been the delivery of high levels of service quality (Mehta *et al.,* 2000: 1).

Service quality is a multi-dimensional concept and it is more meaningful to define as a set of measures instead of relying on a single index. For example, the sale of a concrete slab may be assessed on the basis of reliability, conformance to norms, stability, and friendliness of service, design and people's perception of the product (Garvin, 1987: 105).

Grönroos (1984: 37) defines service quality as the outcome of an evaluation process where the consumer compares the expectations of a service with the service received. This author further indicates that service quality is whatever the customer perceives it to be (Grönroos, 2000: 63). Mackay and Crompton (1990: 47) define service quality as the relationship between what customer's desires from a service and how they perceive the service that they receive. Bitner, Booms and Mohr (1994: 97) define service quality as 'the consumer's overall impression of the relative inferiority or superiority of the organisation and its services'.

The most relevant approach in defining and measuring service quality is the user-based approach, i.e. from the customers' perspective (Woodruff, 1995: 105). Service quality is defined as "the extent in which the service, the service process, and the service organisation can satisfy the expectations of the user". Arnauld *et al.* (2002: 327) define perceived quality, whether in reference to a product or service, as "the consumers' evaluative judgment about an entity's overall excellence or superiority in providing

desired benefits". Generally, service quality has been defined as a consumer attitude reflecting the perceived overall superiority and excellence in the process and outcome of a service provider (Parasuraman *et al.,* 1988: 15).

Service quality is not reproduced consistently because of its variability from time to time and from one customer to another (Erto & Vanacore, 2002: 170). Grönroos (1984: 36; 1988: 41; 2000: 63-64) affirms that quality comprises three dimensions, namely technical and functional quality and corporate image. These dimensions are illustrated in the Grönroos model below.

Figure 10:   Service Quality Model
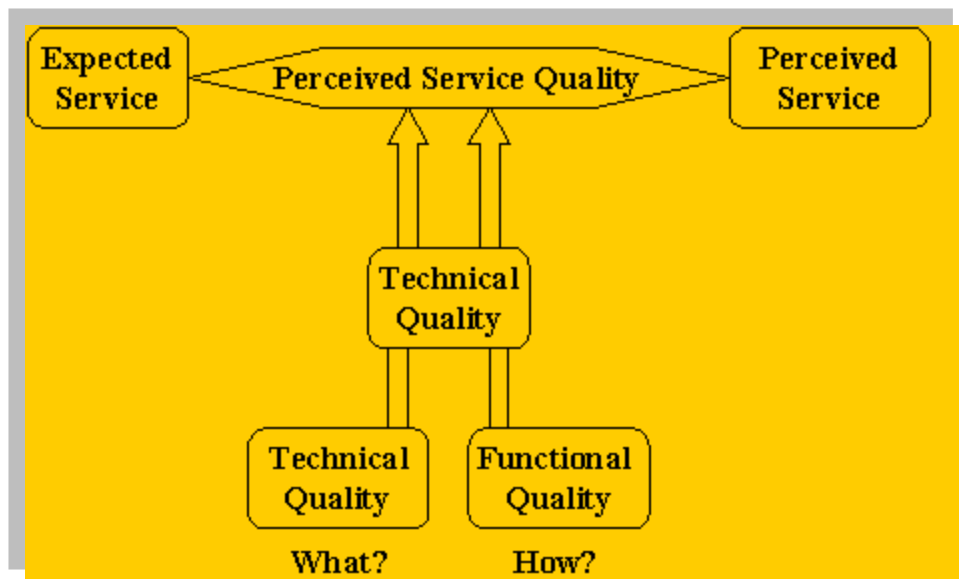
 Source: (Grönroos, 1984: 40)

Corporate image is related to the physical and behavioural attributes of the firm such as business name, architecture, variety of products or services and the impression of quality communicated by each person interacting with the firm's clients (Nguyen & Leblanc (2001: 228). Thus, corporate image is the result of an evaluation process. Although a customer may not have sufficient information about a service provider, information at

hand from different sources such as communication will influence the process of forming the corporate image (Aydin & Ozer, 2005: 913).

Technical quality of an outcome refers to the actual outcome of the service encounter. The customer will also be influenced by the way in which the technical quality is transferred functionally. The accessibility of salespeople, the appearance, behaviour, what they say and how they say it, also impacts on the customer's view of the service. Ferguson, Paulin, Pigeassou and Gauduchon (1999: 59) defined the technical aspects as "the physical tangibles used or experienced by the customer during the service delivery process". **Functional quality** is how the consumers receive the technical outcome of a service and the process of service delivery to customers. Grönroos (1984: 41) suggested that, in the context of services, functional quality is generally perceived to be more important than technical quality, assuming that the service is provided at a technically satisfactory level.

This model is important because it reminds us that service quality must include the manner in which it is delivered. Lovelock, Patterson and Walker (2001: 24) noted that "from the customer's perspective, the people performing the service are the company". Thus clients may evaluate the service quality through their perceptions of the individual service provider with regard to their abilities. The greatest debate within the service literature focuses upon targets of evaluation, thus seeking to answer questions as to "what" should be evaluated (Brady & Cronin, 2001: 34).

Service quality standards require customers and suppliers to interact in a manner which will create a mutual relationship between the two. Customers tend to evaluate service providers with the type of service they provide using certain criteria to assess service quality independently. They apply several quality dimensions which are discussed in the next section.

2.9.3 Dimensions of service quality

Overall evaluations provide little insight into the specific shortcomings or moments of excellence of the organisation. It becomes necessary to describe service quality in terms of specific dimensions that can be measured and used in specific decision-making processes to improve satisfaction (Jordaan & Prinsloo, 2004: 63). Using the gap model, (Parasuraman, Zeithmal & Berry 1985: 41; Zeithaml, Parasuraman & Berry 1990: 23) identified ten detailed dimensions of service quality: tangibles, reliability, responsiveness, communication, credibility, security, competence, courtesy, understanding the customer and access. Originally containing 10 dimensions, the SERVQUAL model was later reduced to five dimensions. Tables 8 and 9 below provide an overview of these dimensions of service quality.

Table 8:   Determinants of service quality

Tangibles	Courtesy
• Display of merchandise • Appearance of salespeople	• Friendliness of staff • Respect shown to customers • Interest shown in customers
Understanding	Access
• Providing individual attention • Recognising regular customers	• Short waiting times • Convenient operating hours • Manager available to discuss problems
Security	Competence
• Feeling safe in parking lot • Communication and transactions treated confidentially	• Knowledgeable and skilled staff • Customers' questions answered
Credibility	Responsiveness
• Honoring commitments • Trustworthiness of salespeople • Return policy	• Returning a customer's call • Giving prompt service
Information provided to customers	Reliability
• Explanation of services and cost • Notes sent to customers informing them of sales • Assurance that a problem will be resolved	• Accuracy in billing • Performing service at designated time • Accuracy in completing sales transaction

Source: (Levy & Weitz, 1998: 578)

Table 9:   SERVQUAL dimensions

Dimensions	Descriptions
Tangibles	Physical plant, equipment and personnel appearance.
Reliability	Ability to perform service dependably and accurately.
Responsiveness	The will to help customers and render prompt service.
Assurance	Knowledge and courtesy of employees and their ability to inspire trust and confidence.
Empathy	Caring, individualised attention the firm provides its customers.

Source: (Parasuraman *et al.,* 1988: 41)

Tangibles consist of or describe the aesthetic value of the facilities, equipment and personnel (Booth, 1999: 30). **Reliability** is defined as the ability to deliver the promised service dependably and accurately. It is about keeping promises about delivery, pricing and complaints handling (Bloemer, de Ruyter & Wetzels 1999: 1084). It also means that the employee should have the capabilities to carry out the services in a consistent manner. Moreover, it involves considering the needs and perspectives of others (Dube, Renaghen, & Miller, 1994: 41). Other qualities include security, being calm and clear-headed, even under demanding situations maintaining helpfulness, an agreeable demeanour and good-natured responses with problem-solving ability smart enough to meet customer needs. Gomez (1999: 26) explains **Responsiveness** as the employees' abilities to be assertive and ready to help customers and provide timely service. **Assurance** includes the ability of the employee to be polite and knowledgeable, as well as to convey a sense of trust and confidence (Cagle, 1998: 8). It is a service quality dimension that focuses on the ability to inspire trust and confidence (Bloemer *et al.,* 1999: 1084). **Empathy** deals with the caring and individualised attention received by customers. Empathy also means being able to emotionally identify with others (Dube *et al.,* 1994: 43). Furthermore it involves being able to identify emotionally with employers and customers. On the five dimensions of quality, research has repeatedly concluded that customers value reliability, or keeping the service promise, above all other dimensions (Jordaan & Prinsloo, 2004: 64). The author

further states that customers view reliability as the core of service and they are least tolerant of broken service promises. The literature also reveals that no generic measure of service quality for all industries has emerged (Blose & Tankersley, 2004: 75). Thus, service quality is generally believed to be a multi-level construct with multiple dimensions making up each level. Kolb (2005: 32) claims that in South Africa, service quality has made very definite gains since the early years of this decade and it seems to be reaching its high point.

The SERVQUAL model, as depicted in Figure 11, assumes that quality is the result of gaps between a customer's expectations and their perceptions of service performance (Parasuraman *et al.,* 1988: 13-14). The authors used the phrase "quality gap" to describe areas where service delivery fails to meet or exceed customers' expectations.

Figure 11:   Gaps model of service quality

Source: (Parasuraman *et al.,* 1985: 44)

Chapter 2: Industry profile, customer services and service quality
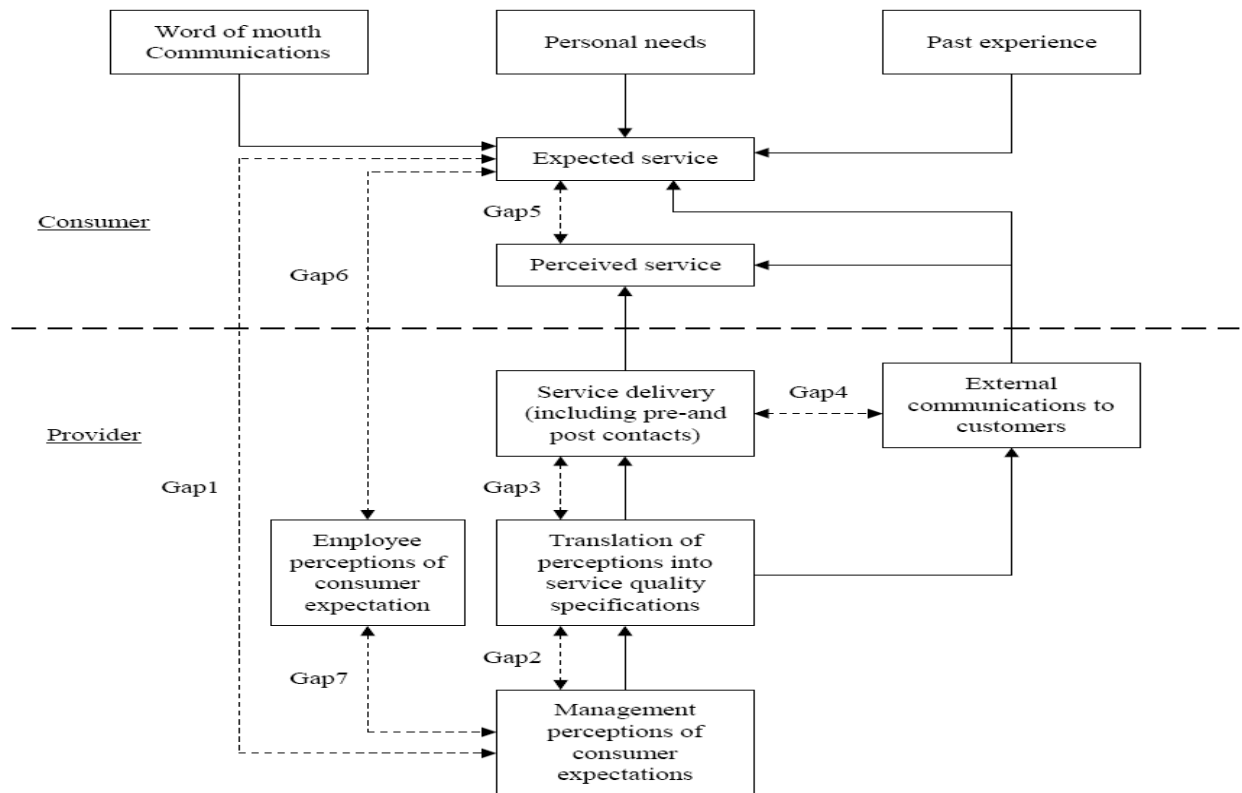
These gaps can be major hurdles in attempting to deliver a service which consumers would perceive as being of high quality (Parasuraman *et al*., 1985: 44-45). This model explains that the three important gaps which are associated with the external customers are Gap 1, Gap 5 and Gap 6: because they have a direct relationship with customers. Gaps1, 2, 3, 4, 6 and 7 are functions of the way in which service is delivered whereas Gap 5 has a direct relationship with customers and it is considered to be the true measure of service quality.

Although the ground-breaking SERVQUAL scale has specifically been designed to measure service quality, it has not been adapted successfully to and validated in a retail environment that offers a mix of merchandise and service (Dabholkar, Thorpe & Rentz, 1996: 3). As the most popular conceptualised instrument, SERVQUAL has received a number of criticisms related to its validity and reliability (Carmen, 1990: 35). A number of researchers have criticized the SERVQUAL instrument and have raised several questions about its dimensionality and applicability (Buttle, 1996: 10; Cronin & Taylor, 1992: 55; Toy, Kerstetter & Rager, 2002: 99). This leads to the question of whether or not SERVQUAL is a generic model capable of being applied to all the service industries or whether or not each type of service requires a modified instrument.

The scale has stirred debates which focus on two issues: First, many authors have examined service quality and customer satisfaction and no agreement can be reached on whether or not customer satisfaction results from the degree of service quality provided. Secondly, there is disagreement as to whether service quality should measure the service a provider should provide or whether the consumer's desires should be measured (Burns, Graefe & Absher, 2003: 363).

Moreover, Cronin and Taylor, (1992: 55) Peter, Churchill and Brown, (1993: 655) raise concerns about the practical application of the instrument. Some of the concerns are outlined below:
- The dimensionality may vary with the type of service under study.

- Customer expectations may not exist or may not be formed clearly enough to serve as a standard for evaluation of service experiences.
- Customers learn from experience and thus their expectations may change over time.

This study was exploratory in nature and as far as the above issues, are concerned, the study makes use of a "perceptions-based" scale (Grönroos, 1984: 37).

To conclude, it is evident that the SERVQUAL instrument can contribute positively towards the evaluation of service quality and its dimensions including customer expectations and perceptions. The next section assesses the relationship between expectations and the perception of consumers.

2.9.4   Measuring Customer Expectations

Individuals form their expectations on the basis of their past experiences, word-of-mouth communications, and the explicit and implicit service promises made by service firms (Yen, Gwinner, Su, 2004: 11). Service firms cannot simply provide a service; they must offer customers something that they value (du Plessis, Jooste & Strydom, 2005: 75).

Expectations are defined as desires or wants of consumers that is what they feel a service provider should offer rather than would offer (Parasuraman *et al.,* 1988: 17). On a daily basis people purchase goods and unfortunately it is inevitable that sometimes goods do not live up to customers' expectation. Zeithaml and Bitner (2000: 48) define customer expectations as "beliefs about service delivery that function as standards or reference points against which performance is judged". Understanding service quality expectations is the starting point for delivering service quality.

Parasuraman *et al.* (1988: 16) are of the view that customers evaluate quality by comparing their expectations with their perceptions of the service performance.

Researchers such as Ojasolo (2001: 204) emphasise the importance of understanding and managing expectations in identifying problems in order to create and sustain long-term relationships. Rust and Oliver (1994: 5) assert that expectations are built on the customers' normative judgment of an ideal company that delivers an excellent quality of service. Customer expectations have been expanded to include both desired and adequate expectations. Desired service is defined as the blend of what can and should be provided whereas the adequate service quality level is defined as the minimum level of service performance customers considers "adequate" (Parasuraman, Zeithmal & Berry, 1994: 224). Customer expectations are however, quite complex and exist on five different levels (Jordaan & Prinsloo, 2005: 38). These levels are depicted in Figure 12 below.

Figure 12   Customer expectation model
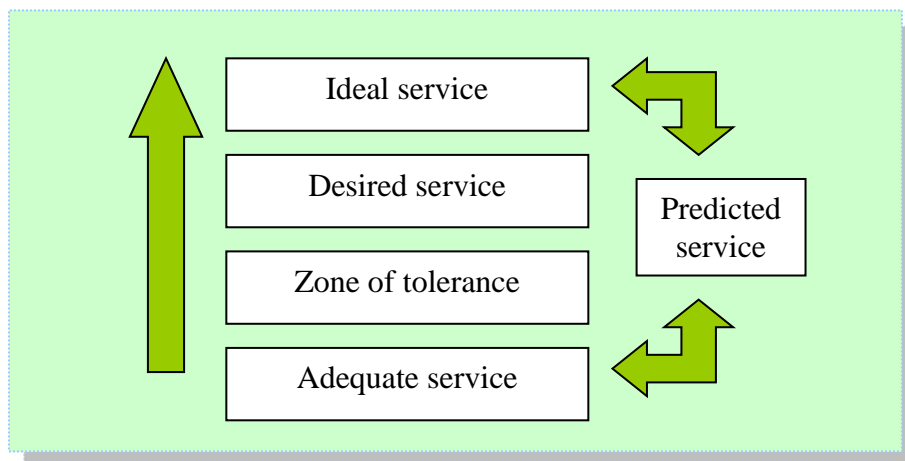
Source: (Jordaan & Prinsloo, 2005: 38)

It is further suggested that a "gap" between desired and adequate service exist and reflects customers' ability to "recognise and willingness to accept heterogeneity". The "gap" is termed the zone of tolerance (ZOT) and it is subjected to changes by factors affecting both desired and adequate service expectations (Zeithmal & Berry, 1993: 23). The concept of tolerance zones is highly useful when trying to understand variability in customer service expectations and perceptions as well as customer satisfaction (Reimann,

Lünemann & Chase, 2008: 65). Figure 13 below outlines the zone of tolerance within the service context.

Figure 13:   Zones of tolerance for different service dimensions
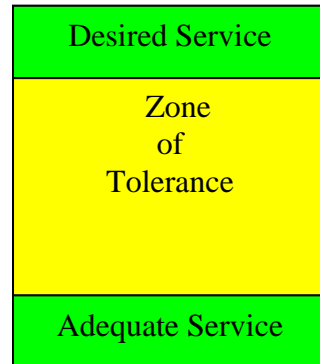
Source: (Zeithmal, Bitner & Gremler, 2006: 86)

A tolerance zone can be defined as "a range of service performance that a customer considers satisfactory" (Berry & Parasuraman, 1991: 58). In their conceptualisation Parasuraman, Berry and Zeithaml (1993: 141) recommended comparative norms as: desired service (the level of service a customer believes can and should be delivered) and adequate (minimum) service (the level of service the customer considers acceptable). Separating these two levels is a zone of tolerance that represents the range of service performance a customer would consider satisfactory. In other words, customer service expectations are characterised by a range of levels (between desired and adequate service) rather than a single point.

2.9.5   Measuring perceptions of service quality

Jordaan and Prinsloo (2004: 40) define perception as the process by which an individual selects, organises and interprets stimuli into a meaningful and coherent picture. According to Philip and Hazlett (1997: 262), perceived service quality can therefore be defined as the discrepancy between what the customer feels a service provider should offer (expectations) and the perception of what the service firm actually offers.

Perceptions are real, they colour what we see, how we behave, what we believe and how we interpret this (Willimon, 2000: 22). Cronin and Taylor (1992: 56) maintains that this distinction is also important to both managers and researchers because service providers need to know what their objectives should be to have satisfied customers or to deliver the maximum level of perceived service quality.

In any business, a negative perception about a particular company will, in all likelihood, spell its demise because customers will simply stop buying its goods or services (Stone, 2008: 3). According to Johns (1999: 960), perceptions of quality tend to rely on a repeated comparison of the customer's expectation concerning a particular service, compared to the actual performance of the service provided. Organisations must take into account that what their customers' wants and needs are when they develop their products and perform their services. When dealing with subjective areas of quality and service, the interpretations that matter the most are those of the customer (Gutheim, 2000: 74). An important part of the evolution of the service quality concept has been distinguishing it from the related concept of customer satisfaction (Schneider & White, 2004: 51). Hence, Othman, Hassan and Pasquire (2005: 69) state that achieving client satisfaction has been identified as one of the most important challenges facing the construction industry to date. This implies that customer satisfaction should receive considerable attention in service research. The next section discusses customer satisfaction in detail.

2.10   CUSTOMER SATISFACTION

While customer satisfaction is one of the primary factors leading to the continuation of relationships, the connection between the two parties in this relationship also provides an important area of research. Customer satisfaction is defined as an overall evaluation of a firm's products or services (Anderson, Fornell & Rust, 1997: 130). From a business point of view, customer satisfaction implies consistently doing something of value for customers in a way they want or expect it to be done (Levy & Weitz, 2001: 152).

Zeithmal and Bitner (2000: 75) define customer satisfaction as the customer's evaluation of a product or service in terms of whether or not that product or service has met the customer's needs and expectations. Within the construction industry customer satisfaction is under-researched (Torbica & Stroh, 2001: 82). These authors emphasised that the use of this performance criterion is at an early evolutionary stage. With the notable scarcity of investigations concerning customer satisfaction in this sector, a rapidly growing number of studies in the service industries have been published over the years. The results of the studies demonstrate strong correlation between customer satisfaction and service quality (Holm, 2000: 525). Customer satisfaction can also be defined as how well a contractor meets the customer's expectations with regard to the quality on construction projects and the fulfilment of customer expectations (Barrett, 2000: 383).

Hence, customer satisfaction depends on the ability of an organisation to deliver implicitly on those expectations through a service delivery process that has been designed according to customer needs (Jordaan & Prinsloo, 2004: 42). These authors further comment that customers mostly rely on how they feel when doing business with a given organisation. Figure 14 depicts the satisfaction process.

Figure 14:   The satisfaction process
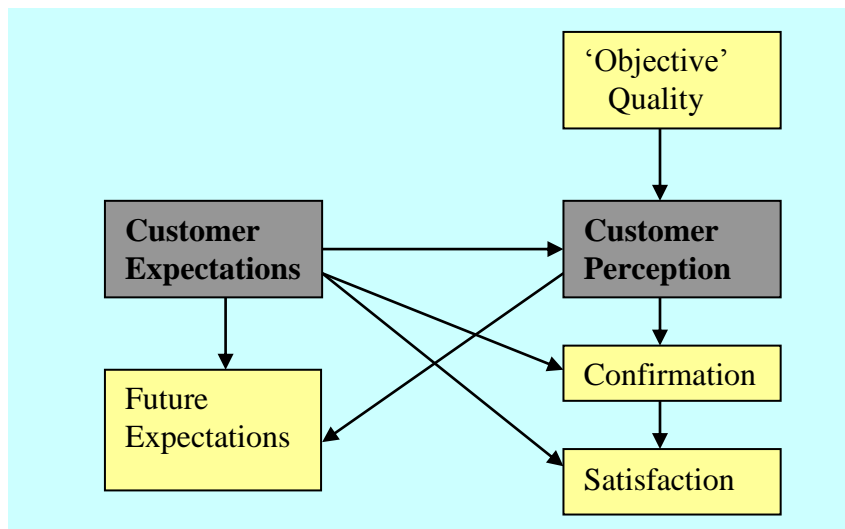
Source: (Rust, Zahorik & Keiningham, 1994: 49)

Dabholkar and Overby (2005:12) established that when examining the concept of service quality and linking it to the service process, customer satisfaction is more dependent on the outcome of the service encounter Customers' who are just satisfied, find it easy to switch suppliers when a better offer or service comes along. Thus, understanding satisfaction is important in the sense that dissatisfied customers rarely complain, but rather purchase elsewhere (Milbourn, 1998: 44).

The significance of customer satisfaction from the customers' perspective, has been emphasised by many authors in the construction industry (Maloney, 2002: 522; Yasamis, Arditi & Mohammadi, 2002: 211). Identifying the determinants of customer satisfaction is an essential prerequisite in the management of service quality. Only when these determinants are known to the organisation can they ensure that their investment in service quality improvement will lead to more satisfied customers (Jordaan & Prinsloo, 2004: 41).

When companies know which attributes of a service or product affects customer satisfaction their challenge is to modify their current offerings in such a way that this will lead to maximum customer satisfaction. Furthermore, Soetanto, Proverbs and Holt (2001: 529) recognise that the satisfactory performance of participants is a prerequisite to maintaining harmonious working relationships. Like external customers, employees engage in numerous service encounters to satisfy their needs in the course of carrying out their job responsibilities (Kang, James & Alexandris, 2002: 279).

Customer satisfaction depends on how well the customer receives what he or she expected from the service provider (Gagliano & Hathcote, 1994: 60). Thus, satisfied customers tend to be loyal to the company and more likely to return (Greenwell, Fink, & Pastore, 2002: 129; Fen & Lian, 2007: 63). Nel (2000: 36) argues that dissatisfied customers merely switch brands or companies. In the next section customer loyalty is discussed and deliberated upon.

2.11 CUSTOMER LOYALTY

The concept of loyalty has been gaining increasing prominence within the marketing literature and business fraternity. It has been regarded as a valuable tool for developing an effective marketing strategy. Dick and Basu (1994: 99-101) postulated that loyalty appears to be a complex multi-dimensional construct and it is defined as the relationship between an individual's attitude towards an object and the repeat patronage of that object.

The link between customer satisfaction and customer loyalty has been in the spotlight for some time. Although there is no established theoretical framework covering all aspects of customer loyalty, there is consensus among researchers that satisfaction and service quality are the prerequisites of loyalty (Lee, Barker & Kandampully, 2003: 423-424).

Oliver (1997: 392) defines customer loyalty as a deeply held commitment to rebuy a preferred product consistently thereby causing repetitive same-brand purchasing, despite situational influences and marketing efforts having the potential to cause switching behaviour. Sheth, Mittal and Newman (1999: 701) defined customer loyalty as a "customer's commitment to a brand or a supplier, based on a strong favourable attitude manifested in consistent repatronage". Moorman, Zaltman, and Deshpandé (1992: 316) explained commitment as "an enduring desire to maintain a valued relationship". East, Sinclair and Gendall (2000: 287) comment that "customer loyalty is viewed as the strength of the relationship between an individual's relative attitude and their repeat patronage".

According to Zeithmal, Bitner and Gremler (2006: 181-182), loyal customers not only provide a solid base for the organisation but also represent growth potential. Precast concrete manufacturers who strive to provide superior customer services quality, stand a better chance to develop a long-term commitment by the customer which increases repeat purchases and customer loyalty (Clottey, Collier & Stodnick, 2008: 36). Gilliland and Bello (2002: 25) remind us that attitudinal commitment is specified as a multicomponent

construct that considers both economic and emotional forms of attachment. Figure 15 shows antecedents that lead to customer relationship.

Figure 15:   Customer service worker relationship model
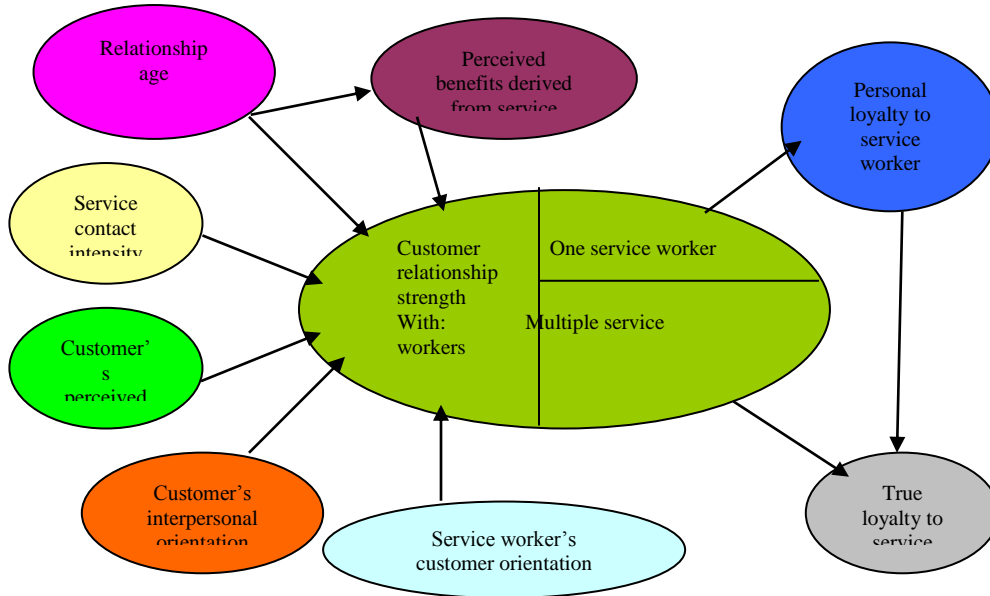
Source: (Bove & Johnson, 2000: 493)

Bove and Johnson (2000: 494) point out that the customer service worker relationship model is more suitable for businesses where the same service provider's employee interact with the same customers every time they contact the firm.

Dick and Basu (1994: 101) postulate that determining the type of loyalty involves the examination of the relationship between a customer's levels of attachment toward an entity, together with the level of repeat purchase (patronage). Figure 16 shows the different types of loyalty.

Figure 16: Four types of loyalty

Relative Attitude (Attachment)	Repeat Patronage (Purchase)	
	High	Low
High	True or Premium Loyalty	Latent Loyalty
Low	Spurious or Inertia Loyalty	No Loyalty

Source: (Dick & Basu, 1994: 101)

Dick and Basu (1994) suggest that relative attitude measures are likely to provide a stronger indication of repeat patronage than attitudes toward a brand measured in isolation. Customers who experience a high level of satisfaction are likely to remain with their existing suppliers of products and maintain their relations. They further posit that true or premium loyalty only exists when repeat patronage coexists with a high relative attitude. Hence, customer loyalty is approached as an attitudinal construct. In the case of absence of service provider commitment, a customer is merely spuriously loyal, i.e. repeat visiting behaviour is directed by inertia. Moreover, it is essential to differentiate customers by classifying them according to the extent of their repeat patronage and their relative attitudinal attachment towards the service since this would ultimately describe the nature of their loyalty to the service provider.

Thompson (2005: 1) lists four steps to follow in improved customer loyalty, which leads to or focuses on profitability improvement:

- Understand drivers of loyalty and defection, from the customers' point of view.
- Develop a loyalty strategy focused on the "right" customers.
- Systematically deliver what your customers value, and fix it quickly when you do not.
- Implement measurement and reward systems to encourage customer-centric behaviour.

Aydin and Ozer (2005: 911) state that although there are different definitions of customer loyalty, there seems to be two basic approaches: **The Stochastic approach** which assumes customer loyalty as a behaviour through which the preference structure of the customer is reflected in the customer's behaviour. Some of the operational measures of this approach include shares of purchase and purchasing frequency. **Deterministic approach** assumes customer loyalty as an attitude. Describing the actual behaviour of the customer does not suffice, but rather a proper analysis and description are clearly required for determining the attitudes of the customer. Some of the operational measures of this approach are preference, buying intention, supplier prioritisation and recommendation and willingness to purchase. Kotler (1991: 197) emphasised that manufacturers are frequently expected to customise their offerings to individual customer needs.

Reichheld (1996: 257) posits that when a company consistently delivers superior value and wins customer loyalty, market share and revenues go up and the cost of acquiring and serving customers goes down. Figure 17 depicts the key drivers of customer loyalty.

Figure 17:   Key drivers of customer loyalty
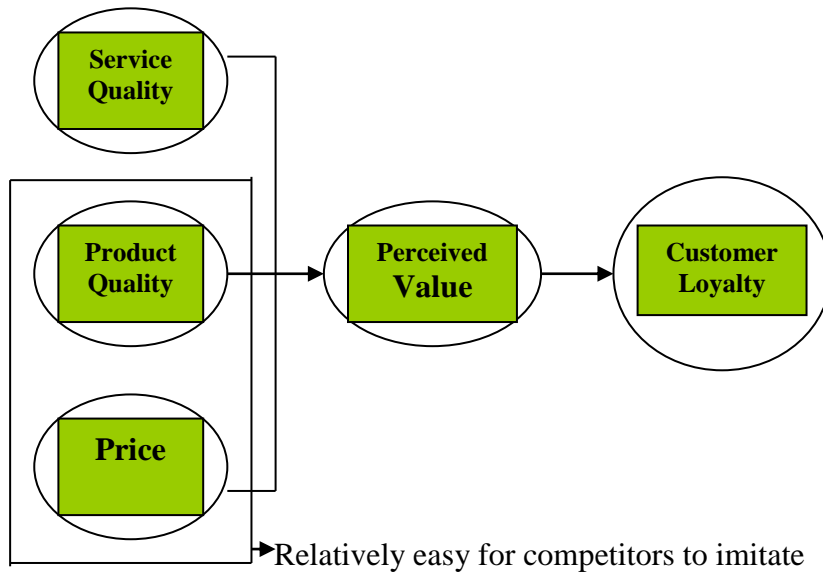
Source: (Parasuraman & Grewal, 2000: 169)

Bloemer *et al.* (1999: 315) claim that customer loyalty can be moderated by positive emotions that customers hold towards the manufacturer or supplier especially where "service delivery takes place over a period of time and active involvement by the customer occurs". Cöner and Güngör (2002: 195) postulate that customer loyalty is affected by product and service quality as well as the image of the service provider, more so if the service provider maintains consistency and shows commitment when serving customers.

As an essential component of loyalty, commitment is defined as "the tendency to resist change in preferences in response to conflicting information or experience (Crosby & Taylor 1983: 414). Crotts, Coppage and Andibo (2001: 196) defined commitment as "the desire to continue the relationship and to work to ensure its continuance".

De Witt, Nguyen and Marshall (2008: 272) argue that a customer's perception of a firm's trustworthiness is positively related to the level of commitment and repurchase intention.

Thus, commitment is viewed as a cognitive and attitudinal process that is based essentially on the desire to maintain a relationship between a service provider and the customer.

According to Morgan and Hunt (1994: 23), commitment is "an enduring desire to maintain a valued relationship". Gremler and Brown (1996: 173) assert that suppliers who "need to gain customer loyalty have to understand that customer loyalty is the degree to which customers' exhibit repeat purchasing behaviour from a service provider and possess a positive attitudinal disposition toward the provider and considers using only this provider when a need for this service arises".

While precast concrete-producing organisations aim to gain customers' loyalty, customers on the other hand, seek an organisation's service loyalty (the assurance of a consistent and superior quality of service) as proof of the organisation's commitment to offering superior service, for both the present and the long term (Kandampully, 1998: 432). It is imperative that the service provider convince its customers of its commitment by providing a superior quality of service.

2.12 SYNOPSIS

As construction companies face increasing competition due to the effect of deregulation, greater attention continues to be given to customer relationships and satisfaction with emphasis on service quality. In construction, customer satisfaction does not guarantee future work with a customer. Therefore, the main benefit of high customer satisfaction for a customer is the opportunity to remain a customer's potential partner in the future.

Given the growth of the service sector, and advances in information technology and communications that facilitate the management of relationships with customers, models of service and relationships are a fast growing area of marketing science. The nature of

service relationships increasingly leads to financial impact being assessed. The next chapter provides an overview of the research design used in the study.

CHAPTER 3

RESEARCH METHODOLOGY

3.1   INTRODUCTION

In the preceding chapter, a theoretical framework of the international precast concrete industry and local construction sector profiles were discussed. In addition, an overview was provided of services, service quality, satisfaction and loyalty.

This chapter describes the research methodology, the sampling procedures, data collection and questionnaire design relevant to this study. Methods of data analysis and statistical techniques are also outlined. Reliability and validity issues are discussed.

3.2   RESEARCH DESIGN

Research design involves a series of rational decision-making choices. Given the nature of service quality in the service industry, particularly when looking at the organisation in the study, it was imperative for the researcher to use an objective scale to measure customer perception of service quality.

Two methodological paradigms of data collections are normally used in research. The two methods are briefly explained below.

3.2.1.   Qualitative research

It is an approach involving the use of structured questions, in which the response options have been predetermined and a large number of respondents are involved. Its purpose is very specific, and data formats as well as sources are clearly defined and the compilation

and formatting of the data gathered follows an orderly procedure (Burns & Bush, 2006: 202).

Qualitative study begins with observation of the phenomenon followed by the recording and classification of data (Taylor, 2000: 164). This method can also be used to study facts, observations and experiences that can be used as empirical indicators when developing an instrument (Pett, Lackey & Sullivan, 2003: 25).

Patton (2000: 40-41) outlines the following characteristics of qualitative research:

- Conditions: naturalistic inquiry - to study real world situations as they unfold naturally.
- Purpose: understanding - seeks to understand people's interpretations.
- Instrumentation: human – the human person is the primary collection instrument.
- Data: subject – data are perceptions of people in the environment.
- Results: valid – the focus is on design procedures to gain "real", "rich", and "deep" data.

3.2.2. Quantitative research

Quantitative research on the other hand is a system of subjecting data or information to empirical analysis to assist the researcher in reaching a decision (Edem & Lawal, 1997: 53). The authors further postulates that utilising quantitative method introduces an approach through which a researcher could systematically and logically construct a methodology to resolve a complex set of socio-economic and technological problems common to a service provider.

Edem and Lawal (1997: 53) assert that quantitative research entails a system of subjecting data or information to empirical analysis to assist a researcher in reaching a decision. The author further postulates that utilising a quantitative method introduces an

approach through which a researcher could systematically and logically construct a methodology to resolve a complex set of socio-economic and technological problems common to a service provider. Malhotra and Birks (2003: 766) say that in quantitative research the data is quantified to apply statistical techniques in order to draw inferences. This is an approach used when seeking insight into the general nature of the problem, the possible decision alternatives and relevant variables that need to be considered.

In this study, to gain a deeper understanding of the company in question, a quantitative methodological paradigm which includes quantitative data collection, techniques to explore the relevant phenomena was used. The rationale for selecting a quantitative study is that it is cost effective, flexible and objective given the budgetary and time limitations (Dhurup & Surujlal, 2008: 19).

3.3.   SAMPLING DESIGN PROCEDURE

The following steps outlined by Tustin *et al.* (2005: 339), were used in the sampling design procedure.

3.3.1   Target population

The target population is a clearly defined group of clients who will participate in the study and more often than not they are defined in terms of the sample units and elements as well as the extent and time of conducting a survey (Tustin *et al.*, 2005: 340; Hair, Bush & Ortinau, 2002: 328). The researcher clearly specified which terms and elements are of interest and those that are to be eliminated from the study. According to Taylor-Powell (1998: 2) this process includes three parts namely:

- identifying the group of interest
- naming the geographic area where the group is found
- indicating the time period of interest, as necessary.

For the purpose of this study, the population will comprise general contractors, government institutions, civil consultants and end-users operating within the construction industry at the Northern, Eastern, Southern, Western and Central regions of the Gauteng province. The elements selected are extracted from the company's client records as at July 2008. Currently the total population from the stated area consists of 622 customers.

3.3.2. Sampling method

The sampling method is the way the sample units are to be selected (Tull & Hawkins, 1993: 543). A probability sampling technique was used in the study. According to Churchill (2001: 452), the advantage of using probability sampling is that each member of the population has a known zero chance of being included in the sample. The use of probability sampling allows for statistical inferences to be made about the target population from which the sample is drawn (Malhotra & Birks 2003: 363).

A combination of stratified and systematic random sampling techniques was employed in the study. Initially a predetermined proportion of respondents were stratified from different groups according to table 10. In the systematic random sampling procedure a skip interval was applied to the sample elements so that it produced a sample of the required size (Boyce, 2002: 246). From the general contractors, government institutions, civil contractors and end users, every second customer in each category was approached to participate in the survey. Where the respondent refused to participate or was not reachable, the next n^{th} customer on the list was approached to participate. The skip interval for the sample was computed by dividing the number of elements in the population by the required sample size as illustrated on the next page.

Skip interval   =   number of elements in the population

              ----

              the required sample size

          =   622

              260

          =   2.4

3.3.3   Identification of the sample frame

The use of probability samples requires that each individual in the population be identifiable on a list or at a location. Taylor-Powell (1998: 3) proposes that the sample frame must meet the following criteria. It needs to be:

- accurate-including only those individuals of interest;
- complete and current-including all individuals of interest;
- free of duplicate names; and
- presented with absence of any pattern in the way the names are listed.

It is essential for the researcher to distinguish between the population and the sample frame. A sample frame is a list of population members used to obtain a sample (Aaker, Kumar & Day, 1995: 363; McDaniel & Gates, 2004: 333). The categories and number of clients are reflected in table 10 on the next page.

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Table 10:   Client population within Gauteng Province

General Contractors	**575**
Government institutions	**29**
Civil Consultants	**9**
End Users	**9**
TOTAL NUMBER OF CLIENTS	**622**

3.3.4   Sample size

The sample size refers to determining how many elements of the population should be included in the sample (Burns & Bush 2006: 33). The determination of a sample size is usually a subjective, intuitive judgment made by the researcher based on past studies (Zikmund, 2000: 519). However, the cost of data collection and the constraint of time is also a major consideration for determining the ultimate sample size. Using the historical evidence approach, the minimum sample size was set at 260 customers. The size of the sample was based on the studies undertaken by (Kim & Jin, 2002: 226; Sureshchander, Rajendra & Anatharaman, 2002: 16) on service quality attributes. In addition, Churchill (2001: 521) suggests that in regional or institutional consumer marketing research survey, a sample between 200 and 500 is adequate.

3.3.5   Data collection and questionnaire development

The survey method was used to obtain appropriate data through face-to-face interviews. The survey approach was chosen as it seeks to discover relationships that are common across organisations or categories of respondents (Gable, 1994: 2).

Abramson and Abramson (1999: 16) state that face-to-face interviews provide an avenue for gathering useful and systematically collected data. Face-to-face interviews also tend to reduce anxiety among respondents, thereby increasing the response rate and decreasing the potential for measurement errors (Tustin *et al.,* 2005: 344). Furthermore, the authors acknowledged that face-to-face interviews can generate large amounts of information for a questionnaire and they elicit essential information which can be used to improve a measurement instrument.

Tustin *et al*. (2005: 145) assert that with this method, data is collected through personal interviews conducted in-house at each selected client's office or at a location convenient to each respondent in an effort to appreciate the interactive essence of the functioning dyadic relationship.

The questionnaire was administered over a six-week period beginning in the first week of December 2008. Data was gathered using a structured questionnaire. Figure 18 below stipulates the methodological steps followed by the researcher in developing the questionnaire.

Figure 18:   **Methodological steps in the scale development and data gathering process.**

Item Generation	Step1 – Literature Review and Scale Creation
	• Examine literature for existing scales • Assess applicability of existing scales and revise if appropriate • Eliminate or reword problematic items and augment with new items as needed
Item Refinement	Step 2 – Pre-Test
	• Employ convenience sample to participate in written survey • Receive qualitative feedback and evaluate item integrity • Eliminate or reword problematic items and augment with new items as needed
	Step 3 – Pilot Test 1 • Calculate reliability scores and modify scales as necessary • Test scales and items using representative sample

Source: (Froehle & Roth, 2004: 8)

3.3.5.1   Questionnaire layout

In accordance with the conceptual framework described above, the questionnaire was structured into four sections.

- Section A: Demographics and general buyer behaviour

- Section B: Questions based on expectations of service quality elements

- Section C: Questions based on customer satisfaction

- Section D: Questions based on customer loyalty

The questionnaire comprised closed questions. In Section A, dichotomous and multiple choice questions were used. A 7-point Likert scale, ranging from 7= strongly agree to 1= strongly disagree, was used in Section B to assess expectations and a 5-point scale,

ranging from 5= strongly agree to 1= strongly disagree, was used in Section C to assess satisfaction. A 5-point scale, ranging from 5= definitely likely to 1= definitely unlikely, was used in Section D to assess customer loyalty. According to Cooper and Schindler (2003: 253), the advantage of using the multidimensional Likert scale is that it measures the gaps between the service quality expectations as well as the service quality experience.

3.4 PRE-TESTING AND PILOT TESTING

Pre-testing refers to testing the questionnaire on a small sample of respondents to identify and eliminate potential problems (Malhotra & Birks 2003: 345). Pre-testing is a systematic checking of a questionnaire which is central to planning a good survey. In the pre-testing stage the researcher affirmed that the questionnaire captured relevant information for the study. The draft questionnaire was submitted to three research professors and three industry representatives who included senior marketing personnel from the population.

A pilot test was also undertaken. A purposive sampling method was chosen in the pilot test stage because respondents were judged to have knowledge about customer-supplier relationships in construction supply chains and procurement. A pilot test was performed with 40 respondents. The 40 respondents included general contractors, sub-contractors, end-users, government institutions and consultants. At the conclusion of this stage the relevant changes were made to the questionnaire before the final compilation of the survey questionnaire. In addition, the Cronbach alpha reliability was computed for the pilot questionnaire.

3.5 DATA PREPARATION

This process involves checking the data for accuracy and entering the data into the computer to transform the data.

The two major phases of data preparation which the researcher employed in this study were, coding and data editing. Coding is assigning a code, usually a number, to each possible response, to each question and the code includes an indication of the column position (field) and data record it will occupy (Malhotra, 2007: 8). Cambell (2000: 9-10) asserts that before the survey data is analysed, the verbal interview responses must be represented by numeric codes. Below are the guidelines that were followed during the coding process.

- Identification of variables. Providing enough space at the beginning of the record to accommodate all identification variables.
- Code categories. Categories will be mutually exclusive, exhaustive, and precisely defined.
- Series of responses. When more than one column was required to handle a series of responses.

Aaker *et al.* (2004: 434) claim that it is easier to code closed-ended questions than to code open-ended questions. Coding enables other kinds of comparisons to be made provided that the comparisons are independent or orthogonal (Hardy & Bryman, 2004: 26). For the purpose of this study coding served to summarise, synthesise and sort many observations made from the data (Charmaz, 1983: 112).

Editing is a review of the questionnaire with the objective of increasing accuracy and precision. It consists of screening questionnaires to identify illegible, incomplete, inconsistent or ambiguous responses.

3.6.   DATA ANALYSIS

According to Bogdan and Biklen (1982: 154), analysis of data encapsulates dealing with data organisation and breaking it down searching for patterns and discovering what is important to be learned and deciding what to tell others. All data was entered into an Excel spreadsheet and then copied to the Statistical Package for Social Sciences (Version

16.0 for Windows) programme, which is a statistical package used to code data and to run statistical analysis discussed below.

3.6.1 Descriptive analysis

Descriptive analysis refers to the transformation of raw data into a form that will make them easy to understand and interpret (Zikmund, 1999: 330). The study makes use of descriptive statistics to analyse the composition and normality of the data. Descriptive analysis determines the central tendency in the distribution of a variable, the spread of a distribution and the association among variables. It provides information about the central tendency, dispersion, skewness and kurtosis of data. This method will be used in the exploratory data analysis stage (Davis, 2008: 315).

Cooper and Schindler (1998: 427) refer to descriptive statistics as a measure of location (mean, median and mode) and dispersion of variability (variance, standard deviation, range and quartile deviation). Some of these measures were used to gain an overall understanding of the raw data and to enable the data to be presented using tables and figures.

3.6.2 Frequency distribution

This entails the construction of a table that shows in absolute and relative terms how often the different values of the variable are encountered in the sample. A frequency distribution indicates how 'popular' the different values of the variable are among the units of analysis (Tustin *et al.,* 2005: 523).

3.6.3 Inferential statistics

This method deals with drawing conclusions and in some cases making predictions about the properties of a population based on information obtained from a sample. It facilitates

the making of broader statements about the relationships between the data (Mouton, 1996: 166). Amongst others, inferential statistics can:

- provide more detailed information than descriptive statistics
- yield insight into relationships between variables
- reveal causes and effects and make predictions
- generate convincing support for a given theory
- be generally accepted due to widespread use in business and academia.

The t-test will be used to test the significant differences in the degree of adherence to quality dimensions, and manifestations of service quality. This will allow preliminary analysis to determine where values in the distribution were concentrated (Davis, 2008: 315)

3.6.4   Correlations analysis

To find how dependent overall users' satisfaction is on individual service quality attributes, the researcher carried out a correlation analysis (Awan, Azam & Asif, 2008: 59). The correlation coefficient is a mathematical measure of the relation between two data sets. It is the standard measure used by researchers to determine if there is some common factor that causes two data sets to move together, rising and falling in a similar fashion. Churchill and Iacobucci (2002: 734) asserted that the relationship can either be positive or negative depending on the direction of the relationship between the variables.

For the purpose of this study, the Pearson correlation coefficient will be used to measure the degree of linear association between two variables. The Pearson correlation coefficient, is a real number in the range (-1 to +1), that expresses the quality of the least square fitting to a given set of data points (Nikoloski, Deo & Kucera, 2005: 240). A -1 indicates perfect linear negative relationship between two variables and +1 indicates perfect positive linear relationship and 0 indicates lack of any linear relationship (Zikmund, 1999: 367).

3.6.5 Factor analysis

A factor is a variable or construct that is not directly observable but needs to be inferred from the input variable. It also might be viewed as a grouping of those input variables that measure or are indicators of a factor (Aaker *et al.,* 1995: 599).   Factor analysis is a statistical technique used to identify a small number of groups or clusters that represent relationships among a set of interrelated variables. The correlation patterns are expressed in terms of unobservable or latent variables called "factors" (Merkle, Layne, Bloomberg & Zhang, 1998: 207-208).

Factor analysis is a collection of methods used to examine how underlying constructs influence the responses on a number of measured variables. Factor analysis partitions the variance of each indicator (derived from the sample correlation/covariance matrix that is used as input for the analysis) into two parts: (a) Common variance, or the variance shared with other indicators in the analysis; and (b) Unique variance, which is a combination of reliable variance that is specific to the indicator (i.e. systematic latent factors that influence only one indicator) and random error variance (i.e. measurement error or unreliability in the indicator) (Brown, 2006: 13). For the purpose of this study exploratory factor analysis will be used.

3.6.5.1 Exploratory factor analysis (EFA)

Exploratory factor analysis is a complex multi-step process. It attempts to discover the nature of the constructs influencing a set of responses. Exploratory factor analysis is a widely utilised and broadly applied statistical technique in the social sciences. EFA is used for a variety of applications (Costello & Osborne, 2005: 1). It is used when the researcher does not know how many factors are necessary to explain the interrelationships among a set of characteristics, indicators or items (Pett, Lackey & Sullivan, 2003: 3).

Costello and Osborne (2005: 5) caution researchers to remember that EFA is a "large-sample" procedure, generalisable or replicable results are unlikely if the sample is too small. In other words the larger the sample sizes the better. According to Raven (1994: 9) the fact that EFA can be applied in the social sciences may help explain an enormous amount of information despite the copious literature concerning how to utilise it in social science research.

DeCoster (1998: 2) outlined some common uses of EFA, as listed below:

- To identify the nature of the constructs underlying responses in a specific content area.
- To determine what sets of items "hang together" (factor loading) in a questionnaire.
- To demonstrate the dimensionality of a measurement scale. Researchers often wish to develop scales that respond to a single characteristic.
- To determine what features are most important when classifying a group of items.
- To generate factor scores representing values of the underlying constructs for use in other analyses.

3.6.5.2   Methods of Extraction

There are several factor analysis extraction methods to choose from such as unweighted least squares, generalised least squares, maximum likelihood, principal axis factoring, alpha factoring, and image factoring (Costello & Osborne 2005: 2). From the many available methods of factor extraction and for the purpose of this study the researcher will apply the most common method (Tredoux, Pretorius & Steele 2006: 249) explained briefly below.

Principal components analysis identifies the best combination of variables in the sense of accounting for most of the variance in the data as a whole. This best combination of

variables represents the first principal component. The second principal component represents the second best combination of variables after the effect of the first component is removed. This process is repeated until there are as many components as there are variables. After the extraction of data is complete, the next step in the factor analytical procedure is therefore to rotate the factors to achieve a more interpretable structure.

3.6.5.3 Rotation

According to Aaker *et al.* (1995: 603), factor analysis can generate several solutions (loadings and factor scores) for any data set. Each solution is termed a factor rotation and it is generated by a factor rotation scheme.

Rotation involves moving the components or axes to improve the "cleanness" or fit of the solution (Tull *et al*., 1993: 697). There are two main classes of rotation procedure, namely orthogonal and oblique. Orthogonal rotation methods ensure that factors are uncorrelated while oblique methods allow factors to be correlated (Tredoux *et al*., 2006: 249). Merkle *et al*. (1998: 208) postulate that these two most popular methods come in two different forms briefly explained below:

Varimax (for orthogonal rotation) maximises the sum of the squared factor loadings across the columns. This tends to force each variable to load highly on as few factors as possible. Ideally it will cause each variable to load on only one factor and thus point out summated scores that could be made. If there is an overall underlying general factor that is working on all of the variables this rotation will not find it. Varimax rotation is by far the most common choice. Varimax, quartimax, and equamax are commonly available orthogonal methods of rotation, while direct oblimin, quartimin and promax are oblique rotation methods. Orthogonal rotations produce factors that are uncorrelated - oblique methods allow the factors to correlate.

Quartimax tends to have the entire variables load highly on one factor and each variable tends to load highly on one other factor and near zero on the rest. Unlike varimax this

method will tend to keep the general factor. It sometimes doesn't seem to differ much from the initial solution (Sharma, 1996: 120). This author reminds us that there are also oblique rotations that don't keep the independence between the factors. Popular methods include Promax, Oblimin, and Orthoblique.

3.6.5.4   Naming of Factors

For the purpose of this study, the researcher named the factors according to which variables load with each factor (Churchill & Iacobucci, 2005: 581). The following procedure was used:

- Begin with the first variable and first factor in the rotated factor-loading matrix and move horizontally from left to right looking for the highest loading. Circle that loading. Repeated this procedure for each of the other variables in turn.
- Examine each of the circled loadings and assess its "significance." The significance of any loading can be judged using either statistical or practical criteria.
- Underline the other significant loadings using the criteria decided on in step two.
- Examine the loading matrix and identify all those variables that do not have significant loadings on any factor. Every factor was expected to load on some factor but if there was a variable that does not, one could either interpret the solution as it is and simply ignore those variables without any large loading or critically evaluate each of the variables that do not load significantly on any factor, specifically if a variable is of minor importance to the study's objective and it has a low communality index.
- Focus on the significant loadings and attempt to name the factors on the basis of what the variables that load on a given factor seem to have in common. Variables that have significant loadings on more than one factor complicate the naming task and are also candidates for elimination, depending on the purpose

of the study as well as on whether the mixed pattern of loadings makes sense or indicates that there are fundamental problems with the variable or item.

According to Churchill and Iacobucci (2005: 576), there are two most popular rules that exist in deciding how many factors to retain for a factor analytical solution. These are described below.

- **The latent roots or eigenvalue criterion** holds that the amount of variation explained by each factor must be greater than 1. The rationale is that the variation in each variable is 1.0 after the variable has been standardised, and a factor should account for at least that much variation to be considered useful from a data summarisation perspective. Hence, only factors with eigenvalues greater than 1.0 are included (Aaker *et al.,* 1995: 605).
- **The scree test** is a plot of eigenvalues against the number of factors, in order of extraction (Malhotra, 2004: 567).

3.6.6   Analysis of variance (ANOVA)

This is a technique of inferences of the arithmetic mean in significance tests in which there are *k* samples in stead of only one or two samples (Basley & Clover, 1988: 281). The analysis of variance is a statistical technique that allows the researcher to test for statistically significant differences between treatment means and to estimate the differences between the means (Aaker *et al.,* 1995: 491-492).

According to Burns and Bush (2006: 507) the basic of analysis of variance is a desire on the part of a researcher to determine whether a statistically significant difference exists or not between the means for any two groups in the sample with a given variable, regardless of the number of groups. It is an extension of the t-test in two ways. Firstly, the t-test enables the researcher to compare a sample mean to a population mean, or means of two samples to each other. Secondly, in a two-sample t-test, there is only one predictor

variable that defines the group membership, e.g. male vs. female (Churchill & Iacobucci, 2005: 497).

Analysis of variance (ANOVA) permits comparison of more than two populations when interval variables are used. ANOVA does this by comparing the dispersion of samples in order to make inferences about their means. ANOVA seeks to answer two basic questions:

- Are the means of variables of interest different in different populations?
- Are the differences in the mean values statistically significant?

For the purpose of this study, the researcher used ANOVA to determine if it is likely that customers with more buying experience are more accustomed to the service quality levels that they encounter (Wallace, Giese & Johnson, 2004: 255). The age category of respondents and the frequency of purchases they made were analysed as they are likely to influence purchases, as well as the type and quality of service levels accessed (Wallace *et al*., 2004: 255).

3.6.7 Reliability analysis

Reliability is the degree to which the results are repeatable. If the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable (Joppe, 2000: 1). This author states further that the reliability of a measure indicates the extent to which the measure is without bias (error free), which offers consistent measurement across time and across the various items on an instrument.

According to Hardy and Bryman (2004: 22-23), two identifiable aspects of reliability exist and they are given below.

- External reliability. If a variable is externally reliable, it does not fluctuate greatly over time. In other words, it is stable.

- Internal reliability. This is an issue that arises in connection with multiple-indicator variables. If a variable is internally reliable it is coherent. This means that all the constituent indicators are measuring the same thing.

Garson (2007: 765) stated that reliability is assessed in one of the four ways listed below

- *Internal consistency*: Estimation based on the correlation among the variables comprising the set (typically, Cronbach's alpha). It assesses the ability to produce similar results when different samples are used to measure a phenomenon during the same time period (McDaniel & Gates, 2004: 201).
- *Split-half reliability*: Estimation based on the correlation of two equivalent forms of the scale (typically, the Spearman-Brown coefficient). This entails randomly dividing the items making up a scale into two halves and establishing how well the two halves correlate (Hardy & Bryman, 2004: 23).
- *Test-retest reliability*: Estimation based on the correlation between two (or more) administrations of the same item, scale, or instrument for different times, locations, or populations, when the two administrations do not differ on other relevant variables (typically, the Spearman Brown coefficient). Spearman's rank correlation which is usually shown with the symbol *s* replaces observed values with their ranks and calculates the value of *s* on the ranks. Like many other nonparametric statistics, is less susceptible to the influence of outliers and it is better than Pearson's correlation for nonlinear relationships (Berk & Carey, 2004: 318).
- *Inter-rater reliability*, which measures *homogeneity*, involves administering the same form to the same people by two or more interviewers so as to establish the extent of consensus on use of the instrument by those who administer it.

These four reliability estimation methods are not necessarily mutually exclusive, nor need they lead to the same results. All reliability coefficients are forms of correlation

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coefficients, but there are other multiple types that can be used. The Cronbach alpha technique was used to measure reliability of the survey instrument.

3.6.8.   Cronbach's alpha

According to Churchill (1995: 538), the use of coefficient alpha in assessing the reliability of marketing constructs is crucial. The Cronbach alpha is mathematically equivalent to the average of all possible split-half estimates. It is a measure of squared correlation between observed scores and true scores.

Zumbo, Gadermann and Zeisser (2007: 27) claim that Cronbach alpha is the most common estimate of internal consistency of items in a scale. Alpha measures the extent to which item responses obtained at the same time correlate highly with each other. Though widely interpreted as such, strictly speaking alpha is not a measure of unidimensionality. Rather, alpha is a measure of the level of mean intercorrelation weighted by variances or a measure of mean intercorrelation for standardised data, stepped up for the number of items. A set of items can have a high alpha and still be multidimensional. This happens when there are separate clusters of items (separate dimensions) which inter-correlate highly, even though the clusters themselves do not intercorrelate highly. Also, a set of items can have a low alpha even when unidimensional if there is high random error (Garson, 2007).

3.6.9   Validity of the Instrument

Validity has two essential parts; internal and external. Internal validity encompasses whether or not the results of the study are legitimate because of the way the groups were selected, data was recorded or analysis performed (Last, 2001: 123). This author further states that external validity, often called "generalisability" involves whether or not the results given by the study are transferable to other groups of interest such as the population.

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According to Sperry (2004: 11), validity refers to the ability of an assessment device or method to measure what it is intended to measure. Blanche, Durrheim and Painter (2008: 90) refer to validity as the degree to which the research conclusions are sound. They also provide different types of validity listed below:

- Internal validity – The extent to which conclusions can be drawn.

- External validity – The extent to which it is possible to generalise from the data and context of the research study to the broader populations and settings.

- Measurement validity – The extent to which the constructs in the research questions are successfully operationalised.

- Interpretative validity – The extent to which the appropriate conclusions are drawn from data.

- Statistical validity – The extent to which the study has used an appropriate design and statistical methods of analysis.

Joppe (2000: 1) asserts that validity determines how truthful the research results are. Researchers generally determine validity by asking a series of questions and often look for the answers in other research. For the purpose of this study, use will be made of the following types of validity measures:

3.6.9.1 Content Validity

Content validity it is based on the extent to which a measurement reflects the specific intended domain of content (Carmines & Zeller, 1991: 20). The questionnaire is to be pre-tested to ensure that it examines and answers all the research questions with intent to verify the content validity of the research instrument.

3.6.9.2 Construct Validity

Construct validity is concerned with the question of "Does the instrument, in fact, measure what it purports it to measure?" (Churchill & Iacobucci, 2005: 294). Its use in this study will testify how well the results obtained from the use of the measure fit the theories around which the test was designed. In other words, construct validity will testify that the instrument did tap into the concept as theorised. This type of validity can be established through correlation and exploratory factor analysis (Peter, 1981: 135).

3.6.9.3 Convergent validity

Convergent validity is the extent to which a scale correlates positively with other measures of the same construct (Malhotra & Birks, 2003: 315). It is not necessary that all these measurements be obtained by using conventional scaling techniques. Correlations between satisfaction and loyalty will be used in this study to establish convergent validity. In addition, the Cronbach alpha value for the overall service quality scale will be used to establish convergent validity.

3.7 RESEARCH ETHICAL ISSUES IN DATA COLLECTION

The essential purpose of research ethics is to protect the welfare of research participants and extends into areas such as scientific misconduct and plagiarism (Blanche *et al.,* 2008: 61). The author further states that there are several research ethics codes that are used to guide researchers.

3.7.1 Anonymity and respect for the dignity of persons

This involves the protection of individual confidentiality and also an important operational expression of this principle. The identity of participants should also be protected in particular circumstances. Anonymity of respondents will be protected.

3.7.2 Nonmaleficence

This philosophical principle supplements the autonomy principle and requires the researcher to ensure that no harm befalls research participants as a direct or indirect consequence of the research.

3.7.3 Beneficence

This philosophical principle obliges the researcher to attempt to maximise the benefits that the research will afford to the participants in the research study.

3.7.4 Justice

In research, justice is a complex philosophical principle and in general it requires that the researcher treat participants with fairness and equity during all stages of research. Mutual trust is an ethical issue. The researcher must uphold standards of confidentiality and anonymity as promised to respondents.

3.8 SYNOPSIS

Numerous methods of conducting research studies involve both theory and practicality and the two general approaches are widely recognised: quantitative and qualitative research methods. The stratified sampling and systematic random sampling method was selected and a quantitative approach was chosen for the study. Various statistical procedures were highlighted as well as the reliability and validity assessment procedures used.

The next section will deal with the interpretations of data collected through the survey method. In order to break down the findings and interpretations of data, the analysis of the findings will be made such that the data can be reported on and phrased into meaningful information. Data interpretations will be displayed in the form of figures and

tables, while trends and comparisons will be displayed in such a way that they answer the research objectives as set out at the beginning of the study.

CHAPTER 4

ANALYSIS AND INTERPRETATION OF EMPIRICAL FINDINGS

4.1 INTRODUCTION

This chapter presents a description and explanation of the method employed in conducting the research. The emphasis in this chapter is on data analysis of the pilot study and the main survey. The results of the pilot study in a form of reliability analysis are discussed, followed by a discussion on data analysis of the main survey.

Data was captured on an Excel spreadsheet and transformed into SPSS version 16.0 for Windows for processing and analysis.

4.2 PILOT TESTING OF THE QUESTIONNAIRE

The pilot questionnaire was scrutinised by the management team of the organisation in including the chief executive officer. Their comments were taken into account during the refinement of the questionnaire. The questionnaire layout was made user-friendly for data capturing and data analysis. A pilot test of 40 respondents was undertaken randomly on respondents who transacted with the organisation in July 2008. General contractors, end-users, government institutions and consultants participated in the pilot study. The distribution profile of the respondents in the pilot study is reflected in Table 11.

Table 11:   Distribution profile of respondents on the pilot study

Distribution Profile	
Category of administered questionnaires received	**Number of Questionnaires**
General Contractors	10
Government Institutions	7
Civil Consultants	8
End Users	15
Total	40

The responses acquired were obtained on a 7 point Likert scale with a score of one indicating that the respondents 'strongly disagree' and a score of seven indicating that the respondents 'strongly agree' with the statement. Cronbach alpha coefficient was computed for the 31-item scale. The results provide a satisfactory indication of reliability (0.965). The reliability statistics are reflected in Table 12.

Table 12:   Reliability statistics

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No of Items
0.967	0.965	31

The inter-item correlations indicated that at this stage no items should be deleted because the deletion of items will not substantially improve the Cronbach Alpha reliability coefficients. Furthermore, since this was a pilot study, it was necessary to retain all the items in order to ascertain the robustness of the items under a larger sample size. The inter-item correlations are reported in Table 13.

Table 13:   Inter-item correlations

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
B1	141.72	570.102	0.484	0.967
B2	141.45	588.356	0.161	0.968
B3	140.85	579.874	0.338	0.968
B4	140.97	584.281	0.217	0.968
B5	141.62	569.522	0.469	0.967
B6	142.57	544.507	0.803	0.965
B7	142.65	542.336	0.832	0.965
B8	142.65	542.336	0.832	0.965
B9	142.62	542.753	0.847	0.965
B10	142.82	548.815	0.757	0.966
B11	141.55	560.664	0.607	0.967
B12	141.87	543.907	0.715	0.966
B13	142.20	540.985	0.878	0.965
B14	142.05	548.921	0.768	0.965
B15	142.22	546.999	0.799	0.965
B16	142.32	540.481	0.879	0.965
B17	142.17	536.763	0.819	0.965
B18	142.00	548.256	0.817	0.965
B19	140.50	572.103	0.505	0.967
B20	141.87	563.497	0.774	0.966
B21	142.20	548.062	0.810	0.965
B22	142.17	547.840	0.912	0.965
B23	142.20	554.369	0.891	0.965
B24	142.62	540.087	0.838	0.965
B25	142.40	555.631	0.711	0.966
B26	140.90	562.810	0.548	0.967
B27	141.67	541.969	0.781	0.965
B28	141.90	555.682	0.718	0.966
B29	141.20	575.959	0.588	0.967
B30	142.47	575.487	0.332	0.968
B31	141.77	567.461	0.515	0.967

4.3   ANALYSIS OF THE MAIN SURVEY RESULTS

In this section, the response rate and respondents' demographic characteristics are discussed in detail. An overview of factor analysis procedures, the methods of extraction as well as the naming and interpretation of factors are also discussed.

4.3.1   Response rate

A total of 260 questionnaires were distributed to respondents which constituted general contractors, government institutions, civil consultants and end users. A total of 246 respondents participated in the survey. A total of 14 respondents refused to participate in the survey, thus leading to a response rate of 94 percent.

4.3.2   Gender composition of the sample

A profile of sampled respondents in the survey comprised 81.5 percent males and 17.7 percent females. This finding tend to suggest that the organisation's customer base within the Gauteng Province, is male dominated. Figure 19 provides an overview of the sample composition.

Figure 19:   Gender of respondents
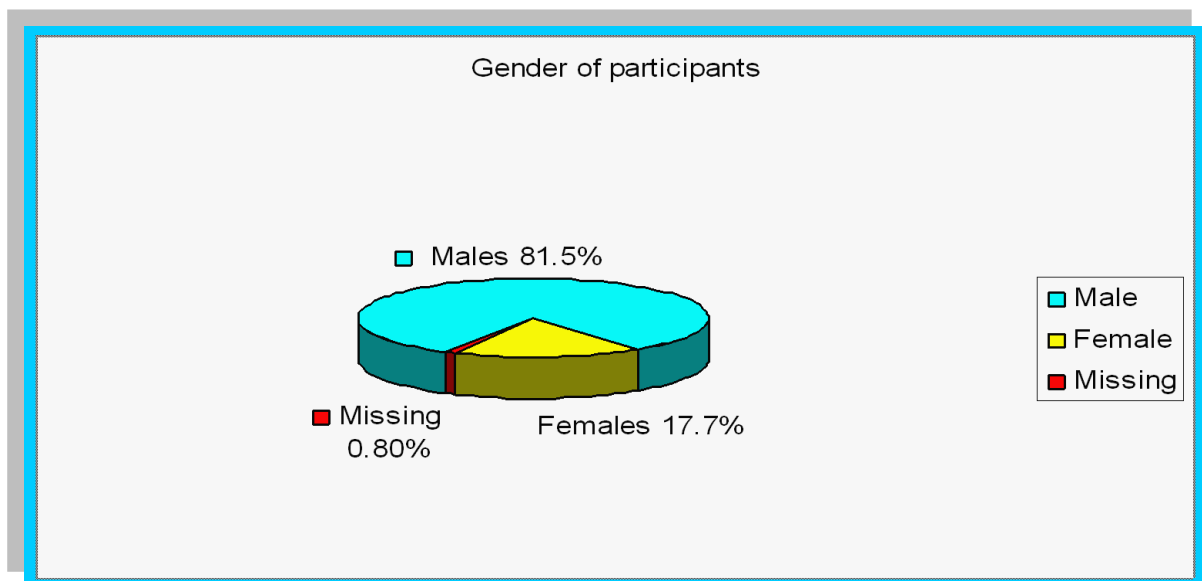
Figure 20 reports on the marital status of the respondents. Married male respondents comprise 62.5 percent and 36.7 percent of the female respondents were married.

Figure 20:   Respondents' marital status
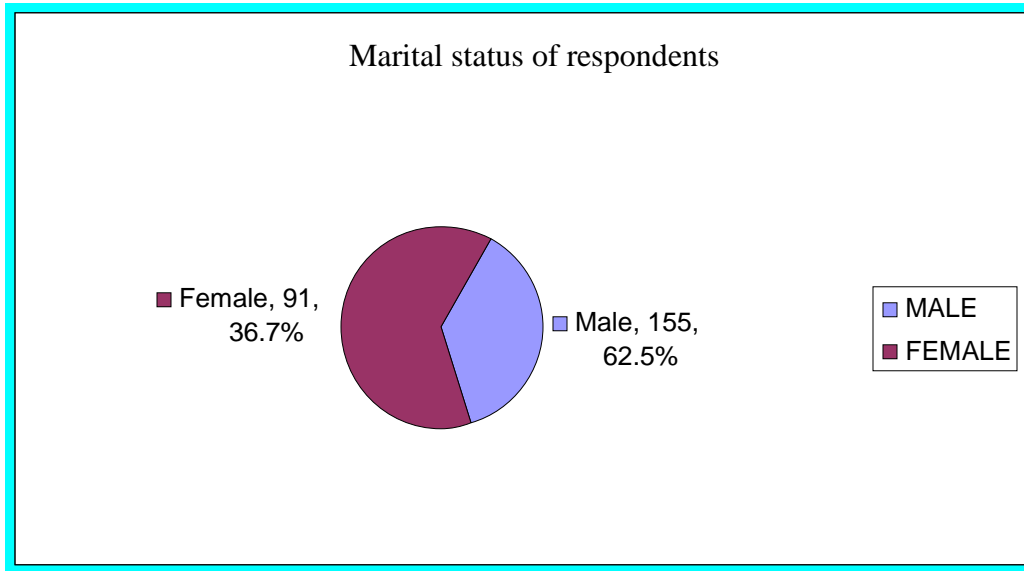
The ethnic groups are reported in figure 21. The majority of the respondents were Whites, 59.7 percent, followed by African respondents, which comprised 34.7 percent. The Coloured and Indian population comprised only 3.3 percent of the sample. These percentages seem also to represent the demographic profile of the province under study.

Figure 21:   Respondents' ethnic groups

	Whites	Blacks	Coloureds	Indians	Others
Frequency	148	86	4	5	3
Percentage	59.7	34.7	1.6	2	1.2
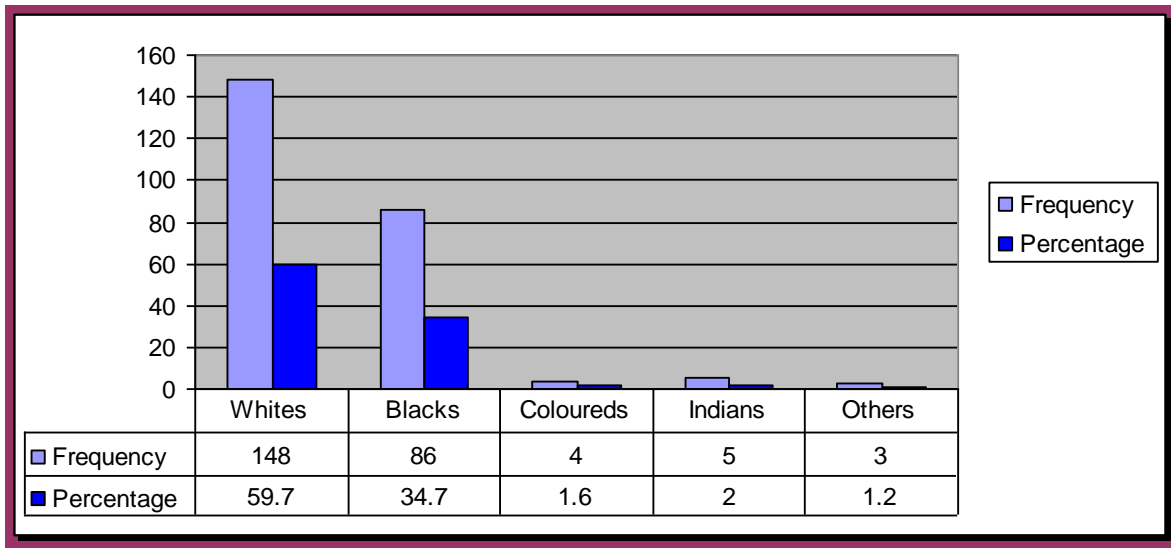
Figure 22 outlines respondent's age profiles. The majority of the respondents, 51.2 percent were between the ages of 36-45 years. The age group 26-35 years constituted the second largest group and comprised 39.1 percent of the sample. It seems that the industry buyers are concentrated within the age ranges of 36-45 years. This scenario is understandable since the industry is a mature industry, which requires experience among respondents in making buying decisions, especially when purchases are made in large volumes.

Figure 22:   Respondents' age groups

	18-25 years	26-35 years	36-45 years	46-55 years	56-65 years
Frequency	6	97	127	13	2
Percentage	2.4	39.1	51.2	5.2	0.8
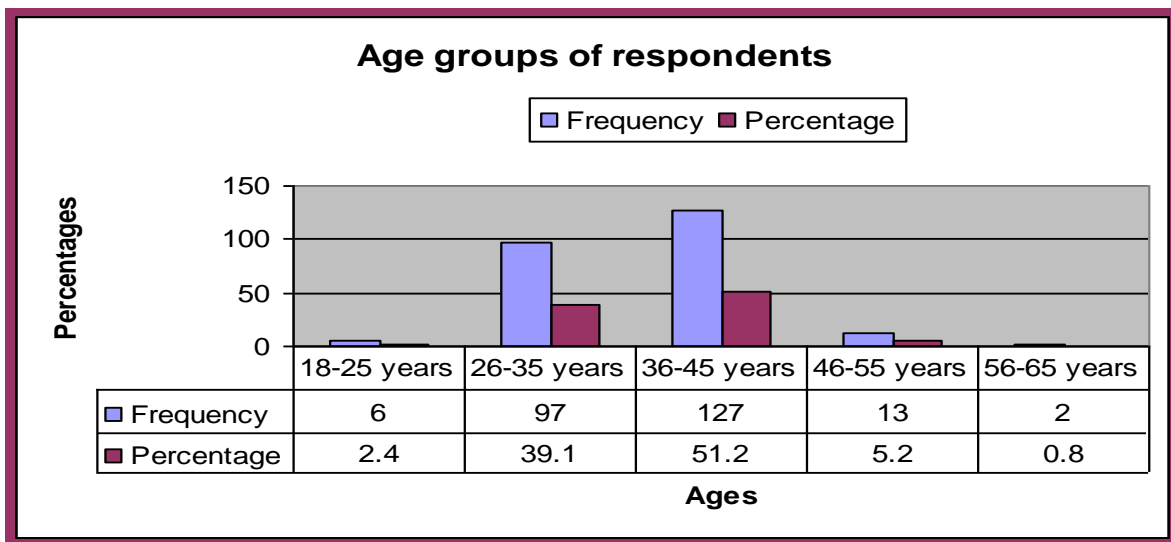
In terms of how long respondents have been making purchases of precast concrete products from the organisation, 30.6 percent of the respondents admitted to having made purchases at this organisation for a period of 2 years and less, while 29.4 percent have been buying for the past 3 to 5 years and 21.8 percent admitted to making purchases for the past 6 to 8 years and the remaining 16.9 percent have been loyal to the organisation for the past 8 years and over. These results are reported in Figure 23.

Figure 23:   Period of making purchases

Period of making purchases

	2 years &	3-5 years	6-8 years	Over 8
Frequency	76	73	54	42
Percentage	30.6	29.4	21.8	16.9

Period
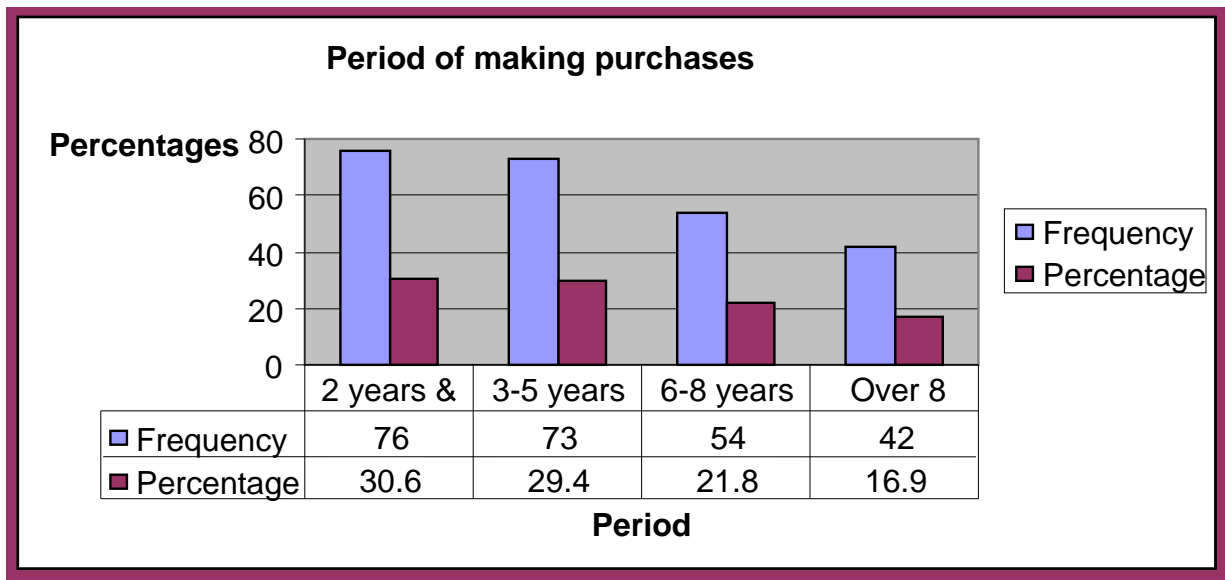
With reference to the frequency of purchases, respondent's buying tendencies were recorded as follows, 37.5 percent of the respondents admitted to be making purchases 2-5 times a year while 24.2 percent purchased precast concrete products 6-8 times a year, 23.8 percent of the respondents admitted to have made purchases over 8 times in a year and finally 12.9 percent of the respondents made purchases from this organisation only once in a year. The results are reported in Figure 24.

Figure 24:   Respondents frequency of purchases

Frequency of purchases

	1 time	2-5 times	6-8 times	Over 8 times
Frequency	32	93	60	59
Percentage	12.9	37.5	24.2	23.8

Times
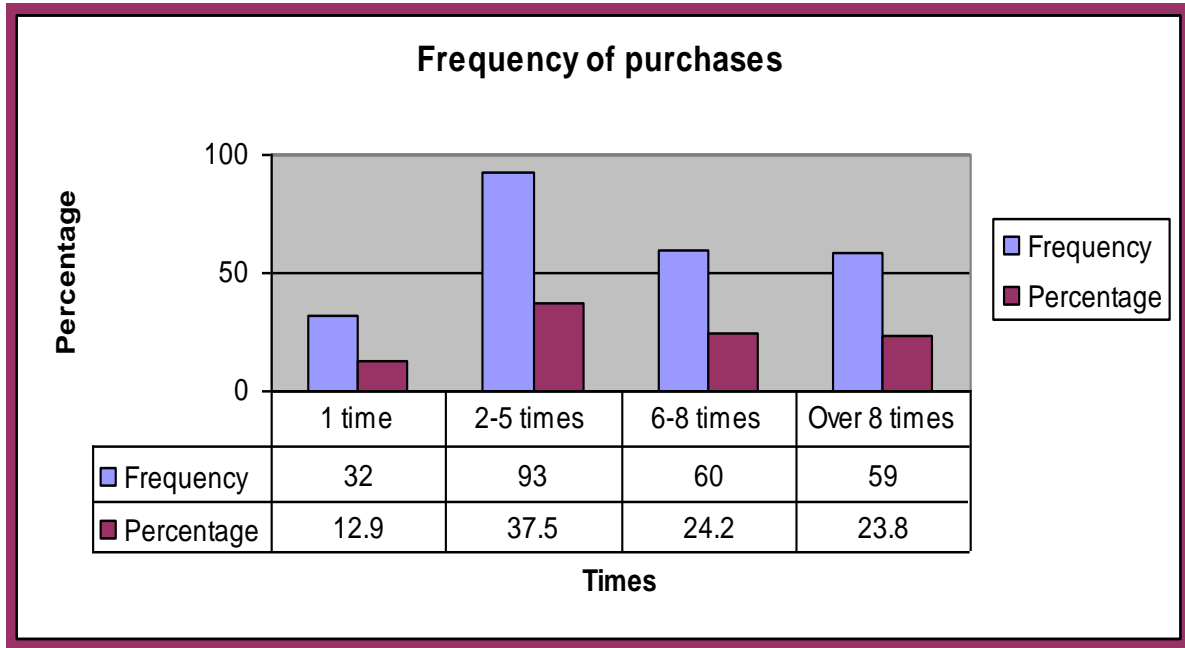
4.4 SECTION B: EXPLORATORY FACTOR ANALYSIS (EFA)

In Section B, the data was factor analysed using exploratory factor analysis. Factor analysis is a statistical data reduction technique that is used to identify a small number of groups or clusters that represent relationships among a set of interrelated variables (Merkle *et al.,* 1998: 209). An overview of the factor analysis procedure, methods of extraction, factor structure, naming and interpretation of factors are discussed in the next section.

4.4.1   Bartlett's test of Sphericity

The Bartlett's test of Sphericity tests the hypothesis that the variance and covariance matrices are identity matrices. It is one of the methods used to establish whether factor analysis is appropriate for the data set. When variables are completely unrelated, then factor analysis is inappropriate (Merkle *et al.,* 1998: 210). In this study, the Bartlett's test

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of Sphericity revealed that the approximate chi-square was 2028.399 (df = 153) at an observed significance level p<0.000 rejecting the hypothesis that there is no correlation between variables.

4.4.2 Kaizer-Meyer-Olkin (KMO) test

The Kaizer-Meyer-Olkin test assesses the degree of relationship between the sets of variables and compares the magnitude of the observed correlations to the magnitude of the partial correlation (Merkle *et al.,* 1998: 208). As a measure of sampling adequacy, the indicator should be 0.5 or greater. In this study, the KMO measure was 0.773 indicating that the sample was adequate for a factor analysis (Kaiser, 1974: 35). The two methods, KMO and Bartlett's tests are illustrated in Table 14.

Table 14:   **Bartlett's test and KMO**

Bartlett's Test and KMO		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.773
Bartlett's Test of Sphericity	Approx. Chi-Square	2028.399
	df	153.000
	Sig.	0.000

4.4.3 Factor rotation

The factors were rotated because this assists in the interpretability of variables loading into a factor. The researcher utilised varimax rotation as it is the most frequently used and reported option (Bahia & Nantel, 2000: 87; Costello & Osborne, 2005: 3). It maximised the sum of the variances of the squared loadings in the factor matrix. This allowed for more factors and clarified the relationship of items to factors by maximising the loading on one factor and minimising loadings on all the others (Ferketich & Muller, 1990: 62).

4.4.4   Factor extraction

Factor extraction was determined in three stages namely; the percentage of variance, eigenvalues and scree plot criterion. These stages are explained briefly below:

4.4.5   Percentage of variance

According to Rietveld and van Hout (1993: 372) it is assumed that in factor analysis the variables do not account for 100 percent of the variance. Although the loading patterns of the factors extracted do not differ substantially, their respective amounts of explained variance do. The table below illustrates the percentages of variance and its cumulative percentages. The cumulative percentage of variance explained is 67 percent which, according to Malhotra (2004: 567), is satisfactory. According to the percentage of variance explained method, five factors seemed appropriate.

Table 15:   Percentage of variance

Component	% of Variance	Cumulative %
1	26.476	26.476
2	16.089	42.565
3	10.086	52.651
4	7.769	60.420
5	6.699	67.118

4.4.6   Eigenvalue

An eigenvalue is the total variance explained by each factor. The general rule of thumb of extracting factors with eigenvalues greater than 1.0 (Mehta *et al*., 2000: 8; Field 2000:

446) is considered appropriate. The rationale is that the variation in each variable is 1.0 after the variable has been standardised and a factor should account for at least that much variation to be considered useful from a data summarisation perspective (Aaker *et al.,* 1995: 605). Hence, for the purpose of this study, only factors with eigenvalues greater than 1.0 were retained (Malhotra, 2004: 567).

The eigenvalue extraction for this study illustrated that five factors were appropriate to capture the dimensions of service quality. Table 16 illustrates factors and their eingenvalues.

Table 16:   **Eigeinvalues extracted through principal component analysis**

Factors	*Eigenvalues*
1	4.766
2	2.896
3	1.816
4	1.398
5	1.206

4.4.7   **Scree plot**

The scree test involves examining the graph of the eigenvalues and examines natural bend or break point in the data where the curve flattens out. The number of data points above the "break" (*i.e.* not including the point at which the break occurs) is usually the number of factors to retain (Costello & Osborne, 2005: 3). This was tested by running multiple factor analyses and setting the number of factors to retain manually. After

rotating the factors, the one with the "cleanest" factor structure was selected. Figure 24 depicts the scree plot with five factors deemed suitable for this study.

Figure 25:   Scree plot of eigenvalues with five factors
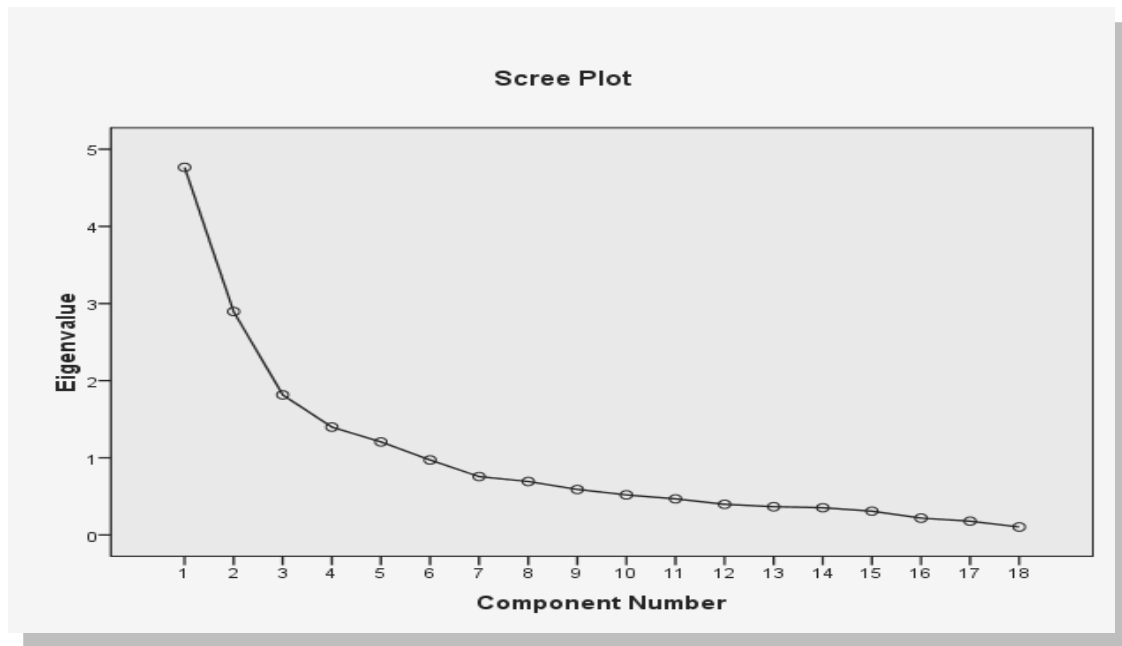
4.4.8   Reduction of items

As suggested by Aldalaigan and Buttle (2002: 369) item reduction was undertaken by examining low item correlations, multiple loadings and unstable variables. This resulted in 13 variables from the 31 items being removed as they had low factor loadings and low inter-item correlation, multiple or unstable loadings. The 13 deleted items are listed in Table 17.

Table 17:   **Deleted variables and description of items**

Variables	Description of items
B6	When the company promises to do something by a certain time it does so
B7	Complaints and problems are solved with great urgency
B8	Complaints and problems are solved with empathy
B9	The company delivers service correctly, the first time
B10	The service is delivered at the time agreed upon
B11	Record keeping of items such as orders and accounts are accurate
B12	Employees of this company inform you of the exact time of delivery
B22	This company pays attention to individual customers
B23	Employees pay personal attention to each customer
B24	Employees understand the specific needs of customers.
B25	Employees have the customers best interest at heart
B26	The business hours of this company are convenient for me
B27	The company is responsive to my needs
B28	The employees in this company provide the necessary information according to my needs
B29	The employees in this company provide an enabling environment for me to arrive at a buying decision
B30	The employees in this company have the appropriate product knowledge in satisfying my needs
B31	The employees in this company communicate appropriately to me to arrive at a buying decision

4.4.9   Final factor structure

The final factor structure took into account the three methods of factor extraction and this is reported in Table 18. Items were considered markers of a component if their loading values were at least 0.50. An 18-item scale with five factors was finally extracted.

Table 18:   **Rotated factor loadings**

	FACTORS				
VARIABLES	1	2	3	4	5
B13	0.716				
B14	0.851				
B15	0.870				
B16	0.576				
B17	0.652				
B18	0.572				
B7		0.779			
B8		0.817			
B9		0.710			
B10		0.676			
B1			0.718		
B2			0.750		
B5			0.536		
B19				0.816	
B20				0.859	
B21				0.795	
B3					0.848
B4					0.848
Extraction method: Principal Component Analysis. Loadings of 0.50 and more were considered significant. Rotation method: Varimax rotation with Kaiser Normalization					

4.5   NAMING AND INTERPRETATION OF THE FACTORS

The first factor was labelled **responsiveness,** with an eigenvalue of 4.766 which explained more variance than a single variable. It comprised six variables that accounted for 26.48 percent of the variance. The variables loaded onto this factor were related to the response rate or level displayed by the employees of the organisation when serving customers. Aspects relating to willingness to help, assisting customers and providing prompt service as well as employee trustworthiness loaded onto this factor. This factor is consistent with the responsiveness as a dimension of the SERVQUAL scale (Parasuraman et al., 1988: 15).

Employee responsiveness relate to how they respond to customers when doing business with this organisation. Awan *et al*. (2008: 53), and Jordaan and Prinsloo (2004: 66) assert that employee abilities to be assertive, willing to help customers and providing timely service captures customers evaluations of an organisation's service performance. The factor loadings for this factor are reported in Table 19.

Table 19:   Rotated factor loadings for responsiveness

VARIABLE	VARIABLE DESCRIPTION	FACTOR LOADING
B13	Employees provide prompt service to you	0.716
B14	Employees of this company are always willing to help you	0.851
B15	Employees are not too busy to assist customers	0.870
B16	The employees of this company can be trusted	0.576
B17	Customers feel safe in transacting with employees of this company	0.652
B18	Employees in this firm are efficient	0.572

The second factor was labelled **problem solving** with an eigenvalue of 2.896. It comprised four variables, which accounted for 16.09 percent of the variance. The variables loaded onto this factor related to the handling of complaints and solving of problems when they arise by service personnel (Mehta *et al*., 2000: 3). Burgers, de Ruyter, Keen and Streukens (2000: 154) affirm that an organisation is expected to listen to the customers, interpret their problems and provide a solid solution to their problems in an efficient manner.

Problem solving is about keeping promises about deliveries and complaints handling (Bloemer *et al*., 1999: 1084). Employees should have the capabilities to carry out the services in a consistent manner. Service personnel must possess the abilities to perform services dependably and accurately (Parasuraman & Grewal, 2000: 169; Dhurup, Venter & Oosthuyzen, 2005: 141; Awan *et al.,* 2008: 53). The factor loadings for this factor are depicted by Table 20.

Table 20:   Rotated factor loadings for problem solving

VARIABLE	VARIABLE DESCRIPTION	FACTOR LOADING
B7	Complaints and problems are solved with great urgency	0.779
B8	Complaints and problems are solved with empathy	0.817
B9	The company delivers service correctly	0.710
B10	The service is delivered at the time agreed upon	0.676

The third factor was labelled **physical aspects,** with an eigenvalue of 1.816. It comprised three variables, which accounted for 10.09 percent of the variance. The variables loaded onto this factor combined the tangible aspects of the SERVQUAL scale and the physical

aspects including the convenience offered to the customers through the layout of the company's physical facilities (Dabholkar *et al.*, 1996: 14; Mehta *et al.*, 2000: 3).

According to Hoffman and Bateson (2002: 221), customers rely on tangible evidence that surrounds the service to help them form their evaluations. Kotler (2000: 527) is of the view that customer's decisions to visit a company are influenced by the impact of the environment, which guides their inferences about the level of service quality offered. Jordaan and Prinsloo (2004: 112) affirms that the service organisations seek to compensate for the intangibility dimension of the service by providing physical clues that support the positioning and image of the service offered. The factor loadings for this factor are presented in Table 21.

Table 21:   Rotated factor loadings for physical aspects

VARIABLE	VARIABLE DESCRIPTION	FACTOR LOADING
B1	*The technical equipment of this company is up-to-date*	*0.718*
B2	*The physical facilities of this company are visually appealing*	*0.750*
B5	*The tools, instruments and machinery used in this company are modern*	*0.536*

The fourth factor was labelled **service personnel** with an eigenvalue of 1.398. This factor consisted of three variables, which accounted for 7.77 percent of the variance. The variables loaded onto this factor were related to the organisation's employees. This factor relates to the level of service quality offered by the employees towards the customers upon entering the firm (Dabholkar *et al.,* 1996: 6). As clients form expectations prior to their encounter with sales personnel, they develop perceptions during the service delivery process and they subsequently compare their perceptions with their expectations in evaluating the outcome of the service encounter (Bloemer, de Ruyter & Peeters, 1998: 278).

Cagle (1998: 8) states that assurance as a service quality dimension includes the ability of the employee to be polite and knowledgeable as well as to convey a sense of trust and confidence to customers. This dimension translates to the functional aspects of Grönroos's model. The factor loadings for this factor are listed in Table 22.

Table 22:   Rotated factor loadings for service personnel

VARIABLE	VARIABLE DESCRIPTION	FACTOR LOADING
B19	Employees of this company are friendly	0.816
B20	Employees of this company are courteous	0.859
B21	Employees of this company possess the knowledge to answer customer's questions	0.795

The fifth factor was labelled **physical appearance** with an eigenvalue of 1.206. It comprised two variables, which accounted for 6.70 percent of the variance. The variables loaded onto this factor incorporated the physical appearance of the organisation's employees.

Pertinent to the literature review on physical appearance, the first impression of the customers is based on their interaction with the employees of that organisation (Jordaan & Prinsloo, 2004: 129). Odekerken-Schröder, de Wulf, Kasper, Kleijnen, Hoekstra and Commandeur (2001: 310) in their study highlighted the importance of interpersonal relationships. They stated that interaction is from both customer-to-customer and customer-to-service provider. Hence, it is imperative for the organisation to ensure that employees are neat and well groomed at all times. The factor loadings for this factor are illustrated in Table 23.

Table 23   Rotated factor loadings for physical appearance

VARIABLE	VARIABLE DESCRIPTION	FACTOR LOADING
B3	The employees of this company are appropriately dressed	0.848
B4	The employees in this company are neat in their appearance	0.848

These factors substantiate the fact that service quality is influenced by the responsiveness of the organisation personnel to issues relating to problem-solving, to physical or tangible aspects of the service and to the physical appearance of the employees.

4.6 EVALUATION OF OVERALL EXPECTATIONS OF SERVICE QUALITY

A seven point Likert scale was used to measure the expectations levels, with seven indicating "exceeding customer expectation" and one "not meeting customer expectations". The mean values of the five dimensions with respect to overall expectations of service quality are presented in Table 24.

Table 24:   The five dimensions with their mean values

Factor	Name of Factor	Mean value
1	Responsiveness	4.61
2	Problem solving	3.86
3	Physical aspects	4.36
4	Service personnel	5.39
5	Physical appearance	5.35
Overall service quality level		4.71

The first factor's mean score of 4.61 indicates that the respondents' were neutral with regard to issues relating to prompt service, willingness to help customers, employee efficiency assistance given to customers.

The second factor's mean score of 3.86 the lowest of all service quality dimension scores suggests that customers' expectations were not met. In particular, customers felt that complaints and problems relating to deliveries did not meet their expectations.

The third factor recorded the mean score of 4.36 for physical aspects and tangible dimension, indicating that the customers' feelings where neutral about the visual appeal of the physical aspects of the company.

The respondents scored highly on Factor 4 with a mean score of 5.39, which indicated that precast concrete product buyers felt that the employees of this company are friendly, courteous and possess the knowledge to answer customer's questions.

The second highest mean score of 5.35 for physical appearance confirmed that customers felt that the employees are appropriately dressed as they are neat in their appearance and thus they met customers' expectations.

The overall mean score of expectation of service quality by customers was 4.71. This indicates that the service provided by this company is mediocre. However, when compared with maximum possible attainable value of 7.00 the precast concrete supplier under consideration seems deficient in three of the areas of service quality namely, problem solving, tangible aspects and physical appearance. This implies that it is necessary for managerial intervention to prioritise in all these areas and to develop a strategy of service quality improvement.

4.7 OVERALL LEVEL OF SATISFACTION

The purpose of analysing customers' satisfaction levels was to confirm the degree of satisfaction or dissatisfaction arising from high or low service quality levels. Satisfaction was scored on a five-point Likert scale, which ranged from five indicating strong agreement and one indicating strong disagreement towards the level of satisfaction. The acquired mean scores for the three items are presented by Table 25.

Table 25:   Level of satisfaction with their mean values

Item	Description of item	Mean value
C1	I am satisfied with my decision to purchase precast concrete products from this company	4.28
C2	I made a wise decision to purchase precast concrete products from this company	4.35
C3	When I have transacted with this company, I feel I made the correct buying decision	3.87
Overall satisfaction level		4.17

As shown in Table 25, the overall mean score of 4.17 (maximum score=5) for the overall satisfaction level suggests that respondents were satisfied with the satisfaction of service A plausible reason for such contrasting results may be due to the fact that satisfaction may be judged by price and not issues of service quality.

Item C1 had a mean score of 4.28 indicating that the respondents were satisfied with their decisions to make purchases from this company. Item C2 comprised the highest mean score of 4.35, which indicated that respondents felt that they have made a wise decision to make purchases from this company. Of concern however, was the mean score of 3.87 for item C3 indicating that customers were not sure whether or not they have made the correct buying decision by making purchases from this company.

4.8 OVERALL ORGANISATIONAL LOYALTY

Organisational loyalty was scored on a five point Likert scale with five indicating that the respondents are definitely likely to make future purchases and one indicating that the respondents are definitely unlikely to undertake future purchases with the company. The mean values for the four items are reported in Table 26.

Table 26   Organisational loyalty mean values

Item	Description of item	Mean value
D1	I would continue to patronize this company in the future	4.33
D2	I would recommend this company to a friend and other buyers of precast concrete products	4.35
D3	I am committed to maintaining my purchase of precast concrete products from this company in the future	4.38
D4	I plan to maintain a cordial buying relationship with this company in the future	4.28
Overall organisational loyalty		4.34

Item D1 had a mean score of 4.33 indicating that respondents would continue to patronize this organisation in the future. Item D2 provided the second highest mean score of 4.35 revealing that respondents would recommend this company to other precast concrete product users. Item D3 had the highest mean score of 4.38, which suggested that the respondents were committed to making purchases of precast concrete products with this company. The final item with a mean score of 4.28 was item D4, which indicated that respondents plan to maintain a cordial buying relationship with this company in the future.

Based on the mean score of 4.34 respondents' are more likely to make repeat purchases and display loyalty to the service provider. Chow and Luk (2005: 287) state that the satisfaction disparity indicates which dimension the firm should concentrate on to enhance its competitive position. They further add that creating a competitive advantage does give a firm an edge over its competitors.

4.9.1 Analysis of variance (ANOVA)

ANOVA, a technique for analysing the way in which the mean of variables is affected by different types and combinations of factors, was used (Bewick, Cheek & Ball, 2004: 130). The mean quality scores for each factor were computed and compared with the help of the ANOVA technique to delve into the discriminatory power of alternative choices on the measurement scales. Two independent analyses of variances were conducted.

The first one was between (A4) age groups of the respondents namely; 18-25 years, 26-35 years, 36-45 years as well as 46-55 years and the service quality dimensions, namely: responsiveness, problem-solving, physical aspects, service personnel and physical appearance. The results are presented in Table 27 showing significant differences (p< 0.000) exist among two of the five factors and age groups.

Table 27:   Analysis of variance – Service quality dimensions and age

ANOVA						
Factors	Groups	Sum of Squares	df	Mean Square	F	Sig.
Responsiveness	Between Groups	0.352	2	0.176	0.462	0.631
	Within Groups	92.083	242	0.381		
Problem Solving	Between Groups	11.995	2	5.998	7.066	0.001
	Within Groups	205.424	242	0.849		
Physical Aspects	Between Groups	1.012	2	0.506	3.214	0.042
	Within Groups	38.108	242	0.157		
Service Personnel	Between Groups	0.723	2	0.361	1.140	0.322
	Within Groups	76.700	242	0.317		
Physical Appearance	Between Groups	0.857	2	0.429	0.993	0.372
	Within Groups	104.455	242	0.432		

The F-test, used to evaluate statistically the differences between the groups, shows that the means are significantly different. Of the five service dimensions, two of the factors show significant variances. Differences were found for the problem solving dimensions (p=0.001) and physical aspects (p=0.042) as both were significant at p< 0.05.

As a result, a *post-hoc* multiple comparison test was conducted to establish which groups have significant differences between the two factors and age categories. The results are shown in Table 28.

Table 28: *Post Hoc* analysis – Service quality dimensions and age

Dependent Variable	(I) A4 (age)	(J) A4 (age)	Mean Difference(I-J)	Std. Error	Sig.
Problem Solving	2 (26-30 years) ($\bar{x}$) =3.61	3 (36-45 years) ($\bar{x}$) = 4.02	-0.402*	0.122	0.003
		4 (46-55 years) ($\bar{x}$) =4.28	-0.669*	0.255	0.025
Physical aspects	2 (26-30 years) ($\bar{x}$) = 1.16	3 (36-45 years) ($\bar{x}$) = 1.74	-0.13113*	0.05262	0.036
*. The mean difference is significant at the 0.05 level.					

The table shows that there is a significant difference between problem solving and age category 2 (26-30 years) and 3 (36-45 years) at p< 0.003; 2 (26-30 years) and age category 4 (46-55 years) at p< 0.025. This shows that there is a significant difference in customers' perceptions of service quality when classified according to age with respect to problem solving. Customers aged 46-55 years vary more than the other age groups, 36-45 years and age group 26-30 years in terms of how they perceive the concrete manufacturers' service quality levels in solving their problems. As for the physical aspects (factor three) and age category 2 (26-30 years) and 3 (36-45 years) there is a significant difference at p< 0.036.

The *post-hoc* test indicates that differences with respect to problem-solving among customers exist. The respondents aged 26-30 years old ($\bar{x} = 3.61$); respondents aged 36-45 years old ($\bar{x} = 4.02$) and respondents aged 46-55 years old ($\bar{x} = 4.28$) varied highly as compared to the rest of the other groups. For the physical aspects, differences among respondents were identified and they were as follows: respondents aged 26-30 years old ($\bar{x} = 1.16$) and respondents aged 36-45 years old ($\bar{x} = 1.74$). This result indicates that for customers aged 36-45 years, the physical aspects of the manufacturer are perceived to be more appealing compared to other age groups.

The second analysis of variance was conducted between (A5) length of purchases in years, 2 years and less, 3-5 years, 6-8 years and over 8 years and the service quality dimensions: responsiveness, problem solving, physical aspects, service personnel and physical appearance. The results yielded significant differences (p<0.000) among three of the five factors and the length of purchases category (in years). The results are shown in Table 29.

Table 29:   Analysis of variance – Service quality and length of purchase in years

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Responsiveness	Between Groups	4.872	3	1.624	4.485	0.004
	Within Groups	87.642	242	0.362		
Problem Solving	Between Groups	9.137	3	3.046	3.532	0.016
	Within Groups	208.657	242	0.862		
Physical Aspects	Between Groups	29.412	3	9.804	244.387	0.000
	Within Groups	9.708	242	0.040		
Service Personnel	Between Groups	0.603	3	0.201	0.629	0.597
	Within Groups	77.341	242	0.320		
Physical Appearance	Between Groups	2.017	3	0.672	1.574	0.196
	Within Groups	103.318	242	0.427		

From Table 29, it is clear that perceptions of responsiveness (p=0.004); problem solving (p=0.016) and physical aspects (p=0.000) vary significantly with the length of time customers have made purchases with the organisation. All three factors are significant at p<0.05. As a result of the differences *post-hoc* multiple comparison test was undertaken to establish which means differ significantly among the length of purchases in years and the three factors.

Table 30:   *Post Hoc* **Analysis – Service Quality and length of purchases**

Dependent Variable	(I) A5 (length of purchases in years)	(J) A5 (length of purchases in years)	Mean Difference (I-J)	Std. Error	Sig.
Responsiveness	1 (2 years and less) ($\bar{x}$) = 4.45	4 (over 8 years) ($\bar{x}$) = 4.87	-0.42304[*]	0.11571	0.002
Problem -solving	1 (2 Years and less) ($\bar{x}$) = 3.87	4 (over 8 years) ($\bar{x}$) = 4.28	-0.503[*]	0.179	0.027
	2 (3-5 years) ($\bar{x}$) = 3.81	4 (over 8 years) ($\bar{x}$) = 4.28	-0.469[*]	0.179	0.047
	3 (6-8 years) ($\bar{x}$) = 4.12	4 (over 8 years) ($\bar{x}$) = 4.28	-0.558[*]	0.191	0.020
Physical Aspects	1 (2 years and less) ($\bar{x}$) = 1.28	2 (3-5 years) ($\bar{x}$) = 1.36	-0.33642[*]	0.03271	0.000
		3 (6-8 years) ($\bar{x}$) = 1.90	-0.62671[*]	0.03565	0.000
		4 (over 8 years) ($\bar{x}$) = 2.26	-0.98120[*]	0.03851	0.000
	2 (3-5 years) ($\bar{x}$) = 1.36	3 (6-8 years) ($\bar{x}$) = 1.90	-0.29029[*]	0.03585	0.000
		4 (over 8 years) ($\bar{x}$) = 2.26	-0.64479[*]	0.03869	0.000
*. The mean difference is significant at the 0.05 level.					

From Table 30, there were significant differences with factor one, responsiveness as a dimension of service quality and the length of making purchases in years, categories 1 (2 years and less) and 4 (over 8 years) at p< 0.002. Furthermore, there were significant differences with factor two, problem-solving and the length of making purchases in years, category 1 (2 years and less) and 4 (over 8 years) at p< 0.027; 2 (3-5 years) and 4 (over 8 years) at p<0.047; 3 (6-8 years) and 4 (over 8 years) at p<0.020. There were significant differences noticed between physical aspects as a dimension of service quality and the

length of making purchases in years, category 1 (2 years and less) and 2 (3-5 years) at p<0.000; 1 (2 years and less) and 3 (6-8 years) at p<0.000; 1(2 years and less) and 4 (over 8 years) at p<0.000; 2 (3-5 years) and 3 (6-8 years) at p<0.000; 2 (3-5 years) and 4 (over 8 years) at p<0.000.

The *post-hoc* test indicates that differences with respect to responsiveness dimension among customers that made purchases for 2 years and less ($\bar{x} = 4.45$) and respondents who made purchases for over 8 years ($\bar{x} = 4.87$). For the second factor, problem-solving, differences were evident between customers who made purchases for 2 years and less ($\bar{x} = 3.87$) and over 8 years ($\bar{x} = 4.28$); 3-5 years ($\bar{x} = 3.81$) and over 8 years ($\bar{x} = 4.28$); 6-8 years ($\bar{x} = 4.12$) and over 8 years ($\bar{x} = 4.28$). The third factor, physical aspects, revealed that differences were evident with customers who made purchases for 2 years and less ($\bar{x} = 1.28$) and 3-5 years ($\bar{x} = 1.36$); 2 years and less ($\bar{x} = 1.28$) and 6-8 years ($\bar{x}$ 1.90); 2 years and less and over 8 years ($\bar{x} = 2.26$). Differences were also found between respondents in categories 3-5 years ($\bar{x} = 1.36$) and 6-8 years ($\bar{x} = 1.90$); 3-5 years ($\bar{x} = 1.36$) and over 8 years ($\bar{x} = 2.26$).

Those customers who had a longer buying relationship with the company appear to be moderately more satisfied compared to those customers who had shorter buying relationships with the company in terms of the responsiveness, problem-solving and physical aspects dimensions. Research undertaken by Beatty, Mayer, Coleman, Reynolds and Lee (1996: 234) found that with excellent service delivery developed early on in a relationship, a bond or close relationship between the customer and service provider is created which may result in a continued relationship. As repeat customer-employee interactions occur, the relationship appears to be strengthened when customers perceive several elements to be consistently present in the relationship such as trust, friendship, and functionality.

4.10 RELIABILITY ANALYSIS

The Cronbach alpha value obtained for the main survey was 0.799, which reflects an acceptable level of reliability since it is above the benchmark level of 0.70. The Cronbach alpha for each of the scales making up latent variables (responsiveness, problem-solving, physical aspects, service personnel and physical appearance) was computed. Table 31 provides evidence that each of the item scales exhibit satisfactory reliability with values ranging from 0.700 to 0.815.

Table 31:   Reliability of service quality

Factors	*Cronbach alpha*
Responsiveness	0.814
Problem-solving	0.815
Physical aspects	0.815
Service personnel	0.780
Physical appearance	0.700

4.11 RELIABILITY FOR SATISFACTION AND LOYALTY SCALES.

The scale items for satisfaction comprised the following: "I am satisfied with my decision to purchase precast concrete products from this company", "I made a wise decision to purchase precast concrete products from this company", and "When I have transacted with this company, I feel I made the correct buying decision". The three items were rated

on a 5-point scale ranging from "strongly agree" to "strongly disagree". The Cronbach alpha value reported in Table 32 was 0.712 and found to be acceptable.

Table 32:   Reliability statistics for satisfaction scale

Reliability Statistics for satisfaction scale	
Cronbach's Alpha	No of Items
0.712	3

The scale items for loyalty comprised the following: "I would continue to patronize this company in the future", "I would recommend this company to a friend and other buyers of precast products", "I am committed to maintaining my purchases of precast concrete products from this company in the future" and "I plan to maintain a cordial buying relationship with this company in the future. The four items were rated on a 5-point scale ranging from "strongly agree" to "strongly disagree". The Cronbach alpha reliability value reported in Table 33 value was 0.764.

Table 33:   Reliability statistics for loyalty scale

Reliability Statistics for loyalty scale	
Cronbach's Alpha	No of Items
0.764	4

4.12 VALIDITY

Various forms of validity were established for the study. A discussion of each type of validity follows:

4.12.1 Content validity

The questionnaire was pre-tested and reviewed by the management team of the company including the chief executive officer. During the refinement of the questionnaire, management scrutinised the instrument to ensure that it adequately tests what the study intend to achieve.

In addition, a pilot test was undertaken with 40 questionnaires from randomly selected respondents who made purchases of precast concrete products with the organization. They were from general contractors, end-users, government institutions and civil consultants. Changes were made to the questionnaire. The pilot study indicated an acceptable level of reliability value of 0.965 (refer to Table 14).

4.12.2 Construct validity

The basic concept pertaining to construct validity was to try and answer the questions: "Does the scale appear to have measured what it was supposed to?" as well as "Do the scale items capture key facets of the unobservable construct being measured?" (Parasuraman *et al*., 1988: 28). Furthermore, assessing a scale's content validity involved examining two aspects:

- The thoroughness with which the construct was scaled and its domain explicated
- The extent to which the scale items represented the construct's domain.

When assessing the construct validity, the original scale was tested. Cronbach alpha coefficient was used and comprised scores for each of the items measured. The main survey was conducted with 246 questionnaires with a Cronbach alpha score of 0.799.

4.12.3   Convergent validity

Convergent validity implies the strength of the factor loading of each observed measure on its proposed latent variable (Mathwick, Malhotra & Rigdon, 2001: 47). The convergent validity was determined using correlations between the overall satisfaction scale and overall organisational loyalty with the purpose of assessing the organisational service quality scale. Data was collected on customer satisfaction and organisational loyalty.

In order to establish the convergent validity, variables were grouped in the same order in which they appeared in the questionnaire. Section C (Satisfaction) was correlated with Section D (Loyalty). The Pearson's correlation coefficient was used as it measures the degree of linear association of two variables. A -1 indicates perfect linear negative relationship between two variables and +1 indicates perfect positive linear relationship and 0 indicates lack of any linear relationship (Nikoloski *et al.,* 2005: 240-241). Three items comprised the satisfaction variables and four items made up the organizational loyalty variables. The significance test was run at $p<0.0.01$ and $p< 0.05$ levels of significance.

Table 34 indicates correlations are either significant at $p< 0.01$ or at the $p<0.0.05$ level of significance, suggesting that positive associations exist between satisfaction and loyalty, hence, providing evidence of convergent validity.

Table 34:   Correlation between customer satisfaction and organisational loyalty

		C1	C2	C3	D1	D2	D3	D4
Correlations								
C1	Pearson Correlation	1.000	0.462**	0.282**	0.168**	0.265**	0.289**	0.169**
	Sig. (2-tailed)		0.000	0.000	0.008	0.000	0.000	0.008
	N	246.000	246	246	246	246	246	246
C2	Pearson Correlation	0.462**	1.000	0.754**	0.140*	0.170**	0.177**	0.069
	Sig. (2-tailed)	0.000		0.000	0.028	0.008	0.005	0.278
	N	246	246.000	246	246	246	246	246
C3	Pearson Correlation	0.282**	0.754**	1.000	0.161*	0.160*	0.162*	0.080
	Sig. (2-tailed)	0.000	0.000		0.012	.012	0.011	0.212
	N	246	246	246.000	246	246	246	246
D1	Pearson Correlation	0.168**	0.140*	0.161*	1.000	0.376**	0.315**	0.265**
	Sig. (2-tailed)	0.008	0.028	0.012		0.000	0.000	0.000
	N	246	246	246	246.000	246	246	246
D2	Pearson Correlation	0.265**	0.170**	0.160*	0.376**	1.000	0.856**	0.489**
	Sig. (2-tailed)	0.000	0.008	0.012	0.000		0.000	0.000
	N	246	246	246	246	246.000	246	246
D3	Pearson Correlation	0.289**	0.177**	0.162*	0.315**	0.856**	1.000	0.418**
	Sig. (2-tailed)	0.000	0.005	0.011	0.000	0.000		0.000
	N	246	246	246	246	246	246.000	246
D4	Pearson Correlation	0.169**	0.069	0.080	0.265**	0.489**	0.418**	1.000
	Sig. (2-tailed)	0.008	0.278	0.212	0.000	0.000	0.000	
	N	246	246	246	246	246	246	246.000
. Correlation is significant at the 0.01 level (2-tailed).								
*. Correlation is significant at the 0.05 level (2-tailed).								

In addition to correlation, factor analysis also provides evidence of convergent validity. During the factor analysis procedure (refer to Table 21) all the variables loaded to either one of the five factors with no cross-loadings, providing evidence of cohesiveness and convergence.

4.13   SYNOPSIS

The measuring instrument used in the study was explained. The descriptive analysis of the study was undertaken in this chapter. Five dimensions of service quality were extracted during the factor analysis procedure. In addition, ANOVA tests were conducted to establish whether or not there were any significant differences between the five dimensions and selected demographic variables. The validity and reliability of the measuring instrument was assessed. Significant correlations were found between satisfaction and loyalty. In the next chapter, an overview of the study objectives, recommendations, limitations, implications and directions for future research are presented.

CHAPTER 5

OVERVIEW, RECOMMENDATIONS, LIMITATIONS AND CONCLUSION

5.1   INTRODUCTION

The previous chapter provided a discussion of the empirical findings. Different stages for data analysis where identified and described. The information was analysed and summarised using tables and figures, correlations and multivariate analysis.

This chapter provides a general overview of the study by placing the theoretical and empirical objectives into context. Arising out of the empirical study, recommendations are made for the organisation under study. This chapter concludes with the benefits, limitations and implications for future research.

5.2   OVERVIEW AND OBJECTIVES OF THE STUDY IN PERSPECTIVE

The purpose of evaluating customer service quality was discussed by providing a theoretical overview of the different perspectives. The importance of customer service depends on the type of buyer-seller relationship and the nature of the product being exchanged between them. Understanding customer service expectations is a prerequisite for delivering superior service given that it is an implicit performance standard, which customers use in assessing service quality (Parasuraman, 1998: 317). Delighting rather than satisfying customers' expectations is seen as a motivator for continued loyalty (Mascarenhas, Kesavan & Bernacchi, 2004: 486). Service quality has been recognised as a strategic tool for achieving operational efficiency and improved organisational performance. A review of the literature points to SERVQUAL as being the most widely advocated service quality scale. Notwithstanding such affirmations, the models

developed by Grönroos, (1984: 40) and Dabholkar *et al.* (1996: 6) provide an interesting avenue for gaining a comprehensive understanding of service quality dimensions.

The theoretical and empirical objectives are revisited in the next section in order to illustrate their attainment within the framework of the study.

5.2.1 Theoretical objectives

For managers and researchers to make informed decision, all research objectives had to be addressed based on the data generated in order to ensure that the initial intent of the study was achieved. The theoretical objectives, as set out in the beginning of the study, are stated in Chapter 1 (refer to Section 1.3.2).

Objective 1: Conduct a literature study on the nature of precast concrete products within the construction industry.

A thorough literature review was undertaken to explain the nature of the sector and to illustrate how the different multi-dimensions of service quality relate and fit within the international and South African market. This objective was written up in Chapter 2 (refer to Section 2.3 and 2.4) with an overview of the generic perspective of the precast concrete sector within the construction industry, followed by a detailed discussion on the international and South African precast concrete sectors. A combination of journal articles, magazines and textbooks was used as literature sources.

Objective 2: Carry out a review of the literature on customer services, service quality, and customers' perception and expectations as well as satisfaction with services

Consistent with the first objective, a review of the literature for the latter objective was conducted and achieved, as discussed in Chapter 2 (refer to Section 2.6, 2.8, 2.9 and

2.10), where a literature review of services, customers services and service quality was conducted.

5.2.2   Empirical objectives

The empirical objectives formulated in the beginning of the study were:

Objective 1:   Establish the generic dimensions influencing service quality that may be applicable within a precast concrete manufacturing company

This objective was achieved in Section 4.4, where dimensions of service quality were extracted. The results demonstrated that five dimensions exist upon which customer's base their expectations in relation to the level of service quality rendered by the organisation in the study. Section 4.3.6 provides a description of the five extracted factors.

Objective 2:   Evaluate customer expectations of the quality of services provided by the company

The first empirical objective was reviewed and conclusions were drawn based on the results of the five dimensions of service quality. Refer to Section 4.3.6 where the five dimensions of service quality where rated in terms of their mean scores.

Objective 3:   Assess the overall level of customer satisfaction in terms of the company's service quality, with reference to precast concrete products

Levels of satisfaction and overall satisfaction are discussed in Sections 4.5 and 4.8 of this study.

Objective 4:   Assess the customers' loyalty levels with the manufacturer

Section 4.5 and section 4.8 outline the organisation's level of loyalty and consumer ratings expressed by the aggregate mean score of the scale.

5.3   RECOMMENDATIONS

In light of statistical analysis undertaken based on the five dimensions of service quality, satisfaction and loyalty, the following recommendations are made:

The mean score of 4.61 for the **responsiveness** factor indicates that the service provided regarding this dimension is mediocre. Hence, it is in the organisation's interest to revisit various aspects of responsiveness. Parasuraman *et al*. (1988: 31) postulate that a striking result in terms of the relative importance of the five dimensions in predicting overall service quality, is that reliability of the organisation in responding to customer issues is consistently most critical. The customers perceived the company to be somewhat inconsistent in responding to issues promptly and courteously. Studies of customer service stress that service personnel's attitude and promptness in responding to customer requests, questions and complaints is an element that an organisation should be attentive to (Parasuraman *et al.,* 1988: 32; Bloemer *et al*., 1999: 1080). The responsiveness might be in terms of timely response to requests, complaints and confirmations of orders and deliveries (Raman, Stephenaus, Alam & Kuppusamy, 2008: 3). A prompt response to the customer inquiry improves the perception of service quality in offering good customer service.

In the process of improving the responsiveness in enhancing the level of service quality, the organisation may apply the following aspects as proposed by Yang, Peterson and Cai (2003: 690):

- Prompt delivery with timely response
- Credibility that includes confidence and good reputation
- Reliability that includes accurate order and keeping promises
- Communication that includes up-to-date and timely information.

A crucial aspect with regard to responsiveness is customer feedback. Feedback should be obtained from the customer to establish whether or not customer expectations were met after each transaction.

The mean score of 3.86 for the **problem-solving** factor is a cause for concern. The company needs to address various aspects of problem-solving and complaints handling. A complaints handling procedure should be established and personnel should be given sufficient training in this regard. Studies on customer dissatisfaction show that of the customers who are dissatisfied with their purchase or with an organisation, only five percent complain (Dhurup, 2003: 113). The other 95 percent either feel that complaining is not worth the effort, or they do not know how to complain or to whom to complain (Kotler, 2000: 441). Nel (2000: 36) argues that some customers do not complain they merely switch brands or companies. Thus, given the potential impact of service failures, effective recovery strategies are essential. A systematic approach, which recognises the importance of customer complaints, setting up a procedure for logging complaints and measurement of follow-up should be built into the complaints handling and problem solving procedure.

In the process of developing a complaints handling strategy, the company should take into account the following aspects of complaints handling as outlined by various scholars and researchers (Levy & Weitz, 1998: 595; Kotler, 2000: 443):

- Encourage customers to complain if they are unhappy with a company's services.
- Make timely, personal communications with customers as a key part of the strategy.
- Encourage employees to respond effectively to customer problems and give them a means to do so. Market the idea of problem-resolution to employees.
- Listen to customers by turning complaints into opportunities. Look at complaints as situations and not something that cannot be resolved, irrespective of how customers express themselves. Restore trust in the customer by aligning with the customer, so that the customer feels that the company is on their side.
- Empower and reward employees for swift resolutions to customer problems. An empowered workforce however, must be an educated and trained workforce. Fund the training of employees.

Training of personnel is an essential component of service quality enhancement especially with complaints and the complaints-handling procedures. The management team of the organisation needs to play an active role in ensuring that all personnel are adequately trained and highly motivated to understand user's specific problems and in the process provide competent solutions to problems (Awan *et al.,* 2008: 62).

The third mean score of 4.36 for the **physical aspects** factor was also mediocre. Tangible cues that form part of this dimension include the tools, instruments and machinery, parking and layout of the facility. All these features are used to communicate to the customer the quality of service that can be expected (Berndt, 2009: 3). Although it is argued that the tangible aspects are considered the least critical service quality dimension by service customers (Bloemer *et al.,* 1999: 1088), the service provider should not

compromise the design and attractiveness of its facilities. The management of the organisation need to examine ways in which these processes can be changed to be more customer-centric in order to satisfy their needs (Berndt, 2009: 8).

The mean score of 5.39 for the **service personnel** indicates that the service personnel exhibit a favourable image of the company and its services. The customers felt that service employees were friendly, courteous and possessed the knowledge to answer their questions. Naylor and Frank (2000: 16) confirm that the lack of knowledgeable employees leads to unsatisfied customers who are likely to switch to other suppliers. Thus, it is imperative that the management team of the organisation ensures that employees are competent and fully trained. Although this service dimension was ranked first in terms of importance by the customers, the precast concrete manufacturer should not be complacent but should rather seek innovative ways in maintaining the service personnel dimension of service quality. The organisation can go a step further by comparing its own performance on this dimension against that of its competitors (Chow & Luk, 2005: 287).

The mean score of 5.35 for **physical appearances** indicates that the respondents felt that employees of this organisation are appropriately dressed and they are neat in their appearance. Corporate images that are developed in the mind of consumers through communication and experiences are believed to create a positive effect on customers' satisfaction judgment and attitude (Andreassen & Lindestad, 1998: 7).

The overall mean score of expectation of **service quality** by customers was (4.71). This indicates that the service provided by this company is satisfactory. However, when compared with the maximum possible attainable score of 7.00, the precast concrete supplier seems deficient in two of the areas of service quality namely, problem-solving and the physical aspects of the organisation. This implies that it is necessary for managerial intervention to prioritise in all these areas and to develop a strategy of service quality improvement.

ANOVA was performed to test the service quality dimensions and respondents' age groups. The test reveals that **younger age groups** seem to rate the company lower in service quality and this calls for management to examine the reasons for such perceptions. Customers, who are just satisfied, find it easy to switch suppliers when a better offer is made.

The level of **customer satisfaction** is also high with an overall satisfaction mean value of 4.17 (with the highest score =5). This suggest that the management team of the organisation should be satisfied with the outcome of the results but also ensure improved and continued general high level of service quality offered to retain customers. Boulding, Kalra, Staelin and Zeithmal (1993: 11) point out that "a person's expectations colour the way he or she perceives reality". Identifying the determinants of customer satisfaction is an essential prerequisite in the management of service quality. Only when these determinants are known to the organisation can they ensure that their investment in service quality improvement will lead to more satisfied customers (Jordaan & Prinsloo, 2005: 41).

The level of **customer loyalty** is also high with an overall satisfaction mean value of (4.34). The management team of the organisation should ensure continued commitment towards nurturing relationships with its customers and offering high levels of service quality in satisfying customer desires (Crotts, Coppage & Andibo, 2001: 196). Bloemer *et al.* (1999: 1085) claim that customer loyalty can be moderated by positive emotions that customers hold towards the manufacturer or supplier especially where "service delivery takes place over a period of time and active involvement by the customer occurs". In summary, the company should consider adopting a service-quality measurement system that monitors service quality levels on a continual basis.

5.4   BENEFITS, LIMITATIONS AND IMPLICATIONS FOR FUTURE RESEARCH

The adopted framework for this study is largely based on the SERVQUAL service dimensions. The instrument developed in this study for measuring the five dimensions of service quality may serve as a useful tool for gathering data that can be used to measure service quality within the organisation. The instrument can be used as a diagnostic methodology for uncovering broad areas of service quality, shortfalls and strengths by undertaking periodic measurements of service quality. The five dimensions of service quality may greatly assist managers in understanding how customers assess the quality of service experiences. The dimensions provide information on which factors require managerial attention in efforts to improve customer perceptions of service quality. In this way, managers can allocate resources to improving service quality collectively or in specific areas of the service act. When applying the service quality scale, top management can examine the mean service quality score of each factor of the scale to determine priorities for improvement. The mean score of each factor is determined by averaging the scores of all the items within a factor.

Future studies should extend the framework to other models such as the SERVPERF model. It should be noted that these limitations do not nullify the affirmative conclusions that emerged from the study, but rather future studies should expand the scope of the study through the participation of other customers from other provinces in the country to gather a broader customer perspective of service quality levels provided by the organisation, nationally.

Another limitation of this study is that the results cannot be generalised, as the service quality has been tested in one organisation only (Khan & Mahapatra, 2009: 45). It is also important to note that this study focused only on feedback from customers who made purchases in the past two years. The question whether or not these respondents are (or have been) customers of competitors is ignored, and their opinions on competitors were

not researched in this study. Applying this approach, managers will be able to address the following questions:

- What is the organisation's competitive position, and how does the firm's overall performance compare with its competitors?
- Which service dimensions can be improved to enhance competitiveness?
- Constrained by limited resources, which service dimensions should be given top priority?

Although the study identifies service quality dimensions, together with those dimensions that require improvements, no attempt was made to investigate switching behaviour among the customers and, as such, no guidance is provided on an appropriate action plan to address such a deficiency (Chow & Luk, 2005: 287). Future studies on switching behaviour patterns among customers are warranted. These limitations, indicates a promising direction for further research in the level of service quality perceptions and the competitiveness prevalent within the concrete manufacturing industry.

5.5   CONCLUDING REMARKS

The findings suggest that the focus by the company should shift from selling to customers to serving them effectively (Parasuraman, 1998: 309). Furthermore, there is a need for the precast concrete manufacturer to satisfy those customers supporting and patronising the firm. Based on literature and results emanating from the empirical survey, these findings may assist the organisation in the enhancement of its service quality levels. Continued patronage requires value-added services and customer support to increase convenience (Kim, Park & Jeong 2004: 157). Hence, service quality levels should be monitored carefully on a continuous basis.

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ANNEXURES

ANNEXURE A

LOCALITY MAP
(GAUTENG PROVINCE)

MapStudio Route Planner South Africa

ANNEXURE B

QUESTIONNAIRE

QUESTIONNAIRE

EXAMINING CUSTOMER-SUPPLIER RELATIONSHIPS: CUSTOMER SERVICE QUALITY IN A PRE-CAST CONCRETE MANUFACTURING COMPANY

SECTION A (DEMOGRAPHICS)

In this section we would like to find out a little more about the characteristics of customers of this particular company. Please place a cross(x) in the appropriate block.

> **CROSS ONLY ONE BLOCK FOR EACH STATEMENT**

A1   Gender: Male ❏1   Female   ❏2

A2   Marital status   Single ❏1   Married   ❏2

A3   Race   White ❏1   Black ❏2   Coloured ❏3 Indian ❏4   Other specify❏5

A4   Age category   18-25 years ❏1   26-35 years ❏2
                      36-45 years ❏3   46-55 years ❏4
                      56-65 years ❏5   Over 65 years ❏6

A5   For how long have you been making purchases at this particular company?
                   2 years and less   ❏1
                   3-5 years   ❏2
                   6-8 years   ❏3
                   over 8 years   ❏4

A6   Indicate your frequency of purchase of pre-cast manufactured products from this company in the past two years

                   1 time   ❏1
                   2-5 times   ❏2
                   6-8 times   ❏3
                   over 8 times   ❏4

SECTION B (EXPECTATIONS)

In this section we would like to find out a little more about service quality offered to you by this company. Please indicate the extent to which the services of this company **exceed your expectations** (7) or **fails to meet your expectations** (1).

> **CROSS ONLY ONE BLOCK FOR EACH STATEMENT**

	Exceeds my expectations						Fails to meet my expectations
B1 The technical equipment of this company is up-to-date	❏7	❏6	❏5	❏4	❏3	❏2	❏1

		Exceeds my expectations						Fails to meet my expectations
B2	The physical facilities of this company is visually appealing	❏7	❏6	❏5	❏4	❏3	❏2	❏1
B3	The employees of this company are appropriately dressed	❏7	❏6	❏5	❏4	❏3	❏2	❏1
B4	The employees in this company are neat in their appearance	❏7	❏6	❏5	❏4	❏3	❏2	❏1
B5	The tools, instruments and machinery used in this company are modern	❏7	❏6	❏5	❏4	❏3	❏2	❏1
B6	When the company promises to do something by a certain time it does so	❏7	❏6	❏5	❏4	❏3	❏2	❏1
B7	Complaints and problems are solved with great urgency	❏7	❏6	❏5	❏4	❏3	❏2	❏1
B8	Complaints and problems are solved with empathy	❏7	❏6	❏5	❏4	❏3	❏2	❏1
B9	The company delivers service correctly, the first time	❏7	❏6	❏5	❏4	❏3	❏2	❏1
B10	The service is delivered at the time agreed upon	❏7	❏6	❏5	❏4	❏3	❏2	❏1
B11	Record keeping such as orders and accounts are accurate	❏7	❏6	❏5	❏4	❏3	❏2	❏1
B12	Employees of this company informs you of the exact time of delivery	❏7	❏6	❏5	❏4	❏3	❏2	❏1
B13	Employees provide prompt service to you	❏7	❏6	❏5	❏4	❏3	❏2	❏1
B14	Employees of this company are always willing to help you	❏7	❏6	❏5	❏4	❏3	❏2	❏1
B15	Employees are not too busy to assist customers	❏7	❏6	❏5	❏4	❏3	❏2	❏1
B16	The employees of this company can be trusted	❏7	❏6	❏5	❏4	❏3	❏2	❏1
B17	Customers feel safe in transacting with employees of this company	❏7	❏6	❏5	❏4	❏3	❏2	❏1

		Exceeds my expectations						Fails to meet my expectations
B18	Employees in this firm are efficient	❑7	❑6	❑5	❑4	❑3	❑2	❑1
B19	Employees of this company are friendly	❑7	❑6	❑5	❑4	❑3	❑2	❑1
B20	Employees of this company are courteous	❑7	❑6	❑5	❑4	❑3	❑2	❑1
B21	Employees of this company possess the knowledge to answer customer's questions	❑7	❑6	❑5	❑4	❑3	❑2	❑1
B22	This company pay attention to individual customers	❑7	❑6	❑5	❑4	❑3	❑2	❑1
B23	Employees pay personal attention to each customer	❑7	❑6	❑5	❑4	❑3	❑2	❑1
B24	Employees understand the specific needs of customers.	❑7	❑6	❑5	❑4	❑3	❑2	❑1
B25	Employees have the customers best interest at heart	❑7	❑6	❑5	❑4	❑3	❑2	❑1
B26	The business hours of this company is convenient for me	❑7	❑6	❑5	❑4	❑3	❑2	❑1
B27	The company is responsive to my needs	❑7	❑6	❑5	❑4	❑3	❑2	❑1
B28	The employees in this company provides the necessary information according to my needs	❑7	❑6	❑5	❑4	❑3	❑2	❑1
B29	The employees in this company provides an enabling environment for me to arrive at a buying decision	❑7	❑6	❑5	❑4	❑3	❑2	❑1
B30	The employees in this company has the appropriate product knowledge in satisfying my needs	❑7	❑6	❑5	❑4	❑3	❑2	❑1
B31	The employees in this company communicates appropriately to me to arrive at a buying decision	❑7	❑6	❑5	❑4	❑3	❑2	❑1

SECTION C   (SATISFACTION)

> **CROSS ONLY ONE NUMBER FOR EACH STATEMENT**

C1   I am satisfied with my decision to purchase pre-cast products from this company

Strongly agree	Agree	Neutral	Disagree	Strongly disagree
5	4	3	2	1

C2   I made a wise decision to purchase pre-cast products from this company

Definitely likely	Quite likely	Neutral	Quite unlikely	Definitely unlikely
5	4	3	2	1

C3   When I have transacted with this company, I feel I made the correct buying decision

Definitely likely	Quite likely	Neutral	Quite unlikely	Definitely unlikely
5	4	3	2	1

SECTION D   (COMPANY LOYALTY)

> **CROSS ONLY ONE NUMBER FOR EACH STATEMENT**

D1   I would continue to patronize this company in the future

Definitely likely	Quite likely	Neutral	Quite unlikely	Definitely unlikely
5	4	3	2	1

D2   I would recommend this company to a friend and other buyers of pre-cast concrete products

Definitely likely	Quite likely	Neutral	Quite unlikely	Definitely unlikely
5	4	3	2	1

D3   I am committed to maintaining my purchase of pre-cast concrete products from this company in the future

Definitely likely	Quite likely	Neutral	Quite unlikely	Definitely unlikely
5	4	3	2	1

D4   I plan to maintain a cordial buying relationship with this company in the future

Definitely likely	Quite likely	Neutral	Quite unlikely	Definitely unlikely
5	4	3	2	1

Thank you for time and your cooperation. Your views are much appreciated.