EVALUATING THE EXTENT TO WHICH NELSON MANDELA METROPOLITAN UNIVERSITY (NMMU) LIBRARIES MEET STUDENT EXPECTATIONS

BY

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SUPERVISOR: Dr John M Burger

December 2006
DECLARATION

I, Mu Zhibing, hereby declare that:

- The work in this dissertation is my own original work;
- I have been informed about and understand the implications of plagiarism.
  All sources used or referred to have been documented and recognised; and
- this dissertation has not been previously submitted in full or partial fulfilment
  of the requirements for an equivalent or higher qualification at any other
  recognised educational institution.

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Port Elizabeth

December 2006
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EXECUTIVE SUMMARY

The failure to evaluate the service quality by comparing service expectations and service perceptions of students requires that the management of NMMU libraries identify the service expectations and service perceptions of students and measure the gaps between these service expectations and service perceptions of students.

A literature review was conducted to explore the service expectations and service perceptions of students. An effective method (using the LibQUAL model) to evaluate the service quality of NMMU libraries based on the service expectations of students was described. Thereafter, a LibQUAL survey was used to collect the required empirical data from a convenience sample of 2,047 students enrolled at NMMU.

The empirical findings showed that gaps existed between the service expectations and service perceptions of students at different campuses of NMMU. At different campuses of NMMU, the service expectations of students were not met in term of the service perceptions of the four dimensions (affect of service, library as place, information access and personal control) of the LibQUAL model.
The study identified the gaps between the service expectations and service perceptions of students at different NMMU campuses and conclusions and recommendations based on these gaps were formulated. The management of the NMMU libraries needs to choose appropriate strategies to improve the quality of NMMU library services based on the service expectations of students.

**KEY WORDS:**

Students
Library service
LibQUAL
Expectations
Perceptions
Nelson Mandela Metropolitan University (NMMU) libraries
Port Elizabeth
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1.1 RATIONALE AND BACKGROUND TO THE STUDY

Evaluating service is highly important for university libraries. University libraries are assumed to be institutions that provide excellent academic services for students (Guidelines for university library services to undergraduate students 2005:¶1). Therefore, evaluating the services provided by university libraries can assist in providing a better quality of information and can contribute to the university’s reputation by facilitating students’ academic success (Hoskins 2005:151).

Since 1960, the world has been transformed into the “information society”, a society in which human activities are supported by the services of information and communication technologies (Darries 2004:72). Libraries have played an important role in assisting the human intellect, as they are regarded as important in the information society and serve to improve man’s structured exploring and critical thinking (Kyrillidou & Heath 2001:¶1).

Being an information collector and service provider, university libraries have been identified as important in helping students obtain intellectual experiences and creative ability in their academic fields (Snoj & Petermanec 2001:¶1). Libraries
are core service providers of information for students in university education. Being non-profit organisations, university libraries do not feel the pressure of market forces from other information sources and service providers and do not evaluate their service quality on student expectations (Snoj & Petermanec 2001:¶1). Therefore, the evaluation of university library services has traditionally focused on how to efficiently operate inputs of library sources (academic books, invested funds, facilities, equipment and trained staff) and outputs (transaction services and special training programmes for students) (Haynes 2004:¶1, Nitecki no date :¶1).

The statistical results of library reports have only explained how library services can be provided effectively. The traditional method of measuring the service quality of university libraries does not indicate student demands or expectations and does not explore how university libraries have evaluated their quality of services based on student expectations (Haynes 2004:¶1).

In the 21st century the rapid development of digital technologies for collecting information has increased the ways students collect information and access information from a variety of sources (Boekhorst & Britz 2004:63). Students can easily buy academic information, books and articles, and get information from the media, online services and the Internet without coming into university libraries (Falcone & Rivera 2005:97). Student expectations with regard to the quality of university library services are therefore growing (Hoskins 2005:151).
Under the impact of the digital information technologies, university libraries have experienced increased pressure to provide students with efficient collection and accessing information skills to meet their expectations. With the increased needs of students, university libraries should focus on students’ feedback (Somi & Jager 2005:259).

The traditional methods of evaluating university library inputs and outputs therefore do not evaluate the quality of university library services on the basis of student expectations (Choudhury, Hobbs, Lorie & Flores 2002:¶1). A new way to evaluate the quality of library services on the basis of student expectations is now needed. With the objective of providing appropriate library services for students, the libraries need to better understand and identify student expectations. According to Kyrillidou of the Association of Research Libraries (ARL), senior programme officer for statistics and measurement, and Hipps (ARL Web developer and analyst) (2001:¶1), university libraries need to shift from measuring input and output to measuring the service quality of their libraries based on student expectations.

The Nelson Mandela Metropolitan University (NMMU) has library facilities on the North campus, the South campus, the Second avenue campus, the Vista campus and the George campus. The NMMU libraries are regarded as centres of the NMMU students’ study, learning and academic information resources.
According to Eales, the former interim director of the NMMU library and information service (who retired in August 2006), the basic service objective of the NMMU libraries is to provide excellent services to NMMU students. The traditional NMMU libraries' service has focused on assessing how well they provide existing services to students. However, according to Eales, Viljoen (the head of the library at the North campus), Odendaal (the head of the Saasveld library at the George campus), Van Wyk (the head of York Street library at the George campus), Makrwede (the head of library at the Vista campus) and Ntshinga (the head of library at the Second avenue campus), the libraries do not know whether their services actually meet student expectations.

According to Eales, students have complained about some aspects of the library services that do not meet their expectations, such as study space provided in libraries, updated collections and access to information. According to Eales, Van Wyk, Viljoen, Odendaal, Makrwede and Ntshinga, it is thus necessary to evaluate and improve the quality of the NMMU library services based on student expectations. The libraries need to know how to provide better services in order to facilitate students’ academic success.

To summarise, evaluating the quality of the NMMU library services as regards student expectations can result in an improvement to the level of quality of such services. A high level of service quality for the NMMU libraries will be an effective way to assist student learning and for developing their creative ability. According to Voges [the Hemis Officer and Information analyst of the CPID (Centre for
Planning and Institutional Department) at NMMU, the 22 202 students registered at NMMU by 9 June 2006 included 17 542 undergraduate students (including first-year to third-year students) and 1 916 Honours and B.Tech students. As the undergraduate, Honours and B.Tech students were the largest group of students (87.64 % of 22 202 students), the research focused on the undergraduate, Honours and B.Tech students to investigate their expectations for improving the quality of the services provided by the NMMU libraries.

The research project which used the LibQUAL model to evaluate and improve the quality of the George campuses’ library services was based on student expectations and would be started from the second semester of 2006. The quality of the NMMU library services will be evaluated by the HEQC (Higher Education Quality Committee in South Africa) in 2008. Therefore, the results of this research should be helpful to the libraries on all NMMU campuses. The research filled the gaps in the field of evaluating the quality of the NMMU library services based on student expectations. This should assist the NMMU libraries in improving the quality of their services in the future.

1.2 THE PURPOSE OF THIS RESEARCH

The main purpose of this study was to investigate and report on the expectations of the undergraduate, Honours and B.Tech students regarding the quality of the NMMU library services. To obtain an efficient evaluation, this study also investigated and reported on the perceptions of the above students.
regarding the quality of the NMMU library services. Student viewpoints were used to identify which aspects of the library services were working well and which were not.

1.3 THE RESEARCH PROBLEM AND SUBPROBLEMS

Service quality is regarded as an essential factor for any marketing strategy to achieve sustainable competitive advantages and to build and sustain positive relationships between organisations and consumers (Lassar, Manolis & Winsor 2000:¶1). For a university library, the service quality emphasises the relationship between the university library and the students and it should serve to satisfy student expectations. This, after all, is the reason why a university library exists (Hernon & Altman 1998:5). Therefore, to provide better services for students the library needs to focus on evaluating the quality of the university library services on the basis of student expectations.

Bearing in mind the reasons for the study, the main research problem was rephrased as follows:

**Does the service quality of NMMU libraries meet the expectations of under- and post graduate students?**
1.3.1 Subproblems

To address the main research problem, attention needed to be focused on the following subproblems:

- Which factors influence student expectations and perceptions for the university library services?
- How to measure the quality of university library services by comparing student expectations and perceptions?
- Are there differences or gaps between target student (under- and post graduate students) expectations and perceptions in evaluating the service quality of NMMU libraries?

1.4 RESEARCH OBJECTIVES

The research objectives were divided into two sections.

1.4.1 The primary research objective

The primary research objective was to explore how to build a closer relationship between the service quality of the NMMU libraries and the expectations of the students.
1.4.2 Secondary research objectives

The secondary objectives were:

- To implement an in-depth literature study to identify student expectations and perceptions and to identify which factors influence student expectations and perceptions (subproblem 1);
- to analyse the related literature on measuring the service quality in university libraries by comparing student expectations and perceptions (subproblem 2);
- to identify the current levels of quality of NMMU library services;
- to identify the differences or gaps between student expectations and perceptions regarding the quality of the NMMU services (subproblem 3);
- to provide information on how NMMU libraries can improve their level of service by investigating the expectations and perceptions of target students.

1.5 THE DEFINITION OF KEY CONCEPTS

The specific meaning of key concepts to be used in this study must be defined.

These key concepts for the proposed research are explained as follows:
1.5.1 The concept of evaluation

Evaluation has been defined as the process of determining, by means of data analyses, whether the quality of a programme meets its target (Definitions of evaluation on the web no date:¶1). According to Haynes (2004:¶1), evaluation focuses on how objectives have been met as regards their efficacy and the extent to which the evaluation has been used as a research method to investigate the people who have experienced such a service.

1.5.2 The concept of service

Ramaswamy (in Chang, Chen & Hsu 2002:¶1) defines service as a company's business transactions between a service provider and its target consumers; such transactions must satisfy the consumers. For the purpose of this current study the services of the NMMU libraries are defined as library and information services (LIS) which are able to facilitate students' access to academic information resources and support students' academic education programmes (Library & information services annual statistical report 2005:4).

For the purpose of this current study, the library and information services of the NMMU libraries included the academic material copying service, the service of access to academic information, the borrowing service, the customer care service, the service of electronic access, interbranch library loans, interlibrary
loans, database training programmes and the online public access catalogue (OPAC) [Nelson Mandela Metropolitan University library and information services (LIS) guide to library and information services 2006:6-18].

1.5.3 The concept of quality

Kasper, Helsdingen and Vries jr. (1999:188) have defined quality as “the extent to which the service, the service process and the service organisation can satisfy the expectations of the user.” Palmer (2005:261) identifies an organisation’s quality goals as meeting or satisfying the expectations of the target users by offering high service quality.

1.5.4 The concept of expectation

A conventional concept of an expectation is defined as “a belief about (or mental picture of) the future, or the feeling that something is about to happen, or wishing with confidence in its fulfilment” (WordReference.com Dictionary 2005¶1). For the purpose of this current study the service provider (NMMU libraries) needs a clearer definition of expectation to be identified. To do this expectation is defined as the students’ service expectations of the NMMU library services. Schneider and White (2004:41) identify service expectations as “expectations on how the service transaction should have occurred.”
Berry and Parasuraman (in Kasper et al 1999:197) maintain that service expectations include two different levels of service expectations. Zeithaml and Bitner (1996:77) explain the two levels of service expectations as follows: The first level of service expectations is defined as a desired level of service expectation regarding the level of services the consumer will be pleased to receive. The second level of service expectations is defined as an adequate level of service expectations which the consumer may accept.

1.5.5 The concept of perception

A traditional concept of perception is defined by Schiffman and Kanuk (in Kasper et al 1999:199) as “the process by which an individual selects, organises and interprets stimuli into a meaningful and coherent picture of the world.” For the purpose of the study, student perception was defined as service perception which focused on a response and on a comparison of the students’ service expectations for the NMMU library services. If a service can accord with the requirement of the students’ service expectations, the students will accept the service (Hoffman & Bateson 2001:326).

1.5.6 The concept of service quality

Mangold and Babakus (in Schneider & White 2004:41) define service quality as “the outcome of a process in which consumers’ expectations for the service are compared with their perceptions of the service actually delivered”.
1.5.7 The concept of the SERVQUAL model

Parasuraman, Zeithaml and Berry designed the SERVQUAL model to measure how consumers evaluate the quality of services provided, and they identified five dimensions as the criteria used by consumers to estimate the quality of services (Phipps 2001:1). These dimensions are shown in Table 1.1 (Gronroos 2000:74; Schneider & White 2004:31-32).

**TABLE 1.1**

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<tr>
<td>Tangibles</td>
<td>Tangibles have been defined as the aspect of a service firm’s facilities, equipment and communication materials.</td>
</tr>
<tr>
<td>Reliability</td>
<td>The service firm provides the service performance right the first time and delivers the promised performance to its consumers.</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>The employees of the service firm are willing to help consumers to give prompt services.</td>
</tr>
<tr>
<td>Assurance</td>
<td>The behaviour of the service firm’s employees has the ability to engender consumers’ trust and confidence and to make consumers feel safe when they use the firm’s service.</td>
</tr>
<tr>
<td>Empathy</td>
<td>Consumers feel that they are given personal attention by the employees of the service firm and the employees of the service firm show an interest in dealing with consumers’ problem.</td>
</tr>
</tbody>
</table>

Source: Adapted from Gronroos 2000:74 and Schneider & White 2004:31-32
1.5.8 The concept of the LibQUAL model

The LibQUAL model as a standard measurement of the quality of university library services was developed by the Association of Research Libraries (ARL) with the Texas A and M University in USA from 1999 (Roszkowski, Baky & Jones 2005:¶1). The LibQUAL model is a development of the SERVQUAL model to evaluate the quality of university library services by identifying and evaluating four dimensions for users’ evaluations (Cook, Heath, Thompson & Webster 2003:39). These dimensions are shown in Table 1.2.

**TABLE 1.2**

**LibQUAL DIMENSIONS AND DEFINITIONS**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affect of service</td>
<td>Affect of service can be defined as the emotional aspect of libraries’ service delivery.</td>
</tr>
<tr>
<td>Library as place</td>
<td>The libraries can provide students with a space for individual study and group cooperation.</td>
</tr>
<tr>
<td>Information access</td>
<td>The information access can be defined as an assessment of the relevance of the collections provided by the libraries and the ability of users to access information efficiently (including training programmes).</td>
</tr>
<tr>
<td>Personal control</td>
<td>Personal control can be defined as the extent to which users are able to browse through and control the sources of information provided.</td>
</tr>
</tbody>
</table>

Source: Adapted from Cook et al 2003:39
1.6 A REVIEW OF THE RELATED RESEARCH

A review of the related research can help researchers to properly focus on their main research problems and subproblems (Leedy & Ormrod 2005:65). According to Leedy and Ormrod (2005:64-65), a literature review has the following benefits:

- It can acquaint the researcher with other researchers who have worked in the same field.
- It can inform the researcher on how other researchers have designed their research methodology.
- It can offer related research sources of which the researcher may not have known.
- It can offer measurement tools developed by other researchers, of which the researcher may not have known.
- It can help the researcher analyse other researchers' findings.

Having reviewed the related literature, the researcher found that no research had been done on evaluating and measuring the service quality of NMMU libraries in Port Elizabeth, South Africa. In the following sections, the literature review focuses on models for evaluating the service quality (the SERVQUAL model and the LibQUAL model) and the measurement of the quality of university library services.
1.6.1 The SERVQUAL model

Parasuraman et al (in Douglas & Connor 2003) initiated the measurement of service quality by using a 22-item instrument which consisted of the five dimensions (tangibles, reliability, responsiveness, assurance and empathy). This was called the SERVQUAL model. They defined the service quality as the gap between the consumers’ expectations of services and the consumers’ perceptions of the actual services delivered. They indicated that the SERVQUAL model represented a score, giving service quality criteria that evaluated the gap between consumers’ perceptions and their expectations of service quality following the five dimensions (Gupta, McDaniel & Herath 2005; Schneider & White 2004; Palmer 2005).

Although this model was originally developed to measure and improve the service quality in financial service performance, it has been used to measure and improve the quality of other industries’ services as regards the target of consumer expectations (Gupta, McDaniel & Herath 2005; Kasper et al 1999).

1.6.2 The LibQUAL model

The LibQUAL model is derived from the SERVQUAL model which was initiated by the Association of Research Libraries (ARL) and Texas A and M university in USA as a standard method to measure the quality of university library services (McNeil & Giesecke 2002:96).
The LibQUAL model measures the gap between the library users’ expectations and their perceptions of service quality in four dimensions: affect of service, library as place, personal control and access to information (Roszkowski, Baky & Jones 2005:¶1). The LibQUAL model is a useful model for university libraries to evaluate the quality of university library services based on the expectations of students (Frequently Asked Questions Library Service Quality Survey 2004:¶1).

Evaluating the quality of university library services with the LibQUAL model can help university libraries to better measure and improve libraries’ student-oriented services. From 2000 to 2005, more than 500 libraries of ARL have used the LibQUAL model to evaluate their library services, “including colleges and universities, community colleges, health sciences libraries, law libraries, and public libraries” (LibQUAL+: Defining and Promoting Library Service Quality 2006:¶1).

1.6.3 Measurement of the quality of university libraries’ services

Dole (2002) used the LibQUAL model to measure service quality for students in Washburn University, USA. The findings indicated that students wanted more convenient methods for accessing services. The students ranked the library as place as a more important dimension than the other three dimensions when they evaluated the quality of library services. Dole suggested that shelving and seating should be put in so that students can have more space for individual study or group study and that public telephones should be put in the library.
Cook et al (2003) focused on the LibQUAL evaluation preparative results of ARL from 2002. Their findings indicated that personal control was the most important issue when users evaluated the quality of university library services and it had the highest student expectations score. The access to information issues had the lowest score compared with the other three issues when students evaluated the library service quality. They suggested that libraries should train their staff to better assist students to access information.

McCord and Nofsinger (2002) used the LibQUAL model to evaluate the library service quality at the Washington State University (WSU) in USA. Their findings indicated that the actual information access and working hours of libraries did not meet student expectations. They suggested that the library should focus more on students’ concerns.

As no studies could be found on measuring the quality of the NMMU library services in Port Elizabeth, the current research is expected to add to research by focusing on the analysis and the measurement of the quality of NMMU library services in Port Elizabeth.

1.7 THE RESEARCH HYPOTHESES

Research hypotheses can provide a direction for the researcher’s thinking in focusing on the related information which will assist the researcher in solving the main research problem and subproblems (Leedy & Ormrod 2005:4). For the
propose of this study, the hypotheses suggested were as follows: The services of NMMU libraries do not meet the student expectations.

1.8 THE RESEARCH METHODOLOGY

For the purpose of this study, the research methodology to be followed in the research study needed to be described. The researcher adopted the following broad methodological procedures to find suitable solutions to the main research problem and subproblems.

Firstly, a general literature study which consisted of books, journals, the Internet and electronic databases (such as EBSCO Host and Emerald) was employed. The objective of the literature study was to provide a theoretical framework for the study.

Secondly, the research as an empirical study of a quantitative nature employing the use of questionnaires was also undertaken. The questionnaire was delivered to the undergraduate, Honours and B.Tech students of faculties (the Faculty of Arts, the Faculty of Business and Economic Sciences, the Faculty of Education, the Faculty of Engineering and the Built Environment and Information Technology, the Faculty of Health Sciences, the Faculty of Law and the Faculty of Science) at the NMMU campuses (North campus, South campus, George campuses, Second avenue campus and Vista campus). With the questionnaires completed by target students, the data from these questionnaires were collected and
analysed to resolve the main problem and subproblems.

1.9 THE DATA COLLECTION AND ANALYSIS

For the purpose of this study, the following was done:

- Data were collected from the respondents who were the students registered at six NMMU campuses. These respondents were required to evaluate whether the quality of NMMU library services met their expectations on service quality.
- A survey was employed as the data collection method. A questionnaire was utilized to conduct the survey. The question format consisted of dichotomous questions, multiple-choice questions and five-point Likert scale questions.
- For the purpose of this study, the researcher employed a convenience sampling method to select 2 047 students (the undergraduate, Honours and B.Tech students of faculties) at six NMMU campuses.
- Captured data were edited into an Excel database and were analysed by a statistician. The results of the data analysis were reported with the assistance of descriptive statistics (the mean).
1.10 DELIMITATION OF THE RESEARCH

To establish the exact boundaries of the research problems it is necessary to delimit the research. Firstly, according to Erlank (the staff member in the reception office of the Bird Street campus), Hosten and Eales, there were no undergraduate students and Honours and B.Tech students registered at NMMU in a 2006 study at the Bird Street campus. Therefore, the research did not focus on the Bird Street campus. Secondly, the researcher only focused on undergraduate, Honours and B.Tech students who were registered at one of the six NMMU libraries (the North campus library, the South campus library, the Vista campus library, the Second avenue campus library, the Saasveld library at the George campus and the York Street library at the George campus).

1.11 ASSUMPTIONS

For the purpose of this study, it was assumed that undergraduate, Honours and B.Tech students as the NMMU libraries’ users had the necessary expertise to evaluate the quality of the NMMU library services based on their service expectations. The perceptions of the target students on the quality of the NMMU library services were regarded as valid indicators to describe the NMMU library service situation.
1.12 THE SIGNIFICANCE OF THE RESEARCH

This study contributed to the literature on evaluating and measuring service quality focusing on the NMMU libraries. The results of this research could assist the NMMU libraries to improve the quality of their services and satisfy their users.

The research was important for the following reasons:

- The research could help the NMMU libraries better evaluate the quality of their services and meet the expectations of NMMU students.
- The research could help the staff of the NMMU libraries become more efficient and effective when they provide library services to students.
- The research could help the NMMU libraries better provide student-oriented services to students.
- The research could contribute to enriching the knowledge on evaluating and measuring the quality of the NMMU library services.
- No research had previously been done on evaluating the quality of the NMMU library services in Port Elizabeth.
1.13 RESEARCHER'S QUALIFICATIONS

The researcher graduated from the Nelson Mandela Metropolitan University (NMMU) in 2004 and obtained a B.Tech degree in Marketing (cum laude). During the period of study, the researcher was successful in communicating with others, being filled with enthusiasm for the research project and keen to acquire new knowledge. The researcher was adequately qualified to complete the research project successfully.

1.14 A TIMETABLE FOR THE STUDY

The researcher designed a timetable for the research as follows:

**TABLE 1.3**

**THE TIMETABLE FOR THE STUDY**

<table>
<thead>
<tr>
<th>Goal</th>
<th>Date to accomplish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 1</td>
<td>January – June 2006</td>
</tr>
<tr>
<td>Chapter 2</td>
<td>August 2006</td>
</tr>
<tr>
<td>Chapter 3</td>
<td>September 2006</td>
</tr>
<tr>
<td>Chapter 4</td>
<td>October 2006</td>
</tr>
<tr>
<td>Chapter 5</td>
<td>November 2006</td>
</tr>
<tr>
<td>Chapter 6</td>
<td>December 2006</td>
</tr>
<tr>
<td>Final document</td>
<td>January 2007</td>
</tr>
</tbody>
</table>

Source: Own construction
1.15 THE CHAPTER OUTLINE

The dissertation is divided into six chapters. Chapter 1 provides details on the rationale for the study, the research objectives, the research methodology and the data collection and analysis.

Chapter 2 reviews the literature study, focusing on consumers’ service expectations and service perceptions.

Chapter 3 reviews the literature study, focusing on measuring service quality in university libraries by comparing students’ service expectations and service perceptions.

Chapter 4 focuses on a detailed discussion of the research methodology and the data collection and also the data analysis.

Chapter 5 focuses on analysing the findings and reporting the major findings of the empirical study.

Chapter 6 consists of a summary of the study, listing the conclusions based on both the literature and the empirical findings; this chapter ends with the recommendations based on these findings.
CONSUMERS’ SERVICE EXPECTATIONS AND SERVICE PERCEPTIONS

2.1 INTRODUCTION

Chapter 1 described the rationale and background to the study, the research problem and subproblems, the research objectives, the research methodology and the data collection and analysis. In this chapter, consumers’ service expectations and perceptions are explained.

In this chapter the researcher provides a literature review on consumer expectations. Consumer expectations play a very important role in evaluating the quality of services provided by service organisations. It is thus necessary to review the literature on consumer expectations. This chapter provides an overview of the literature on consumer expectations.

To properly understand consumer expectations the concept of expectation needs to be identified. It is necessary to understand the components of consumer expectation (desired service expectations and adequate service expectations) and which factors influence the two kinds of service expectation of consumers.

In effectively evaluating the quality of the services of service organisations it is necessary to compare consumers’ service expectations and consumers’ service
perceptions. Therefore this chapter also focuses on the concept of the service perception of consumers and describes factors which will influence consumers’ service perceptions.

2.2 STUDENTS ARE CONSUMERS

According to Weingand (in Hernon & Altman 1998:4), students are consumers of university libraries as they also have a relationship with libraries where they pay for products and the services of university libraries. Hernon and Altman (1998:5) point out that students are the consumers of university libraries who “actually use” the services of university libraries. They thus have expectations of the university library services and hope that the university libraries can provide the services that they expect (Hernon & Altman 1998:5).

2.3 THE CONCEPT OF EXPECTATION

Consumers concentrate on their expectations when they evaluate the service quality of a service organisation (Coye 2004:¶1). The concept of expectation thus needs to be explained. According to Coye (2004:¶1), an expectation is defined as a “subject probability” of persons which explains a series of actions that will happen imminently and will also happen in the future. According to Boulding, Kalna, Staelin and Zeithaml; Zeithaml, Berry and Parasuraman (in Coye 2004:¶1), there are two basic kinds of expectation. Firstly,
the consumer expectations are linked to the satisfaction evaluation of consumers. Zeithaml et al. (in Coye 2004:¶1) maintain that expectations are defined as predicted expectations of consumers which will exist before consumers make decisions to buy services. Secondly, according to Coye (2004:¶1) and Zeithaml and Bitner (1996:77) consumer expectations are defined as the expectations of which services are desired to be received. The kind of expectation shows that consumers hope that the quality of the service provided by service organisations should meet their desired expectations (Coye 2004:¶1; Zeithaml & Bitner 1996:77). Consumer expectations always combine consumers’ predicted expectations and how the service will be provided and what should be provided to consumers (Coye 2004:¶1; Prugsamatz, Pentecost & Ofstad 2006:¶1).

2.3.1 Expectations as beliefs

As consumer expectations can be regarded as predicted expectations (Coye 2004:¶1), Zeithaml et al. (in Coye 2004:¶1) and Schneider and White (2004:40) maintain that consumers can judge whether they satisfy a service or not through comparing what they desire to receive from a service and what they actually receive from a service. Olson and Dover (in Coye 2004:¶1) define consumer expectations as beliefs which have “an object and attribute”.

Therefore, service organisations must have an awareness of consumers’ belief. Fishbein and Ajzen (in Coye 2004:¶1) and Heath (2003:¶1) maintain that a belief links specific objects and internal attributes. Olson and Dover; Fishbein and
Ajzen (in Coye 2004:¶1) explain that the belief originates from the personal awareness in a particular situation, knowledge supplied by others, or resulting from various procedures.

2.3.2 Expectations in service management

In their research on service quality, Davidow, Uttal, Waldman and Gopalakrishnan; Zeithaml et al (in Coye 2004:¶1) maintain that the research on service quality should focus on evaluating “the ability” of service organisations to provide a service which will meet consumer expectations.

According to Prugsamatz, Pentecost and Ofstad (2006:¶1), consumers always evaluate whether the quality of a service meets their expectations through comparing what they desire of the service and what they actually receive. Solomon, Surprenant, Czepiel and Gutman (in Coye 2004:¶1) point out that consumer expectations on service quality are different from consumer expectations on the quality of actual products. As services are intangible, service expectations of consumers will be subjective. Schank and Abelson (in Coye 2004:¶1) maintain that the subjective expectations constitute a predicted, stable series of behaviours which will result.

Coye (2004:¶1) maintains that in service management of service organisations, the expectation will help consumers to evaluate the quality of the service provided by comparing consumer perceptions. According to Smith and Houston
(in Coye 2004:¶1), the consumer expectations in service management are used to evaluate the quality of a service and they can be influenced by the steps of the service process, the staff who provide the service and the various equipments or place where the actions are experienced.

2.4 UNDERSTANDING CONSUMER EXPECTATIONS

Lovelock (2001:112) maintains that when consumers make decisions to buy services, they always buy the services that fulfil their expectations. Expectations come from the consumers' mind and are influenced by their service experiences and when consumers have an expectation of a service, they will take action to see that the expectation is met (Lovelock 2001:112). Therefore, if a service organisation can offer a service to meet consumer expectations, the organisation will obtain positive benefits through selling services to consumers (Lovelock 2001:114).

Understanding consumer expectations is very important for service organisations. The expectations can provide consumers with the standards needed to evaluate the service quality of service organisations (Walker & Baker 2000:¶1).

2.5 SERVICE EXPECTATIONS

In the following sections, the researcher provides a framework for service expectations of consumers.
2.5.1 Definitions of service expectations

In a service industry, consumer expectations are regarded as service expectations of quality (Lovelock & Wright 2002:81). According to Schneider and White (2004:41), the service expectations are defined as the desired outcome of a service transaction.

To clearly define service expectations, the types of service expectations must be explained by the researcher. Zeithaml and Bitner (1996:77) pointed out that there are two levels of service expectations.

The first level of service expectations is defined as desired service expectations (Zeithaml & Bitner 1996:77). This level of service expectations is defined as the level of service expectations that the consumer expects to “receive” and it also combines what the service organisation seeks to provide and what the service organisation “should” provide (Zeithaml & Bitner 1996:77). The desired service expectation can indicate which services are desired by consumers (Zeithaml & Bitner 1996:77).

Secondly, Zeithaml and Bitner (1996:78) maintain that the service desired by consumers can be obtained, but consumers also know it is difficult to provide. For this reason, consumers have a lower level of service expectations. The lower level of service expectations is defined as adequate service expectations of service acceptable to the consumers. The adequate service expectation is
explained as the “minimum” requirement expected by the consumers based on the consumers’ service awareness and service experiences (Zeithaml & Bitner 1996:78).

2.5.2 The zone of tolerance

Services’ aim is defined as what is needed to satisfy the service requirements of consumers (Zeithaml & Bitner 1996:79). The service extent which consumers will accept and be satisfied with is called the zone of tolerance (shown in Figure 2.1) (Lovelock & Wirtz 2004:40).

FIGURE 2.1
THE ZONE OF TOLERANCE

Source: Adapted from Lovelock & Wirtz (2004:40)

The Figure 2.1 shows that if the service quality is lower than desired in service expectations, consumers’ satisfaction will be lower and they may not accept the service (Lovelock 2001:116). If the service quality is higher than desired in
service expectations, the service quality provided to target consumers will be higher than consumers’ service expectation. Then consumers’ satisfaction will be higher than adequate service expectations and consumers’ service expectations will be met (Zeithaml & Bitner 1996:80). When the service quality is lower than adequate service expectations, the consumers’ evaluations on service quality will be “negative” which reflect a lower level of consumers’ satisfaction and vice versa (Zeithaml & Bitner 1996:79).

Consumers’ zones of tolerance are different from those of others as different levels of desired service expectations and adequate service expectations exist (Zeithaml & Bitner 1996:80). Each consumer’s zone of tolerance is determined by many factors affecting service expectations and service perceptions.

2.6 FACTORS INFLUENCING CONSUMERS’ SERVICE EXPECTATIONS

When consumers evaluate service quality, consumers’ service expectations play an important role. Therefore, the management of a company must be aware of and control these factors which can effectively influence consumers’ service expectations.
2.6.1 Factors influencing desired service expectations

According to Zeithaml and Bitner (1996:82), the factors influencing desired service expectations are “personal needs” and “enduring service intensifiers” (shown in Figure 2.2).

**FIGURE 2.2**

FACTORS INFLUENCING DESIRED SERVICE EXPECTATIONS

![Diagram showing factors influencing desired service expectations]

Source: Adapted from Zeithaml & Bitner (1996:83)

As Figure 2.2 shows, personal needs are the key factor in influencing the level of consumers’ desired service expectations. These consist of “physical needs, social needs, psychological and functional needs” (Zeithaml & Bitner 1996:82). Zeithaml and Bitner (1996:83) maintain that another important factor is called “enduring service intensifiers”. This includes two factors (Zeithaml & Bitner 1996:83):

- One of the specific factors is regarded as “derived service expectation” which means consumers’ expectations are influenced by other individual persons or
Another factor of the enduring service intensifier is called the “personal service philosophy” which reflects consumers’ subliminal judgments about the level of service quality and evaluations of service providers.

2.6.2 Factors influencing adequate service expectations

According to Zeithaml and Bitner (1996:84-88), there are five factors that play an important role in influencing adequate service expectations (shown in Figure 2.3).

FIGURE 2.3
FACTORS INFLUENCING ADEQUATE SERVICE EXPECTATIONS

Source: Adapted from Zeithaml & Bitner (1996:85)
• Transitory service intensifiers are the individual and specific factors that can meet service expectations of consumers.

• Perceived service alternatives reflect whether more than one service provider can provide the same services to consumers or consumers can operate the services by themselves. Therefore, the level of their adequate service expectations is higher than those of other consumers who think they cannot have choices of service alternatives from other service providers.

• The consumers’ self-perceived service role is the third factor which is defined as the level of consumers’ adequate service expectations. It is influenced by their outcome of performance in the light of their expectations.

• Situational factors are the fourth factor. This means “service performance conditions” from the point of view of the consumers will influence the level of consumers’ adequate service expectations.

• Predicted service is the last factor. This means the level of adequate service expectations of consumers can be foreseen. Predicted service suggests that consumers can evaluate “what will happen” in the service transaction.

2.7 MANAGING SERVICE EXPECTATIONS OF CONSUMERS

Service organisations must identify and be aware of the service expectations of consumers in order to meet their expectations and satisfy consumers. Therefore, it is necessary that service organisations manage the service expectations of consumers (Bebko 2000:¶1). As the service is intangible, consumers may not know that the service they receive from the service organisation will meet their
expectations, and consumers might think that they will waste time and money in receiving the service (Bebko 2000:¶1; Schneider & White 2004:6). Therefore, the level of consumer expectations of service quality will increase. The service organisation needs to build a positive reliability impression on consumers’ minds and build a positive relationship between the quality of the service and consumer expectations (Bebko 2000:¶1).

To meet service expectations of consumers, service organisations need to identify the specific service expectations of consumers and help consumers to be aware of the service process and the actual level of service. Service organisations must provide services effectively to meet the service expectations of consumers (Bebko 2000:¶1). The service organisations will use “a suitable positioning statement, mission statements, service guarantees, consumer education programmes, pricing strategies and consistent and excellent service delivery” to effectively influence the service expectations of consumers and help consumers to have expectations which can indeed be fulfilled by the service organisations (Robledo 2001:¶1).

2.8 SETTING SERVICE STANDARDS

To meet service expectations of consumers, service organisations must be aware of the service expectations of consumers and their zone of tolerance. According to Lovelock and Wirtz (2004:239), the zone of tolerance is used to measure the level of consumer expectations from the level of desired service
expectations of consumers to the level of adequate service expectations of consumers. As service expectations of consumers are subjective and vary, the service organisations will need to set specific service standards to satisfy consumers from the service organisations’ point of view (Lovelock & Wirtz 2004:239).

Different service industries have different service standards to satisfy consumer expectations. The service standards include five basic factors (Service Standards: a Guide to the Initiative 1995:¶1):

- The service standards must describe the target service which a service organisation provides and what kind of consumers will be the target consumers (Service Standards: a Guide to the Initiative 1995:¶1).
- The service standards must include the service principles which will guarantee the quality of the service to meet target consumer expectations (Service Standards: a Guide to the Initiative 1995:¶1).
- The service standards must include a service recovery system. According to Lovelock and Wirtz (2004:385), service recovery means that when a consumer is not satisfied by a service or a service cannot meet his or her expectations, the service organisation will deal with the unsatisfactory service and build positive communication with the consumers. The service organisation must have a service recovery system to identify and analyse why the service cannot satisfy the consumer and cannot meet his or her expectation (Service Standards: a Guide to the Initiative 1995:¶1).
- The service standards must include setting specific service targets in the
service process and in service delivery. These service targets can effectively build a positive relationship between the quality of the service provided by the service organisation and consumer expectations (Service Standards: a Guide to the Initiative 1995:¶1).

- The service standards must include the fees for the services. If consumers do not know the fees for the services, their service expectations may not be appropriate for the services provided to them (Service Standards: a Guide to the Initiative 1995:¶1).

2.9 SATISFACTION AND SERVICE EXPECTATIONS OF CONSUMERS

Walker and Baker (2000:¶1) maintain that “a service” includes “a promise of satisfaction” and the aim in providing a service by a service organisation is to satisfy the consumers. According to Lovelock and Wirtz (2004:120), satisfaction is regarded as a mental “attitude” or evaluation of a consumer after the consumer buys a service or the consumer has a sequence of transactions with a service organisation. Whether or not service expectations of consumers can be met will depend on consumer satisfaction when comparing their service expectations with their service perceptions (Walker & Baker 2000:¶1).

The service expectations always exist in consumers’ minds and the consumers will evaluate whether the quality of the service meets their expectation by comparing their expectations with their perceptions (Nadiri & Hussain 2005:¶1). Therefore, the consumers evaluate whether or not they are satisfied with the
service by comparing their expectations with their perceptions (Walker & Baker 2000:¶1). If service expectations of consumers can be met or be exceeded by the quality of the service provided, the evaluation of the quality of the service will be positive and consumers will be satisfied with the quality of the service and vice versa (Walker & Baker 2000:¶1).

2.10 SERVICE PERCEPTIONS

In a service industry, consumer perceptions are regarded as service perceptions of consumers and the service perceptions of consumers is explained as how consumers evaluate the quality of services received by them and whether they are satisfied with the quality of the services (Zeithaml & Bitner 1996:103). According to Schneider and White (2004:41), when consumers evaluate whether the quality of service meets their expectations, they always consider their service perceptions against their service expectations.

2.10.1 Factors influencing consumers’ service perceptions

According to Zeithaml and Bitner (1996:104), there are four factors that influence consumers’ service perceptions (shown in Figure 2.4). These factors are explained in this section.
FIGURE 2.4

FACTORS INFLUENCING CONSUMERS’ SERVICE PERCEPTIONS

- Service encounters or “moments of truth”

When consumers transact business with a service organisation, the original judgment on the service quality will always happen in the service encounters (Zeithaml & Bitner 1996:105). The service encounters help consumers have “a snapshot of the service organisation’s service quality” (Zeithaml & Bitner 1996:105). The higher the service level the more positive the relationships between the service quality and consumers’ perceptions (Zeithaml & Bitner 1996:105).

Source: Adapted from Zeithaml & Bitner (1996:104)
Three types of service encounters exist: remote encounters, phone encounters and face-to-face encounters (Zeitham & Bitner 1996:107). Firstly, the consumers can operate transactions by themselves in the service encounter and these are called remote encounters (Zeitham & Bitner 1996:107). For example, a consumer can draw money or require his or her financial statements from the bank ATM system without the help of bank staff. Secondly, the consumers can operate transactions by phone with a service organisation and this is called a phone encounter (Zeitham & Bitner 1996:108). Thirdly, the consumers need to directly contact the staff of a service organisation to do business. These are called face-to-face encounters (Zeitham & Bitner 1996:108).

- Evidence of service

As the service perceptions are intangible, the consumer always looks for clues or evidences of service to evaluate the service quality (Zeitham & Bitner 1996:113). The evidence of service includes three general factors: people, processes and physical evidence (Baron & Harris 2003:55; Zeitham & Bitner 1996:113).

The item, “people” refers to the persons in service transactions including the employees in service interactions, consumers themselves and other consumers (Baron & Harris 2003:56). The item of “processes” refers to a service process including a series of activities or steps in the service process, the level of flexibility of the service performances and the level of technology of the service performances which influence the service perceptions of consumers (Lovelock 2001:39).
The item, “physical evidence” refers to the search for the clues of physical evidence in the service environment to influence their service perceptions since such services are intangible (Lovelock 2001:66). The physical evidence includes tangible service facilities or equipment, service guarantees and effective service communications which include “employees, telephones, faxes, telegrams, telex and electronic email” (Lovelock 2001:66-67).

- Image

Consumer service perceptions can also be influenced by the third factor, the “image or reputation” of the organisations. According to Zeithaml and Bitner (1996:114), the organisational image is defined as the initial impression of an organisation as perceived by the consumer. The consumers can get images from contact with the employees of a service organisation and their service experiences. The image can assist an organisation to build a positive service perception for consumers. This positive image can act as “a buffer” for consumers’ service perceptions when consumers obtain negative service experiences (Zeitham & Bitner 1996:115).

- Price

Service perceptions of consumers are sensitive to the price of the service. The price is always used by consumers to evaluate the service quality of organisations and build service perceptions of consumers before consumers make a purchase decision (Zeitham & Bitner 1996:116). The higher the price of a service, the higher the service expectations of consumers are and these higher expectations will greatly influence the service perceptions of consumers (Zeitham & Bitner 1996:116).
2.11 STRATEGIES FOR INFLUENCING CONSUMER SERVICE PERCEPTIONS

For an organisation, it is very important to obtain positive perceptions. Therefore, the management in an organisation must provide effective strategies, as follows (Zeithaml & Bitner 1996:126-128):

- **Build positive relationships between consumers and service encounters**
  Because service encounters can make deep impressions on consumers’ service perceptions, developing a high level of service encounter is necessary for organisations to increase consumers’ satisfaction. Service failures cannot always be avoided. Therefore, when consumers obtain unsatisfactory service, “doing it right the second time”, means building a recovery system and analysing the main cause of the service failure in the service process. These are very important for the staff in building and increasing the positive consumer satisfaction.

- **Build effective management of the evidence of service**
  The evidence of service (people, processes and physical evidence) plays a very important role in increasing positive consumer service perceptions. Therefore, the evidence of service should be regarded as an essential factor in the same
way as the traditional factors of the marketing mix (product, price, place and promotion) when an organisation makes its marketing strategies.

- Build a positive image

The image of an organisation should be sensitive in evaluating the quality of the organisation’s service and in meeting consumers’ service perceptions. Therefore, any organisation should have a strong interest in developing a positive image. As “image is reality” and “image development and improvement programmes have to be based on reality”, the management of the organisation must focus on fitting reality with positive communication actions, and consumer-oriented staff are needed to build positive consumers experiences.

2.12 SUMMARY

In this chapter, an overview of the literature studied on consumer expectations and consumer perceptions has been provided. The concept of expectation has been introduced and two aspects of the contents of expectation (expectations as beliefs and expectations in service management) were identified to properly understand consumer expectations.

Secondly, the definitions of service expectations, the zone of tolerance to measure whether the service quality of service organisations meets the service expectations of consumers, and the factors influencing consumers’ service expectations have been described. Managing the service expectations of consumers, setting service standards to meet consumers’ service expectations
for service organisations, as well as satisfaction and the service expectations of consumers have been discussed.

Finally, this chapter described consumers’ service perceptions and the factors influencing consumers’ service perceptions as well as strategies for influencing consumers’ perceptions. In Chapter 3, a review on measuring the service quality of university libraries by comparing service expectations of the students and service perceptions of the students will be given.
CHAPTER 3

MEASURING SERVICE QUALITY

3.1 INTRODUCTION

Chapter 2 described a literature review on service expectations of consumers and service perceptions of consumers. The service expectations and service perceptions of consumers play a very important role in evaluating the quality of services provided by service organisations. Consumers always evaluate the service quality of service organisations by comparing what they expect to receive and what they actually do receive. Therefore, it is necessary to review the literature on the measuring of service quality delivered by service organisations. This chapter provides an overview of the literature on measuring the quality of university library services.

To properly understand service quality the concept of service (including the characteristics of services), categories of services and the concept of services must be identified. For the purpose of this research it is necessary to understand the role of university libraries, the factors in the environment surrounding university library services, and university library marketing.
To effectively evaluate the quality of university library services it is necessary to identify the dimensions of service quality, the gaps in service quality and the Gap model. Most importantly, this chapter describes the instruments (the SERVQUAL instrument and the LibQUAL instrument) used to measure the service quality of service organisations in terms of the aspects of the SERVQUAL model (including the five dimensions of the SERVQUAL model, the five gaps of the SERVQUAL model, the sections of the SERVQUAL survey instrument and criticisms of the SERVQUAL model) as well as the aspects of the LibQUAL model (including the background of the LibQUAL model and the LibQUAL instrument) which were developed from the SERVQUAL model and are used to measure the quality of university library services.

3.2 THE CONCEPT OF SERVICE

According to Schneider and White (2004:4), “service is different from goods” and they point out that services focus on what can be done for consumers or to consumers. According to Lovelock (2001:4), services are defined as “something that” can be purchased and consumed, “but” they are intangible. Zeithaml and Bitner (in Kasper et al. 1999:9) define services as “deeds, processes and performances”. Kasper et al. (1999:13) define services as elusive “and relatively quickly perishable purchasing” activities which occur in a contact “process” intended to “create consumer satisfaction but during this interactive consumption this leads to material possession”.

Gilmore (2003:5) describes services in different ways: Firstly, services can be regarded as provided by “an organisation” since the commercial purpose for the existence of an organisation is to provide services. Secondly, services can also be regarded as the “core product which is the commercial output of a service organisation”. Thirdly, services can be regarded as “product augmentation” to promote the sale of goods or products and the services themselves can be regarded as “acts or modes of behaviour”.

According to Lovelock (2001:3), the concept of service includes two aspects. Firstly, a service is the actual activity or “performance provided by an organisation to consumers or organisations” (Gilmore 2003:4; Lovelock 2001:3). Secondly, a service is a commercial “activity from which” service organisations can provide consumers with “positive benefits or added value” (Lovelock 2001:3).

3.2.1 The characteristics of services

The characteristics of services are as follows:

- Intangibility

Zeithaml and Bitner (in Schneider & White 2004:6) point out that services are “deeds, processes and performances”. Therefore, consumers cannot have tangible impressions about services as the services do not have any “physical, manifestation” (Schneider & White 2004:6). According to Hoffman and Bateson
(2001:27), the intangibility of service is defined as the fact that services cannot be “touched” or stored like goods.

As services are intangible, service organisations will focus on aspects of the characteristics of services as follows: Firstly, the services cannot be saved and the service organisations cannot save the services to be used in the next sale periods (Hoffman & Bateson 2001:28-29). Secondly, the services can be easily copied by competitors and a service organisation cannot always keep the advantages of a unique service in one service industry (Hoffman & Bateson 2001:29). Thirdly, as services are intangible, there is difficulty for service organisations in promoting services and consumers cannot easily evaluate a service before they have consumed it as they cannot touch it (Hoffman & Bateson 2001:29). Fourthly, physical goods can be priced “based on cost-plus pricing” by a company and the price of services cannot be based on “cost” as services are intangible (Hoffman & Bateson 2001:29). When service organisations price a service, the factors influencing the price of a service include “the unit of service consumption”, the object to increase revenue, “consumers’ demands” and attracting consumers (Lamb, Hair & McDaniel 2004:353).

As services are intangible, consumers evaluate the quality of a service with more difficulty than they evaluate the quality of goods (Lamb et al 2004:345). When comparing the quality of goods, consumers experience the aspects of evaluating the quality of a service as follows (Lamb et al 2004:345): Firstly, consumers cannot easily evaluate the quality of a service by “a characteristic of service”
before they buy the service. Secondly, consumers put more attention on their experiences or perceptions after they have consumed the service when consumers are able to evaluate the quality of a service. Thirdly, consumers may have limited knowledge to properly evaluate the quality of a service.

- **Inseparability**

According to Schneider and White (2004:7), services are a process and the services cannot be yielded at an exact time-point and a place or experienced by consumers at another time-point or another place. Lamb et al (2004:345) point out that services are made “and consumed” at the same time and when consumers purchase a service, they must remain within “the production of that service” as the “production and consumption of services cannot be separated”. Lamb et al (2004:345) and Kerin, Hartley, Berkowitz and Rudelius (2006:318) also maintain that consumers cannot use the services in one place differently from the place where the service is provided.

Hoffman and Bateson (2001:31) point out that the inseparability of services indicates that there are close relationships between service organisations who produce services, an individual consumer who uses the services and other consumers who buy and use the services. When service organisations provide services, they will focus on aspects of inseparability of services as follows (Hoffman & Bateson 2001:31-32): Firstly, service organisations cannot provide services to consumers without communicating with consumers in order to meet the service expectations of consumers. Therefore, service organisations must be aware of the service expectations of consumers, otherwise they cannot
successfully sell their services to consumers. When employees communicate with consumers, their “language, clothing, and personal hygiene and communication skills” can influence the service expectations of consumers which are an important part of evaluating the quality of the services to consumers.

Secondly, according to Hoffman and Bateson (2001:32), as services’ “productions and consumptions” are inseparable, what consumers expect and whether consumers are satisfied with the quality of a service can influence both the “production” of a service and the delivery of a service by a service organisation. To successfully deliver services, service organisations must focus on consumers’ service expectations before they produce these services (Hoffman & Bateson 2001:34).

Thirdly, according to Hoffman and Bateson (2001:34-36), when a service organisation provides a service to an individual consumer, other consumers can also be provided with the same service. Therefore, other consumers’ service perceptions can also influence the individual consumer’s service perceptions and the evaluation of the quality of the service. If the service perceptions of other consumers are positive, the individual consumer’s service perception will be influenced to be satisfied with the quality of the service and vice versa.
Heterogeneity

According to Schneider and White (2004:8), different consumers have different service expectations which need to be met and individual consumers cannot have the same service expectation at a particular time-point.

Zeithaml and Bitner (1996:20) and Baron and Harris (2003:20) point out that services are produced and consumed by human behaviours (consumers to receive and employees to produce). Therefore, the quality of services is heterogeneous as different staffs of a service organisation at different service times can cause different service perceptions by consumers and different evaluations of service quality by consumers (Baron & Harris 2003:20; Zeithaml & Bitner 1996:20). As each individual consumer has different service expectations and service perceptions, the evaluation of the quality of services by each individual consumer is different from that of other consumers (Baron & Harris 2003:20; Zeithaml & Bitner 1996:20).

As services are heterogeneous, service expectations and service perceptions of each consumer are different from others. Therefore, it is difficult for service organisations to “standardize” the quality of services and to have effective management of service quality (Hoffman & Bateson 2001:39).

In service transactions employees play an important role in the evaluation of the quality of services by consumers as they are involved in the service transaction with the consumers (Hoffman & Bateson 2001:39). Employees’ “personality” and
communication skills, and knowledge of services can increase consumers’ positive service perceptions and assist service organisations to effectively control the quality of services (Hoffman & Bateson 2001:39).

Lambin (2000:301-302) explains that the reasons why services are heterogeneous as follows: Firstly, consumers evaluate the quality of services on the basis of their service perceptions influenced by the results of using the services and the service processes or service performances. Different people have different service experiences and perceptions. Therefore, services are heterogeneous. Secondly, consumers always evaluate the quality of the service by comparing their service expectations and their service perceptions. As the service expectations and the service perceptions of consumers are produced from their mind, not all individual consumers have the same service expectations and service perceptions. Therefore, services are heterogeneous.

- Perishability

According to Hoffman and Bateson (2001:41) and Lamb et al. (2004:346), services are perishable and that means “they cannot be saved”. As services are intangible, service organisations cannot produce and store a service in order to wait until consumers consume it (Hoffman & Bateson 2001:41).

As services are perishable, service organisations have difficulty in meeting consumers’ demands and expectations (Hoffman & Bateson 2001:42; Lamb et al. 2004:346). The service demands or service expectations of consumers cannot be exactly identified by service organisations in advance (Hoffman & Bateson
2001:42; Lovelock 2001:391). If the service demands or expectations of consumers exceed the “supply” of service by the organisation (Hoffman & Bateson 2001:42), consumers will not be satisfied by the services of service organisations.

3.3 CATEGORIES OF SERVICES

According to Kerin et al (2006:321), the categories of services are described as follows: The first category of services is explained by the fact that services are produced by “people or equipment”. This category of services includes: the service-based services involving consumers and employees during the service interactions (Kerin et al 2006:321). Equipment-based services mean self-service and consumers can consume the service without the assistance of employees (Baron& Harris 2003:30; Kerin et al 2006:322).

Secondly, services can be identified as either the services of profit organisations or non-profit organisations (Kerin et al 2006:322). As consumers pay for services, the profit organisations will obtain positive service feedback if the services meet the service expectations of consumers (Palmer 2005:53).

The services of non-profit organisations are unmarketable (Palmer 2005:53). The non-profit organisations’ profits do not need to be taxed and “be distributed by non-market-based mechanisms” (Palmer 2005:53; Kerin et al 2006:322). As “privatization is increasing” in the field of services of non-profit organisations
some kinds of services of non-profit organisations have been changed to be marketable and consumers need to pay for these services (Kerin et al 2006:322).

Thirdly, the category of services can be identified by different industries and service organisations of different industries can provide different kinds of services. Therefore, different consumers in different industries have different service expectations. Measuring and meeting the service expectations of consumers are core goals of service organisations in different industries (Kasper et al 1999:50).

### 3.4 THE CONCEPT OF QUALITY

In the field of service marketing, the quality of services delivered by service organisations is the “best weapon to fight competitors” (Kasper et al 1999:183). Juran (in Kasper et al 1999:184) defined quality as “fitness for use, the extent to which the product successfully serves the purpose of the user during usage”. Parasuraman et al (in Kasper et al 1999:184) explain that “quality is zero defects - doing it right the first time” and “quality is exceeding what consumers expect from the service”. Kasper et al (1999:188) and Schneider and White (2004:10) maintain that quality is the extent to which the service, the service process and the service organisation can satisfy the expectations of consumers.
There are different approaches in defining quality and in directing the method of researching quality. The first approach is called the “philosophical approach” (Kasper et al. 1999:185; Schneider & White 2004:10). This approach defines quality as being the same as “excellence” that is built in (Kasper et al. 1999:185; Schneider & White 2004:10). The quality cannot be predicted “defined” or evaluated and the quality can only be identified by “experiences” of consumers (Kasper et al. 1999:185).

According to Schneider and White (2004:10), the second approach is called the “technical approach”. This approach defines quality as it is involved in the “extent” to which each product meets the requirement of “technical standards”. In this definition of quality, the quality can be “objectively” measured and this approach is suitable for evaluating “the quality of standardized products that are mass-produced”.

The third approach is called “user-based approach” (Kasper et al. 1999:185; Schneider & White 2004:10). This approach maintains that quality can only be evaluated by consumers and that quality is “subjective” (Kasper et al. 1999:185; Schneider & White 2004:10). This evaluation of quality is influenced by the expectations and perceptions of consumers (Kasper et al. 1999:188; Schneider & White 2004:10). This “user-based approach” is suitable for measuring the quality of services from the consumers’ point of view (Schneider & White 2004:10).
Kasper et al (1999:187) and Schneider and White (2004:10) point out that the user-based approach is suitable for measuring the “subjective” quality of services evaluated by consumers because of the characteristics of services. Firstly, as services are intangible, consumers cannot evaluate the quality of services by “physically touching services” (Kasper et al 1999:188; Schneider & White 2004:10). Therefore, consumers evaluate the quality of services by weighing up their expectations and perceptions (Kasper et al 1999:188).

Secondly, the quality of services can be evaluated according to objective technical standards. To achieve special standards of service quality, many “specific goals” are incorporated in the service performance. However, although employees may “achieve these goals”, the quality of services provided by them may still be low as some aspects of service do not have goals. Consumers always evaluate the quality of services based on the consumers’ expectations and perceptions. Therefore, these objective goals cannot guarantee consumers’ satisfaction with the quality of services as consumers’ evaluation is always subjective (Schneider & White 2004:11).
3.5 THE ROLE OF UNIVERSITY LIBRARIES

According to Von Joseph and Kangundo (2004:¶1), university libraries have been regarded as “central to the management of” academic contact and the storage of “the written records and a powerful symbol of human intellectual achievement”. At the university, the role of libraries is regarded as being to “help students’ acquire the skills of lifelong learning” and the libraries also play an important role in “offering programmes of information literacy, which emphasize students’ critical thinking skills, and tackle the use of information by a range of methods and by so doing prepare university students for lifelong learning” (Von Joseph & Kangundo 2004:¶1). The responsibilities of university libraries are regarded as identifying requirements of students of library and information services and providing “user-oriented” library and information services (Von Joseph & Kangundo 2004:¶1).

3.6 THE FACTORS IN THE ENVIRONMENT SURROUNDING UNIVERSITY LIBRARY SERVICES

According to Bryson (in Von Joseph & Kangundo 2004:¶1), five factors in the environment influence university library services:

- “Economic conditions” reveal the overall economic stability of “the country” and region “in which information services operate and influence both” the
wants and “consumer usage of services and the needs or expectations of resources.”

- Internationally, financial “budgets and the purchasing power of libraries and information services have” decreased, “while their consumers’ needs or expectations have increased.” Because of the lack of economic funds, “the cost” to provide “the services is being passed directly to the consumers and library managers need to be more” responsible and focus on the market.

- Technology is defined as “the generally available knowledge and technique steps, tools or methods of delivering services.” “The complexity of present information technology” plays an important role in “influencing the skills and competencies required by information service employees and consumers.” Therefore, “any technology application should be” done to ensure that “appropriate services” are produced to meet users’ expectations because of the rapid change in technology.

- The employees of university libraries play an important role in the environment of university libraries as the service interactions are operated by employees and consumers. Therefore, the employees need to be trained in specific “skills and knowledge”. Then university libraries can be guaranteed by employees to provide user-oriented services and the employees can implement the service objectives of university libraries on the basis of their knowledge on service interactions.

- The management of university libraries can influence the environment of university libraries by building an “appropriate environment for users and employees”. Being service providers, university libraries in their actions are
described as delivering “services to users”. Therefore, the management of university libraries must identify users’ expectations of the quality of delivering services and “meet individual” expectations of users in order to “increase users’ attention”.

3.7 UNIVERSITY LIBRARY MARKETING

According to Von Joseph and Kangundo (2004:¶1), marketing is defined as “the systematic orientation of all operational functions including processing, production, storage and sales to meet the consumer needs”. According to Kotler (in Von Joseph & Kangundo 2004:¶1), the marketing is described as “the analysis, planning, implementation and control of carefully formulated programmes designed to bring about voluntary exchanges with target markets for the purpose of achieving organisational objectives”.

In the service industry of university libraries, the marketing of university libraries focuses on “how the library interacts with their target consumers and how the library delivers their services on the basis of the service expectations of users” (Von Joseph & Kangundo 2004:¶1). Therefore, the library has been regarded as a “market-oriented organisation which focuses on satisfying the expectations of consumers and wants to” meet “their expectations” by providing high quality of services (Von Joseph & Kangundo 2004:¶1).
3.7.1 Why university libraries need to market their services

Borchardt (in Von Joseph & Kangundo 2004:¶1) points out that the managements of university libraries do not “traditionally market their services” until they “understand the necessity of marketing concept”. Booth (in Von Joseph & Kangundo 2004:¶1) maintains that “every organisation has its market and must have consumers to consume their services” and the consumers of university libraries are identified simply as users who use their services.

Wiegand (in Von Joseph & Kangundo 2004:¶1) explains the reasons why university libraries need to “market their services”:

- “Financial” maintenance “of university libraries needs to be” made by dealing “with consumers the same as other service industries” (Von Joseph & Kangundo 2004:¶1).
- University libraries do not dominate the “sources of information” (Von Joseph & Kangundo 2004:¶1). Consumers can obtain information from multi-service providers (Boekhorst & Britz 2004:63). Therefore, university libraries need to “market their services” (Von Joseph & Kangundo 2004:¶1) and make consumers interested in library services competing with other service providers (Falcone & Rivera 2005:97).
- Consumers of university library services have their service expectations based on the environment of university libraries, the experienced result of
service interactions with employees of university libraries, the service “experiences” they have consumed and their “level of education” and the extent to which “the consumers feel that the libraries are” meeting “their expectations and convenience” (Von Joseph & Kangundo 2004:¶1). Therefore, the service expectations of consumers are not necessarily the same on different service occasions. To identify and measure the changing service expectations of consumers, the university libraries also need to “market their services” (Von Joseph & Kangundo 2004:¶1).

3.8 EVALUATING THE SERVICE QUALITY OF UNIVERSITY LIBRARY SERVICES

According to Baron and Harris (2003:136), consumers will inevitably evaluate the quality of services in “service delivery processes”. According to Lewis and Booms (in Baron & Harris 2003:137), service quality is defined as “a measure of how well the service level delivered matches consumer expectations”. When a consumer consumes a service, he or she will evaluate the quality of the services through what he or she expects to receive and what he or she “actually” receives (Kerin et al 2006:324). Parasuraman et al (in Baron & Harris 2003:137) provide a “framework” to explore the process whereby consumers evaluate the service quality of university library services.
3.8.1 Dimensions of service quality

Parasuraman et al (in Baron & Harris 2003:137) and Eiglier and Langeard (in Lambin 2000:504) identified ten general standards as “determinants of service quality used by consumers” to evaluate the quality of services consumed by consumers. These dimensions are:

- **Reliability** means the ability of service organisations to “actualise the promised services and perform the service right the first time” (Lambin 2000:504).
- **Accessibility** means “physical and psychological accessibility” and includes whether a service is easily and quickly produced so that consumers do not wait a long time (Lambin 2000:504).
- **Security** means the ability of a service to keep consumers from “danger, risk or doubt” situations (Baron & Harries 2003:138).
- **Credibility** “involves trustworthiness, believability and honesty” (Lambin 2000:505).
- **Understanding the consumers** means service organisations “make the effort to understand the consumers’ needs” (Lambin 2000:505).
- **Responsiveness** is the extent to which the employees “of service organisations” are willing to “provide service” (Lambin 2000:505).
- **Competence** is defined as having the right “skills“ and ability “to perform the service” required (Lambin 2000:504).
- **Courtesy** means whether the employees of service organisations are “polite, friendly respectful and considerate” to consumers (Lambin 2005:505).
Tangibility “includes the physical evidence of the service (physical facilities, appearance of employees, and physical representation of the service” (Lambin 2005:505).

Communication “means” letting the consumers know what is happening and being willing to “listen to them” as well (Lambin 2005:505).

3.8.2 Gaps in service quality

When consumers evaluate the quality of services, they always compare their service expectations and service perceptions (Lovelock 2001:369). Firstly, if the actual service the consumer has received cannot meet what they expect, consumers will have a negative evaluation of the quality of services (Lovelock 2001:369).

Secondly, services are different from goods. As services are intangible and inseparable, consumers evaluate the quality of services not only based on service produced by service organisations but also based on the service process and services consumed (Hoffman & Bateson 2001:326). Therefore, research on evaluating the quality of services of consumers must focus on the differences or gaps in service perceptions and service expectations of consumers and focus on the management of service organisations, the employees of service organisations, and consumers themselves (Kasper et al 1999:220).
According to Lovelock and Wright (2002:268), if the quality of the delivered service is higher than consumers' desired service expectations, consumers will be satisfied with the quality of the delivered services. If the quality of delivered service is in the consumers' zone of tolerance, consumers will receive a satisfactory level of quality of service (Lovelock & Wright 2002:268) (shown in Figure 2.1). If the quality of services is lower than the service expectations of consumers, consumers will not be satisfied with the quality of the services and then a service failure or a “gap will occur” (Lovelock & Wright 2002:268).

3.8.3 Gaps model

According to Lovelock and Wirtz (2004:411), the gap is defined as the service gap which means the distance between the service expectation of a consumer and his or her service perception. For a service organisation the goal of its service strategies is to identify and analyse the gaps between what consumers expect to receive and what they actually receive in order to “close the gaps” (Lovelock 2001:369).

Parasuraman et al (in Lovelock 2001:369) identify these gaps between service expectations and service perceptions of consumers as the need to evaluate the quality of services in the process of producing and consuming services from the view point of service organisations, consumers and employees (shown in Figure 3.1).
FIGURE 3.1
GAPS IN SERVICE QUALITY

When consumers evaluate the quality of services, Figure 3.1 shows that there are seven types of gaps that can happen in the process of producing and consuming services from the viewpoint of service organisations, consumers and employees (Lovelock 2001:369). These gaps are described as follows (Lovelock 2001:369-370; Lovelock & Wirtz 2004:412):
Gap 1

Gap 1 is called “the knowledge gap”. This gap is defined as “the difference” between the awareness of what consumers expect from the viewpoint of service organisations and the “actual” service expectations of consumers themselves.

Gap 2

Gap 2 is called “the standards gap”. This gap is defined as “the difference between management’s perceptions of consumer expectations and the actual quality of standards established for service delivery”.

Gap 3

Gap 3 is called “the delivery gap”. This gap is defined as “the difference between specified delivery standards and the service provider’s actual performance on these standards”.

Gap 4

Gap 4 is called “the internal communications gap”. This gap is defined as “the difference between what the organisation’s advertising and sales personnel think are the product’s features, performance, service quality levels and what the organisation is actually able to deliver”.

Gap 5

Gap 5 is called “the perceptions gap”. This gap is defined as “the difference between what is actually delivered” and the service perceptions of consumers because consumers cannot “accurately evaluate service quality”.

Gap 6

Gap 6 is called “the interpretation gap”. This gap is defined as “the difference between what a service provider’s communication efforts (in advance of service
delivery) actually promise and what a consumer thinks was promised by these communications”.

- Gap 7

Gap 7 is called “the service gap”. This gap is defined as “the difference between the expected level of service quality” that consumers expect to receive and “the level of” that they “actually” receive.

Lovelock and Wirtz (2004:412) point out that Gap 1, Gap 5, Gap 6 and Gap 7 indicate “external gaps” which occur “between consumers and the service organization”. Gap 2, Gap 3 and Gap 4 indicate “internal gaps” which result “between different functions and departments within the service organisation” (Lovelock 2001:370).

According to Lovelock and Wirtz (2004:413), Gap 7 is regarded as the most important gap in these gaps. When consumers evaluate the service quality of services of service organisations, they always compare what they expect to receive and what they actually receive (Gilmore 2003:21). This service gap (Gap 7) indicates “the difference between” what consumers desire to receive and what consumers actually receive (Lovelock 2001:371). Therefore, this service gap profoundly influences consumers’ evaluation of service quality.
3.8.4 SERVQUAL model

According to Gilmore (2003:21), the gap model (shown in Figure 3.1) identifies the “components” of gaps from the point of view of consumers, service organisations and employees of service organisations. Any gaps can cause negative evaluations by consumers of the service quality of service organisations (Lovelock & Wirtz 2004:413).

Gilmore (2003:21) maintains that the SERVQUAL model based on the gap model was developed as a specific measurement tool for service quality and the SERVQUAL model can be used to measure service quality with quantitative data in different service industries (Palmer 2005:269). The target of measuring service quality is to provide high quality services and to achieve “consumer satisfaction” (Gilmore 2003:22). The SERVQUAL model can be applied to the target of measuring service quality by measuring the gap between the service expectations and service perceptions of consumers (Gilmore 2003:40).

3.8.4.1 Five dimensions of the SERVQUAL model

According to Lovelock and Wright (2002:277), the SERVQUAL model is defined as “a standardized scale that measures expectations and perceptions of consumers of critical quality dimensions”. According to Palmer (2005:269), Kerin et al (2006:324) and Baron and Harris (2003:139), the SERVQUAL model “is based on five dimensions of service quality” and these dimensions include
tangibles, reliability, responsiveness, assurance and empathy. The definitions of these dimensions of the SERVQUAL model have been described in Table 1.1. Several researchers describe different aspects of these dimensions as follows:

- **tangibles**
  According to Zeithaml and Bitner (1996:122), the tangible aspects of services are always used by consumers to evaluate the quality of services. Kerin et al. (2006:324) maintain that the dimension of tangibles includes the “appearance of physical facilities, equipment, personnel and communication materials”.

- **reliability**
  According to Lamb et al. (2004:346), the dimension of reliability is regarded as “the most important” dimension of the dimensions of the SERVQUAL model whereby consumers evaluate the quality of services. The dimension of reliability can also be described as that whereby a service organisation provides its “promise” of the quality of service produced and the resolution of service problems to consumers (Zeithaml & Bitner 1996:119).

- **responsiveness**
  Kerin et al. (2006:324) describe the dimension of responsiveness as the “willingness to help consumers and to provide prompt services”. The dimension of responsiveness focuses on consumers’ requirements or expectations, consumers’ “complaints” and service “problems” (Zeithaml & Bitner 1996:122).
assurance

Baron and Harris (2003:139) define the dimension of assurance as employees’ “knowledge and courtesy and their ability to inspire trust and confidence”. The trained employees of service organisations can build positive communication relationships with consumers so that consumers will feel “trust and confidence” when consuming the services delivered (Zeithaml & Bitner 1996:121).

empathy

Kerin et al (2006:324) define the dimension of empathy as “caring, individualized attention provided to consumers”. The service organisations should provide “personalized” or “customized” services to consumers (Zeithaml & Bitner 1996:122). The dimension of empathy reflects the employees’ need to identify individual consumers and remember their names, and to be aware of the subjective service expectations of consumers (Lamb et al 2004:347).

3.8.4.2 Five gaps of the SERVQUAL model

According to Baron and Harris (2003:139), Parasuraman et al identified five gaps in experiencing the service gap (Gap 7 in 3.8.3) of consumers between service expectations and service perceptions of consumers in evaluating the quality of the services. These gaps are shown in Figure 3.2:
FIGURE 3.2

FIVE GAPS OF SERVQUAL MODEL


- **Gap 1**

Lamb et al (2004:347) define Gap 1 as the gap between the perceptions of what consumers expect and the perceptions of what management expect of
consumers. Three factors can “cause” Gap 1 (Kasper et al 1999:221): Firstly, management of service organisations believe they are aware of the service expectations of consumers and “pay” little attention to identify the service expectations of consumers (Lamb et al 2004:347-348). Lack of knowledge in identifying the service expectations of consumers will result in service organisations “incorrectly” judging service expectations of consumers and the service organisations providing poor quality of services as the quality of services will not meet the service expectations of consumers (Kasper et al 1999:221).

Secondly, employees of service organisations do not frequently communicate with consumers (Lamb et al 2004:348). The more employees connect with consumers, the more employees will have “first-hand knowledge” of their consumers regarding service expectations and can provide services which meet the service expectations of consumers (Kasper et al 1999:221).

Thirdly, “the number of layers of management between top managers and consumer-contact employees” is the co-essential cause of Gap 1 (Kasper et al 1999:221). The more layers that exist between top management and the consumers, “the less objective information” about service expectations of consumers will be sent to top management of service organisations from consumers (Kasper et al 1999:221).

• Gap 2

Lamb et al (2004:348) describe Gap 2 as the gap between the perceptions of the service expectations of consumers held by management of service organisations
and service quality “specifications”. When service organisations have in correct perceptions of the service expectations of consumers, they are “unwilling or unable” to design the “specifications” of service quality based on service expectations of consumers (Baron & Harris 2003:139; Lamb et al 2004:348).

Three factors can cause Gap 2 (Kasper et al 1999:222). Firstly, for benefit-organisations, the management of service organisations “pay” more attentions to “cost reduction and short-term profit” than to providing excellent quality of service which can meet the service expectations of consumers (Kasper et al 1999:222). The goals of cost-controlling and maximum profit are objective and are more easily evaluated than the quality evaluating of services (Kasper et al 1999:222).

Secondly, whether service organisations establish “effective” task standardisations can influence the effect of standards of service (Kasper et al 1999:222). High levels of task standardizations can design easily clear and effective standards of service quality and can guarantee that not only employees of service organisations have consistent and reliable interactions with consumers, but also that excellent quality of service will be delivered to consumers (Kasper et al 1999:222).

Thirdly, the employees can also “influence” Gap 2 (Kasper et al 1999:222). When management of service organisations has awareness on the service expectations of consumers, the “feasibility” of delivering services to meet
consumers’ expectations is dependent on the knowledge of employees in service performance, and on the level of service skills of employees in interactions with consumers (Kasper et al 1999:222; Lovelock & Wirtz 2004:414).

- **Gap 3**

Lamb et al (2004:348) describe Gap 3 as the gap between “the service quality specifications and the service that is actually” delivered. Two aspects of employees can influence Gap 3. Firstly, employees of service organisations need to understand whether they satisfy consumers in their service performance and how their performance of the service quality will successfully achieve the goals of their service organisations (Kasper et al 1999:222). If employees do not meet the above statement, Gap 3 will “occur” (Kasper et al 1999:222). Secondly, whether the employees are trained to delivery services well with technical tools and are trained to have excellent communication skills can also result in Gap 3 occurring (Kasper et al 1999:222-223).

- **Gap 4**

Lamb et al (2004:348) describe Gap 4 as the gap between the delivery of service quality and external communications to consumers. It is natural that service organisations will promise that the service delivered will meet the service expectations of consumers and satisfy consumers from their advertisements (Baron & Harris 2003:140). When consumers find the received quality of services cannot match their service expectations, they will be unsatisfied with the promised services (Kasper et al 1999:223). As service expectations of consumers are profoundly influenced by external communications, service organisations need to develop positive external communications matching their
quality of services and to provide information on what the service organisations actually provide or deliver and, if necessary, the reasons why service expectations of consumers cannot be met (Kasper et al 1999:223-224). After that, Gap 4 will be closed.

- Gap 5

Lamb et al (2004:348) describe Gap 5 as the gap between service expectations and the actual service perceptions of consumers. The results of Gap 5 are caused by one or more differences in Gap 1, Gap 2, Gap 3 and Gap 4 and if any gap is large, the Gap 5 will be large as service expectations of consumers cannot meet service perceptions of consumers (Baron & Harris 2003:140).

3.8.4.3 Sections of the SERVQUAL survey instrument

Consumers are required to answer a 44-item questionnaire following the five dimensions of the SERVQUAL model about their service expectations and service perceptions on the service quality of service organisations (Schneider & White 2004:31). The SERVQUAL instrument includes two kinds of “sections” (Hoffman & Bateson 2001:334). The first “22-item” section is used to measure service expectations of consumers regarding a specific service organisation (Schneider & White 2004:31). The second 22 attributes are used to measure the service perception of consumers by “matching” the 22 attributes of service expectations of consumers (Palmer 2005:269). “Results” from comparing service expectations and service perceptions of consumers will be analysed as “gap scores” for each of the five dimensions (Hoffman & Bateman 2001:334).
According to Palmer (2005:270), these 44 scales can be used to “reflect the relative importance of” each of five dimensions in evaluating service quality. Service organisations need to be aware of these 44 scales in order to judge whether their services can meet service expectations or not (Palmer 2005:270). The outcomes of SERVQUAL evaluation can be applied by service organisations to evaluate which dimensions of the five dimensions influence the evaluation of service quality from the viewpoints of consumers (Gilmore 2003:42). The analysed results of the SERVQUAL instrument can be applied in service performances as indicators which will guarantee that excellent quality of services are delivered to consumers (Gilmore 2003:42).

3.8.4.4 Criticisms of the SERVQUAL model

Parasuraman et al (in Chang et al 2002:¶1) used the SERVQUAL model to evaluate service quality by comparing the gap between service expectations and service perceptions of consumers. This SERVQUAL instrument is regarded as an effective and “popular” instrument as it offered a complete understanding “of service quality with an instrument to measure service quality for the first time in service quality studies” (Baron & Harris 2003:143; Chang et al 2002:¶1).

However, several researchers comment on the SERVQUAL model and there are some “shortcomings” of the SERVQUAL model (Baron & Harris 2003:143; Chang et al 2002:¶1):
Hoffman and Bateson (2001:338) maintain that a “survey instrument” based on the SERVQUAL model includes 44 questions to measure service expectations and service perceptions of consumers. Therefore, the questionnaire on the SERVQUAL model may become too long (Baron & Harris 2003:143). Hoffman and Bateson (2001:339) describe two methods to “reduce the questionnaire’s length”: Firstly, “on a single scale, ask respondents where they would rate a high-quality organisation and then where they would rate the organisation under investigation” (Hoffman & Bateson 2001:339). Secondly, “use the scale’s midpoint as the expected level of service from a high-quality organisation, and then rate the specific organisation in relation to the midpoint above expectations or below” (Hoffman & Bateson 2001:339).

Finn and Lamb (in Chang et al 2002:1) point out that the traditional five dimensions of the SERVQUAL instrument are not suitable for measuring service quality in the service industry of “retail” and they maintain that “retailers and consumer researchers do not treat SERVQUAL as an ‘off-the-shelf’ measure of perceived quality”. Carman (in Chang et al 2002:1) points out that the SERVQUAL instrument needs to be adjusted when it is used to measure the service quality in different service industries. Gilmore (2003:42) also maintains that “the types and number of dimensions of the SERVQUAL instrument” are influenced by the actual service provided.
3.8.5 The LibQUAL model

The LibQUAL model adjusts the dimensions of the SERVQUAL model on evaluation of service quality of university library services (McNeil & Giesecke 2002:96). According to Roszkowski et al (2005:¶1), the LibQUAL model is regarded as an effective method for measuring the service quality of university library services.

3.8.5.1 Background of the LibQUAL model

This research to evaluate university library services has currently given more attention to how to meet the expectations of users (Blixrud no date:¶1). Methods for evaluating the quality of library services should “pay” more attention to “outcome-based” evaluating methods and the “outcome measures” should reflect whether users are satisfied with the quality of university library services (Blixrud no date:¶1).

A standard evaluation instrument is required to evaluate the quality of university library services and it is called the LibQUAL model (Blixrud no date:¶1). The LibQUAL instrument was developed from the SERVQUAL by the Association of Research Libraries (ARL) with the Texas A and M University in the USA from 1999 (Blixrud no date:¶1). The LibQUAL model can be used to evaluate the quality of university library services through collecting and analysing a lot of data.
on service expectations and service perceptions of users of university libraries (Blixrud no date:¶1).

To measure better the quality of university library services two ARL committees (the statistics and measurement committee and management committee of ARL) focused on input (including “resources such as funds, equipment, books and staff”) and output (including “products or transactions, circulation and specific programs”) to evaluate the quality of university library services from 1999 (Blixrud no date:¶1; Haynes 2004:¶1).

Then, the ARL found that the research results could not be used to evaluate the quality of university library services based on service expectations of users as the data only reflected “the recording of the resource allocations in libraries” (Blixrud no date:¶1). These results reflect “the daily life of the library to measure” financial support, employees “levels and resource changes” (Haynes 2004:¶1). Durrance (in Haynes 2004:¶1) state that “these results on the input and output of libraries” are appropriate for describing “how well” the libraries can provide services to “meet users’ expectations”.

Then, Texas A and M university (TAMU) joined the ARL project to develop an appropriate instrument for evaluating the quality of university library service with TAMU’s “experiences of the SERVQUAL instrument” (Blixrud no date:¶1). From “October 1999”, “ARL and the TAMU” cooperated to “test a regrounded
SERVQUAL instrument” (Blixrud no date:¶1). The new instrument was defined as the LibQUAL model and the research results were analysed in July 2000 (Blixrud no date:¶1). The SERVQUAL instrument has traditionally five dimensions (show in Table 1.1) and the five dimensions include reliability, assurance, empathy, responsiveness and tangibles (Blixrud no date:¶1).

In 1999 TAMU adapted the SERVQUAL model and maintained that “there are three library service dimensions isolated by SERVQUAL” and the three dimensions are tangibles, reliability and the affect of library service (Blixrud no date:¶1). In 2000, TAMU and the ARL continued to test the SERVQUAL instrument and they "tested five dimensions of the LibQUAL model (including affect of service, reliability, library as place, provision of physical collections and access to information)” (Blixrud no date:¶1). All statistical data measured the gap between service expectations and service perceptions of users. TAMU and the ARL adapted the five dimensions of the LibQUAL model and introduced new dimensions for the LibQUAL model (affect of service, library of place, self-reliance and access to information) (Blixrud no date:¶1). In 2001, TAMU and the ARL used the four dimensions of the LibQUAL model to measure the quality of university library services by analysing the data of the gap comparing service expectations and service perceptions of users (Blixrud no date:¶1). The dimensions of the LibQUAL model are affect of service, library as place, personal control and information access (Blixrud no date:¶1).
3.8.5.2 The LibQUAL instrument

According to Thompson, Cook and Heath (2000:¶1), the LibQUAL instrument is used to measure the quality of university library services and it was developed by ARL and TAMU. The LibQUAL instrument is regarded as a development from the SERVQUAL instrument in the research field for measuring the quality of university library services (Thompson et al 2000:¶1). The LibQUAL instrument also reflects the theory that “only consumers can judge quality; all other judgments are essentially irrelevant” (Thompson et al 2000:¶1).

Cook and Heath (in Thompson et al 2000:¶1) and Nagata, Gerrard and Kytomaki (in Kyrillidou & Persson 2006:¶1) point out that, when measuring the quality of university library services, the traditional dimensions of the SERVQUAL model need to be adapted in order to specifically reflect service expectations and service perceptions of users on the quality of university library services. The new research instrument developed by the SERVQUAL instrument is defined as LibQUAL instrument (in Thompson et al 2000:¶1). “The LibQUAL” instrument “is undergoing continual revision through an iterative series of studies as theory building and construct measurement are joint bootstrap operations” (Thompson et al 2000:¶1).
According to Thompson et al (2000:¶1), the LibQUAL instrument also measures the gap between service expectations and service perceptions of users based on the four dimensions. The definitions of the four dimensions (affect of service, library as place, information access and personal control) of the LibQUAL instrument are shown in Table 1.2. Several researchers describe aspects of the LibQUAL instrument: Firstly, Lincoln (in Kyrillidou & Persson 2006:¶1) defines a “wild user” as a new library user who is independent and one “views library control of resources as an obstruction to the creation of his or her own cognitive skills” and Lincoln (in Kyrillidou & Persson 2006:¶1) points out that this kind of user puts more attention on “the dimensions (personal control and information access)” of the LibQUAL instruments.

Secondly, according to Kyrillidou and Persson (2006:¶1), the dimensions of “library as place and affect of service” are regarded as the “more traditional library service dimensions”. The dimensions of “personal control” to measure the quality of university library services can reflect the service expectations of “wild users” (in Kyrillidou & Persson 2006:¶1).

3.9 SUMMARY

In this chapter, an overview of the literature studied in measuring the service quality of university library services has been provided. Firstly, the concept of service was introduced and the characteristics of services (intangibility,
inseparability, heterogeneity and perishability) were identified to properly understand the concept of service. The categories of service and the concept of quality are also described.

Secondly, the role of university libraries, the factors in the environment surrounding university library services (economic condition, financial budgets, technology, employees of university libraries and management of university libraries) and university library marketing were described.

Thirdly, the dimensions of service quality, the gaps in service quality and the Gap model were described. Then, the aspects of the SERVQUAL model (the five dimensions of the SERVQUAL model, the five gaps of the SERVQUAL model, the sections of the SERVQUAL survey instrument and the criticisms of the SERVQUAL model) as well as the aspects of the LibQUAL model (the background of the LibQUAL model and the LibQUAL instrument) were described. In Chapter 4 the methodology selected for the empirical research has been explained.
4.1 INTRODUCTION

Chapter 2 and Chapter 3 provided the literature study for this research. Chapter 2 described aspects of the service expectations and service perceptions of consumers. The literature study on the factors influencing service expectations and the service perceptions of consumers in Chapter 2 provided the answers to the first subproblem: Which factors influence student expectations and perceptions for the university library services?

Chapter 3 described aspects of measuring the quality of university library services by comparing the service expectations and service perceptions of students. The characteristics of the SERVQUAL instrument have already been described. The SERVQUAL instrument is a traditional instrument to measure the service quality of service organisations. The LibQUAL instrument, which was developed from the SERVQUAL instrument, has also been described. It is a standard instrument for measuring the quality of university library services by comparing the service expectations and service perceptions of students. The literature study in Chapter 3 addressed the answer to the second subproblem: How to measure the quality of university library services by comparing student expectations and perceptions?
Chapter 4 and Chapter 5 describe how to implement the empirical study, namely to measure the quality of NMMU library services by comparing service expectations and service perceptions of students and to evaluate whether there are gaps between these expectations and perceptions. The results of the empirical study answer the last subproblem: Are there differences or gaps between target student expectations and perceptions in evaluating the service quality of NMMU libraries?

Chapter 4 describes aspects of the research methodology (including research design, the types of data sources, research methods, the proposed research methodology, the data collection, the choice of data collection methods, the questionnaire design, data analysis, validity and reliability). Chapter 5 reports on the findings of the empirical study.

4.2 RESEARCH DESIGN

According to Parasuraman, Grewal and Krishnan (2004:9), marketing research is defined as “a set of techniques and principles for systematically collecting, recording, analysing and interpreting data” to provide managers with information on “marketing goods, services or ideas.” Welman and Kruger (2002:46) maintain that a research design can be defined as “the plan” to describe the research respondents involved in the marketing research and to describe the methods of gathering data.
According to Wegner (2000:19), the research design in the marketing field explains “the research approach” which presents the method to “collect and analyse” the data. McGivern (2006:79) and Wegner (2000:20) maintain that research design will help to resolve the research problem, providing “accurate and clear” data and it can “ensure” that the marketing research will have a high level of ability in practical operation.

Baines and Chansarkar (2002:25-26) and Aaker, Kumar and Day (2004:73) maintain that, when a researcher designs a marketing research in a specific marketing industry, the content of the research design includes employing a research method, “how” the data are collected and analysed and how the questionnaire “should” be designed. These issues are described in this chapter.

4.2.1 The types of research design

According to Wegner (2000:20), the appropriate types of research design can “ensure” that the data collected and analysed will help to resolve the research problem and will improve the “effective” level of marketing research. Aaker et al (2004:75) maintain that the research design of marketing researches can be identified by using one of three types of research design: exploratory research, descriptive research and causal research. These types of research design are described as follows:
• Exploratory research

Wegner (2000:20) points out that exploratory research is appropriate for collecting and analysing “qualitative data” and exploratory research is usually employed to explore an unresearched “phenomenon”. Parasuraman et al (2004:63) maintain that exploratory research is employed by a researcher who needs to research “insight” into “the general nature of a problem” or to direct a research. Sekaran (2000:123) maintains that exploratory research can always contribute to research in which few prior researchers have studied “similar problems” in a particular marketing research field.

According to Churchill (2001:108), a researcher can employ exploratory research based on one or more of the “following purposes”: The first purpose is to “accurately” express the research problem and to ensure reliable research results. The second purpose is to design a high quality of hypothesis testing. The third purpose is to build the first stage for a high level of feasibility for research on studying an undiscovered research problem. The fourth purpose is to understand the nature of a phenomenon on which little information has existed, and the fifth purpose is to accurately identify the situation around a research problem and express the practical issues of a research problem.

• Descriptive research

According to Churchill (2001:126), descriptive research is employed when the researcher describes the characteristics of a research problem. Parasuraman et al (2004:72) maintain that the approach of descriptive research is to appropriately collect or analyse the quantitative data.
According to Churchill (2001:126), descriptive research can be employed in the following situations: research to summarise the attributes of a phenomenon or a research problem, research to evaluate consumer behaviour (including brand choice, expectations and perceptions about service quality and product consumption) and research to predict any new trend in consumer purchasing and consuming behaviour.

According to Baines and Chansarkar (2002:5), descriptive research primarily employs “questionnaires” to describe the characteristics of a target group of respondents and to evaluate the attitudes of consumer behaviour. For the purpose of the study the researcher employed descriptive research to lead the method of collecting and analysing data as the designed research to evaluate the attitudes of consumer behaviour, namely evaluating the quality of NMMU library services, comparing expectations and perceptions of students.

Causal research

Wegner (2000:30) and Tustin, Ligthelm, Martins and Van Wyk (2005:87) maintain that causal research is used to examine “cause-and-effect relationships” and it always employs experiments to examine the “cause-and-effect relationships” between two or more variables. According to Kent (1999:209), causal research is appropriate for the situation where relationships between variables in a phenomenon are needed to identify and test the cause (independent variable) and the effect (dependent variable).
4.3 THE TYPES OF DATA SOURCES

According to Wegner (2000:50), statistical data come from two kinds of data sources: primary data sources and secondary data sources. These data sources are explained as follows:

- Primary data
  According to Baines and Chansarker (2002:43) and Parasuraman et al (2004:157), primary data are defined as “the data which are collected specifically for a research project the first time”. The primary data can be collected by a “questionnaire approach” and the respondents can “actively” interact with the researcher when the respondents complete the questionnaires (Parasuraman et al 2004:158).

- Secondary data
  According to Aaker et al (2004:106), secondary data are defined as the “data that are collected by persons or agencies for purposes other than solving the problem at hand”. According to Baines and Chansarker (2002:43), the “secondary data” can be collected from “internal or external sources”. According to Wegner (2000:52), the internal secondary data sources are collected by “record keeping within an organisation as it carries out its normal business activities”. According to Wegner (2000:53), the external secondary data sources are collected from “that which already exists and is available from sources outside the organisation".
4.4 RESEARCH METHODS

According to Kent (1999:8), “marketing research” includes qualitative and quantitative methods. A researcher should choose one of two research methods based on the research objective, the “research problem” and the characteristics of the target respondents (Leedy & Ormrod 2005:93).

Qualitative research is defined as the research method which “collects, analyses and interprets data that cannot be meaningfully quantified” (Parasuraman et al: 195). Qualitative research is usually employed for “exploratory research” and focuses on small respondent samples (Parasuraman et al 2004:195). The primary “techniques” used in qualitative research include “the focus group interview, the in-depth interview, projective techniques (word-association tests, sentences, story completion, cartoon tests, third-person techniques and analogies)” (Proctor 1997:155-166). Chisnall (2001:195) maintains that the techniques of qualitative research “cannot” quantify data.

According to Parasuraman et al (2004:195), quantitative research is defined as the research method which “collects, analyses and interprets data” to describe the characteristics of “large respondent samples”. Quantitative research is appropriate for “collecting quantitative data” and always employs a “questionnaire survey” as a “research technique” (Parasuraman et al 2004:195). McGivern (2006:57) maintains that the data can be described by using “tables, graphs and charts” in quantitative research. Baines and Chansarkar (2002:23)
point out that the data will be “quantified” in quantitative research by “percentages” being analysed and by “descriptive statistics”.

According to Tustin et al (2005:89), the research methods of qualitative and quantitative analysis play an important role in marketing research. The researcher chooses an appropriate research method based on the characteristics of these research methods. The characteristics of these research methods are explained in Figure 4.1. As Figure 4.1 shows, for the purposes of this study, quantitative research was used as the research methodology.

FIGURE 4.1

CHARACTERISTICS OF TWO RESEARCH METHODS

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Qualitative research method</th>
<th>Quantitative research method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of question</td>
<td>Probing</td>
<td>Limited probing</td>
</tr>
<tr>
<td>Sample size</td>
<td>A small number of respondent samples</td>
<td>A large number of respondent samples</td>
</tr>
<tr>
<td>Administration</td>
<td>Interviewers must have special skills</td>
<td>Interviewers do not need special skills</td>
</tr>
<tr>
<td>Type of data analysis</td>
<td>A subjective and interpretive data analysis (words, pictures and in-depth information)</td>
<td>A statistical data analysis (percentage, numbers and means)</td>
</tr>
<tr>
<td>Type of marketing research</td>
<td>Exploratory research</td>
<td>Descriptive research or causal research</td>
</tr>
</tbody>
</table>

Source: Adapted from McGivern (2006:57); Tustin et al (2005:90)
4.5 THE DATA COLLECTION

Data collection plays an important role in quantitative research. It can assist in obtaining useful knowledge for an individual research by examining the raw data from the questionnaires (Aaker et al 2004: 432).

According to Wegner (2000:36), the data collected in an individual research are defined as “the raw material of statistical analysis.” Therefore, the “quality of statistical data” influences the level of effective results from marketing research and also influences the management of an organisation to design consumer-oriented marketing strategies.

4.5.1 The choice of data collection methods

This empirical study is quantitative in nature. Wegner (2000:70) maintains that three methods (observation, experimentation and a survey) are best used to collect primary research data for quantitative research.

The researcher chose a survey as a suitable data collection method. Observation was not suitable for this study. Observation is not appropriate for determining attitudes, opinions, or what people think (Kent 1999:75), and observation is “very expensive and time consuming to conduct” (Ferreira 2005:25).
Experimentation was also inappropriate since there were no cause and effect relationships in this study between two or more variables that needed to be tested (Kumar 1999:88). Therefore, the chosen method for this research study was a survey.

4.5.1.1 The survey

According to Wegner (2000:24), the data collection method of survey can collect data “directly” by “questioning” respondents and the survey is regarded as the most frequently used method for data collection rather than the other two methods “in the field of marketing research”. The survey does not only gather “factual and observable behavioural data”, but can also “record data on the attitudes, opinions, motives, intentions and interests of consumers as they relate to the marketing problem being investigated” (Wegner 2000:73).

Service organisations expect the quality of services delivered to meet consumers’ expectations, and the organisations can obtain competing advantages for business benefits. Therefore, service organisations need to focus on the survey research to “provide timely, useful data to managers about consumers’ expectations and to identify consumers’ perceptions” (Lovelock & Wright 2002:275).
According to Berry (in Lovelock & Wright 2002:275), the types of survey research are explained as follows:

- **Post-transaction surveys**

  According to Lovelock and Wright (2002:276), this kind of survey is defined as a survey which is used to evaluate the perceptions of consumers on a “service experience” by focusing “a specific service experience that is fresh in the consumers’ mind”.

- **Total market surveys**

  According to Lovelock and Wright (2002:276), service expectations and service perceptions of consumers can influence service experiences of consumers. Therefore, the total market survey is used to evaluate the “overall service quality” of service organisations by comparing service expectations and service perceptions of consumers (Kantsperger & Kunz 2005:136; Lovelock & Wright 2002:276).

According to Lovelock and Wright (2002:277), the SERVQUAL survey is regarded as the traditional instrument of total market surveys to collect data by questioning consumers. Respondents need to complete the questionnaire which consists of “a series of” questions to measure service expectations and service perceptions of consumers (Lovelock & Wright 2002:27). These questions reflect different “aspects of five dimensions (tangibles, reliability, responsiveness, assurance and empathy)” (Gronroos 2000:74; Lovelock & Wright 2002:27; Schneider & White 2004:31-32).
For the purpose of this study the researcher chose the LibQUAL survey which was developed from the SERVQUAL survey as the method of data collection to collect the data of university libraries. The researcher investigated and analysed related data gathered from the service expectations and service perceptions of target students on the quality of NMMU library services. These data were used to evaluate the quality of NMMU library services following the four dimensions of service quality (affect of service, library as place, information access and personal control).

The LibQUAL survey is effectively used to measure the quality of university library services and it can measure the gaps where the service perceptions of target students are lower than their service expectations based on the four dimensions of service quality. The results from measuring and analysing the gaps can assist the management of the NMMU libraries to improve the quality of NMMU library services.

- New, declining and former consumer surveys

According to Lovelock and Wright (2002:278), this kind of survey can gather data from new consumers by identifying characteristics of services delivered by a service organisation in which new consumers show strong interest. The declining survey can assist the service organisation to be aware of why consumers are not satisfied with the service quality of the service organisation. The former consumer survey can assist the management of the service organisation in identifying the shortcomings of services.
4.6 QUESTIONNAIRE DESIGN

According to Stark and Roberts (2002:114), the survey method is used to collect data from the respondents who have completed “questionnaires”. According to Wegner (2000:90), the questionnaire is an important tool in conducting surveys. They are used to record the data in all studies and to make them the most suitable option for this study.

A questionnaire includes a series of questions and is designed to obtain and analyse the data for a research (Parasuraman et al 2004: 307). For the purpose of this study the questionnaire was designed in the following sections with the assistance of Eales.

4.6.1 The process of designing a questionnaire

According to Wegner (2000:90), the questionnaire is employed to gather data from the survey. Therefore, the questionnaire needs to be designed objectively. The “research questions” of a questionnaire are to be understood by respondents as valid and reliable and can assist in the effective statistical analysis.
To gather critical data the process of designing a questionnaire is explained as follows:

- **Identifying the research problem**
  
  When the researcher designs a questionnaire he or she must first understand that the questionnaire serves for a specific research problem (Baines & Chansarkar 2002:95). Therefore, the researcher needs to explain the purpose of the questionnaire to respondents and correctly identify the sampling populations for effectively gathering data (Lambin 2000:156).

- **Choosing the format of questions**
  
  According to Lambin (2000:156), the choice of format of questions can influence the quality of data collection. Therefore, for an individual study, the researcher needs to choose appropriate formats of questions to collect data in a questionnaire (Baines & Chansarkar 2002:95).

- **Sequence of questions**
  
  According to Baines and Chansarkar (2002:95), the sequence of questions in a questionnaire should be clear and "logical" for respondents to read. According to Lambin (2000:158), the basic sequence of questions is explained as follows: The information questions are put first in a questionnaire and the demographic questions are put in the questionnaire after the information questions.

- **Determining the wording of questions**
  
  To avoid errors in analysing data the questions in questionnaires must be clearly and accurately expressed for respondents (Wegner 2000:91). Lambin (2000:158) and Wegner (2000:91) maintain that "general rules" are used to determine the
wording of questions and these rules are explained as follows: “using simple wording (avoiding technical jargon), avoiding ambiguous and emotive wording, avoiding leading questions which will favour one response more than others and avoiding asking for more than one piece of information in one question (double-barreled questions)”.

- Pre-testing the questionnaire

According to Lambin (2000:158) and Ferreira (2005:50), the researcher should pre-test the questionnaire before he or she delivers the questionnaire to the target respondents. According to Baines and Chansarkar (2002:96), the researcher can pre-test on a small sample of respondents and the results from these respondents can provide the researcher feedback on whether the target respondents can understand easily and accurately the meaning of the questions, and whether the questions are appropriate for collecting data.

4.6.2 The research population and sampling procedure

Burns (2000:83) defines a population as a special group of people who have at least one characteristic in common; they must be defined specifically and unambiguously. For the purpose of this study, the research population consisted of students at all the NMMU campuses. These are undergraduate students (from first-year students to third-year students) and Honours and B.Tech students.
Burns (2000:83) defines a sample as a small proportion of a target population which must be representative of the target population. According to Hutchinson (2003: ¶1), the appropriate scope of sample sizes in most quantitative research is the range from 30 respondents to 500 respondents.

For the purpose of this study the sample consisted of 2 047 students (1 790 undergraduate students and 130 Honours and 127 B.Tech students) who were registered at the NMMU libraries. According to the brochure of Undergraduate Programmes General Information 2006 corroborated by Hosten (the Head of the Admissions department at the South campus) and Eales, the structure of sampling groups at six campuses is explained as follows:

- The target student groups at the South Campus and the North campus of NMMU are explained in Figure 4.2.
Source: Own construction

- According to Blaauw (the assistant faculty officer of Arts at the South campus of NMMU) and Ubsdell (the administrative officer at the Vista campus of NMMU), there are no first-year or Honours students at the Vista campus of NMMU. According to Van Zyl (the administration assistant of the Faculty of Business and Economic Sciences at the South campus of NMMU) and Bulembu (the faculty officer of the Faculty of Business and Economic Sciences at the Vista campus), there are no Honours students at the Vista campus. According to Ahmed (the faculty officer of the Faculties of Health Science and Science at the North campus of NMMU), there are seven
B.Tech students of the Faculty of Health Science at the Second Avenue campus. The target student groups at the Second Avenue campus and the Vista campus of NMMU are detailed in Figure 4.3.

**FIGURE 4.3**

THE TARGET STUDENT GROUPS AT THE SECOND AVENUE CAMPUS AND THE VISTA CAMPUS

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Second avenue campus</th>
<th>Vista campus</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>First-year students</td>
<td></td>
</tr>
<tr>
<td>Arts</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Business &amp; Economic Sciences</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering, the Built Environment &amp; Information Technology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Sciences</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Law</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total students</td>
<td>117</td>
<td>90</td>
</tr>
</tbody>
</table>

Source: Own construction

- The target student groups at the George campuses (Saasveld and York street) of NMMU are detailed in Figure 4.4.
FIGURE 4.4
THE TARGET STUDENT GROUPS AT THE GEORGE CAMPUS

<table>
<thead>
<tr>
<th>Faculty</th>
<th>George campus (Saasveld)</th>
<th>George campus (York Street)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>First-year students</td>
<td>Second-year students</td>
</tr>
<tr>
<td>Arts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business &amp; Economic Sciences</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering, the Built Environment &amp; Information Technology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Sciences</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Law</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Total students</td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>

Source: Own construction

4.6.3 Question format

According to Wegner (2000:91), the question format is employed to design the format of each question for appropriate data recording. For the purpose of this study three kinds of questions were employed for the question format in the research. These types of questions are explained as follows:
• Dichotomous questions: the respondents are only allowed to mark one option from two categories (Baines & Chansarkar 2002:100; Chisnall 2001:140). Examples from the questionnaire in ANNEXURE A are shown below:

<table>
<thead>
<tr>
<th>Gender</th>
<th>1. Female</th>
<th>2. Male</th>
</tr>
</thead>
</table>

• Multiple-choice questions: the respondents can mark only one option to match their feelings from more than two options (Baines & Chansarkar 2002:101; Chisnall 2001:141). Examples from the questionnaire in ANNEXURE A are shown below:

<table>
<thead>
<tr>
<th>The faculty where I am registered</th>
<th>Arts</th>
<th>Business &amp; Economic Sciences</th>
<th>Education</th>
<th>Engineering &amp; the Built Environment &amp; Information Technology</th>
<th>Health Sciences</th>
<th>Law</th>
<th>Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

• Likert scale questions: Likert scale questions are used to determine the respondents' attitudes by asking them the extent of their agreement or disagreement with a statement (Baines & Chansarkar 2002:106; McGivern 2006:318-319). In section A of the questionnaire in ANNEXURE A, each question was designed as a series of statements related to the research and had a scale ranking (very low expectation, low expectation, neutral, high expectation, and very high expectation).
In section B of the questionnaire in ANNEXURE A, each question was designed as a series of statements related to the research and had a scale ranking (completely disagree, disagree, neutral, agree, and completely agree). Examples from the questionnaire in ANNEXURE A are shown below:

Note that 1= very low expectation, 5= very high expectation.

<table>
<thead>
<tr>
<th></th>
<th>The staff in the library will instil confidence in me.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>The staff in the library will be willing to help me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

4.6.4 The content of a questionnaire

For the purpose of the study, the research provided only one kind of questionnaire. The questionnaire was designed to measure the expectations and perceptions of the undergraduate students (from first-year to third-year students) as well as Honours and B.Tech students on measuring the quality of the NMMU library services.

The questionnaire in the ANNEXURE A was divided into three sections. Section A consisted of 27 statements, which were all set to a five-point scale (from “very low expectation” to “very high expectation”) regarding expectations of service quality. The 27 statements in section A identified the four dimensions of the LibQUAL model (affect of service, library as place, information access and personal control) that assisted in the statistical analysis of the data.
Section B consisted of 27 statements that were all set to a five-point scale (from “completely disagree” to “completely agree”) regarding perceptions of service quality. The 27 statements in section B identified the four dimensions of the LibQUAL model (affect of service, library as place, information access and personal control) that assisted in the statistical analysis of the data. Section C included four questions consisting of students’ demographics and the classification of information.

4.6.5 Sampling procedure

For the purpose of the study a non-probability sampling method was employed for this research. The 2 047 students (including undergraduate, Honours and B.Tech students) from six NMMU campuses were selected by the convenience sampling method.

4.6.6 Administration of the questionnaires

The researcher administered these questionnaires. The researcher interviewed all the respondents at the six NMMU campuses. The questionnaires were required to be completed during the interviews.
4.6.7 Pre-testing the questionnaire

According to Proctor (1997:144) and Churchill (2001:340), pre-testing is a necessary test before delivering a questionnaire. The pre-test always employs a limited number of sampling respondents from the target sample representative of the respondents (Module 14: pre-testing the methodology no date:1). The results of the pre-testing can assist a researcher in discovering potential shortcomings in a questionnaire and the results of the pre-test can also assist the researcher in “revising the method of data collection and the questionnaire design” (Churchill 2001:340).

According to Kent (1999:62), pre-testing can be used to evaluate the questions in a questionnaire for the following purposes:

- Discovering whether content and wording of the questions meet the requirements of data collection;
- discovering whether the questions are “difficult” for target respondents’ reading and completion;
- discovering whether any of the alternative answers to the questions do not perhaps match the target respondents’ feelings.
For the purpose of this study the researcher pre-tested the target students in the North campus and the South campus of NMMU. The number of sampling respondents (total 1 700 students) in the two campuses is 83.05% of the total number of sampling respondents (total 2 047 students). The pre-tested students included 100 students from the South campus (30 first-year students, 30 second-year students, 30 third-year students and 10 Honours students) and 100 students from the North campus (30 first-year students, 30 second-year students, 30 third-year students and 10 B.Tech students).

The general feedback from these respondents reflected that gaps existed between service expectations and service perceptions of target students on the service quality of NMMU libraries. The researcher made a few minor adjustments to the questions.

4.7 DATA ANALYSIS

According to Aaker et al (2004:432), the raw data collected from the questionnaires must be analysed to provide the researcher with valid and reliable findings for conclusions and recommendations on the research. To obtain high quality in data analysis the data analysis was designed in three phases. In the first phase the raw data were coded or edited into an Excel database and were analysed by a statistician using Statistica Version 6.1. In the second phase the report of the statistical data results was analysed by factor analysis.
Descriptive statistics (means) were used in all the questions. In the third phase the researcher compared and evaluated the mean scores of the expected level with the mean scores of the perceived level on the 27 issues. The researcher identified which aspects of the NMMU library services did not meet the students’ expectations obtained by comparing the target students’ expectations and perceptions. This focused on which factors influenced the target students’ evaluation of the quality of the NMMU library services following the four dimensions (affect of service, library as place, personal control and access to information) based on the different NMMU campuses. The detailed discussions on the results of data analysis are explained in Chapter 5.

4.8 VALIDITY AND RELIABILITY

According to Leedy and Ormrod (2005:27), validity and reliability play an important role in research design. The validity and reliability always indicate the “validity and reliability of the measurement instrument” and the validity and reliability can influence the quality level in collecting and analysing the data (Neuman 2003:178). “The validity and reliability of the measurement instrument” can influence the research in resolving research problems (Leedy & Ormrod 2005:27).

“The validity of the measurement instrument” is described as “the extent to which the instrument measures what it is supposed to measure” (Leedy & Ormrod 2005:28). According to Kent (1999:45), construct validity is appropriately
employed to examine the measurement of instruments measuring consumer attitudes. For the purpose of this study construct validity is employed as it examines the validity of the measurement instrument in measuring consumer attitudes, namely service expectations and service perceptions of consumers (Churchill 2001:371). A factor analysis as a variable technique was employed to measure the construct validity. The approach using factor analysis in this research is described in section 4.8.

According to Sekaran (2000:205), the reliability of a measurement instrument reflects the scope “to which the measure is without bias (error free)” and examines the level of “stability and consistency” of a measurement instrument in assessing concepts or subjects (Kent 1999:45). To improve the reliability of the measurement instrument in this research, the researcher has employed more than two indicators to measure a variable. Secondly, the researcher pre-tested the questionnaire to test the reliability of the measurement instrument. The detailed description is in section 4.6.7.

4.9 SUMMARY

This chapter discussed aspects of the research methodology. Firstly, the research design of this research was described. The research design was descriptive research using quantitative methods. The types of data sources, and the data collection were also described.
Secondly, this chapter also described the questionnaire design, as well as the process of designing the questionnaire, the research population and the sampling procedure, the question format, the content of a questionnaire, the administration of the questionnaire and the pre-testing of the questionnaire.

Thirdly, the data analysis and the validity and reliability were also described. The final findings of the empirical study are reported in Chapter 5.
5.1 INTRODUCTION

Chapter 4 described the research design, the research methods, the data collection methods, the questionnaire design and the data analysis. Chapter 5 reports on the findings of the empirical research. Chapter 5 is set in two phases: The first phase reports on the findings on the demographic information of respondents in section C of the questionnaire (in ANNEXURE A). The second phase reports on the findings on the service expectations of respondents in section A of the questionnaire (in ANNEXURE A) and the findings on the service perceptions of respondents in section B of the questionnaire (in ANNEXURE A).

In the second phase, the report describes the main gaps between the expectations of respondents and their perceptions on the service quality of NMMU libraries in the different campuses of NMMU.

5.2 REPORTING DEMOGRAPHIC INFORMATION OF RESPONDENTS

The demographic information on 2 047 respondents included gender, faculty, and campus of NMMU and the educational levels of respondents in section C of the questionnaire (in ANNEXURE A). The reporting on these data is described in the following sections.
5.2.1 Gender

All respondents (total 2 047) were students of NMMU. Female respondents (total 1 306) were more than male respondents (total 741). Figure 5.1 shows the percentage of female students and male students.

![Pie chart showing gender distribution](image)

**FIGURE 5.1**

GENDER

63.8%
36.2%

Source: Own construction

As shown in Figure 5.1, 63.8% of 2 047 respondents were female students (total 1 306) and 36.2% of 2 047 respondents were male students (total 741). The group of female students was bigger than the group of male students.
5.2.2 Faculty

All respondents were spread over seven NMMU faculties. The detailed reporting on students and faculties is described in Table 5.1.

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts</td>
<td>400</td>
<td>19.54</td>
</tr>
<tr>
<td>Business &amp; Economic Science</td>
<td>280</td>
<td>13.68</td>
</tr>
<tr>
<td>Education</td>
<td>170</td>
<td>8.30</td>
</tr>
<tr>
<td>Engineering</td>
<td>200</td>
<td>9.77</td>
</tr>
<tr>
<td>Health Sciences</td>
<td>407</td>
<td>19.89</td>
</tr>
<tr>
<td>Law</td>
<td>210</td>
<td>10.26</td>
</tr>
<tr>
<td>Sciences</td>
<td>380</td>
<td>18.56</td>
</tr>
<tr>
<td>Total</td>
<td>2047</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Own construction

Table 5.1 illustrates that the respondents from the faculty of Health Sciences (total 407) constituted the biggest group of all respondents as they were 19.89% of 2 047 students. The respondents from the faculty of Education (total 170) constituted the smallest group of all respondents as they were only 8.30% of all the respondents (total 2 047 students).
5.2.3 Campus of NMMU

All respondents studied in different campuses of NMMU. The detailed information is given in Table 5.2.

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency table: Campus</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Count</td>
<td>Percentage %</td>
</tr>
<tr>
<td>South campus</td>
<td>1020</td>
<td>49.83</td>
</tr>
<tr>
<td>North campus</td>
<td>680</td>
<td>33.22</td>
</tr>
<tr>
<td>Second Avenue</td>
<td>117</td>
<td>5.71</td>
</tr>
<tr>
<td>Vista campus</td>
<td>90</td>
<td>4.40</td>
</tr>
<tr>
<td>Saasveld campus</td>
<td>40</td>
<td>1.95</td>
</tr>
<tr>
<td>York Street campus</td>
<td>100</td>
<td>4.89</td>
</tr>
<tr>
<td>Total</td>
<td>2047</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Own construction

As shown in Table 5.2, the respondents (total 1 020) at the South Campus were the biggest group as they were 49.83% of 2 047 students at all the NMMU campuses. The respondents at the Saasveld campus (total 40) were the smallest group of respondents as they were only 1.95% of 2 047 students at the NMMU campuses.
5.2.4 The educational levels of respondents

The educational levels of respondents of NMMU are given in Table 5.3.

TABLE 5.3
THE EDUCATIONAL LEVELS

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency table: Level</th>
<th>Count</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>First-year</td>
<td></td>
<td>590</td>
<td>28.82</td>
</tr>
<tr>
<td>Second-year</td>
<td></td>
<td>600</td>
<td>29.31</td>
</tr>
<tr>
<td>Third-year</td>
<td></td>
<td>600</td>
<td>29.31</td>
</tr>
<tr>
<td>Honours</td>
<td></td>
<td>130</td>
<td>6.35</td>
</tr>
<tr>
<td>B.Tech</td>
<td></td>
<td>127</td>
<td>6.21</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>2047</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Own construction

Table 5.3 illustrates that the second-year students (total 600) and the third-year students (total 600) were the biggest groups of all the respondents as they made up 29.31% of 2 047 students. The B.Tech students (total 127) were the smallest group as they were only 6.21% of 2 047 students.

5.3 COMPARING SERVICE EXPECTATIONS AND SERVICE PERCEPTIONS

With the assistance of Dr Pietersen (the statistician in the employ of the NMMU), the data from section A and section B in the questionnaire (in ANNEXURE A) were analysed. The analysed data from section A provided the information about
what respondents expected or desired to receive by way of the service quality of NMMU libraries. The analysed data from section B provided the information about what respondents actually received in terms of the service quality of NMMU libraries. The gaps comparing expectations and perceptions on the service quality of NMMU libraries are described in the following sections.

5.3.1 Identifying the factors of service quality

As shown in Table 1.2, the LibQUAL model has four dimensions (affect of service, library as place, information access and personal control). All the questions in the questionnaire (in ANNEXURE A) belong to the four dimensions.

For the purpose of this study, these questions in the questionnaire (in ANNEXURE A) were identified and the researcher described which questions belonged to which one of the four dimensions which were regarded as the factors of service quality in the reporting.

These factors and these questions are described as follows:
● Factor 1

Those questions belonging to factor 1 are described below:

<table>
<thead>
<tr>
<th>Dimension 1</th>
<th>Questions in section A (expectation)</th>
<th>Questions in section B (perception)</th>
</tr>
</thead>
<tbody>
<tr>
<td>D11</td>
<td>The staff in the library will instil confidence in me.</td>
<td>The staff in the library instil confidence in me.</td>
</tr>
<tr>
<td>D12</td>
<td>The staff in the library will be willing to help me.</td>
<td>The staff in the library are willing to help me.</td>
</tr>
<tr>
<td>D13</td>
<td>The staff in the library will have my best interests at heart.</td>
<td>The staff in the library have my best interests at heart.</td>
</tr>
<tr>
<td>D14</td>
<td>The staff in the library will give me personal attention.</td>
<td>The staff in the library give me personal attention.</td>
</tr>
<tr>
<td>D15</td>
<td>The staff in the library will understand my specific needs.</td>
<td>The staff in the library understand my specific needs.</td>
</tr>
<tr>
<td>D16</td>
<td>The staff in the library will be always polite.</td>
<td>The staff in the library are always polite.</td>
</tr>
<tr>
<td>D17</td>
<td>The staff in the library will be ready to respond to my questions.</td>
<td>The staff in the library are ready to respond to my questions.</td>
</tr>
<tr>
<td>D18</td>
<td>The staff in the library will have the knowledge to answer my questions.</td>
<td>The staff in the library have the knowledge to answer my questions.</td>
</tr>
<tr>
<td>D19</td>
<td>The staff’s help in finding information will improve my research skills.</td>
<td>The staff’s help in finding information improves my research skills.</td>
</tr>
</tbody>
</table>
Factor 2

Those questions belonging to factor 2 are described below:

<table>
<thead>
<tr>
<th>Dimension 2</th>
<th>Questions in section A (expectation)</th>
<th>Questions in section B (perception)</th>
</tr>
</thead>
<tbody>
<tr>
<td>library as place</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D21</td>
<td>The library will be a comfortable place to encourage my study and learning.</td>
<td>The library is a comfortable place to encourage my study and learning.</td>
</tr>
<tr>
<td>D22</td>
<td>The library will be a contemplative environment.</td>
<td>The library is a contemplative environment.</td>
</tr>
<tr>
<td>D23</td>
<td>The library will have enough space to facilitate quiet and individual study.</td>
<td>The library has enough space to facilitate quiet and individual study.</td>
</tr>
<tr>
<td>D24</td>
<td>The library will have enough space to meet group study and research needs.</td>
<td>The library has enough space to meet group study and research needs.</td>
</tr>
<tr>
<td>D25</td>
<td>The library will have enough space to meet individual study and research needs.</td>
<td>The library has enough space to meet individual study and research needs.</td>
</tr>
<tr>
<td>D26</td>
<td>The library will be a place for reflection and creativity.</td>
<td>The library is a place for reflection and creativity.</td>
</tr>
</tbody>
</table>

Factor 3

Those questions belonging to factor 3 are described below:

<table>
<thead>
<tr>
<th>Dimension 3</th>
<th>Questions in section A (expectation)</th>
<th>Questions in section B (perception)</th>
</tr>
</thead>
<tbody>
<tr>
<td>information access</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D31</td>
<td>The database training programme provided by the library will meet the needs of my study.</td>
<td>The database training programmes provided by the library meet the needs of my study.</td>
</tr>
<tr>
<td>D32</td>
<td>It will be convenient and possible for me to make their electronic resources available from my home.</td>
<td>It is convenient and possible for me to make their electronic resources available from my home.</td>
</tr>
<tr>
<td>D33</td>
<td>The OPAC service will help me to locate information.</td>
<td>The OPAC service helps me to locate information.</td>
</tr>
</tbody>
</table>
Those questions belonging to factor 4 are described below:

<table>
<thead>
<tr>
<th>Dimension 4</th>
<th>Questions in section A (expectation)</th>
<th>Questions in section B (perception)</th>
</tr>
</thead>
<tbody>
<tr>
<td>personal control</td>
<td>D41 The library will provide a convenient printing service for me.</td>
<td>The library provides a convenient printing service for me.</td>
</tr>
<tr>
<td></td>
<td>D42 The amount of equipment necessary for copying materials will meet my needs.</td>
<td>The amount of equipment necessary for copying materials meets my needs.</td>
</tr>
<tr>
<td></td>
<td>D43 The library will provide a large amount of books published after 2003.</td>
<td>The library provides a large amount of books published after 2003.</td>
</tr>
<tr>
<td></td>
<td>D44 The library will provide a timely interbranch library loans delivery.</td>
<td>The library provides a timely interbranch library loans delivery.</td>
</tr>
<tr>
<td></td>
<td>D45 The library will provide a timely interlibrary loans delivery.</td>
<td>The library provides a timely interlibrary loans delivery.</td>
</tr>
<tr>
<td></td>
<td>D46 The library’s business hours will be from 8:00am to 10:00pm on weekdays.</td>
<td>The library’s business hours are from 8:00am to 10:00pm on weekdays.</td>
</tr>
<tr>
<td></td>
<td>D47 The library’s business hours will be from 8:00am to 10:00pm on Saturday.</td>
<td>The library’s business hours are from 8:00am to 10:00pm on Saturday.</td>
</tr>
<tr>
<td></td>
<td>D48 The library’s business hours will be from 8:00am to 10:00pm on Sunday.</td>
<td>The library’s business hours are from 8:00am to 10:00pm on Sunday.</td>
</tr>
<tr>
<td></td>
<td>D49 The library will provide a large amount of journals that can be borrowed.</td>
<td>The library provides a large amount of journals that can be borrowed.</td>
</tr>
</tbody>
</table>
5.3.2 General reporting on comparing the gaps

For the purpose of this study, the researcher focused on the gaps by comparing the expectations and perceptions of respondents on the quality of NMMU library services. The research on the gaps can assist in meeting the expectations of users on the quality of NMMU library services and improve the quality of NMMU library services. Following the LibQUAL model, the mean scores on the service expectations and the service perceptions of 2 047 respondents from the questionnaires have been described. The mean scores of gaps have also been reported. These reports depend on the different campuses of NMMU.

For the purpose of this study, the mean scores on service expectations and service perceptions of respondents were analysed from the 2 047 questionnaires. All the questions in the questionnaire (in ANNEXURE A) belong to the four dimensions of the LibQUAL model. Therefore, the mean scores from the 27 questions in the questionnaire (in ANNEXURE A) and the mean gap scores also belong to the four dimensions of the LibQUAL model (shown in Table 5.4).
## TABLE 5.4

GENERAL REPORTING

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Valid N</th>
<th>Average expectations Mean</th>
<th>Average perceptions Mean</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension 1 (Affect of service)</td>
<td>2047</td>
<td>4.13</td>
<td>2.59</td>
<td>-1.54</td>
</tr>
<tr>
<td>Dimension 2 (Library as place)</td>
<td>2047</td>
<td>4.30</td>
<td>2.56</td>
<td>-1.74</td>
</tr>
<tr>
<td>Dimension 3 (Information access)</td>
<td>2047</td>
<td>4.26</td>
<td>2.58</td>
<td>-1.68</td>
</tr>
<tr>
<td>Dimension 4 (Personal control)</td>
<td>2047</td>
<td>4.36</td>
<td>2.25</td>
<td>-2.11</td>
</tr>
</tbody>
</table>

Source: Own construction

From the results of data analysis, these dimensions (from dimension 1 to dimension 4) following the LibQUAL model were used to assess the service quality of NMMU libraries. As shown in Table 5.4, the range of average expectations mean scores were from 4.13 to 4.36 and the range of average perceptions mean scores were from 2.25 to 2.59. Firstly, the average mean score (4.36) of dimension 4 on the expectations of the respondents was higher than other expectations’ mean scores. Therefore, the level of expectations (personal control) of respondents was higher than other levels of expectation of respondents (affect of service, library as place, information access). The average mean score (4.13) of dimension 1 on the expectations of the respondents was lower than other expectations’ mean scores. Therefore, the level of expectation (affect of service) of respondents was lower than other levels of expectation of respondents.
respondents (library as place, information access and personal control).

Secondly, the average perception mean scores were lower than the average expectation mean scores. The highest average perception mean score (2.59) was dimension 1 (affect of service) and the lowest perception mean score (2.25) was dimension 4 (personal control).

Thirdly, as shown in Table 5.4, there existed gaps in the mean scores on the perceptions of 2,047 respondents. These did not meet the mean scores on the expectations of 2,047 respondents. Table 5.4 indicates that the gap score (2.11) of dimension 4 was the biggest gap compared with any other gap scores. Therefore, the level of expectations of students on dimension 4 (personal control) which was measured was lower than the level of expectations on the other three dimensions.

5.4 COMPARING GAPS AT DIFFERENT CAMPUSES

For the purpose of this study, the data from the expectations and perceptions of a total of 2,047 respondents on the service quality of NMMU libraries were analysed from the six campuses of NMMU. The findings are described as follows:
5.4.1 Comparing gaps at South campus

At South campus, a total of 1 020 respondents were interviewed. The findings on comparing expectations and perceptions of these respondents on the service quality of the library at South campus are described following the four dimensions, as follows:

5.4.1.1 Dimension 1

All respondents provided their information on expectations and perceptions on service quality of the library at South campus. The results of the data analysis on dimension 1 (affect of service) are described in Table 5.5.

<table>
<thead>
<tr>
<th>Dimension 1 (affect of service)</th>
<th>Valid N</th>
<th>Expectations Mean</th>
<th>Perceptions Mean</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>D11</td>
<td>1020</td>
<td>3.80</td>
<td>2.28</td>
<td>-1.52</td>
</tr>
<tr>
<td>D12</td>
<td>1020</td>
<td>4.14</td>
<td>2.53</td>
<td>-1.61</td>
</tr>
<tr>
<td>D13</td>
<td>1020</td>
<td>4.05</td>
<td>2.47</td>
<td>-1.58</td>
</tr>
<tr>
<td>D14</td>
<td>1020</td>
<td>4.01</td>
<td>2.44</td>
<td>-1.57</td>
</tr>
<tr>
<td>D15</td>
<td>1020</td>
<td>4.09</td>
<td>2.34</td>
<td>-1.75</td>
</tr>
<tr>
<td>D16</td>
<td>1020</td>
<td>4.39</td>
<td>2.29</td>
<td>-2.10</td>
</tr>
<tr>
<td>D17</td>
<td>1020</td>
<td>4.10</td>
<td>2.46</td>
<td>-1.64</td>
</tr>
<tr>
<td>D18</td>
<td>1020</td>
<td>4.06</td>
<td>2.51</td>
<td>-1.55</td>
</tr>
<tr>
<td>D19</td>
<td>1020</td>
<td>4.08</td>
<td>2.69</td>
<td>-1.39</td>
</tr>
<tr>
<td>Average Mean</td>
<td>1020</td>
<td>4.08</td>
<td>2.45</td>
<td>-1.63</td>
</tr>
</tbody>
</table>

Source: Own construction
As shown in Table 5.5, nine items (D11 to D19) were related to the dimension 1 (affect of service). Table 5.5 indicates that the lowest expectation mean score (3.80) was D11 and the highest expectation mean score (4.39) was D16. As shown in Table 5.5, the lowest perception mean score (2.28) was D11 and the highest perception mean score (2.69) was D19. Table 5.5 indicates that the gap score of D15 (1.75), the gap score of D16 (2.10) and the gap score of D17 (1.64) were higher than the average gap score (1.63).

5.4.1.2 Dimension 2

The results of the data analysis on dimension 2 (library as place) are described in Table 5.6.

<table>
<thead>
<tr>
<th>Dimension 2 (library as place)</th>
<th>Valid N</th>
<th>Expectations Mean</th>
<th>Perceptions Mean</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>D21</td>
<td>1020</td>
<td>4.27</td>
<td>2.40</td>
<td>-1.87</td>
</tr>
<tr>
<td>D22</td>
<td>1020</td>
<td>4.16</td>
<td>2.55</td>
<td>-1.61</td>
</tr>
<tr>
<td>D23</td>
<td>1020</td>
<td>4.38</td>
<td>2.52</td>
<td>-1.86</td>
</tr>
<tr>
<td>D24</td>
<td>1020</td>
<td>4.29</td>
<td>2.43</td>
<td>-1.86</td>
</tr>
<tr>
<td>D25</td>
<td>1020</td>
<td>4.25</td>
<td>2.69</td>
<td>-1.56</td>
</tr>
<tr>
<td>D26</td>
<td>1020</td>
<td>4.07</td>
<td>2.40</td>
<td>-1.67</td>
</tr>
<tr>
<td><strong>Average Mean</strong></td>
<td></td>
<td><strong>4.24</strong></td>
<td><strong>2.50</strong></td>
<td><strong>-1.74</strong></td>
</tr>
</tbody>
</table>

Source: Own construction
As shown in Table 5.6, six items (D21 to D26) were related to dimension 2 (library as place). Table 5.6 indicates that the lowest expectation mean score (4.07) was D26 and the highest expectation mean score (4.38) was D23. As shown in Table 5.6, the lowest perception mean scores (2.40) were D21 and D26 and the highest perception mean score (2.69) was D25. Table 5.6 indicates that the gap score of D21 (1.87), the gap score of D23 (1.86) and the gap score of D24 (1.86) were higher than the average gap score (1.74).

5.4.1.3 Dimension 3

The results of the data analysis on dimension 3 (information access) are described in Table 5.7.

<table>
<thead>
<tr>
<th>Dimension 3 (information access)</th>
<th>Valid N</th>
<th>Expectations Mean</th>
<th>Perceptions Mean</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>D31</td>
<td>1020</td>
<td>4.21</td>
<td>2.53</td>
<td>-1.68</td>
</tr>
<tr>
<td>D32</td>
<td>1020</td>
<td>4.27</td>
<td>2.34</td>
<td>-1.93</td>
</tr>
<tr>
<td>D33</td>
<td>1020</td>
<td>4.18</td>
<td>2.70</td>
<td>-1.48</td>
</tr>
<tr>
<td>Average Mean</td>
<td></td>
<td>4.22</td>
<td>2.52</td>
<td>-1.70</td>
</tr>
</tbody>
</table>

Source: Own construction
As shown in Table 5.7, three items (D31 to D33) were related to dimension 3 (information access). Table 5.7 indicates that the lowest expectation mean score (4.18) was D33 and the highest expectation mean score (4.27) was D32. As shown in Table 5.7, the lowest perception mean scores (2.34) was D32 and the highest perception mean score (2.70) was D33. Table 5.7 indicates that the gap score (1.93) of D32 was higher than the average gap score (1.70).

5.4.1.4 Dimension 4

The results of the data analysis on dimension 4 (personal control) are described in Table 5.8.

<table>
<thead>
<tr>
<th>Dimension 4 (personal control)</th>
<th>Valid N</th>
<th>Expectations Mean</th>
<th>Perceptions Mean</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>D41</td>
<td>1020</td>
<td>4.30</td>
<td>2.55</td>
<td>-1.75</td>
</tr>
<tr>
<td>D42</td>
<td>1020</td>
<td>4.33</td>
<td>2.41</td>
<td>-1.92</td>
</tr>
<tr>
<td>D43</td>
<td>1020</td>
<td>4.25</td>
<td>2.53</td>
<td>-1.72</td>
</tr>
<tr>
<td>D44</td>
<td>1020</td>
<td>4.09</td>
<td>2.58</td>
<td>-1.51</td>
</tr>
<tr>
<td>D45</td>
<td>1020</td>
<td>4.17</td>
<td>2.52</td>
<td>-1.65</td>
</tr>
<tr>
<td>D46</td>
<td>1020</td>
<td>4.44</td>
<td>2.07</td>
<td>-2.37</td>
</tr>
<tr>
<td>D47</td>
<td>1020</td>
<td>4.23</td>
<td>1.87</td>
<td>-2.36</td>
</tr>
<tr>
<td>D48</td>
<td>1020</td>
<td>4.27</td>
<td>1.90</td>
<td>-2.37</td>
</tr>
<tr>
<td>D49</td>
<td>1020</td>
<td>4.41</td>
<td>2.46</td>
<td>-1.95</td>
</tr>
<tr>
<td><strong>Average Mean</strong></td>
<td></td>
<td>4.28</td>
<td>2.32</td>
<td>-1.96</td>
</tr>
</tbody>
</table>

Source: Own construction
As shown in Table 5.8, nine items (D41 to D49) were related to dimension 4 (personal control). Table 5.8 indicates that the lowest expectation mean score (4.09) was D44 and the highest expectation mean score (4.44) was D46. As shown in Table 5.8, the lowest perception mean scores (1.87) was D47 and the highest perception mean score (2.58) was D44. Table 5.8 indicates that the gap score (2.37) of D46, the gap score (2.36) of D47 and the gap score (2.37) of D48 were higher than the average gap score (1.96).

5.4.2 Comparing gaps at North campus

At North campus, a total of 680 respondents were interviewed. The findings on comparing expectations and perceptions of these respondents on the service quality of the library at North campus are described following the four dimensions as follows:

5.4.2.1 Dimension 1

All respondents provided their information on expectations and perceptions on service quality of the library at North campus. The results of the data analysis on dimension 1 (affect of service) are described in Table 5.9.
As shown in Table 5.9, nine items (D11 to D19) were related to dimension 1 (affect of service). Table 5.9 indicates that the lowest expectation mean score (3.98) was D11 and the highest expectation mean score (4.45) was D16. As shown in Table 5.9, the lowest perception mean score (2.44) was D11 and the highest perception mean score (3.00) was D12. Table 5.9 indicates that the gap score (1.54) of D11, the gap score (1.46) of D13, the gap score (1.47) of D14, the gap score (1.87) of D16, the gap score (1.46) of D18 and the gap score (1.57) of D19 were higher than the average gap score (1.45).
5.4.2.2 Dimension 2

The results of the data analysis on dimension 2 (library as place) are described in Table 5.10.

### TABLE 5.10
**DIMENSION 2 AT NORTH CAMPUS**

<table>
<thead>
<tr>
<th>Dimension 2 (library as place)</th>
<th>Valid N</th>
<th>Expectations Mean</th>
<th>Perceptions Mean</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>D21</td>
<td>680</td>
<td>4.37</td>
<td>2.76</td>
<td>-1.61</td>
</tr>
<tr>
<td>D22</td>
<td>680</td>
<td>4.52</td>
<td>2.74</td>
<td>-1.78</td>
</tr>
<tr>
<td>D23</td>
<td>680</td>
<td>4.44</td>
<td>2.76</td>
<td>-1.68</td>
</tr>
<tr>
<td>D24</td>
<td>680</td>
<td>4.54</td>
<td>2.29</td>
<td>-2.25</td>
</tr>
<tr>
<td>D25</td>
<td>680</td>
<td>4.41</td>
<td>2.64</td>
<td>-1.77</td>
</tr>
<tr>
<td>D26</td>
<td>680</td>
<td>4.34</td>
<td>2.81</td>
<td>-1.53</td>
</tr>
<tr>
<td><strong>Average Mean</strong></td>
<td></td>
<td><strong>4.44</strong></td>
<td><strong>2.67</strong></td>
<td><strong>-1.77</strong></td>
</tr>
</tbody>
</table>

Source: Own construction

As shown in Table 5.10, six items (D21 to D26) were related to dimension 2 (library as place). Table 5.10 indicates that the lowest expectation mean score (4.34) was D26 and the highest expectation mean score (4.54) was D24. As shown in Table 5.10, the lowest perception mean score (2.29) was D24 and the highest perception mean score (2.81) was D26. Table 5.10 indicates that the gap score (1.78) of D22, the gap score (2.25) of D24, and the gap score (1.77) of D25 were higher than the average gap score or equal to the average gap score (1.77).
5.4.2.3 Dimension 3

The results of the data analysis on dimension 3 (information access) are described in Table 5.11.

TABLE 5.11
DIMENSION 3 AT NORTH CAMPUS

<table>
<thead>
<tr>
<th>Dimension 3 (information access)</th>
<th>Valid N</th>
<th>Expectations Mean</th>
<th>Perceptions Mean</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>D31</td>
<td>680</td>
<td>4.30</td>
<td>2.76</td>
<td>-1.54</td>
</tr>
<tr>
<td>D32</td>
<td>680</td>
<td>4.44</td>
<td>2.51</td>
<td>-1.93</td>
</tr>
<tr>
<td>D33</td>
<td>680</td>
<td>4.34</td>
<td>2.72</td>
<td>-1.62</td>
</tr>
<tr>
<td><strong>Average Mean</strong></td>
<td></td>
<td><strong>4.36</strong></td>
<td><strong>2.66</strong></td>
<td><strong>-1.70</strong></td>
</tr>
</tbody>
</table>

Source: Own construction

As shown in Table 5.11, three items (D31 to D33) were related to dimension 3 (information access). Table 5.11 indicates that the lowest expectation mean score (4.30) was D31 and the highest expectation mean score (4.44) was D32. As shown in Table 5.11, the lowest perception mean score (2.51) was D32 and the highest perception mean score (2.76) was D31. Table 5.11 indicates that the gap score (1.93) of D32 was higher than the average gap score (1.70).
5.4.2.4 Dimension 4

The results of the data analysis on dimension 4 (personal control) are described in Table 5.12.

TABLE 5.12
DIMENSION 4 AT NORTH CAMPUS

<table>
<thead>
<tr>
<th>Dimension 4 (personal control)</th>
<th>Valid N</th>
<th>Expectations Mean</th>
<th>Perceptions Mean</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>D41</td>
<td>680</td>
<td>4.21</td>
<td>2.23</td>
<td>-1.98</td>
</tr>
<tr>
<td>D42</td>
<td>680</td>
<td>4.43</td>
<td>2.44</td>
<td>-1.99</td>
</tr>
<tr>
<td>D43</td>
<td>680</td>
<td>4.32</td>
<td>2.48</td>
<td>-1.84</td>
</tr>
<tr>
<td>D44</td>
<td>680</td>
<td>4.45</td>
<td>2.71</td>
<td>-1.74</td>
</tr>
<tr>
<td>D45</td>
<td>680</td>
<td>4.50</td>
<td>2.72</td>
<td>-1.78</td>
</tr>
<tr>
<td>D46</td>
<td>680</td>
<td>4.68</td>
<td>1.60</td>
<td>-3.08</td>
</tr>
<tr>
<td>D47</td>
<td>680</td>
<td>4.68</td>
<td>1.54</td>
<td>-3.14</td>
</tr>
<tr>
<td>D48</td>
<td>680</td>
<td>4.67</td>
<td>1.58</td>
<td>-3.09</td>
</tr>
<tr>
<td>D49</td>
<td>680</td>
<td>4.71</td>
<td>2.37</td>
<td>-2.34</td>
</tr>
<tr>
<td><strong>Average Mean</strong></td>
<td></td>
<td><strong>4.52</strong></td>
<td><strong>2.19</strong></td>
<td><strong>-2.33</strong></td>
</tr>
</tbody>
</table>

Source: Own construction

As shown in Table 5.12, nine items (D41 to D49) were related to dimension 4 (personal control). Table 5.12 indicates that the lowest expectation mean score (4.21) was D41 and the highest expectation mean score (4.71) was D49. As shown in Table 5.12, the lowest perception mean score (1.54) was D47 and the highest perception mean score (2.72) was D45. Table 5.12 indicates that the gap score (3.08) of D46, the gap score (3.14) of D47, the gap score (3.09) of D48 and the gap score of (2.34) of D49 were higher than the average gap score (2.33).
5.4.3 Comparing gaps at Vista campus

At Vista campus, a total of 90 respondents were interviewed. The findings on comparing expectations and perceptions of these respondents on the service quality of the library at Vista campus are described following the four dimensions as follows:

5.4.3.1 Dimension 1

The results of the data analysis on dimension 1 (affect of service) are described in Table 5.13.

Table 5.13

<table>
<thead>
<tr>
<th>Dimension 1 (affect of service)</th>
<th>Valid N</th>
<th>Expectations Mean</th>
<th>Perceptions Mean</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>D11</td>
<td>90</td>
<td>4.09</td>
<td>2.68</td>
<td>-1.41</td>
</tr>
<tr>
<td>D12</td>
<td>90</td>
<td>4.31</td>
<td>2.88</td>
<td>-1.43</td>
</tr>
<tr>
<td>D13</td>
<td>90</td>
<td>4.20</td>
<td>2.66</td>
<td>-1.54</td>
</tr>
<tr>
<td>D14</td>
<td>90</td>
<td>4.22</td>
<td>2.52</td>
<td>-1.70</td>
</tr>
<tr>
<td>D15</td>
<td>90</td>
<td>4.19</td>
<td>2.40</td>
<td>-1.79</td>
</tr>
<tr>
<td>D16</td>
<td>90</td>
<td>4.37</td>
<td>2.60</td>
<td>-1.77</td>
</tr>
<tr>
<td>D17</td>
<td>90</td>
<td>4.18</td>
<td>2.38</td>
<td>-1.80</td>
</tr>
<tr>
<td>D18</td>
<td>90</td>
<td>4.08</td>
<td>2.42</td>
<td>-1.66</td>
</tr>
<tr>
<td>D19</td>
<td>90</td>
<td>4.27</td>
<td>2.32</td>
<td>-1.95</td>
</tr>
<tr>
<td><strong>Average Mean</strong></td>
<td></td>
<td><strong>4.21</strong></td>
<td><strong>2.54</strong></td>
<td><strong>-1.67</strong></td>
</tr>
</tbody>
</table>

Source: Own construction
As shown in Table 5.13, nine items (D11 to D19) were related to dimension 1 (affect of service). Table 5.13 indicates that the lowest expectation mean score (4.08) was D18 and the highest expectation mean score (4.37) was D16. As shown in Table 5.13, the lowest perception mean score (2.32) was D19 and the highest perception mean score (2.88) was D12. Table 5.13 indicates that the gap score (1.70) of D14, the gap score (1.79) of D15, the gap score (1.77) of D16 and the gap score of (1.80) of D17 and the gap score of (1.95) of D19 were higher than the average gap score (1.67).

5.4.3.2 Dimension 2

The results of the data analysis on dimension 2 (library as place) are described in Table 5.14.

<table>
<thead>
<tr>
<th>Dimension 2 (library as place)</th>
<th>Valid N</th>
<th>Expectations Mean</th>
<th>Perceptions Mean</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>D21</td>
<td>90</td>
<td>4.19</td>
<td>2.07</td>
<td>-2.12</td>
</tr>
<tr>
<td>D22</td>
<td>90</td>
<td>4.24</td>
<td>2.27</td>
<td>-1.97</td>
</tr>
<tr>
<td>D23</td>
<td>90</td>
<td>4.12</td>
<td>2.33</td>
<td>-1.79</td>
</tr>
<tr>
<td>D24</td>
<td>90</td>
<td>4.06</td>
<td>2.19</td>
<td>-1.87</td>
</tr>
<tr>
<td>D25</td>
<td>90</td>
<td>4.26</td>
<td>2.19</td>
<td>-2.07</td>
</tr>
<tr>
<td>D26</td>
<td>90</td>
<td>4.06</td>
<td>2.48</td>
<td>-1.58</td>
</tr>
<tr>
<td><strong>Average Mean</strong></td>
<td></td>
<td><strong>4.16</strong></td>
<td><strong>2.26</strong></td>
<td><strong>-1.90</strong></td>
</tr>
</tbody>
</table>

Source: Own construction
As shown in Table 5.14, six items (D21 to D26) were related to dimension 2 (library as place). Table 5.14 indicates that the lowest expectation mean scores (4.06) were D24 and D26. The highest expectation mean score (4.26) was D25. As shown in Table 5.14, the lowest perception mean score (2.07) was D21 and the highest perception mean score (2.48) was D26. Table 5.14 indicates that the gap score (2.12) of D21, the gap score (1.97) of D22 and the gap score (2.07) of D25 were higher than the average gap score (1.90).

5.4.3.3 Dimension 3

The results of the data analysis on dimension 3 (information access) are described in Table 5.15.

<table>
<thead>
<tr>
<th>Dimension 3 (information access)</th>
<th>Valid N</th>
<th>Expectations Mean</th>
<th>Perceptions Mean</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>D31</td>
<td>90</td>
<td>4.13</td>
<td>2.16</td>
<td>-1.97</td>
</tr>
<tr>
<td>D32</td>
<td>90</td>
<td>4.11</td>
<td>2.26</td>
<td>-1.85</td>
</tr>
<tr>
<td>D33</td>
<td>90</td>
<td>4.18</td>
<td>2.23</td>
<td>-1.95</td>
</tr>
<tr>
<td><strong>Average Mean</strong></td>
<td></td>
<td>4.14</td>
<td>2.22</td>
<td>-1.92</td>
</tr>
</tbody>
</table>

Source: Own construction
As shown in Table 5.15, three items (D31 to D33) were related to dimension 3 (information access). Table 5.15 indicates that the lowest expectation mean score (4.11) was D32 and the highest expectation mean score (4.18) was D33. As shown in Table 5.15, the lowest perception mean score (2.16) was D31 and the highest perception mean score (2.26) was D32. Table 5.15 indicates that the gap score (1.97) of D31 and the gap score (1.95) of D33 were higher than the average gap score (1.92).

5.4.3.4 Dimension 4

The results of the data analysis on dimension 4 (personal control) are described in Table 5.16.

<table>
<thead>
<tr>
<th>Dimension 4 (personal control)</th>
<th>Valid N</th>
<th>Expectations Mean</th>
<th>Perceptions Mean</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>D41</td>
<td>90</td>
<td>4.22</td>
<td>2.04</td>
<td>-2.18</td>
</tr>
<tr>
<td>D42</td>
<td>90</td>
<td>4.27</td>
<td>2.13</td>
<td>-2.14</td>
</tr>
<tr>
<td>D43</td>
<td>90</td>
<td>3.94</td>
<td>2.07</td>
<td>-1.87</td>
</tr>
<tr>
<td>D44</td>
<td>90</td>
<td>4.01</td>
<td>2.02</td>
<td>-1.99</td>
</tr>
<tr>
<td>D45</td>
<td>90</td>
<td>4.24</td>
<td>2.00</td>
<td>-2.24</td>
</tr>
<tr>
<td>D46</td>
<td>90</td>
<td>4.20</td>
<td>1.82</td>
<td>-2.38</td>
</tr>
<tr>
<td>D47</td>
<td>90</td>
<td>4.18</td>
<td>1.81</td>
<td>-2.37</td>
</tr>
<tr>
<td>D48</td>
<td>90</td>
<td>4.34</td>
<td>1.87</td>
<td>-2.47</td>
</tr>
<tr>
<td>D49</td>
<td>90</td>
<td>4.44</td>
<td>2.09</td>
<td>-2.35</td>
</tr>
<tr>
<td><strong>Average Mean</strong></td>
<td></td>
<td>4.20</td>
<td>1.98</td>
<td>-2.22</td>
</tr>
</tbody>
</table>

Source: Own construction
As shown in Table 5.16, nine items (D41 to D49) were related to dimension 4 (personal control). Table 5.16 indicates that the lowest expectation mean score (3.94) was D43 and the highest expectation mean score (4.44) was D49. As shown in Table 5.16, the lowest perception mean score (1.81) was D47 and the highest perception mean score (2.13) was D42. Table 5.16 indicates that the gap score (2.24) of D45, the gap score (2.38) of D46, the gap score (2.37) of D47, the gap score (2.47) of D48 and the gap score (2.35) of D49 were higher than the average gap score (2.22).

5.4.4 Comparing gaps at Second avenue campus

At Second avenue campus, a total of 117 respondents were interviewed. The findings on comparing expectations and perceptions of these respondents on the service quality of the library at Second avenue campus are described following the four dimensions as follows:

5.4.4.1 Dimension 1

The results of the data analysis on dimension 1 (affect of service) are described in Table 5.17.
As shown in Table 5.17, nine items (D11 to D19) were related to dimension 1 (affect of service). Table 5.17 indicates that the lowest expectation mean score (3.81) was D11 and the highest expectation mean score (4.20) was D16. As shown in Table 5.17, the lowest perception mean score (2.44) was D11 and the highest perception mean score (2.71) was D16. Table 5.17 indicates that the gap score (1.45) of D12, the gap score (1.50) of D13, the gap score (1.49) of D16 and the gap score (1.40) of D17 were all higher than the average gap score (1.39).

5.4.4.2 Dimension 2

The results of the data analysis on dimension 2 (library as place) are described in Table 5.18.
As shown in Table 5.18, six items (D21 to D26) were related to dimension 2 (library as place). Table 5.18 indicates that the lowest expectation mean score (3.99) was D21 and the highest expectation mean score (4.18) was D24. As shown in Table 5.18, the lowest perception mean score (2.25) was D24 and the highest perception mean score (2.65) was D21. Table 5.18 indicates that the gap score (1.69) of D23, the gap score (1.93) of D24 and the gap score (1.89) of D25 were higher than the average gap score (1.63).

5.4.4.3 Dimension 3

The results of the data analysis on dimension 3 (information access) are described in Table 5.19.
As shown in Table 5.19, three items (D31 to D33) were related to dimension 3 (information access). Table 5.19 indicates that the lowest expectation mean score (3.91) was D31 and the highest expectation mean score (4.06) was D33. As shown in Table 5.19, the lowest perception mean score (2.42) was D32 and the highest perception mean score (2.78) was D33. Table 5.19 indicates that the gap score (1.55) of D32 was higher than the average gap score (1.39).

Source: Own construction

As shown in Table 5.19, three items (D31 to D33) were related to dimension 3 (information access). Table 5.19 indicates that the lowest expectation mean score (3.91) was D31 and the highest expectation mean score (4.06) was D33. As shown in Table 5.19, the lowest perception mean score (2.42) was D32 and the highest perception mean score (2.78) was D33. Table 5.19 indicates that the gap score (1.55) of D32 was higher than the average gap score (1.39).

5.4.4.4 Dimension 4

The results of the data analysis on dimension 4 (personal control) are described in Table 5.20.
As shown in Table 5.20, nine items (D41 to D49) were related to the dimension 4 (personal control). Table 5.20 indicates that D44 and D45 had the lowest expectation mean scores (3.97). The highest expectation mean score (4.29) was D43. As shown in Table 5.20, the lowest perception mean score (1.79) was D47. D44 and D45 had the highest perception mean scores (2.50). Table 5.20 indicates that the gap score (2.09) of D41, the gap score (2.21) of D42, the gap score (2.08) of D43, the gap score (2.34) of D46, the gap score (2.43) of D47 and the gap score (2.29) of D48 were all higher than the average gap score (2.04).
5.4.5 Comparing gaps at Saasveld campus

At Saasveld campus, a total of 40 respondents were interviewed. The findings on comparing expectations and perceptions of these respondents on the service quality of the library at Saasveld campus are described following the four dimensions as follows:

5.4.5.1 Dimension 1

The results of the data analysis on dimension 1 (affect of service) are described in Table 5.21.

**TABLE 5.21**
**DIMENSION 1 AT SAASVELD CAMPUS**

<table>
<thead>
<tr>
<th>Dimension 1 (affect of service)</th>
<th>Valid N</th>
<th>Expectations Mean</th>
<th>Perceptions Mean</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>D11</td>
<td>40</td>
<td>4.25</td>
<td>2.98</td>
<td>-1.27</td>
</tr>
<tr>
<td>D12</td>
<td>40</td>
<td>4.22</td>
<td>2.92</td>
<td>-1.30</td>
</tr>
<tr>
<td>D13</td>
<td>40</td>
<td>4.20</td>
<td>2.85</td>
<td>-1.35</td>
</tr>
<tr>
<td>D14</td>
<td>40</td>
<td>4.25</td>
<td>2.88</td>
<td>-1.37</td>
</tr>
<tr>
<td>D15</td>
<td>40</td>
<td>4.33</td>
<td>2.83</td>
<td>-1.50</td>
</tr>
<tr>
<td>D16</td>
<td>40</td>
<td>4.38</td>
<td>2.98</td>
<td>-1.40</td>
</tr>
<tr>
<td>D17</td>
<td>40</td>
<td>4.20</td>
<td>2.90</td>
<td>-1.30</td>
</tr>
<tr>
<td>D18</td>
<td>40</td>
<td>4.08</td>
<td>2.80</td>
<td>-1.28</td>
</tr>
<tr>
<td>D19</td>
<td>40</td>
<td>4.35</td>
<td>2.85</td>
<td>-1.50</td>
</tr>
<tr>
<td><strong>Average Mean</strong></td>
<td></td>
<td>4.25</td>
<td>2.89</td>
<td>-1.36</td>
</tr>
</tbody>
</table>

Source: Own construction
As shown in Table 5.21, nine items (D11 to D19) were related to dimension 1 (affect of service). Table 5.21 indicates that the lowest expectation mean score (4.08) was D18. The highest expectation mean score (4.38) was D16. As shown in Table 5.21, the lowest perception mean score (2.80) was D18. D11 and D16 had the highest perception mean scores (2.98). Table 5.21 indicates that the gap score (1.37) of D14, the gap score (1.50) of D15, the gap score (1.40) of D16 and the gap score (1.50) of D19 were all higher than the average gap score (1.36).

5.4.5.2 Dimension 2

The results of the data analysis on dimension 2 (library as place) are described in Table 5.22.

<table>
<thead>
<tr>
<th>Dimension 2 (library as place)</th>
<th>Valid N</th>
<th>Expectations Mean</th>
<th>Perceptions Mean</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>D21</td>
<td>40</td>
<td>4.33</td>
<td>2.90</td>
<td>-1.43</td>
</tr>
<tr>
<td>D22</td>
<td>40</td>
<td>4.33</td>
<td>3.02</td>
<td>-1.31</td>
</tr>
<tr>
<td>D23</td>
<td>40</td>
<td>4.45</td>
<td>2.57</td>
<td>-1.88</td>
</tr>
<tr>
<td>D24</td>
<td>40</td>
<td>4.40</td>
<td>2.25</td>
<td>-2.15</td>
</tr>
<tr>
<td>D25</td>
<td>40</td>
<td>4.45</td>
<td>2.63</td>
<td>-1.82</td>
</tr>
<tr>
<td>D26</td>
<td>40</td>
<td>4.45</td>
<td>2.65</td>
<td>-1.80</td>
</tr>
<tr>
<td><strong>Average Mean</strong></td>
<td></td>
<td><strong>4.40</strong></td>
<td><strong>2.67</strong></td>
<td><strong>-1.73</strong></td>
</tr>
</tbody>
</table>

Source: Own construction
As shown in Table 5.22, six items (D21 to D26) were related to dimension 2 (library as place). Table 5.22 indicates that D21 and D22 had the lowest expectation mean scores (4.33). D23, D25 and D26 had the highest expectation mean scores (4.45). As shown in Table 5.22, the lowest perception mean score (2.25) was D24. The highest perception mean score (3.02) was D22. Table 5.22 indicates that the gap score (1.88) of D23, the gap score (2.15) of D24, the gap score (1.82) of D25 and the gap score (1.80) of D26 were higher than the average gap score (1.73).

5.4.5.3 Dimension 3

The results of the data analysis on dimension 3 (information access) are described in Table 5.23.

<table>
<thead>
<tr>
<th>Dimension 3 (information access)</th>
<th>Valid N</th>
<th>Expectations Mean</th>
<th>Perceptions Mean</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>D31</td>
<td>40</td>
<td>4.22</td>
<td>2.80</td>
<td>-1.42</td>
</tr>
<tr>
<td>D32</td>
<td>40</td>
<td>4.42</td>
<td>2.70</td>
<td>-1.72</td>
</tr>
<tr>
<td>D33</td>
<td>40</td>
<td>4.38</td>
<td>2.98</td>
<td>-1.40</td>
</tr>
<tr>
<td><strong>Average Mean</strong></td>
<td></td>
<td><strong>4.34</strong></td>
<td><strong>2.83</strong></td>
<td><strong>-1.51</strong></td>
</tr>
</tbody>
</table>

Source: Own construction
As shown in Table 5.23, three items (D31 to D33) were related to dimension 3 (information access). Table 5.23 indicates that the lowest expectation mean score (4.22) was D31. The highest expectation mean score (4.42) was D32. As shown in Table 5.23, the lowest perception mean score (2.70) was D32. The highest perception mean score (2.98) was D33. Table 5.23 indicates that the gap score (1.72) of D32 was higher than the average gap score (1.51).

5.4.5.4 Dimension 4

The results of the data analysis on dimension 4 (personal control) are described in Table 5.24.

<table>
<thead>
<tr>
<th>Dimension 4 (personal control)</th>
<th>Valid N</th>
<th>Expectations Mean</th>
<th>Perceptions Mean</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>D41</td>
<td>40</td>
<td>4.45</td>
<td>1.95</td>
<td>-2.50</td>
</tr>
<tr>
<td>D42</td>
<td>40</td>
<td>4.60</td>
<td>1.95</td>
<td>-2.65</td>
</tr>
<tr>
<td>D43</td>
<td>40</td>
<td>4.57</td>
<td>2.50</td>
<td>-2.07</td>
</tr>
<tr>
<td>D44</td>
<td>40</td>
<td>4.47</td>
<td>2.72</td>
<td>-1.75</td>
</tr>
<tr>
<td>D45</td>
<td>40</td>
<td>4.40</td>
<td>2.73</td>
<td>-1.67</td>
</tr>
<tr>
<td>D46</td>
<td>40</td>
<td>4.58</td>
<td>1.95</td>
<td>-2.63</td>
</tr>
<tr>
<td>D47</td>
<td>40</td>
<td>4.63</td>
<td>1.95</td>
<td>-2.68</td>
</tr>
<tr>
<td>D48</td>
<td>40</td>
<td>4.60</td>
<td>1.95</td>
<td>-2.65</td>
</tr>
<tr>
<td>D49</td>
<td>40</td>
<td>4.72</td>
<td>2.90</td>
<td>-1.82</td>
</tr>
<tr>
<td><strong>Average Mean</strong></td>
<td></td>
<td><strong>4.56</strong></td>
<td><strong>2.29</strong></td>
<td><strong>-2.27</strong></td>
</tr>
</tbody>
</table>

Source: Own construction
As shown in Table 5.24, nine items (D41 to D49) were related to dimension 4 (personal control). Table 5.24 indicates that the lowest expectation mean score (4.40) was D45. The highest expectation mean score (4.72) was D49. As shown in Table 5.24, D41, D42, D46, D47 and D48 had the lowest perception mean scores (1.95). The highest perception mean score (2.90) was D49. Table 5.24 indicates that the gap score (2.50) of D41, the gap score (2.65) of D42, the gap score (2.63) of D46, the gap score (2.68) of D47 and the gap score (2.65) of D48 were higher than the average gap score (2.27).

5.4.6 Comparing gaps at York street campus

At York street campus, a total of 100 respondents were interviewed. The findings on comparing expectations and perceptions of these respondents on the service quality of the library at York street campus are described following the four dimensions as follows:

5.4.6.1 Dimension 1

The results of the data analysis on dimension 1 (affect of service) are described in Table 5.25.
As shown in Table 5.25, nine items (D11 to D19) were related to dimension 1 (affect of service). Table 5.25 indicates that the lowest expectation mean score (4.08) was D11. The highest expectation mean score (4.44) was D16. As shown in Table 5.25, the lowest perception mean score (2.69) was D14. The highest perception mean score (2.97) was D12. Table 5.25 indicates that the gap score (1.57) of D14, the gap score (1.55) of D15, the gap score (1.50) of D16, the gap score (1.58) of D17 and the gap score (1.50) of D19 were all higher than the average gap score (1.45).
5.4.6.2 Dimension 2

The results of the data analysis on dimension 2 (library as place) are described in Table 5.26.

<table>
<thead>
<tr>
<th>Dimension 2 (library as place)</th>
<th>Valid N</th>
<th>Expectations Mean</th>
<th>Perceptions Mean</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>D21</td>
<td>100</td>
<td>4.32</td>
<td>2.76</td>
<td>-1.56</td>
</tr>
<tr>
<td>D22</td>
<td>100</td>
<td>4.33</td>
<td>2.80</td>
<td>-1.53</td>
</tr>
<tr>
<td>D23</td>
<td>100</td>
<td>4.39</td>
<td>2.75</td>
<td>-1.64</td>
</tr>
<tr>
<td>D24</td>
<td>100</td>
<td>4.28</td>
<td>2.56</td>
<td>-1.72</td>
</tr>
<tr>
<td>D25</td>
<td>100</td>
<td>4.48</td>
<td>2.64</td>
<td>-1.84</td>
</tr>
<tr>
<td>D26</td>
<td>100</td>
<td>4.22</td>
<td>2.78</td>
<td>-1.44</td>
</tr>
<tr>
<td><strong>Average Mean</strong></td>
<td></td>
<td><strong>4.34</strong></td>
<td><strong>2.72</strong></td>
<td><strong>-1.62</strong></td>
</tr>
</tbody>
</table>

Source: Own construction

As shown in Table 5.26, six items (D21 to D26) were related to dimension 2 (library as place). Table 5.26 indicates that the lowest expectation mean score (4.22) was D26. The highest expectation mean score (4.48) was D25. As shown in Table 5.26, the lowest perception mean score (2.56) was D24. The highest perception mean score (2.80) was D22. Table 5.26 indicates that the gap score (1.64) of D23, the gap score (1.72) of D24 and the gap score (1.84) of D25 were higher than the average gap score (1.62).
5.4.6.3 Dimension 3

The results of the data analysis on dimension 3 (information access) are described in Table 5.27.

TABLE 5.27
DIMENSION 3 AT YORK STREET CAMPUS

<table>
<thead>
<tr>
<th>Dimension 3 (information access)</th>
<th>Valid N</th>
<th>Expectations Mean</th>
<th>Perceptions Mean</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>D31</td>
<td>100</td>
<td>4.28</td>
<td>2.74</td>
<td>-1.54</td>
</tr>
<tr>
<td>D32</td>
<td>100</td>
<td>4.25</td>
<td>2.63</td>
<td>-1.62</td>
</tr>
<tr>
<td>D33</td>
<td>100</td>
<td>4.27</td>
<td>2.73</td>
<td>-1.54</td>
</tr>
<tr>
<td>Average Mean</td>
<td></td>
<td>4.27</td>
<td>2.70</td>
<td>-1.57</td>
</tr>
</tbody>
</table>

Source: Own construction

As shown in Table 5.27, three items (D31 to D33) were related to dimension 3 (information access). Table 5.27 indicates that the lowest expectation mean score (4.25) was D32. The highest expectation mean score (4.28) was D31. As shown in Table 5.27, the lowest perception mean score (2.63) was D32. The highest perception mean score (2.74) was D31. Table 5.27 indicates that the gap score (1.62) of D32 was higher than the average gap score (1.57).
5.4.6.4 Dimension 4

The results of the data analysis on dimension 4 (personal control) are described in Table 5.28.

**TABLE 5.28**
DIMENSION 4 AT YORK STREET CAMPUS

<table>
<thead>
<tr>
<th>Dimension 4 (personal control)</th>
<th>Valid N</th>
<th>Expectations Mean</th>
<th>Perceptions Mean</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>D41</td>
<td>100</td>
<td>4.44</td>
<td>2.00</td>
<td>-2.44</td>
</tr>
<tr>
<td>D42</td>
<td>100</td>
<td>4.46</td>
<td>2.00</td>
<td>-2.46</td>
</tr>
<tr>
<td>D43</td>
<td>100</td>
<td>4.33</td>
<td>2.69</td>
<td>-1.64</td>
</tr>
<tr>
<td>D44</td>
<td>100</td>
<td>4.24</td>
<td>2.75</td>
<td>-1.49</td>
</tr>
<tr>
<td>D45</td>
<td>100</td>
<td>4.32</td>
<td>2.76</td>
<td>-1.56</td>
</tr>
<tr>
<td>D46</td>
<td>100</td>
<td>4.21</td>
<td>2.00</td>
<td>-2.21</td>
</tr>
<tr>
<td>D47</td>
<td>100</td>
<td>4.33</td>
<td>2.00</td>
<td>-2.33</td>
</tr>
<tr>
<td>D48</td>
<td>100</td>
<td>4.37</td>
<td>2.00</td>
<td>-2.37</td>
</tr>
<tr>
<td>D49</td>
<td>100</td>
<td>4.51</td>
<td>2.83</td>
<td>-1.68</td>
</tr>
<tr>
<td><strong>Average Mean</strong></td>
<td></td>
<td>4.36</td>
<td>2.34</td>
<td>-2.02</td>
</tr>
</tbody>
</table>

Source: Own construction

As shown in Table 5.28, nine items (D41 to D49) were related to dimension 4 (personal control). Table 5.28 indicates that the lowest expectation mean score (4.21) was D46. The highest expectation mean score (4.51) was D49. As shown in Table 5.28, D41, D42, D46, D47 and D48 had the lowest perception mean scores (2.00). The highest perception mean score (2.83) was D49. Table 5.28 indicates that the gap score (2.44) of D41, the gap score (2.46) of D42, the gap
score (2.21) of D46, the gap score (2.33) of D47 and the gap score (2.37) of D48 were higher than the average gap score (2.02).

5.5 SUMMARY

In this chapter the findings of the empirical research were reported and analysed. Firstly, the findings on the demographic information of 2 047 respondents were explained in detail. The results of this explanation include gender, faculty, campus of NMMU and the educational levels of respondents. Secondly, the results of the findings described the general reporting on comparing the gaps between the service expectations and service perceptions of students. Thirdly, the results of the findings described the different expectations and different perceptions on the service quality of NMMU libraries at different campuses of NMMU. The gaps between the expectations and the perceptions on the service quality of NMMU libraries at different campuses of NMMU were identified in detail.

Chapter 6 describes a synopsis of the study and draws the conclusions and recommendations.
CHAPTER 6

SYNOPSIS, CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

NMMU libraries have played an important service role for students’ academic research in NMMU education. The quality level of NMMU library services can influence the success of students during their academic careers. Therefore, the researcher investigated the quality level of NMMU library services by focusing on the gaps between service expectations and service perceptions of students. Whether the service expectations of students are met by their service perceptions is an effective method to evaluate the quality level of NMMU library services.

As an effective tool evaluating the service quality in the fields of university library services, the LibQUAL model developed from the SERVQUAL model was used for this research to evaluate the gaps between service expectations and service perceptions of students. The four dimensions (affect of service, library as place, information access and personal control) of the LibQUAL model can clearly identify where the gaps exist. The results of this research can assist the management of NMMU library services to improve the quality of NMMU library services.
This chapter contains a synopsis of the previous chapters and gives conclusions and recommendations based on the empirical findings.

6.2 SYNOPSIS OF THE STUDY

Chapter 1 began with the rationale and background to the study, discussing the importance of evaluating the quality of university library services based on the service expectations and service perceptions of students. The purpose of this research, the research problem and subproblems, the research objectives and the definition of key concepts were clearly explained. The review of the related research, the research hypotheses, the research methodology, the data collection and analysis, the delimitation of the research, the assumptions and the significance of the research were also described. The researcher’s qualifications, the timetable for the study and the chapter outline were also described.

Chapter 2 defined the concept of expectations and two aspects of the concepts of expectation were discussed (expectations as beliefs and expectations in service management). Secondly, the service expectations of consumers and the zone of tolerance were explained. The factors influencing consumers’ service expectations were identified. Thirdly, the service perception of consumers was identified. The factors influencing consumers’ service perceptions were discussed.
Chapter 3 explained the factors in the environment surrounding university library services. The university library marketing was also discussed. The LibQUAL model, which is an effective method to evaluate the quality of university library services, was described. The LibQUAL model clearly identified the gaps between service expectations and service perceptions of students through its four dimensions (affect of service, library as place, information access and personal control).

Chapter 4 outlined with the research methodology used for the study. Both descriptive and quantitative research methods were used in this study. The LibQUAL survey of the total market was employed for this research as the data collection method. Secondly, the questionnaire design (including the process of the designing questionnaire, the research population and sampling procedure, the question format and the content of a questionnaire) were also explained. Thirdly, the data analysis method was also described.

Chapter 5 described and analysed the findings of the empirical research. Firstly, the findings about the demographic information of 2,047 respondents were reported on and analysed. Secondly, the findings about the general reporting of gaps comparing the expectations and perceptions of 2,047 respondents on the quality of NMMU library services were reported on and analysed. Thirdly, the findings of the gaps of 2,047 respondents were reported and analysed in the different NMMU campuses.
6.3 CONCLUSIONS AND RECOMMENDATIONS

In this section, the conclusions and recommendations are given based on the literature study and on the empirical study. As described in Chapter 2, consumers always evaluate the quality of a service by comparing the gaps between the service expectations and service perceptions of consumers (Prugsamatz et al. 2006:¶1; Coye 2004:¶1). If the service expectations of consumers cannot be met by their service perceptions, they will put a negative evaluation on the service quality of an organisation (Lovelock 2001:112).

As described in Chapter 3, consumers always evaluate the service quality of an organisation focusing on Gap 7 (the service gap) (Lovelock & Wirtz 2004:413), and Gap 7 is defined as “the difference between” what consumers expect to receive and what they “actually” receive (Gilmore 2003:21). The LibQUAL model focuses on Gap 7 and is regarded as an effective method for measuring the service quality of university library services (Roszkowski et al. 2005:¶1). The LibQUAL model with the four dimensions (affect of service, library as place, information access and personal control) can provide management of university libraries with deep insights to measure the service quality of university libraries.

As described in Chapter 5, the results of the empirical study were reported from the 2 047 respondents from the different NMMU campuses. Therefore, the conclusions and recommendations are based on all the different NMMU campuses.
6.3.1 South campus

At South campus, a total of 1,020 respondents finished the questionnaires. Following the results of data analysis, the conclusions and recommendations are completed on the four dimensions of the LibQUAL model at South campus.

6.3.1.1 Dimension 1

As described in 1.5.8 and 3.8.5.2, dimension 1 is “affect of service” and it is defined as “the emotional aspect of libraries’ service delivery” (Cook et al 2003:39). Table 5.5 indicates that the gap score of D15 (1.75), the gap score of D16 (2.10) and the gap score of D17 (1.64) were higher than the average gap score (1.63). The gaps of D15, D16 and D17 were the main gaps. It is suggested that the perceptions of respondents (“the staff in the library understand my specific needs”, “the staff in the library are always polite” and “the staff in the library are ready to respond to my questions”) did not meet the expectations of respondents.

The implications suggest that: As the attitude of the staff can influence the service perceptions of students, the staff of the library at South campus play an important role in making positive service perceptions for students and meeting the service expectations of students. The managers of the library at South campus should focus on a staff training programme to improve the communication skills of the staff. The training programme should teach the staff
how to improve their listening skill, how to look for common ground instead of focusing solely on differences and how to keep a positive mental focus. Then the staff of the library at South campus will be efficient in understanding students’ service needs and responding to students’ questions. Consequently, the students will be satisfied with the attitude of the staff.

6.3.1.2 Dimension 2

As described in 1.5.8 and 3.8.5.2, dimension 2 is “library as place” and is defined as “the libraries can provide students with a space for individual study and group cooperation” (Cook et al 2003:39). Table 5.6 indicates that the gap score of D21 (1.87), the gap score of D23 (1.86) and the gap score of D24 (1.86) were higher than the average gap score (1.74). The gaps of D21, D23 and D24 were the main gaps. It is suggested that the perceptions of respondents (“the library is a comfortable place to encourage my study and learning”, “the library has enough space to facilitate quiet and individual study” and “the library has enough space to meet group study and research needs”) did not meet the expectations of respondents.

The implications suggest that: Firstly, the managers of the library at South campus should focus on putting one computer room to make the library a more comfortable environment and encourage study and learning for students as there are not computer rooms in this library. Secondly, the management of the library at
South campus should put four computers to help students searching the academic materials on the ground of the library as there are currently only four computers for students searching on the first floor of the library. Thirdly, the library at South campus should improve the current study carrels and tables for students into the ergonomical study carrels and tables for students’ individual study and increase ten individual study rooms for first-year to third year students as there are only ten individual study rooms for Honour students, Master students and Doctor students. Fourthly, the management of the library at South campus should provide one group study room to meet the needs of group study and research as no group study rooms exist for students.

6.3.1.3 Dimension 3

As described in 1.5.8 and 3.8.5.2, dimension 3 is “information access” and is defined as “an assessment of the relevance of the collections provided by the libraries and the ability of users to access information efficiently (including training programmes)” (Cook et al 2003:39). Table 5.7 indicates that the gap score (1.93) of D32 was higher than the average gap score (1.70). The gap of D32 was the main gap. It is suggested that the perception of respondents (“it is convenient and possible for me to make their electronic resources available from my home”) did not meet the expectation of respondents.
The implications suggest that: Firstly, with the assistance of the department of information technology at NMMU, the library at South campus should create an easier or more direct access point for electronic resources. Secondly, the library at South campus should put one note to collect feedback of students on accessing the information via the service of electronic access, database training programmes and the online public access catalogue. If students have any problem, the library can assist them to resolve the problem.

6.3.1.4 Dimension 4

As described in 1.5.8 and 3.8.5.2, dimension 4 is “personal control” and is defined as “the extent to which users are able to browse through and control the sources of information provided” (Cook et al 2003:39). Table 5.8 indicates that the gap score (2.37) of D46, the gap score (2.36) of D47 and the gap score (2.37) of D48 were higher than the average gap score (1.96). The gaps of D46, D47 and D48 were the main gaps. It is suggested that the perception of respondents (“the library’s business hours are from 8:00am to 10:00pm on weekdays”, “the library’s business hours are from 8:00am to 10:00pm on Saturday” and “the library’s business hours are from 8:00am to 10:00pm on Sunday”) did not meet the expectations of respondents.

The implications suggest that: As students are primarily in class during the daytime, it is necessary that they be able to use the library on weekday evenings, Saturdays and Sundays. Firstly, during the weekdays, the library at South
campus should be opened from 8:00 am as the current opening time is started from 8:30 am. Secondly, as the library is opened from 9:00 am to 5:00 pm on Saturdays and is opened from 2:00 pm to 6:00 pm on Sundays, the library at South campus should be opened from 8:00 am to 10:00 pm on Saturday and on Sunday. By so doing the service expectations of students on opening hours will be met by the library at South campus.

6.3.2 North campus

At North campus, a total of 680 respondents finished the questionnaires. Following the results of data analysis, the conclusions and recommendations are completed on the four dimensions of the LibQUAL model at North campus.

6.3.2.1 Dimension 1

As described in 1.5.8 and 3.8.5.2, dimension 1 is “affect of service” and it is defined as “the emotional aspect of libraries’ service delivery” (Cook et al 2003:39). Table 5.9 indicates that the gap score (1.54) of D11, the gap score (1.46) of D13, the gap score (1.47) of D14, the gap score (1.87) of D16, the gap score (1.46) of D18 and the gap score (1.57) of D19 were higher than the average gap score (1.45). The gaps of D11, D13, D14, D16, D18 and D19 were the main gaps. It is suggested that the perception of respondents (“the staff in the library instil confidence in me”, “the staff in the library have my best interests at heart”, “the staff in the library give me personal attention”, “the staff in the library
are always polite”, “the staff in the library have the knowledge to answer my questions” and “the staff’s help in finding information improves my research skills”) did not meet the expectations of respondents.

The implications suggest that: As the attitude of the staff can influence the service perceptions of students, the staff of the library at North campus play an important role in making positive service perceptions for students and meeting the service expectations of students. The managers of the library at North campus should focus on a staff training programme to improve the communication skills of the staff on listening carefully to what consumers say and thinking carefully about what they can compromise on. Therefore, the staff of the library at North campus will be able to understand what the students expect. By so doing students will be satisfied with the attitude of the staff.

Secondly, the management in the library at North campus should focus on a training programme for the staff to improve their level of specific knowledge about accessing the information on computers, searching the academic materials in the library to resolve the problems of students. This action will result in staff being able to improve their research skills.
6.3.2.2 Dimension 2

As described in 1.5.8 and 3.8.5.2, the dimension 2 is “library as place” and is defined as “the libraries can provide students with a space for individual study and group cooperation” (Cook et al. 2003:39). Table 5.10 indicates that the gap score (1.78) of D22, the gap score (2.25) of D24, and the gap score (1.77) of D25 were higher than the average gap score (1.77) or equal to the average gap score. The gaps of D22, D24 and D25 were the main gaps. It is suggested that the perceptions of respondents (“the library is a contemplative environment”, “the library has enough space to meet group study and research needs” and “the library has enough space to meet individual study and research needs”) did not meet the expectations of respondents. accessing the information via the service of electronic access, database training programmes and the online public access catalogue.

The implications suggest that: Firstly, the managers of the library at North campus should focus on putting one reading room and one computer room to make for a more contemplative environment as there are not reading rooms and computer rooms in this library. Secondly, the library at North campus should provide one individual study room on the ground of the library and on the first floor of the library to encourage the individual study and learning of students as there are not individual study rooms for students on the ground and the first floor. Thirdly, the library at North campus should provide one special group study room to meet the needs of group study and research as there are not currently group
study rooms for group study.

6.3.2.3 Dimension 3

As described in 1.5.8 and 3.8.5.2, dimension 3 is “information access” and is defined as “an assessment of the relevance of the collections provided by the libraries and the ability of users to access information efficiently (including training programmes)” (Cook et al. 2003:39). Table 5.11 indicates that the gap score (1.93) of D32 was higher than the average gap score (1.70). The gap of D32 was the main gap. It is suggested that the perceptions of respondents (“it is convenient and possible for me to make their electronic resources available from my home”) did not meet the expectation of respondents.

The implications suggest that: Firstly, the library at North campus should build a closer relationship between the library and the department of information technology at NMMU. Then, the library can provide a better library website for students. The library also can create an easier or more direct access point for electronic resources with the assistance of the department of information technology. Secondly, the library at North campus should put one note to collect feedback of students on accessing the information via the service of electronic access, database training programmes and the online public access catalogue. If students have any problem, the library can assist them to resolve the problem.
6.3.2.4 Dimension 4

As described in 1.5.8 and 3.8.5.2, dimension 4 is "personal control" and is defined as "the extent to which users are able to browse through and control the sources of information provided" (Cook et al. 2003:39). Table 5.12 indicates that the gap score (3.08) of D46, the gap score (3.14) of D47, the gap score (3.09) of D48 and the gap score of (2.34) of D49 were all higher than the average gap score (2.33). The gaps of D46, D47, D48 and D49 were the main gaps. It is suggested that the perceptions of respondents ("the library’s business hours are from 8:00am to 10:00pm on weekdays", "the library’s business hours are from 8:00am to 10:00pm on Saturday", "the library’s business hours are from 8:00am to 10:00pm on Sunday" and "the library provides a large amount of journals that can be borrowed") did not meet the expectations of respondents.

The implications suggest that: As students are primarily in class during the daytime, it is necessary that they should be able to use the library on weekday evenings, Saturdays and Sundays. Firstly, during the weekdays, the management of the library at North campus should only close the library at 10:00 pm as the current closing time of the library is 8:00 pm. As the operating hours of the library are 9:00 am to 1:00 pm on Saturdays and it is closed on Sundays, the library at North campus should be opened from 8:00 am to 10:00 pm on Saturdays and Sundays. These operating hours will meet the service expectations of students at North campus. Secondly, the library at North campus can provide bound periodicals for students but loose periodicals are not allowed
to be lent out according to the current library policy, the library at North campus should put one scanning equipment in the library as there are not currently scanning equipment in this library. Consequently, the students could scan the pages of loose periodicals and they will satisfy this service.

6.3.3 Vista campus

At Vista campus, a total of 90 respondents completed the questionnaires. Following the results of data analysis, the conclusions and recommendations are completed on the four dimensions of the LibQUAL model at Vista campus.

6.3.3.1 Dimension 1

As described in 1.5.8 and 3.8.5.2, the dimension 1 is “affect of service” and it is defined as “the emotional aspect of libraries’ service delivery” (Cook et al. 2003:39). Table 5.13 indicates that the gap score (1.70) of D14, the gap score (1.79) of D15, the gap score (1.77) of D16 and the gap score of (1.80) of D17 and the gap score of (1.95) of D19 were higher than the average gap score (1.67). The gaps of D 14, D 15, D 16, D 17 and D 19 were the main gaps. It is suggested that the perceptions of respondents (“the staff in the library give me personal attention”, “the staff in the library understand my specific needs”, “the staff in the library are always polite”, “the staff in the library are ready to respond to my questions” and “the staff’s help in finding information improves my research skills”) did not meet the expectations of respondents.
The implications suggest that: As the attitude of the staff can influence the service perceptions of students, the staff of the library at Vista campus can play an important role in making positive service perceptions for students and meeting the service expectations of students. The managers of the library at Vista campus should focus on a staff training programme to improve the communication skills of the staff. Such training of the staff of the library at Vista campus can teach the staff how to improve their listening skill, how to look for common ground instead of focusing solely on differences. Therefore, the students will consequently be satisfied with the attitude of the staff.

Secondly, the managers of the library at Vista campus should focus on a training programme for the staff to improve the level of specific knowledge about accessing to computers to support students’ research, using database searching and finding a specific book from the library. Then, the staff's assistance could help students to improve their research skills.

6.3.3.2 Dimension 2

As described in 1.5.8 and 3.8.5.2, dimension 2 is “library as place” and is defined as “the libraries can provide students with a space for individual study and group cooperation” (Cook et al 2003:39). Table 5.14 indicates that the gap score (2.12) of D21, the gap score (1.97) of D22 and the gap score (2.07) of D25 were all higher than the average gap score (1.90). The gaps of D21, D22 and D25 were the main gaps. It is suggested that the perceptions of respondents (“the library is
a comfortable place to encourage my study and learning”, “the library is a contemplative environment” and “the library has enough space to meet individual study and research needs”) did not meet the expectations of respondents.

The implications suggest that: The managers of the library at Vista campus should put one computer room for students to make the library a more comfortable and contemplative place to encourage study and learning for students as there are not computer rooms in this library. The library at Vista campus should put out one individual study room for students’ individual study to meet their needs for individual study and research as there are not individual study rooms in this library.

6.3.3.3 Dimension 3

As described in 1.5.8 and 3.8.5.2, dimension 3 is “information access” and is defined as “an assessment of the relevance of the collections provided by the libraries and the ability of users to access information efficiently (including training programmes” (Cook et al 2003:39). Table 5.15 indicates that the gap score (1.97) of D31 and the gap score (1.95) of D33 were higher than the average gap score (1.92). The gaps of D31 and D33 were the main gaps. It is suggested that the perceptions of respondents (“the database training programmes provided by the library meet the needs of my study” and “the OPAC service helps me to locate information”) did not meet the expectations of respondents.
The implications suggest that: Firstly, the library at Vista campus should put one note to collect feedback of students on accessing the information via the service of electronic access, database training programmes and the online public access catalogue. By so doing the library can obtain timely feedback from the students and assist the students to resolve the problem on accessing information. Secondly, with the assistance of the department of the information technology at NMMU, the library at Vista campus could use less technical terms for the OPAC service online and could provide direct introduction to a relevant subject. Such actions will result in the OPAC service being more satisfactory and accessible for the students.

6.3.3.4 Dimension 4

As described in 1.5.8 and 3.8.5.2, dimension 4 is “personal control” and is defined as “the extent to which users are able to browse through and control the sources of information provided” (Cook et al. 2003:39). Table 5.16 indicates that the gap score (2.24) of D45, the gap score (2.38) of D46, the gap score (2.37) of D47, the gap score (2.47) of D48 and the gap score (2.35) of D49 were higher than the average gap score (2.22). The gaps of D45, D46, D47, D48 and D49 were the main gaps. It is suggested that the perceptions of respondents (“the library provides a timely interlibrary loans delivery”, “the library’s business hours are from 8:00am to 10:00pm on weekdays”, “the library’s business hours are from 8:00am to 10:00pm on Saturday”, “the library’s business hours are from 8:00am to 10:00pm on Sunday” and “the library provides a large amount of
journals that can be borrowed”) did not meet the expectations of respondents.

The implications suggest that: Firstly, to provide a timely interlibrary loans service, the library at Vista campus should vary the service of interlibrary loans delivery as the postal service is the current main method in this library. As no staff provide the service, adding a specific staff to receive and dispatch the interlibrary loans is an effective method for the library at Vista campus to meet the student expectations on providing a better interlibrary loans service.

Secondly, during the weekdays, the library at Vista campus should be opened until 10:00 pm as the current closing time of this library is 7:00 pm. As the operating hours of this library is from 9:00 am to 1:00 pm on Saturdays and it is closed on Sundays, the library at Vista campus should be opened from 8:00 am to 10:00 pm on Saturdays and Sundays. These operating hours will meet the service expectations of students at the Vista campus.

Thirdly, the library at Vista campus provides bound periodicals and loose periodicals to students. As loose periodicals are not allowed to be lent out according to the NMMU libraries, the library at Vista campus should put one scanning equipment in the library. Then, the students will be able to scan the pages of loose periodicals and the copy of loose periodicals. They will satisfy this service.
6.3.4 Second avenue campus

At Second avenue campus, a total of 117 respondents finished the questionnaires. Following the results of data analysis, the reports were based on the four dimensions of the LibQUAL model. Then, the conclusions and recommendations are completed on the four dimensions at Second avenue campus.

6.3.4.1 Dimension 1

As described in 1.5.8 and 3.8.5.2, dimension 1 is “affect of service” and it is defined as “the emotional aspect of libraries’ service delivery” (Cook et al. 2003:39). Table 5.17 indicates that the gap score (1.45) of D12, the gap score (1.50) of D13, the gap score (1.49) of D16 and the gap score (1.40) of D17 were all higher than the average gap score (1.39). The gaps of D12, D13, D16 and D17 were the main gaps. It is suggested that the perceptions of respondents (“the staff in the library are willing to help me”, “the staff in the library have my best interests at heart”, “the staff in the library are always polite” and “the staff in the library are ready to respond to my questions”) did not meet the expectations of respondents.
The implications suggest that: As the attitude of the staff can influence the service perceptions of students, the staff of the library at Second avenue campus play an important role in making positive service perceptions for students and meeting the service expectations of students. The managers of the library at Second avenue campus should focus on a staff training programme to improve the communication skills of the staff to improve their listen skill and to keep a positive mental focus. Then, the staff of the library at Second avenue campus will be able to better understand what the students expect. The students will subsequently be satisfied with the attitude of the staff.

6.3.4.2 Dimension 2

As described in 1.5.8 and 3.8.5.2, dimension 2 is “library as place” and is defined as “the libraries can provide students with a space for individual study and group cooperation” (Cook et al. 2003:39). Table 5.18 indicates that the gap score (1.69) of D23, the gap score (1.93) of D24 and the gap score (1.89) of D25 were higher than the average gap score (1.63). The gaps of D23, D24 and D25 were the main gaps. It is suggested that the perceptions of respondents (“the library has enough space to facilitate quiet and individual study”, “the library has enough space to meet group study and research needs” and “the library has enough space to meet individual study and research needs”) did not meet the expectations of respondents.
The implications suggest that: Firstly, as there are not reading rooms and computer rooms in this library, the managers of the library at Second avenue campus should focus on making one reading room and one computer room to encourage quiet and individual study for students. Secondly, the library at Second avenue campus should provide one individual study room for students’ individual study as there not currently individual study rooms in this library. Thirdly, the library at Second avenue campus should put one group study room as only one group study room for group study did not meet the expectation of students.

6.3.4.3 Dimension 3

As described in 1.5.8 and 3.8.5.2, dimension 3 is “information access” and is defined as “an assessment of the relevance of the collections provided by the libraries and the ability of users to access information efficiently (including training programmes)” (Cook et al 2003:39). Table 5.19 indicates that the gap score (1.55) of D32 was higher than the average gap score (1.39). The gap of D32 was the main gap. It is suggested that the perception of respondents (“it is convenient and possible for me to make their electronic resources available from my home”) did not meet the expectation of respondents.
The implications suggest that: Firstly, with the assistant of the department of information technology at NMMU, the library at Second avenue campus should create an easier or more direct access point for electronic resources. Secondly, the library at Second avenue campus should put one note to collect feedback of students on accessing the information via the service of electronic access, database training programmes and the online public access catalogue. If students have any problem, the library can assist them to resolve the problem.

6.3.4.4 Dimension 4

As described in 1.5.8 and 3.8.5.2, dimension 4 is “personal control” and is defined as “the extent to which users are able to browse through and control the sources of information provided” (Cook et al 2003:39). Table 5.20 indicates that the gap score (2.09) of D41, the gap score (2.21) of D42, the gap score (2.08) of D43, the gap score (2.34) of D46, the gap score (2.43) of D47 and the gap score (2.29) of D48 were higher than the average gap score (2.04). The gaps of D41, D42, D43, D46, D47 and D48 were the main gaps. It is suggested that the perceptions of respondents (“the library provides a convenient printing service for me”, “the amount of equipment necessary for copying materials meets my needs”, “the library provides a large amount of books published after 2003”, “the library’s business hours are from 8:00am to 10:00pm on weekdays”, “the library’s business hours are from 8:00am to 10:00pm on Saturday” and “the library provides a large amount of journals that can be borrowed”) did not meet the expectations of respondents.
The implications suggest that: Firstly, the managers of the library at Second avenue campus should put out one more printing and copying equipment for students as there are two current printing and copying equipment at the library. Consequently, the students at the Second avenue campus can get sufficient services for printing and copying.

Secondly, according to Ntshinga (the head of library at the Second avenue campus), the library at Second avenue campus provides near 8 000 books on the open shelves for students to borrow and 656 books are published after 2003. Therefore, the library at the Second avenue campus should apply for more books published after 2003 on the open shelves from the management of NMMU libraries to keep at least 900 books published after 2003. By so doing, the students at Second avenue campus will obtain more updated sources of academic information.

Thirdly, as students are primarily in class during the daytime, it is necessary that they should be able to use the library on weekday evenings, Saturdays and Sundays. During the weekdays, the management of the library at Second avenue campus should open the library until 10:00 pm as the current closing time of the library is 8:00 pm. As the current operating hours of this library is from 9:00 am to 1:00 pm on Saturdays and it is closed on Sundays, the library at Second avenue campus should be opened from 8:00 am to 10:00 pm on Saturdays and Sundays. Then, the service expectations of students on opening hours will be met by the library at Second avenue campus.
6.3.5 Saasveld campus

At Saasveld campus, a total of 40 respondents finished the questionnaires. Following the results of the data analysis, the reports were based on the four dimensions of the LibQUAL model. The conclusions and recommendations are completed on the four dimensions at Saasveld campus.

6.3.5.1 Dimension 1

As described in 1.5.8 and 3.8.5.2, dimension 1 is “affect of service” and it is defined as “the emotional aspect of libraries’ service delivery” (Cook et al 2003:39). Table 5.21 indicates that the gap score (1.37) of D14, the gap score (1.50) of D15, the gap score (1.40) of D16 and the gap score (1.50) of D19 were higher than the average gap score (1.36). The gaps of D14, D15, D16 and D19 were the main gaps. It is suggested that the perceptions of respondents (“the staff in the library give me personal attention”, “the staff in the library understand my specific needs”, “the staff in the library are always polite” and “the staff’s help in finding information improves my research skills”) did not meet the expectations of respondents.
The implications suggest that: As the attitude of the staff can influence the service perceptions of students, the staff of the library at Saasveld campus play an important role in making positive service perceptions for students and meeting the service expectations of students. The managers of the library at Saasveld campus should focus on a staff training programme to improve the communication skills of the staff on how to improve their listening skill, how to look for common ground instead of focusing solely on differences and how to keep a positive mental focus. Then, the staff of the library at Saasveld campus will be able to better understand what the students expect. Students will thus be satisfied with the attitude of the staff.

Secondly, the management of the library at Saasveld campus should focus on a training programme for the staff to improve their level of specific knowledge on the skill of online database searching, providing reference service of software tools to help students. Therefore, students will be satisfied with the

6.3.5.2 Dimension 2

As described in 1.5.8 and 3.8.5.2, dimension 2 is “library as place” and is defined as “the libraries can provide students with a space for individual study and group cooperation” (Cook et al 2003:39). Table 5.22 indicates that the gap score (1.88) of D23, the gap score (2.15) of D24, the gap score (1.82) of D25 and the gap score (1.80) of D26 were higher than the average gap score (1.73). The gaps of D23, D24, D25 and D26 were the main gaps. It is suggested that the perceptions
of respondents (“the library has enough space to facilitate quiet and individual study”, “the library has enough space to meet group study and research needs”, “the library has enough space to meet individual study and research needs” and “the library is a place for reflection and creativity”) did not meet the expectations of respondents.

The implications suggest that: Firstly, the managers of the library at Saasveld campus should focus on putting one reading room and one computer room to facilitate the quiet and individual study of students as there are not currently reading rooms and computer rooms in this library. Secondly, the library at Saasveld campus should make one more individual study room for students’ individual study as there is only one individual study room in this library. Thirdly, the library at Saasveld campus should provide one group study room to meet the needs of group study and research as there are not currently group study rooms for group study. Such facilities will result in the students at Saasveld campus regarding the library as a place for reflection and creativity.

6.3.5.3 Dimension 3

As described in 1.5.8 and 3.8.5.2, dimension 3 is “information access” and is defined as “an assessment of the relevance of the collections provided by the libraries and the ability of users to access information efficiently (including training programmes)”(Cook et al. 2003:39). Table 5.23 indicates that the gap score (1.72) of D32 was higher than the average gap score (1.51). The gap of D
32 was the main gap. It is suggested that the perception of respondents (“it is convenient and possible for me to make their electronic resources available from my home”) did not meet the expectation of respondents.

The implications suggest that: Firstly, the library at Saasveld campus should build a closer relationship between the library and the department of information technology at NMMU. As a result the library can provide a better library website for students. The library can also create an easier or more direct access point for electronic resources with the assistance of the department of information technology. Secondly, the library at Saasveld campus should put one note to collect feedback of students on accessing the information via the service of electronic access, database training programmes and the online public access catalogue. If students have any problem, the library can assist them to resolve the problem.

6.3.5.4 Dimension 4

As described in 1.5.8 and 3.8.5.2, dimension 4 is “personal control” and is defined as “the extent to which users are able to browse through and control the sources of information provided” (Cook et al 2003:39). Table 5.24 indicates that the gap score (2.50) of D41, the gap score (2.65) of D42, the gap score (2.63) of D46, the gap score (2.68) of D47 and the gap score (2.65) of D48 were higher than the average gap score (2.27). The gaps of D 41, D 42, D 46, D47 and D 48 were the main gaps. It is suggested that the perceptions of respondents (“the
library provides a convenient printing service for me”, “the amount of equipment necessary for copying materials meets my needs”, “the library’s business hours are from 8:00am to 10:00pm on weekdays”, “the library’s business hours are from 8:00am to 10:00pm on Saturday” and “the library’s business hours are from 8:00am to 10:00pm on Sunday”) did not meet the expectations of respondents.

The implications suggest that: Firstly, the managers of the library at Saasveld campus should provide one more printing and copying equipment for students at the library as there are currently one printing and copying equipment in this library. Then, the students at the Saasveld campus will get the convenient service they need for printing and copying.

Secondly, as students are primarily in class during the daytime, it is necessary that they be able to use the library on weekday evenings, Saturdays and Sundays. During the weekdays, the management of the library at Saasveld campus should open the library until 10:00 pm as it is currently closed at 5:00 pm. As it is currently closed on Saturdays and Sundays, the library at Saasveld campus should be opened from 8:00 am to 10:00 pm on Saturdays and Sundays. Then, the service expectations of students on opening hours will be met by the library at Saasveld campus.
6.3.6 York street campus

At York street campus, a total of 100 respondents finished the questionnaires. Following the results of data analysis, the reports were based on the four dimensions of the LibQUAL model. Therefore, the conclusions and recommendations are completed on the four dimensions at York street campus.

6.3.6.1 Dimension 1

As described in 1.5.8 and 3.8.5.2, the dimension 1 is “affect of service” and it is defined as “the emotional aspect of libraries’ service delivery” (Cook et al 2003:39). Table 5.25 indicates that the gap score (1.57) of D14, the gap score (1.55) of D15, the gap score (1.50) of D16, the gap score (1.58) of D17 and the gap score (1.50) of D19 were higher than the average gap score (1.45). The gaps of D14, D15, D16, D17 and D19 were the main gaps. It is suggested that the perceptions of respondents (“the staff in the library give me personal attention”, “the staff in the library understand my specific needs”, “the staff in the library are always polite”, “the staff in the library are ready to respond to my questions” and “the staff’s help in finding information improves my research skills”) did not meet the expectations of respondents.
The implications suggest that: As the attitude of the staff can influence the service perceptions of students, the staff of the library at York street campus play an important role on making positive service perceptions of students and meeting service expectations of students. The managers of the library at York street campus should focus on a staff training programme to improve the communication skills of the staff. The training programme should teach the staff how to improve their listening skill, how to look for common ground instead of focusing solely on differences and how to keep a positive mental focus. As a result, the staff of the library at York street campus will be competent to understand what the students expect. The students will be satisfied with the attitude of the staff.

Secondly, the managers of the library at York street campus should focus on a training programme for the staff to improve the level of specific knowledge on accessing the information, using the sources of the library and the knowledge of bibliographic service for students’ searching topic to help students on research skills of searching academic information.

6.3.6.2 Dimension 2

As described in 1.5.8 and 3.8.5.2, the dimension 2 is “library as place” and is defined as “the libraries can provide students with a space for individual study and group cooperation” (Cook et al. 2003:39). Table 5.26 indicates that the gap score (1.64) of D23, the gap score (1.72) of D24 and the gap score (1.84) of D25
were higher than the average gap score (1.62). The gaps of D23, D24 and D25 were the main gaps. It is suggested that the perceptions of respondents (“the library has enough space to facilitate quiet and individual study”, “the library has enough space to meet group study and research needs” and “the library has enough space to meet individual study and research needs”) did not meet the expectations of respondents.

The implications suggest that: Firstly, the managers of the library at York street campus should focus on providing one reading room and one computer room to encourage the quiet and individual study of students as there are not reading rooms and computer rooms in this library. Secondly, the library at York street campus should make one individual study room for students’ individual study as there are no individual study rooms in this library. Thirdly, the library at York street campus should put one group room for students’ group study as there are no specific group rooms for students.

6.3.6.3 Dimension 3

As described in 1.5.8 and 3.8.5.2, the dimension 3 is “information access” and is defined as “the information access can be defined as an assessment of the relevance of the collections provided by the libraries and the ability of users to access information efficiently (including training programmes)”(Cook et al 2003:39). Table 5.27 indicates that the gap score (1.62) of D32 was higher than the average gap score (1.57). The gap of D32 was the main gap. It is suggested
that the perception of respondents (“it is convenient and possible for me to make their electronic resources available from my home”) did not meet the expectation of respondents.

The implications suggest that: Firstly, with the assistance of the department of information technology at NMMU, the library at York street campus should create an easier or more direct access point for electronic resources. Secondly, the library at York street campus should put one note to collect feedback of students on accessing the information via the service of electronic access, database training programmes and the online public access catalogue. If students have any problem, the library can assist them to resolve the problem.

6.3.6.4 Dimension 4

As described in 1.5.8 and 3.8.5.2, the dimension 4 is “personal control” and is defined as “personal control can be defined as the extent to which users are able to browse through and control the sources of information provided” (Cook et al 2003:39). Table 5.28 indicates that the gap score (2.44) of D41, the gap score (2.46) of D42, the gap score (2.21) of D46, the gap score (2.33) of D47 and the gap score (2.37) of D48 were higher than the average gap score (2.02). The gaps of D41, D42, D46, D47 and D48 were the main gaps. It is suggested that the perceptions of respondents (“the library provides a convenient printing service for me”, “the amount of equipment necessary for copying materials meets my needs”, “the library’s business hours are from 8:00am to 10:00pm on
weeks”, “the library’s business hours are from 8:00am to 10:00pm on Saturday” and “the library’s business hours are from 8:00am to 10:00pm on Sunday”) did not meet the expectations of respondents.

The implications suggest that: Firstly, the managers of the library at York street campus should provide one more printing and copying equipment for students at the library as there are only one printing and copying equipment in this library. By providing such facilities, the students at York street campus can get convenient services for printing and copying.

Secondly, as students are primary in class during the daytime, it is necessary that they expect to use the library on weekday evenings, Saturdays and Sundays. During the weekdays, the management of the library at York street campus should open the library until 10:00 pm as it is currently closed at 5:00 pm. As it is currently closed on Saturdays and Sundays, the library at York street campus should be opened from 8:00 am to 10:00 pm on Saturdays and Sundays. Therefore, the hours of operation will result in the service expectations of students being fulfilled.

6.4 SUMMARY OF IMPLICATIONS

For the purpose of this study, Table 6.1 and Table 6.2 indicate summaries of implications for NMMU libraries.
## TABLE 6.1

THE SUMMARY OF IMPLICATIONS (D 1 AND D 2)

<table>
<thead>
<tr>
<th>Library</th>
<th>Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>South campus</strong></td>
<td>To improve the communication skills of the staff on listening skill, looking for common ground instead of focusing solely on differences and keeping a positive mental focus. To put one computer room and put four computers; to improve the current study carrels and tables into the ergonomical study carrels and tables; to increase ten individual study rooms for first-year to third year students and provide one group study room.</td>
</tr>
<tr>
<td><strong>North campus</strong></td>
<td>To improve the communication skills of the staff on listening carefully to what consumers say and thinking carefully about what they can compromise on; to improve their level of specific knowledge about accessing the information on computers, searching the academic materials in the library to resolve the problems of students. To put one reading room and one computer room; to provide one individual study room on the ground of the library and on the first floor of the library; to provide one special group study room.</td>
</tr>
<tr>
<td><strong>Vista campus</strong></td>
<td>To improve the communication skills of the staff how to improve their listening skill, how to look for common ground instead of focusing solely on differences; to improve the level of specific knowledge about accessing to computers to support students’ research, using database searching and finding a specific book from the library. To put one computer room; to put out one individual study room.</td>
</tr>
<tr>
<td><strong>Second avenue campus</strong></td>
<td>To improve the communication skills of the staff to improve their listen skill and to keep a positive mental focus. To make one reading room and one computer room; to put one individual study room for students’ individual study;</td>
</tr>
<tr>
<td>Campus</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Saasveld campus</td>
<td>To improve the communication skills of the staff on how to improve their listening skill, how to look for common ground instead of focusing solely on differences and how to keep a positive mental focus; to improve their level of specific knowledge on the skill of online database searching, providing reference service of software tools to help students</td>
</tr>
<tr>
<td>York street campus</td>
<td>To improve the communication skills of the staff on how to improve their listening skill, how to look for common ground instead of focusing solely on differences and how to keep a positive mental focus; to improve the level of specific knowledge on accessing the information, using the sources of the library and the knowledge of bibliographic service for students’ searching topic to help students on research skills of searching academic information</td>
</tr>
</tbody>
</table>

Source: Own construction
### TABLE 6.2

**THE SUMMARY OF IMPLICATIONS (D 3 AND D 4)**

<table>
<thead>
<tr>
<th>Library</th>
<th>Implications</th>
<th>D 4 (Dimension 4)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>South campus</strong></td>
<td>To create an easier or more direct access point for electronic resources;</td>
<td>To be opened from 8:00 am during the weekdays;</td>
</tr>
<tr>
<td></td>
<td>to put one note to collect feedback of students on accessing the information</td>
<td>to be opened from 8:00 am to 10:00 pm on Saturdays and Sundays</td>
</tr>
<tr>
<td></td>
<td>via the service of electronic access, database training programmes and the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>online public access catalogue</td>
<td></td>
</tr>
<tr>
<td><strong>North campus</strong></td>
<td>To create an easier or more direct access point for electronic resources with</td>
<td>To close the library at 10:00 pm during the weekdays;</td>
</tr>
<tr>
<td></td>
<td>the assistance of the department of information technology;</td>
<td>to be opened from 8:00 am to 10:00 pm on Saturdays and Sundays;</td>
</tr>
<tr>
<td></td>
<td>to put one note to collect feedback of students on accessing the information</td>
<td>to put one scanning equipment in the library</td>
</tr>
<tr>
<td></td>
<td>via the service of electronic access, database training programmes and the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>online public access catalogue</td>
<td></td>
</tr>
<tr>
<td><strong>Vista campus</strong></td>
<td>To put one note to collect feedback of students on accessing the information</td>
<td>To vary the service of interlibrary loans delivery;</td>
</tr>
<tr>
<td></td>
<td>via the service of electronic access, database training programmes and the</td>
<td>to adding a specific staff to receive and dispatch the interlibrary loans;</td>
</tr>
<tr>
<td></td>
<td>online public access catalogue</td>
<td>to be opened until 10:00 pm during the weekdays and be opened from 8:00 am to</td>
</tr>
<tr>
<td></td>
<td>to use less technical terms for the OPAC service online and provide direct</td>
<td>10:00 pm on Saturdays and Sundays;</td>
</tr>
<tr>
<td></td>
<td>introduction to a relevant subject.</td>
<td>to put one scanning equipment in the library</td>
</tr>
<tr>
<td><strong>Second avenue campus</strong></td>
<td>To create an easier or more direct access point for electronic resources;</td>
<td>To put out one more printing and copying equipment;</td>
</tr>
<tr>
<td></td>
<td>to put one note to collect feedback of students on accessing the information</td>
<td>to apply for more books published after 2003 on the open shelves from the management of NMMU libraries to keep at least 900</td>
</tr>
<tr>
<td>Library Campus</td>
<td>Proposed Improvements</td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>-----------------------</td>
<td></td>
</tr>
<tr>
<td>Saasveld campus</td>
<td>To provide a better library website for students; to create an easier or more direct access point for electronic resources with the assistance of the department of information technology; to put one note to collect feedback of students on accessing the information via the service of electronic access, database training programmes and the online public access catalogue</td>
<td></td>
</tr>
<tr>
<td>York street campus</td>
<td>To create an easier or more direct access point for electronic resources; to put one note to collect feedback of students on accessing the information via the service of electronic access, database training programmes and the online public access catalogue</td>
<td></td>
</tr>
</tbody>
</table>

Source: Own construction

6.5 FURTHER RESEARCH

This study focused on the 2 047 students (including 590 first-year, 600 second-year, 600 third-year, 130 Honours and 127 B.Tech students) registed at NMMU. It is recommended that further research should focus on M. Tech and D. Tech students. Secondly, this research only focused students registered at
NMMU. It is also suggested that the future research should also focus on the lecturing staff who use the service of the libraries at NMMU. The further research on analysing the gaps between the service expectations and service perceptions of target respondents (including M.Tech students, D.Tech students and lecturing staff) will comprehensively add to the understanding and evaluating the quality of service provided by NMMU libraries.
ANNEXURE A

Dear Sir / Madam

The attached questionnaire forms part of a research project in completion of an M-Tech degree in Marketing at the Nelson Mandela Metropolitan University. The purpose of the questionnaire is to find out what are your expectations and your perceptions of the NMMU library and information services. The questionnaire will only take 10 minutes to complete. The information you provide will be kept confidential and only aggregate figures will be reported.

It will be greatly appreciated if you would complete the questionnaire, as your opinion can help improve the service of the NMMU libraries.

Yours sincerely

Mu Zhibing

SECTION A: THE LEVEL OF EXPECTATIONS OF THE SERVICE QUALITY

Please indicate the level of expectations of service quality in the NMMU library you use.

Note that 1= very low expectation, 5= very high expectation.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>very low expectation</th>
<th>very high expectation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The staff in the library will instil confidence in me.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>The staff in the library will be willing to help me.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>The staff in the library will have my best interests at heart.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>The staff in the library will give me personal attention.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>The staff in the library will understand my specific needs.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>The staff in the library will always be polite.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>The staff in the library will be ready to respond to my questions.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>The staff in the library will have the knowledge to answer my questions.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>The database training programme provided by the library will meet the needs of my study.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>The staff’s help in finding information will improve my research skills.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>The library will be a comfortable place to encourage my study and learning.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>The library will be a contemplative environment.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>The library will have enough space to facilitate quiet and individual study.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>The library will have enough space to meet group study and research needs.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>The library will have enough space to meet individual study and research needs.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>The library will be a place for reflection and creativity.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>It will be convenient and possible for me to make their</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>
**SECTION B: THE LEVEL OF PERCEPTIONS OF THE SERVICE QUALITY**

For each of the following statements, please indicate your level of agreement, as they apply to your perceptions of service quality in the NMMU library you use. Note that 1 = completely disagree, 3 = neutral, 5 = completely agree.

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The staff in the library instil confidence in me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>The staff in the library are willing to help me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>The staff in the library have my best interests at heart.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>The staff in the library give me personal attention.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>The staff in the library understand my specific needs.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>The staff in the library always are polite.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>The staff in the library are ready to respond to my questions.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>The staff in the library have the knowledge to answer my questions.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9</td>
<td>The database training programmes provided by the library meet the needs of my study.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10</td>
<td>The staff’s help in finding information improves my research skills.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11</td>
<td>The library is a comfortable place to encourage my study and learning.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12</td>
<td>The library is a contemplative environment.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13</td>
<td>The library has enough space to facilitate quiet and individual study.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14</td>
<td>The library has enough space to meet group study and research needs.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15</td>
<td>The library has enough space to meet individual study and</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
research needs.

16 The library is a place for reflection and creativity.
17 It is convenient and possible for me to make their 
electronic resources available from my home.
18 The OPAC service helps me to locate information.
19 The library provides a convenient printing service for me.
20 The amount of equipment necessary for copying materials 
meets my needs.
21 The library provides a large amount of books published 
after 2003.
22 The library provides a timely interbranch library loans 
delivery.
23 The library provides a timely interlibrary loans delivery.
24 The library’s business hours are from 8:00am to 10:00pm 
on weekdays.
25 The library’s business hours are from 8:00am to 10:00pm 
on Saturday.
26 The library’s business hours are from 8:00am to 10:00pm 
on Sunday.
27 The library provides a large amount of journals that can be 
borrowed.

SECTION C: DEMOGRAPHICS

<table>
<thead>
<tr>
<th>Gender</th>
<th>1. Female</th>
<th>2. Male</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>The faculty where I am registered</th>
<th>Arts</th>
<th>Business &amp; Economic Sciences</th>
<th>Education</th>
<th>Engineering &amp; the Built Environment &amp; Information Technology</th>
<th>Health Sciences</th>
<th>Law</th>
<th>Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The campus where I study</th>
<th>South campus</th>
<th>North campus</th>
<th>Second Avenue campus</th>
<th>Vista campus</th>
<th>Saasveld campus</th>
<th>York Street campus</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>My level of academic education programme</th>
<th>First-year</th>
<th>Second-year</th>
<th>Third-year</th>
<th>Honours</th>
<th>B.Tech</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

THANK YOU FOR YOUR TIME!!!
ANNEXURE B

THE INTERVIEW FORM

NAME OF DEPARTMENT: NMMU library

INTERVIEWER: Mu Zhibing

Please complete and submit the required form below. All information you provide here will remain confidential. Information will be aggregated and will not be published in any way that might enable identification of individuals.

SECTION A PERSONAL INFORMATION

NAME
THE TITLE OF POSITION IN LIBRARY
CONTACT PHONE NUMBER
E-MAIL ADDRESS
BRANCH OF THE NMMU LIBRARIES
1 Can you give reasons why the NMMU libraries do not have a project to evaluate the quality of their library services based on student expectations?

2 Do the students complain that the library services cannot meet their expectations?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
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<tbody>
<tr>
<td>YES</td>
<td>NO</td>
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If your answer is 1, please explain why they thought the library services do not meet their expectations.

3 Do you think it is necessary to evaluate the quality of the NMMU library services? Please give your reasons.
4 Can you give your reasons why evaluating the quality of library services needs to investigate student expectations?

THANK YOU!
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TO WHOM IT MAY CONCERN

Mr Mu Zhibing (20432585) is a registered student doing a dissertation on the evaluation of the quality of service of the NMMU Library and Information Services.

This is to certify that Mu Zhibing has the full support of the Interim Director: Library and Information Services.

You are kindly requested to assist Mu Zhibing with any relevant information that he requires for his study.

Thank you for your co-operation

Yours Sincerely

Ms M Eales
Interim Director: Library and information Services