RHODES UNIVERSITY
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A SURVEY OF CUSTOMER SATISFACTION, EXPECTATIONS AND PERCEPTIONS AS A MEASURE OF SERVICE QUALITY IN SANBS

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ABSTRACT

Background: The purpose of the study is to evaluate the service quality that the SANBS provides to its customers, by measuring customers' perceptions and their expectations of service quality provided by the supplier of blood transfusion services. The organization that is used for this study is the South African National Blood Service (SANBS). Specifically the study seeks to:

1. Determine the extent to which customers are satisfied or not satisfied with the service they receive from the SANBS using the ten-dimensional format of SERVQUAL model, modified to the specific service quality requirements of the blood transfusion service industry.
2. Establish customers' perceptions of the service they receive using a multiple-item scale (SERVQUAL) for measuring consumer perceptions of service quality.
3. Establish customers' expectations of the service, and compare them to their perceptions of the service they currently receive. The comparison is made along each service quality dimension, across different parts of same service on a geographical basis, and across different customer groups on a customer category (or type) basis.
4. Recommend implementation of appropriate service quality performance improvement procedures where necessary.

Study design and methods: The data for the study came from the SANBS' customer perception and expectation survey conducted in 2005. Questionnaires were sent out to hospitals that use products and services provided by the SANBS in the Eastern Cape and KwaZulu-Natal Provinces of South Africa. The questionnaire was based on the multiple-item SERVQUAL model for measuring

consumer perceptions of service quality, modified and tailored to specific service quality requirements of the blood transfusion service industry. Questionnaires were sent out to 113 (69.3%) hospitals out of a total of 163 blood-utilizing hospitals in the two provinces. Of the 113 hospitals, 92 (81.4%) responded, with 4 questionnaires rendered unusable. The final sample size is 88 and is included in the final study database.

The data is analyzed by comparing different parts of the service on a geographical basis namely KwaZulu-Natal and Eastern Cape zones. The data is also analyzed by comparing different customer groups namely the Rural State Hospitals, the Urban State Hospitals and Private Hospitals.

Results: The result confirms the research (alternative) hypothesis ($H_1 : \mu_1 \neq \mu_2$), and rejects H_o. The overall expectations ratings are higher than the perceptions ratings, and the KwaZulu-Natal expectations ratings are higher than the Eastern Cape ratings. The expectations of private hospitals and rural state hospitals have a higher rating than that of urban state hospitals and the perceptions of private and urban state hospitals have a higher rating than that of rural state hospitals.

The largest service quality gap is the accessibility dimension which relates specifically to approachability and ease with which customers can access staff at different levels of the organization by e-mail, and includes accessing of knowledgeable blood bank personnel and medical staff of SANBS, but may also relate to the distance of hospitals from the nearest blood bank, all of which are situated in urban state hospitals. The mean difference for accessibility is the highest followed by the understanding customer mean difference. The mean

differences for the other dimension categories are significantly less than that of the largest two dimensions, but not significantly different amongst themselves.

The mean difference for rural state hospitals is the largest followed by private hospitals and urban state hospitals. The mean difference for rural state hospitals is greater than that for urban state hospitals in both zones, but the mean difference for private hospitals is greater in KwaZulu-Natal than in the Eastern Cape. The dimension means of differences for rural state hospitals are greater than that for urban state hospitals. According to the correlations between expectations and perceptions for different dimensions, there is a weak or no linear relationship between expectations and perceptions.

Conclusion: This empirical study supports the literature on the provision of service quality, and concludes that there is a statistically significant difference or gap between the services offered by the SANBS as perceived by its customers, and the expectations of its customers. The study substantiates the need for management of blood transfusion services to take into account customer perceptions of service quality and their expectations, and upon identification of gaps, to implement appropriate service quality improvement processes, rather than take a one sided view of their (SANBS') own perception of service quality.

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- my wife, Linda,
- my son Kwezi,
- my daughter Yolanda,
- my daughter Luto,
- my son Qawe, and lastly
- my mother Yvonne

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CHAPTER 1

1. INTRODUCTION AND RESEARCH CONTEXT

This chapter covers aspects of the research problem and how the research arose. The research question is broken down into four subsections. Also covered in this chapter is the importance of the research both in terms of adding value to the body of knowledge and in terms of the organizational context within which the research occurs, including issues of what is happening in the blood transfusion industry in general.

1.1 Introduction:

The purpose of the study is to evaluate the service quality that the SANBS provides to its customers, by measuring customers' perceptions relative to their expectations of service quality provided by the supplier of blood transfusion services. The SANBS service quality is measured by using the ten-dimensional format of SERVQUAL model, modified to the specific service quality requirements of the blood transfusion industry, to allow the organization to assess its level of service quality along each dimension, as well as overall. It is hoped that this empirical research will help the management of the SANBS to better understand their customer needs, identify gaps in service provision, and implement necessary procedures to close the gaps, so as to improve service quality.

Offering superior solutions for customer needs becomes a prerequisite to provide a sustainable competitive advantage for a firm, and being customer-focused is a prime imperative for a firm, whether an organization is a manufacturing or service provider, (Morison and Davis, 2004). The historical practice of blood transfusion services in South Africa has been to provide services to passive customers, in this case hospitals, who have little influence on the service offerings. The blood transfusion organizations therefore made assumptions about what is important to the customer without establishing what the customer expects or perceives as value or quality service. The little influence or contribution/input that the blood transfusion service customers make relates to the information that they supply when completing service request forms. However, service providers must develop mechanisms in order to ensure that customers provide the required information and effort to facilitate the

service encounter and outcome (Kelley, Donnelly and Skinner, 1990 in Westwood and Ager, 1999).

Zeithaml and Bitner, (2003) argue that perhaps the inhibitor to learning about customer expectations is management's and employees' fear of asking, stemming from the belief that customer expectations will be extravagant and unrealistic, and that by asking about them a company will set itself up for even loftier expectation levels. Zeithaml, et al., (2003) explain that there is evidence to suggest that customers' main expectations of service are quite simple and basic, i.e. customers expect service organizations to do what they are supposed to do; they expect fundamentals and not fanciness; performance, not empty promises. An understanding and measurement of service quality is important because it is a concept integral to the provision of a better, more focused service, and in order to achieve this, it is necessary to capture information on customer needs, expectations and perceptions (Wisniewski, 2001a).

The first aspect of the need to research is related to the fact that there are many issues and subjects about which we have very incomplete knowledge (Remenyi, 1996). In the context of the blood transfusion service, the relationships between markets and products or services offered is an area which needs exploring in order to generate further deeper understanding, which may in turn improve efficiency and effectiveness of the business and management processes. Remenyi, (1996) attributed the second aspect of the need to research, to what he calls homo sapiens' compulsion for growth. In this regard, there is requirement for increased demand for better health care, and thus, as Remenyi (1996:22) describes, "an endless requirement for increased performance in all aspects of life," and "the need to continually break the frontiers of knowledge through the research process", leading to greater good of the society at large.

According to Zeithaml, Parasuraman and Berry, (1985), an acceleration of academic interest and research activity in services marketing in the years following their publication, was to be expected, and was necessary because far more questions than answers existed at the time. Zeithaml, et al., (1985) proposed that the need existed for services marketing research to enter a new phase of empirical work that

integrates various disciplines and various service industries, and that there existed important differences among service firms, not just between service firms and goods firms.

The Blood Transfusion Service is categorized as a services company rather than a manufacturing company, because voluntary blood donors donate blood to the South African National Blood Service, for the sole purpose of making blood available to patients in hospitals who require a blood transfusion as part of their medical treatment (the SANBS does not manufacture blood). Blood is then processed into different components for the treatment of specific disorders in a patient, and simultaneously undergoes testing for transmissible infections and other tests, prior to being dispatched to various blood banks for use by hospitals. Blood bank employees, upon receiving a request from the hospital (doctors) for blood, carry out further testing to determine compatibility of the donated unit of blood with the patient's own blood in whom the unit of blood is to be infused.

The South African National Blood Service (SANBS) is also categorized as a services company in terms of its primary deeds and core offerings performed for its customers (Zeithaml and Bitner, 2003), as represented by blood testing and blood component processing, pre-transfusion testing (blood grouping and cross matching service performed at the blood banks), problem analysis and resolution, meetings and educational workshops with the customers, follow-up calls and reporting, technical support and clinical advice offered to the customers.

Within the SANBS, customers are identified as being the blood donors, patients, medical practitioners, hospitals, and any user of products and services provided by the SANBS. However, for the purpose of this survey, only hospitals would be considered in this study as customers. Although the organization's customer profile extends to the product "supplier" customer (i.e. the blood donors), the SANBS primary focus is to the patient or to the hospital as a customer. This primary focus or core function of providing all patients with blood is entrenched in the company's mission. The decision to focus on the "demand" customer (hospitals) is also due to the huge differences in the dynamics of service delivery strategies between the two customer groups. For instance when dealing with hospitals, the SANBS has to meet

a contractual need of providing blood to patients who require a blood transfusion. On the other hand blood donors are voluntary people who do not necessarily satisfy their need and are under no obligation to meet the requirements of the SANBS. Blood donors are customers in a different way to hospitals or patients. Dealing with blood donors can be an emotive issue that requires to be treated with sensitivity as they have potential to create negative publicity. In the view of the researcher, issues of service quality (perceptions and expectations) in respect of “supply” customer (blood donors) are huge and warrant a separate research study on their own.

Medical technicians and medical technologists working in the blood banks of the SANBS are the front-line workers being considered in the study. The blood banks are situated in all the major hospitals in South Africa, and these comprise services contacts with the customers. The nature of the SANBS core function is that, apart from providing fully tested and cross-matched blood and blood products (a product service), the company provides services to its customers as described above. Customer service is required in both provision of service products and product services.

A distinction is made between service products and product services; the former being marketed purely as services, such as banking, insurance, consultancy and education, whereas product services are an inseparable part of a package, such as computer installation and maintenance, (Corkindale, et al. 1989 as cited in Chan, 2003). According to Rust and Oliver (1996) as cited in Chan (2003), the service product is the core performance purchased by a customer and includes the interactions with the firm’s personnel, and the flow of events designed to provide a desired outcome. Provision of blood banking service is a service product that could be classified as medium to high-contact services. This is because blood bank employees receive a service request from hospital, to perform compatibility testing in order to issue blood. They then proceed to carry out the testing and eventually provide the product, while providing the service at the same time. There is considerable interaction between the hospital (customer) and the provider of service (blood bank employee) with regard to the exact specification of the service request, when the service will be available, the urgency of the request, what specific

requirements need to be followed should further requests for the same patient be necessary.

The SANBS' core function of providing all patients with sufficient blood, blood products and medical services related to blood transfusion, is entrenched in the company's mission statement. However, SANBS does not deal directly with patients; rather it deals with the hospitals which are represented primarily by doctors, and nursing personnel. According to Shostack (1977) the characteristics of services are more intangible than tangible and are consumed, not possessed, which means that the essence of what is being bought is intangible. Shostack (1977) further argues that services (intangible product) usually come with tangible products, and that the producer of service must be present in most cases. Shostack's description of services bears testimony to the manner in which the SANBS provides blood banking and compatibility (cross-matching service) testing services at various blood banks in the country. These services come with tangible products such as blood and blood products, which Shostack (1977) describes above.

1.2 Research Context:

The following provides the basis of the importance of the research and how it arose. ***Is there a statistically significant difference between the services offered by the SANBS as perceived by its customers, and the expectations of its customers?*** The main research question is broken down into the following subsections:

1.2.1 Research Question 1: *Are SANBS' customers satisfied with service quality? Determining the extent to which customers are satisfied or not satisfied with the service they receive from SANBS.*

The South African National Blood Service is a Non-profit Organization registered under Section 21 of the Companies Act, and is directed by a donor-based Board of Directors. It is licensed by the South African Department of Health to provide human blood, human blood products and transfusion-related services to the healthcare communities. It is regulated by the Human Tissues Act (Act 65 of 1983) and the Standards for the Practice of Blood Transfusion in South Africa. The South African National Blood Service

is licensed to practice blood transfusion and provide its services to approximately 84% of the South African population, and the remaining 16% being serviced by the Western Province Blood Transfusion Service. The organization thus enjoys a fair level of monopoly in the blood transfusion industry in South Africa.

In existing literature on quality of service, it is argued that monopolistic and even some competitive environments are not conducive to promote quality, and monopolies tend to distort quality of service by either over supply or under supply depending on various factors including elasticity of demand, (http://www.teriin.org/discussion/regu-ip.htm, 2000). ***There is a need for determining customer satisfaction with the service offered by the SANBS***. This view is supported by a number of other service quality researchers including Westwood, et al., (1999). Service providers, however, also face risk in that control over encounter cannot be guaranteed when relying on the customer to perform tasks or provide information (Westwood, et al., 1999). Westwood, et al., (1999) have submitted that participation of customers can improve productivity for providers as well as improving service quality and customer satisfaction. In their study on managing the customer role, Westwood, et al., (1999) suggest that there is a positive correlation between customer participation and perceived service quality.

For instance when the SANBS customers are dissatisfied with its service, the only options they have is to complain to the service firm, to complain to a third party, to take legal action or to spread negative word of mouth sentiments about the firm. The SANBS customers do not have an option to switch or defect and use other companies who offer similar services, and therefore the SANBS may not be in a position to suffer loss of revenues as a consequence of defected customers. The least the SANBS would have to deal with, are complaints and legal actions against the organization. It is the above reasons that motivate the need for a customer satisfaction market research being undertaken. Kumar, (1999) as cited in Nel (2003) stresses the importance for organizations to develop a customer satisfaction programme to measure performance/satisfaction over time. According to Kumar, (1999) in Nel (2003)

the reason is the fact that 96% of dissatisfied customers never complain while 60 to 90% of these “silent” dissatisfied customers, never buy from the company again.

One school of thought would argue that there is probably no need to conduct research for organizations that are monopolistic, as there are no options for customers to switch service providers. The researcher’s view and counter argument is that, the very nature of a monopolistic organization demands that research be conducted and its service quality be measured. This is primarily because it is easy for such organizations to be complacent and “arrogant” towards their customers, and quite often their operations and processes tend to focus on their own internal procedures rather than externally where customers would be regarded as an important stakeholder. Therefore undertaking of service quality measurement will certainly benefit both the customer and the organization, in firms which enjoy monopoly in the industry.

On the other hand, the South African government recommended that there shall be one blood transfusion service in the country which will service the entire South African population. Upon these recommendations which were later made into law, the merger of the then seven former independent Blood Transfusion Services was initiated in April 1999, in keeping with the recommendations of the World Health Organisation and other international bodies, that fragmentation of blood transfusion services should be avoided and competition between Services for the recruitment of donors should not be permitted. However, governments do come and go, so do laws get repealed, it is important to anticipate change and innovation (scenario planning), so that should there be any competition in this industry in the future, the organisation would be well positioned in retaining its current customer base. After all, despite any other argument, it is the view of the researcher that measurement of service quality in pursuit of customer satisfaction is just the right thing to do, for both profit-maximising businesses and non-profit monopolistic organisations.

1.2.2 Research Question 2: *How is SANBS' service quality in the eyes of its customers? Establishing customers' perceptions of the service they receive.*

In order for organizations to meet their customer needs, it is important to first establish the service quality that an organization is offering as perceived by its customers (customers' perceptions). Proactive establishment of perceptions of the SANBS' customers in the area being studied has been given little or no attention in the past. Some of the reasons for failing to give it sufficient attention may be related to the monopolistic nature of the organization. It may also be possible that the SANBS management is avoiding the subject for fear of unreasonable perception ratings by the customer.

1.2.3 Research Question 3: *How do customers' perceptions of service quality compare with their (customers') expectations? Establishing customers' expectations of service and compare those to their perceptions of service currently received, so as to identify gaps in service provision. The comparison is made along each service quality dimension, across different parts of same service on a geographical basis, and across different customer groups on a customer category basis.*

Analysis of customer complaint records within the SANBS, do not provide sufficient data to be of any use in service quality measurement. For instance such records do not identify gaps in provision of service quality. By analyzing and comparing customers' perceptions of service with their expectations, the study will enable to identify gaps in the service provision. ***The research undertaken will identify gaps (if any) in the service quality within the organization.*** Comparison of customers' perceptions with their expectations of service quality is an area that has not been given sufficient attention in the SANBS, particularly in the area being studied. As suggested by Zeithaml, et al., (2003) some companies refrain from carrying out such studies for fear of what they term unreasonable customer expectations that may lead to the organization incurring increased costs, if attempts to close gaps were undertaken.

1.2.4 Research Question 4: *What steps should be taken upon identification of gaps in service provision within SANBS? Recommending implementation of appropriate service quality performance improvement procedures where gaps in service quality were identified.*

The elements of such performance improvement procedures will include identification of problems and their causes, resolution of those problems, modification of processes and feedback. The end result of the performance improvement includes customer satisfaction, improved customer loyalty, improved service quality, improved brand loyalty and decreased chances of litigation. Currently, implementation of service quality improvement processes is carried out as an internal business procedure in SANBS, driven primarily by the requirement to conform to regulatory bodies. In other instances these are carried out following a customer complaint. It is for this reason that a study such as this becomes even more important for the SANBS as a service organization.

CHAPTER 2

2. LITERATURE REVIEW

This chapter presents the theoretical perspective of the research and the recent empirical studies that are relevant to the research questions. Discussion of theories and empirical studies is presented and discussed within the broader research question in general, and under nine sub-headings, within the context of customer satisfaction, perceptions and expectations. Within the context of the research objectives, the first part of this chapter discusses theories and studies with regard to the service package, the SERVQUAL model and application thereof, the Gap model and service quality. The latter section of this chapter discusses theories and studies with regard to customer perceptions, satisfaction and expectation, the design of products and services and the importance of services to economies.

2.1 The service package:

The service package as described by Fitzsimmons and Fitzsimmons, (1994) in Heineke and Tsikriktsis, (1998) comprises four elements – the supporting facility (such as the building from which blood bank services are provided), facilitating goods (such as the units of blood, blood products and service request documents), explicit services (such the provision of a cross-match service), and implicit services (such as the blood bank employees attitude when providing the service). On arrival at the blood bank, the customer will experience all these four elements, and because services are intangible, it is particularly important for managers to understand what actually composes the service product (Heineke and Tsikriktsis, 1998).

According to Zeithaml, et al., (1985) in their study of problems and strategies in services marketing, intangibility of service refers to the fact that services are performances, rather than objects, they cannot be seen, felt, tasted, or touched in the same manner in which goods can be sensed. Inseparability of production and consumption involves the simultaneous production and consumption which characterizes most services, while heterogeneity refers to the potential for high variability in the performance of services, and perishability means that services cannot be saved. In a study investigating the four characteristics of services, Wolak, Kalafatis and Harris (1998:25) introduced the idea of services as being “activities,

benefits or satisfactions which are offered for sale, or are provided in connection with the sale of goods". The SANBS service would be closely aligned to the latter explanation.

Services can also be classified according to the degree of service complexity and customization (Heineke and Tsikriktsis, 1998). For instance a professional service system such as the blood transfusion service provides complex and customized services. Lovelock (2001) in Chan (2003), when describing a service product, argues that, in the case of manufactured goods, customers purchase them and thus take title to the physical objects. On the other hand service performances, being intangible and ephemeral are experienced rather than owned, (Chan, 2003). Even when there are physical elements to which the customer does take title, such as in receiving blood or blood products from the blood bank in the case of the SANBS, Lovelock (2001) in Chan (2003) argues that a significant portion of the price paid by customers is for the value added by the accompanying service elements, including labour, expertise and use of specialized equipment. This describes precisely the scenario within the blood transfusion set up in South Africa. However the researcher contends that the SANBS customers pay for all the services (rather than a significant portion thereof) rendered in terms of labour, expertise, use of specialized equipment, cost of testing and many other related functionalities, hence the term "Service" in Blood Transfusion Service. This is so because blood is not manufactured, rather it is donated freely and voluntarily by blood donors, and therefore one could not put a price on it.

2.2 The SERVQUAL Model:

Consulta Research (Pty) Ltd (http://www.be.up.co.za/consulta.html, 2005), argue that the realization of the importance of providing excellent service quality in the marketing of goods and services has led to the introduction of customer service departments, toll-free help lines and many more. At Consulta Research, they contend that the problem which is still not adequately addressed is how to measure the extent of one's service quality objectively, and apply remedial procedures quicker and better than the competitors. The gap concept has clear implications for the measurement of service quality, implying that both perceptions and expectations need to be explicitly measured in order to quantify service quality gaps, (Accounts

Commission for Scotland, 1999a; Lam, 1997; Youseff, Nel and Bovaird, 1996; Parasuraman, et al., 1988, 1985) as cited in Wisniewski, (2001a).

SERVQUAL is a service quality measurement model that has been extensively applied. The SERVQUAL model was developed by Parasuraman, Zeithaml and Berry, (1985). Wisniewski, (2001c) argue that, with minor modification, SERVQUAL can be adapted to any service organization, and that information on service quality gaps can help managers diagnose where performance improvement can best be targeted. However, Chang, Chen and Hsu, (2002) are critical of SERVQUAL in that, although it made great contribution to the field of service quality and was popular among service quality researchers for many years, it is thought to be insufficient because of its conceptual weaknesses caused by the disconfirmatory paradigm, and its empirical inappropriateness. According to Oliver in Carden, and DelliFraine, (2004) the SERVQUAL satisfaction survey instrument is one of the most widely used techniques for obtaining quantitative measures of customer satisfaction in the US. Carden, et al., (2004) state that the survey instrument allows consumers to indicate the extent to which they agree with a series of statements designed to measure the elements of a service that consumers would expect as ideal (the expectations score) and then those elements of service that they have recently experienced (the perceptions score). The difference between the customer perceptions and expectations is referred to by Parasuraman, et al. (1988) as the satisfaction gap.

“The Servqual instrument was specifically designed to measure service quality using both the gap concept and service quality dimensions, and was designed to be transportable, with minor adaptation, to organizations in any service sector.” (Wisniewski, 2001a:4). As is the case in this presentation, the SERVQUAL ten dimensions model for service quality measurement should be tailor made to ones business. Once the dimensions have been identified, the next step is to determine the extent of the impact the dimensions have in the customers’ perception of service quality. This step will be followed by implementation of various service improvement programmes.

> SERVQUAL provides management and key players with feedback about the organization’s ability to provide quality service, and the results of a service quality audit assist management to identify service strengths and weaknesses (GAPS). The instrument assists organizations to establish ongoing ‘listening systems’ to develop continuous insight about customer service

> needs. More informed decision making to improve service quality comes from a continuous series of snapshots taken from various angles and through different methods form the essence of systematic listening, (http://www.workinfo.com/Renres/register/9.htm, 2005).

Service marketers need to monitor how their customers feel about doing business with them, using both formal and informal means, (Goncalvels, 1998). Goncalves (1998) further submits that the existence of customer satisfaction research lets customers know that the company cares about their opinions, so in itself has the potential to enhance overall satisfaction. Using the SERVQUAL scale can be helpful in determining how much time, staff and budget to allocate to the core and supplementary services that are affected by each of these factors, (Goncalves, 1998). Lovelock, (1991) submits that a key challenge for any service business is to deliver satisfactory outcomes to its customers in a cost-effective manner.

According to Parasuraman, et al., (1985), delivering superior service quality appears to be a prerequisite for success, if not survival, of businesses in the 1980s and beyond. In their study, Crosby (1979) and Garvin (1983) in Parasuraman, et al., (1985) explain that, unlike goods quality, which can be measured objectively by such indicators as durability and number of defects, service quality is an abstract and elusive construct because of the three features unique to services, namely, intangibility, heterogeneity, and inseparability of production and consumption. Parasuraman, et al., (1988) argue that in the absence of objective measures, an appropriate approach for assessing the quality of a firm's service is to measure consumers' perceptions of quality, and that SERVQUAL is most valuable when it is used periodically to track service quality trends, and when it is used in conjunction with other forms of service quality measurement, but is limited to current or past customers of that firm. This is because meaningful responses to the perception statements require respondents to have some knowledge of, or experience with the firm being researched.

Moolla and du Plessis (2001), in their study where they critically review the SERVQUAL model, recommend that validity of SERVQUAL should be examined on an industry-by-industry basis before it is used to gather consumers' perceptions of service quality. In this study, Moolla, et al. (2001) advised managers to carefully consider which issues are important to service quality in their specific environments and to modify the SERVQUAL scale as needed, and this is also supported by

Zeithaml, et al. (1985). In this survey the SERVQUAL model is modified in accordance with the issues that are important to service quality in the SANBS.

In his report on a survey conducted to assess customer satisfaction with local authority services using SERVQUAL, Wisniewski (2001b) supports the SERVQUAL model developed by Parasuraman et al. (1985), and emphasizes that customers assess service quality by comparing their expectations of service with their perceptions of service received. In his evaluation of the pilot studies, Dotchin (1994) in Wisniewski (2001b) described SERVQUAL as being seen by many as still the most appropriate method of trying to measure customer satisfaction, although Buttle (1996) in Wisniewski (2001c) has criticized it from both a theoretical and operational perspective.

Despite SERVQUAL's criticisms, Moolla, et al. (2001) conclude that the groundbreaking work of Zeithaml, et al. (1990) has paved the way for a deeper understanding of service quality and the eventual development of an important measurement tool.

2.3 Application of SERVQUAL:

The SERVQUAL model can be used in a number of situations for measuring service quality. According to Wisniewski, (2001b) there are a number of ways in which SERVQUAL results can be used to help services identify areas of performance improvement which include, understanding current service quality. Use of gap scores enables the service manager to assess current service quality and quantify gaps that exist. Use of the service quality dimensions will allow an understanding of the broad areas where customers have particularly high – or low expectations and an assessment of where there may be relatively large gaps, (Wisniewski, 2001b). A breakdown of a dimension into its constituent statements will then allow focusing on particular problem areas, (Wisniewski, 2001b).

Weighting results can also be used (Wisniewski, 2001c) to provide an overall understanding of the relative importance from the customer's perspective of the ten service dimensions in terms of an individual service and across different services. The SERVQUAL instrument asks respondents to allocate weight out of 100 to each

of the ten dimensions. SERVQUAL could also be used to compare different customer groups.

Comparing different customer groups, where customers will have varying needs and who do not use services in exactly the same way. For instance, the service quality requirements for rural state hospitals may be different to those of urban state hospitals and those of private hospitals. The gap analysis can be useful in comparing these, and can help focus on where improvements would have most impact as far as these customers were concerned, (Wisniewski, 2001c). SERVQUAL can be used to compare different parts of the same service on a geographical basis.

Comparing different parts of the service: Gap analysis also allows comparisons to be made across different parts of the same service on a geographical basis, so that comparison of expectations of customers within each area becomes possible; so does the identification of similar, or different, service quality gaps across areas, (Wisniewski, 2001c). For instance the comparison can be made between hospitals in the KwaZulu-Natal geographical area and those in the Eastern Cape area, in as far as provision of blood transfusion services is concerned. The SERVQUAL model can be used in understanding the internal customer within an organization.

Understanding the internal customer: Wisniewski (2001c) argues that, in order to deliver service quality to the external customer it is well recognized that internal customer service must also be of the right quality. In the case of the SANBS blood banks, there exists the service chain of inter-connected activities from collecting the unit of blood through testing and processing the unit of blood into different components, and finally dispatching fully tested blood to the blood banks, for pre-transfusion testing and issuing to the final customer. Wisniewski (2001c) argues that any chain is as strong as its weakest link and the service received by the external customer will be inadequate if internal customer service is not delivered. Where more than one organization offers similar services, the SERVQUAL model could also be used to compare these.

Comparing services: Where more than one service organization that provides similar services exists, allows comparison of results from gap-based surveys. This might probably not be applicable for the SANBS, which services approximately 84.0% of the South African community. Performance over time is another way in which SERVQUAL model can be used, and repeating the gap survey over time allows the service to track whether actions taken have closed gaps and whether new gaps are appearing, (Wisniewski, 2001c). For instance, it might also be useful to repeat the gap survey after an organization's major strategic and structural changes in order to asses gaps in the service provision or to assess effectiveness of such changes in terms of provision of service quality.

2.4 The Gap Model:

The SERVQUAL model provides the management of service organizations with feedback about the organization's ability to provide quality service. The service quality survey, using the SERVQUAL model, will assist SANBS management to identify the organization's service strengths and weakness (GAPS), hence the Gap model. Parasuraman, et al., (1985) developed the Gap model which shows how the various gaps in the service process may affect customer's assessment of the service quality.

The approach on measurement of service quality that has been used in this study is the disconfirmation theory, otherwise known as the Gaps Model of Parasuraman, et al., (1985). Other approaches use the psychometric performance measurement of Cronin and Taylor. Consulta Research, (http://www.be.up.co.za/consulta.html, 2005), however argue that despite their strong scientific basis, the biggest problem with the Gaps Model and the SERVQUAL Instrument is the inability to identify consumer service problems in sufficient detail. In a recent article Kolb (2005a:1) confirms "the well known Servqual model as a solution to the problem of measuring the elusive quality concept". Kolb (2005a:1) states that SERVQUAL measurement of the gap between expected service levels and perceived service levels as an ultimate solution "to better measure service quality rather than performance". Kolb, (2005a:1) argues that "various authors have either confirmed or rejected these five dimensions depending on the service organization they were analyzing (and perhaps on how the research was conducted)".

Zeithaml, Berry and Parasuraman (1993) in Mehta, Lobo and Khong (2002) propose that a “gap” known as the zone of tolerance exists between desired and adequate service, and is subjected to changes by factors affecting both desired and adequate service expectations. A study of the Life Insurance Industry carried out by Mehta, et al., (2002) brings to light the relationship between the customer and an insurance agent who is seen as the only contact in 80% of cases, (Crosby, Evans and Crowles, 1990 in Mehta, et al., 2002). Mehta states that customers perceive the role of insurance agents as their contact for ongoing necessary interaction. A similar scenario occurs between the hospital and the blood bank staff, where the blood banks staff are in constant contact with the customer, hence the importance of service encounter (also referred to as the moment of truth). The researcher submits that it is during this moment that adequately empowered blood bank staff will prove to be extremely important in handling customers’ requests and queries.

The Gap model constitutes five possible contributing factors for the organizational weaknesses or Gaps, and these include:

Gap 1: Discrepancy between actual customer expectations and management perceptions of those expectations. “Management does not understand how the service should be designed and what support or secondary services the customer requires, i.e. what the right quality for the customer is”, (Moolla and du Plessis, 2001:3).

Gap 2: Discrepancy between management perceptions of customer expectations and service quality specifications. “Often in an attempt to reduce costs, management places internal restrictions on how a service is to be performed, restrictions which deprive the staff of the opportunity to meet the customer’s expectations”, (Moolla, et al., 2001:3). For instance the SANBS management may decide to restrict opening blood bank services in certain hospitals and at certain times based on ‘low’ blood usage figures, and in turn operate emergency banks, where the hospital keeps stocks of blood for use in emergencies. This is a typical example of management’s placement of internal restriction on how a service is to be performed, in an attempt to reduce costs.

Gap 3: Discrepancy between service quality and service actually delivered. “Even if the quality of service is carefully specified in a company, the result in practice may be different from what was intended. Service quality is difficult to standardize since it is often dependent on personal contact between the customer and company staff”, (Moolla, et al., 2001:3).

Gap 4: Discrepancy between service actually delivered and what is communicated about the service to customers. “It is important not to promise the customer more than the company can deliver. At the same time, it is important for the company to inform customers about the efforts being made to elevate the quality, which would otherwise not be visible to the customer”, (Moolla, et al., 2001:3). For instance it is important for the SANBS not promise maintenance of emergency bank refrigerators in all hospitals when the organization lacks the capacity and logistical support to do that.

Gap 5: Discrepancy between customer’s expectations of the service provider and their perceptions of provider delivery. “This is the most crucial gap. This gap is a function of other gaps: i.e. Gap 5 = f(gaps 1, 2, 3, 4). It is this gap that Parasuraman et al (1985) seek to measure using the SERVQUAL instrument”, (Moolla, et al., 2001:3).

Gap 5 is what this study seeks to measure, based on Parasuraman, et al., (1985) using the SERVQUAL model. Moolla, et al., (2001) describe the model as being customer-oriented because it is concerned with the experiences and the needs of the customer. The needs of the customer are based on the customer’s previous experience with the service, and how the customer perceives the service. The Gap model also takes into account what the customer expects the service to be in comparison with his or her perceptions of previous experience. The model is also process oriented because it identifies the gaps that may arise in various parts of the service process, which eventually affects the difference between the customer’s expected and perceived quality, (Moolla, et al., 2001).

The model is thus based on what is known as the ‘disconfirmation of expectations paradigm’ in services marketing literature. Figure 2-1 below depicts how various

gaps in the service process may affect the customer's assessment of the quality of service. Moolla, et al., (2001) submit that the Gap model is useful in assisting managers and staff to examine their own perceptions of quality and to recognize how much they really understand the perceptions of customers. Figure 2-2 is an illustration of further development of the original Gap model (shown in figure 2-1), which depicts inter-organizational factors affecting the different gaps. Figure 2-1 also facilitates an analysis of what caused the gaps and how they can be reduced.

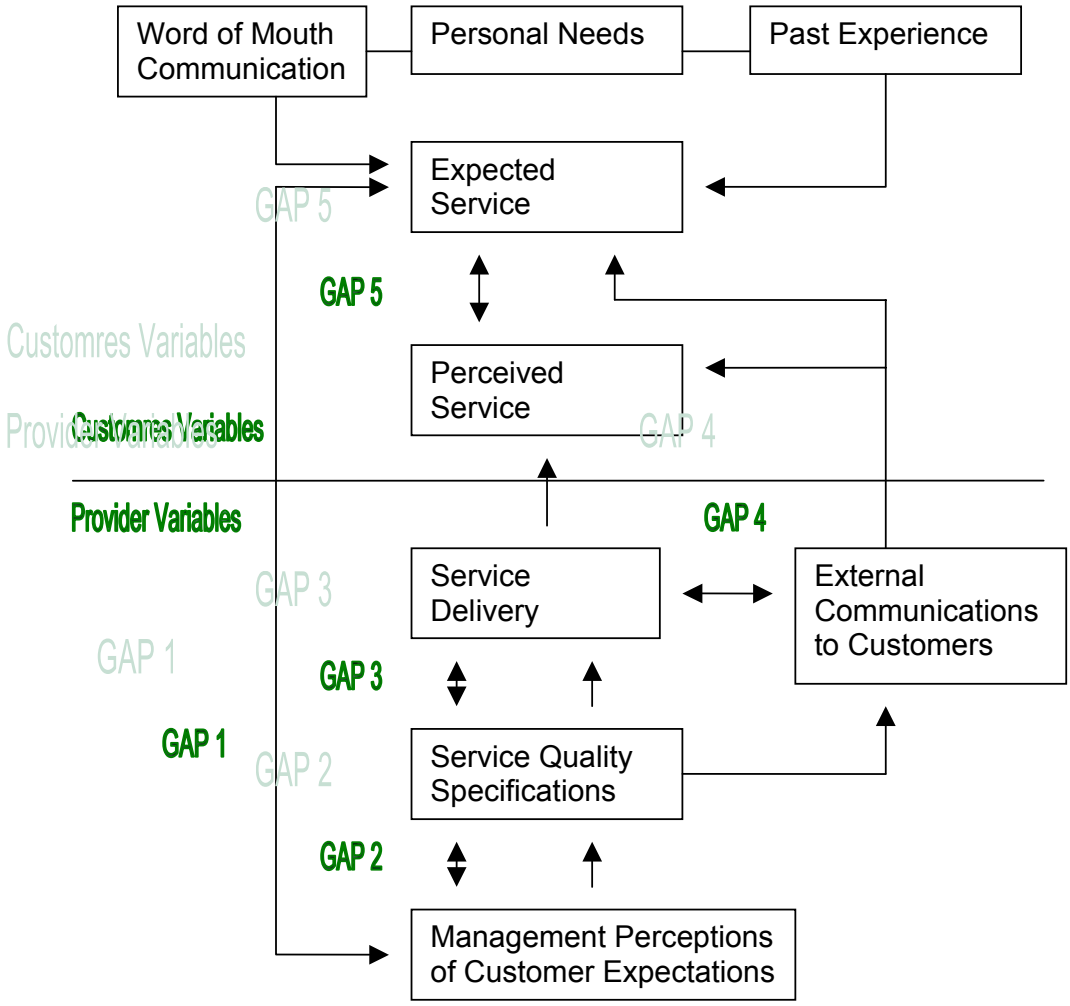

Figure 2-1: The Gap Model (Reproduced from Parasuraman, Zeithaml and Berry, 1985)

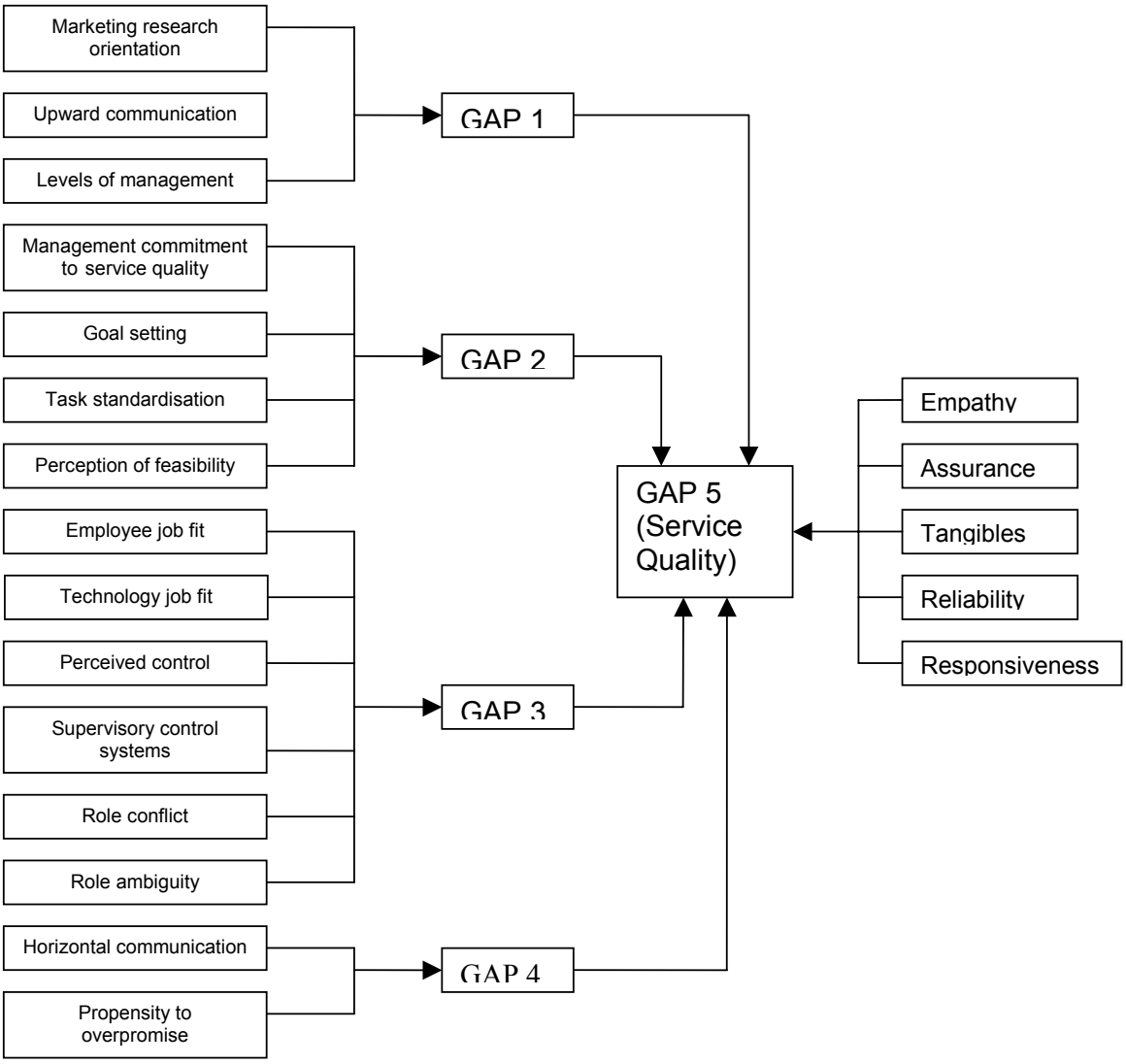

Figure 2-2: Extension of the Gap Model (Reproduced from Parasuraman, Zeithaml and Berry, 1988)

Moolla, et al., (2001) describe this gap as a measure of service quality rather than a measure of satisfaction on the basis of the nature of expectation included and the timing involved. Moolla, et al., (2001) argues that satisfaction is associated with a service encounter, whereas service quality relates to the superiority of service.

Wisniewski (2001c) concludes from his pilot work, that service managers find the service quality gap approach and the service dimension approach conceptually attractive and operationally useful. Wisniewski (2001c) further argues that

potentially, the approach offers a cost-effective way of ensuring that services remain customer-focused and, based on the pilot work, the Accounts Commission has published a detailed guide to the approach which has been widely distributed in Scotland's local authorities.

2.5 The Service Quality:

In order to improve service delivery and customer satisfaction and loyalty, there is a need for an appropriate approach for assessing the quality of SANBS' service to its customers, through measuring customers' perceptions and expectations of service quality for the company. The SERVQUAL model developed by Parasuraman, et al. (1985), a multiple-item scale for measuring consumer perceptions of service quality, has been used to assess this. Parasuraman, et al., (1988), describe service quality as an abstract and elusive construct because of three features unique to services, namely, intangibility, heterogeneity, and inseparability of production and consumption. A fourth feature, perishability, was later also recognized.

Gronroos, (1984) as cited in Wisniewski (2001a) submits that there are two distinct constituents of service quality, namely technical and functional. Functional service quality is seen by the customers as the most important factor in service transaction, given their (customers') frequent inability to judge technical quality of service, (Asubonteng, et al., 1996 in Wisniewski, 2001a). This is particularly true in the health care context, where the technical quality of service may be difficult for the consumer with no technical expertise to evaluate (Gronroos, 1984 in Wisniewski, 2001a), whereas functional quality (the manner in which the service is delivered) can, and will be evaluated by the consumer. Functional service quality is evaluated in this study because it may be difficult for the consumer (the hospitals) to evaluate or assess the technical quality of the SANBS services, which relates for instance to the post transfusion viability of red cells in a unit of transfused blood, or the presence or absence of clotting factors in a unit of fresh frozen plasma issued. Wisniewski, (2001a) argues that customers tend to rely on the "how" of service delivery and attributes such as empathy, reliability, responsiveness associated with the service encounter become critical.

Service quality has been defined as being about value, the conformance to standards, excellence, and meeting or exceeding customers' expectations, resulting in delight, (Malherbe and Pearse, 2003). According to Parasuraman, et al., (1988), service quality, as perceived by consumers, stems from a comparison of what they feel firms should offer (i.e. from their expectations) with their perceptions of the performance of firms providing the services. Perceived service quality is therefore viewed as the degree and direction of discrepancy between consumers' perceptions and expectations. In service quality literature, expectations are viewed as desires or wants of consumers, i.e. what they feel a provider should offer rather than would offer, whereas in consumer satisfaction literature, expectations are viewed as predictions made by consumers about what is likely to happen during an impending transaction or exchange, (Parasuramn, et al., 1998).

Service quality may also be defined as the extent to which a service meets customers' needs or expectations, that is the difference between customer expectations of service and perceived service, (Wisniewski, 2001c). If expectations are greater than performance, then perceived quality is less than satisfactory and hence customer dissatisfaction occurs (Parasuraman, et al., 1985; Lewis and Mitchell, 1990, in Wisniewski, 2001c). Wisniewski (2001c) argues that many surveys fail to assess whether customer needs and expectations are met because they tend to focus solely on customer perceptions of service, thus measuring what the customer thinks of the service. According to Wisniewski (2001c) such an approach fails to measure customer expectations of service delivery. An adequate understanding of customer expectations is essential for performance improvement. "Without adequate information on both the quality of services expected and perceptions of services received then feedback from customer surveys can be highly misleading from both a policy and an operational perspective", (Wisniewski, 2001c:381).

Wisniewski (2001a), in his study on measuring service quality in a hospital colposcopy clinic, describes service quality as a relatively new academic discipline emerging in the USA in the 1980's when the manufacturing sector declined in economic importance and the service sector grew. "Consumers demanded increasingly higher quality services and accordingly the pressure to provide quality

services in order to remain commercially competitive increased," (Wisniewski, 2001a:1). According to Wisniewski, (2001a) this development forced businesses to develop a better understanding of what service quality meant to the customer, and how it could best be measured.

Wisniewski, (2001a) explains service quality as the difference between predicted, or expected, service (customer expectations) and perceived service (customer perceptions). Wisniewski, (2001a) further argues that if expectations are greater than performance, then perceived quality is less than satisfactory and a service quality gap materialises, and this does not mean that the service is of low quality but rather the customer expectations have not been met hence customer dissatisfaction occurs and opportunities arise for better meeting customer expectations. However, Smith and Bolton, (1998) in their experimental investigation of customer reactions to service failure and recovery encounters suggest that although excellent service recoveries can enhance customer satisfaction and increase what they term repatronage intentions, viewing service failures as opportunities to impress customers with good service performance may involve substantial risks.

Quality is defined by the customer's impression of the service provided (Parasuraman, et al., 1988 and 1985 in Chang, et al., 2002). Chang, et al., (2002), propose that the assumption behind this definition is that customers form the perception of service quality according to the service performance they experience and based on past experiences of service performance.

According to Kurtz and Klow (1998), what constitutes service quality could be described in terms of, and is largely dependant on the particular service sector under consideration, and that parameters that measure quality in a given service sector vary considerably across industries. However, Parasuraman, et al., (1998) argue that regardless of the type of service, customers used basically the same general criteria in arriving at an evaluative judgement about service quality. Consumer expectations are pretrial beliefs a consumer has about the performance of a service, that are used as the standard or reference against which service performance is judged, (Kurtz, et al., 1998). An understanding of the levels of consumer expectations will help companies to ensure that consumer expectations are met.

For instance in the Blood Transfusion industry, technologically advanced laboratory testing systems within an internationally accredited system, and remaining on the cutting edge research and innovation, are some of the indicators of quality of service, in addition to other service quality dimensions such as responsiveness and competence. Other indicators of service quality in the blood transfusion service environment is the implementation of risk management programmes, type of documentation such as service request forms and other material, provision of prompt service and turn around times, ability to distinguish and deal with emergency service requests appropriately, access of knowledgeable personnel and educational material, credibility and competent staff, not only in terms of possession of required skills and knowledge to perform the job, but also staff who are properly empowered to deal with clients' requests and queries. An understanding of the above levels of consumer expectations will help the SANBS to ensure that consumer expectations are met.

The performance of the employees is to some extent the means through which the organization delivers service quality and meets customer satisfaction, (Nel, 2003). These indicators may not necessarily all be applicable to all service sectors. In some instances service quality may be determined by compliance with regulatory bodies, such as the Health Professions Council of South Africa, the South African Nursing Council, and accreditation bodies such as the South African National Accreditation Scheme.

The following are some of the examples where quality of service (QOS) was mandated by legislative interventions.

Sri Lanka

In Sri Lanka, the Telecom Act 1991 requires the Telecom Regulatory Commission (TRC) to take such regulatory measures including the issue of directive as may be deemed necessary to bring down and monitor quality of services provided by operators and to ensure that services conform to standards relating to quality of service specified by rules made under the Act. (http://www.teriin.org/discussion/regu-ip.htm, 2000:2).

US

A primary goal of the Telecommunications Act in USA is to promote provisioning of high quality telecommunication services to consumers. A NRRI study (National Regulatory

Research Institute), USA (1998) shows that 30 states in USA are applying QOS requirement to all local exchange carriers equally, while 15 states do not do so for various reasons. A new concept has emerged in USA regarding the 'telecommunication consumer Bill of Rights'. In the absence of rate based rate of return (RBROR) regulation and with the introduction of competition in many states, the concept of 'Bill of Rights' has been introduced to safeguard consumer interest. (http://www.teriin.org/discussion/regu-ip.htm, 2000:2).

India

In the telecom sector, the TRAI (Telecom Regulatory Authority of India) had issued a QOS consultation paper in 1998. The paper lays down certain QOS parameters for application to providers of basic services, cellular services, pager services and internet services: other service providers such as PMRT, data network, email providers are outside the ambit of regulatory intervention. (http://www.teriin.org/discussion/regu-ip.htm, 2000:4).

UK

The Electricity Act 1989 and the competitive and Service (Utilities) Act 1992 in UK govern the regulatory interventions in laying down and enforcing the QOS in electricity sector. (http://www.teriin.org/discussion/regu-ip.htm, 2000:5).

Othman and Owen (2001), in their study on developing an instrument to measure customer service quality (SQ) in Islamic banking, have added a sixth dimension known as 'Compliance fully with Islamic law and principles', to the original five dimensional SERVQUAL model of Parasuraman, et al., (1985) and called their model the CARTER model, which means Compliance (fully with Islamic law and principles), Assurance, Reliability, Tangibles, Empathy, and Responsiveness. A principal emphasis of recent academic and managerial enquiry has focused on determining what service quality means, and creating market-focused strategies to meet customer expectation, (Othman, et al., 2001).

> Although existing service quality literature is prodigious, researchers have paid little attention to usage frequency and possible relationship with service quality perception, even though it is well known that service users may change their perceptions over time as they gain additional experience, or on their religious beliefs, values and cultural backgrounds. (Othman, et al., 2001)

Othman, et al., (2001) concluded in their study that the CARTER model to measure service quality is a multi-dimensional variable, and that the conceptualization of expectations needs clarification and quantification in terms of all factors especially, religious and cultural factors. They also claim that CARTER offers a unique and original measure of customers' expectations in Islamic banks.

2.6 Customer Perceptions and Desired Performance Outcomes:

Although there has been a lot of interest in understanding the relationship between customer service quality perceptions and firm performance, little effort has been devoted to designing tools that allow quality managers to link such customer perceptions to desired performance outcomes so that this information might be effectively used to shape strategic decisions, (Blose, Tankersly and Flynn, 2005). Blose, et al., (2005) in their study of managing service quality using data envelopment analysis, argue that evaluative tools have been proposed that are said to help service providers get a sense of where they stand and how they might make service quality improvements, but these techniques are very limited. In support of the argument by Blose, et al., (2005), the researcher submits that service organizations need to take a conscious strategic decision to align their service delivery in accordance with the desired customer expectations of service quality. Organizations should use service quality information to shape the strategy of the organization, rather than developing and implementing a once off remedial process.

Blose, et al., (2005) argue that whilst service quality results might be used to compare service quality performance across various units within a firm or across competitors in an industry, researchers have not described exactly how these activities might be systematically carried out so that meaningful analysis can be made. Regression analysis, as recommended by Parasuraman, et al., (1988) to determine the relative impact of each service quality dimension on overall service quality has been used in this study. Hemmasi, Strong, and Taylor (1994) as cited in Blose, et al., (2005) propose that performance-importance analysis be used to manage service quality.

> This would involve first measuring consumers' service quality performance perceptions, using a scale that taps whatever pertinent dimensions have been identified for the given service context and measuring consumers' perceptions of the importance of each attribute. Then each service attribute would be plotted on a matrix in terms of its performance score and its importance score to highlight where improvement efforts should be focused. (Blose, et al., 2005:8)

While regression could be used to determine the relative impact of each service quality dimension on overall service quality, such an analysis would not specifically indicate how managerial and/or firm behaviour should be strategically modified,

(Blose, et al., 2005). For instance it would not give definitive prescription as to how much adjustment in resources should be made by shifting emphasis from relatively less important dimensions. Another important limitation, argues Blose, et al., (2005) is the assumption that the manager's goal is to effectively manipulate various elements or dimensions of service quality to maximize the overall measure of service quality. Blose, et al., (2005) propose that service quality itself is generally not the ultimate managerial, or firm goal, rather it has been suggested that there is an optimal level of service quality that each firm should try to obtain. They propose a new managerial tool for evaluating and managing service quality which is known as Data Envelopment Analysis. This managerial tool was originally introduced by Charnes, Cooper, and Rhodes in 1978 as a tool for monitoring organizational performance in non-profit and public service organizations. The method allows management analysts to measure the relative productive efficiency of each member of a set of comparable organizational units based on a theoretical optimal performance for each organization, (Blose, et al., 2005).

2.7 Customer Satisfaction and Expectation:

In the face of rapid and fundamental changes taking place in South Africa and indeed in the whole world today, business organizations are confronted with many challenges including political, social and economic. One of the important elements in an effective organization is to ensure that its policies and procedures are constructed in such a way that they do not constrain the effective functioning of its services, rather its policies and procedures allow and enhance commitment to meet or exceed customer expectations, establish customer perceptions, and contribute to customer satisfaction, in pursuit of the organization's business objectives and competitive advantage. Intensifying competition and rapid deregulation have led many service and retail businesses to seek profitable ways to differentiate themselves, by implementing strategies that ensure delivery of high service quality, (Parasuraman, Zeithaml and Berry, 1988).

Carden, et al., (2004) reported, in a study involving hospital satisfaction with blood suppliers in 2001, conducted by the National Blood Data Resource Centre in America, that customer satisfaction is a function of consumer expectation with regard to the purchase of a product or service, and the perception of the degree to

which those expectations are met after the purchase. Carden, et al. (2004) defines customer satisfaction as a post purchase attitude formed through a mental comparison of the quality that a customer expected to receive from an exchange and the level of quality the customer perceives actually receiving from the exchange. In the preceding definition of Carden, customer satisfaction is defined in terms of customer perceptions and the customer expectations. Cadotte and colleagues in Carden, et al., (2004) define customer satisfaction in terms of an emotional response to the purchase of a product or service.

In their study, Carden, et al argue that there is a strong positive association between customer satisfaction and organizational performance, in that customer satisfaction has been shown to lead to greater customer loyalty and profitability, attracting of new customers, lowering of costs, and retaining of customers. In a study on customer satisfaction measurement, Nel (2003) argues that if an organization that lacks customer focus tries to deliver quality, it would more often fall back in delivering quantity (more product features) rather than quality (features that enhance customer enjoyment). Nel (2003) further explains that the current increased focus on customer satisfaction research can be attributed to the increased focus on performance excellence in the American and European business by adopting the Baldrige and European business excellence models.

Hospitals are increasingly making demands for lower costs for blood and blood products without compromising service quality (Carden, et al., 2004). For this reason, a study such as this becomes even more important and urgent.

> Empirical research to investigate the determinants of hospital satisfaction with blood suppliers can help policy makers and blood centre managers reshape the system by focusing on those activities that have the greatest impact on satisfaction while deemphasizing, and/or eliminating the costs associated with those with the least value added. (Carden, et al., 2004:1648).

Carden, et al., (2004) argues that customers are valuable assets whose value can be enhanced through long-term stream of revenue, and that building strong relationship with customers will help reduce customer turnover and increase profitability. This is because it costs less to retain customers than it is to acquire new ones, argues Carden, et al., (2004).

The major difference between the operation of the American and South African blood services from the service quality viewpoint, is that in South Africa, blood bank employees are in constant contact with the customers (hospital doctors) when they receive service requests, through to carrying out the service, and ultimately issuing blood or blood products to the customer, while in America blood bank compatibility tests and issuing of blood is carried out by hospitals themselves. In the service industry all employees have the responsibility and opportunity to directly impact upon service perception and quality, and deal effectively with customers, argues Malherbe, et al., (2003). The bottom line in the Service Profit Chain (SPC), before any subsequent achievements or successes can be made by the service organization, is therefore its internal systems and human resource policies, namely, employee support received from colleagues and the organization, employee capability and responsibility, degree of empowerment, and finally, employee enthusiasm and satisfaction, (Malherbe, et al., 2003).

The relationship between employees' perceptions of service quality and employee satisfaction has also been reported by Heskett, Jones, Loveman, Sasser and Schlesinger, (1994) in a study of MCI's seven telephone customer service centers. The study also linked employee satisfaction directly to customer satisfaction and customer intentions to continue to use MCI services. Reichheld and Sasser (1990) in Heskett, et al. (1994), endorsing the importance of customer loyalty as the driver of profitability and growth, estimate that a 5% increase in customer loyalty can produce profit increases from 25% to 85%. This is a view that is categorically disputed by Sharp (2005), who refers to it as a popular modern marketing myth and a misleading assertion. Sharp, (2005) further explains that Reichheld and Sasser's article does not empirically show that lower defection rates cause massive increases in firm profits, and in fact Sharp, (2005) claims that their misleading assertion is not even based on any research.

In a study on customer satisfaction measurement in South African local government, Nel, (2003) explains that many companies are aiming at high satisfaction levels because customers who are just satisfied still find it easy to switch when a better proposition comes along, while on the other hand if the expectations of a customer

are exceeded, the customer becomes highly satisfied and are much less ready to switch. Nitecki, (1997) in a study on measuring service quality in academic libraries approaches services quality , as perceived by consumers, as a function of what consumers expect and how well the firm performs in providing the service, and SERVQUAL is described to be among the most popular assessment tools of service quality in Nitecki's study.

2.8 The Design of Products and Services:

The challenge and objectives of designing products and services is to satisfy customers by meeting their actual or anticipated needs and expectations. This can be achieved by gathering information from customers in order to understand and identify their needs and expectations, and also look for possible market opportunities. The customers' needs and expectations as interpreted by the market research are then taken, and a specification for a product or service is created. The specification is then used as the input to the business operation which creates and delivers the product or service to its customers. "Service designers try to put together a service which customers will see as at least meeting their expectations. Yet at the same time the service must be within capabilities of the business operation and be delivered at reasonable cost." (Pycraft, Singh, Phihlela, Slack, Chambers, Harland, Harrison and Johnston, 2000:107).

Johne and Storey (1998:185) in Chan (2003:99) define service product as "the predominantly intangible core attributes which customers purchase". The following are the characteristics of service products as described by Chan (2003:99):

- Service products are predominantly intangible (even though efforts may be made to make them more tangible, for example by supporting financial service products with attractive looking plastic cards).
- Service products are predominantly processes rather than "things".
- Service products are often variable in quality because service is commonly produced and consumed simultaneously. Customers of services risk buying an outcome and/or experience, which they cannot fully assess prior to purchase.

Indeed the last "bulleted" statement above bears testimony to the way in which service is provided to hospital by blood bank, in that, the hospital relies on the provider of service (blood bank) to have done all the necessary testing prior to

rendering the unit of blood safe for transfusion into a particular patient. There is no way the hospital personnel would be able fully assess the unit of blood as compatible to the patient in whom it is to be infused, other than perhaps checking for identification labels and perhaps leaks and discolouration. For this reason customers of services indeed risk buying an outcome and/or experience, which they cannot fully assess prior to purchase.

> Services represent a huge and growing percentage of the world economy, yet particularly in the United States, customer perceptions of service are not good. Given the economic growth in services, their profit and competitive advantage potential, and the overall decline in customer satisfaction with services, it seems that the potential and opportunities for companies who can excel in services marketing, management, and delivery have never been greater. (Zeithaml, et al., 2003:2).

2.9 The Importance of Services to Economy:

According to the Business Day (2004) an estimated 85% of the industrialized world economy today is based on services, confirming the importance of services to the economy, and yet the number of companies that neglect customer service is shocking. With the decline in the economic importance of the manufacturing sector, and the corresponding growth of the services sector, Wisniewski (2001a) argues that the service quality became a key management issue particularly in private sector competitiveness. "It is accepted globally that tourism, technology and telecommunications will be the three interconnected engines of growth in the twenty-first century", ***http://www.upe.ac.za/courses/coursedetails.asp?id=164***. The services industry including the healthcare industry is also contributing enormously to the economy of South Africa. In order to remain commercially competitive businesses under pressure to provide high quality services that the customers demand. Although the blood transfusion service is a monopolistic organization, it is no exception in its endeavor to provide high quality service for its customers.

According to Rust, et al. (1994) in Chan (2003), there has been growing realization of the importance of services in the world economy since the late 1970s. In a recent study of service quality, Kolb (2005b) of Ask Africa contends in the findings of the Orange Index that service quality in South Africa has made enormous gains since the early years of the decade. According to this study, the winning service industry

as identified by the Orange Index in 2004 (a measure of service quality developed by Ask Africa) was Telecommunications.

Service quality ratings may be influenced by a number of variables including significant improvements on the part of the company, but these may also be influenced by expectations which in turn are based on previous experiences. For instance customers who had previous high rating service quality experiences in a similar or different industry, may have high expectations of service quality in the industry being researched. Likewise, customers with no previous service quality or with previous low rated service quality experience are likely not to be dissatisfied with service quality of the organization being researched. In the case of the SANBS, customers' service quality ratings are likely to be influenced by expectations based on experiences gained in different health institutions, rather than in different companies offering similar services, as there are only two entities in this regard currently.

The differences in service quality offerings between health institutions may be influenced by a number of factors, including historical experiences with independent Blood Transfusion Services from which these health institutions were serviced. Differences may also be influenced by the location of the health institution in relation to the bigger cities and to the nearest SANBS blood bank, which enjoy better service quality compared to institutions in remote areas and away from the SANBS blood banks. Other factors that may play a role in differences in service provision include roads infrastructure, where some hospitals are remotely located and at times inaccessible by roads.

In their article, Heskett, et al. (1994) explain how, in the new paradigm, profitability and growth is derived from employee satisfaction and loyalty, which in turn has an impact on value of products and services, leading to customer satisfaction and loyalty. The focus of new economics of service, as stated by Heskett, et al. (1994) in their study, is on investing in people (frontline workers and customers), and in technology and appropriate business policies such as automation of labour-intensive tasks, recruitment strategies, training and compensation-linked performance management. In this study, Heskett, et al. (1994) stated that when companies make

employees and customers paramount, a radical shift occurs in the way companies manage and measure success.

Heskett, et al. (1994) further emphasizes that the new economics of service requires innovative measurement techniques, which calibrate the impact of employee satisfaction, loyalty, and productivity on the value of products and services delivered, so that managers can build customer satisfaction and loyalty and assess the corresponding impact on profitability and growth. It is the researcher's view that innovative measurement techniques should also calibrate customer satisfaction through their perceptions and expectations, in addition to measuring employee satisfaction.

CHAPTER 3

3. RESEARCH METHODS AND METHODOLOGY

This chapter describes the aims of the research. It is broken down into hypotheses and research questions. Procedures that have been followed in conducting the research are explained. Coherence between research paradigm research method, data collection method and sampling is described and demonstrated, together with the characteristics of the study sample.

3.1 Aim of the Research (Research Objectives):

The purpose of the study is to assess service quality that SANBS provides to its customers, by measuring customers' perceptions and compare them to their expectations of service quality, in order to identify gaps in the service provision.

The study will address whether there is a statistically significant difference between the services offered by the SANBS as perceived by its customers, and the expectations of its customers. Within the foregoing broader research context, the study will focus on the following subsections of research objectives:

1. To determine the extent to which customers are satisfied or not satisfied with the service they receive from the SANBS using the ten-dimensional format of SERVQUAL model, developed by Parasuraman, et al., (1985), modified to the specific service quality requirements of the blood transfusion service industry. In order to corroborate the clarity of the language, and the reliability and validity of the study, the instrument used was examined by the Medical Division of the SANBS. The medical staff of the SANBS were at some stage the SANBS' customers themselves.
2. To establish customers' perceptions of the service they receive using a multiple-item scale (SERVQUAL).
3. To establish customers' expectations of the service, and compare them to their perceptions of the service they currently receive. The comparison is made along each service quality dimension, across different parts of same service on a geographical basis, and across different customer groups on a customer category basis.
4. To recommend implementation of appropriate service quality performance improvement procedures where necessary. Identification of service quality gaps

can help the organization accurately target areas for performance improvement. Likewise if gap scores are positive in some areas, this allows the organization to review the service and consider such changes as re-deployment of resources into other areas where these may be under performing.

Based on the research objectives, the following hypotheses were developed:

Null Hypothesis. H_o: $\mu_1 = \mu_2$

There is no significant difference or gap between the services offered by the South African National Blood Service (SANBS) as perceived by its customers compared to expectations of its customers. (This means that the services of the SANBS as perceived by its customers, do meet customers' expectations).

Research (Alternative) Hypothesis. H_1: $\mu_1 \neq \mu_2$

There is a significant difference or gap between the services offered by the South African National Blood Service (SANBS) as perceived by its customers, relative to the expectations of its customers. (This means that the services of the SANBS as perceived by its customers, do not meet customers' expectations).

3.2 Research Paradigm:

The research conducted is primarily based on empirical techniques that will enable to make a "philosophical assumption that evidence, as opposed to thought or discourse, is required to be able to make a satisfactory claim to have added to the body of knowledge" (Remenyi, 1996:25). Usable evidence has been collected through a survey conducted using SERVQUAL standard questionnaires that have been modified to specific service quality requirements of the SANBS. This empirical research paradigm is approached from a positivist view, having "thorough understanding of the theoretical issues surrounding the subject, which have been studied, and about which evidence has been collected" (Remenyi, 1996:25). From a positivism standpoint, Remenyi (1996) describes the researcher as an objective analyst and interpreter of a tangible reality, thus carrying out the study on quantifiable observations that has been statistically analyzed.

The results obtained can be generalized or transferred to other customers in other areas served by the SANBS, as the sample have been of sufficient size, (54.0%)

and represent the population from which this was obtained. Transferability is enhanced through the parameters and assumptions of the research context described above. For instance, the researcher is not responsible for making the judgment of transferability of results to areas outside of the SANBS.

The quality of the research design has been ensured through use of well-designed and carefully controlled questionnaires. Internal validity is thus ensured through serial numbering of all questionnaires sent out to participants, and these have been collated as they were returned in order to avoid research errors such as repeatability or replicability. Photocopied or return by facsimile questionnaires were not acceptable. Participants have used an acceptable identification mark such as hospital official stamp when returning questionnaires. To ensure reliability, all questionnaires contained the same type of questions and these have been administered similarly. The researcher acknowledges that the participants are in different settings in terms of the size, and the geographical positioning of the hospitals, and as such these differences may affect the research study.

The ethical issues in the research relate to interacting with the SANBS customers, which may be viewed as both sensitive and interference. In this regard, prior authorization from the SANBS authorities has been sought, and the questionnaires have been prior approved by the medical division of the organization and the Director of Technical Services. Confidentiality in respect of information provided by the respondents has been strictly maintained. Respondents have not disclosed their personal names and identities in order to maintain anonymity and avoid biased analysis of data.

3.3 Service Quality Dimensions:

A measure of service quality requirements in the blood transfusion industry should therefore take into account the following dimensions of service delivery, adapted from the original SERVQUAL model, (Oliver, 1997) as shown in Figure 3-1.

Tangibles dimension:

The tangibles dimension is concerned with the use of equipment and technology, the appearance and dress of staff, appearance and design of the organization's forms

and other material used in business transactions, and the appearance of business' physical facilities. Each of these statements will have an impact on the service quality as perceived by the customer. For instance a customer may perceive that SANBS is using antiquated equipment and technology, and expects the organization to be in the forefront in terms of technology and equipment used.

Reliability dimension:

This dimension is concerned with the provider's ability to perform the promised service dependably and accurately. In this study reliability involves the ability to provide services at the time the organization promises to do so. In the blood transfusion industry, the reliability dimension is also concerned with whether the organization keeps clinicians informed about when the services will be available, or whether staff follow exact specification of the clinicians' request. It may also be concerned with the provision of service that is free of errors, and the consistency in the level of service provided by staff at different times of the day.

Responsiveness dimension:

This dimension is concerned with willingness and ability to provide a prompt service consistently, and the prioritizing of service requests according to their varying degrees of urgency. In this study, a measure of responsiveness will be the hospitals' satisfaction with timelines with which the SANBS delivers emergency and non-emergency (routine) blood orders or service requests.

Competence dimension:

Competence dimension deals with possession of required skills and knowledge to perform the job, and may also include availability of material documents that give guidelines on appropriate use of the service. In this study a measure of competence will be the hospitals' satisfaction with the knowledge displayed by the SANBS blood bank staff when interacting with the hospital. This may also be the degree with which the hospital is satisfied with the handling of their queries, and provision of medical and technical support, including educational programmes and documentation material where appropriate.

Courtesy dimension:

This dimension involves politeness, respect, consideration and friendliness of staff when interacting with customers. This may be physical personal contact or via telephones or electronic mail. The level of hospitals' satisfaction with the blood bank employees' ability to be consistently courteous, and maintain a pleasant attitude with the hospital (clinicians and nursing personnel) will be a measure of courtesy in this study.

Credibility dimension:

This dimension is concerned with trustworthiness and honesty of service provider, not only in dealings with customers, but also should be internalized. "Analysis shows that without nurturing trust within the organization, employee loyalty suffers. In turn service quality suffers, and ultimately returns to shareholders," Whitener (2001) in Kolb (2005a:4). In this study a measure of credibility will be the hospitals' satisfaction with the organization's reputation, accuracy of responses given with other reliable sources, and where appropriate, the guarantee of services provided.

Security dimension:

Security dimension deals with issues of safety while accessing the service provider, and may also involve safe keeping of confidential documents that are used in the business transactions. Safe accessing of the SANBS blood banks, including safe keeping of patients' records and other documents of confidential nature will constitute a measure of security in this study.

Accessibility dimension:

Accessibility dimension is concerned with approachability and ease with which customers can access staff at different levels of the organization either in person or by telephone or e-mail. This dimension may also be concerned with convenient location of access point of service provider. The ease with which the hospitals can access knowledgeable blood bank personnel and medical staff of the SANBS either in person or by telephone or e-mail will be a measure of accessibility in this study.

Communication dimension:

Communication dimension deals with issues of listening to customers and showing understanding and concern to their problems. In this study communication is

measured by the hospitals' level of satisfaction with blood bank staff's demonstration of understanding and listening to customers' problems. This may include explanation of various options to customers and communicating possible delays in service provision where this proves necessary.

Understanding the customer:

This dimension is concerned with making an effort to know customers and their specific needs. It may also take into account issues of level of service provided and cost of service, and their consistency with the customers' requirements and affordability. In this study, understanding the customer is measured by the ability of the blood bank staff to recognize each regular customer and try to determine what their specific requirements are, and the flexibility to accommodate the clinicians' schedules. It is also a measure of the level and cost of service in relation to the hospitals' requirements and affordability.

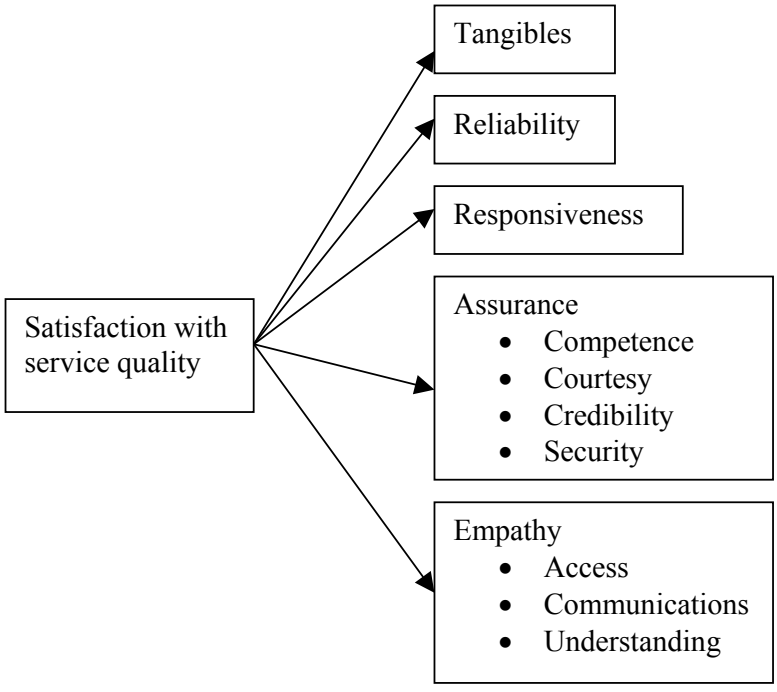

Figure 3-1 Conceptual model of SERVQUAL instrument. Reproduced from Carden and DelliFraine (2004). Adapted from Oliver (1997).

3.4 Questionnaire layout:

In the survey the service quality of SANBS is evaluated in terms of customer perceptions and expectations (on a rating scale of 1 for strongly disagree, to 7 for strongly agree) for 10 different dimensions as shown in appendix II. The respondents (heads of hospitals) were classified according to the zone where the hospital is located in (KwaZulu-Natal or Eastern Cape) and according to hospital category or type (State rural hospital, State urban hospital or Private hospital).

3.5 Data Collection Methods and Sampling:

Blood-utilizing hospitals in the Eastern Cape and KwaZulu-Natal Provinces constitute the population under study. The sample is comprised of simple random selection of hospitals that represent rural state hospitals, urban state hospitals and private hospitals, to which the survey questionnaires were distributed. Measurements for the 10 variables make up data set for customers' perceptions on one hand, and for customers' expectations on the other hand.

The hospital is the unit of analysis for this study. The data has been collected through completion of questionnaires sent to medical managers in hospitals in the Eastern Cape and KwaZulu-Natal Provinces. "Questionnaires are a useful tool for investigating patterns and trends in data and are frequently used with success in management, marketing and consumer research", (Easterby-Smith, et al., 1991 as cited in Othman, et al., 2001:4). Some of the questionnaires were sent by courier services, via the SANBS blood banks that service these customers, while others, where possible were hand delivered. Many of the questionnaires were returned by post, while others were returned via the blood banks of the SANBS. Upon receipt of completed questionnaires, these were captured directly into a research study database for analyses. Hospitals that did not use blood and blood products (e.g. psychiatric) were excluded from the study.

The aim of the study was to include all hospitals in the East Coast Region of the SANBS that utilize the services of the SANBS. The East Coast Region comprises the Eastern Cape and KwaZulu-Natal Provinces. Survey questionnaires were sent out to medical managers of 113 blood-utilizing hospitals out of a total of 163 (69.3% coverage). A total of 92 survey questionnaires were returned (response rate of

81.4%), with 4 questionnaires rendered unusable due to not being completed for one reason or another. The final sample size is 88 and is included in the final study database. The somewhat high response rate was attributable to the SANBS blood bank employees who helped distribute and return the survey questionnaires.

The survey instrument (questionnaire) consisting of two sections containing 42 statements (items) each was developed for assessing customer perceptions and expectations of service quality in the SANBS, as shown in Appendix II. The questionnaire contains statements based on the original ten dimensions SERVQUAL model for measuring consumer perceptions of service quality, modified and tailored to specific service quality requirements of the blood transfusion industry.

3.6 Characteristics of the sample:

The categorization of hospitals into state hospitals situated in rural areas and state hospitals in urban areas, and the private hospitals (all situated in urban areas), allows a comparative analysis of the differences of their needs and hence the differences with which each category perceives the SANBS service quality in relation to what each expect. As shown in Figure 3-2 below, of the 163 hospitals in the area under study, 48 (29.0%) are state hospitals situated in the rural villages of the two provinces, predominantly in the Transkei region of the Eastern Cape Province and the central to northern parts of KwaZulu-Natal Province. Seventy-nine (49.0%) and nearly half the total number of all hospitals in the area being studied, are state hospitals situated in the towns and cities of the two provinces. The remaining 36 (22.0%) comprise private hospitals and these are all found in the urban areas of the two provinces.

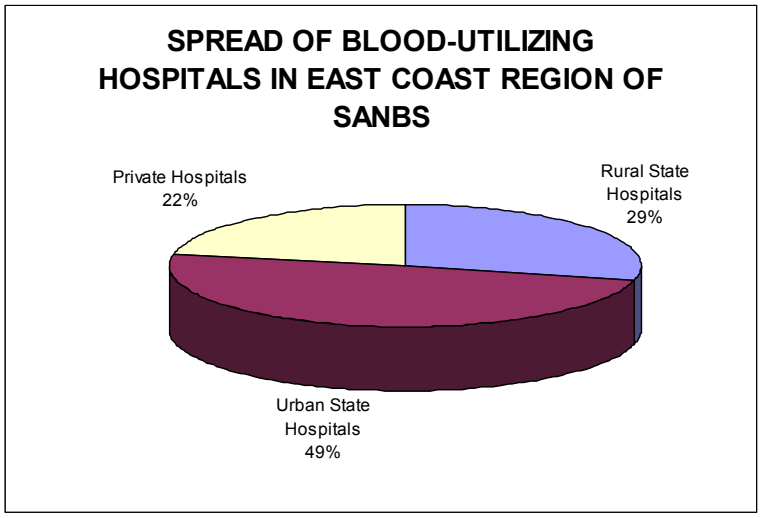

Figure 3-2: Graphical representation of the distribution of 163 blood-utilizing hospitals across Eastern Cape and KwaZulu-Natal Provinces

It was ensured that the distribution of the survey questionnaires covered all three groups of hospitals or hospitals in all these areas, so as to cover all possible scenarios in respect to areas of operation and differences in authorities of institutions. Rurality was defined in terms of the hospital being situated in a rural village away from towns and city environment. Urban hospitals include hospitals in big cities and those in smaller towns in the countryside. Comparative analysis is also made between hospitals situated in the KwaZulu-Natal zone of the organization and those situated in the Eastern Cape zone of the organization. The difference in state hospitals in particular, in these zones is that they are under the control of the respective provincial authorities, and may not necessarily have similar service quality requirements. For instance, currently, the SANBS does not make available a blood product known as fresh frozen plasma or a service such as antenatal testing, to KwaZulu-Natal hospitals, while this product and service is available to hospitals in the Eastern Cape.

The survey questionnaires were sent out to a total of 113 (69.0%) hospitals' medical managers. As shown in Figure 3-3 below, of the 113 hospitals, 34 (30.0%) comprised those questionnaires sent to rural hospitals, representing 71.0% coverage of all rural state hospitals in the area being studied, while 58 (51.0%) comprised those survey questionnaires sent to urban state hospitals, representing 73.0% coverage of all urban state hospitals in the area under consideration. Private

hospitals covered comprised 21 (19.0%) of the total sent, and this figure represents 58.0% coverage of all private hospitals in the area under study.

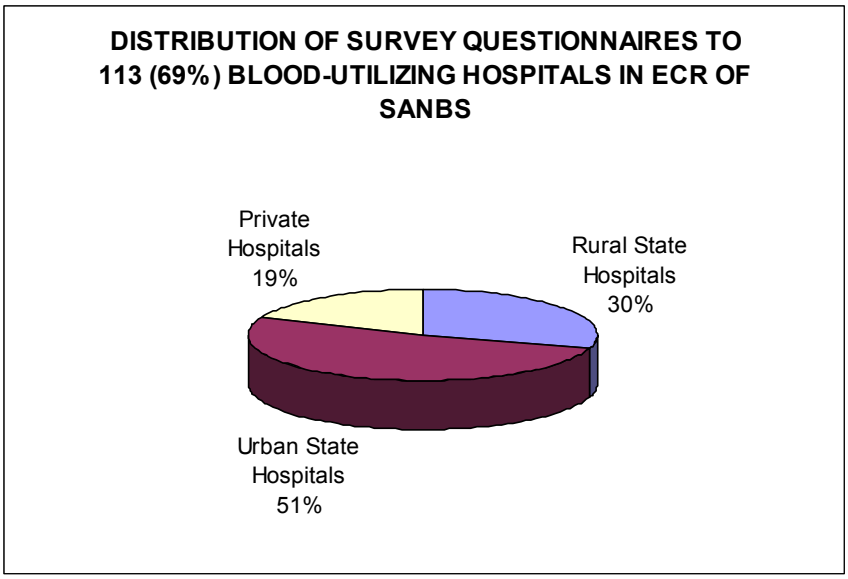

Figure 3-3: Graphical representation of the distribution of survey questionnaires to 113 (69%) blood-utilizing hospitals across Eastern Cape and KwaZulu-Natal Provinces

A total of 92 questionnaires were returned (81.0% response rate), and 29 (31.0%) of these comprised questionnaires returned from rural state hospitals, representing 85.0% of all rural state hospitals sent. As shown in Figure 3-4 below, forty-four (48%) of these were returned from urban state hospitals, representing 76.0% response rate amongst urban state hospitals sent. A total of 19 (21.0%) of the questionnaires sent were returned from private hospitals, representing 90.0% response rate amongst private hospitals sent.

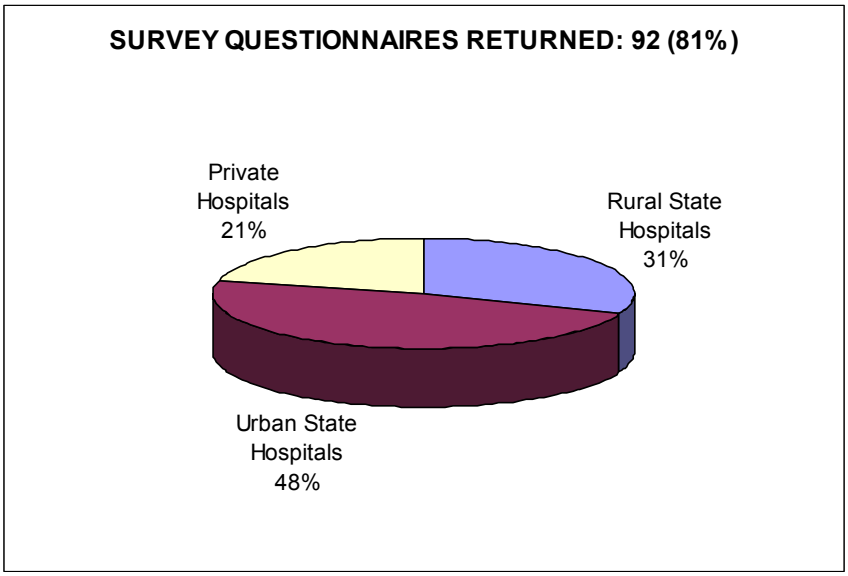

Figure 3-4: Graphical representation of the **s**urvey questionnaires returned: 92 (81%)

Of the 44 survey questionnaires returned from urban state hospitals, 4 were rendered unsuitable for inclusion in the study due to improper completion. A total of 88 blood-utilizing hospitals were included in the final study database as shown below in Figure 3-5 (represented by hospital category), and Figure 3-6 (represented by zone).

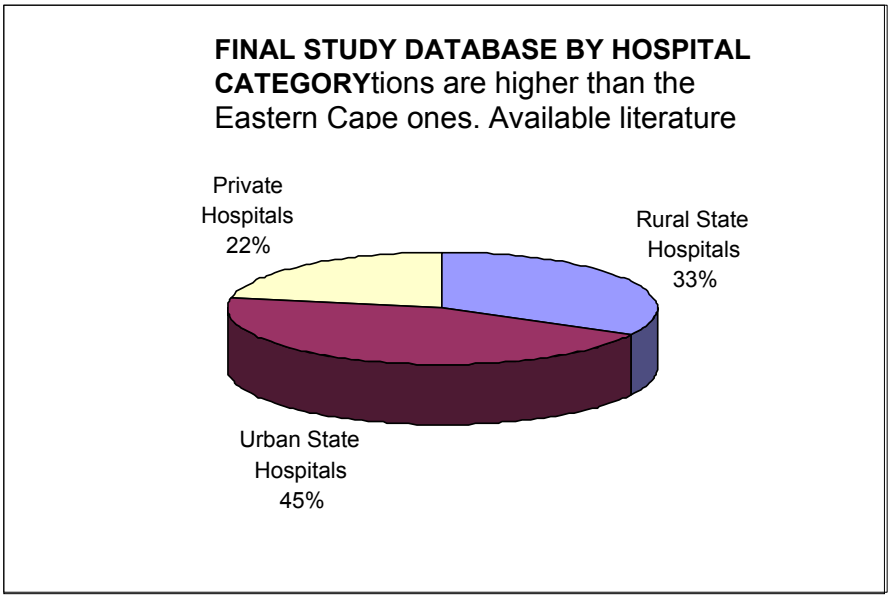

Figure 3-5: Graphical representation of the Final Study Database by hospital category: 88 (78%)

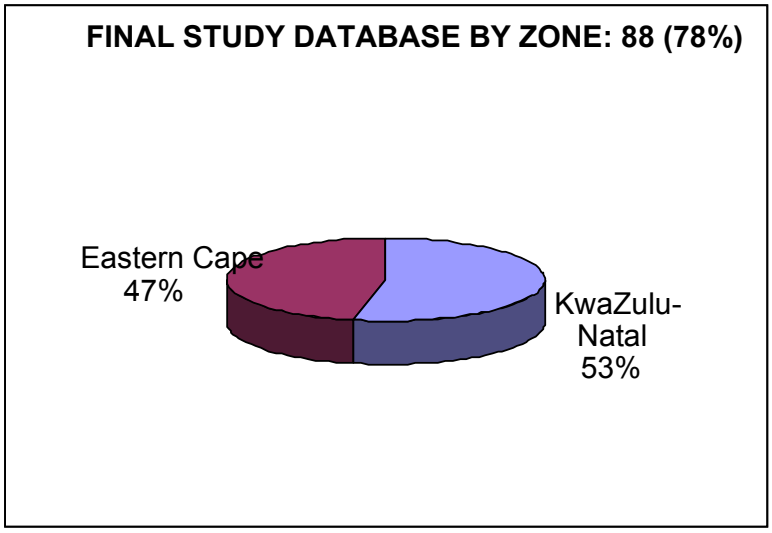

Figure 3-6: Graphical representation of the Final Study Database by zone: 88 (78%)

CHAPTER 4

4. FINDINGS

This chapter presents the results of the study based on the research objectives. The first section of this chapter presents the expectations and perceptions frequencies of the different dimensions by zone. This is followed by the presentation of expectations and perceptions frequencies of the different dimensions by hospital type (category). The latter section of this chapter presents frequencies of differences (the gap) between expectations and perceptions for the zones and hospital types.

4.1 Frequencies by zone:

Table 4-1 below shows the expectations frequencies of the ten SERVQUAL dimensions by zone. E.g. the expectations statements in the tangibles dimension were rated at a 6 by 43 respondents, and at a 7 by 145 respondents in the KwaZulu-Natal zone.

Table 4-1: Frequencies by zone for expectations

ZONE			EXPECTATIONS							Total
			Strongly disagree						Strongly agree	
			1	2	3	4	5	6	7	
KwaZulu-Natal	DIMEN	Tangibles					0	43	145	188
		Reliability					0	57	225	282
		responsiveness					0	39	196	235
		competence					0	13	175	188
		Courtesy					0	45	143	188
		Credibility					0	37	198	235
		Security					0	34	107	141
		accessibility					1	71	257	329
		communication					0	31	157	188
		understanding the customer					0	30	158	188
	Total						1	400	1761	2162
Eastern Cape	DIMEN	Tangibles				0	4	44	116	164
		Reliability				0	2	90	154	246
		responsiveness				0	5	64	136	205
		competence				1	1	32	130	164
		Courtesy				0	3	45	116	164
		Credibility				0	4	60	141	205
		Security				2	1	31	89	123
		accessibility				2	5	97	183	287
		communication				2	2	55	105	164
		understanding the customer				0	1	64	99	164
	Total					7	28	582	1269	1886

The figures along each dimension in table 4-1 above are determined by the number of questions or statements per dimension, and the number of respondents in each zone, hence the totals are not the same. E.g. the tangibles dimension has four questions or statements while the reliability dimension has six questions or statements, hence 188 and 282 totals respectively.

Table 4-2 below shows the perceptions frequencies of the ten SERVQUAL dimensions by zone. E.g. the perceptions statements in the tangibles dimension below were rated at a 7 by 33 respondents, at a 6 by 51 respondents, and at a 5 by 64 respondents in the KwaZulu-Natal zone.

Table 4-2: Frequencies by zone for perceptions

			PERCEPTIONS							Total
			Strongly disagree						Strongly agree	
ZONE			1	2	3	4	5	6	7	
KwaZulu-Natal	DIMEN	tangibles	0	3	4	33	64	51	33	188
		reliability	2	1	14	54	81	77	53	282
		responsiveness	1	1	15	54	47	80	37	235
		competence	0	0	7	41	42	60	38	188
		courtesy	1	2	14	27	45	63	36	188
		credibility	0	0	14	33	62	71	55	235
		security	0	1	4	30	33	46	27	141
		accessibility	33	28	22	65	71	71	39	329
		communication	0	4	6	38	65	49	26	188
		customer	3	1	7	48	47	62	20	188
	Total		40	41	107	423	557	630	364	2162
Eastern Cape	DIMEN	tangibles	0	2	10	36	61	34	21	164
		reliability	1	2	14	49	70	69	41	246
		responsiveness	0	3	18	41	54	56	33	205
		competence	0	1	17	45	25	50	26	164
		courtesy	2	1	10	34	47	49	21	164
		credibility	2	2	12	32	66	62	29	205
		security	0	0	9	32	28	41	13	123
		accessibility	26	26	14	74	52	66	29	287
		communication	0	2	16	36	48	35	27	164
		understanding the customer	4	6	19	45	37	34	19	164
	Total		35	45	139	424	488	496	259	1886

The following condensed table, Table 4-3, is constructed from tables 4-1 and 4-2 to make data easier to plot and interpret the ratings. The correspondence analysis bi-plot (Figure 4-1) that follows shows where the corresponding expectations and perceptions ratings are plotted for the Eastern Cape and KwaZulu-Natal Zones.

Table 4-3: Condensed table of expectations and perceptions by zone

MEASURE			RATING			Total
			below 6	6	7	
Expectation	ZONE	KwaZulu-Natal	1	400	1761	2162
		Eastern Cape	35	582	1269	1886
	Total		36	982	3030	4048
Perception	ZONE	KwaZulu-Natal	1168	630	364	2162
		Eastern Cape	1132	496	258	1886
	Total		2300	1126	622	4048

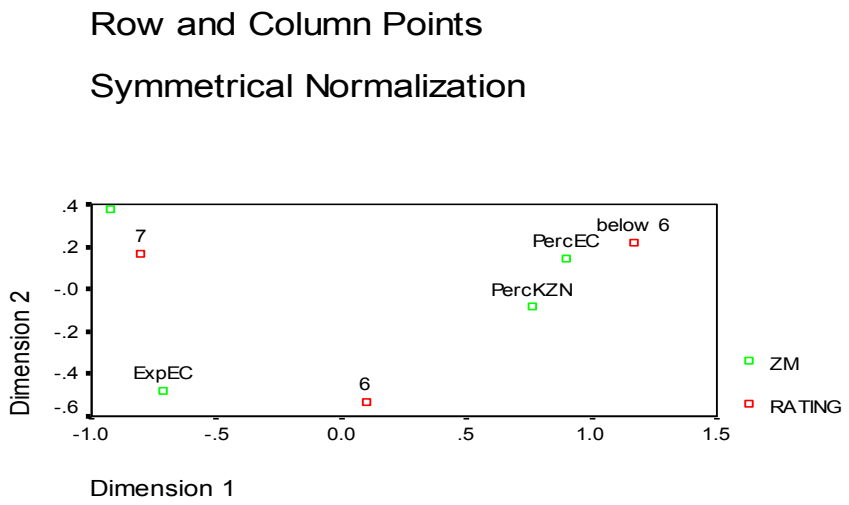

Figure 4-1: Correspondence analysis bi-plot of counts in table 4-3

The top left plot in Figure 4-1 refers to ExpKZN (expectations for KwaZulu-Natal). ZM refers to a combination of zone and measure (perception or expectation).

The above plot shows that the perceptions in both zones are associated with a rating of below 6, the expectations for Eastern Cape with a rating of between 6 and 7 and the expectations for KwaZulu-Natal with a rating of 7. This means that the expectation ratings are higher than the perception ones and the KwaZulu-Natal expectation ratings are higher than the Eastern Cape ones.

4.2 Frequencies by hospital type:

Table 4-4 below shows the expectations frequencies of the ten SERVQUAL dimensions by hospital type. E.g. the expectations statements in the tangibles dimension below were rated at 7 by 95 respondents, at a 6 by 17 respondents, and at a 5 by 4 respondents in the State Rural Hospitals of the area under study.

Table 4-4: Frequencies by hospital type for expectations

HOSPT			EXPECT				Total
			4	5	6	7	
state rural	DIMEN	Tangibles	0	4	17	95	116
		Reliability	0	2	60	112	174
		Responsiveness	0	5	32	108	145
		Competence	1	1	16	98	116
		Courtesy	0	3	29	84	116
		Credibility	0	4	34	107	145
		Security	2	1	16	68	87
		Accessibility	2	5	48	148	203
		Communication	2	2	34	78	116
		Customer	0	1	35	80	116
	Total		7	28	321	978	1334
state urban	DIMEN	Tangibles		0	56	100	156
		Reliability		0	67	167	234
		Responsiveness		0	60	135	195
		competence		0	26	130	156
		courtesy		0	55	101	156
		credibility		0	56	139	195
		security		0	36	81	117
		accessibility		1	99	173	273
		communication		0	41	115	156
		customer		0	47	109	156
	Total			1	543	1250	1794
Private	DIMEN	tangibles			14	66	80
		reliability			20	100	120
		responsiveness			11	89	100
		competence			3	77	80
		courtesy			6	74	80
		credibility			7	93	100
		security			13	47	60
		accessibility			21	119	140
		communication			11	69	80
		customer			12	68	80
	Total				118	802	920

Table 4-5 below shows the perceptions frequencies of the ten SERVQUAL dimensions by hospital type. E.g. The perceptions statements in the tangibles dimension below, were rated at a 7 by 13 respondents, at a 6 by 19 respondents, at a 5 by 43 respondents, and at a 4 by 33 respondents in the State Rural Hospitals.

Table 4-5: Frequencies by hospital type for perceptions

HOSPT			PERCEP							Total
			1	2	3	4	5	6	7	
state rural	DIMEN	tangibles	0	1	7	33	43	19	13	116
		reliability	0	2	5	46	56	44	21	174
		responsiveness	0	0	18	36	46	32	13	145
		competence	0	0	13	43	28	24	8	116
		courtesy	2	1	9	26	40	27	11	116
		credibility	2	0	12	27	63	29	12	145
		security	0	1	11	26	24	16	9	87
		accessibility	18	20	12	67	34	38	14	203
		communication	0	2	9	28	52	15	10	116
		customer	4	2	10	35	35	24	6	116
	Total		26	29	106	367	421	268	117	1334
state urban	DIMEN	tangibles	0	4	5	29	54	36	28	156
		reliability	2	1	20	29	56	76	50	234
		responsiveness	1	3	9	38	32	74	38	195
		competence	0	1	7	26	21	61	40	156
		courtesy	0	0	10	24	28	60	34	156
		credibility	0	0	7	27	39	73	49	195
		security	0	0	2	20	25	50	20	117
		accessibility	31	24	11	53	55	66	33	273
		communication	0	1	9	35	36	46	29	156
		customer	3	2	11	32	32	55	21	156
	Total		37	36	91	313	378	597	342	1794
Private	DIMEN	tangibles	0	0	2	7	28	30	13	80
		reliability	1	0	3	28	39	26	23	120
		responsiveness	0	1	6	21	23	30	19	100
		competence	0	0	4	17	18	25	16	80
		courtesy	1	2	5	11	24	25	12	80
		credibility	0	2	7	11	26	31	23	100
		security	0	0	0	16	12	21	11	60
		accessibility	10	10	13	19	34	33	21	140
		communication	0	3	4	11	25	23	14	80
		customer	0	3	5	26	17	17	12	80
	Total		12	21	49	167	246	261	164	920

The following condensed table, Table 4-6, is constructed from tables 4-4 and 4-5 to make the data easier to interpret and plot. The correspondence analysis bi-plot (Figure 4-2) that follows shows where the corresponding expectations and perceptions ratings are plotted for the State Rural Hospitals, the State Urban Hospital, and the Private Hospitals in a plotted representation.

Table 4-6: Condensed table of expectations and perceptions by hospital type

MEASURE			RATING			Total
			below 6	6	7	
Expectation	HOSP	State rural	35	321	978	1334
		State urban	1	543	1250	1794
		Private	0	118	802	920
	Total		36	982	3030	4048
Perception	HOSP	State rural	950	268	116	1334
		State urban	855	597	342	1794
		Private	495	261	164	920
	Total		2300	1126	622	4048

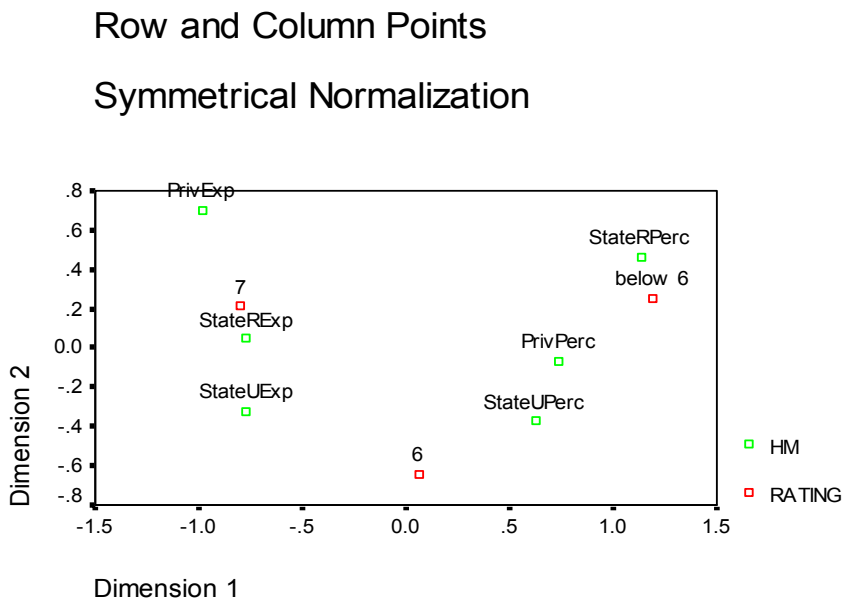

Figure 4-2: Correspondence analysis bi-plot of counts in table 4-6

HM refers to a combination of hospital type and measure (perception or expectation). The above plot shows that expectations are greater than perceptions (as was noticed in the plot in Figure 4-1). The plotted points for the expectations of rural state hospitals and private hospitals are closest to a rating of 7, that for the expectations of urban state hospitals are between ratings of 6 and 7, those for the perceptions of private and urban state hospitals between ratings of 6 and below 6 and that for rural state hospitals at a rating of below 6. This suggests that the expectations of private hospitals and rural state hospitals have a higher rating than that of urban state hospitals and that the perceptions of private and urban state hospitals have a higher rating than that of rural state hospitals.

4.3 Frequencies of differences between expectations and perceptions:

A summary of the difference (difrnc) between the expectation and perception ratings for the respondents of KwaZulu-Natal Zone in the state rural hospitals, state urban hospitals and private hospitals is shown in Table 4-7: Range difference: (-1 to +2).

Table 4-7: Frequencies by zone and hospital type for differences of KwaZulu –Natal zone respondents. Range difference: (-1 to +2).

ZONE	HOSPT			DIFRNC				Total
				-1	0	1	2	
KwaZulu-Natal	state rural	DIMEN	Tangibles	1	4	11	17	33
			Reliability	2	13	22	18	55
			responsiveness	0	8	13	17	38
			competence	0	4	10	15	29
			Courtesy	1	9	14	9	33
			Credibility	0	5	19	18	42
			Security	1	6	8	10	25
			accessibility	1	11	13	14	39
			communication	0	5	11	19	35
			Customer	0	1	15	17	33
		Total		6	66	136	154	362
	state urban	DIMEN	Tangibles	3	22	26	25	76
			Reliability	5	35	43	27	110
			responsiveness	2	27	43	24	96
			competence	1	29	34	14	78
			Courtesy	1	35	32	16	84
			Credibility	5	43	34	22	104
			Security	2	20	29	9	60
			accessibility	1	33	41	33	108
			communication	0	23	22	31	76
			Customer	0	20	32	22	74
		Total		20	287	336	223	866
	Private	DIMEN	Tangibles	0	12	20	16	48
			Reliability	0	10	20	24	54
			responsiveness	2	8	20	15	45
			competence	0	6	19	12	37
			Courtesy	1	4	17	12	34
			Credibility	1	13	17	17	48
			Security	0	9	9	11	29
			accessibility	0	11	16	20	47
			communication	0	5	17	20	42
			Customer	0	7	15	10	32
		Total		4	85	170	157	416

A summary of the difference (difrnc) between the expectation and perception ratings for the respondents of Eastern Cape Zone in the State Rural Hospitals, State Urban

Hospitals and Private Hospitals in is shown in Table 4-8 below. Range difference: (-2 to +2).

Table 4-8: Frequencies by zone and hospital type for differences of the Eastern Cape zone respondents. Range difference: (-2 to +2).

ZONE	HOSPT			DIFRNC					Total
				-2	-1	0	1	2	
Eastern Cape	state rural	DIMEN	Tangibles	2	2	9	8	25	46
			Reliability	0	1	22	26	33	82
			responsiveness	3	2	11	18	27	61
			competence	0	2	10	9	15	36
			Courtesy	0	3	8	18	18	47
			Credibility	1	1	11	23	36	72
			Security	0	1	9	7	13	30
			accessibility	0	0	18	23	24	65
			communication	1	2	9	17	22	51
			Customer	0	0	9	17	23	49
		Total		7	14	116	166	236	539
	state urban	DIMEN	Tangibles		3	12	18	22	55
			Reliability		7	23	31	18	79
			responsiveness		7	21	20	18	66
			competence		2	14	26	9	51
			Courtesy		4	20	14	8	46
			Credibility		1	28	24	13	66
			Security		3	12	13	11	39
			accessibility		4	26	15	17	62
			communication		7	8	20	17	52
			Customer		5	14	13	14	46
		Total			43	178	194	147	562
	private	DIMEN	Tangibles		0	7	10	7	24
			Reliability		1	16	12	8	37
			responsiveness		0	13	9	7	29
			competence		0	11	7	4	22
			Courtesy		0	9	9	9	27
			Credibility		0	10	16	7	33
			Security		2	6	8	2	18
			accessibility		0	18	15	9	42
			communication		0	12	8	2	22
			Customer		0	5	7	6	18
		Total			3	107	101	61	272

A summary of the difference (difrnc) between the expectation and perception ratings for the respondents of KwaZulu-Natal Zone in the State Rural Hospitals, State Urban Hospitals and Private Hospitals in is shown in Table 4-9 below. Range difference: (3 to 6).

Table 4-9: Frequencies by zone and hospital type for differences of the KwaZulu-Natal zone respondents. Range difference: (3 to 6).

ZONE	HOSPT			DIFRNC				Total
				3	4	5	6	
KwaZulu-Natal	state rural	DIMEN	Tangibles	10	1	0	0	11
			Reliability	10	0	1	0	11
			responsiveness	12	5	0	0	17
			competence	14	1	0	0	15
			Courtesy	8	3	0	0	11
			Credibility	9	4	0	0	13
			Security	4	3	1	0	8
			accessibility	22	4	9	3	38
			communication	8	0	1	0	9
			Customer	9	2	0	0	11
		Total		106	23	12	3	144
	state urban	DIMEN	Tangibles	13	3	0	0	16
			Reliability	21	5	2	0	28
			responsiveness	15	2	2	0	19
			competence	12	2	0	0	14
			Courtesy	7	1	0	0	8
			Credibility	10	1	0	0	11
			Security	9	0	0	0	9
			accessibility	17	13	12	11	53
			communication	13	2	1	0	16
			Customer	14	1	1	2	18
		Total		131	30	18	13	192
	private	DIMEN	Tangibles	4	0	0	0	4
			Reliability	23	1	0	0	24
			responsiveness	15	5	0	0	20
			competence	12	3	0	0	15
			Courtesy	10	5	2	1	18
			Credibility	10	7	0	0	17
			Security	10	0	0	0	10
			accessibility	18	7	11	8	44
			communication	7	1	2	0	10
			Customer	18	1	1	0	20
		Total		127	30	16	9	182

A summary of the difference (difrnc) between the expectation and perception ratings for the respondents in State Rural Hospitals, State Urban Hospitals and Private Hospitals in Eastern Cape Zone is shown in Table 4-10. Range difference: (3 to 6).

Table 4-10: Frequencies by zone and hospital type for differences of the Eastern Cape zone respondents. Range difference: (3 to 6).

ZONE	HOSPT			DIFRNC				Total
				3	4	5	6	
Eastern Cape	state rural	DIMEN	Tangibles	22	4	0	0	26
			Reliability	21	4	0	1	26
			responsiveness	21	8	0	0	29
			competence	27	9	0	0	36
			Courtesy	19	4	0	2	25
			Credibility	12	4	0	2	18
			Security	17	7	0	0	24
			accessibility	32	8	11	10	61
			communication	14	7	0	0	21
			Customer	12	5	3	3	23
		Total		197	60	14	18	289
	state urban	DIMEN	Tangibles	5	3	1	0	9
			Reliability	9	7	1	0	17
			responsiveness	10	2	2	0	14
			competence	12	0	1	0	13
			Courtesy	13	5	0	0	18
			Credibility	8	6	0	0	14
			Security	8	1	0	0	9
			accessibility	25	7	7	11	50
			communication	8	4	0	0	12
			Customer	9	7	2	0	18
		Total		107	42	14	11	174
	private	DIMEN	Tangibles	3	1	0		4
			Reliability	3	1	1		5
			responsiveness	4	1	1		6
			competence	5	1	0		6
			Courtesy	1	0	0		1
			Credibility	0	1	1		2
			Security	3	0	0		3
			accessibility	4	2	1		7
			communication	2	4	0		6
			Customer	6	3	1		10
		Total		31	14	5		50

From Table 4-7 to Table 4-10 it is clear that the vast majority of the differences are zero or positive. This means that in the majority of cases, the expectations ratings are as high as (zero differences), or higher (positive differences) than perceptions ratings. The results of an analysis of variance performed on these differences are shown in Table 4-11, the ANOVA table below. The ANOVA (Analysis of Variance) table is the test for differences (gap) in mean values, which is testing whether the mean difference (expectations – perceptions) is the same at different levels of the

dimensions, thus helping answer the research question 3. If the mean differences are not the same at all the levels of the dimensions (significance below 0.05), one would want to know at which levels of the dimensions these mean differences are not the same. To determine this, follow up (Post Hoc) tests, shown in Figure 4-12 are performed. A significant result for the interaction between two dimensions means that the mean difference at different levels of the one dimension is not the same at all levels of the other factor. The reasons for one or two dimensions interactions are explained in subsection 4.4 below.

Table 4-11: Results of an analysis of variance performed on the differences between expectations and perceptions for dimension, zone and hospital type.

ANOVA table: **Tests of Between-Subjects Effects**

Dependent Variable: DIFRNC

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	726.146(a)	59	12.308	6.867	.000
Intercept	8364.264	1	8364.264	4667.017	.000
DIMEN	237.742	9	26.416	14.739	.000
ZONE	11.023	1	11.023	6.150	.013
HOSPT	182.742	2	91.371	50.982	.000
DIMEN * ZONE	21.412	9	2.379	1.327	.217
DIMEN * HOSPT	47.938	18	2.663	1.486	.085
ZONE * HOSPT	75.359	2	37.680	21.024	.000
DIMEN * ZONE * HOSPT	46.415	18	2.579	1.439	.103
Error	7147.325	3988	1.792		
Total	18527.000	4048			
Corrected Total	7873.470	4047			

A R Squared = .092 (Adjusted R Squared = .079)

Table 4-12: Post Hoc Tests (Dimensions Mean Difference)

DIFRNC

DIMEN	N	Subset 1	Subset 2	Subset 3
Credibility	440	1.38		
Security	264	1.44		
Reliability	528	1.44		
Courtesy	352	1.45		
Tangibles	352	1.50		
Responsiveness	440	1.52		
Competence	352	1.57		
Communication	352	1.57		
Customer	352		1.78	
Accessibility	616			2.24
Sig.		.080	1.000	1.000

Means for groups in homogeneous subsets are displayed. Based on Type III Sum of Squares the error term is Mean Square (Error) = 1.792.

a. Uses Harmonic Mean Sample Size = 383.801.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

c. Alpha = .05.

Table 4-13: Hospital Type/Category Mean Difference

DIFRNC

		Subset		
HOSPT	N	1	2	3
state urban	1794	1.40		
Private	920		1.64	
state rural	1334			1.91
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed. Based on Type III Sum of Squares the error term is Mean Square (Error) = 1.792.

a. Uses Harmonic Mean Sample Size = 1253.135.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

c. Alpha = .05.

4.4 Explanation of results of ANOVA table:

4.4.1 Dimension

The post hoc test results show that the mean difference for accessibility is the highest followed by the understanding customer mean difference. The mean differences for the other dimension categories are significantly less than that of the largest two dimensions, but not significantly different amongst themselves.

4.4.2 Hospital type

The mean difference for rural state is the largest followed by private and urban state.

4.4.3 Zone by hospital interaction

The means for differences for combinations of zone and hospital categories are shown in the table below; extracted from Appendix III, the **Relationship between dimensions for expectations and perceptions.**

Table 4-14: Means for zone and hospital categories

DIFRNC

ZONE	HOSPT	Mean	N	Std. Deviation
KwaZulu-Natal	state rural	1.83	506	1.253
	state urban	1.36	1058	1.325
	private	1.86	598	1.339
	Total	1.61	2162	1.334
Eastern Cape	state rural	1.96	828	1.441
	state urban	1.45	736	1.498
	private	1.22	322	1.240
	Total	1.63	1886	1.461
Total	state rural	1.91	1334	1.374
	state urban	1.40	1794	1.399
	private	1.64	920	1.340
	Total	1.62	4048	1.395

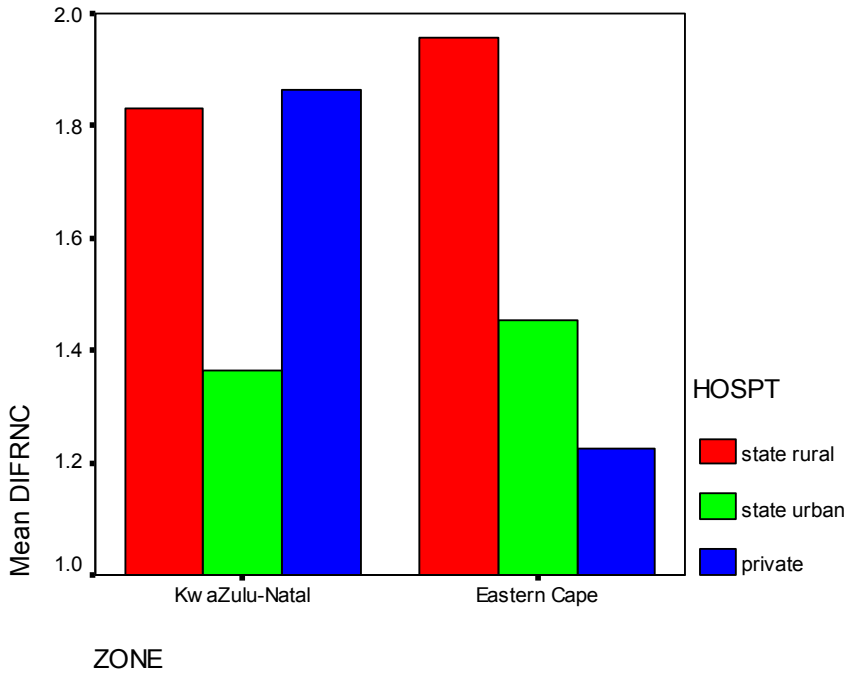

Figure 4-3: Bar chart of means of differences for zone and hospital categories

The bar chart shows that the mean difference for rural state hospitals is greater than that for urban state hospitals in both zones, but that the mean difference for private hospitals is greater in KwaZulu-Natal than in the Eastern Cape. The bar chart shows

the difference in mean values among hospital types and between the two zones much clearer.

4.4.4 Dimension by hospital interaction

According to the results in the ANOVA table, there is some evidence of dimension by hospital interaction (p-value = 0.085). The hospital interaction is the interaction between two factors (dimensions) indicating the mean difference at different levels of dimensions, in line with the research question 3. The nature of this interaction can be seen from the bar chart shown below.

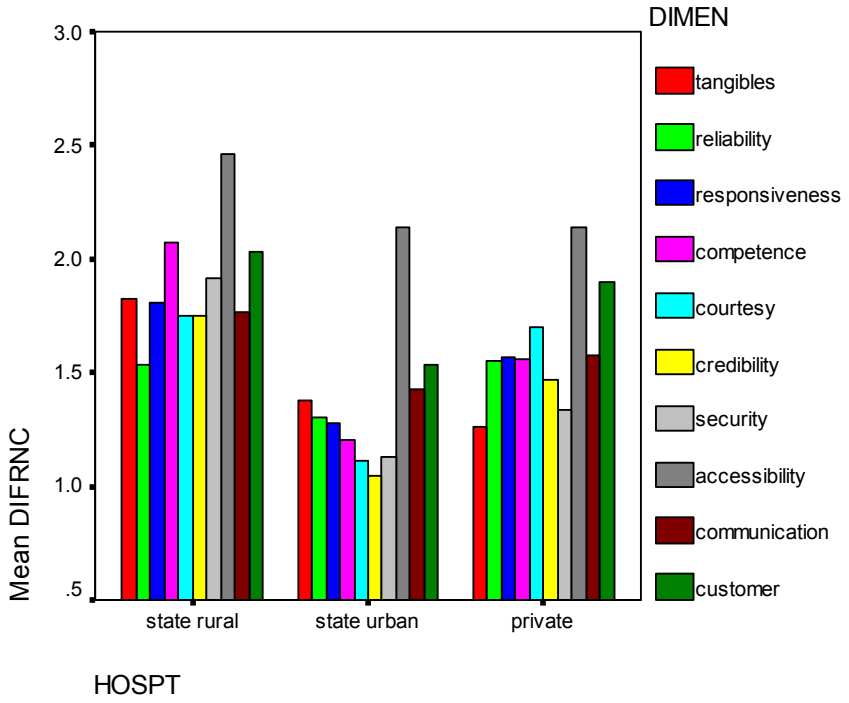

Figure 4-4: Bar chart of means of differences for hospital types for different dimension categories

The bar chart shows that the dimension means of differences for rural state hospitals are greater than that for urban state hospitals.

4.5 Relationship between dimensions for expectations and perceptions:

From the table of correlations shown below it can be seen that there is a weak or no linear relationship between expectations and perceptions.

Table 4-15: Correlations between expectations and perceptions for different dimensions.

Dimension	Pearson coefficient	Spearman coefficient
Tangibles	0.09	0.074
Reliability	0.131	0.111
Responsiveness	0.03	0.05
Competence	0.13	0.135
Courtesy	-0.009	0.008
Credibility	0.084	0.112
Security	-0.026	-0.056
Accessibility	0.05	0.043
Communication	0.129	0.149
Customer	0.111	0.127

4.6 Descriptive Analysis of the survey respondents:

The descriptive analysis of the survey respondents was conducted to describe the percentage of survey respondents' expectations of various aspects of blood banking services by zone and again by hospital category. The descriptive analysis of the survey respondents was also conducted to describe the percentage of survey respondents' perceptions of various aspects of blood banking services by zone and again by hospital category.

Linear regression was performed with overall hospital expectation and perception as the dependant variable and the 10 composites of the SERVQUAL model and the control variables as the predictors of overall hospital satisfaction with blood suppliers. Frequencies of responses by survey participants are presented in Appendix IV to XIII.

4.7 FREQUENCIES BY ZONE (KwaZulu-Natal and Eastern Cape):

4.7.1 Frequency Distribution: Expectations Ratings (%) – KwaZulu-Natal:

The respondents in the KwaZulu-Natal zone were asked to indicate the level of service that should be offered by the SANBS. The respondents were asked to rate 42 questionnaire items according to their expected service level. Appendix IV shows the frequency distribution of the responses on a 7-point scale anchored by Strongly Disagree (1) to Strongly Agree (7).

According to Appendix IV,

- Three variables were rated at a 7 (the maximum on the 7point scale) by more than 90.0% of respondents. These variables are ability of staff to answer questions, knowledgeable employees and availability of appropriate and up to date material. All three variables are under the competency dimension.

4.7.2 Frequency Distribution: Expectations Ratings (%) - Eastern Cape:

The respondents in the Eastern Cape zone were asked to indicate the level of service that should be offered by the SANBS. The respondents were asked to rate 42 questionnaire items according to their expected service level. Appendix V shows the frequency distribution of the responses on a 7-point scale anchored by Strongly Disagree (1) to Strongly Agree (7).

According to Appendix V,

- Four variables were rated at a 7 (the maximum on the 7-point scale) by more than 80.0% of the respondents. These are documentation material used (tangibles dimension), staff ability to answer questions, knowledgeable employees, and appropriate and up to date material used (all under competency dimension).

4.7.3 Frequency Distribution: Perceptions Ratings (%) - KwaZulu-Natal:

The respondents in the KwaZulu-Natal zone were asked to indicate their perceptions of the level of service quality provided by the SANBS. The respondents were asked to rate 42 questionnaire items according to their perceptions of the SANBS' service quality. Appendix VI shows the frequency distribution of the responses on a 7-point scale anchored by Strongly Disagree (1) and Strongly Agree (7).

According to Appendix VI,

- Three variables were rated at a 7 (the maximum on a 7-point scale) by 29.8% of respondents. These are neat and appropriately dressed staff (tangibles dimension), good reputation (credibility dimension), and ease of accessing knowledgeable blood bank staff by telephone (accessibility dimension).

4.7.4 Frequency Distribution: Perceptions Ratings (%) - Eastern Cape:

The respondents in the Eastern Cape zone were asked to indicate their perceptions

of the level of service quality provided by the SANBS. The respondents were asked to rate 42 questionnaire items according to their perceptions of the SANBS' service quality. Appendix VII shows the frequency distribution of the responses on a 7-point scale anchored by Strongly Disagree (1) and Strongly Agree (7).

According to Appendix VII,

- Two variables were rated at a 7 (the maximum on a 7-point scale) by 22.0% of respondents. These are service request forms easy to understand (tangibles), and providing of services at promised times (reliability).

4.8 FREQUENCIES BY CATEGORY (Rural State, Urban State, Private):

4.8.1 Frequency Distribution: Expectations Ratings (%) - Rural State Hospitals:

The respondents in the Rural State Hospitals were asked to indicate the level of service that should be offered by the SANBS. The respondents were asked to rate 42 questionnaire items according to their expected service level. Appendix VIII shows the frequency distribution of the responses on a 7-point scale anchored by Strongly Disagree (1) to Strongly Agree (7).

According to Appendix VIII,

- Seven variables were rated at a 7 (the maximum on a 7-point scale) by more than 80.0% of respondents. Three of these variables are under the tangibles dimension and include equipment and technology used, employees' appearance and dress, and documentation material used. Three variables are under competency dimension, namely staff ability to answer questions, knowledgeable employees, appropriate and up to date material. The last variable is safe keeping of documents (security dimension).

4.8.2 Frequency Distribution: Expectations Ratings (%) - Urban State Hospitals:

The respondents in the Urban State Hospitals were asked to indicate the level of service that should be offered by the SANBS. The respondents were asked to rate 42 questionnaire items according to their expected service level. Appendix IX shows the frequency distribution of the responses on a 7-point scale anchored by Strongly Disagree (1) to Strongly Agree (7).

According to Appendix IX,

- One variable was rated at a 7 (the maximum on a 7-point scale) by 95.0% of respondents, and includes appropriate and up to date material used (competence dimension).

4.8.3 Frequency Distribution: Expectations Ratings (%) - Private Hospitals:

The respondents in the Private Hospitals were asked to indicate the level of service that should be offered by the SANBS. The respondents were asked to rate 42 questionnaire items according to their expected service level. Appendix X shows the frequency distribution of the responses on a 7-point scale anchored by Strongly Disagree (1) to Strongly Agree (7).

According to Appendix X,

- Five variables were rated at a 7 (the maximum on a 7-point scale) by 100.0% of respondents. Two of the variables fall under the competency dimension and include knowledgeable employees and appropriate and up to date material used. The other two variables fall under the credibility dimension, namely good reputation and accurate and consistent responses. The last variable is polite answering of telephones (courtesy dimension).

4.8.4 Frequency Distribution: Perceptions Ratings (%) - Rural State Hospitals:

The respondents in the Rural State Hospitals were asked to indicate their perceptions of the level service quality provided by the SANBS. The respondents were asked to rate 42 questionnaire items according to their perceptions of the SANBS' service quality. Appendix XI shows the frequency distribution of the responses on a 7-point scale anchored by Strongly Disagree (1) and Strongly Agree (7).

According to Appendix XI,

- Three variables were rated at a 7 (the maximum on a 7-point scale) by 17.2% of respondents. These include following the exact specifications of clinicians' request (reliability), service request forms easy to understand (tangibles), and clinicians confident about service provided (security).

4.8.5 Frequency Distribution: Perceptions Ratings (%) - Urban State Hospitals:

The respondents in the Urban State Hospitals were asked to indicate their perceptions of the level service quality provided by the SANBS. The respondents were asked to rate 42 questionnaire items according to their perceptions of the SANBS' service quality. Appendix XII shows the frequency distribution of the responses on a 7-point scale anchored by Strongly Disagree (1) and Strongly Agree (7).

According to Appendix XII,

- Four variables were rated at a 7 (the maximum on a 7-point scale) by 30.0% or more of respondents. Two of these variables fall under the competency dimension, namely staff appear to know what they are doing, staff provide service without fumbling around. The other variable is good reputation of SANBS (credibility dimension), and accessing knowledgeable blood bank staff by telephone (accessibility dimension).

4.8.6 Frequency Distribution: Perceptions Ratings (%) - Private Hospitals:

The respondents in the Private Hospitals were asked to indicate their perceptions of the level service quality provided by the SANBS. The respondents were asked to rate 42 questionnaire items according to their perceptions of the SANBS' service quality. Appendix XIII shows the frequency distribution of the responses on a 7-point scale anchored by Strongly Disagree (1) and Strongly Agree (7).

According to Appendix XIII,

- Six variables were rated at a 7 (the maximum on a 7-point scale) by more than 30.0% of respondents. These include staff appear neat and appropriately dressed (tangibles), staff always willing to help (responsiveness), guidelines for use of service is appropriate and up to date (competency), good reputation of the SANBS (credibility), guarantee of services (credibility), and clinicians easy to access knowledgeable blood bank staff by telephone (accessibility).

4.9 Explanation of differences in frequency tables:

The frequency tables under subsection 4.1 and 4.2 are derived from totaling the number of respondents for each dimension, in each geographical (zone) area and in

each customer group for expectations and perceptions. This analysis helps compare the perceptions ratings and expectations ratings in each zone and in each customer group as per research question. The result demonstrates the overall perceptions and expectations rating on the 7-point scale for each geographical area and each customer group.

The frequency tables under subsection 4.7 and 4.8 are derived from percentage ratings of the questionnaire variables (dimensions) according to the respondents' perceived service level, and their expected service level, across geographical area and customer groups. The tables help analyze what the customers value as critical variables (dimensions) in each geographical area and in each customer group as per research objectives.

4.10 Summary findings per objective:

Research objective 1:

The findings suggest that the SANBS customers are not satisfied with the service they receive, both on a zonal (geographical) perspective and also on a customer group perspective. This finding is based on the outcome of dimensions associated with service encounter, rather than those associated with superiority of service.

Research objective 2:

Customers' perceptions were established using the SERVQUAL model. Perceptions of both zones are associated with a rating of below 6 on a 7-point scale. Perceptions of private hospitals and urban state hospitals are associated with a rating of 6 and below, and that of rural hospital are associated with a rating of below 6.

Research objective 3:

Customers' expectations were established and are associated with a rating of between 6 and 7 for the Eastern Cape zone, and with a rating of 7 for KwaZulu-Natal zone. Comparative analysis of expectations to perceptions was made. Expectation ratings are higher than perception ratings in the area being studied. KwaZulu-Natal expectation ratings are higher than Eastern

Cape ratings.

Expectation ratings for rural state hospitals and private hospitals are associated with a rating of 7, and that of urban state hospitals are associated with a rating of 6 and 7. This finding suggests that expectations of private hospitals and rural state hospitals have higher ratings than those of urban state hospitals. The finding also suggests that perceptions of private and urban state hospitals have higher ratings than those of rural state hospitals.

Research objective 4:

Gaps in service quality were identified as determined by frequencies on differences in subsection 4.3. The mean difference for accessibility is the highest, followed by the mean difference for understanding the customer. The mean difference for rural state hospitals is the largest, followed by the mean difference for private hospitals and urban state hospitals. Recommendation for the implementation of appropriate service quality performance improvement procedures will be made.

5. DISCUSSION

This chapter attempts to demonstrate and give meaning to the findings of the study while at the same time addressing the research questions. This study hypothesized that there is significant difference or gap between the services offered by the South African National Blood Service (SANBS) as perceived by its customers, compared to the expectations of its customers, meaning that the services of the SANBS as perceived by its customers, do not meet customers' expectations. The results of this study emphatically support the use of the SERVQUAL model to measure the service quality that SANBS provides to its customers through measuring customers' perceptions and comparing these to their expectations of service quality.

5.1 Frequencies by zone:

Expectations: According to table 4-1 (Frequencies by zone for expectations), the expectations in both zones are associated with a rating of 6 and 7. This shows that customers in both zones expect provision of high quality services. This finding is in line with the global trends which show that customers in the services industry demand high quality services. The KwaZulu-Natal expectation ratings are higher than those of the Eastern Cape. According to these findings, the overall dimension variables were rated at a 7 (the maximum on a 7-point scale) by 1761 (81.0%) respondents in the KwaZulu-Natal zone. In the Eastern Cape zone the combined dimension variables were rated at a 7 by 1269 (67.0%) respondents.

Six dimensions were rated at a 7 by more than 80.0% of respondents in the KwaZulu-Natal zone, while five dimensions were rated at a 7 by more than 70.0% of respondents in the Eastern Cape zone. The credibility dimension and the understanding the customer dimension were rated at a 7 by 84.0% (highest percentage) of respondents in the KwaZulu-Natal zone. The responsiveness, competency and communication dimensions were rated at 7 by 83.0% of respondents in the KwaZulu-Natal zone. In the Eastern Cape zone, the competency dimension was rated at a 7 by 79.0% (highest percentage) of respondents. The tangibles and courtesy dimensions were rated at a 7 by 73.0% of respondents.

According to these findings the KwaZulu-Natal respondents rate the credibility and understanding the customer dimensions highly, while the Eastern Cape respondents rate the competency dimension highly. Between the two zones, the competency dimension is rated highly, followed by the credibility dimension. This shows that despite the differences in service quality expectations between the respondents of the two zones, respondents in both zones expect the service provider (SANBS blood bank employees) to possess the required skills and knowledge to perform the job. The competency will be determined by the level of knowledge displayed when blood bank staff interact with the hospital. It may also be measured by the degree with which the customer queries are handled and medical and technical support is provided.

The findings also show that the respondents in both zones expect a trustworthy and honest service provider. A measure of credibility is the degree with which the customers rate the reputation of the organization. It may also be a measure of accuracy of responses that the organization's employees give to customers, and where appropriate the guarantee of services provided.

Perceptions: The perception ratings are distributed across the spectrum of the 7-point scale. According to table 4-2 (Frequencies by zone for perceptions) the perceptions in both zones are associated with a rating of 6 and below. This shows that in both zones, customers' perception of service quality is not rated highly, or at least not as high as their expectations. According to these findings, the total dimension variables were rated at a 7 (the maximum on a 7-point scale) by 364 (17.0%) respondents in the KwaZulu-Natal zone, and by 259 (14.0%) respondents in the Eastern Cape zone. This finding illustrates that only a small percentage of respondents rate the perception dimensions at 7. Alternatively the number of respondents who have high perceptions of service quality is low in both zones.

Six dimensions (responsiveness, competency, courtesy, credibility, security, and understanding the customer) were rated at a 6 (below the maximum on a 7-point scale) by more than 30.0% of respondents in the KwaZulu-Natal zone, while four dimensions (competency, courtesy, credibility, and security) were rated at a 6 by more than 30.0% of respondents in the Eastern Cape zone.

These findings suggest that between the two zones, the customers' perception of the SANBS service quality is rated below maximum. The two zones have similar perception ratings for the competency, courtesy, credibility, and security dimensions despite the differences in other dimension ratings. The combined dimensions were rated at a 6 and at a 5 by 29.0% and 26.0% of respondents respectively in KwaZulu-Natal. In the Eastern Cape the dimensions were rated at a 6 and 5 by 26.0% of respondents. The findings also suggest that the overall perception ratings are higher in the KwaZulu-Natal zone compared to the Eastern Cape zone.

5.2 Frequencies by hospital type:

Expectations: According to table 4-4 (Frequencies by hospital type for expectations) the total dimensions were rated at a 7 by 978 (73.0%) of respondents in state rural hospitals. In state urban hospitals the dimensions were rated at a 7 by 1250 (70.0%) of respondents. In private hospitals the dimensions were rated at a 7 by 802 (87.0%) of respondents. This finding suggests that private hospitals have higher expectation of service quality compared to the other hospital categories.

In state rural hospitals the competency dimension was rated at a 7 by 84.0% (highest percentage) of respondents. In state urban hospitals the competency dimension was rated at a 7 by 83.0% (highest percentage) of respondents. 96.0% (highest percentage) of respondents in private hospitals rated the competency dimension at a 7. This finding suggests that all three hospital groups expect the service provider (SANBS blood bank employees) to possess the required skills and knowledge to perform the job. The private hospitals have the highest service quality expectations ratings. The competency dimension is rated the highest by the respondents in the private hospitals category.

Perceptions: According to table 4-5 (Frequencies by hospital type for perceptions) there is a wider spread of ratings along the linkert scale. There is more concentration of ratings at a 5 and 6 on the 7-point scale. The perception dimensions are rated at a 5 by 32.0% (highest) of respondents in the state rural hospitals. This is followed by a rating at a 4 by 28.0%, at a 6 by 20.0%, and at a 7 by 9.0% of respondents. This

shows that the majority of respondents in the state rural hospitals have almost mid-point perception ratings of service.

In the state urban hospitals the perception dimensions are rated at a 6 by 33.0% (highest) of respondents, followed by the rating at a 5, 7, and 4 by 21.0%, 19.0%, and 17.0% of respondents respectively. The highest rating in the private hospitals category is 6 by 28.05 of respondents, followed by the rating at a 5, 4, and 7 by 27.0%, 18.0%, and 18.0% of respondents respectively. These findings suggest that the majority of respondents in state urban and in private hospitals have perception ratings of below maximum.

These findings also suggest that the service quality perception of respondents in state rural hospitals is low compared to the other two hospital groups. Alternatively the state urban hospitals and private hospitals have a higher rating than that of state rural hospital. The low perception ratings shown by the state rural hospitals may be influenced by, among other things, logistical problems that these hospitals experience when requesting a service. These problems make it difficult for the rural hospitals to be offered similar high quality services, despite efforts by the service provider to deliver services equitably. For instance due to roads infrastructure, it may take up to 4 hours or longer for some of the rural hospitals to send a request for blood, have the request processed and ultimately receive the order. Some of the problems relate to hospital transport that is not always available when needed.

5.3 Frequencies of differences between expectations and perceptions:

Frequencies by zone and hospital type for differences of KwaZulu-Natal zone respondents. Range difference: -1 to +2 (table 4-7) and Range difference 3 to 6 (table 4-9): According to table 4-7 and table 4-9, the vast majority of the differences are zero or positive. This means that in the majority of cases where there are zero differences, the expectation ratings are as high as the perception ratings. This also means that where there are positive differences, the expectation ratings are higher than the perception ratings. These findings suggest that the customers in the KwaZulu-Natal zone have higher expectations of service compared to their perceptions of service they are being offered currently.

Frequencies by zone and hospital type for differences of Eastern Cape zone respondents. Range difference: -2 to +2 (table 4-8) and Range difference 3 to 6 (table 4-10): According to table 4-8 and table 4-10, the vast majority of the differences are zero or positive. This means that in the majority of cases where there are zero differences, the expectation ratings are as high as the perception ratings. This also means that where there are positive differences, the expectation ratings are higher than the perception ratings. These findings suggest that the customers in the Eastern Cape zone have higher expectations of service compared to their perceptions of service they are being offered currently.

Analysis of variance: Table 4-11 to 4-14 has already been discussed under findings in chapter 4, subsection 4.3 and 4.4.

5.4 Customer satisfaction with SANBS' service quality (Research Question 1):
The study confirms the claim made in the research question, and supported by literature, that the very nature of a monopolistic organization demands that market research be conducted and its service quality to measure customer satisfaction be conducted. This is primarily because it is easy for such organizations to be complacent and 'arrogant' towards their customers, and quite often their operations and processes tend to focus internally on their own procedures rather than externally where customers would be an important stakeholder. Therefore the undertaking of service quality measurement will certainly benefit both the customer and the firm in organizations which enjoy monopoly in the industry, thus improving service delivery and performance at the same time. Moola, et al., (2001) argue that satisfaction is associated with service encounter while service quality relates to superiority.

Lundberg, Rzasnicki, and Söderlund, (2000) in their study of customer familiarity and its effects on expectations, performance perceptions, and satisfaction, suggest that customer's previous satisfaction with the provider of service shifts expectations upwards, and that expectations of previously dissatisfied customers are shifted downwards. This view implies that the customer is subject to a cognitive process which emphasizes the avoidance of disequilibrium in the future, (Lundberg, et al., 2000). The high expectation ratings across all customer groups in this study may well have been the result of satisfaction with previous service quality or performance

by the supplier of service in this case the SANBS, according to the study of Lundberg, et al., (2000). It is becoming a priority of organizations to create value during the service encounter, as this is the driver of customer satisfaction and loyalty, (Malherbe, et al., 2003).

Within the context of understanding that employees (frontline workers) and customers need to be the center of management concern in the new economics of service, the service encounter, also known as the moment of truth, is critical in determining customer satisfaction and loyalty, (Heskett, et., al, 1994). Through analysis of the various dimensions of service quality during the service encounter, the level of empowerment required for frontline staff, in this case the blood bank staff, will be identified. While these workers may require little or no additional training on the technical aspects of their work, they are likely to need, and appreciate, orientation to the goals of the organization, because there may appear to be a tension between the goals of the individual blood bank employee and his or her customer and the goals of the organization, (Heineke, et al., 1998). The researcher proposes that blood bank professionals, because they are in constant contact with the customers, be provided with information and support that is relevant in service organization, to do their work effectively and efficiently. This view is supported by Heineke, et al., (1998), in which managers are encouraged to establish standards and goals with professionals, so that both managerial and professional objectives can be met. Nel, (2003) contends that the most important requirement is for the employees to be empowered to meet the customers' needs as they arise.

5.5 Customers' perception of service and Customers' expectations of service (Research Question 2 & 3):

Available literature in Wisniewski, (2001c) supports and identifies the potential application of SERVQUAL by use of gap analysis that allows comparisons to be made across different parts of the same service on a geographical basis, and by comparing different customer groups. It is evident from the data collected that, in both KwaZulu-Natal and Eastern Cape zones, perceptions are associated with a rating of below 6, while expectations for Eastern Cape are associated with a rating of between 6 and 7, and expectations for KwaZulu-Natal with a rating of 7. This means that overall, expectation ratings are higher than perception ones, and KwaZulu-Natal

expectations are higher than the Eastern Cape ones.

Use of service quality dimensions has also allowed focusing on particular individual problems, by breaking down each dimension into constituent statements. For instance the expectations ratings for competence dimension is particularly higher in the KwaZulu-Natal (rated at a 7, the maximum on a 7-point scale, by more than 90.0% of respondents), than in the Eastern Cape, where the same was rated at a 7 by more than 80.0% of the respondents. Within the competence dimension, the statement about whether the SANBS should have knowledgeable employees, and appropriateness of academic material used, the expectations ratings for KwaZulu-Natal for these variables was at a 7 by 97,9% each, while the same was rated at a 7 by 80.5% and 87.8% respondents respectively in the Eastern Cape, indicating competence to be a critical dimension within this sector.

As was noticed in the discussion of frequencies by zone, expectations are greater than perceptions generally, but private hospitals have higher expectation ratings, followed by rural state hospitals, with ratings of closer to 7. This is confirmed by a rating of thirty seven variables at a 7 (the maximum on a 7-point scale) by more than 80.0% of respondents in private hospitals. Of these, five were rated by 100.0% of respondents and included competence (2 items), credibility (2 items) and courtesy (1 item), while 3 were rated by more than 90.0% of respondents and included tangibles (1 item), competence (1 item) and communication (1 item). Here again, in addition to tangibles and communication dimension, the competency dimension also features to be prominent amongst the SANBS' customers.

In rural state hospitals seven expectation variables were rated at a 7 by more than 80.0% of respondents. These variables include tangibles (3 items), competence (3 items) and security (1 item). Urban state hospitals have expectation ratings of between 6 and 7. Five variables were rated at a 7 by more than 80.0% of respondents, and these included competence (3 items, one of which was rated by 95.0% of respondents), reliability (1 item), and communication (1 item).

Perceptions of private and urban state hospitals have ratings of 6 and below 6, and that for rural state hospitals have a rating of below 6. This suggests that perceptions

of private and urban state hospitals have higher rating than that of rural state hospital. Four perception variables were rated at a 7 by more than 30.0% of respondents in urban state hospitals, and these include competence (2 items), credibility (1 item), and accessibility by telephone (1 item). Six perception variables were rated at a 7 by more than 30.0% of respondents in private hospitals, and these are tangibles (1 item), responsiveness (1 item), competence (1 item), credibility (2 items), and accessibility by telephone (1 item). Three variables were rated at a 7 by 17.2% of respondents in rural state hospitals, and these include tangibles (1 item), reliability (1 item), and security (1 item).

The somewhat low perception rating in the rural state hospitals compared to other hospital categories, may have been contributed to by the fact that blood banks are all situated in urban state hospitals, and therefore the rural hospital do not have easy and immediate access to the service, and often they have to travel long distances, often on bad dusty roads to obtain the service from the nearest blood bank, and other services are historically not made available to rural hospitals, partly for reasons related to size and distance of the hospitals from the blood banks and also for reasons associated with previous historical inequality policies.

The mean difference between expectations and perceptions for rural state hospitals is greater than that for urban state hospitals in both zones. This is probably not a surprising finding as the blood banks are all situated in urban state hospitals and this may have an impact on service quality as perceived by customers in rural state hospitals. The mean difference for private hospitals is greater in KwaZulu-Natal zone than in the Eastern Cape zone, suggesting that the private hospitals in KwaZulu-Natal have significantly higher expectations than those in the Eastern Cape in terms of service quality. Again here, this observation may have been influenced by previous service offerings that the customers experienced.

The means of differences for hospital types for different dimension categories (dimension by hospital interaction) show that the dimension means of differences for rural state hospitals are greater than that for urban state hospitals. From the table of correlations, there is weak (if any) correlation between expectations and perceptions.

5.6 Implementation of service quality performance improvement procedures (Research Question 4):

Higher expectation ratings compared to perception ratings require management intervention to close these gaps. Use of service quality dimensions has allowed an understanding of the area, e.g. KwaZulu-Natal zone, where customers have particularly high expectations compared to the Eastern Cape ones, and an assessment of where there may be relatively large gaps between these expectations and their perceptions of service quality. These high expectations may have resulted from previously high service quality in the KwaZulu-Natal zone.

The largest service quality gap appears to be the accessibility dimension which relates specifically to gap in accessing the service provider by e-mail, but may also relate to distance of hospitals from the nearest blood bank, all (blood banks) of which are situated in urban hospitals. Management's identification of these specific areas and intervention for performance improvement should positively impact on customer satisfaction. Wisniewski (2001c) argues that SERVQUAL results can be used to help services identify areas for performance improvement although; this is an area that has been little discussed in literature.

These findings and the significant differences are supported by literature. Wisniewski, (2001c) suggested that few services, if any, will have customers who all have exactly the same needs and who all use the same service in exactly the same way. The gap analysis approach is therefore useful in comparing these, and has profound implications for management's intervention and service improvement.

For instance, the expectation ratings for the competence dimension is higher compared to other dimensions among respondents in all three hospital categories, particularly in private hospitals. This suggests that expectations for the competence dimension are regarded by the SANBS customers as crucial for service quality. This is contrary to the research undertaken by Parasuraman, et al., (1988:33) and confirmed by Nitecki (1997) and Nel (2003) that suggested that reliability dimension is the most important one of the ten dimensions in terms of service quality. Within the competence dimension, the rating is higher for three items and these include ability of staff to answer questions, knowledgeable employees, and availability of

appropriate and up to date material. But the perceptions rating for the competence dimension is significantly lower in all three hospital categories, particularly in the rural state hospital. This is a cause for concern for the SANBS' management, who would have to close the gap thus identified. It also addresses a problem which was not one of the research questions, pertaining to understanding that employees and customers need to be the centre of management concern in the new economics of service (Heskett, et al., 1994) and that the service encounter is critical in determining customer satisfaction and loyalty. Through analysis of the various dimensions of service quality during the service encounter, the level of empowerment required for frontline staff will be identified, and efforts to close the gap need be given attention.

The most important requirement is for the employees to be empowered (Nel, 2003) to meet customers' needs as it arises. Malherbe et al (2003) argue that by providing superior customer service, so as to strive toward and maintain superior levels of customer satisfaction and delight, is where organizations today are improving and differentiating to gain competitive advantage. In order to achieve superior levels of customer satisfaction and service quality, managers will need to pay attention to conditions that enable frontline employees to do a good job and deliver results to the customer, (Malherbe, et al., 2003).

Results of an analysis of variance performed on differences between expectations and perceptions for dimension, zone and hospital category show that the mean difference for accessibility is the highest the mean difference followed by the mean difference for understanding the customer. The implication of the significant differences or gaps is that management of the organization need to focus on procedures for performance improvement on the two dimensions, initially, namely accessibility and understanding the customer. The mean differences for the other dimension categories are significantly less than that of the largest two dimensions, but not significantly different among themselves.

5.7 Limitations:

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 or statements expressed. Remenyi (1996) argues that the nature of evidence which

may be collected by means of a questionnaire is often regarded as relatively superficial, especially in comparison with evidence from which it is possible to collect other techniques such as case studies or personal interviews. This was also evident in this study as shown by the desire expressed by some respondents to discuss other issues that the questionnaire did not offer an opportunity to be expressed. Questionnaires are particularly of less value when asking questions about how or why. Although qualitative evidence is particularly valuable when asking the how and why questions, it is intrinsically more prone to bias, argues Remenyi, (1996) and may be very subjective than quantitative evidence. In support of the preceding limitation, Sharp, (2005) argues that most companies recognize the need to quantitatively measure levels of satisfaction and perceptions of service quality among their customers. However, according to Sharp, (2005) these are subjective attitudinal evaluations, that is, asking if the customers personally felt the service they received was satisfactory. Sharp, (2005) advocates for the use of objective measurements as well as the traditional attitudinal evaluations, because use of attitudinal evaluations alone, according to Sharp, (2005) do not tell the manager what the problems with the service are, rather they simply tell what the ratings of the service are. According to Sharp, (2005) by asking other objective questions, one can give far clearer indications of where problems might lie.

The timing of the research study coincided with a major restructuring and alignment process within the SANBS. The restructuring and alignment process resulted in closure of some blood banks while others were opened, in order to achieve equitable provision of service throughout the area serviced by the SANBS. Closure of certain service provision centers has inevitably had a negative impact on some customers, and consequently on how they responded to the service quality questionnaire. Other customers declined to take part in the study, citing the closure of blood banks in their health centers as the reason, and expressed serious negative sentiments and objections to the decision.

The study also coincided with the period when the organization had just suffered negative publicity by the media, the South African government and other organizations, due to its risk management policies which utilized race as an indicator of risk when profiling blood donors. The consequence of such publicity and the

discussions held with the government thereafter forced the organization to change its policies and to implement blood donor risk profiling measures that did not use race as an indicator of risk, but rather the frequency of donations. All these factors may have impacted on the way the customers perceive the organization.

It would be strongly recommended to use survey results and compare them across competitors within the blood transfusion industry, but this is limited by the number of available competitors in the industry, being almost non-existent, other than the Western Province Blood Transfusion Service that supplies its service to approximately 16.0% of the South African population.

6. CONCLUSION AND IMPLICATIONS FOR THE BUSINESS

6.1 Conclusion:

Based on the research objectives, H_o is rejected and it is therefore concluded that there is a statistical significant difference or gap between the services offered by the South African National Blood Service (SANBS) as perceived by its customers, and the expectations of its customers. The result confirms the research (alternative) hypotheses ($H_1 : \mu_1 \neq \mu_2$), that the services of SANBS as perceived by its customers, do not meet customers' expectations. This however does not necessarily mean that the SANBS is providing low service quality, it simply shows what customers value and how well their current provider of service are meeting their needs and expectations. This empirical study supports the literature on the provision of service quality, in respect of the importance of evaluating customer satisfaction with the service quality that organizations provide, with the ultimate goal of improving the service provided in all service organizations.

6.2 Implications for business:

The study substantiates the need for management of the SANBS to take into account customer expectations when they evaluate service quality, rather than take a one sided view of their own perception of service quality. The study further endorses the importance of establishing the customer perceptions, and compares them to their expectations, so that management can precisely identify the gap (if any) and determine the level of the difference in order to institute appropriate remedial processes, and improve performance and service quality.

"The ServQual Methodology is an invaluable tool for organizations to better understand what customers value and how well their current organizations are meeting the needs and expectations of customers", http://www.tspg-consulting.com. Quality of service is an important issue for all businesses, whether they sell services directly or they offer facilitating services. SERVQUAL is a concise multiple-item scale with good reliability and validity that service and retailing organizations can use to better understand the service expectations and perceptions of consumers and, as a result, improve service (Parasuraman, et al., 1998). The instrument has been

found equally applicable to the blood transfusion service, in providing a tool with which the organization can better understand its customers' expectations and perceptions. It can also help in pinpointing areas requiring managerial attention and action to improve service quality, (Parasuraman, et al., 1998). The implication for managers is that they can focus on the areas where the service quality has been rated particularly low by their customers, and implement service improvement procedures, or recovery procedures where applicable. It is also recommended that a similar study be undertaken at least within one to two years after completion of the restructuring and alignment process in the SANBS.

6.3 Recommendations for future research:

Because there are other issues that the customers felt strongly about, that were not included in the 42 statements of the SERVQUAL model-based questionnaire, and as such could not be expressed, there needs to be conducted a qualitative study in future, in addition to or alongside the quantitative study of customer satisfaction measurement thus carried out. The recommendation is in line with the approach used by Ehrenberg-Bass Institute for Marketing Science, (2005) in which objective measurement of service quality are used in addition to what they term traditional subjective attitudinal evaluations.

It is also recommended that such a study be conducted at least within one to two years after the SANBS restructuring and alignment process has been completed. During this period it is hoped that organizational stability will have taken place following the implementation of new strategic and structural changes within the organization. This will allow the SANBS to measure its effectiveness of service quality provision in the eyes of its customers, following these new changes. In support of the above recommendation, Parasuraman, et al., (1998), suggests that SERVQUAL is most valuable when it is used periodically to track service quality trends, and when it is used in conjunction with other forms of service quality measurement.

It is also recommended that future research includes the measurement of customer satisfaction with the SANBS' products quality in addition to service quality. This will probably allow customers' input to the quality requirements of the product for the

treatment of their patients. Future research should incorporate comparative analysis of service quality requirements between large tertiary hospitals and medium to small hospitals. Similar research needs to be conducted in respect of blood donor recruitment strategies, as blood donors are the source of blood, without which the blood transfusion service cannot survive.

APPENDIXES

Appendix I. Letter to respondents:

22 May 2005

Dear Doctor

Measure of Service Quality in South African National Blood Service (SANBS)

I am the Regional Manager: Issue Department (Hospital Services) of the South African National Blood Service (SANBS), East Coast Region, based in Durban. I am currently enrolled with the MBA program offered by the Rhodes University Business School. 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 SANBS. In order to improve service delivery, customer satisfaction and loyalty, there is a need for an appropriate approach for assessing the quality of SANBS' service to its customers, through measuring their perceptions and expectations of the service quality.

The expected outcome of the study includes:

- Identification of gaps in the service quality within the organization, so that appropriate service improvement processes may be instituted.
- Identification of level of empowerment required for frontline staff.
- Determination of the extent to which customers are satisfied or not satisfied with the service they receive from SANBS.
- Establishing customers' perceptions of the service they receive from SANBS.
- Establish customers' expectations of the service they aught to receive from SANBS.

Would you kindly participate in this survey to determine Service Quality in the South African National Blood Service, by completing the attached seven-page questionnaire?

- For purposes of maintaining anonymity and avoiding biased data analysis, respondents may not disclose their names and identities.
- Only hospital official stamp or doctors' stamp (in the case of private doctors) is acceptable as an identification mark of a completed questionnaire.
- Confidentiality in respect of information provided by the respondents shall be strictly maintained.

It is preferred for the questionnaire to be completed by the medical manager of the hospital utilizing SANBS' services, or a delegated doctor, where appropriate.

I would appreciate to have the questionnaires returned by the 31 August 2005 to be considered for the analysis. Thank for your co-operation as always.

Mpumzi Mququ

Appendix II. SERVQUAL Questionnaire:

A SURVEY OF CUSTOMER SATISFACTION, EXPECTATIONS AND PERCEPTIONS AS A MEASURE OF SERVICE QUALITY IN SANBS

PERCEPTIONS

For each of the following statements, circle the number that indicates your perceptions of SANBS quality of service. The numbers are on a scale ranging from 1 (for strongly disagree) to 7 (for strongly agree).

Statements in the Tangibles Dimension	Strongly disagree						Strongly agree
1. SANBS has modern equipment and technology.	1	2	3	4	5	6	7
2. SANBS blood bank staff appear neat and appropriately dressed.	1	2	3	4	5	6	7
3. Cross-match service request forms and other material are easy to understand and visually appealing.	1	2	3	4	5	6	7
4. SANBS blood bank has visually attractive physical facilities (premises).	1	2	3	4	5	6	7

Statements in the Reliability Dimension							
1. SANBS blood bank provides its services (cross-match or other services) at the time it promises to do so.	1	2	3	4	5	6	7
2. SANBS blood bank keeps clinicians informed about when services (such as provision of products) will be available or performed.	1	2	3	4	5	6	7
3. SANBS blood bank follows the exact specifications of the clinicians' request.	1	2	3	4	5	6	7
4. Service (cross-match, and other services) provided by SANBS blood bank is free of errors.	1	2	3	4	5	6	7
5. SANBS blood bank performs service (cross-match and other) right the first time.	1	2	3	4	5	6	7
6. All blood bank staff perform the same level of service at all times of the day.	1	2	3	4	5	6	7

Statements in the Responsiveness Dimension

	Strongly disagree						Strongly agree
1. Employees in SANBS blood bank give you prompt service.	1	2	3	4	5	6	7
2. Blood bank staff are always willing to help you.	1	2	3	4	5	6	7
3. Emergency service requests are always treated with the urgency they deserve.	1	2	3	4	5	6	7
4. Blood bank employees are never too busy to respond to clinicians' requests.	1	2	3	4	5	6	7
5. Specific times for provision of service are prescribed to clinicians.	1	2	3	4	5	6	7

Statements in the Competence Dimension

1. SANBS blood bank staff appear to know what they are doing.	1	2	3	4	5	6	7
2. Employees in SANBS blood bank have the knowledge to answer your questions.	1	2	3	4	5	6	7
3. Blood bank staff provide service without fumbling around.	1	2	3	4	5	6	7
4. All material including guidelines for use of blood and blood products is appropriate and up to date.	1	2	3	4	5	6	7

Statements in the Courtesy Dimension

1. SANBS blood bank staff are consistently courteous with clinicians.	1	2	3	4	5	6	7
2. When clinicians ask questions, blood bank staff refrain from being rude or acting busy.	1	2	3	4	5	6	7
3. Blood bank staff have a pleasant demeanor.	1	2	3	4	5	6	7
4. Blood bank staff who answer the telephone, are considerate and polite.	1	2	3	4	5	6	7

Statements in the Credibility Dimension

	Strongly disagree						Strongly agree
1. As a company, SANBS has a good reputation.	1	2	3	4	5	6	7
2. Blood bank staff do not put undue pressure on clinicians.	1	2	3	4	5	6	7
3. Responses given by blood bank staff are accurate and consistent with other reliable sources.	1	2	3	4	5	6	7
4. SANBS blood bank employees understand your specific needs.	1	2	3	4	5	6	7
5. As an organisation, SANBS guarantees its services.	1	2	3	4	5	6	7

Statements in the Security Dimension

1. It is always safe to access SANBS blood bank.	1	2	3	4	5	6	7
2. Patients' records (e.g. request forms)provided by requesting clinicians to blood bank are kept confidential, safe, and secure.	1	2	3	4	5	6	7
3. Clinicians are confident that the service provided by blood bank staff was performed correctly.	1	2	3	4	5	6	7

Statement in the Accessibility Dimension

1. When a requesting clinician has a problem, it is easy to talk to knowledgeable blood bank staff.							
In person	1	2	3	4	5	6	7
By telephone	1	2	3	4	5	6	7
By e-mail	1	2	3	4	5	6	7
2. When a requesting clinician has a problem, it is easy to talk to SANBS medical staff.							
In person	1	2	3	4	5	6	7
By telephone	1	2	3	4	5	6	7
By e-mail	1	2	3	4	5	6	7
3. SANBS blood banks access points are conveniently located.	1	2	3	4	5	6	7

Statements in the Communication Dimension

	Strongly Disagree						Strongly agree
1. When a clinician contacts a blood bank, staff listen to their problem and demonstrate understanding.	1	2	3	4	5	6	7
2. Blood bank staff explain clearly various options available to a particular query.	1	2	3	4	5	6	7
3. Blood bank staff avoid technical jargon when speaking with clinicians.	1	2	3	4	5	6	7
4. Blood bank staff call if there is an anticipated delay in the provision of service.	1	2	3	4	5	6	7

Statements in the Understanding the Customer Dimension

1. Blood bank staff recognise each regular clinician and address them by name.	1	2	3	4	5	6	7
2. Blood bank staff try to determine what clinician's specific requirements are.	1	2	3	4	5	6	7
3. The level of service and cost of service is consistent with hospital's requirements and affordability.	1	2	3	4	5	6	7
4. Blood banks are flexible enough to accommodate clinician's schedule.	1	2	3	4	5	6	7

EXPECTATIONS

For each of the following statements, circle the number that indicates how SANBS Blood Banks' performance compares with the level you expect. The numbers are on a scale ranging from 1 (for strongly disagree) to 7 (for strongly agree).

Statements in the Tangibles Dimension

SANBS' blood banks should have:	Strongly disagree						Strongly agree
1. Modern equipment and technology.	1	2	3	4	5	6	7
2. Professionally & neatly dressed staff.	1	2	3	4	5	6	7
3. Up to date documentation material.	1	2	3	4	5	6	7
4. Attractive facilities (premises).	1	2	3	4	5	6	7

Statements in the Reliability Dimension

SANBS' blood banks should:							
1. Keep promised service times.	1	2	3	4	5	6	7
2. Keep clinicians informed of service times.	1	2	3	4	5	6	7
3. Carrying out requests as specified.	1	2	3	4	5	6	7
4. No errors in service provision.	1	2	3	4	5	6	7
5. Perform service right first time.	1	2	3	4	5	6	7
6. Provide same level of service at all times.	1	2	3	4	5	6	7

Statements in the Responsiveness Dimension

SANBS' blood banks should:							
1. Provide prompt service.	1	2	3	4	5	6	7
2. Always be willing to help.	1	2	3	4	5	6	7
3. Prioritise urgent requests.	1	2	3	4	5	6	7
4. Never be too busy to respond.	1	2	3	4	5	6	7
5. Prescribe specific times for service Provision.	1	2	3	4	5	6	7

Statements in the Competence Dimension

SANBS' blood bank staff should be:

	Strongly disagree						Strongly agree
1. Able to answer all questions.	1	2	3	4	5	6	7
2. Knowledgeable employees.	1	2	3	4	5	6	7
3. Providing service without fumbling around.	1	2	3	4	5	6	7
4. Using appropriate and up to date material.	1	2	3	4	5	6	7

Statements in the Courtesy Dimension

SANBS' blood banks should:

1. Have courteous employees.	1	2	3	4	5	6	7
2. Refrain from being rude or acting busy.	1	2	3	4	5	6	7
3. Have a pleasant demeanour.	1	2	3	4	5	6	7
4. Have staff that answer telephones politely.	1	2	3	4	5	6	7

Statements in the Credibility Dimension

SANBS should:

1. Be a company with good reputation	1	2	3	4	5	6	7
2. Not put undue pressure on clinicians	1	2	3	4	5	6	7
3. Have accurate and consistent responses.	1	2	3	4	5	6	7
4. Understand specific customer needs.	1	2	3	4	5	6	7
5. Guarantee its services.	1	2	3	4	5	6	7

Statements in the Security Dimension

SANBS' blood banks should:	Strongly disagree						Strongly agree
1. Have safe access to premises.	1	2	3	4	5	6	7
2. Keep documents safe and secure.	1	2	3	4	5	6	7
3. Keep patients' records confidential.	1	2	3	4	5	6	7

Statement in the Accessibility Dimension

SANBS'							
1. Knowledgeable blood bank staff should be easily accessible: In person	1	2	3	4	5	6	7
By telephone	1	2	3	4	5	6	7
By email	1	2	3	4	5	6	7
2. Medical staff should be easily easily accessible, In person	1	2	3	4	5	6	7
By telephone	1	2	3	4	5	6	7
By email	1	2	3	4	5	6	7
3. Blood Bank's access points should be easy to locate.	1	2	3	4	5	6	7

Statements in the Communication Dimension	Strongly disagree						Strongly agree
SANBS' blood bank staff should:							
1. Listen and show understanding.	1	2	3	4	5	6	7
2. Explain options available to customers.	1	2	3	4	5	6	7
3. Avoid technical jargon when speaking with clinicians.	1	2	3	4	5	6	7
4. Communicate anticipated delays in service provision.	1	2	3	4	5	6	7

Statements in the Understanding the Customer Dimension							
SANBS'							
1. Staff should individually recognise each customer.	1	2	3	4	5	6	7
2. Staff should try to determine what clinicians' requirements are.	1	2	3	4	5	6	7
3. Should provide a level and cost of service that is consistent with hospitals' requirements and affordability.	1	2	3	4	5	6	7
4. Blood bank staff should be flexible and accommodate clinician's schedule.	1	2	3	4	5	6	7

Appendix III. Relationship between dimensions for expectations and perceptions:

Appendix IIIa. Tangibles:

		PERCEP						Total
		2	3	4	5	6	7	
EXPECT	5	1	0	0	0	1	2	4
	6	3	5	18	31	22	8	87
	7	1	9	51	94	62	44	261
Total		5	14	69	125	85	54	352

Appendix IIIb. Reliability:

		PERCEP							Total
		1	2	3	4	5	6	7	
EXPECT	5	0	0	0	0	2	0	0	2
	6	3	1	11	27	48	40	17	147
	7	0	2	17	76	101	106	77	379
Total		3	3	28	103	151	146	94	528

Appendix IIIc. Responsiveness:

		PERCEP							Total
		1	2	3	4	5	6	7	
EXPECT	5	0	0	0	0	0	2	3	5
	6	1	0	10	28	21	32	11	103
	7	0	4	23	67	80	102	56	332
Total		1	4	33	95	101	136	70	440

Appendix IIId. Competence:

		PERCEP						Total
		2	3	4	5	6	7	
EXPECT	4	0	0	0	1	0	0	1
	5	0	0	0	1	0	0	1
	6	0	8	12	8	13	4	45
	7	1	16	74	57	97	60	305
Total		1	24	86	67	110	64	352

Appendix IIIe. Courtesy:

		PERCEP							Total
		1	2	3	4	5	6	7	
EXPECT	5	0	0	0	0	0	3	0	3
	6	0	1	7	10	30	35	7	90
	7	3	2	17	51	62	74	50	259
Total		3	3	24	61	92	112	57	352

Appendix IIIf. Credibility:

		PERCEP							Total
		1	2	3	4	5	6	7	
EXPECT	5	0	0	0	0	2	1	1	4
	6	0	1	4	20	33	32	7	97
	7	2	1	22	45	93	100	76	339
Total		2	2	26	65	128	133	84	440

Appendix IIIg. Security:

		PERCEP						Total
		2	3	4	5	6	7	
EXPECT	4	0	0	2	0	0	0	2
	5	0	0	0	0	1	0	1
	6	0	2	11	16	28	8	65
	7	1	11	49	45	58	32	196
Total		1	13	62	61	87	40	264

Appendix IIIh. Accessibility:

		PERCEP							Total
		1	2	3	4	5	6	7	
EXPECT	4	0	0	1	1	0	0	0	2
	5	0	1	1	2	1	1	0	6
	6	16	18	11	30	36	52	5	168
	7	43	35	23	106	86	84	63	440
Total		59	54	36	139	123	137	68	616

Appendix IIIi. Communication:

		PERCEP						Total
		2	3	4	5	6	7	
EXPECT	4	0	0	0	1	1	0	2
	5	0	0	2	0	0	0	2
	6	2	6	26	27	17	8	86
	7	4	16	46	85	66	45	262
Total		6	22	74	113	84	53	352

Appendix IIIj. Understanding Customer:

		PERCEP							Total
		1	2	3	4	5	6	7	
EXPECT	5	0	0	0	1	0	0	0	1
	6	2	1	8	32	24	22	5	94
	7	5	6	18	60	60	74	34	257
Total		7	7	26	93	84	96	39	352

Appendix IV. Frequency Distribution: Expectations Ratings (%) - KwaZulu-Natal:

	Strongly disagree						Strongly agree
	1	2	3	4	5	6	7
Tangibles Dimension							
Equipment and technology used						29.80%	70.20%
Employees appearance and dress					0.00%	17.00%	83.00%
Documentation material used					0.00%	17.00%	83.00%
Physical facilities (premises)					0.00%	27.70%	72.30%
Reliability Dimension							
Keeping of promised service times						14.90%	85.10%
Keep clinicians informed of service times						27.70%	72.30%
Carrying out request as specified						17.00%	83.00%
No errors in service provision						23.40%	76.60%
Perform service right first time						17.00%	83.00%
Same level of service at all times					0.00%	21.30%	78.70%
Responsiveness Dimension							
Provide prompt service					0.00%	17.00%	83.00%
Always be willing to help					0.00%	17.00%	83.00%
Prioritise urgent requests					0.00%	14.90%	85.10%
Never too busy to respond					0.00%	17.00%	83.00%
Prescribe specific times for service provision					0.00%	17.00%	83.00%
Competence Dimension							
Staff ability to answer questions						6.40%	93.60%
Knowledgeable employees					0.00%	2.10%	97.90%
Provide service without fumbling					0.00%	17.00%	83.00%
Appropriate and up to date material used						2.10%	97.90%
Courtesy Dimension							
Courteous employees					0.00%	31.90%	68.10%
Refrain from being rude or acting busy					0.00%	17.00%	83.00%
Have a pleasant demeanour					0.00%	17.00%	83.00%
Polite answering of telephones						29.80%	70.20%
Credibility Dimension							
Company with good reputation						14.90%	85.10%
Not put undue pressure on clinicians					0.00%	17.00%	83.00%
Accurate and consistent responses					0.00%	12.80%	87.20%
Understanding of specific needs					0.00%	14.90%	85.10%
Guarantee of services					0.00%	19.10%	80.90%
Security Dimension							
Safety of access to premises						33.30%	66.70%
Safe and secure keeping of documents					0.00%	19.10%	80.90%
Keeping patients' records confidential					0.00%	23.40%	76.60%
Accessibility Dimension							
Ease of accessing knowledgeable staff in person					0.00%	23.40%	76.60%
By telephone					0.00%	17.00%	83.00%
By e-mail					0.00%	17.00%	83.00%
Ease of accessing medical staff in person				0.00%	2.10%	25.50%	72.30%
By telephone					0.00%	17.00%	83.00%
By e-mail					0.00%	17.00%	83.00%
Blood bank's access points					0.00%	34.00%	66.00%
Communication Dimension							
Listening and showing understanding					0.00%	17.00%	83.00%
Explanation of options available					0.00%	10.60%	89.40%

Avoid technical jargon when speaking with clinicians					0.00%	17.00%	83.00%
Communication of anticipated delays					0.00%	21.30%	78.70%
Understanding the Customer Dimension							
Individualised recognition of customer						21.30%	78.70%
Try and determine what clinician requirements are					0.00%	17.00%	83.00%
Level and cost of service consistent with hospitals' requirements and affordability						10.60%	89.40%
Flexibility to accommodate clinicians' schedule						14.90%	85.10%

Appendix V. Frequency Distribution: Expectations Ratings (%) - Eastern Cape:

	Strongly disagree						Strongly agree
	1	2	3	4	5	6	7
Tangibles Dimension							
Equipment and technology used						29.30%	70.70%
Employees appearance and dress					2.40%	24.40%	73.20%
Documentation material used					2.40%	17.10%	80.50%
Physical facilities (premises)					4.90%	36.60%	58.50%
Reliability Dimension							
Keeping of promised service times						43.90%	56.10%
Keep clinicians informed of service times						31.70%	68.30%
Carrying out request as specified						43.90%	56.10%
No errors in service provision						39.00%	61.00%
Perform service right first time					2.40%	29.30%	68.30%
Same level of service at all times					2.40%	31.70%	65.90%
Responsiveness Dimension							
Provide prompt service					2.40%	29.30%	68.30%
Always be willing to help					2.40%	29.30%	68.30%
Prioritise urgent requests					2.40%	39.00%	58.50%
Never too busy to respond					2.40%	29.30%	68.30%
Prescribe specific times for service provision					2.40%	29.30%	68.30%
Competence Dimension							
Staff ability to answer questions						19.50%	80.50%
Knowledgeable employees					2.40%	17.10%	80.50%
Provide service without fumbling					2.40%	29.30%	68.30%
Appropriate and up to date material used						12.20%	87.80%
Courtesy Dimension							
Courteous employees					2.40%	26.80%	70.70%
Refrain from being rude or acting busy					2.40%	29.30%	68.30%
Have a pleasant demeanour					2.40%	29.30%	68.30%
Polite answering of telephones						24.40%	75.60%
Credibility Dimension							
Company with good reputation						29.30%	70.70%
Not put undue pressure on clinicians					2.40%	29.30%	68.30%
Accurate and consistent responses					2.40%	24.40%	73.20%
Understanding of specific needs					2.40%	36.60%	61.00%
Guarantee of services					2.40%	26.80%	70.70%
Security Dimension							
Safety of access to premises						42.40%	57.60%
Safe and secure keeping of documents					2.40%	19.50%	78.00%
Keeping patients' records confidential					2.40%	22.00%	75.60%
Accessibility Dimension							
Ease of accessing knowledgeable staff in person					2.40%	31.70%	65.90%
By telephone					2.40%	29.30%	68.30%
By e-mail					2.40%	29.30%	68.30%
Ease of accessing medical staff in person				2.40%	0.00%	39.00%	58.50%
By telephone					2.40%	29.30%	68.30%
By e-mail					2.40%	29.30%	68.30%
Blood bank's access points					2.40%	48.80%	48.80%
Communication Dimension							
Listening and showing understanding					2.40%	36.60%	61.00%

Explanation of options available					2.40%	31.70%	65.90%
Avoid technical jargon when speaking with clinicians					2.40%	29.30%	68.30%
Communication of anticipated delays					2.40%	36.60%	61.00%
Understanding the Customer Dimension							
Individualised recognition of customer						48.80%	51.20%
Try and determine what clinician requirements are					2.40%	29.30%	68.30%
Level and cost of service consistent with hospitals' requirements and affordability						39.00%	61.00%
Flexibility to accommodate clinicians' schedule						39.00%	61.00%

Appendix VI. Frequency Distribution: Perceptions Ratings (%) - KwaZulu-Natal:

	Strongly disagree						**Strongly agree**
	1	**2**	**3**	**4**	**5**	**6**	**7**
Tangibles Dimension							
Has modern equipment and technology				21.30	40.40	23.40	14.90
Staff appear neat and appropriately dressed			2.10	14.90	29.80	23.40	29.80
Service request forms easy to understand and visually appealing			2.10	14.90	29.80	34.00	19.10
Has visually attractive physical facilities		6.40	4.30	19.10	36.20	27.70	6.40
Reliability Dimension							
Provides its services at the time it promises to do so		0.00	6.40	21.30	27.70	36.20	8.50
Keeps clinicians informed about when services will be available		0.00	8.50	17.00	25.50	34.00	14.90
Follows the exact specifications of the clinicians' request			2.10	14.90	25.50	29.80	27.70
Service provided is free of errors			4.30	19.10	25.50	25.50	25.50
Performs service right the first time			2.10	19.10	31.90	21.30	25.50
Staff perform same level of service at all times of the day	4.30	2.10	6.40	23.40	36.20	17.00	10.60
Responsiveness Dimension							
Employees give prompt service			2.10	25.50	17.00	38.30	17.00
Staff always willing to help you			2.10	23.40	19.10	29.80	25.50
Emergency service requests always treated with urgency	2.10		8.50	19.10	17.00	34.00	19.10
Staff never too busy to respond to clinicians' requests			8.50	17.00	23.40	40.40	10.60
Specific times for provision of service prescribed to clinicians		2.10	10.60	29.80	23.40	27.70	6.40
Competence Dimension							
Staff appear to know what they are doing			4.30	23.40	14.90	34.00	23.40
Employees have knowledge to answer your questions			2.10	25.50	25.50	31.90	14.90
Staff provide service without fumbling around			4.30	17.00	25.50	25.50	27.70
Guidelines for use of service is appropriate and up to date		0.00	4.30	21.30	23.40	36.20	14.90
Courtesy Dimension							
Staff consistently courteous with clinicians			12.80	12.80	25.50	36.20	12.80
When asked questions, staff refrain from being rude	2.10		4.30	21.30	14.90	36.20	21.30
Staff have a pleasant demeanour	0.00	2.10	4.30	12.80	23.40	36.20	21.30
Staff who answer telephone are considerate and polite		2.10	8.50	10.60	31.90	25.50	21.30
Credibility Dimension							
SANBS has a good reputation			6.40	6.40	25.50	31.90	29.80
Staff do not put undue pressure to clinicians			6.40	8.50	31.90	38.30	14.90
Responses are accurate and consistent with reliable sources			2.10	17.00	34.00	21.30	25.50
Employees understand clinicians specific needs		0.00	6.40	21.30	19.10	29.80	23.40
SANBS guarantees its services	0.00	0.00	8.50	17.00	21.30	29.80	23.40
Security Dimension							
Always safe to access blood bank		2.10	4.30	19.10	27.70	31.90	14.90
Patients' records are kept confidential, safe and secure			2.10	23.40	23.40	34.00	17.00
Clinicians confident about service provided			2.10	21.30	19.10	31.90	25.50
Accessibility Dimension							
Clinicians easy to access knowledgeable blood bank staff:							
In person	4.30	0.00	2.10	29.80	25.50	23.40	14.90
By telephone				25.50	21.30	23.40	29.80
By e-mail	29.80	34.00	10.60	10.60	10.60	4.30	0.00
Clinicians easy to access SANBS medical staff:							
In person	4.30	4.30	6.40	31.90	25.50	19.10	8.50
By telephone		2.10	8.50	17.00	25.50	34.00	12.80
By e-mail	29.80	19.10	12.80	6.40	10.60	17.00	4.30
Blood banks access points conveniently located	2.10		6.40	17.00	31.90	29.80	12.80
Communication Dimension							

Staff listen to clinicians' problem with understanding and concern		0.00	2.10	19.10	42.60	23.40	12.80
Staff explain clearly various options available to a particular query			2.10	19.10	36.20	25.50	17.00
Staff avoid technical jargon when speaking with clinicians			2.10	25.50	31.90	29.80	10.60
Staff call if there is an anticipated delay in service provision		8.50	6.40	17.00	27.70	25.50	14.90
Understanding the Customer Dimension							
Recognise each regular clinician and address them by name	4.30	0.00	4.30	21.30	23.40	38.30	8.50
Try to determine what clinicians' specific requirements are	2.10	2.10	4.30	23.40	29.80	23.40	14.90
Level and cost of service consistent with requirements	0.00	0.00	6.40	29.80	17.00	38.30	8.50
Flexible enough to accommodate clinicians' schedule	0.00	0.00	0.00	27.70	29.80	31.90	10.60

Appendix VII. Frequency Distribution: Perceptions Ratings (%) - Eastern Cape:

	Strongly disagree						Strongly agree
	1	2	3	4	5	6	7
Tangibles Dimension							
Has modern equipment and technology				29.30%	34.10%	26.80%	9.80%
Staff appear neat and appropriately dressed			2.40%	17.10%	46.30%	22.00%	12.20%
Service request forms easy to understand and visually appealing			7.30%	24.40%	26.80%	19.50%	22.00%
Has visually attractive physical facilities		4.90%	14.60%	17.10%	41.50%	14.60%	7.30%
Reliability Dimension							
Provides its services at the time it promises to do so		2.40%	4.90%	26.80%	19.50%	24.40%	22.00%
Keeps clinicians informed about when services will be available	2.40%	2.40%	7.30%	26.80%	29.30%	19.50%	12.20%
Follows the exact specifications of the clinicians' request			4.90%	14.60%	36.60%	26.80%	17.10%
Service provided is free of errors	2.40%		0.00%	17.10%	41.50%	24.40%	14.60%
Performs service right the first time			7.30%	9.80%	26.80%	39.00%	17.10%
Staff perform same level of service at all times of the day	0.00%	0.00%	9.80%	24.40%	17.10%	34.10%	14.60%
Responsiveness Dimension							
Employees give prompt service			7.30%	19.50%	34.10%	22.00%	17.10%
Staff always willing to help you			7.30%	22.00%	26.80%	24.40%	19.50%
Emergency service requests always treated with urgency			9.80%	14.60%	22.00%	39.00%	14.60%
Staff never too busy to respond to clinicians' requests			4.90%	26.80%	24.40%	24.40%	19.50%
Specific times for provision of service prescribed to clinicians		7.30%	14.60%	17.10%	24.40%	26.80%	9.80%
Competence Dimension							
Staff appear to know what they are doing			9.80%	22.00%	14.60%	39.00%	14.60%
Employees have knowledge to answer your questions			14.60%	24.40%	22.00%	26.80%	12.20%
Staff provide service without fumbling around			9.80%	31.70%	12.20%	29.30%	17.10%
Guidelines for use of service is appropriate and up to date		2.40%	7.30%	31.70%	12.20%	26.80%	19.50%
Courtesy Dimension							
Staff consistently courteous with clinicians			9.80%	24.40%	22.00%	26.80%	17.10%
When asked questions, staff refrain from being rude	2.40%		2.40%	24.40%	24.40%	34.10%	12.20%
Staff have a pleasant demeanour	2.40%	0.00%	7.30%	12.20%	39.00%	29.30%	9.80%
Staff who answer telephone are considerate and polite		2.40%	4.90%	22.00%	29.30%	29.30%	12.20%
Credibility Dimension							
SANBS has a good reputation	2.40%		7.30%	9.80%	34.10%	26.80%	19.50%
Staff do not put undue pressure to clinicians			0.00%	17.10%	34.10%	34.10%	14.60%
Responses are accurate and consistent with reliable sources			2.40%	19.50%	41.50%	24.40%	12.20%
Employees understand clinicians specific needs		2.40%	7.30%	22.00%	26.80%	29.30%	12.20%
SANBS guarantees its services	2.40%	2.40%	12.20%	9.80%	24.40%	36.60%	12.20%
Security Dimension							
Always safe to access blood bank		0.00%	12.20%	22.00%	22.00%	34.10%	9.80%
Patients' records are kept confidential, safe and secure			4.90%	31.70%	24.40%	31.70%	7.30%
Clinicians confident about service provided			4.90%	24.40%	22.00%	34.10%	14.60%
Accessibility Dimension							
Clinicians easy to access knowledgeable blood bank staff:							
In person	0.00%	4.90%	4.90%	34.10%	14.60%	26.80%	14.60%
By telephone				41.50%	7.30%	31.70%	19.50%
By e-mail	26.80%	29.30%	2.40%	9.80%	14.60%	14.60%	2.40%
Clinicians easy to access SANBS medical staff:							
In person	2.40%	4.90%	9.80%	36.60%	24.40%	12.20%	9.80%
By telephone		0.00%	2.40%	34.10%	19.50%	31.70%	12.20%
By e-mail	34.10%	24.40%	2.40%	4.90%	14.60%	17.10%	2.40%
Blood banks access points conveniently located	0.00%		12.20%	19.50%	31.70%	26.80%	9.80%
Communication Dimension							

Staff listen to clinicians' problem with understanding and concern		2.40%	7.30%	24.40%	26.80%	22.00%	17.10%
Staff explain clearly various options available to a particular query			12.20%	24.40%	31.70%	14.60%	17.10%
Staff avoid technical jargon when speaking with clinicians			9.80%	19.50%	36.60%	19.50%	14.60%
Staff call if there is an anticipated delay in service provision		2.40%	9.80%	19.50%	22.00%	29.30%	17.10%
Understanding the Customer Dimension							
Recognise each regular clinician and address them by name	2.40%	4.90%	17.10%	39.00%	12.20%	12.20%	12.20%
Try to determine what clinicians' specific requirements are	2.40%	0.00%	12.20%	29.30%	24.40%	17.10%	14.60%
Level and cost of service consistent with requirements	2.40%	7.30%	7.30%	19.50%	29.30%	24.40%	9.80%
Flexible enough to accommodate clinicians' schedule	2.40%	2.40%	9.80%	22.00%	24.40%	29.30%	9.80%

Appendix VIII. Frequency Distribution: Expectations Ratings (%) - Rural State Hospital:

	Strongly disagree						Strongly agree
	1	2	3	4	5	6	7
Tangibles Dimension							
Equipment and technology used						17.20%	82.80%
Employees appearance and dress					3.40%	13.80%	82.80%
Documentation material used					3.40%	10.30%	86.20%
Physical facilities (premises)					6.90%	17.20%	75.90%
Reliability Dimension							
Keeping of promised service times						34.50%	65.50%
Keep clinicians informed of service times						41.40%	58.60%
Carrying out request as specified						41.40%	58.60%
No errors in service provision						41.40%	58.60%
Perform service right first time					3.40%	20.70%	75.90%
Same level of service at all times					3.40%	27.60%	69.00%
Responsiveness Dimension							
Provide prompt service					3.40%	20.70%	75.90%
Always be willing to help					3.40%	20.70%	75.90%
Prioritise urgent requests					3.40%	27.60%	69.00%
Never too busy to respond					3.40%	20.70%	75.90%
Prescribe specific times for service provision					3.40%	20.70%	75.90%
Competence Dimension							
Staff ability to answer questions						13.80%	86.20%
Knowledgeable employees					3.40%	6.90%	89.70%
Provide service without fumbling					3.40%	20.70%	75.90%
Appropriate and up to date material used						13.80%	86.20%
Courtesy Dimension							
Courteous employees					3.40%	31.00%	65.50%
Refrain from being rude or acting busy					3.40%	20.70%	75.90%
Have a pleasant demeanour					3.40%	20.70%	75.90%
Polite answering of telephones						27.60%	72.40%
Credibility Dimension							
Company with good reputation						27.60%	72.40%
Not put undue pressure on clinicians					3.40%	20.70%	75.90%
Accurate and consistent responses					3.40%	24.10%	72.40%
Understanding of specific needs					3.40%	24.10%	72.40%
Guarantee of services					3.40%	20.70%	75.90%
Security Dimension							
Safety of access to premises						21.10%	78.90%
Safe and secure keeping of documents					3.40%	13.80%	82.80%
Keeping patients' records confidential					3.40%	24.10%	72.40%
Accessibility Dimension							
Ease of accessing knowledgeable staff in person					3.40%	20.70%	75.90%
By telephone					3.40%	20.70%	75.90%
By e-mail					3.40%	20.70%	75.90%
Ease of accessing medical staff in person				3.40%	0.00%	27.60%	69.00%
By telephone					3.40%	20.70%	75.90%
By e-mail					3.40%	20.70%	75.90%
Blood bank's access points					3.40%	34.50%	62.10%
Communication Dimension							
Listening and showing understanding					3.40%	37.90%	58.60%

Explanation of options available					3.40%	31.00%	65.50%
Avoid technical jargon when speaking with clinicians					3.40%	20.70%	75.90%
Communication of anticipated delays					3.40%	27.60%	69.00%
Understanding the Customer Dimension							
Individualised recognition of customer						44.80%	55.20%
Try and determine what clinician requirements are					3.40%	20.70%	75.90%
Level and cost of service consistent with hospitals' requirements and affordability						27.60%	72.40%
Flexibility to accommodate clinicians' schedule						27.60%	72.40%

Appendix IX. Frequency Distribution: Expectations Ratings (%) - Urban State Hospitals:

	Strongly disagree						Strongly agree
	1	2	3	4	5	6	7
Tangibles Dimension							
Equipment and technology used						42.50%	57.50%
Employees appearance and dress					0.00%	30.00%	70.00%
Documentation material used					0.00%	27.50%	72.50%
Physical facilities (premises)					0.00%	42.50%	57.50%
Reliability Dimension							
Keeping of promised service times						30.00%	70.00%
Keep clinicians informed of service times						15.00%	85.00%
Carrying out request as specified						27.50%	72.50%
No errors in service provision						32.50%	67.50%
Perform service right first time					0.00%	30.00%	70.00%
Same level of service at all times					0.00%	32.50%	67.50%
Responsiveness Dimension							
Provide prompt service					0.00%	30.00%	70.00%
Always be willing to help					0.00%	30.00%	70.00%
Prioritise urgent requests					0.00%	32.50%	67.50%
Never too busy to respond					0.00%	30.00%	70.00%
Prescribe specific times for service provision					0.00%	30.00%	70.00%
Competence Dimension							
Staff ability to answer questions						15.00%	85.00%
Knowledgeable employees					0.00%	15.00%	85.00%
Provide service without fumbling					0.00%	30.00%	70.00%
Appropriate and up to date material used						5.00%	95.00%
Courtesy Dimension							
Courteous employees					0.00%	37.50%	62.50%
Refrain from being rude or acting busy					0.00%	30.00%	70.00%
Have a pleasant demeanour					0.00%	30.00%	70.00%
Polite answering of telephones						40.00%	60.00%
Credibility Dimension							
Company with good reputation						27.50%	72.50%
Not put undue pressure on clinicians					0.00%	30.00%	70.00%
Accurate and consistent responses					0.00%	22.50%	77.50%
Understanding of specific needs					0.00%	32.50%	67.50%
Guarantee of services					0.00%	27.50%	72.50%
Security Dimension							
Safety of access to premises						48.60%	51.40%
Safe and secure keeping of documents					0.00%	22.50%	77.50%
Keeping patients' records confidential					0.00%	22.50%	77.50%
Accessibility Dimension							
Ease of accessing knowledgeable staff in person					0.00%	40.00%	60.00%
By telephone					0.00%	30.00%	70.00%
By e-mail					0.00%	30.00%	70.00%
Ease of accessing medical staff in person				0.00%	2.50%	42.50%	55.00%
By telephone					0.00%	30.00%	70.00%
By e-mail					0.00%	30.00%	70.00%
Blood bank's access points					0.00%	52.50%	47.50%
Communication Dimension							
Listening and showing understanding					0.00%	25.00%	75.00%

Explanation of options available					0.00%	20.00%	80.00%
Avoid technical jargon when speaking with clinicians					0.00%	30.00%	70.00%
Communication of anticipated delays					0.00%	35.00%	65.00%
Understanding the Customer Dimension							
Individualised recognition of customer						37.50%	62.50%
Try and determine what clinician requirements are					0.00%	30.00%	70.00%
Level and cost of service consistent with hospitals' requirements and affordability						22.50%	77.50%
Flexibility to accommodate clinicians' schedule						30.00%	70.00%

Appendix X. Frequency Distribution: Expectations Ratings (%) - Private Hospitals:

	1	2	3	4	5	6	7
Tangibles Dimension							
Equipment and technology used						21.10%	78.90%
Employees appearance and dress					0.00%	10.50%	89.50%
Documentation material used					0.00%	5.30%	94.70%
Physical facilities (premises)					0.00%	31.60%	68.40%
Reliability Dimension							
Keeping of promised service times						15.80%	84.20%
Keep clinicians informed of service times						42.10%	57.90%
Carrying out request as specified						15.80%	84.20%
No errors in service provision						10.50%	89.50%
Perform service right first time					0.00%	10.50%	89.50%
Same level of service at all times					0.00%	10.50%	89.50%
Responsiveness Dimension							
Provide prompt service					0.00%	10.50%	89.50%
Always be willing to help					0.00%	10.50%	89.50%
Prioritise urgent requests					0.00%	10.50%	89.50%
Never too busy to respond					0.00%	10.50%	89.50%
Prescribe specific times for service provision					0.00%	10.50%	89.50%
Competence Dimension							
Staff ability to answer questions						5.30%	94.70%
Knowledgeable employees					0.00%	0.00%	100.00%
Provide service without fumbling					0.00%	10.50%	89.50%
Appropriate and up to date material used						0.00%	100.00%
Courtesy Dimension							
Courteous employees					0.00%	10.50%	89.50%
Refrain from being rude or acting busy					0.00%	10.50%	89.50%
Have a pleasant demeanour					0.00%	10.50%	89.50%
Polite answering of telephones						0.00%	100.00%
Credibility Dimension							
Company with good reputation						0.00%	100.00%
Not put undue pressure on clinicians					0.00%	10.50%	89.50%
Accurate and consistent responses					0.00%	0.00%	100.00%
Understanding of specific needs					0.00%	10.50%	89.50%
Guarantee of services							
Security Dimension							
Safety of access to premises						31.30%	68.80%
Safe and secure keeping of documents					0.00%	21.10%	78.90%
Keeping patients' records confidential					0.00%	21.10%	78.90%
Accessibility Dimension							
Ease of accessing knowledgeable staff in person					0.00%	10.50%	89.50%
By telephone					0.00%	10.50%	89.50%
By e-mail					0.00%	10.50%	89.50%
Ease of accessing medical staff in person				0.00%	0.00%	15.80%	84.20%
By telephone					0.00%	10.50%	89.50%
By e-mail					0.00%	10.50%	89.50%
Blood bank's access points					0.00%	26.30%	73.70%
Communication Dimension							
Listening and showing understanding					0.00%	10.50%	89.50%
Explanation of options available					0.00%	5.30%	94.70%
Avoid technical jargon when speaking with clinicians					0.00%	10.50%	89.50%

Communication of anticipated delays					0.00%	15.80%	84.20%
Understanding the Customer Dimension							
Individualised recognition of customer						10.50%	89.50%
Try and determine what clinician requirements are					0.00%	10.50%	89.50%
Level and cost of service consistent with hospitals' requirements and affordability						21.10%	78.90%
Flexibility to accommodate clinicians' schedule						15.80%	84.20%

Appendix XI. Frequency Distribution: Perceptions Ratings (%) - Rural State Hospitals:

	Strongly disagree						Strongly agree
	1	2	3	4	5	6	7
Tangibles Dimension							
Has modern equipment and technology				44.80%	31.00%	17.20%	6.90%
Staff appear neat and appropriately dressed			6.90%	31.00%	27.60%	20.70%	13.80%
Service request forms easy to understand and visually appealing			6.90%	24.10%	34.50%	17.20%	17.20%
Has visually attractive physical facilities		3.40%	10.30%	13.80%	55.20%	10.30%	6.90%
Reliability Dimension							
Provides its services at the time it promises to do so		3.40%	3.40%	34.50%	24.10%	20.70%	13.80%
Keeps clinicians informed about when services will be available	3.40%	0.00%	6.90%	34.50%	24.10%	20.70%	10.30%
Follows the exact specifications of the clinicians' request			0.00%	24.10%	34.50%	24.10%	17.20%
Service provided is free of errors	0.00%		0.00%	27.60%	37.90%	24.10%	10.30%
Performs service right the first time			0.00%	17.20%	41.40%	31.00%	10.30%
Staff perform same level of service at all times of the day	0.00%	3.40%	6.90%	20.70%	31.00%	31.00%	6.90%
Responsiveness Dimension							
Employees give prompt service			10.30%	27.60%	34.50%	17.20%	10.30%
Staff always willing to help you			6.90%	37.90%	20.70%	27.60%	6.90%
Emergency service requests always treated with urgency	0.00%		13.80%	20.70%	34.50%	20.70%	10.30%
Staff never too busy to respond to clinicians' requests			13.80%	17.20%	27.60%	31.00%	10.30%
Specific times for provision of service prescribed to clinicians		0.00%	17.20%	20.70%	41.40%	13.80%	6.90%
Competence Dimension							
Staff appear to know what they are doing			6.90%	37.90%	13.80%	34.50%	6.90%
Employees have knowledge to answer your questions			13.80%	37.90%	31.00%	10.30%	6.90%
Staff provide service without fumbling around			10.30%	37.90%	27.60%	17.20%	6.90%
Guidelines for use of service is appropriate and up to date		0.00%	13.80%	34.50%	24.10%	20.70%	6.90%
Courtesy Dimension							
Staff consistently courteous with clinicians			17.20%	27.60%	27.60%	20.70%	6.90%
When asked questions, staff refrain from being rude	3.40%		0.00%	34.50%	24.10%	27.60%	10.30%
Staff have a pleasant demeanour	3.40%	0.00%	6.90%	10.30%	44.80%	24.10%	10.30%
Staff who answer telephone are considerate and polite		3.40%	6.90%	17.20%	41.40%	20.70%	10.30%
Credibility Dimension							
SANBS has a good reputation	3.40%		10.30%	10.30%	51.70%	17.20%	6.90%
Staff do not put undue pressure to clinicians			3.40%	20.70%	44.80%	24.10%	6.90%
Responses are accurate and consistent with reliable sources			3.40%	20.70%	51.70%	17.20%	6.90%
Employees understand clinicians specific needs		0.00%	10.30%	27.60%	34.50%	17.20%	10.30%
SANBS guarantees its services	3.40%	0.00%	13.80%	13.80%	34.50%	24.10%	10.30%
Security Dimension							
Always safe to access blood bank		3.40%	17.20%	31.00%	27.60%	13.80%	6.90%
Patients' records are kept confidential, safe and secure			10.30%	41.40%	24.10%	17.20%	6.90%
Clinicians confident about service provided			10.30%	17.20%	31.00%	24.10%	17.20%
Accessibility Dimension							
Clinicians easy to access knowledgeable blood bank staff:							
In person	0.00%	3.40%	3.40%	44.80%	17.20%	20.70%	10.30%
By telephone				58.60%	3.40%	27.60%	10.30%
By e-mail	24.10%	37.90%	6.90%	13.80%	6.90%	10.30%	0.00%
Clinicians easy to access SANBS medical staff:							
In person	3.40%	0.00%	3.40%	44.80%	20.70%	20.70%	6.90%
By telephone		0.00%	3.40%	41.40%	20.70%	24.10%	10.30%
By e-mail	34.50%	27.60%	10.30%	3.40%	13.80%	6.90%	3.40%
Blood banks access points conveniently located	0.00%		13.80%	24.10%	34.50%	20.70%	6.90%

Communication Dimension							
Staff listen to clinicians' problem with understanding and concern		0.00%	6.90%	20.70%	48.30%	17.20%	6.90%
Staff explain clearly various options available to a particular query			6.90%	27.60%	44.80%	6.90%	13.80%
Staff avoid technical jargon when speaking with clinicians			10.30%	24.10%	51.70%	10.30%	3.40%
Staff call if there is an anticipated delay in service provision		6.90%	6.90%	24.10%	34.50%	17.20%	10.30%
Understanding the Customer Dimension							
Recognise each regular clinician and address them by name	3.40%	3.40%	3.40%	34.50%	27.60%	20.70%	6.90%
Try to determine what clinicians' specific requirements are	3.40%	0.00%	10.30%	27.60%	34.50%	17.20%	6.90%
Level and cost of service consistent with requirements	3.40%	3.40%	10.30%	27.60%	27.60%	24.10%	3.40%
Flexible enough to accommodate clinicians' schedule	3.40%	0.00%	10.30%	31.00%	31.00%	20.70%	3.40%

Appendix XII. Frequency Distribution: Perceptions Ratings (%) - Urban State Hospitals:

	Strongly disagree						Strongly agree
	1	2	3	4	5	6	7
Tangibles Dimension							
Has modern equipment and technology				17.50%	40.00%	27.50%	15.00%
Staff appear neat and appropriately dressed			0.00%	10.00%	45.00%	22.50%	22.50%
Service request forms easy to understand and visually appealing			2.50%	22.50%	25.00%	25.00%	25.00%
Has visually attractive physical facilities		10.00%	12.50%	25.00%	30.00%	15.00%	7.50%
Reliability Dimension							
Provides its services at the time it promises to do so		0.00%	7.50%	15.00%	27.50%	35.00%	15.00%
Keeps clinicians informed about when services will be available	0.00%	2.50%	10.00%	15.00%	27.50%	30.00%	15.00%
Follows the exact specifications of the clinicians' request			7.50%	7.50%	25.00%	35.00%	25.00%
Service provided is free of errors	0.00%		5.00%	12.50%	25.00%	30.00%	27.50%
Performs service right the first time			7.50%	10.00%	20.00%	35.00%	27.50%
Staff perform same level of service at all times of the day	5.00%	0.00%	12.50%	17.50%	25.00%	25.00%	15.00%
Responsiveness Dimension							
Employees give prompt service			2.50%	17.50%	17.50%	42.50%	20.00%
Staff always willing to help you			2.50%	12.50%	22.50%	35.00%	27.50%
Emergency service requests always treated with urgency	2.50%		5.00%	15.00%	10.00%	47.50%	20.00%
Staff never too busy to respond to clinicians' requests			2.50%	22.50%	22.50%	32.50%	20.00%
Specific times for provision of service prescribed to clinicians		7.50%	10.00%	27.50%	12.50%	35.00%	7.50%
Competence Dimension							
Staff appear to know what they are doing			5.00%	15.00%	12.50%	37.50%	30.00%
Employees have knowledge to answer your questions			7.50%	15.00%	17.50%	40.00%	20.00%
Staff provide service without fumbling around			2.50%	15.00%	15.00%	32.50%	35.00%
Guidelines for use of service is appropriate and up to date		2.50%	2.50%	25.00%	10.00%	45.00%	15.00%
Courtesy Dimension							
Staff consistently courteous with clinicians			5.00%	12.50%	20.00%	42.50%	20.00%
When asked questions, staff refrain from being rude	0.00%		5.00%	15.00%	15.00%	42.50%	22.50%
Staff have a pleasant demeanour	0.00%	0.00%	7.50%	15.00%	20.00%	37.50%	20.00%
Staff who answer telephone are considerate and polite		0.00%	7.50%	17.50%	17.50%	35.00%	22.50%
Credibility Dimension							
SANBS has a good reputation	0.00%		5.00%	7.50%	17.50%	37.50%	32.50%
Staff do not put undue pressure to clinicians			0.00%	10.00%	25.00%	45.00%	20.00%
Responses are accurate and consistent with reliable sources			2.50%	15.00%	27.50%	27.50%	27.50%
Employees understand clinicians specific needs		0.00%	2.50%	17.50%	15.00%	40.00%	25.00%
SANBS guarantees its services	0.00%	0.00%	7.50%	17.50%	15.00%	42.50%	17.50%
Security Dimension							
Always safe to access blood bank		0.00%	5.00%	12.50%	25.00%	45.00%	12.50%
Patients' records are kept confidential, safe and secure			0.00%	12.50%	27.50%	45.00%	15.00%
Clinicians confident about service provided			0.00%	25.00%	10.00%	40.00%	25.00%
Accessibility Dimension							
Clinicians easy to access knowledgeable blood bank staff:							
In person	5.00%	2.50%	0.00%	30.00%	15.00%	25.00%	22.50%
By telephone				22.50%	17.50%	30.00%	30.00%
By e-mail	35.00%	30.00%	7.50%	5.00%	17.50%	5.00%	0.00%
Clinicians easy to access SANBS medical staff:							
In person	2.50%	7.50%	10.00%	30.00%	25.00%	17.50%	7.50%
By telephone		2.50%	2.50%	20.00%	25.00%	40.00%	10.00%
By e-mail	32.50%	17.50%	2.50%	7.50%	12.50%	25.00%	2.50%
Blood banks access points conveniently located	2.50%		5.00%	20.00%	30.00%	32.50%	10.00%

Communication Dimension							
Staff listen to clinicians' problem with understanding and concern		0.00%	0.00%	27.50%	20.00%	32.50%	20.00%
Staff explain clearly various options available to a particular query			5.00%	20.00%	27.50%	30.00%	17.50%
Staff avoid technical jargon when speaking with clinicians			5.00%	27.50%	22.50%	27.50%	17.50%
Staff call if there is an anticipated delay in service provision		2.50%	12.50%	12.50%	20.00%	35.00%	17.50%
Understanding the Customer Dimension							
Recognise each regular clinician and address them by name	5.00%	2.50%	15.00%	25.00%	12.50%	30.00%	10.00%
Try to determine what clinicians' specific requirements are	2.50%	0.00%	5.00%	22.50%	25.00%	30.00%	15.00%
Level and cost of service consistent with requirements	0.00%	2.50%	7.50%	17.50%	17.50%	42.50%	12.50%
Flexible enough to accommodate clinicians' schedule	0.00%	0.00%	0.00%	17.50%	27.50%	40.00%	15.00%

Appendix XIII. Frequency Distribution: Perceptions Ratings (%) - Private Hospitals:

	Strongly disagree						Strongly agree
	1	2	3	4	5	6	7
Tangibles Dimension							
Has modern equipment and technology				10.50%	42.10%	31.60%	15.80%
Staff appear neat and appropriately dressed			0.00%	5.30%	36.80%	26.30%	31.60%
Service request forms easy to understand and visually appealing			5.30%	5.30%	26.30%	47.40%	15.80%
Has visually attractive physical facilities		0.00%	0.00%	10.50%	31.60%	52.60%	5.30%
Reliability Dimension							
Provides its services at the time it promises to do so		0.00%	5.30%	26.30%	15.80%	36.80%	15.80%
Keeps clinicians informed about when services will be available	0.00%	0.00%	5.30%	15.80%	31.60%	31.60%	15.80%
Follows the exact specifications of the clinicians' request			0.00%	15.80%	36.80%	21.10%	26.30%
Service provided is free of errors	5.30%		0.00%	15.80%	42.10%	15.80%	21.10%
Performs service right the first time			5.30%	21.10%	31.60%	15.80%	26.30%
Staff perform same level of service at all times of the day	0.00%	0.00%	0.00%	42.10%	26.30%	15.80%	15.80%
Responsiveness Dimension							
Employees give prompt service			0.00%	26.30%	26.30%	26.30%	21.10%
Staff always willing to help you			5.30%	21.10%	26.30%	10.50%	36.80%
Emergency service requests always treated with urgency	0.00%		10.50%	15.80%	15.80%	36.80%	21.10%
Staff never too busy to respond to clinicians' requests			5.30%	26.30%	21.10%	36.80%	10.50%
Specific times for provision of service prescribed to clinicians		5.30%	10.50%	21.10%	21.10%	31.60%	10.50%
Competence Dimension							
Staff appear to know what they are doing			10.50%	15.80%	21.10%	36.80%	15.80%
Employees have knowledge to answer your questions			0.00%	26.30%	26.30%	36.80%	10.50%
Staff provide service without fumbling around			10.50%	21.10%	15.80%	31.60%	21.10%
Guidelines for use of service is appropriate and up to date		0.00%	0.00%	15.80%	26.30%	21.10%	36.80%
Courtesy Dimension							
Staff consistently courteous with clinicians			15.80%	15.80%	26.30%	26.30%	15.80%
When asked questions, staff refrain from being rude	5.30%		5.30%	21.10%	21.10%	31.60%	15.80%
Staff have a pleasant demeanour	0.00%	5.30%	0.00%	10.50%	31.60%	36.80%	15.80%
Staff who answer telephone are considerate and polite		5.30%	5.30%	10.50%	42.10%	21.10%	15.80%
Credibility Dimension							
SANBS has a good reputation	0.00%		5.30%	5.30%	21.10%	31.60%	36.80%
Staff do not put undue pressure to clinicians			10.50%	5.30%	31.60%	36.80%	15.80%
Responses are accurate and consistent with reliable sources			0.00%	21.10%	36.80%	21.10%	21.10%
Employees understand clinicians specific needs		5.30%	10.50%	21.10%	21.10%	26.30%	15.80%
SANBS guarantees its services	0.00%	5.30%	10.50%	5.30%	21.10%	26.30%	31.60%
Security Dimension							
Always safe to access blood bank		0.00%	0.00%	21.10%	21.10%	36.80%	21.10%
Patients' records are kept confidential, safe and secure			0.00%	36.80%	15.80%	31.60%	15.80%
Clinicians confident about service provided			0.00%	26.30%	26.30%	31.60%	15.80%
Accessibility Dimension							
Clinicians easy to access knowledgeable blood bank staff:							
In person	0.00%	0.00%	10.50%	15.80%	36.80%	31.60%	5.30%
By telephone				15.80%	26.30%	21.10%	36.80%
By e-mail	21.10%	26.30%	5.30%	15.80%	10.50%	15.80%	5.30%
Clinicians easy to access SANBS medical staff:							
In person	5.30%	5.30%	10.50%	26.30%	31.60%	5.30%	15.80%
By telephone		0.00%	15.80%	10.50%	21.10%	31.60%	21.10%
By e-mail	26.30%	21.10%	15.80%	5.30%	10.50%	15.80%	5.30%
Blood banks access points conveniently located	0.00%		10.50%	5.30%	31.60%	31.60%	21.10%
Communication Dimension							

Staff listen to clinicians' problem with understanding and concern		5.30%	10.50%	10.50%	47.40%	10.50%	15.80%
Staff explain clearly various options available to a particular query			10.50%	15.80%	31.60%	21.10%	21.10%
Staff avoid technical jargon when speaking with clinicians			0.00%	10.50%	31.60%	42.10%	15.80%
Staff call if there is an anticipated delay in service provision		10.50%	0.00%	21.10%	21.10%	26.30%	21.10%
Understanding the Customer Dimension							
Recognise each regular clinician and address them by name	0.00%	0.00%	10.50%	31.60%	15.80%	26.30%	15.80%
Try to determine what clinicians' specific requirements are	0.00%	5.30%	10.50%	31.60%	21.10%	5.30%	26.30%
Level and cost of service consistent with requirements	0.00%	5.30%	0.00%	36.80%	26.30%	21.10%	10.50%
Flexible enough to accommodate clinicians' schedule	0.00%	5.30%	5.30%	31.60%	21.10%	26.30%	10.50%

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