An evaluation of customer service quality at a selected resin company
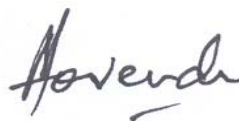
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Submitted in partial fulfilment of the requirements for the
Degree of Masters in Business Administration

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November 2008

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DECLARATION

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

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This dissertation is being submitted in partial fulfilment for the requirements for the degree of Masters in Business Administration.

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This dissertation is the result of my own independent work/ investigation, except where otherwise stated.

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ACKNOWLEDGEMENTS

It is difficult to write a simple thanks to all the people who have contributed to the successful completion of my dissertation. This dissertation is a result of months of work in which I have been accompanied and supported by many people. It is fantastic that I now have the opportunity to express my gratitude and sincere thanks to them all.

The first person that I would like to thank is my supervisor Dr. Jeeva Govender. I have known him to be a sympathetic and principle-centred man. His overly enthusiastic and integral view on research has made a deep impression on me. I owe him a lot of gratitude for having guided me through this research.

I would like to thank the management and staff of Cray Valley Resins not only for their support and for assistance, but also for the encouragement and kind help.

I would also like to thank all the participants who contributed to my work, for their time and willingness to participate in this study.

None of this would have possible without the sacrifices of my immediate and extended family.

To my wife and children, you were the inspiration and the driving force behind this milestone in my life.

Finally, I thank the Lord for giving me the strength to start and go through the process of completing this study.

DEDICATION

To my wife Prabashnee and childen,

Telisha & Eshandren

Without whom this life would not be possible.

To

My Parents

For making the sacrifices to educate your son

ABSTRACT

The conditions for doing business are changing rapidly. In the last decade, the resin market has witnessed a substantial growth and rapid changes globally as well as domestically. Customer satisfaction is a critical issue in the success of any business system, hence, one of the key challenges of this market is how to satisfy and retain their customers. This issue is strongly related to how service quality is managed and which holds a significant importance to customers' satisfaction and their perceived performance of companies. In order for companies to survive and grow, they must find new ways of thinking, which has led to doing marketing researches, especially those related to customer satisfaction.

In this study, the SERVQUAL model was employed to establish the customers' perceptions versus their expectations of service quality at Cray Valley Resins. Both primary and secondary data were used to inform this particular research. The research was quantitative in nature and conducted in the form of a self-administered survey. The type of study used was the cross-sectional analytical survey method.

The summary of the findings reveals that the dimensions with the highest expectation were tangibles followed by responsiveness. Coincidently these two dimensions also had the largest gap scores.

The overall mean gap score (-0.326) is relatively small. Thus, it can be concluded that although the customers hold a good opinion of the quality of the services provided, expectations of the services were higher.

CONTENTS

PAGE

CHAPTER ONE

CHAPTER TWO: LITERATURE REVIEW

CHAPTER THREE: RESEARCH METHODOLOGY

CHAPTER FOUR: FINDINGS OF THE EMPIRICAL RESEARCH

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

LIST OF FIGURES

FIGURES

LIST OF TABLES

TABLES

CHAPTER ONE

INTRODUCTION

1.1   INTRODUCTION

Cray Valley Resins South Africa was established in1969 to supply the coating market (as part of Coates SA). The company entered the polyester resin market in1979. Internationally, the company has 47 production facilities on four continents. Globally, the group is the market leader in the manufacture of gelcoats and distribution of materials to the composites industry. The company is the second largest manufacturer of unsaturated polyester resins and photocure resins in the world.

Cray Valley Resins South Africa's core function is the manufacture and sale of resin to the composite and coating markets. The company supplies high volume customers directly, and has two partners who are distributors, one in the coatings market and the other in the structural market.

Service sector managers are under constant pressure to demonstrate that their services are customer-focused and to develop productive and profitable relationships with their customers. This is a key goal of organisations not only in the consumer sector, but also in the business-to-business sector. The purpose of this study is to evaluate the service that Cray Valley Resins provides to its customers, by measuring customer perceptions relative to their expectations. Service quality is going to be measured using the SERVQUAL model, modified to the specific service requirements of the resin industry, to allow customers to assess its level of service quality along each dimension. It is expected that the outcome of this empirical research will help the management of Cray Valley Resins better understand their customer needs, identify gaps in the service provision, and implement the necessary procedures to close these gaps, so that service quality can be improved.

Suppliers need to offer superior solutions to customer needs. This need has become a prerequisite to providing a sustainable competitive advantage for a company. Being customer-focused, is also an imperative for a company, whether an organisation is manufacturing (as Cray Valley Resins is), or a service provider (Morison and Davis, 2004: 1-7).

Service providers must have systems in place to ensure that customers provide the required information and effort to facilitate the service encounter and outcome (Westwood and Ager, 1999: 1-5).

This chapter will include the following sections: problem statement, research objectives and rationale for the study,

1.2   PROBLEM STATEMENT

The key issue is the lack of understanding of customer satisfaction levels at Cray Valley Resins.

The South African resin market is highly competitive, and there are several players in this market. Many small paint companies manufacture their own resins. Globally, due to the surplus capacity of the eastern markets, e.g. China, Korea, South Africa is seen as a viable "dumping ground" for their excess manufacturing capacity. The fixed cost is significantly lower in the east, due to labour being cheaper and some key raw materials being manufactured there.

In view of this situation, it is imperative that Cray Valley Resins has a full understanding of customer satisfaction levels amongst its customers. This study will evaluate customer satisfaction at Cray Valley Resins.

1.3   RESEARCH OBJECTIVES

The goal of this study is to evaluate customer satisfaction levels at Cray Valley Resins.

The objectives of the study are:

- To determine customer expectations of service quality at Cray Valley Resins;
- To determine customer perceptions of service quality at Cray Valley Resins; and
- To identify gaps in service quality within Cray Valley Resins.

1.4   RATIONALE FOR THE STUDY

To sustain and grow the business, Cray Valley Resins' customers need to be satisfied with the level of service that the organisation provides. If these customers are dissatisfied with its service, the company may face loss of orders, increased claims, lower prices and generally lower supplier ratings. Once the customer switches to an alternate supplier, Cray Valley Resins would suffer a loss of revenue. Nel (2003:15) stresses the importance for an organisation to develop a customer satisfaction programme to measure performance/satisfaction over time. The research will analyse the current service status of Cray Valley Resins in South Africa.

1.5   SCOPE OF THE STUDY/DELIMITATIONS

The study is limited to customers that are serviced by Cray Valley Resins in South Africa only. A cross section of both the coatings as well as the structural customers was surveyed.

1.6   RESEARCH METHODOLOGY

In this section, the overview of the research methodology is presented. The research methodology shows how the research is designed. It highlights the sampling methods, the questionnaire, data collection and the techniques used to analyse the data.

1.6.1 Research type

The research was descriptive, quantitative and cross-sectional in nature and aimed to provide a holistic perspective of the perceptions and expectations of the customers, serviced by Cray Valley Resins. A questionnaire with 42 questions was used to gather data.

1.6.2 Target Population

All customers of Cray Valley Resins in South Africa constitute the population under study. A census was conducted amongst the company's 45 customers.

1.6.3 Data collection

Data collection is regarded as one of the core activities in research (Blaikie, 2000:30). Data was collected through the completion of questionnaires, which were sent to the procurement managers of the various companies, via e-mail. The researcher administrated the questionnaires.

The measuring instrument used was the 22-item SERVQUAL instrument. Numerous researchers have validated this instrument over the years. Durvasula, Lysonski and Mahta (1999: 132-150) used the SERVQUAL instrument in the business-to-business environment. A covering letter was used to inform the respondents of the nature and purpose of the research. The research questions were structured logically in the simplest terms to facilitate understanding by the respondents.

The data was analysed using the SPSS VERSION 15 software and the appropriate statistical techniques were used.

1.7 STRUCTURE OF CHAPTERS

Chapter 1 describes the research problem and how the research arose. It also focuses on the rationale and the objectives of the study. The scope, research methodology and the structure of the study are presented.

Chapter 2 will present the theoretical perspective of the research and the recent empirical studies that are relevant to the research questions. Theories and empirical studies will be discussed, within the context of customer satisfaction, perceptions and expectations. This chapter will also focus on the Servqual model, the Gap model and service quality.

Chapter 3 will focus on the research methodology. The procedures that will be followed in conducting the research will be explained. The data collection method and sampling will be described.

Chapter 4 will constitute a presentation of the results of the survey. The explanation of the results will start with a comparison of the customers' expectations and perceptions of the service quality. The gaps between those expectations and perceptions will then be presented.

Chapter 5 will contain a summary of the previous chapters, and the conclusions and recommendations based on the empirical findings. Recommendations for future research will also be made.

1.8 CONCLUSION

This chapter presented a description of the concepts used in this study. Firstly, a statement of the problem was presented. The research objectives were then stated. Finally, a description of the methodology of the research and the study plan concluded the chapter. In the next chapter, the theoretical aspects of service quality, including the SERVQUAL and GAP model, will be presented.

CHAPTER TWO

LITERATURE REVIEW

2.1   INTRODUCTION

This chapter includes the theoretical framework of the study; including services, service quality and customer satisfaction. The four characteristics of a service are discussed. The service quality attributes, based on the disconfirmation notion, are also presented. The SERVQUAL model is introduced and then broken down into its dimensions and the application of the model is discussed. The versatility of the SERVQUAL model in the different industries and countries, as well a critique of the model, is provided. The Gap model and the five gaps reverent to this research are discussed. The chapter ends with a discussion on service quality and customer satisfaction.

2.2   WHAT IS A SERVICE?

A service, as defined by Masmanidis, Vassiliadis and Mylonakis (2006: 81), is "any act or performance that one party can offer to another that is essentially intangible, and does not result in the ownership of anything. Its production may not be tied to a physical product. Lamb, Hair, McDaniel, Boshoff and Terblanche (2004: 438) elaborate that services are deeds or performances that one entity offers to another or efforts that cannot be physically possessed. Therefore, the authors contend that service marketing is one of the sub-disciplines of marketing.

Sierra and McQuitty (2005: 392) suggest that when there is a close relationship between a customer service representative and a customer, the manner in which the service is performed is generally more important than what is actually delivered. The customer service representatives' performance is critical for the success or failure of the service exchange and the employee's behaviour and attitudes can influence a customer's perception of quality for that service offering. The authors also discuss that it is more expensive to find new customers than to retain existing customers. Therefore,

the customer service representatives' performance can create and sustain the company's competitive advantage based on customer retention.

2.3 SERVICE CHARACTERISTICS

Four service characteristics are differentiated in service marketing, namely: intangibility, inseparability, perishability and heterogeneity (Lamb et al., 2004: 439-440). These service characteristics will be discussed below.

2.3.1 Intangibility

Services cannot be seen, touched, tasted or felt in the same manner in which physical goods can be sensed. Moreover, services cannot be stored and are difficult to duplicate (Kotler, 2000: 429). They are described as experiences or processes (Doyle and Stern, 2006: 351). The lack of easy reference points can make it difficult for customers to distinguish among competing suppliers (Lovelock and Wirtz, 2007: 17). This scenario cerates a problem to the suppliers / vendors in communicating to the buyer exactly what is on offer. A customer cannot really evaluate a service until it has been consumed. Intangibility of services is the prime source of performance ambiguity. Communication can form an important part of the solution to clarify the character of the service. Formal communication, as opposed to interpersonal communication, requires awareness of cultural codes and conventions of a particular group of consumers. The inseparability of a service producer and consumer is characterised by the encounter, whereas the intangibility of services requires knowledge of the changing tastes and preferences of socially stratified consumer groups (Grieves and Mathews, 1997: 90-91).

Intangibility is also known to pose problems for the supplier. The absence of physical characteristics makes it difficult to display and differentiate the service offered (Doyle and Stern, 2006: 352). To counter these problems, the authors suggest that the company should stimulate personal influence sources such as word of mouth recommendations and to provide incentives for opinion leaders to try the service. The company can also develop tangible cues that suggest high-quality service, such as knowledgeable staff, modern equipment, advertising in the reverent magazines and trade shows.

2.3.2 Inseparability

Services are sold and produced at the same time and at the same place. Consumption and production are two inseparable activities of a service and the customer has to be present during the production of the services (Lamb et al., 2004:440). In industry, the staff generally will personify the business to the client. A customer, who likes or admires the employee, is likely to be pleased with the service (Doyle and Stern, 2006: 353). In the role of services, employees are central for creating successful exchanges, but the role the customers play in the interaction cannot be overlooked. Customers play decisive roles in creating service outcomes; they enhance or diminish their own satisfaction and value received. The expectations and attitudes that customers bring to a service encounter can positively or negatively affect the service's delivery.

2.3.3 Heterogeneity

Heterogeneity, as a characteristic, is most applicable to a company with a large staff complement and it suggests that services tend to be less standardised and uniform than physical goods (Lamb et al., 2004: 440). This situation arises because services involve people at the production and consumption ends. The quality of the service is dependent upon the individual employee in charge of it, the individual customer receiving the service and the time the service is performed. All are extremely variable (Doyle and Stern, 2006: 353). The authors further discuss that, unlike machines, people are not normally predictable and consistent in their attitude and behaviour. This attribute makes it difficult for the company to develop a consistent brand image. Cray Valley Resins can overcome these difficulties by adopting the following measures:

- To have well trained and motivated employees, who are better able to follow standard procedures and cope with unpredictable demands;
- To improve the consistency of its staff's performance, by having detailed job descriptions and closer supervision of the employees; and

- The company can convert the heterogeneity to an advantage by emphasising how the employee tailors the service to the individual requirements of the customer.

2.3.4 Perishability

Unlike physical goods or products, a service cannot be stored or inventoried, and, as a result, it is impossible to regain once the opportunity is lost (Lambin, 2000: 301).

Employees can have a considerable impact on customers' perceptions of and satisfaction with a service (Sierra and McQuitty, 2005: 393). Masmanidis, Vassiliadis and Mylonakis (2006: 81) explain that services differ from products due to the nature of the service, i.e. they are intangible, inseparable, perishable and variable. Customer expectations reflect the desired level of service, the level at which customers are willing to accept and believe that they will eventually receive. Lovelock and Wirtz (2007: 21) state that companies, which practise best service, have made enormous progress in reducing variability by adopting standard operating procedures, implementing rigorous management of service quality, training staff carefully and automating tasks previously performed by people. These companies make sure that their staff are adequately trained in service recovery procedures in case things do go wrong.

2.4 SERVICE QUALITY ATTRIBUTES

Based on the disconfirmation notion, quality is perceived through a comparison between expectation and experiences over many quality attributes. The following four service quality attributes are discussed by Grönroos (2000: 73-74):

- Care and concern: the customer wants to feel that the company, its staff and its operational systems are devoted to solving his/her problems;

9

- Spontaneity: customer service representatives demonstrate a willingness and readiness to actively engage customers and take care of their problems;

- Problem solving: customer service representatives are skilled in taking care of their tasks and perform according to agreed standards. It is also suggested that the company, including operational support employees and operational systems, are also trained and designed to give good service; and

- Recovery: should anything go wrong or something unplanned happens, the company has someone who is prepared to make a special effort to handle the situation.

2.5 SERVICES VERSUS GOODS/PRODUCTS

Although many approaches to quality improvement apply equally to products and services, there are conceptual differences between the two. Some of the more important differences can be noted as follows:

- Services are not as tangible as products, and it can, therefore, be difficult to explain, specify, and measure the contents of a service;

- Due to the nature of services being more abstract than products, services are perceived and evaluated more subjectively;

- The customer often plays an active role in creating a service;

- A service is often consumed at the same time as it is created; it cannot, therefore, be inventoried or transported;

- The customer does not become the owner of a tangible property after delivery of a service;

- Services often consist of consequential activities; this makes it difficult (or impossible) for the consumer to test them before the purchase; and

- Services often consist of a system of sub-services, but the customer usually evaluates the whole and not the separate parts (Kvist and Klefsjo, 2006:523).

Brysland and Curry (2001: 392) argue that there is no consensus on the appropriate level of service. The idea of excellent service quality implies that every customer is as important as the next and that all customers' expectations should be met or exceeded. This requirement will, however, depend on whether or not customers' expectations are reasonable. Service delivery mistakes will have an immediate and directly negative impact on the customers' perception of the service provided. Studies show that the perceived relative quality of a product or service is the most important factor determining the company's long-run market share and profitability (Doyle and Stern, 2006: 355).

2.6 THE SERVQUAL MODEL

The SERVQUAL model was developed by Parasuraman, Zeithaml, and Berry (Gounaris, 2005: 422). The aim of these authors was to provide a generic instrument for measuring service quality across a broad range of service categories and disciplines. The information for the original study was gathered from 12 focus groups of consumers. In this study by Parasuraman, Zeithaml, and Berry, it was discussed that consumers evaluated service quality by comparing expectations (of service to be received) with perceptions (of service actually received) on ten dimensions (Carden and Dellifraine, 2004: 1649).

Table 2.1   Original ten-service quality dimensions

Service Quality Dimension		Definition
Reliability		Involves consistency of performance
Responsiveness		Willingness or readiness of employees to provide service (timeliness of service, giving prompt service)
Competence		Possession of the required skills and knowledge to perform the service
Access		Approachability and ease of contact
Courtesy		Politeness, respect, consideration and friendliness of contact personnel
Communication		Keeping customers informed in a language they can understand
Credibility		Trustworthiness, believability, honesty, and having the customers' best interests at heart
Security		Freedom from danger, risk and doubt
Understanding/Knowing the customer		Making the effort to understand the customers' needs
Tangibles		Physical evidence of the service

Source: Grönroos (2000: 75)

In a later study by Parasuraman, Zeithaml and Berry (Arasli, Mehtap-Smadi and Katircioglu, 2005: 45), the authors reduced the original ten dimensions to five. The SERVQUAL model's core content remained unchanged. Parasuraman, Zeithaml and Berry claim that, with appropriate adaptation, of the SERVQUAL model it can be used by all departments and divisions of a company to ascertain the quality of service that they provide (Dhurup and Mohamane, 2007: 63).

Table 2.2   The revised five service quality dimensions

Service Quality Dimension		Definition
Tangibles		The appeal of the facilities, equipment, material and employees which the service firm uses to deliver its services to the customer
Reliability		Consistency of performance and dependability
Responsiveness		Willingness or readiness of employees to provide prompt service
Assurance		The knowledge and courtesy of the employees and their ability to convey trust and confidence
Empathy		The providing of caring, individualised attention to customers

Source: Kotler and Keller (2006: 413)

2.6.1 Tangibles

Zeithaml, Bitner and Gremler (2006:120) refer to tangibility as the appearance of physical facilities, equipment, personal, and communication materials. These authors state that the policy and terms of sale should be printed correctly, legibly and in a language that can be easily understood by the customer. Similarly, materials associated with resin companies' services such as pamphlets, brochures, and newsletters should have useful information and be visually appealing. The employees' appearance should be neat and they should look courteous. Resin companies should have modern equipment and technology to keep records of customers' orders and accounts efficiently.

2.6.2 Reliability

The reliability aspect is concerned with the firm's ability to perform the promised services dependably and accurately (Lamb, Hair, McDaniel, 2004: 346). This means that a company must deliver on its promises about delivery, service provision, problem resolution and pricing. If there is a problem, Cray Valley Resins' staff must show the customer sincere interest in solving it. The company's statements and reports should be free of errors.

Schneider and White (2004: 145) state that one of the most important aspects of a service is reliability, meaning that the customers know what to expect and when they can expect to receive it. Consistency between one occasion to another and between one employee to another increases the reliability and is integrated in the concept of service quality (Lars, Johnson and Gustafsson, 2001: 8). Zeithaml, Bitner and Gremler (2006: 117) emphasise that if a company fails to keep its promises, the customers will be disappointed.

2.6.3 Assurance

Arasli, Mehtap-Smadi and Katircioglu, (2005: 45) stipulate that assurance is the employee's knowledge, courtesy and ability to inspire trust and confidence in the customer. The authors also stated that this aspect is of critical importance for services in which customers face a high level of risk or feel uncertain about their ability to evaluate outcomes. Zeithaml, Bitner and Gremler (2006:120) state that trust and confidence can be enhanced by the person who links the customer to the company. The company tries to build trust between key people in the organisation, such as customer service representatives and customers. Trust and confidence can also be represented by the organisation itself; thus, firms make efforts to build a trusting relationships between customers and the company as a whole. These views are also expressed by Grönroos (2000: 74), who explains that staff behaviour will give customers confidence in the company and that the company needs to make the customers feel safe in their transactions.

2.6.4 Responsiveness

Responsiveness is defined as willingness to help customers respond to their requests and provide prompt service (Lamb, Hair, McDaniel, 2004: 346). This dimension underlines the attentiveness and promptness in dealing with customers' requests, complaints and problems. Responsiveness is manifest in the time period that customers have to wait for assistance, answers to inquiries or attention to problems, as well as the flexibility and ability to customise the service to the customers' needs. In order to excel on the responsiveness dimension, companies are requested to have well staffed knowledgeable customer service departments, with responsive front-line staff

in all contact positions as customers' perceptions on responsiveness may diminish when they wait to get through a company by telephone, and are put on hold or put through a complex automated voice mail system (Zeithaml, Bitner and Gremler, 2006:118). In many businesses, customers look to customer services' representatives for advice or assistance and are frustrated if they cannot obtain it (Lovelock and Wirtz, 2007: 57).

2.6.5 Empathy

Empathy, as discussed by Grönroos (2000: 76), shows that the company understands customers' problems, performs in their best interests, as well as provides customers with individual personal attention and have convenient operating hours. Customers should be addressed by their names and not their account/company name. However, this practice may be difficult to be employed by a large firm with many customers. Cray Valley Resins should have convenient business hours to meet the customers' requirements. Zeithaml, Bitner and Gremler (2006:120) state that the essence of empathy is conveyed via personalised or customised services so that customers feel that they are special and their needs are understood. Disappointments can result when customers forget to perform their roles for the services that they are using (Zeithaml, Bitner and Gremler, 2006:503). Therefore, there is a need for communication from the resin company to educate the customer and prepare the customer for the service process e.g. lead times and batch sizes of specialised resins.

The popularity of the SERVQUAL model by academics and researchers can be explained mainly due to the model's ease of use and its adaptability to many diverse service sectors (Nyeck, Morales, Ladhari and Pons, 2002: 102).

2.7 APPLICATION OF THE SERVQUAL MODEL

The SERVQUAL instrument consists of twenty-two parallel-related expectation (E) and perception (P) statements that represent the five service quality dimensions. Each of these 22 items is measured in two ways (Grönroos, 2000: 76):

- The expectations of customers concerning a service; and
- The perceived levels of service actually provided.

The service quality is calculated as the difference between perceptions and expectations, with importance weights associated to each dimension. It is, however, limited to current and past customers because respondents need to have some knowledge and experience of the company in order to be able to complete the scale. In making these measurements, respondents are asked to indicate their degree of agreement with certain statements on a seven-point Likert-type scale (1 = "strongly disagree" to 7 = "strongly agree"). For each item, a "gap score" (G) is then calculated as the difference between the raw "perception-of-performance" score (P) and the raw "expectations score" (E). The "gap score" is calculated as $G = P - E$. The largest negative gaps, combined with assessment of where expectations are highest, facilitate prioritisation of performance improvement. On the converse, if gap scores in some aspects of service are positive, it implies that expectations are actually being exceeded. The positive gaps allow managers to review whether they may be "over-supplying" on this particular feature of service and whether there should be a re-deployment of resources into features that are underperforming (Shahin, 2006: 121).

2.8 USE OF SERVQUAL

SERVQUAL has been used to measure service quality in various industries; these have included but are not exclusive to: airline industry (Sultan and Simpson, 2000: 188-216); a department store (Alzola and Robaina, 2005: 46-57); the health sector (Kilbourne, Duffy, Duffy and Giarchi, 2004: 524-533); banking (Arasli, Mehtap-Smadi, Katircioglu, 2005: 41-46); fast food (Lee and Ulgado, 1997: 39-50); telecommunications (Van der Wal, Pampallis, and

Bond, 2002: 323-335); information systems (Jiang, Klein, and Crampton, 2000: 725-44); ocean shipping (Durvasula, Lysonski and Mahta, 1999: 132-150) and library services (Cook and Thompson, 2001: 585-604).

SERVQUAL has also been applied in various countries; these have included: the United States (Kilbourne et al., 2004: 524-533); China (Zhou, Zhang, and Xu, 2002: 14-21); Australia (Baldwin and Sohal, 2003: 207-216); Hong Kong (Lam, 1997: 145-152); Korea (Kettinger, Lee, and Lee, 1995: 569-588); The Netherlands (Kettinger, Lee, and Lee, 1995: 569-588); the UK (Kilbourne et al., 2004: 524-533); and South Africa (Kgaile and Morris 2006: 47-68).

2.9   CRITICISMS OF THE SERVQUAL MODEL

Although both scholars and practitioners have utilised the SERVQUAL model to measure service quality, several theoretical and empirical criticisms of the scale have been raised. These can be summarised as follows:

Scholars argue that SERVQUAL only reflects on the service delivery process and does not address the service encounter outcomes (Kang and James, 2004: 266-268). Toy, Kerstetter and Rager (2002: 99) assessed the SERVQUAL model and criticised Parasuraman, Zeithaml, and Berry for the lack of explaining the variability of the outcomes of the SERVQUAL model and have suggested a contingency model approach. Volt and Fesenmaier (1995: 763) have, without success, used the SERVQUAL model to evaluate the tourists' and retailers' perceptions of the service levels at a tourism destination.

The concept and operationalisation of the "gap score" have been questioned. It has been suggested that the notion of "subtraction", contained in the SERVQUAL model, has no equivalent in theories of psychological function (Ekinci and Riley, 1998: 349-362). The use of a "gap score" is said to be a poor choice as a measure of psychological construct (Van Dyke, Prybutok, and Kappelman, 1999: 877-891) because there is little evidence that customers actually assess service quality in terms of perception-minus-expectations scores (Ekinci and Riley, 1998: 349-362). It has been contended by Cronin and Taylor (1992: 55-68) that service quality is more accurately

assessed by measuring only perceptions of quality. Moreover, the validity of the operationalisation of the "gap score" has been questioned because such scores are unlikely to be distinct from their component scores (Boshoff and Gray, 2004: 30).

The concept of "expectations" has been criticised for being loosely defined and open to multiple interpretations. According to this critique, expectations have been variously defined as "desires", "wants", "what a service provider should offer", "the level of service the customer hopes to receive", "adequate service", "normative expectations", and "ideal standards". As a result of the above statements, it is implied that the operationalisation of SERVQUAL is it open to multiple interpretations. Difference score measures are argued to be less reliable than non-different score measures for they appear to possess discriminate validity just because such measures are unreliable. Gounaris (2005: 422) states that empirical findings have demonstrated that expectations about the performance of a services may change after it is used once, which will then reduce the reliability of a difference score based on those measures. The author further states that, when using difference scores to predict some outcome (e.g. satisfaction), it is assumed that the components of the difference score have equal but opposite effects on the criterion variable.

The validity of the items and dimensions of the SERVQUAL instrument have been questioned. It has been suggested that the factor-loading pattern in a number of studies (Kang and James, 2004: 267) indicates a weakness in terms of convergent validity because several of the SERVQUAL items had the highest loadings on different dimensions from the study of Parasuraman, Zeithaml and Berry (1991:8).

In a critique of the gap score, Babakus and Boller found that the expectation score was not necessary in determining satisfaction levels. In their study, Babakus and Boller reported that the expectation score was clearly overshadowed by the perception score, and that the expectation score did not contribute to the difference scores (Gounaris, 2005: 422).

Many scholars have suggested that different dimensions are more appropriate for expectations, perceptions, and gap scores. A few suggestions have included: one dimension (Lam, 1997: 145-152.); two dimensions (Gounaris, 2005: 421-435); three dimensions (Najjar and Bishu, 2006: 35-44); four dimensions (Kilbourne et al., 2004: 524-533); six dimensions (Headley and Miller, 1993: 32-41); and seven dimensions (Walbridge and Delene, 1993: 7-15). Some studies have reported a poor fit when tested against a five-factor model with confirmatory factor analysis (Chi Cui, Lewis and Park, 2003: 191-201). As mentioned above, a number of dimensions have been identified in service quality. These five dimensions: tangibles, reliability, responsiveness, assurance and empathy have been identified consistently as being relevant in service industries (Berndt and Herbst, 2006: 100).

The fundamental model underlying SERVQUAL has been questioned. Several researchers have contended that service quality is an aggregation of various quality sub-dimensions and that service quality is, therefore, a multilevel construct (as well as being a multidimensional construct) (Wilkins, Merrilees and Herington, 2007: 840-853).

Despite this variation, it is apparent that the five dimensions of SERVQUAL were, for the most part, retained in the studies examined by the researcher. The dimension of "tangibles" (the appearance of physical facilities, equipment, and personnel) was retained in most of the studies (Markovic, 2006: 86-95). Similarly, the "empathy" dimension (the knowledge and courtesy of employees and their ability to inspire trust and confidence) was retained in numerous studies (Karatepe, Yavas and Babakus, 2005: 373-383). The researcher contended to use the five dimensions: tangibles, reliability, responsiveness, assurance and empathy in this study.

The problem is that there is no credible alterative to SERVQUAL to measure service quality. The revised version of SERVQUAL, which measures the five dimensions, was used in this study to measure service quality. To conclude, many authors have criticised the SERVQUAL model. However, the researcher motivates the use of the model only in the measurement of the "service

delivery process" and will not measure the service encounter outcomes. Despite the widespread criticism of SERVQUAL, it is the contention of the present study that the scale continues to be the most useful model for measuring service quality. In addition, the methodological approach used by Parasuraman, Zeithaml, and Berry in developing and refining SERVQUAL was more rigorous than those used by the authors of the alternative models (Carrillat, Jaramillo and Mulki, 2007: 475).

The following summary highlights some of the characteristics that can be analysed by using the SERVQUAL instrument to determine customer service levels (Brysland and Curry, 2001: 395):

- The different customers' perceptions and expectations of service quality to highlight current performance levels, by customer segmentation;
- The resultant service gaps;
- An understanding of customer perceptions and expectations over time, thus allowing for further analysis as part of the monitoring process;
- How to manage customer expectations with respect to service planning, design and delivery;
- The impact of service improvement activities which were carried out as a result of customer expectations and priorities; and
- Most importantly, the results provide a starting point and assists in the prioritisation of the service improvement activities.

2.10 THE GAP MODEL

It is agued by Lovelock and Wirtz (2007: 424) that if management accepts the view that quality means consistently meeting or exceeding customers' expectations and perceptions, then the manager's task is to balance customer expectations and perceptions and to close any gaps between the two. The gap-model conceptualises service quality as a comparison between customers' expectations and perceptions – the "disconfirmation paradigm" for measurement, which is the predominant model in the field of quality and customer satisfaction literature (Skålén and Fougère, 2007: 110).

These authors also go on to discuss that the gap-model is the most important technology in the field of customer-perceived service quality. The service quality survey, using the SERVQUAL model, will assist Cray Valley Resins' management to identify the organisation's service strengths and weaknesses (GAPS). Therefore, it is necessary to use the Gap model. Parasuraman, Ziethaml, and Berry, developed the Gap model, which shows how various gaps in the service process may affect customers' assessment of the service quality. This conceptual model of service quality was later developed to "The Gap Model of service quality" (Zeithaml, Bitner and Gremler, 2006: 33-46). The "Gap Analysis Model", as discussed by Grönroos (2000: 100), is intended to be used for analysing sources of quality problems and for helping managers understand how service quality can be improved.

Service quality has been at the centre of the service management research agenda since the middle of the 1980s and encapsulates the service management "spirit". The gap-model is, thus, not a marginal customer survey technology tool; rather, it is representative for gaining insights into customers' demands and desires (Skålén and Fougère, 2007: 110).

The service quality gap model conceptualises perceived service quality as the "service quality gap", which is the difference between expectation of service quality from an "excellent" service provider and the perception of service quality from the current service provider (Mukherjee and Nath, 2005: 175).

The gap model constitutes of five possible contributing factors for the company's weaknesses or Gaps. These quality gaps are as a result of the inconsistencies in the quality management process of the company (Grönroos, 2000: 102).

The following summary of the five gaps is discussed below (Kotler and Keller, 2006: 412-413):

- Gap (1) is between consumer expectation and management perception – management does not always correctly perceive what customers want. Business managers may think that customers want lower prices, but customers may be more concerned with the slow turn-around time of their orders.

- Gap (2) is between management perception and service quality specification – Management might correctly perceive customers' wants but may not set a performance standard. Business managers may tell the production department to produce the goods quickly, without specifying the lead-time given to the customer.

- Gap (3) is the difference between service-quality specifications and service delivery – Personnel might be poorly trained, or incapable of or unwilling to meet the standard; or they may be held to conflicting standards, such as taking time to listen to customers and serving them fast.

- Gap (4) is between service delivery and statements made by the company representatives and advertisements that affect external communications – Consumer expectations. If the company's brochure shows a neat a beautiful drum of resin, but the customer gets a dirty, rusty and tacky looking drum, the external communications have distorted the customer's expectations.

- Gap (5) is between perceived service and expected service – This gap occurs when the customer misperceives the service quality. When the customer takes delivery of the product and the customer services representative keeps phoning to find out the performance of the product. The customer may interpret this communication as an indication that something is really wrong with the product.

Grönroos (2000: 105) agues that should Gap 5 be negative, it could indicate a quality problem, which would attract a bad word-of-mouth recommendation, have a negative impact on the corporate image and result in a loss of

business for the company. A positive gap leads to either a positively confirmed quality or over quality. In a study by Frost and Kumar (2000: 9), Gap 5 is indicated as the main gap, where customers' expectations of a service provided are compared with their perceptions of that service. In the current research, this gap focuses on the customers of Cray Valley Resins. The gap is based on the difference between the customers' expectations and perceptions of Cray Valley Resins' service quality. The gaps 1 to 4 indicate the shortfalls within the service providers' company. Gaps 1 and 2 are management orientated, while gaps, 3 and 4 are services specific. Figure 2.1 illustrates the aforementioned gaps.

Figure 2.1   Conceptual Model of Service Quality
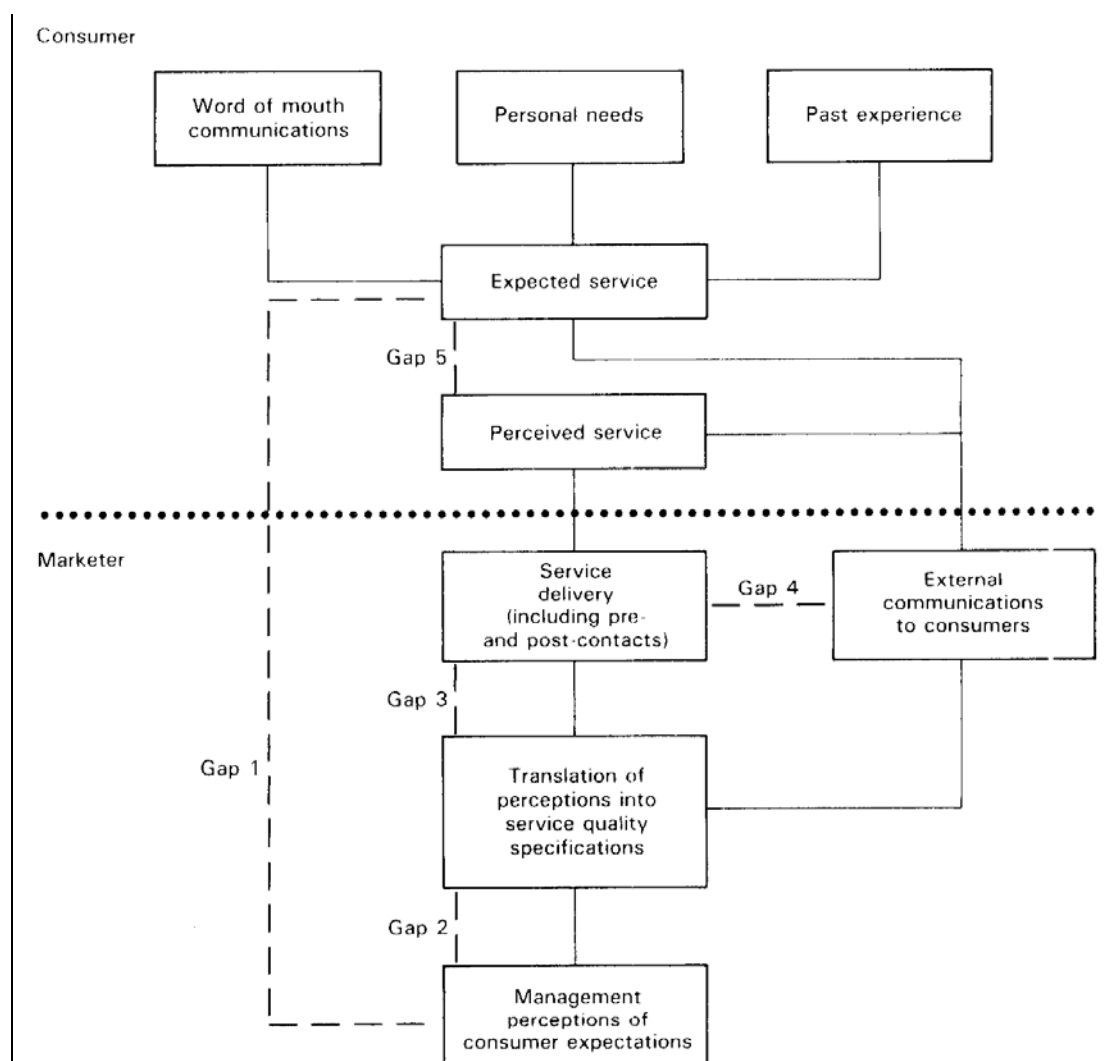
Source: Kotler and Keller (2006: 413)

Skålén and Fougère (2007:118) emphasise that the gap-model should not be used as a once-off event, but should be used on a number of occasions in order to produce the customer orientation that it promises. It is also argued that the power of the gap-model becomes obvious only when several measurements are compared to each other, over time. The Gap Analysis Model, as discussed by Grönroos (2000: 106), suggests that management should use the model as a guide in finding out where the reason (or reasons) for the quality problem lie and in discovering appropriate actions to close this gap. Gap analysis is a straightforward and appropriate way of identifying discrepancies between a service provider and the customers' perceptions of service performance.

2.11   SERVICE QUALITY AND IMPROVING SERVICE DELIVERY

In order to improve service delivery, customer satisfaction and loyalty, there is a need for an appropriate approach for assessing the quality of Cray Valley Resins' service to its customers, through measuring customers' perceptions and expectations of service quality for the company. Berry, Parasuraman and Zeithaml (Tiernan, Rhoades and Waguespack, 2008: 215), argue that service quality, as perceived by consumers, stems from a comparison of what they feel service firms should offer (i.e. from their expectations) of the performance of the firm providing the service.

Unlike product quality, which can be measured objectively by specifications, durability or number of defects, service quality is an elusive construct that may be difficult to measure (Venter and Dhurup, 2005b: 425). The Servqual model, developed by Parasuraman, Ziethaml, and Berry, (Bradley, Sheys and Morris, 2005: 961), is a multiple-item scale for measuring consumer perceptions of service quality.

Definitions of service quality focus on meeting customers' needs and requirements, and how well the delivered service matches the customers' expectations. The most relevant approach in defining and measuring service quality is the user-based approach i.e. from the customer's perspective, in which the human element forms an integral part in the service offering.

Keltner and Finegold assert that many service processes require the active involvement of the customer of the service and the customer, therefore, becomes involved as a co-producer of the service. In seeking quality service, customer needs and expectations may differ between customers (Venter and Dhurup, 2005a: 30). Various scholars defined service quality in different ways: Kasper, Van Helsdingen and De Vries define service quality as "the extent to which the service process and the service organisation can satisfy the expectations of the user". Parasuraman, Zeithaml, and Berry define service quality as "a function of the difference between service expected and customers' perceptions of the actual service delivered". Grönroos proposes that service quality is made up of two quality dimensions – technical quality and functional quality. Technical quality refers to the relatively quantifiable aspects of the service, that is, what is being done, while functional quality is how the service employee provides the service. In services marketing literature, the quality dimension can be summarised as providing customer value, conformance to requirements, and fitness for use and meeting customers' expectations. Service quality is, therefore, defined as an enduring dimension that encompasses quality performances in all activities undertaken by the management and employees of the organisation. Customers are the only judges of service quality. If the customer perceives the service to be poor, then it is. The customers assess service quality by comparing what they want or expect with what they perceive they are getting (Prayag, 2007: 495).

Service quality forms an important part of service marketing. The essence of service quality is performing the service dependably and accurately. Dhurup and Mohamane, (2007: 62) state that when a company performs a service carelessly, makes avoidable mistakes and when it fails to deliver on promises that it has made to attract customers, it unsettles the customers' confidence and undermines the company's chances of receiving a reputation for service excellence. The view of service quality from the customer's perspective is simply a flawless performance in the delivery of the service. The SERVQUAL model is based on functional quality (the delivery process) rather than technical quality (the outcome of the service encounter) (Ladhari, 2008:75-76). Functional quality is being studied in this research.

Zeithaml and Bitner (2003:85-86) state that perceived service quality is only one component of customer satisfaction. The authors also mention that service quality "reflects" the customers' perception of the service elements (i.e. the interaction and outcomes) where the satisfaction of the customers is more "inclusive" with its influence and its perceptions of the service quality.

Perceptions are defined as the customers' judgement of the service organisation's performance, which is then further refined by Chenet, Tyan and Money (2000: 472) as the discrepancy between the specifications of service and the delivery. It is also discussed that using service quality is a key point of market differentiation, which positively influences customer retention and market growth (Imrie, Cadogan and McNaughton, 2002: 10-18).

According to Zeithaml, Bitner and Gremler (2006:116-117), customers do not perceive quality in a uni-dimensional way. The authors Zeithaml, Bitner and Gremler go on further to say that customers judge quality based on multiple aspects relevant to the context. The five dimensions of service quality (reliability, assurance, tangibility, empathy and responsiveness) were identified through the pioneering research of Parasuraman, Zeithaml and Berry, which was found to be applicable across a variety of service contexts, including banking, insurance and securities' brokerage. These dimensions express the way customers organise information in their minds to evaluate the quality of services.

Table 2.3 indicates that customer satisfaction and service quality are two distinct concepts, although these constructs are closely correlated. In marketing literature, several studies have found positive relationships between service quality and customer satisfaction with customer behavioural intentions (Jaiswal, 2008: 407).

Table 2.3   The distinction between customer satisfaction and service quality

Customer Satisfaction	Service Quality
Customer satisfaction can result from any dimension, whether or not it is quality related.	The dimensions underlying quality judgements are rather specific.
Customer satisfaction judgements can be formed by a large number of non-quality issues, such as needs, equity, and perceptions of fairness.	Expectations for quality are based on ideals or perceptions of excellence.
Customer satisfaction is believed to have more conceptual antecedents.	Service quality has less conceptual antecedents.
Satisfaction judgements do require experience with the service or provider.	Quality perceptions do not require experience with the service or provider.

Source: Fen and Lian (2007: 62)

To conclude this section on service quality, the focus is on the reason for measurement, since "measurement allows for the comparison before and after changes, for the location of quality-related problems and for the establishment of clear standards for the service delivery made by the company" (Brysland and Curry, 2001: 392).

2.12 CUSTOMER SATISFACTION AND EXPECTATION

In the literature on service quality and customer satisfaction, expectations are interpreted differently. In service quality, expectations have a normative role, which is based on past experience, and they provide the customers' views of what should happen. In the literature based on customer satisfaction, expectations are usually linked to what consumers forecast, that is, they have a more predictive role and they relate to what will happen (Zeithaml, Berry, Parasuraman, 1993:5).

One definition of customer satisfaction proposed by Carden and DelliFraine (2004: 1649) is that customer satisfaction is a function of customer expectations with regard to the purchase of a service or product, and the post-purchase perception of the extent to which those expectations were met.

The role of expectations in service quality is made more complex by theory arguing that different levels of normative expectations exist (the customers' "Zone of Tolerance") and that the expectations associated with service quality and customer satisfaction interact (Zeithaml, Berry, Parasuraman, 1993:6). The zone of tolerance is based on the assumption that customers recognise and are willing to accept a degree of heterogeneity in service quality (Skålén and Fougère, 2007:115).

Carden and Dellifraine (2004:1651-1653) argue that there is a strong positive association between customer satisfaction and organisational performance. Customer satisfaction has been shown to lead to greater customer loyalty and profitability, attracting of new customers, lowering of cost and retaining of customers. The authors state that if a company lacks customer focus and tries to deliver quality, it would more often fall back in delivering quality (more product features) rather than quality (features that enhance customer enjoyment).

There appears to be three main, although overlapping, applications of the zone of tolerance;

- A description of an outcome state;
- A description of a range of pre-performance expectations; and
- As the satisfactory range of in-process service performance.
-

The service quality model has three outcomes:

- "Negative disconfirmation", as a result poor perceived quality;
- "Positive disconfirmation", as a result of high quality, also known as "delight"; and
- "Confirmation", as a result of adequate quality, also called satisfaction.

It is this satisfaction state that is referred to as the zone of tolerance (Johnston, 1995: 47).

Grönroos (2000: 106) states that the zone of tolerance concept assumes that customers do not have expectations of a service attribute on any one given level. The customers can tolerate a variation in the real experiences and still consider them acceptable according to their expectations. This characteristic implies that customers' expectations exit on two levels, a desired level and an adequate level. The desired level reflects on what level the service should be provided by the company, whereas the adequate level is what customers believe it could be. The adequate level is the least acceptable level of service experience in the eyes of the customer.

The "zone of tolerance" can also be applied to pre-performance expectations. It is generally accepted that pre-performance expectations can be classified from "minimum tolerable", next to "ideal", then "deserved", to "desirable" and finally "adequate" or somewhere in-between (Johnston, 1995: 47).

Skålén and Fougère (2007:115) explain that the zone of tolerance stipulates that customer expectations do not have to be exactly equal to customer perceptions in order for service quality to be satisfactory, but it rather allows for some variation within the range of performance and an increase in

performance within this range will have a marginal effect on perceptions. The authors go on to say that when performance moves outside of this range that there will be a real effect on perceived service quality. Lovelock and Wirtz (2007: 61) postulate that in all types of services, managing the service interactions effectively is key to creating satisfied customers who will be willing to enter into long-term relationships with the service provider.

2.13   CONCLUSION

The chapter reviewed the concepts of services, service quality and customer satisfaction. The literature addressed the characteristics of services and the difference between services versus goods. The SERVQUAL model was found to be applicable to various industries and countries, which assisted both scholars as well as researchers to measure service quality. The researcher motivated for the choice of the SERVQUAL model for this research. The areas requiring managerial attention and action could be highlighted using this model and the Gap model. It can be gathered from this chapter that quality cannot be determined by the service provider only. Quality it has to be based on the customers needs, wishes and expectations. Quality cannot be planned as an objective measurement, instead it is subjectively perceived by the customers as to what is being delivered. The production and delivery processes are both perceived by the customer who also takes an active part in this process.

The next chapter will discuss the methodology used in this research and will include the research type, measurement scale and the data.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1   INTRODUCTION

This chapter presents the methodology adopted in this study, which uses the service quality model to analyse the gap between perceptions and expectations of service quality of Cray Valley Resins' customers. It shows how the research was designed. It highlights the sampling method, the questionnaire, data collection and the techniques used to analysis the data. Research design "constitutes the blueprint for the collection, measurement, and analysis of data" (Cooper & Schindler, 2006: 192).

"It is commonly said that what is not measured is not managed. Without measurement, you cannot be sure whether service quality gaps exist, let alone what types of gaps, where they exist, and what potential corrective actions should be taken. And, of course, measurement is needed to determine whether goals for improvement are being met after changes have been implemented" (Lovelock and Wirtz, 2007: 425).

3.2   RESEARCH TYPE

The research conducted was descriptive, quantitative and cross-sectional in nature and aimed to provide a holistic perspective of the perceptions and expectations of the customers who are serviced by Cray Valley Resins. As discussed by Grönroos (2000: 78), if one wants to find out how customers perceive the quality of a given service, then both expectations and perceptions regarding this particular service should be measured.

3.2.1 Descriptive Research

Houser (2008: 192) defines descriptive research to be a type of study which tries to find out what, why, who, or where. The descriptive part of the study is where the researcher tries to explain the gaps between "expectations" and "perceptions" of Cray Valley Resins' customers. As discussed by Prayag (2007: 496), when applying the SERVQUAL model, the "gap" between the two parameters will measure the level of service quality.

3.2.2 Cross-sectional survey

Fink and Kosecoff (2006: 61) discuss cross-sectional surveys to be studies that take place at a single point in time. These surveys are regarded as a snapshot of a group of people or organisations. The majority of empirical studies conducted to measure service quality have been cross-sectional (Dabholkar, Shepherd and Thorpe, 2000: 148), where both expectations and perceptions were measured after the service had been delivered. This approach assumes that expectations before the service are identical to expectations after the service. The study was a cross-sectional survey, for the study will be done once and will give the perspectives of the findings at one point in time. Although a number of the respondents had exposure to Cray Valley Resins' service quality for many years, the measurement of these expectations and perceptions are only measured during one point in time.

3.2.3 Quantitative Research

As discussed by Cooper & Schindler (2006: 216), quantitative research attempts to measure the precise count of some behaviour, knowledge, opinion or attitude. Surveys are regarded as the dominant methodology of the quantitative researcher.

In the previous chapter, the quality measurement instrument i.e. the SERVQUAL model was introduced. After a critical analysis of the SERVQUAL model and its application in the business industry, it was decided to use this instrument to test service quality in the resin industry. It needs to be stated that no evidence could be found where the SERVQUAL model has been used

to measure service quality in the resin industry.

3.3   TARGET POPULATION

A population includes all the respondents about which the researcher wishes to make inferences (Groebner, Shannon, Fry and Smith, 2005: 13). In the current study, all the customers of Cray Valley Resins in South Africa constituted the population under study. Due to the small size of the population, a census was conducted amongst the company's 45 customers.

3.4   QUESTIONNAIRE DESIGN

It is argued by Saunders, Lewis and Thornhill (2003: 282) that questionnaires can be used for descriptive or explanatory research, such as the attitude and opinion questionnaire used in this research. Questionnaires were used to test the service quality dimensions of Cray Valley Resins' customers. The next section provides some of the reasons/justifications as to why the researcher chose the use of questionnaires as a data collection method, as well as the precautions taken for non-response errors, the types of questions used and the measurement scale for the questions.

Many formal methods can be use to collect customer feedback data. Some of the more frequently used methods include focus groups, e-mail, a mail survey, a telephone survey and personal interviews (Mertens, 2005: 172). In comparison with personal interviews, focus groups and questionnaires, questionnaires involve substantially lower costs (time spent collecting the data). Questionnaires can be given to a large number of people simultaneously. Questionnaires are accessible to all the targeted respondents, especially those researched via e-mail. Therefore, questionnaires were chosen for data collection. A disadvantage of the e-mailed questionnaires was the possibility of a low response rate amongst the respondents. To counter this disadvantage, the questionnaires were impersonal and anonymous. The amount of information requested in the questionnaire for this study was reasonable, for the respondents were only required to indicate the level of agreement for both the perceptions' and

expectations' statements as stated in the SERVQUAL model. The time required to complete the questionnaire for this study was not longer than ten minutes.

3.4.1 Advantages of questionnaires

Questionnaires are familiar to most people. Nearly everyone has had some experience completing questionnaires and they generally do not make people apprehensive. The following statements are some of the reasons as to why questionnaires were used in this study:

- This approach is less expensive in terms of time and money;

- Respondents feel a greater sense of anonymity;

- Each respondent is asked the same questions;

- The format is standard for all respondents and is not dependent on the mood of the interviewer;

- Large samples, covering large geographic areas, compensate for the expected loss of respondents; and

- A greater amount of data over a broad range of topics may be collected (Cargan, 2007: 116-117).

3.4.2 Precautions taken while using emailed questionnaires

The data collection method was an e-mailed questionnaire to all Cray Valley Resins' customers. The following precautions were taken into consideration to minimise the non-response error during the data collection:

- The questionnaire length was limited to four pages;

- Forty-five personalised e-mails were sent to all Cray Valley Resins' customers; and

- A cover letter introduced the researcher to the respondents and provided clear instructions on how to compete the questionnaire (Appendix A).

3.4.3 Types of questions used

A set of structured response questions was used to measure the service quality of Cray Valley Resins. The research questions were structured logically in the simplest terms, to facilitate understanding by the respondents. Respondents had to choose between the alternatives provided in the Likert scale (Cooper and Schindler, 2006: 370-371). Kolb (2005: 32) suggests that with service quality studies, questionnaires should be short and should not include too many questions in one study. Moreover, shorter questionnaires are more likely to yield quality data while longer questionnaires are likely to fatigue respondents and create resistance for future research in service quality.

Although the SERVQUAL model was used in numerous business related studies, it was not formally tested in the resin industry. It was decided to use the original twenty-two statements as used by Parasuraman, Zeithaml, and Berry (Shahin, 2006: 130-131), but to apply the original statements to Cray Valley Resins.

Parasuraman, Zeithaml, and Berry measured both customers' expectations and perceptions in the SERVQUAL model. The original SERVQUAL model stated nine statements negatively for better quality control. This method resulted in a "reverse scoring" during the data analysis. In the current study, the researcher has decided against this approach and all the statements were stated positively on the questionnaires during the data capturing process. Justifications for the reversing of the statements to only positive statements are that the respondents may have limited time to complete the questionnaire and possibly not notice the negative statements. Table 3.1 indicates which statements were "reversed scored" in the original survey by Parasuraman, Zeithaml, and Berry (Shahin, 2006: 117-131) and made positive by the researcher.

Table 3.1   Reverse scoring for SERVQUAL model statements

Statements that were "reversed scored" in the original survey by Parasuraman, Zeithaml, and Berry (Shahin, 2006: 117-131).
Statement 10: They shouldn't be able to tell customers exactly when services will be performed
Statement 11: It is not realistic for customers to expect prompt service from employees of these firms.
Statement 12: Their employees don't always have to be willing to help customers.
Statement 13: It is ok if they are too busy to respond to customer requests promptly.
Statement 18: These firms should not be expected to give customers individual attention.
Statement 19: Employees of these firms cannot be expected to give customers personal attention.
Statement 20: It is unrealistic to expect employees to know what the needs of their customers are.
Statement 21: It is unrealistic to expect these firms to have their customers' best interests at heart.
Statement 22: They shouldn't be expected to have operating hours convenient to all their customers.

3.5 THE MEASUREMENT SCALE

In this study, a customised measurement scale was used to measure the constructs. The researcher aimed to measure the customers' expectations and perceptions of service quality of Cray Valley Resins. The definition of scaling is the "procedure for the assignment of numbers to a property of objects in order to impart some of the characteristics of numbers to the properties in question" (Cooper & Schindler, 2006: 364). The criteria used to select the measurement scale is subject to the following areas:

- The study objectives for this research are to judge the respondents' level of satisfaction with the service quality delivered to them by Cray Valley Resins as indicated by the different service quality dimensions, and to measure the gaps in the service quality.

- The use of Likert scales were employed to measure the response in the research. Respondents were required to compare their service quality expectations and perceptions of Cray Valley Resins.

- The three to seven point scale range is one of the most widely used. The researcher utilised the five-point scale range, as used by Frochot and Hughes (2000: 157-167) in their studies, because the Likert scale is a summated scale.

- The degree of preference was indicated by the selection of a specific rating for the level of satisfaction or dissatisfaction as indicated on the Likert scale. This scale consists of statements that express either agreement (high expectation/perception) or disagreement (low expectation/perception) attitude towards the object of interest. Both of these options have to be completed according to the respondents, expectations or perceptions with regard to a specific statement.

- The Likert scale assisted the researcher to measure the gaps in service quality as perceived by Cray Valley Resins' customers. These gaps will be discussed in chapter five.

- A Likert scale is a summated rating scale, which consists of statements that express either an agreeable or a disagreeable attitude towards the objects investigated (Cooper and Schindler, 2006: 370-371). The respondents were required to choose between a range of one to five in the scale for each statement. Every response was given a numerical score to reflect its degree of agreement.

3.6   DATA

3.6.1 Primary data

Primary data refers to the collecting of new data used in meeting the objectives of a particular research (Saunders, Lewis and Thornhill, 2003: 188). The research was quantitative in nature and in the form of a self-administered survey. The type of study used was the cross-sectional analytical survey method. The study is carried out once and represents a snapshot of one point in time (Cooper & Schindler, 2006:195).

3.6.2 Secondary data

Secondary data is data recorded in previously studies and was discussed in the literature review, in the previous chapter.

3.6.3 Data collection

The data collected from the population list was based on a computer generated census list of the forty-five customers who have previously purchased from Cray Valley Resins. This list serves as the sampling frame for the research (Cooper and Schindler, 2006: 434). A structured electronic questionnaire was e-mailed to all forty-five respondents (Procurement Managers) on the population list. The questions asked in the questionnaire were adapted to address the functionality of the customers with Cray Valley Resins. The researcher, via e-mail, administered all the questionnaires on the 1 August 2008. The completed questionnaires were requested from the respondents by the 22 August 2008 for data collection by the researcher. A

reminder went out one week after the original e-mail encouraging the non-respondents to complete the questionnaire.

3.7 DATA ANALYSIS

All the data was analysed by SPSS software to determine the gaps in service quality at Cray Valley Resins.

3.7.1 Data preparation

Factor analysis was used to analyse the data. Prior to this process being started, the data had to be prepared for the correct interpretation during the factor analysis. The steps involved in data preparation included editing, coding and data entry (Cooper and Schindler, 2006: 490).

3.7.1.1 Editing

"Editing detects errors and omissions, corrects them when possible, and certifies that minimum data quality standards have been achieved" (Grover and Vriens: 2006: 197). The data was checked to ensure that all measures fell within the appropriate measurement range.

3.7.1.2 Coding

Coding of nominal data allow for easier analysis using specialised software. Software analysis is done using comparisons between numbers (and not text). Responses were coded through the allocation of numbers that were grouped into a limited number of categories (Cooper and Schindler, 2006: 493). Variables in this study were coded according to the number chosen in the five point Likert scale.

3.7.2 Data entry

Once the coding of all the completed questionnaires were done (primary data), data typists entered the codes to a medium for viewing and manipulation (Cooper and Schindler, 2006: 504). The data was entered in a data file of a statistical software package named SPSS (version 15), a

comprehensive set of programmes designed for use by social scientists. Although the software provided a wide range of statistical options for design, analysis and presentation, the research was also analysed with the aid of "Statgraphics Centurion". These packages enable the entire data file to be edited. Software makes the data accessible and effortless during the analysis. These database programmes collect and analyse the data for computerised retrieval. These programmes assisted the statistician, to define the data field and link files for simplified data storage, retrieval within the database. Spreadsheets organise, tabulate and give simple statistics for easier interpretation (Groebner et al., 2005:2).

The reliability of the instrument begins with the computation of coefficient alpha. According to the Academic Technology Services at the University of California, Los Angeles (UCLA Academic Technology Services: 2002), the Cronbach alpha measures how well a set of items (or variables) measures a single one-dimensional latent construct. Due to the multidimensionality of the service-quality construct, the coefficient alpha must be computed separately for all five dimensions, (tangibility, assurance, reliability, responsiveness and empathy). The accepted norm is that a factor solution should account for a minimum of sixty percent of the total variance; however, the more acceptable range for the SERVQUAL model is above seventy percent (Hair, Babin and Money, 2003: 364-365). The two most important aspects of precision are reliability and validity. Reliability refers to the reproducibility of a measurement. Validity refers to the agreement between the value of a measurement and its true value. Poor validity also degrades the precision of a single measurement, and it reduces the ability to characterise relationships between variables in descriptive studies (Cooper and Schindler, 2006: 352).

The following steps were taken to ensure the validity of the study:

- Data was collected from the reliable sources. Participants were customers of Cray Valley resins;
- Survey questions were based on the literature review and frame of reference to ensure the validity of the result. The questionnaire was generated, based on a well known customer satisfaction measuring model, which is called SERVQUAL;
- Data had been collected through three weeks. Within this short period, no major event changed with the related topic; and
- The questionnaire was scrutinised by a panel of experts for validity.

3.8   Conclusion

In this chapter, the research methodology used for the data analysis was addressed. The use of the empirical study was explained as well as the structure and type of questionnaires used to collect the data. Factor analysis was used for the data interpretation. The findings from the empirical study will be discussed in the next chapter, together with graphical illustrations.

Chapter 4
FINDINGS OF THE EMPIRICAL RESEARCH

4.1   INTRODUCTION

The research methodology and procedures were discussed in chapter three. This chapter will present the data that has been collected through quantitative survey. Chapter four focuses on the data interpretation and results of the research. The following stages for the data analysis are identified: the descriptive statistics, gap measurement, factor analysis and the rotated factor loading for the Q=P-E variables.

4.2   THEORY OF STATISTICS USED

Both descriptive and inferential statistical analyses are covered in this research.

Descriptive statistics describe the organising and summarising of quantitative data. Univariate and bivariate analyses are most appropriate for descriptive statistics. Univariate analysis is concerned with measures of central tendency and measures of dispersion. The most appropriate measure of central tendency for interval data is the mean and the most appropriate measure of dispersion for interval data is the standard deviation. Bivariate analysis concerns the measurement of two variables at a time.

Inferential statistical analysis is concerned with the testing of hypothesis. The independent t-test is the most appropriate parametric test for interval measurement. This test reveals any significant difference between the two variables, perception and expectation of service quality. Primary data was collated and analysed and comments and concluding discussions are thereafter based on the results obtained.

4.3   GRAPHS

Bar charts were used to present the data. These were used to allow for ease of comparison between groups.

4.4   STATISTICAL SOFTWARE

The analysis was performed using the following statistical software packages:

- SPSS (version 15); and
- Statgraphics Centurion.

4.5   COMPREHENSIVE STATISTICS OF STATEMENTS

The research on measuring service quality has focused primarily on meeting or exceeding customers' expectations. The following paragraphs are the comprehensive statistics of the original twenty-two statements with reference to customer service. All the statements are measured on a five-point scale ranging from "1=strongly disagree" to "5=strongly agree'. This section answers the first two research objectives, namely: "to determine customer expectations of service quality at Cray Valley Resins" and "to determine customer perceptions of service quality at Cray Valley Resins".

4.5.1   Statement 1: Manufacturing companies should have modern equipment

The data reflected in Table 4.1 reveal the expectations and perceptions of respondents in this study in terms of the modernity of the company's equipment. The expectations to the statement are as follows: 12.1% (neutral), 33.3% (agree) and 54.5% (strongly agree). The relevant perceptions are as follows: 3% (neutral), 54.8% (agree) and 41.9% (strongly agree). A large number of the respondents (87.8%) agree that manufacturing companies should have modern equipment.

Table 4.1   Equipment of manufacturing companies

Options	Expectation Percent	Perception Percent
Neutral	12.1	3.0
Agree	33.3	54.8
Strongly Agree	54.5	41.9
Total	100	100.0

Table 4.1 indicates that 96% of Cray Valley customers believe that the company does have modern equipment.

4.5.2 Statement 2: Manufacturing companies' physical facilities should be visually appealing

The aim of statement 2 is to reveal the expectations and perceptions of respondents in this study in terms of the company's physical facilities appearance, which is summarised in Table 4.2. The expectations to the statements are as follows: 15.2% (neutral), 57.6% (agree) and 27.3% (strongly agree). The relevant perceptions are as follows: 9.7% (neutral), 74.2% (agree) and 16.1% (strongly agree). Almost 85% of the respondents expect the manufacturing companies to have visually appealing facilities and 80.3 % agree that Cray Valley Resins has visually appealing facilities.

Table 4.2   Physical facilities of manufacturing companies

Options	Expectation Percent	Perception Percent
Neutral	15.2	9.7
Agree	57.6	74.2
Strongly Agree	27.3	16.1
Total	100	100.0

The expected and perceived responses on the visual appeal of Cray Valley Resins' facilities are similar. The customers believe that the facilities are visually appealing.

4.5.3 Statement 3: Manufacturing companies' staff should have a neat and professional appearance

The aim of statement 3 is to reveal the expectations and perceptions of respondents in this study in terms of the staff's appearance. The responses are summarised in Table 4.3. The expectations to the statement are as follows: 33.3% (agree) and 66.7% (strongly agree). The relevant perceptions are as follows: 3.0% (neutral), 24.2% (agree) and 72.7% (strongly agree). All the respondents expect that the staff should have a neat and professional appearance and 96.9% agree that Cray Valley Resins' staff are neat and professional in appearance.

Table 4.3   Appearance of staff at manufacturing companies

Options	Expectation Percent	Perception Percent
Neutral	0	3.0
Agree	33.3	24.2
Strongly Agree	66.7	72.7
Total	100	100.0

Cray Valley customers are satisfied that the staff present a neat and professional appearance.

4.5.4 Statement 4: Goods / Materials associated with manufacturing companies should be visually appealling

Statement 4 aims to assess the appearance of the goods associated with Cray Valley Resins. Table 4.4 reveals that 87.9% of the respondents expect manufacturing companies to have visually appealing materials. Although the percentage of the perceptions is slightly less than the expectations, the results exhibit that a large percentage of the respondents are in agreement with statement 4.

Table 4.4   Visual appeal of goods / Materials

Options	Expectation Percent	Perception Percent
Neutral	12.1	21.2
Agree	30.3	33.3
Strongly Agree	57.6	45.5
Total	100	100.0

There is a 10% variation between the expected and perceived values regarding the visual appeal of Cray Valley Resins' products. Customers believe that there is room for improvement in this regard.

4.5.5 Statement 5: When manufacturing companies promise to do something at a certain time, they will do so

As stated in the literature study (see section 2.6.2), the aspect of the firm's ability to perform the promised services dependably and accurately is an important factor to the customers in their assessment of the service provided. As indicated in Table 4.5, all the respondents expect the company to keep to its promises and 87.8% of the respondents agree that Cray Valley Resins keeps its promises.

Table 4.5   Keeping to promised time

Options	Expectation Percent	Perception Percent
Neutral	0	12.1
Agree	9.1	63.6
Strongly Agree	90.9	24.2
Total	100	100.0

Cray Valley customers are satisfied that services are provided on time.

4.5.6 Statement 6: When a customer has a problem, excellent manufacturing companies will show a sincere interest in solving it

Statement 6 aims to assess whether Cray Valley Resins shows a sincere interest in problem solving. All the respondents expect the company to show a sincere interest in solving their problems, as per Table 4.6. The perception is that Cray Valley Resins do show a sincere interest in solving their customer problems as all of the respondents did agree with the statement, as indicated in Table 4.6.

Table 4.6   Sincere interest in problem solving

Options	Expectation Percent	Perception Percent
Agree	21.2	46.9
Strongly Agree	78.8	53.1
Total	100	100.0

There is no difference between the expected and perceived values for the overall agreement values in Table 4.6.

4.5.7 Statement 7: It is expected that manufacturing companies will perform the service right the first time

As shown in table 4.7, 85% are in agreement (72.7% agree and 12.1% strongly agree) with the statement. However, 15% were unable to quantify their rating of this statement. This finding is an indication that these customers have had experiences where they may have had prompt service at one time and not had the same satisfaction at some other instance. The percentage of the relevant expectation is 100%. The results explain that the performance of the staff is quite important. Failure to meet this expectation can lead to customers' dissatisfaction.

Table 4.7   Services performed right the first time

Options	Expectation Percent	Perception Percent
Neutral		15.2
Agree	21.2	72.7
Strongly Agree	78.8	12.1
Total	100	100.0

About 15% of Cray Valley Resins' customers did not commit to answering this question. This finding is an indication that these customers may have, at times, not received prompt service.

4.5.8 Statement 8: Manufacturing companies should provide their services at the time they promise to do so

This statement aims to reveal whether the company keeps to its promised delivery date. All the respondents expect the company to keep to its delivery dates. The relevant perceptions, as shown in Table 4.8, are as follows: 3.0% are uncertain, 72.7% (agree) and 24.2% (strongly agree).

Table 4.8   Services provided as agreed

Options	Expectation Percent	Perception Percent
Neutral	0	3.0
Agree	12.5	72.7
Strongly Agree	87.5	24.2
Total	100	100.0

There is almost complete agreement that Cray Valley Resins' customers do receive service when promised.

4.5.9 Statement 9: Manufacturing companies should keep accurate records

Statement 9 reveals the expectations and perceptions of the customers with regard to keeping of records. The expectations to the statement are as follows: 9.1% (agree) and 90.9% (strongly agree). The relevant perceptions are as follows: 60.6% (agree) and 39.4% (strongly agree). This finding indicates that the record keeping is very important.

Table 4.9   Accuracy of record keeping

Options	Expectation Percent	Perception Percent
Agree	9.1	60.6
Strongly Agree	90.9	39.4
Total	100	100.0

There is complete overall agreement with this statement. However, analysis of Table 4.9 shows that less than half of the respondents (39.4%) strongly agree that Cray Valley Resins keeps accurate records.

4.5.10 Statement 10: Employees in manufacturing companies will be able to inform the customers exactly when the services will be performed

Statement 10 aims to assess whether Cray Valley Resins are able to inform the customers exactly when the services will be performed. The expectations to the statement in Table 4.10 are as follows: 18.2% (agree) and 81.8% (strongly agree). The relevant perceptions are as follows: 15.2% (are neutral), 48.5% (agree) and 36.4% (strongly agree). The results indicate that there is room for improvement in this regard.

Table 4.10   Notification as to when services will be performed

Options	Expectation Percent	Perception Percent
Neutral		15.2
Agree	18.2	48.5
Strongly Agree	81.8	36.4
Total	100	100.0

Customers expect to know exactly when services are going to be performed as these notifications impact on their activities. Customers believe that Cray Valley Resins does give notifications about 85% of the time.

4.5.11 Statement 11: Employees in manufacturing companies are expected to give back prompt feedback

Statement 11 aims to reveal the customers' expectations and perceptions with regard to the turnaround time in responding to their requests and queries. The expectations to the statement in Table 4.11are as follows: 21.2% (agree) and 78.8% (strongly agree). The relevant perceptions are as follows: 15.2% (are neutral), 51.5% (agree) and 33.3% (strongly agree).

Table 4.11   Prompt feedback to customers

Options	Expectation Percent	Perception Percent
Neutral	0	15.2
Agree	21.2	51.5
Strongly Agree	78.8	33.3
Total	100	100.0

Customers also expect to get prompt feedback to queries as this may impact on the various customer activities. Eighty five percent of Cray Valley Resins' customers believe that the company is achieving this objective.

4.5.12 Statement 12: Employees in manufacturing companies are expected to be always willing to help customers

Table 4.12 reveals the expectations and perceptions of respondents in this project in terms of responsiveness of staff. The data from table 4.12 suggests that all the respondents expect the staff to be always willing to help the customers. The relevant perceptions suggest that 94% of the respondents agree that Cray Valley Resins' staff are always willing to help the customers.

Table 4.12   Willingness to help customers

Options	Expectation Percent	Perception Percent
Neutral		6.1
Agree	12.1	27.3
Strongly Agree	87.9	66.7
Total	100	100.0

Customers are satisfied that the staff at Cray Valley Resins do assist when requested.

4.5.13 Statement 13: Employees in manufacturing companies are expected never to be too busy to respond to customers' requests

The aim of statement 13 is to reveal the expectations and perceptions of respondents in this study in terms of the staff being never to busy to respond to customer requests. The expectations to the statement are as follows: 3.0% (are neutral), 27.3% (agree) and 69.7% (strongly agree). The relevant perceptions are as follows: 9.1% (neutral), 51.5% (agree) and 39.4% (strongly agree). 97.0% the respondents expect that the staff should never be to busy to respond to customer requests and 90.9% agree that Cray Valley Resins' staff are never to busy to respond to customers' requests.

Table 4.13   Never too busy to respond to customers' requests

Options	Expectation Percent	Perception Percent
Neutral	3.0	9.1
Agree	27.3	51.5
Strongly Agree	69.7	39.4
Total	100.0	100.0

Customers do understand that staff at Cray Valley Resins may not always be free to assist them. However, Tables 4.10, 4.11 and 4.12 do indicate that customers should not be made to wait too long and should be attended to as soon as possible.

4.5.14 Statement 14: The behaviour of employees in manufacturing companies is expected to instil confidence in customers

The aim of statement 14 is to estimate whether the behaviour of staff can be accepted. As shown in Table 4.14, the expectations to the statement are high, 18.2% (agree) and 81.8% (strongly agree). The relevant perceptions are as follows: 63.6% (agree) and 36.4% (strongly agree).

Table 4.14   Confidence in the behaviour of employees

Options	Expectation Percent	Perception Percent
Agree	18.2	63.6
Strongly Agree	81.8	36.4
Total	100	100.0

Cray Valley Resins' customers are satisfied with the behaviour of the employees.

4.5.15 Statement 15: Customers should be able to feel safe in their transactions with manufacturing firms' employees

As shown in Table 4.15, all the respondents agree that they feel safe in their dealings with Cray Valley Resins' staff. Customer responses were very positive.

Table 4.15   Customers feeling safe in their transactions

Options	Expectation Percent	Perception Percent
Agree	9.1	27.3
Strongly Agree	90.9	72.7
Total	100	100.0

The high percentages indicate that customers of Cray Valley Resins trust the employees of the company with their transactions.

4.5.16 Statement 16: Manufacturing companies' employees should be polite and courteous to customers

Table 4.16 reveals the expectations and perceptions of respondents in this project in terms of courtesy of staff in the resin industry. The expectations to the statement 16 are as follows: 3.0% (are neutral), 15.2% (agree) and 81.8% (strongly agree). The relevant perceptions are as follows: 33.3% (agree) and 66.7% (strongly agree). This finding shows that Cray Valley Resins' staff are polite and courteous to their customers.

Table 4.16   Politeness and courtesy to customers

Options	Expectation Percent	Perception Percent
Neutral	3.0	0.0
Agree	15.2	33.3
Strongly Agree	81.8	66.7
Total	100.0	100.0

The customers of Cray Valley Resins believe that the employees of the company are polite and courteous.

4.5.17 Statement 17: Staff should have the knowledge to answer customers' questions

The data in Table 4.17 reveal the expectations and perceptions of respondents in this study in terms of knowledge of staff. The expectations to the statement are as follows: 12.1% (are neutral), 15.2% (agree) and 72.7% (strongly agree). The relevant perceptions are as follows: 6.1% (are neutral), 39.4% (agree) and 54.5% (strongly agree). The results reflect that Cray Valley Resins' staff are very knowledgeable to carry out their functions.

Table 4.17   Knowledgability of staff

Options	Expectation Percent	Perception Percent
Neutral	12.1	6.1
Agree	15.2	39.4
Strongly Agree	72.7	54.5
Total	100.0	100.0

Customers are satisfied with the knowledge ability of the employees. Only 6.1% preferred not to commit positively.

4.5.18 Statement 18: Manufacturing companies should give the customers individual attention

Statement 18 reveals the perceptions and expectations of respondents in this project in terms of individualised attention of staff. As indicated in Table 4.18, the expectations to the statement are as follows: 30.3% (agree) and 69.7% (strongly agree). The relevant perceptions are as follows: 6.1% (are neutral), 51.5% (agree) and 42.4% (strongly agree).

Table 4.18   Individual attention to customers

Options	Expectation Percent	Perception Percent
Neutral	0.0	6.1
Agree	30.3	51.5
Strongly Agree	69.7	42.4
Total	100.0	100.0

Customers believe that they, for the most part, receive individual attention.

4.5.19 Statement 19: Manufacturing companies are expected to have operating hours convenient to all their customers

In Table 4.19, the data reveal the expectations and perceptions of respondents in this study in terms of convenience of operation hours. The expectations to the statement are as follows: 3.0% (disagree), 21.2% (neutral), 30.3% (agree) and 45.5% (strongly agree). All the respondents agree that Cray Valley Resins' operating hours are convenient to them.

Table 4.19   Convenient operating hours

Options	Expectation Percent	Perception Percent
Disagree	3.0	0.0
Neutral	21.2	0.0
Agree	30.3	30.3
Strongly Agree	45.5	69.7
Total	100.0	100.0

Cray Valley Resins exceeds the expectations of their customers in terms of providing suitable operating hours.

4.5.20 Statement 20: Employees of manufacturing companies are expected to know what the needs of their customers are

Statement 20 reveals the perceptions and expectations of respondents in this project in terms of knowing what the needs of their customers are. The expectations to the statement are as follows: 3.0% (disagree), 3.0% (neutral), 54.5% (agree) and 39.4% (strongly agree). The relevant perceptions are as follows: 15.2% (are neutral), 51.5% (agree) and 33.3% (strongly agree). It is interesting to note that 15.2% of the respondents are undecided.

Table 4.20   Know what the customers need

Options	Expectation Percent	Perception Percent
Disagree	3.0	0.0
Neutral	3.0	15.2
Agree	54.5	51.5
Strongly Agree	39.4	33.3
Total	100.0	100.0

Almost 85% of the customers believe that the employees of Cray Valley know what their customers need.

4.5.21 Statement 21: Staff of manufacturing companies will have the customers' best interests at heart

The aim of statement 21 is to determine whether Cray Valley Resins paid more attention to their customers. As shown in Table 4.21, the expectations are very high 93.9% (strongly agree). The relevant perceptions are as follows: 87.8%, (agree) and 33.3% (strongly agree).

Table 4.21   Having the customers' best interests at heart

Options	Expectation Percent	Perception Percent
Neutral	3.0	12.1
Agree	3.0	54.5
Strongly Agree	93.9	33.3
Total	100.0	100.0

Almost 88% of the customers believe that the employees do have the best interests of the customers at heart.

4.5.22 Statement 22: The employees of manufacturing companies are expected to give their customers personal attention

Statement 22 reveals the expectations and perceptions of respondents in this study in terms of individualised attention of staff. As indicated in Table 4.22, the expectations to the statement are as follows: 3.0% (neutral), 18.2% (agree) and 78.8% (strongly agree). The relevant perceptions are as follows: 6.1% (neutral), 51.5% (agree) and 42.4% (strongly agree).

Table 4.22   Providing personal attention

Options	Expectation Percent	Perception Percent
Neutral	3.0	6.1
Agree	18.2	51.5
Strongly Agree	78.8	42.4
Total	100.0	100.0

Almost 94% of the customers are satisfied with the level of personal attention that they receive.

4.6   RELIABILITY

Below is a summary of the Cronbach alpha reliability scores for the expected and perceived service levels for Cray Valley Resins.

Table 4.23   Case Processing Summary

Case   Processing

		N	%
Cases	Valid	27	81.8
	Excluded[a]	6	18.2
	Total	33	100.0

a. Listwise deletion based on all variables in the procedure

Table 4.23 indicates that 81.8% of the questionnaires were valid and used in the analysis. 18.2% of the questionnaires were excluded.

Table 4.24   Reliability statistics

Cronbach's Alpha	N of
.921	44

The high Cronbach alpha value (0.921 in Table 4.24) indicates that there is a strong intercorrelation between items, and that the items measure the dimension that they constitute.

The two most important aspects of precision are **reliability** and **validity**. Reliability refers to the reproducibility of a measurement. Reliability is quantified simply by taking several measurements on the same subjects. Poor

reliability degrades the precision of a single measurement and reduces the ability to track changes in measurements in experimental studies. Validity refers to the agreement between the value of a measurement and its true value. Validity is quantified by comparing one's measurements with values that are as close to the true values as possible. Poor validity also degrades the precision of a single measurement, and it reduces the ability to characterise relationships between variables in descriptive studies. (http://www.spss.com/events/e_id_2096/Presentation.pdf.)

4.7   FACTOR ANALYSIS

Factor analysis is used to find latent variables or factors among observed variables. In other words, if data contains many variables, factor analysis can be used to reduce the number of variables. Factor analysis groups variables with similar characteristics together. With factor analysis a small number of factors can be produced from a large number of variables which is capable of explaining the observed variance in the larger number of variables. The reduced factors can also be used for further analysis. (http://www.spss.com/events/e_id_2096/Presentation.pdf.)

There are three stages in factor analysis:

- First, a correlation matrix is generated for all the variables. A correlation matrix is a rectangular array of the correlation coefficients of the variables with each other;
- Second, factors are extracted from the correlation matrix based on the correlation coefficients of the variables; and
- Third, the factors are rotated in order to maximise the relationship between the variables and some of the factors. (http://www.ncl.ac.uk/iss/statistics/docs/factoranalysis.php)

4.8   COMMUNALITIES OF EXPECTED AND PERCEIVED VARIABLES

The communality for a given variable can be interpreted as the proportion of variation in that variable, explained by the factors that make up the variable. These factors are included in Table 4.25.

Table 4.25   Table of communalities for expected values.

Expected	Extraction
E - Manufacturing companies should have modern equipment.	0.7568822
E - Manufacturing companies' physical facilities should be visually appealing.	0.6795337
E - Manufacturing companies' staff should have a neat and professional appearance.	0.6277580
E - Goods / Materials associated with these companies should be visually appealing.	0.8420582
E - When these companies promise to do something at a certain time, they will do so.	0.5446708
E - When a customer has a problem, excellent companies will show a sincere interest in solving it.	0.6445579
E - It is expected that these companies will perform the service right the first time.	0.8445304
E - They should provide their services at the time they promise to do so.	0.8527231
E - Manufacturing companies should keep their records accurately.	0.8252364
E - Employees in these companies will be able to inform the customers exactly when the services will be performed.	0.3536821
E - Employees in these companies are expected to give back prompt feedback.	0.8487153
E - Employees in these companies are expected to be always willing to help customers.	0.8159903
E - Employees in these companies are expected never to be too busy to respond to customer requests.	0.7748311
E - The behaviour of employees in these companies are expected to instil confidence in customers.	0.3794699
E - Customers should be able to feel safe in their transactions with these firms' employees.	0.4980563
E - Their employees should be polite and courteous to customers.	0.7174765
E - Staff should have the knowledge to answer customers' questions.	0.8437774
E - These companies should give the customers individual attention.	0.5854037
E - These companies are expected to have operating hours convenient to all their customers.	0.6289542
E - Employees of these companies are expected to know what the needs of their customers are.	0.8591542
E - Staff of these companies will have the customers' best interests at heart.	0.6649594
E - The employees of these companies are expected to give their customers personal attention.	0.6831408

In this instance, for example, there are 4 variables that make up the first component (as indicated in the component matrix Table 4.26, below). The analysis is similar to that for multiple regression: signage against the two common factors yields an R^2 = 0.76 (for the first variable in Table 4.25, i.e. Manufacturing companies should have modern equipment), indicating that about 76% of the variation in terms of the expected equipment is explained by the factor model.

This argument can then be extended to the rest of the model. It is noticed that for the expected values, there is wide variation as results vary from the 30 to the 80 percent range. For the perceived values, only the statement for operating hours has a low communality value (0.29).

For the same statement, i.e., manufacturing companies should have modern equipment, the perceived value is 0.72 in Table 4.26. This means that 72% of the variation in terms of the expected equipment is explained by the factor model.

It is noted though that certain components are split into finer components. This is explained in Table 4.28, the rotated component matrix.

Table 4.26   Table of communalities for perceived values

Perceived	Extraction
P - Cray Valley Resins has modern equipment.	0.7242626
P - Cray Valley Resins physical facilities are visually appealing.	0.7335196
P - Cray Valley Resins staff has a neat and professional appearance.	0.6352307
P - Goods / Materials associated with Cray Valley Resins are visually appealing.	0.6908019
P - When Cray Valley Resins promises to do something at a certain time it does so.	0.7914045
P - When you have a problem, Cray Valley Resins shows a sincere interest in solving it.	0.5806646
P - Cray Valley Resins performs the service right, the first time.	0.8435732
P - Cray Valley Resins provides their services at the time it promise to do so.	0.7018857
P - Cray Valley Resins keeps its records accurately.	0.7489303
P - Cray Valley Resin's employees informs you exactly when the services will be performed.	0.8790938
P - Cray Valley Resin's employees give you prompt feedback.	0.8977178
P - Cray Valley Resins employees are always willing to help customers.	0.6791877
P - Cray Valley Resin's employees are never to be too busy to respond to customer requests	0.657318
P - The behaviour of employees in Cray Valley Resins instils confidence in you.	0.7258299
P - You feel safe in your transactions with Cray Valley Resins.	0.7365654
P - Cray Valley Resin's employees are polite and courteous to you.	0.7961074
P - Cray Valley Resins' staff has the knowledge to answer your questions.	0.6269036
P - Cray Valley Resins give you individual attention.	0.8323472
P - Cray Valley Resins' operating hours are convenient to you.	0.2896494
P - Cray Valley Resins understands your needs.	0.8274586
P - Cray Valley Resin's staff has your best interests at heart.	0.8090506
P - Cray Valley Resin's employees give you personal attention.	0.6900129

Extraction Method: Principal Component Analysis.

- The rotation method used is the Varimax Method with Kaiser Normalization. This is an orthogonal rotation method that minimises the number of variables that have high loadings on each factor. It simplifies the interpretation of the factors.
- Factor analysis / loading shows inter-correlations between variables.

An assessment of how well this model is doing can be obtained from the communalities. The ideal is to obtain values that are close to one. These values would indicate that the model explains most of the variation for those variables. In this case, the model is fairly decent as it explains approximately 71% of the overall variation for the 22 factors (both expected and perceived). The average scores of the dimensions are as follows:

Table 4.27   Average communality scores of the dimensions

	Expected	Perceived
Tangibles	0.726558	0.695954
Reliability	0.721621	0.729382
Responsiveness	0.723691	0.772450
Assurance	0.609695	0.721352
Empathy	0.684322	0.689704
Overall	0.693177	0.721768

Table 4.27 gives the percentage of variation explained in the model. This might be looked at as an overall assessment of the performance of the model. However, this percentage is higher than the proportion of variation explained by the first eigen value, obtained earlier. The individual communalities tell how well the model is working for the individual variables, and the total communality gives an overall assessment of performance.

Table 4.28   Rotated Component Matrix

	Component – Expectations					Component - Perceptions				
	1	2	3	4	5	1	2	3	4	5
Modern equipment					0.7456					0.7704
Physical facilities are visually appealing		0.6910								0.7642
Staff have a neat and professional appearance		0.6557								0.7262
Materials associated with these companies are visually appealing		0.8730					0.7555			
Timeframes are adhered to				0.6227		0.8609				
Show a sincere interest in solving customer problems				0.6969					0.5705	
Service is performed right the first time				0.7965			0.6574			
Services are provided at the promised time				0.7712		0.6989				
Companies keep their records accurately				0.8458		0.7571				
Employees inform customers exactly when the services will be performed	0.3980					0.6607				
Employees give prompt feedback		0.7087				0.8181				
Employees are always willing to help customers			0.8213							0.7186
Employees are expected never to be too busy to respond to customer requests				0.6314		0.7211				
Employees' behaviour is expected to instil confidence in customers			0.6063			0.7189				
Customers feel safe in their transactions with these firms' employees			0.4797			0.6850				
Employees are polite and courteous to customers			0.5956						0.6689	
Staff have the knowledge to answer customer questions		0.8396				0.5022				
Customers receive individual attention		0.6001				0.6576				
Operating hours are convenient to all their customers			0.6696						0.3534	
Employees know what the needs of their customers are			0.8749				0.7607			
Staff have the customers' best interests at heart			0.7728				0.7254			
Employees give their customers personal attention					0.7456					0.7704

Factor analysis is a statistical technique whose main goal is data reduction. A typical use of factor analysis is in survey research, where a researcher wishes to represent a number of questions with a small number of hypothetical factors. With reference to Table 4.28 above:

- The principle component analysis was used as the extraction method, and the rotation method was Varimax with Kaiser Normalisation. This is an orthogonal rotation method that minimises the number of variables that have high loadings on each factor. It simplifies the interpretation of the factors;

- Factor analysis/loading show inter-correlations between variables; and
- Items of questions that are loaded similarly imply measurement along a similar factor. An examination of the content of items loading at or above 0.5 (and using the higher or highest loading in instances where items cross-loaded at greater than this value) effectively measured along a similar theme for the five dimensions.

It is noted that it was only for the reliability dimension that the four variables that constituted the component loaded perfectly in one factor for the expected (E) scores. This finding means that the questions (variables) that constituted this dimension perfectly measured the dimension.

However, all of the other dimensions have factors that overlap, indicating a mixing of the factors. This finding means that the questions in the overlapping dimensions did not specifically measure what it set out to measure. Consequently, the respondents did not clearly distinguish between the questions constituting the dimensions.

Most of the components spread over two components. However, there are dimensions that spread across many components. To determine the relationships between the variables within a component, especially where questions are spread over many factors, pair-wise reliability and correlations have to be conducted.

4.9   GAP ANALYSIS

The tables and graphs below indicate the expected and perceived (Cray Valley Resins) scores in addition to the gap for each question for each dimension. The discussion that follows below answers the third research objective "to identify gaps in service quality within Cray Valley Resins".

Table 4.29   Table of the mean and gap scores

		E	P	Gap
Q1	Modern equipment	4.4242	4.3871	-0.0371
Q2	Physical facilities are visually appealing	4.1212	4.0645	-0.0567
Q3	Staff have a neat and professional appearance	4.6667	4.6970	0.0303
Q4	Materials associated with these companies are visually appealing	4.4545	4.2424	-0.2121
Q5	Timeframes are adhered to	4.9091	4.1212	-0.7879
Q6	Show a sincere interest in solving customer problems	4.9697	4.5313	-0.4384
Q7	Service is performed right the first time	4.7879	3.9697	-0.8182
Q8	Services are provided at the promised time	4.8750	4.2121	-0.6629
Q9	Companies keep their records accurately	4.9091	4.3939	-0.5152
Q10	Employees inform customers exactly when the services will be Performed	4.8182	4.2121	-0.6061
Q11	Employees give prompt feedback	4.7879	4.1818	-0.6061
Q12	Employees are always willing to help customers	4.8788	4.6061	-0.2727
Q13	Employees are expected never to be too busy to respond to customer requests	4.6667	4.3030	-0.3636
Q14	Employees behaviour is expected to instil confidence in customers	4.8182	4.3636	-0.4545
Q15	Customers feel safe in their transactions with these firms' employees	4.9091	4.7273	-0.1818
Q16	Employees are polite and courteous to customers	4.7879	4.6667	-0.1212
Q17	Staff have the knowledge to answer customer questions	4.6061	4.4848	-0.1212
Q18	Customers receive individual attention	4.6970	4.3636	-0.3333
Q19	Operating hours are convenient to all their customers	4.1818	4.6970	0.5152
Q20	Employees know what the needs of their customers are	4.3030	4.1818	-0.1212
Q21	Staff have the customers' best interests at heart	4.8788	4.2121	-0.6667
Q22	Employees give their customers personal attention	4.7273	4.3636	-0.3636

Table 4.29 provides a summary of the mean expected and perceived scores by dimension. The difference between these scores provides the gap scores.

Table 4.30   Statements ranked according to the +ve or -ve gap scores

R*	Q**	Statement	Gap	SERVQUAL Dimension
1	Q19	Operating hours are convenient to all their customers	0.5152	Empathy
2	Q3	Staff have a neat and professional appearance	0.0303	Tangibles
3	Q1	Modern equipment	-0.0371	Tangibles
4	Q2	Physical facilities are visually appealing	-0.0567	Tangibles
5	Q16	Employees are polite and courteous to customers	-0.1212	Assurance
6	Q17	Staff have the knowledge to answer customers questions	-0.1212	Assurance
7	Q20	Employees know what the needs of their customers are	-0.1212	Empathy
8	Q15	Customers feel safe in their transactions with these firms' employees	-0.1818	Assurance
9	Q4	Materials associated with these companies are visually Appealing	-0.2121	Tangibles
10	Q12	Employees are always willing to help customers	-0.2727	Responsiveness
11	Q18	Customers receive individual attention	-0.3333	Empathy
12	Q13	Employees are expected never, to be too busy to respond to customer requests	-0.3636	Responsiveness
13	Q22	Employees give their customers personal attention	-0.3636	Empathy
14	Q6	Show a sincere interest in solving customer problems	-0.4384	Reliability
15	Q14	Employees behaviour is expected to instil confidence in Customers	-0.4545	Assurance
16	Q9	Companies keep their records accurately	-0.5152	Responsiveness
17	Q10	Employees inform customers exactly when the services will be Performed	-0.6061	Responsiveness
18	Q11	Employees give prompt feedback	-0.6061	Responsiveness
19	Q8	Services are provided at the promised time	-0.6629	Reliability
20	Q21	Staff have the customers' best interests at heart	-0.6667	Empathy
21	Q5	Timeframes are adhered to	-0.7879	Reliability
22	Q7	Service is performed right the first time	-0.8182	Reliability

(**R*** = ranking of the questions; **Q*** = question number)

Table 4.31   Comparison of quality dimension

The average scores per dimension are given below:

	Expected	Perceived	Gap
Tangibles	4.416666667	4.347751711	-0.06891
Reliability	4.885416667	4.208570076	-0.67685
Responsiveness	4.812121212	4.339393939	-0.47273
Assurance	4.78030303	4.560606061	-0.2197
Empathy	4.557575758	4.363636364	-0.19394
Overall	4.690416667	4.36399163	-0.32643

In examining the mean gap of service expectations and perceptions, it can be observed that "tangibles" is the lowest. This finding does not imply that "tangibles" is not important. This finding simply means that the "tangibles" dimension is relatively less important in comparison with the other dimensions of service quality that the respondents were asked in the survey.

The dimensions of "reliability" and "responsiveness" produced the largest gaps.

Figure 4.1   Tangibles:
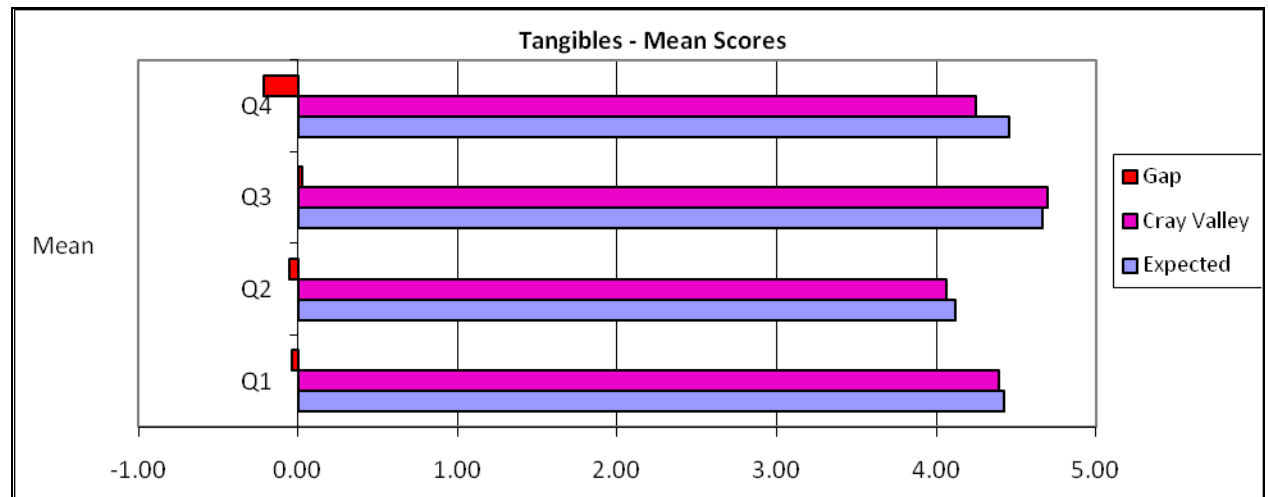
4.9.1 Factor - 1: Tangibles

It is observed that the average score for this dimension was 4.42 for the Expected scores (as in Table 4.31). This finding indicates a fair degree of agreement with the statements that constitute this dimension. Almost all of the expected scores are similar to the average score (as illustrated in Figure 4.1). The indication is that the respondents believe that an institution should have acceptable levels of tangibles (in terms of the layout and design of the institution). The actual rating of Cray Valley Resins is also one of satisfaction as indicated by a mean overall score of 4.35. This finding implies that there were as many respondents who were satisfied with the manner of the physical design and attributes of Cray Valley Resins. Questions 1, 2 and 4 showed gap scores, albeit small (< 0.22). Question 3 showed a positive gap, implying that the company exceeded customer expectations in terms of employees' attire.

Figure 4.2   Reliability:
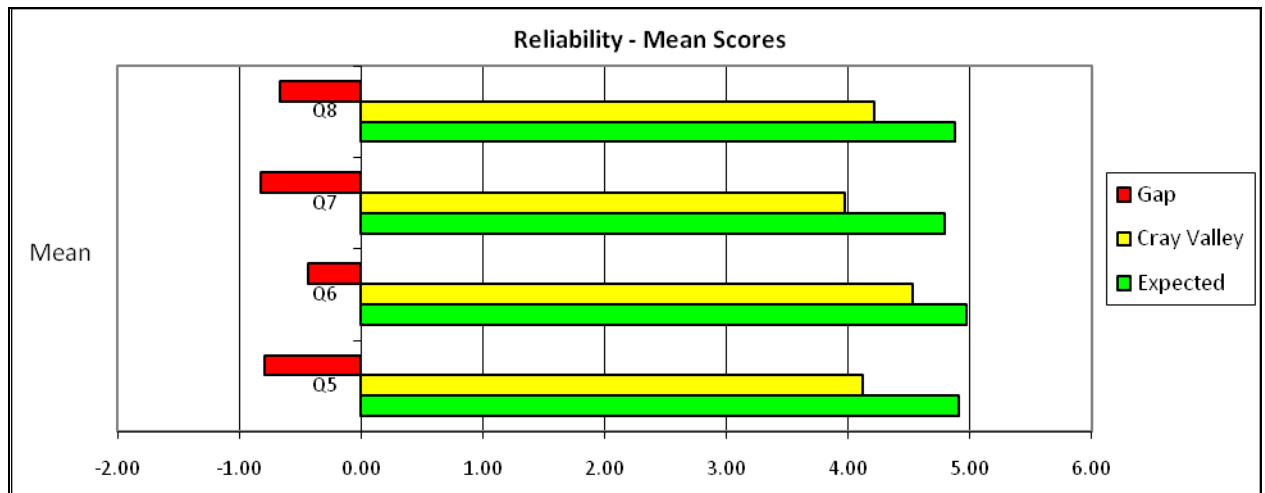
4.9.2 Factor - 2: Reliability

Figure 4.2 illustrates that this dimension produced the largest gaps between the customer expectations and perceptions, namely, "Service is performed right the first time" (-0.8182), "Timeframes are adhered to" (-0.7879) and "Services are provided at the promised time" (-0.6629). Even though the statements are in the region of agreement, areas of focus could be on the three points illustrated above. It should be noted that the gaps are not very large, indicating that the customer is fairly satisfied with this dimension of reliability.

Figure 4.3   Responsiveness:
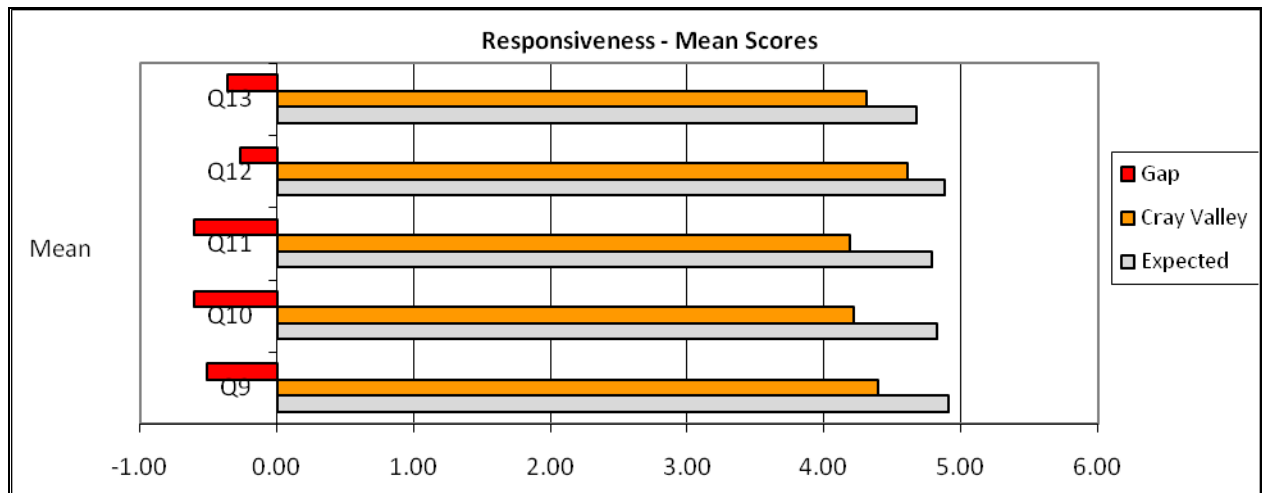
4.9.3 Factor - 3: Responsiveness

The expected and perceived values are in the region of agreement (> 4.0), as indicated in Figure 4.3. However, the overall gap for this dimension is second only to reliability. Hence, even though the gaps are small, areas of concern would be questions 9, 10 and 11. The promptness of feedback was critical to customer care, as illustrated earlier.

Figure 4.4   Assurance:
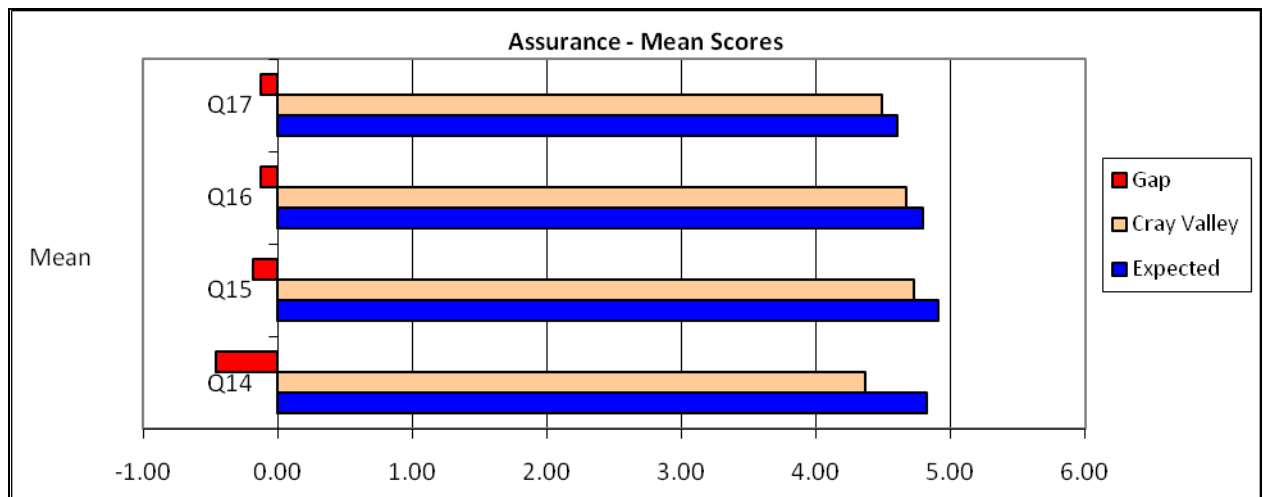
4.9.4   Factor - 4: Assurance

The overall mean combined score for this dimension was 4.6, which is not far off the maximum positive rating of 5. This finding indicates that customers are fairly satisfied. Even though the gaps are close to zero, as shown in Figure 4.4, question 14, which dealt with employee behaviour towards customers, was 0singled out as being the most important in this category.

Figure 4.5   Empathy:
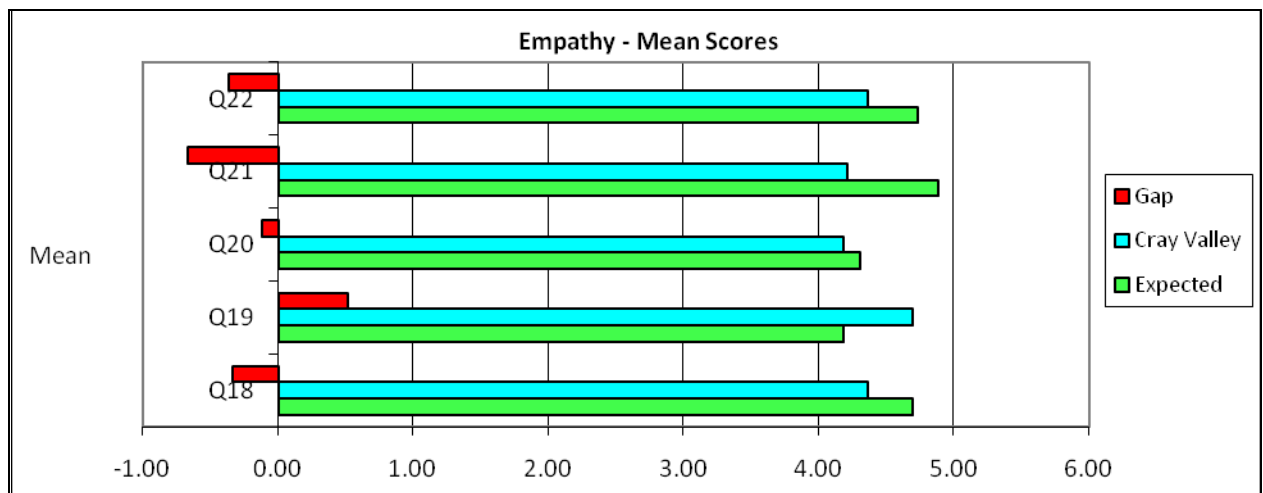
4.9.5   Factor – 5: Empathy

The mean score for empathy is also above 4. Again, even though the gaps are close to zero, questions 18, 22 and 21 ranked as those that indicated the largest gaps. These questions dealt specifically with the personal attention that customers received. The results are summarised in figure 4.5.

4.10   SIGNIFICANT RELATIONSHIPS

An examination of relationships between variables indicated the following statistically significant differences between the expected and perceived scores. The results are presented in Table 4.32 below.

Table 4.32   Table Paired Samples T-Test

	Sig. (2-tailed)
Timeframes are adhered to	0.0000
Show a sincere interest in solving customers' problems	0.0000
Service is performed right the first time	0.0000
Services are provided at the promised time	0.0000
Companies keep their records accurately	0.0000
Employees inform customers exactly when the services will be performed	0.0000
Employees give prompt feedback	0.0000
Employees are always willing to help customers	0.0176
Employees are expected never to be too busy to respond to customers' Requests	0.0031
Employees' behaviour is expected to instil confidence in customers	0.0001
Customers feel safe in their transactions with these firms' employees	0.0316
Customers receive individual attention	0.0030
Operating hours are convenient to all their customers	0.0074
Staff have the customers' best interests at heart	0.0000
Employees give their customers personal attention	0.0015

Table 4.32 indicates that there are p-values less than 0.05. These values indicate that there is a significant difference between the perceived and expected values, and that the results are not due to chance. This finding is interesting as, in many of the dimension analysis above, the values are numerically close to one another.

The p-values that are greater than 0.05 imply that there is no significant difference in the mean values between perceptions and expectations.

4.11 CONCLUSION

This chapter presented the analysis of the data collected from the survey. The survey responses were analysed through statistical techniques. These approaches permitted the examination of each of the 22 statements. Computer numerical tables determined a comparison of the service quality expectations and perceptions for Cray Valley Resins. The results of all the statements indicated that the actual service quality in this company was able to meet the customers' expectations. According to the GAP analysis of the service dimensions, the gap between expectations and perceptions of this company is largest for "Reliability" and lowest for "Tangibles" (see Table 4.31). The correlation matrix (Table 4.28) indicated that the reliability dimension was the only perfect fit. The other four dimensions are interrelated to improve the service quality of Cray Valley Resins in the South African industry.

The Cronbach alpha figures, as presented in Table 4.27, of 0.73 (Tangibles), 0.72 (Reliability), 0.72 (Responsiveness), 0.61 (Assurance), 0.68 (Empathy) for the expectation scores, and 0.70 (Tangibles), 0.73 (Reliability), 0.77 (Responsiveness), 0.72 (Assurance), 0.69 (Empathy) for the perception scores, suggest that the items represent reliable measures for each of the five dimensions and thus support the SERVQUAL instrument.

In general, all the dimensions of the service quality are proved significant. The overall mean gap score (-0.326) is relatively small. Therefore, it can be concluded that although the company holds a good opinion of the quality of the services provided, expectations of the services were higher. This finding shows that there is still room for improvement of the service offered by Cray Valley Resins to their customers. In the next chapter, the conclusions and recommendations in terms of these findings will be discussed.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1   INTRODUCTION

Chapter 4 analysed the data from the empirical study with the aid of inferential and descriptive statistics. As a summary of the research, this chapter discusses the findings of the literature and the empirical study. Subsequently, limitations of this research and key recommendations for improving service quality in Cray Valley Resins in South Africa are presented.

5.2   SUMMARY OF THE STUDY

As discussed in chapter two (section 2.10), the GAP analysis is crucial for management to identify the service problems or service disappointments experienced by the customers. Numerous research studies on service quality focus on Gap 5 i.e. "how to reduce the gap between customers' expectations and their perceptions". This research may provide management with important insights about the lack of understanding of customer satisfaction levels at Cray Valley Resins. One of the prime purposes of such performance measurement is to allow action to be taken to close significant gaps in service provision. Repeating the gap survey over time will allow Cray Valley Resins to track whether actions taken have closed gaps and whether new gaps are appearing.

As shown in section 4.9, the Gap analysis revealed that customers' perceptions were lower than their expectations for 20 of the 22 statements. Table 4.29 reports the gaps over the 22 statements in the SERVQUAL model, while Table 4.30 indicates the ranking of all the statements from the most positive gaps to the statements where the biggest gap (most negative Gap) occur. These negative gaps indicate that the delivered service level was less than the customers' expectations of service quality at Cray Valley Resins. The majority of the responses on the Likert scale are between 4 and 5 which is an indication of a higher than average service expectation from respondents.

This finding is in line with the global trends, which show that customers in the services industry demand high quality services. Reliability and responsiveness are the two major factors impacting on customers' satisfaction in Cray Valley Resins.

5.2.1 Reliability

The reliability dimension refers to the company's ability to provide the promised service in a precise and reliable manner. Various empirical tests by the past scholars and researchers have shown that reliability is the most important service dimension from a customers' point of view (Douglas and Connor, 2003: 168).

The largest gaps are (-0.82) "service is performed right the first time" and (-0.79) "timeframes are adhered to", on the reliability dimension. It is suggested that when the service cannot be performed right the first time, service providers should engage with the customers, gathering their views and opinions, seeking their advice and understanding their needs and expectations. The emphasis must fall on customer service. It is proposed that when the service cannot be delivered on time, service providers should provide an explanation for the delay, suggest a new delivery date and keep the customers updated on progress by consistently doing what is promised, doing it correctly and on time ensure reliability.

The overall gap scores from the reliability statements suggest that managers of Cray Valley Resins should focus on improving all items regarding this dimension. To achieve this goal, the company should improve their systems to develop processes for monitoring as well as control policies and engage in two-way communication so that they are able to provide the promised service in a precise and reliable manner.

5.2.2 Responsiveness

The responsiveness dimension refers to the company's willingness to help the customers and to provide prompt service. The statements in this dimension produced the second largest gaps. The responsiveness dimension has the second largest average gap score of –0.47. For Cray Valley Resins to improve on the responsiveness dimension, the company needs to have a well-staffed, knowledgeable customer service department, with responsive front-line staff in all contact positions, and promptness in dealing with customer's requests, complaints and problems.

5.2.3 Other service related factors

The other factors include "Tangibles", "Assurance" and "Empathy". Among these three factors, "Assurance" held the third largest gap score of –0.22 while "Empathy" had a gap score of –0.19. 'Tangibles" held the smallest gap score of –0.07, which indicates a fair degree of agreement with the statements that constitute this dimension. This finding implies that there were many respondents who were satisfied with the manner of the physical design and attributes of Cray Valley Resins.

"Assurance" refers to the knowledge and courtesy of employees and their ability to inspire trust and confidence as well as their service effectiveness. Two of the statements in the "Assurance" dimension had the third smallest gaps as shown in Table 4.30, "employees are polite and courteous to customers" (-0.12) and "Staff have the knowledge to answer customer questions" (-0.12). The overall mean combined score for this dimension was 4.6, which is not far off the maximum positive rating of 5. This finding indicates that customers are satisfied with the knowledge and skills the customer service representatives have at Cray Valley Resins.

As with all businesses in South Africa, Cray Valley Resins are facing strong competition to increase their market share and profitability. The marketing focus for these managers is to increase the number of repeat customers and attract new businesses by being the preferred supplier in the resin industry. The resultant quality gaps obtained from this study will form the basis for

future service developments and will aid in the prioritisation of service development for the forthcoming year. By analysing expectations and perceptions of service quality, it can provide a starting point for senior managers to develop and formulate marketing strategies to meet the needs of each specific dimension more effectively. Using the results revealed in this study, senior managers can plan effective marketing strategies to increase market share, profitability and customer satisfaction.

5.3   KEY RECOMMENDATIONS TO IMPROVE SERVICE QUALITY

Based on the research findings, the following recommendations are made:

- It is important to reinforce reliability both in the interest of customer satisfaction and of high quality service, which means observing the agreed deadlines, solving problems, being faultless and providing information. Also crucial is handling complaints in a professional and fair manner.

- Greater confidence has to be inspired in the customer, by providing up-to-date, unquestionable, professionally correct, fast information and help needs to be provided to them in every situation, also paying attention to the customer. The customer has to be made to feel that, at the given moment, he/she is the most important and the only customer for the company. This relationship has to be maintained in the future by taking care of the customer's future requests.

- Communications with staff and other stakeholders should bring about reliability, stressing that this aspect of service quality is crucial to business success. Management needs to set up ways to use internal communications for sharing ideas and problems relating to service delivery. Meetings between the interrelated departments need to be set up weekly, if not daily, to discuss customer requirements and potential service delivery problems. The company needs to make sure that the communication matches the reliability of the service provided.

- Management needs to create means to collect and assess customer attitudes, expectations, needs and opinions. Customers need to be involved in the development and amendment of services. Employees should encourage customer complaints and react to the problems identified.

- The present timeframes are not satisfying the customers' requirements. Therefore, Cray Valley Resins needs to provide consistent, on-schedule delivery, especially during times of peak demand, and the use of out-sourced transporters needs to be considered. Forecasts need to be used so that the correct stock is manufactured in anticipation of the seasonal demand for certain types of products. These forecasts will enhance Cray Valley Resins' ability to deliver quickly on short notice.

- Representatives of Cray Valley Resins' customer services need to give the customers quick call backs in response to their demands, with accurate timeframes as to when the services will be delivered. Consequently the sales, production and logistics departments need to work closely together.

- The management of Cray Valley Resins needs to understand and respond to the organisational context and amend internal organisational systems to ensure their effectiveness. They should establish standard operating procedures for dealing with customers to reduce variability in customer engagement across employees. These procedures need to be measured, so that they can be managed for effectiveness, when dealing with customers.

LIMITATIONS

The timing of the administration of the questionnaire could present itself as a limitation. The questionnaire administration was conducted during the company's low demand period of manufacture. Therefore, there was not much pressure in meeting customers' demands.

Although the survey questionnaires offered an opportunity to collect large quantities of valuable data, the information gathered is limited to the type of questions asked. It would be strongly recommended to use survey results and compare them across competitors within the resin industry.

Finally, the study is limited to Cray Valley Resins South Africa and cannot be generalised across the other international companies forming part of the group.

5.4   DIRECTIONS FOR FUTURE STUDY

This study also raises new questions for further research. In this study, the reliability dimension was found to have the highest expectation mean score and also the dimension with the largest gap. Therefore, future research should investigate whether the results, as revealed in this study, are also valid for other resin manufacturers. Future research may also look at whether perceived service quality levels differ between developing (third world) and developed (first world) counties. Future research should investigate the evolution and changing roles of expectations and desires over time and possible convergence of and interactions between the two comparison norms.

5.5   CONCLUSION

Although there are not many players in the South African resin market, the competition between them is more intense than ever. They compete not only in the quality of goods produced, by a large amount of investment in manufacturing capacity and upgrading, but also in customer acquisition and satisfaction by direct and indirect strategies. Hence, customer satisfaction and service quality would be critical factors for surviving in this market.

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APPENDIX A

01 August 2008

Dear Respondent

Measure of Service Quality at Cray Valley Resins

I am the Customer Services Manager of Cray Valley Resins South Africa, based in Durban. I am currently enrolled with the MBA program offered by the Durban University of Technology. As part of my dissertation research requirement, I am doing a study/survey of customer satisfaction, expectations and perceptions as a measure of service quality in Cray Valley Resins'. In order to improve service delivery, customer satisfaction and loyalty, there is a need for an appropriate approach for assessing the quality of Cray Valley Resins service to its customers, through measuring their perceptions and expectations of the service quality.

Would you kindly participate in this survey to determine Service Quality at Cray Valley Resins, by completing the attached questionnaire?

- For purposes of maintaining anonymity and avoiding biased data analysis, respondents may not disclose their names and identities.
- Confidentiality in respect of information provided by respondents shall be strictly maintained.

It is preferred for the questionnaire to be completed by the Procurement Manager of the company utilizing Cray Valley Resins' services, or a delegated person in the Procurement Department, where appropriate.

I would be grateful if the questionnaires are returned by the 22 August 2008 to be considered for the analysis. Thank you for your co-operation as always.

Prega Moodley

Customer Services Manager

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APPENDIX B

Expectations

We would like your impression of service performance relative to service expectations.

Based on your experience as a consumer, please think about the kind of company that would deliver excellent quality services. If you strongly agree that these firms should possess a feature, circle number 5. If you strongly disagree that these firms should possess a feature, circle number 1. If your feelings are not strong, circle one of the numbers in the middle. There is no right or wrong answer.

1 Manufacturing companies should have modern equipment.

1	2	3	4	5

2 Manufacturing companies' physical facilities should be visually appealing.

1	2	3	4	5

3 Manufacturing companies' staff should have a neat and professional appearance.

1	2	3	4	5

4 Goods / Materials associated with these companies should be visually appealing.

1	2	3	4	5

5 When these companies promise to do something at a certain time, they will do so.

1	2	3	4	5

6 When a customer has a problem, excellent companies will show a sincere interest in solving it.

1	2	3	4	5

7 It is expected that these companies will perform the service right the first time.

1	2	3	4	5

8 They should provide their services at the time they promise to do so.

1	2	3	4	5

9 Manufacturing companies should keep their records accurately.

1	2	3	4	5

10 Employees in these companies will be able to inform the customers exactly when the services will be performed.

1	2	3	4	5

11 Employees in these companies are expected to give back prompt feedback.

1	2	3	4	5

12 Employees in these companies are expected to be always willing to help customers.

1	2	3	4	5

13 Employees in these companies are expected never to be too busy to respond to customer requests.

1	2	3	4	5

14 The behaviour of employees in these companies are expected to instil confidence in customers.

1	2	3	4	5

15 Customers should be able to feel safe in their transactions with these firms' employees.

1	2	3	4	5

16 Their employees should be polite and courteous to customers.

1	2	3	4	5

17 Staff should have the knowledge to answer customer questions.

1	2	3	4	5

18 These companies should give the customers individual attention.

1	2	3	4	5

19 These companies are expected to have operating hours convenient to all their customers.

1	2	3	4	5

20 Employees of these companies are expected to know what the needs of their customers are.

1	2	3	4	5

21 Staff of these companies will have the customers' best interests at heart.

1	2	3	4	5

22 The employees of these companies are expected to give their customers personal attention.

1	2	3	4	5

Perceptions

The following set of statements relate to your feelings about Cray Valley Resins. For each statement, please show the extent to which you believe Cray Valley Resins has the feature described by the statement. Once again, circling 5 means that you strongly agree that Cray Valley Resins has that feature, and circling a 1 means that you strongly disagree. You may circle any of the numbers in the middle that show how strong your feelings are. There is no right or wrong answer.

1 Cray Valley Resins has modern equipment.

1	2	3	4	5

2 Cray Valley Resin's physical facilities are visually appealing.

1	2	3	4	5

3 Cray Valley Resins' staff has a neat and professional appearance.

1	2	3	4	5

4 Goods / Materials associated with Cray Valley Resins are visually appealling.

1	2	3	4	5

5 When Cray Valley Resins promise to do something at a certain time, it does so.

1	2	3	4	5

6 When you have a problem, Cray Valley Resins show a sincere interest in solving it.

1	2	3	4	5

7 Cray Valley Resins perform the service right, the first time.

1	2	3	4	5

8 Cray Valley Resins provide their services at the time it promise to do so.

1	2	3	4	5

9 Cray Valley Resins keeps its records accurately.

1	2	3	4	5

10 Cray Valley Resins' employees inform you exactly when the services will be performed.

1	2	3	4	5

11 Cray Valley Resins' employees give you prompt feedback.

1	2	3	4	5

12 Cray Valley Resins' employees are always willing to help customers.

1	2	3	4	5

13 Cray Valley Resins' employees are never to be too busy to respond to customer requests.

1	2	3	4	5

14 The behaviour of employees in Cray Valley Resins instils confidence in you.

1	2	3	4	5

15 You feel safe in your transactions with Cray Valley Resins.

1	2	3	4	5

16 Cray Valley Resins' employees are polite and courteous to you.

1	2	3	4	5

17 Cray Valley Resins' staff has the knowledge to answer your questions.

1	2	3	4	5

18 Cray Valley Resins give you individual attention.

1	2	3	4	5

19 Cray Valley Resins' operating hours are convenient to you.

1	2	3	4	5

20 Cray Valley Resins understands your needs.

1	2	3	4	5

21 Cray Valley Resins' staff has your best interests at heart.

1	2	3	4	5

22 Cray Valley Resins' employees give you personal attention.

1	2	3	4	5