



UNIVERSITY OF
KWAZULU-NATAL

INYUVESI
YAKWAZULU-NATALI

**USER PERCEPTIONS OF SERVICE QUALITY
AND LEVEL OF USER SATISFACTION AT
THE MANGOSUTHU UNIVERSITY OF TECHNOLOGY'S
NATURAL SCIENCES LIBRARY, UMLAZI, DURBAN**

by

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Declaration

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Dedication

This dissertation is dedicated to:

My lovely wife, Zanele (snr), my sons Siyabonga (jnr) and Siyamthanda, and my daughter, Zanele (jnr) for their unconditional love, support and continuous encouragement and understanding.

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Abstract

This study examined the quality of service provided by Mangosuthu University of Technology's Natural Sciences Library (MUT-NSL) from the perspective of the users of the library. The study assessed the users' perceptions of the quality service and determined the level of user satisfaction at the MUT-NSL. The purpose of the study was to determine the gaps between user expectations and perceptions of the service quality and to ascertain the level of user satisfaction at the library.

The study population consisted of 318 registered undergraduate students, 164 postgraduate students and 89 staff. Of the 482 students and 89 staff under study, 323 responded to the questionnaire, yielding a response rate of 56.56%.

The identification of the gaps in the library services and the assessment results can improve service delivery. The intention of the study was to measure the users' perceptions of the quality of the collections, library facilities and staff services. The results will be used for service improvements and to make informed decisions concerning the quality of service that is offered at the MUT-NSL.

The LibQUAL+™ survey instrument was used to measure the gap between customer expectations for excellence and their perceptions of the actual services delivered by the library. The questionnaire consisted of both open-ended and closed questions although the latter predominated. The three dimensions of service quality, that is, access to information, staff service and library facilities formed the core of the instrument.

The research method used for this study was the descriptive survey. The stratified proportional sampling method was used. Results were analysed using SPSS to determine the frequency of responses. The results were displayed using tables and figures.

The results from this indicate that there is small gap between users' expectations and users' perceptions of service quality delivered at the MUT-NS Library. However, there were instances where gaps were significant and clearly these do need to be addressed by library management. The extent of the gap varies depending on the individual services.

There were perhaps understandable variations within the different user categories of respondents, namely postgraduate students, undergraduate students and academic staff, concerning library usage, perceptions and level of satisfaction of service quality at the MUT-

NS Library. The findings of the study revealed that most of the users who were the students and staff rated the overall quality of service as good.

Based on the findings, recommendations were made to address problems presented to improve service and increase the level of user satisfaction at the MUT-NS Library.

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List of Acronyms

ARL	Association of Research Libraries
BSC	Balanced Scorecard
B.Tech	Bachelor of Technology
EFQM	European Foundation Quality Management
HEMIS	Higher Education Management Information System
HEQC	Higher Education Quality Committee
HONS	Honours
HSLIC	Health Science Library and Informatics Centre
JNR	Junior
JNU	Jawaharlal Nehru University Library
LibQUAL+™	Library Quality
LISM	Library and Information Sector Improvement Model
MIS	Master of Information Studies
MUT	Mangosuthu University of Technology
MUT-NSL	Mangosuthu University of Technology's, Natural Sciences Library
N	Number of Responses
NR	No Response
NDip	National Diploma
NSL	Natural Sciences Library
OPAC	Online Public Access Catalogue
PGDip	Postgraduate Diploma
PGDIS	Postgraduate Diploma in Information Studies
SERVQUAL	Service Quality
SERVPERF	Service Performance
SNR	Senior
SPSS	Statistical Package for Social Sciences
TQM	Total Quality Management
TSA	Technikon South Africa
UBL	University of Botswana Library
UKZN	University of KwaZulu-Natal
UNISA	University of South Africa
USA	United States of America

Chapter 1

INTRODUCTION

1.1 Introduction

In this introductory chapter, various components of the study are introduced: the research problem, the rationale for the study, research questions, delimitation of the study, definitions of key terms used and brief overviews of the theoretical framework and research methodology adopted. In order to provide some background information, this chapter will also highlight the importance of service quality regarding users' expectations and perceptions.

An academic library is not an independent institution, but belongs to a parent organisation and therefore has an important role to play in the educational process of that organisation. Libraries are central to the educational purpose of universities in supporting the missions of effective teaching, research and learning. Consequently, academic libraries add value to the educational process (Lakos 1998). For academic libraries to be able to add value to the educational process, they must be both efficient and effective. To be efficient and effective means that they should be organised and managed well. For academic libraries to succeed in supporting the missions of effective teaching, research and learning, they have to become more user focused in delivering their services. In order to do this, libraries have to take the responsibility of incorporating into their work environment a culture of ongoing assessment and a willingness to make decisions based on facts and sound analysis (Simba 2006, 1). Thus, the Mangosuthu University of Technology's Natural Sciences Library (MUT-NSL), in order to fulfil the mission of its parent organisation, is required to assess the quality of its services.

Whittaker (1993, 28) noted that "undoubtedly any library that aims at reaching the highest level of service, that is, to provide for the needs of users as individuals is attempting to be user centred". Therefore, a user centred approach was the approach adopted in this study. Organisations are increasingly being evaluated in terms of their service quality and libraries are no different in this respect. Service quality, as perceived by customers, is a function of what customers expect and how well the organisation performs in providing the services (Naidu 2009, 1).

The core function of the academic library is to contribute to the intellectual and social development of students and staff (North West Academic Libraries 2007). The intellectual and social development of students and staff can be facilitated through:

- Collecting relevant material and information;
- Establishing the conditions that enable immediate access to the collection; and
- Encouraging the effective use of material available in the library as well as material found in remote sources. (North West Academic Libraries 2007)

In the past, academic libraries were measured by their collections and use. The tendency to measure the quality of an academic library in quantifiable terms regarding its collection and use, does not adequately address the community's demands for information (Naidu 2009, 2). Naidu (2009, 2) mentioned that "librarians therefore require new and innovative ways to measure quality in libraries". A new and innovative way is to use the LibQUAL+™ whereby a library can be assessed by measuring users' perceptions of library service quality.

This study was an attempt to identify users' expectations of service excellence and their perceptions of service quality with reference to one site, the MUT-NSL.

1.2 Background and outline of research problem

Mangosuthu University of Technology (MUT) is situated in Umlazi, Durban. Presently (2016) it has 610 staff which consisting of 197 academic staff, 330 administrative staff, 83 support staff and 10 421 students. It comprises three faculties, namely the Faculty of Engineering, the Faculty of Management Science and the Faculty of Natural Sciences which consists of six departments (MUT Institutional Planning and Research Directorate 2016). MUT has two libraries: the Main Library serving the Faculties of Engineering and Management Science and the Natural Sciences Library (NSL), which was the focus of this study, serving 1 854 students and 89 academics in the Faculty of Natural Sciences. The MUT-NSL (which was opened in 2006) currently has a collection of approximately 11 138 books, one internet Laboratory with 50 computers and five staff members one of whom is professionally qualified. The core services offered by the library are circulation, short loan, reference, subject specialist service, periodicals and multimedia collection. The goal of the NSL is to provide service excellence and a quality service to all its users (MUT Library Service website 2016) and in so doing achieve its mission of providing "access to information

in support of teaching, learning, and research needs of students, staff of the University and the broader community”.

It is in light of the aforementioned mission that the study needs to be seen. Naidu (2009, 6) pointed out that the library is the “heart” of the institution and is expected to fulfil its role as a service provider in terms of education, training, research, community service and recreation. Crucial in this regard is determining whether the role is being fulfilled or not and this necessitates an evaluation of the services provided by the library from the perspectives of the users of the services. As Ebbinghouse (1999, 20) pointed out “few libraries exist in a vacuum, accountable only to themselves”. De Jager (2002, 140) argued that it is contingent on the library to demonstrate how well it is doing and the extent to which users benefit from its services. Robinson (1995, 179) made the point that “students have to pay for an increasingly higher proportion of their education and, as customers, have the right to demand a demonstrably efficient, effective and state-of-the-art library and information service”.

Despite the obvious importance of, and need to do so, the MUT-NSL since its inception in 2007 has never assessed the quality of its services from the users’ perspective. While a similar study of the MUT Main Library was conducted by Naidu in 2009, it did not include the NSL. It is this problem (and gap) that the present study sought to address. To do so, the study made use of LibQUAL+™- a survey instrument designed to specifically measure the quality of library services based on the perceptions of the users (in this study students and staff) and to identify gaps between users’ expectations and users’ perceptions of the services (Crawford 2006, 74).

1.3 Rationale for the study

Filiz (2007, 9) claimed that the survival of a library very much depended on the benefits it brings to its users. Its existence will be in question when users begin looking for alternatives to library services. One way to show value is by providing quality service. It is therefore important for the library to be aware of changing user expectations and to continually strive to provide quality service to its users.

Every library needs to have an understanding of the specific needs of library users in order to provide the appropriate type and level of service that meets those needs. As indicated

above, since the MUT-NSL's inception, no formal quality service evaluations have been undertaken and Naidu's (2009) study was limited to the Main Library only. Thus, there is an element of uncertainty concerning the degree of satisfaction of users with the various services provided by the MUT-NSL and whether it is achieving its aims and objectives through its services. According to Millson-Martula and Menon (1995, 35), one way of providing high quality library service is through the incorporation of users' personal needs and expectations into the development of programmes and services.

The purpose of this study was to determine the users' perceptions of the quality of library service they receive at MUT-NSL. Results of the study could be used to identify possible sources of failure or inefficiency in the services provided. As noted by Sanaratma, Peiris and Jayasundara (2010, 3), the assessment of service quality provides important feedback for libraries to assess and improve their services to users. Similarly, Naidu (2009, 4) pointed out that studies such as this assist in determining which dimensions of the services need improvement in the eyes of the library users. It was thus anticipated that the findings of the study would be of significant interest to library management and to management at MUT more generally. In the context of MUT-NSL, the results of the study could be used for future improvements regarding service delivery and could thereby assist library management to achieve and maintain service excellence in the library.

1.4 Key questions asked

The study was underpinned by the following key questions:

- ❖ What are the perceptions of users regarding the quality of the MUT-NSL service?
- ❖ Are users satisfied with the service they receive?
- ❖ What are the user expectations of the MUT-NSL service?
- ❖ What are the gaps between user expectations and user perceptions?
- ❖ What recommendations can be made based on the findings of the study?

1.5 Delimitations

The study targeted the academic staff, and both postgraduate and undergraduate students registered in the Faculty of Natural Sciences. Other potential library users such as administrative staff, executive management, external school learners and staff and students from the other two faculties were excluded. This was due to time limitations and the nature of

the coursework master's degree. In addition, academic staff and students are the main users of an academic library.

1.6 Broader issues

In terms of a broader context to this study, some researchers (Paulos 2008, 252; Nawe 2004, 382) have claimed that libraries in developing countries have, since the 1980s, a poor record of service delivery. Challenges faced by libraries in these countries include budgetary constraints and an overreliance on donor support. According to Hisle (2002), there are six top issues facing academic libraries:

- Recruitment, education, and retention of librarians;
- Role of the library in academic enterprise;
- Impact of information technology on library services;
- Chaos in scholarly communication;
- Support of new users; and
- Higher education funding.

While the applicability of these issues to the MUT-NLS Library is beyond the scope of the study, it is acknowledged that all could have an impact on the services provided by the Library and the subsequent expectations and perceptions of service quality as provided by the users of the Library.

1.7 Definitions of relevant terms

In this section a brief definition of relevant terms used in the study is provided. The definitions show the meanings that the terms are intended to convey when used in this study.

1.7.1 Library collection

The library collection is the total of books and other materials housed in the library. It is made up of books, periodicals, multimedia and electronic resources.

1.7.2 Library services

Library services are the services offered to the library users. These services comprise of Lending or Circulation, Reference, Online databases, Online Catalogue, Internet service, Photocopying and Discussion rooms.

1.7.3 Perception

Stevenson (1997, 113) defines a perception as “an opinion about someone or something”. In the context of this study, perceptions mean how the users interpret the library services as a result of their interaction with library staff, its services and resources.

1.7.4 Quality

Stevenson (1997, 125) referred to quality as “a measure of how good or bad something is”. In the context of this study, quality means how good or bad the library services are.

1.7.5 Service quality

Sahu (2007, 235) stated that in the context of a library, the concept of service quality can be defined as the “difference between users’ expectations and perceptions of service performance and the reality of the service”. According to Sahu, service quality means being able to view services from the customers’ point of view and then meeting the customers’ expectations for service. Nitecki and Franklin (1999, 484) defined service quality in terms of reducing the gap between customers’ expectations for excellent service and their perceptions of service delivered.

1.7.6 Users

According to Herson and Altman (1998, 3), in the library context “users are the recipients of the library service”. In this study, users are students at both undergraduate and postgraduate level and academic staff members.

1.7.7 User satisfaction

Dalton (1994, 2) claimed that “user satisfaction” was a “subjective output measure which reflects the quality dimension of the library service being provided.” In the proposed study “user satisfaction” means that the users of the library are receiving a good quality service and the services rendered meet their expectations.

1.8 Theoretical framework

According to the literature (Parasuraman, Zeithaml and Berry 1988; Nitecki 1996; Association for Research Libraries [ARL] 2000), there have been various theories of service

quality evaluation and user perceptions. Research has shown that institutions use various models for service quality assessment, namely: SERVQUAL, SERVPERF (Service Performance Model), EFQM (European Foundation for Quality Management), TQM (Total Quality Management), LibQUAL+™ and HEQC (Higher Education Quality Committee) which are based on particular theoretical frameworks (Martensen and Gronhold 2003).

This study was based on the modified SERVQUAL model namely, the LibQUAL+™ because it provides a reliable survey in terms of measuring the gap between user expectations and user perceptions (Marnane 2004). According to Quinn (1997, 361) the “SERVQUAL model is a comprehensive measure because it measures both customer expectations and perceptions and it has been extensively tested across a wide variety of service settings.” Nitecki and Herson (2000, 259) pointed out that the SERVQUAL survey instrument is based on the “Gaps Model of Service Quality” and uses a set of five gaps showing the discrepancy between:

1. Customers’ expectations and management’s perceptions of these expectations;
2. Management’s perceptions of customers’ expectations and service quality specifications;
3. Service quality specifications and actual service delivery;
4. Actual service delivery and what is communicated about it; and
5. Customers’ expected services and perceived service delivered.

The focus of this study was on Gap 5, namely, the gap between what customers (or users) expect in terms of services provided and their perceptions of actual services delivered. The various models noted above are discussed in some detail in Chapter 2 as is Gap 5.

1.9 Research methodology

Mamabolo (2009, 40) defined methodology as ways of obtaining, organising and analysing data. The study fell within a quantitative paradigm with quantitative data, in the main, being collected. In line with the quantitative approach, a descriptive survey design was adopted using the LibQUAL+™ survey instrument containing a mix of both open and closed questions, with the latter predominating. According to Franfort-Nachmias and Nachmias (1992, 234) “the survey method is one of the most important data collection methods in the social sciences and is used extensively to collect information on numerous subjects in research”.

The population of the study comprised the academic staff and both postgraduate and undergraduate students working and registered in the Faculty of Natural Sciences of MUT. While all the academic staff and postgraduate students were surveyed, the undergraduate students who participated were selected using a proportional stratified random sampling technique.

The instrument used, a questionnaire, was an adaption of an existing instrument for which the reliability and validity was well established. The questionnaire was pre-tested on five students and three members of staff before being administered, by hand, to the survey population. An overall response rate of 56.56% was achieved. Quantitative data was analysed using the Statistical Package for Social Sciences (SPSS) while content from the open questions was analysed using thematic content analysis.

The research methodology followed in the study is discussed in detail in Chapter 3.

1.10 Structure of the remainder of the study

The next chapter, Chapter 2, provides a review of the literature regarding user perceptions and expectations. This will be preceded by a discussion of the theoretical framework used. Chapter 3 describes the research methodology and methods adopted in this study. Chapter 4 presents the results and analyses the data. The discussion of the results will provide the content for Chapter 5. Chapter 6 encompasses the findings, conclusions and recommendations. Appendices follow after the list of references.

1.11 Summary

In this introductory chapter, various components of study were introduced, namely, the background and outline of the research problem, a rationale for the study, key research questions, the theoretical framework in brief, the definitions of important terms used in the study and the delimitations of the study. Also briefly outlined was the research methodology. The main concern of the chapter was to demonstrate the importance of service quality regarding users' expectations and perceptions and to outline the way in which the study was conducted.

Chapter 2

LITERATURE REVIEW

“The review of the literature provides a classification and evaluation of what accredited scholars and researchers have written on a topic, organized according to a guiding concept such as a research objective or the problem a research wishes to address” (Taylor 2006). According to Naidu (2009, 32), this process includes identifying potentially relevant sources, a thorough analysis of selected sources and the construction of an account integrating and explaining relevant sources.

In this chapter the concept of service quality is discussed as well as user satisfaction. This is followed by an overview of the most important and relevant models commonly used in service quality assessment. A review of seven related studies on service quality in the academic library context ends the chapter.

2.1 Service quality assessment in academic libraries

Service quality is the function of what customers expect and how well the institution performs in providing the service. Thus, as Awan and Mahmood (2013, 1093) pointed out, “libraries must know the requirements and expectations of their customers.” According to Zeithaml, Parasuraman and Berry (1990) within a service quality assessment model only customers judge quality; all other judgements are essentially irrelevant. Academic libraries have many reasons why they are interested in service quality because there is increasing competition from huge bookstores and the Internet. As Cullen (2001, 662) noted “academic libraries are facing major threats in the global digital environment and an increasing competitive environment, and must improve the quality of their services in order to survive”.

2.1.1 Conceptual definition of service quality

According to Naidu (2009, 33) quality is the basic requirement of any library service and all libraries strive to deliver the highest quality of service. The basic question which needs to be asked in this regard is: what does library service quality imply? According to the literature, there has been progression in defining the concept “service quality” in the academic library.

In the context of this study, quality means how good or bad the library services are. Sahu (2007, 234) suggested that:

A quality service is one that fully meets the expectations and requirements of the users. If a library provides appropriate information to the right user at the right time and in the required form, then it could be argued to be maintaining quality.

Libraries used to measure service quality based on quantitative measures (Zeithaml; Parasuraman and Berry 1990, 26). However, “the literature has shown that service quality has shifted its emphasis for achieving excellence from product specifications towards development of relationships with customers” (Naidu 2009, 34). This means that researchers have moved from measuring quantitative outputs (such as circulation statistics) to measuring outcomes (quality and satisfaction). Because libraries are service organisations, quality in the context of a library is treated as the quality of service (Simba 2006, 23).

2.1.2 Academic library service quality assessment perspectives

The quality of academic library service can be assessed from different perspectives. These perspectives may include that of the librarians or library staff, the users of the services provided by the library, the parent institution and the funders of the library (Griffiths 2003, 504). However, the two most common assessment perspectives in academic libraries are those of the librarians and the users. The literature shows that there are those who argue that the users’ perspective is appropriate for service quality assessment while others prefer to refer to trained professionals’ (librarians) perspective of service quality assessment (Walters 2003; Quinn 1997; Cook and Heath 2001).

The researcher agrees with those who argue for the perspective of the librarian because “the librarian has assumed the responsibility of anticipating what the students’ needs will be, which frequently calls for the development of certain competencies in library research” (Simba 2006, 24-25). However, all the perspectives of library service quality assessment are valid as all are directed at enhancing service quality. Furthermore, the amalgamation of all perspectives to assess the quality of library service is critical to improve library service and meet user expectations and thereby bridge the gap between their expectations and perceptions of service quality (Derfert-Wolf, Gorski and Marcinek 2005).

Library users are the focus point of the library services as one can argue that the perspective of users is the most important. According to Cook and Heath (2001, 548), “service marketing has identified the customer or user as the most critical voice in assessing service quality”. The service marketing literature clearly illustrates the importance of the user perspective in

assessing library services. According to Kavulya (2004), “various case studies have shown that users are the best judges of service quality since services are aimed at customers”.

In the past, researchers used traditional forms of library evaluation which did not involve users directly. Dervin and Nilan (1986) claimed that early forms of library evaluation started with measurements based on library staff, processes or systems and statistics but not the user. These tools were used to improve library procedures and make the library more efficient. However, it was argued that this form of assessment alone was not sufficient (Nicholson 2004) and needed to be combined with other forms of assessment in which the actual users of the library became the focus.

Simba (2006, 31) quoted Shi and Levy (2005) who pointed out that “now it is widely recognised that user perceptions of service quality, user expectations, and user satisfaction are essential elements of any service assessment activity”. It is also suggested that new measures are needed in academic libraries to assess not only the input, output and outcome, but also the impact of libraries on the users (De Jager 2002; Poll 2003). According to Poll (2003), such measures should incorporate the libraries’ impact on the academic or professional success of library users; the libraries’ impact on information literacy and information retrieval to users; the economic values the users gained by using the libraries; and the social benefits achieved by users of the libraries. However, this study did not examine the impact of the library on the user; rather it looked at user perceptions, user expectations and levels of user satisfaction with the services provided by the Natural Sciences Library.

In assessing service quality provided by libraries, various models have been proposed and are discussed below.

2.2 Prominent models of library service quality assessment and their challenges

According to Naidu (2009, 49), “service quality assessment models that the library and information sector have been implementing include: the Balanced Scorecard Model (BSC), European Foundation for Quality Management (EFQM Model), Library and Information Sector Improvement Model (LISM), the LibQUAL+™ instrument, SERVQUAL Model, SERVPERF Model and Total Quality Management Model (TQM Model)”. The implementation of these models is aimed at assessing service quality for improvement,

accountability, to focus resources and for survival reasons (Retief 2005, 23-64; Arveson 1998; Marnane 2004).

In the following section, some of the models that have been extensively used in assessing library services are discussed. The fact that Balanced Scorecard Model, European Foundation for Quality Management Excellent Model, SERVQUAL Model, and LibQUAL+™ instrument are widely used in assessing academic library service quality and the availability of literature dealing with these models are the reasons for discussing them.

2.2.1 Balanced Scorecard (BSC) Model

According to the Balanced Scorecard Institute website (1998-2016):

The balanced scorecard is a strategic planning and management system that is used extensively in business and industry, government, and non-profit organizations worldwide to align business activities to the vision and strategy of the organization, improve internal and external communication, and monitor organization performance against strategic goals.

The website further mentions that it was originated by Robert Kaplan and David Norton as a performance measure for traditional financial metrics to give managers and executives a more “balanced view of organizational performance”. According to Ceynowa (2000, 159), the BSC model was “originally developed for the private sector but had to be adapted for the activities of the public service and the universities”. The literature shows that the tool was used by libraries such as the University of Virginia Library in 2001 (Retief 2005, 61). According to Self (2003, 62), the implementation of the BSC model by the University of Virginia Library was successful. The model measures organisational performance across four balanced perspectives:

- User;
- Finance;
- Internal processes; and
- Learning and growth.

The model is depicted graphically in Figure 2.1 below.

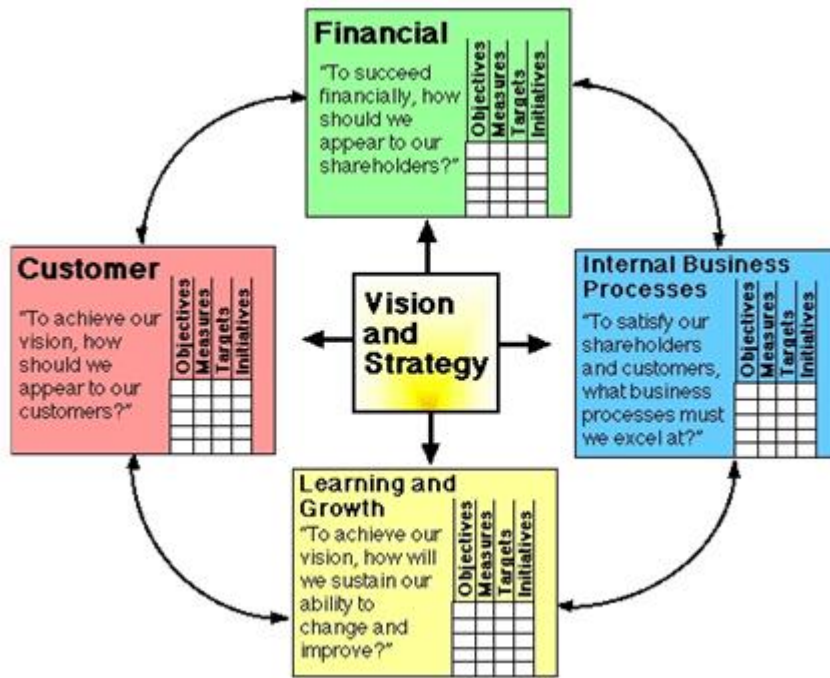


Figure 2.1: Balanced Scorecard Model

Source: Arveson (1998)

According to Retief (2005, 61) there are four reasons for the implementation of the BSC Model:

- ❖ Improve organisational performance by measuring what matters;
- ❖ Align organisational strategy with the work people do on a day-to-day basis;
- ❖ Focus on the drivers of future performance;
- ❖ Improve communication of the organisation's vision and strategy (Retief 2005, 61).

Retief's study also revealed that the model was useful in supporting the university's library strategic plans, improving statistical data collection, clarifying organisational values and ensuring the focus remains on library assessment. Broady-Preston and Preston (1999, 128) explained that the BSC model could be used to communicate the mission and strategy of the organisation as well as to keep the staff informed about its intended long-term goals. This shows that this model is not like other measurements which measure past performance and aim at controlling behaviour of staff. It expresses the strategy of the organisation, communicates that strategy, and manages individual, organisational and departmental initiatives to achieve a common purpose and goals.

Poll (2001, 712-714) explained that the BSC Model which has been implemented in academic libraries in Germany deviates from the original. The adapted BSC Model for academic libraries places more emphasis on users' perspectives than on finances (Naidu 2009: 51). Poll (2003) in her later work suggests that the indicators for assessment in the adapted model are not visible in assessing service quality in the academic library. For this reason, other measures that incorporate outcome and impact to assess service quality were needed (Poll 2003).

2.2.2 The European Foundation for Quality Management (EFQM) Excellence Model

The history of the EFQM Excellence Model goes back to the success of the Baldrige Model (USA) and Deming prize (Japan) which encouraged the formation of the EFQM in 1988. The 14 founders of EFQM were all presidents of world-class organisations representing several different markets and were endorsed by the European Commission (Hides, Davies and Jackson 2004).

According to the EFQM homepage (2002), the EFQM Excellence Model is a non-prescriptive framework that recognises there are many approaches to achieving sustainable excellence. Leonard and McAdam (2002) described the EFQM Excellence Model as providing a conceptual framework to overview the organisation and the "issues" through which business improvement can be structured. It is used to understand the connections between what an organisation does, and the results it can achieve. It is used to structure a logical and systematic review of any organisation, permitting comparisons to be made with similar or very different kinds of organisations. It is also used to define the capabilities and resources necessary to deliver the organisation's strategic objectives (EFQM 2009).

According to Wongrassamee, Gardiner and Simmons (2003, 16-17), many countries in Europe have now based their national quality awards on the excellence framework and criteria which are divided into five "Enabler" criteria and four "Result" criteria. The nine criteria are described as follows:

❖ Enabler Criteria

- **Leadership:** relates to the behaviour of the executive team and all other managers in as much as how leaders develop and clarify a statement of vision

that proposes total quality and continuous improvement which the organisation and its people can achieve.

- **People management:** regards how the organisation handles its employees and how it develops the knowledge and full potential of its people to improve its business processes and /or services continuously.
 - **Policy and strategy:** reviews the organisation's mission, values, vision and strategic direction; how the organisation implements its vision and mission via the concept of the total quality and continuous improvement.
 - **Resources:** refers to how the organisation manages and utilises its external partnerships and internal resources effectively in order to carry out effective business performance as stated in its mission and strategic planning.
 - **Processes:** concerns how the organisation designs, manages and improves its activities and processes in order to satisfy its customers and other stakeholders.
- ❖ **Result Criteria**
- **People satisfaction:** investigates what the organisation is achieving in relation to its employees.
 - **Customer satisfaction:** measures what the organisation is fulfilling in relation to its targeted customers.
 - **Impact on society:** concerns what the organisation is achieving in satisfying the needs and expectations of local, national and international society as appropriate.
 - **Business results:** examines what the organisation is achieving in relation to its planned business performance and in satisfying the needs of its shareholders.

The model is depicted graphically in Figure 2.2 .

EFQM Excellence Model

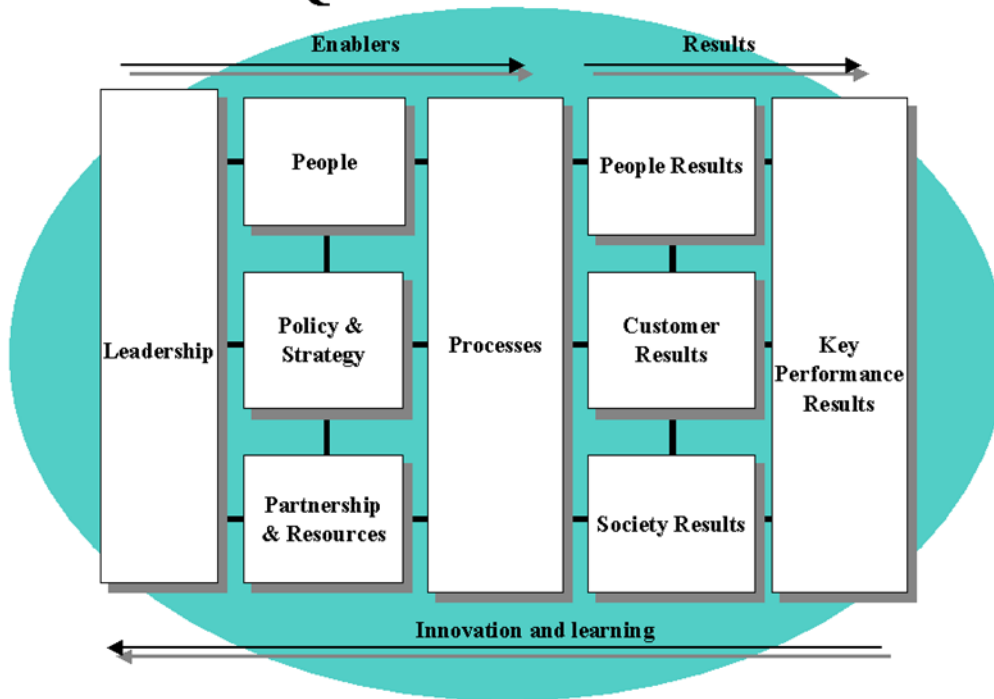


Figure 2.2: The EFQM Excellence Model

Source: EFQM (2012)

The EFQM Excellence Model has been used internationally, especially in commercial organisations in Europe and the United States of America. According to Herget and Hierl (2007, 530), the model has been effectively adopted in the library context. Not only has the model been useful in profit making industries, but it has also been useful for non-profit organisations. The model has been used in academic libraries to assess service quality. Barrionuevo and Perez (2001) have described how the EFQM Excellence Model was used with good results as a base for assessment of academic libraries in Andalusia, Spain. The archival and academic libraries in Portugal have also employed this model in library service quality assessment with promising results (Retief 2005, 54-55).

While acknowledging the applicability of this model for the library context, the researcher did not use it in this study because of some inconsistencies and discrepancies that have been identified by both Poll (2003) and Blixrud (2002). The biggest challenge generally does not lie in the quantitative evaluation of the library (for example, output data or the compliance with standards such as the ISO11620 library performance indicators) but in measuring the efficiency, effectiveness and qualitative aspects.

2.2.3 SERVQUAL

As its name suggests the SERVQUAL Model is based on “concept of service quality which originated from the marketing discipline in the early 1980s” (Bhim 2010, 33). The SERVQUAL Model itself was developed by researchers in 1988 as an instrument for assessing customer perceptions of service quality in service and retailing organisations (Parasuraman; Zeithaml and Berry 1988).

According to Zeithaml and Bitner (2003, 135), the SERVQUAL Model is a sound measure of service quality that can identify the aspects of service needing performance improvement, assessing the extent to which each aspect of service needs improvement and evaluating the impact of improvement efforts.

Naidu (2009, 56) claimed that “researchers, academics and librarians recognised the importance of user needs and user perceptions of service quality and devised methods to implement assessment of service quality”. One of the most frequently used approaches to discuss and measure service quality is the Gaps Model and its SERVQUAL instrument (Sahu 2007, 234).

Zeithaml and Bitner (2003) were of the opinion that quality could be viewed as the gap between perceived service and expected service. Their work finally resulted in the Gap Theory of Service Quality (Cook and Thompson 2000, 248). According to Nagata, Satoh and Kyatomaki (2004, 53), the working presupposition of the theory is that the service is good if perceptions meet or exceed expectations and problematic if perceptions fall below expectations. The SERVQUAL Model, based on the idea of user-centred assessment, identifies five potential gaps between expectations and perceptions, both internal and external, of service delivery. Service quality is a sensitive issue because it deals with those expectations that the library chooses to meet, whereas satisfaction is more of an emotional and subjective reaction to a time-limited event or cumulative experiences that a user has with a service provider. Nitecki (1996, 182) defined the five gaps as follows:

- Gap 1: The discrepancy between customers’ expectations and managements’ perceptions of these expectations;
- Gap 2: The discrepancy between managements’ perceptions of customers’ expectations and service quality specifications;
- Gap 3: The discrepancy between service quality specifications and actual service delivery;

- Gap 4: The discrepancy between actual service delivery and what is communicated to customers about it; and
- Gap 5: The discrepancy between customers' expected services and perceived services delivered.

Figure 2.33 below shows the GAP Model of Service Quality from Parasuraman, Zeithaml and Berry (1988).

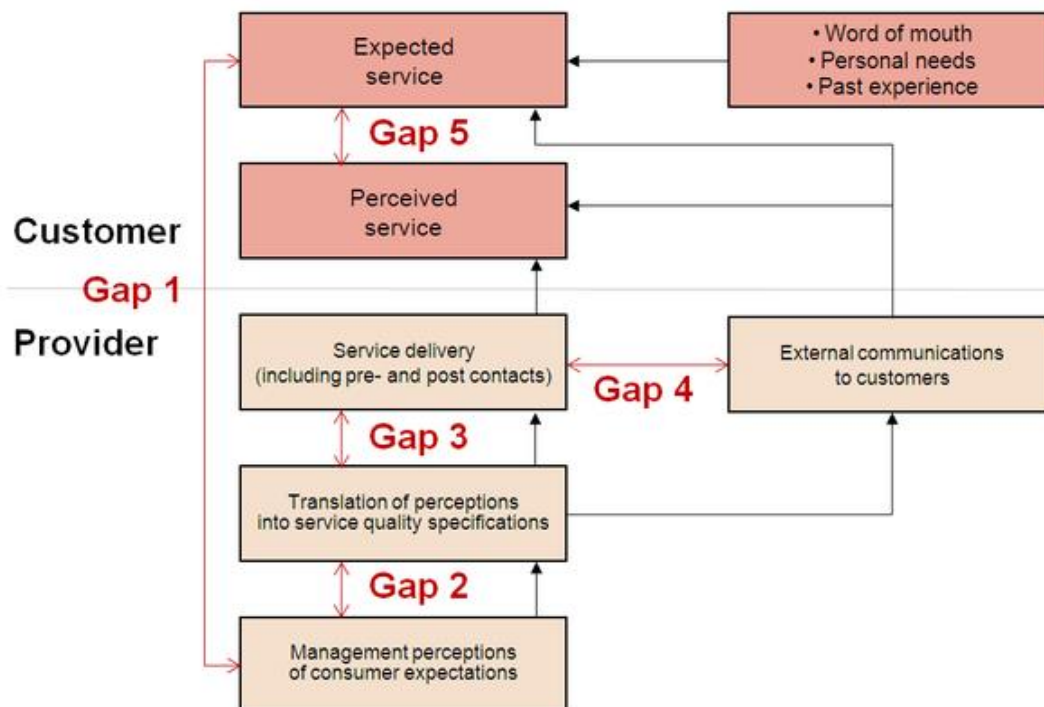


Figure 2.3: Gap Model of Service Quality

Source: Verint Systems (2014)

The fifth gap is the basis of a customer-oriented definition of service, is the most user-focused and the conceptual basis for the SERVQUAL instrument (Nitecki 1996, 182) and it is the main focus in library research (Cullen 2001, 663). The current study focuses on this gap.

According to Nagata et al. (2004, 55) there are ten dimensions which consumers use to evaluate service quality. These are tangibles, reliability, responsiveness, competence, courtesy, credibility, security, communication, access and understanding the customer.

Through numerous qualitative studies by the researchers, these ten dimensions evolved to a set of five dimensions which have been consistently ranked by customers to be most important for service quality, regardless of service industry.

Kiran (2010, 263-264) listed the five dimensions as:

1. Tangibles – these include appearance of physical facilities, equipment, personnel, and communication materials;
2. Reliability – this includes ability to perform the promised service dependably and accurately;
3. Responsiveness – willingness to help customers and provide prompt service;
4. Assurance – this has to do with knowledge and courtesy of employees and their ability to convey trust and confidence; and
5. Empathy – the caring, individualised attention the firm provides its customers.

According to Simba (2006, 39-40), the SERVQUAL instrument or questionnaire integrates all these dimensions to measure user expectations and perceptions of service delivered. The evaluation of service quality is done by measuring the gaps between expectation and perceptions. The comparison between the expectations and the perceptions determines whether the service is good or problematic. As noted by Nagata et al. (2004, 53) above, the service is considered to be good if the perceptions meet or exceed the expectations and problematic if perceptions fall below expectations.

“The literature has revealed that the SERVQUAL model was originally designed for retail, industrial and commercial environments and adapted for a library environment and had certain shortcomings in the questionnaire” (Naidu 2009, 59). According to Quinn (1997), the SERVQUAL model could be adapted to various areas within the academic library such as access services, reference services, and collection development. However, “academic criticism of the validity and feasibility of SERVQUAL has been accompanied by proposals for alternative service quality measures” (Newman 2001, 126). This criticism and quest for alternative service quality measures resulted in the development of LibQUAL+™.

2.2.4 LibQUAL+™ instrument

The LibQUAL+™ instrument has its roots in the Gap Theory of Service Quality and the SERVQUAL instrument (Cook, Heath, Thompson and Webster 2003, 38). According to Simba (2006: 40), the Texas A&M University research team launched a pilot project that had

its origins in the Gap Theory of Service Quality to develop a new measure to assess service quality in research libraries. The LibQUAL+™ survey instrument is used to measure the library user's perceptions of service quality and identifies the gaps between the desired, perceived and minimum expectations of service (Moon 2007: 72). LibQUAL+™ is an extension of the 22-item SERVQUAL tool which was developed by the marketing research team of Parasuraman, Zeithaml and Bitner (Thompson, Cook and Heath 2000, 165; Shi and Levy 2005, 270). According to Kachoka (2010, 47) the instrument is now recognised as a standard tool for measuring the quality of library service. She explained that the instrument contains 22 core items which yield quantitative data and it also yields qualitative data through user comments. The instrument can be modified to suit the local environment as has been done in this study.

LibQUAL+™ is a total market survey intended to help librarians understand user perceptions and thus improve service quality and better meet users information needs (Thompson, Kyriallidou and Cook 2008, 203). The instrument was developed, tested and refined by Texas A&M University in partnership with the Association of Research Libraries (ARL 2004). According to Ladhari and Morales (2008, 355), LibQUAL+™ evolved from eight dimensions (LibQUAL+™ 2000) to three dimensions (LibQUAL+™ 2004). The three dimensions are:

- Effect of service – how well users are served and treated by library staff;
- Information control – the ability to navigate the information universe; and
- Library as place – how well the library meets the individual needs of users who look for a place to do research and study. (Crawford 2006, 73)

This study has adopted the 2004 version of LibQUAL+™.

The questions which are used to measure the three dimensions according to Cook et al. (2003, 39) and Crawford (2006, 73) are:

- Effect of service – focuses on questions concerning the effectiveness of library staff;
- Information control – focuses on questions which look at the availability of collections and ability to access them on timely basis regardless of the location of the user and the resource in question; and
- Library as place – focuses on questions on the physical environment.

According to Naidu (2009, 61), the LibQUAL+™ instrument helps libraries assess and improve library services, change organisational culture, and market the library. LibQUAL+™ is a protocol that is useful for local planning and decision making (Kyrillidou and Hipps 2001, 10).

2.2.4.1 Goals of LibQUAL+™

The Health Science Library and Informatics Center (HSLIC) (2003; see also Crawford 2006, 74) considers LibQUAL+™ as a suite of services that libraries use to solicit, track, understand, and act upon user 'opinions of service quality. The goals of LibQUAL+™ are to:

- Foster the culture of excellence in providing library services;
- Help libraries better understand user perceptions of library service quality;
- Collect and interpret library user feedback systematically over time;
- Provide libraries with comparable assessment information from peer institutions;
- Identify best practices in library service; and
- Enhance library staff members' analytical skills for interpreting and acting on data (Crawford 2006, 74; HSLIC 2003).

The LibQUAL+™ instrument also benefits library users by giving them the chance to tell the library staff where their services need improvement so that the library staff can respond to and meet the expectations of users better. According to Naidu (2009, 63), the library management can develop services that meet expectations to a higher degree by comparing library data with that of peer institutions and examining the practices of those libraries that are evaluated highly by their users.

2.2.5 Some concerns about SERVQUAL AND LibQUAL+™

Some researchers have raised concerns about the SERVQUAL and LibQUAL+™ instruments. Quinn (1997) pointed out that the pure service quality tenet that insists that the customer is the sole judge of service or that satisfying customer wants is the key to quality service do not seem to fit readily with the academic library environment. The goals and methods of academia, and the relation of staff to customers, are more complex than in the business and manufacturing settings from which SERVQUAL concepts developed. However, he argued that the SERVQUAL model could be adapted to various areas within the academic library which are access services, reference services, and collection development (Quinn 1997).

Much of the literature which critically evaluates the models has focused on either the coverage of the items, principles of measurement or issues in administration (Newman 2001, 136).

Walters (2003) recognised the significance of LibQUAL+™ and its progenitor SERVQUAL in assessing the perceptions of the library users to determine service quality. However, like Quinn, he was not fully convinced by the central concept of the two models that “only customers judge the quality; all other judgements are essentially irrelevant”. Referring to the academic library context where students are users of the library services, Walters (2003, 98) stated:

The assessment of library service quality requires both expertise and objectivity. Undergraduate students are neither expert nor objective, and assessment models that rely heavily on students’ perceptions are likely to be inadequate in several respects. Students’ needs are not necessarily consistent with their preferences, for example, and the limited experiences of most undergraduates give them only a partial understanding of library collections and services. Although user surveys provide valuable information about patrons’ perceptions, that information is no substitute for objective standards based on professional knowledge.

Academic libraries exist to address users’ needs and satisfy their requests and expectations (Simba 2006, 43). However, their needs and expectations do change over a period and this is a great challenge for academic librarians together with the changes in the digital environment and increasing competition (Cullen 2001).

The current study is constructed on the modified SERVQUAL model and the theory behind it. This is because LibQUAL+™, the modified SERVQUAL model, provides a more reliable survey in terms of measuring the gap between user expectations and perceptions (Marnane 2004) is more flexible and allows for the local understanding of use needs.

2.3 Discussion of service quality assessments in academic libraries

Numerous studies have been done around the world using the LibQUAL+™ instrument devoted to users’ perceptions of service quality and user satisfaction in academic libraries. For this discussion, seven international and local studies were considered. These seven studies were used to illustrate relevant case studies on service quality and user satisfaction, to identify the methodology used in assessing service quality and user satisfaction, benchmark

their findings, and to use these findings as a guide in interpreting the results of the current study.

Hiller's (2001) study, *Assessing user needs, satisfaction, and library performance at the University of Washington Libraries*, used the web-based LibQUAL+™ survey instrument. The survey covered the following LibQUAL+™ dimensions of service: accountability, assurance, reliability, responsiveness, tangibles, access to collections and the library as place. Other areas included behavioural questions, frequency of library use, and an overall service quality questionnaire and demographic data. The study used a random sample of academic staff, graduate students and undergraduate students. The results of the study point out significant variations within and between groups concerning library satisfaction, use, priorities and importance. Despite the variations in expectations and perceptions, there was an overall satisfaction with the services provided. The results showed a shift toward remote use of library resources and increased importance of electronic resources. The areas of concern that showed negative results were quiet study areas and full-text electronic databases. The study showed that the LibQUAL+™ instrument was relevant in assessing service quality in the academic library.

The study done by Sahu (2007), *Perceptions of service quality in an academic library*, examined the perceptions of users of Jawaharlal Nehru University Library (JNU) in India as they relate to the quality of service and determined how far the JNU Library had succeeded in delivering services to its users. The study further established whether the library was meeting the quality expectations of the users, and also evaluated the differences in perceptions of the quality of library services between students and academic staff.

The sample size of the Sahu case study was 130 consisting of 90 students and 40 academic staff. The sample group was selected at random and the survey method was used to collect data. The study used a self-administered questionnaire consisting of 47 open and closed questions. The questionnaire covered three sections of the library, that is, aspects relating to the physical facilities, technical facilities such as computer facilities and the attitude and competence of staff. The questionnaire covered the following dimensions: reliability, responsiveness, assurance, access, communications and empathy. The study yielded 70 responses from the students and 30 responses from the academic staff.

The findings of the study revealed that the users of the JNU Library were largely satisfied with the various aspects of service quality except for responsiveness and communication. The

analysis of the students' and academic staff perceptions of library service revealed that 63% of students gave a positive response as compared to 97% of the staff. It was therefore concluded that library staff gave too much importance to the academic staff and less importance to students. Positive observations were made in regard to tangibles: 90% indicated satisfaction with the furniture, 85% indicated satisfaction with the temperature of the library, and 75% indicated satisfaction with the lighting of the library and contrary to most studies, 82% reported that the library retains adequate silence. Similar observations were also made about the user friendliness of the electronic databases and the use of the electronic database manual. However, the library did not fare well in the area of communication as most users indicated lack of awareness of some of the available services. Students also felt that the library staff gave them negative responses when they requested the latest publications. The results also revealed that the library staff was not re-shelving the books daily. However, despite the shortcomings, the results of the study showed that the JNU Library was not lacking in service quality.

A study done by Thapisa and Gamini (1999), *Perceptions of service quality at the University of Botswana: What Nova says*, determined the perceptions of the clients (students and staff) of the University of Botswana Library (UBL) as they related to quality of service. The survey established whether the library was meeting the quality expectations of clients. From a study population of 6 892 students, 400 students were sampled together with 487 staff. The study received 243 responses from the students yielding a response rate of 60.75%. The questionnaire contained 44 questions – both open and closed. The questionnaire used the following dimensions of service quality, namely: reliability, responsiveness, assurance, access and communications.

The findings of the study indicated that overall, the UBL was not lacking quality service. It was observed that academic staff preferred to access information from their offices through a campus-wide online electronic information network. A significant difference was observed in perceptions about quality between graduate students and undergraduate students depending on the level of study. There was a significant difference among various faculties in their perceptions of quality service. A link between user friendliness of the OPAC and the reliability of information was observed.

The study done by Simba (2006) titled *User perceptions of the quality of service at Iringa University College Library, Tumbani University, Tanzania* assessed via a questionnaire-based

survey, whether the library was meeting the service quality expectations of users. The questionnaire was modified to suit the local environment and it measured two scales: the expected and perceived level of service on a numerical scale of 1 to 5. The sample of 294 subjects was drawn from a population of 1 239 undergraduate students using a proportional stratified random sampling technique, all 31 postgraduate students and 50 academic staff. 213 usable questionnaires were received, yielding a response rate of 68.8%.

Findings revealed that a gap existed between users' desired expectations and perceived levels of service. The library performed poorly in the following services: electronic journals, photocopiers, interlibrary loan, electronic databases, a quiet library environment and a library webpage with useful information. Different user groups varied in their responses to the desired and perceived level of service with academic staff having higher expectations as compared with the other groups. Simba (2006) observed that the results could help to improve the service quality of the library and new services could be introduced to meet the needs of the users.

Also on the African continent was a study by Kachoka (2010) titled *Undergraduate students' perceptions of the quality of service at Chancellor College Library, University of Malawi*. According to Kachoka (2010), the study population consisted of 285 undergraduate students. Of the 285 students under study, 186 students responded to the questionnaire yielding a response rate of 65.26%. The findings show that the undergraduate students had higher expectations of service quality than the perceived quality of service. The author further stated that the findings also indicated that the library was not meeting the minimum expectations of the service quality of its users in all three dimensions of service quality: effect of service, library as place and information control

The study done by Moon (2007) *LibQUAL+™ at Rhodes University Library: An overview of the first South African implementation* is one of the few studies that have been done in Africa on service quality and which specifically used the LibQUAL+™ instrument. The research was aimed at illustrating how LibQUAL+™ as a "turn-key" survey instrument could provide the type of benchmarking information that could facilitate targeted service improvements.

Although the response rate of 10% was low, it was representative of different user groups and disciplines on the campus. The population consisted of undergraduate students, postgraduate students, academics, administrative and support staff (Moon 2007, 75). The survey used a 2004 standard LibQUAL+™ instrument consisting of 22 core questions and three service

dimensions: library as place, effect of service and information control. A scale of 1-9 was used to indicate minimum acceptable service level, desired service level and perceived service level.

The findings of the study indicated that all groups of library users at Rhodes were dissatisfied with their library building. This was understandable given that the library is small and the number of student enrolments had increased over the years. Rhodes performed well on the dimension of information control. Findings also indicated that it did less well in the dimension of effect of service. According to Moon (2007, 86) “the use of the LibQUAL+™ survey at Rhodes University has been most valuable.”

The study done by Naidu (2009), *User perceptions of service quality and level of user satisfaction at the Mangosuthu University of Technology Library, Umlazi, Durban* examined the quality of service of the library from the users’ perspective using a modified LibQUAL+™ instrument. As has been pointed out, this study did not include the library that the present study focused on. The gaps between users’ expectations and perceptions were determined. A descriptive survey was used on the population of undergraduate and postgraduate students, academic and administrative staff. Stratified proportional sampling was used to select 1 915 respondents. An overall response rate of 69.5% was yielded in this study. The study measured two scales: the expected and perceived level of service on a numerical scale of 1-5 as in the study done by Simba (2006). According to Naidu (2009) huge gaps were revealed between user expectations and perceptions of service quality. Library as place, library facilities and an inadequate and outdated book collection were identified as the problematic areas. Overall, the academic staff regarded the quality of services as good whilst the students regarded it as poor.

2.4 The impact and challenges of library assessment models

The literature has shown that many models have been developed to assess service quality in academic libraries. According to Retief (2005, 64) the development of LibQUAL+™ based on the SERVQUAL model, and the implementation of Balanced Scorecard Model and the European Foundation for Quality Management Excellence model, lifted service quality measurement to a new level of library management and ensured relevant and accurate accountability towards all library stakeholders. These assessment models brought new challenges to academic libraries to abandon the traditional way of assessing library quality in

favour of a new way of service quality assessment that advocates user focus and involvement; that is changing the concept of service quality assessment from collection-centred to user-centred (Simba 2006:49).

According to these assessment models, user focus and user participation have developed an interactive, dynamic environment that has facilitated overall quality improvement in academic libraries. Emphasising how assessment could be beneficial to the library, Convey (2002) asserts that:

To reap real consistent benefits from assessments, libraries must pool their knowledge and experience, and organize assessment as a core activity integrated into the fabric of daily life as firmly and conspicuously as collection development and reference service.

The literature shows that there are many ways of assessing service quality in academic libraries. Naidu (2009, 75) suggests that librarians should use a combination of traditional and non-traditional methods of assessment to provide a useful evaluation of library service quality in academic libraries. This implies that there is no single or right way of assessing service quality in academic libraries.

2.5 Summary

In this chapter the concept of service quality was discussed in more detail. The most important and relevant models commonly used in service quality assessment were discussed. The LibQUAL+™ model was adopted in the study to measure the gap between customer expectations for excellence and their perceptions of the actual services delivered by the library. Seven related studies on service quality in the academic library context both internationally and locally were reviewed with the methodologies and findings of these studies being identified and discussed. The chapter ended with a brief discussion on the impact and challenges of library assessment models.

Chapter 3

RESEARCH METHODOLOGY

This chapter discusses the research methodology used in this study. The design of the study, population, sampling techniques, data collection instruments and procedures, validity and reliability and methods of data analysis are described and discussed.

3.1 Research design

According to Terre Blanche, Durrheim and Painter (2006, 34), “a research design is a strategic framework for action that serves as a bridge between research questions and execution and implementation of the research”. Bless and Higson-Smith (1995: 63) defined research design as a specification of the most adequate operations to be performed in order to test a specific hypothesis under given conditions. “The design is a plan that guides the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure” (Terre Blanche and Durrheim 1999, 29).

Kothari (2004, 5) pointed to there being two basic approaches to research, namely, quantitative and qualitative paradigms. Both these approaches are essential to the research process but Bouma (2000, 175) noted that they require some common and some different skills. According to Naidu (2009, 78), the use of the preferred approach depends on the research topic and appropriateness of the questions asked and she further stated that each approach has its own rules of practice.

In this study the researcher adopted a largely quantitative approach. The purpose of study was to determine the users’ perceptions of the quality of library service at MUT-NSL using an adaption of the standard LibQUAL+™ instrument which is largely quantitative in nature consisting, in the main, of closed questions (see below). According to Bertram (2004, 59), quantitative analysis measures phenomena using numbers in combination with statistical procedures to process data and summarise results.

To determine users’ perceptions, a cross-sectional, descriptive survey design was used (Babbie and Mouton 2001, 92). According to Powell (1997, 64), the most straightforward type of survey research is descriptive and it is designed to ensure that the sample is

reasonably representative of the population which the researcher wishes to generalise and that the relevant characteristics of the population have been accurately measured.

The survey design was chosen for this study for the following reasons:

- Firstly, many studies have pointed out that it is popularly used for studies on users' perceptions of quality of service. Most of the studies on users' perceptions of service quality reviewed (see, for example, Thapisa and Gamini 1999; Hiller 2001; Simba 2006; Moon 2007; Sahu 2007; Naidu 2009 and Kachoka 2010) used the survey design.
- Secondly, the survey design is economical in that it allows gathering data on a once-off basis in order to describe the nature of existing conditions (Simba 2006, 52). This was an important consideration for the study in that there were financial constraints and a time limitation (Bertram 2004, 61).
- Thirdly, the survey design enables researchers to collect large amounts of data with relatively little effort (Ngulube 2005, 4).

3.2 Population

In this section the population of the study and sampling process are described and discussed.

Population refers to the larger group from which the sample is taken and to which findings are to be generalised (Trochin 2000, 1). According to Busha and Harter (1980, 55-57), the term 'population' is defined as any group of people, objects or institutions with at least one common characteristic. In this study, academic staff, and both postgraduate and undergraduate students from the Faculty of Natural Sciences formed the population.

As pointed out in Chapter 1, other potential library users such as administrative staff, executive management, external school learners and staff and students from the other two faculties which comprise MUT were excluded. This was due to the focus on the NSL, time limitations and the nature of the coursework master's degree. In addition and, as pointed out, academic staff and students are the main users of an academic library.

The common characteristic of the population being studied was that they were all users of the MUT-NSL and they all belonged to the MUT community by their status of being either academic staff or students. The population of the study from which the sample was drawn

consisted of 1 682 undergraduate students; 164 postgraduate students (B.Tech) and 89 academic staff.

3.2.1 Sampling

Sampling is an important step in survey research especially for populations which are too large to be studied as a total population (Kachoka 2010, 68). Powell (1997, 66-67) explained that sampling is often one of the most crucial steps in survey research and he defined a sample as “a selection of units from the total population to be studied”. Since the study population in this study were undergraduate students in first, second and third years, postgraduate and academic staff, it was decided that random stratified sampling be used by dividing the population into different groups. Bouma (2000, 18) described this procedure as “basically a type of quota sampling where members of each quota group within, or stratum of the sample, are selected randomly”.

“A very important issue in sampling is to determine the most adequate size of the sample” (Bless and Higson-Smith 1995, 96). In terms of the 1 682 undergraduates, a sample of 318 was arrived at achieving a confidence level of 95% and a 5% confidence interval (Sample size Calculator 2009; Powell and Connaway 2004, 107). No sampling was done with the 164 postgraduate students and 89 staff members and all were thus included in the final sample – 482 students and 89 staff members giving a total of 571. In line with the proportional stratified sampling approach adopted 104 first year students, 114 second year students and 100 third year students were drawn as a sample. Table 3.1 below illustrates the population and sample size of students and staff. The numbers below reflect the situation for the 2015 academic year – the year in which the survey was done.

Table 3.1: Population and sample size of students and staff

1 st yr.	sample	2 nd yr.	sample	3 rd yr.	sample	post- graduate	sample	lecturers	sample	total sample
619	104	644	114	419	100	164	164	89	89	571

Source: MUT Department of Higher Education Management Information System (HEMIS) 2015

In this section, the following are described: the instrument used to collect the data, forms of questions asked, peer-review and pre-testing of questionnaire, validity and reliability of the instruments, administration of the questionnaire and response rates.

3.3 Data collection instruments

According to Simba (2006, 55), instruments in research refer to the methods that are used to collect data to answer the research questions. “There are three frequently used data collection techniques, that is, the questionnaire, the interview and observation. They are data collection techniques or instruments, not research methodologies and they can be used with more than one methodology”. The instrument that the researcher used in collecting data was the self-administered questionnaire comprising both open and closed questions. The latter, in line with the predominantly quantitative approach adopted, were in the majority.

Neuman (2000, 271) claimed that the use of a questionnaire is by far the cheapest means of collecting data and can be conducted by a single researcher – both important considerations in this study. In addition, questionnaires allow respondents to answer questions at times that are convenient to them. A further advantage of the self-administered questionnaire is that it is “economical and lacks interview bias” (Babbie and Mouton 2001, 266).

3.3.1 The questionnaire

Simba (2006, 55) noted that “a questionnaire is a method of gathering self-reported information from respondents through self-administration of questions”. For the purpose of this study, the researcher constructed a seven-page questionnaire consisting of ten sections. The LibQUAL+™ based survey questions (Naidu 2009; Kachoka 2010; Bhim 2010) were adapted to the MUT-NSL context. See Appendix 2 for the questionnaire used.

The first part of the questionnaire (Section 1) comprised demographic data on the participants. The purpose of this was to gather data that would help to correlate response sets between different groups of respondents in order to see whether responses were consistent across groups. The second section consisted of 28 statements and respondents were asked to rate on a scale from 1-5 (that is, strongly agree, agree, neutral, disagree and strongly disagree) their expectations of service quality. Two open questions followed in Sections 3 and 4 which asked respondents to add comments about existing services or services they expected. Section 5 questions were similar to questions in Section 2, but in this section the respondents were asked, by using the same scale, to rate their perceptions of library services currently provided by the MUT-NSL. Sections 6 and 7 had open questions as in Section 3 and 4. Sections 8 and 9 had statements on user satisfaction and respondents had to indicate whether they were very satisfied, satisfied, neutral, dissatisfied or very dissatisfied with the services. The questionnaire ended with an open question in Section 10.

3.3.2 Forms of questions

In general, there are two types of questions, namely open or closed. According to Terre Blanche and Durrheim (1999, 292) the compilation of questions is a crucial aspect of developing any assessment instrument. As noted, this study used both open and closed questions. This was done to collect both subjective and objective data using both formats (Fitzgibbons 2003).

3.3.2.1 Open questions

According to Babbie and Mouton (2001, 233), in the case of open questions, the respondent is asked to provide an answer in his or her own words. To allow the respondents to answer in their own words and give unprompted opinions, four open questions were asked in this study. Open questions are advantageous in that they allow respondents to answer in their own choice of words and give unprompted answers which could be beneficial. The disadvantages of this open format are, first, the questions require more thought and time on the part of the respondents and as a result they may be ignored by the respondents. Secondly, it is not easy to automatically tabulate or perform statistical analysis on these kinds of questions (Fitzgibbons 2003).

3.3.2.2 Closed questions

According to Babbie and Mouton (2001, 233), in the case of structured or closed questions, “the respondent is asked to select an answer from among a list provided by the researcher”. In a closed question, “the possible answers are set out in the questionnaire or schedule and the respondent or the investigator ticks the category that best describes the respondent’s answer” (Kumar 1996, 116). Closed questions are advantageous because the response pattern has already been developed as part of the instrument construction and all one needs to do at this stage is to assign a numerical value to each category. Other advantages of closed questions are that the results of the investigation can be quickly available, respondents have a better understanding of the questions and questions can be answered within the same framework, and responses can consequently be better compared with one another (De Vos 1998, 161). In line with the predominantly quantitative nature of the study, the majority of questions in the instrument were closed consisting of nominal scale questions (elicited demographic data), ordinal scaled questions (respondents rated their degree of agreement or disagreement with a statement) and finally, matrix questions (questions which have the same set of answer categories). As noted by Frankfort-Nachmias and Nachmias (1992, 258), “these questions are

extremely popular and they have a great advantage of being simple to record and score and they allow for an easy comparison and quantification of the results”.

As with open questions, however, closed questions also have their disadvantages and these include that they may introduce bias, either by forcing the respondent to choose from given alternatives or by making the respondent select alternatives that might not have otherwise come to mind (Frankfort-Nachmias and Nachmias 1992, 243).

3.3.4 Pre-testing the questionnaire

According to Kumar (2011, 158), pre-testing a research instrument entails a critical examination of the understanding of each question and its meaning by a respondent. The author further states that a pre-test should be carried out under actual field conditions on a group of people similar to one’s study population. Pre-testing provides the researcher an opportunity to identify questionnaire items that tend to be misunderstood by the participants and it allows respondents to point out problem questions, poor instructions and unnecessary or missing questions (Naidu 2009, 87).

The questionnaire of this study was reviewed by selected people in the Information Studies Programme. More importantly, Babbie and Mouton (2001, 245) recommended that a pre-test be used with the people to whom the questionnaire seems most relevant. The questionnaire was pre-tested on ten people consisting of six students and four staff from the designated study population. According to Saunders, Lewis and Thornhill (2000, 306), this exercise allows the researcher to check the following: clarity and layout of questions, spelling, ambiguous and unclear questions, omission of relevant questions, difficult questions for respondents and comments from respondents.

All the respondents found the questionnaire easy to understand and experienced no difficulty in completing it. Therefore, no corrections or changes were made to the questionnaire.

3.3.5 Validity and reliability of the instrument

Ngulube (2005) stressed that the validity and reliability of instruments is critical in research. According to Bouma (2000, 85), validity is crucial in the construction of questionnaires to measure a person’s attitudes, beliefs or values. For a questionnaire to be valid, it should “examine the full scope of the research question in a balanced way” (Williams 2003, 245). Simba (2006, 57) mentioned that the aspects of validity that need to be tested are criterion, factual and face validity. In this study the researcher, as mentioned, adapted the existing

LibQUAL+™ instrument as did Naidu (2009), Kachoka (2010) and Bhim (2010) in their studies. The instrument has been used in numerous studies around the world and Simba (2006, 57) rightly concluded that the “instrument has been thoroughly tested and its validity is well established. It measures what it is supposed to measure and can replicated and yield the same results” (Simba 2006, 57). Also crucial in terms of ensuring validity was the pre-test described above.

Naidu (2009, 89) noted that the concept of validity is different from the concept of reliability. Reliability was defined by Babbie and Mouton (2001, 119) as the degree to which a test consistently measures what it sets out to measure while at the same time yielding the same results and the crucial point here is that the “measurement device employed should provide the same results when repeated”. This is called “test-retest reliability” (Bouma 2000, 86). According to Naidu (2009, 89), factors such as a respondent’s momentary distraction when completing a questionnaire, ambiguous instructions, and technical difficulties may cause the introduction of variable measurement errors. Given the nature of reliability and its testing, it was not feasible to test for reliability in the pre-test study.

3.3.6 Administering and distribution of the questionnaire

The researcher sought permission to conduct the study from the MUT management and permission was granted by the Research Committee. A signed letter from the Research Director (see Appendix 1) was received. Permission from the Dean of the Faculty and the HODs was also obtained prior to the distribution of the questionnaires. According to Naidu (2009, 89), systematic administration of the questionnaire is vital to ensure that the process is a smooth transition for data collection. For this study, the questionnaires were hand-delivered to the undergraduate students and academic staff. The questionnaire was put on Survey Monkey for the postgraduate students to access as they mainly worked during the day and were thus not immediately accessible for hand-delivering the instrument.

The sample of 571 respondents was a large one and assistance from library colleagues and lecturers was received for distribution of the questionnaires which was done before or after lectures. The completed questionnaires were returned to the lecturers concerned and these were then passed on to the researcher. Email addresses of the postgraduate students were obtained from the various departmental heads. An email was sent to these students requesting participation in the study. The link to the questionnaire on Survey Monkey was included in the email message.

The questionnaire was administered to academic staff in three ways:

- The researcher personally hand delivered the questionnaire to the academic staff member's office.
- For those staff members who were not in their offices, questionnaires were handed to the departmental secretaries.
- An email was sent to those who were marking at home and to those who requested a questionnaire in electronic format.

Data was collected over a period of six weeks in September and October 2015.

3.3.7 Response rates

According to Babbie and Mouton (2001, 261), a questionnaire return rate of 50% is adequate for data analysis and reporting. A return rate of 60% is good and 70% is regarded as very good. Williams (2003) in Simba (2006, 59) actually argued that “a response rate of 20% for a self-administered questionnaire based survey is sufficient to report the results”. The response rate for this study was affected by the fact that it was nearing exam time for the students who were thus busy with revision; the third-year students for Agriculture were not available because they were attending in-service training; and the lecturers were busy with ratifications.

Despite the problems associated with the timing of the distribution, 250 completed questionnaires were returned by students giving a response rate for students of 51.9%. Of the 89 staff, 73 completed the questionnaire, giving a very good response rate of 82%.

The overall response rate of 323 (56.6%) could be considered adequate and sufficient for data analysis and reporting.

3.4 Data analysis

The information collected during the survey is referred to as raw data. Nichols (as cited in Bhim 2010) described the following four stages in processing and analysing raw data:

- Checking through the questionnaires and correcting errors;
- Coding;
- Preparing data tables; and

- Making sense of data (this includes preparing summaries, measures, and using them to test ideas about the target population).

Given the preponderance of closed questions, quantitative analysis was employed in this study. SPSS was used to analyse and interpret the data (Babbie and Mouton 2001, 411). Before analysing the raw data, each completed questionnaire was checked for missing data, ambiguity, omissions and errors. According to Powell (1997, 63) cleaning data can involve everything from simply reading results, looking for surprising responses and unexpected patterns, to verifying or checking the coding of the data.

The open questions gave respondents the opportunity to state their views regarding the library services. Providing qualitative data, the responses to these questions were analysed and interpreted using content analysis. The first step in content analysis involved the construction of categories. The categories for this study were: access to information; library facilities; staff services; library as place; and teaching and research. The analysis involved perusing the responses and allocating them to one of the categories. The categories were coded and the now quantified data was entered into SPSS. The data derived from the open questions offered some evidence about the main categories and trends relating to the study.

3.5 Summary of the chapter

In this chapter the research methodology was described and discussed. More specifically, this included the research design of the study, the population, sampling, instrumentation, pre-test, data collection and data analysis. In the following chapter, Chapter 4, the findings of the survey are presented.

Chapter 4

RESEARCH RESULTS

This chapter presents the results of the survey of the sample population of users of Mangosuthu University of Technology Natural Sciences Library (MUT-NSL). The survey was conducted by means of a self-administered questionnaire. The validation for each section of the questionnaire is submitted and the results are presented. The report indicates N for the number of respondents who should have responded to a particular question. This study yielded a return rate of 259 (54%) for students and 73 (82%) for staff. The response rate for staff was good in comparison to the response rate for students. However, the latter was considered adequate for data analysis and reporting. The overall response rate was 57%.

4.1 Questionnaire results

This section reports the results obtained from the questionnaire which was administered to the library users – both academic staff and students.

4.1.1 Demographic data

This section of the questionnaire asked for the background information of the respondents. Demographic information was essential for the response sets between different categories of library users. This information enabled one to determine whether the responses were consistent across different categories. In order to obtain such information, questions 1.1, 1.2, 1.3 and 1.4 determined the respondent's gender, user category, year of study of undergraduate students, age and department. The data is shown in Tables 4.1, 4.2, 4.3, 4.4, 4.5, 4.6 and 4.7 below.

Table 4.1 (Question 1.1): Gender

N= 326

Gender	Frequency	Percentage
Male	159	48.8%
Female	167	51.2%
TOTAL	326	100%

Table 4.1 shows the gender of respondents. In general, there was a very small difference between male and female respondents. However, there were more female respondents, 167 (51.2%) than male respondents, 159 (48.8%). Table 4.2 shows the respondents by user category.

Table 4.2: (Question 1.2) User categories

N= 326

User category	Frequency	Percentage
Academic Staff	73	22.4%
Postgraduate Students	67	20.6%
Undergraduate Students	186	57.1%
TOTAL	326	100%

The majority of respondents, 186 (57.1%) were undergraduate students, 73 (22.4%) were academic staff and 67 (20.6%) were postgraduate students which was the smallest group. Table 4.3 shows the description of undergraduate students by year of study.

Table 4.3: (Question 1.2.1) Description of undergraduate students by year of study

N= 186

Year of study	Frequency	Percentage
1 st yr.	66	35.5%
2 nd yr.	56	30.1%
3 rd yr.	64	34.4%
TOTAL	186	100%

As can be seen from the table above, students were evenly distributed across the three years of study.

Table 4.4: (Question 1.3) Description of respondents by age group

N= 326

Age group	Frequency	Percentage
18 – 20	55	16.9%
21 – 30	199	61%
31 – 40	29	8.9%
41 – 50 (over)	43	13.2%
TOTAL	326	100%

The most common age group to which most of the respondents belonged was within the age group of 21- 30 years with 199 (61%) respondents belonging to this group. The smallest group was 31- 40 years with 29 (8.9%) respondents. Table 4.5 shows the respondents by departments.

Table 4.5: (Question 1.4) Description of respondents by departments

N= 326

Department	Frequency	Percentage
Agriculture	50	15.3%
Biomedical Science	54	16.6%
Chemistry	61	18.7%
Community Extension	44	13.7%
Environmental Health	22	6.7%
ICT	55	16.9%
Mathematical Science	8	2.5%
Nature Conservation	30	9.2%
TOTAL	326	100%

The department which had the highest number of respondents, 61 (18.7%) was the Chemistry department. This was closely followed by 55 (16.9%) respondents from ICT department and 54 (16.6%) from Biomedical Science. Mathematical Science had the smallest number because the sample consisted of staff only; there were no students from this department participating in the study.

4.1.2 Library usage patterns

This section determined how often respondents used the resources in the library. The questions were also aimed at examining the usage patterns between the different categories of users.

4.1.2.1 Frequency of use of resources in the library

The usage patterns of the library and its resources are shown in Tables 4.6a and Table 4.6b.

Table 4.6a: (Question 1.5) Overall frequency of use of library resources

N=326

Frequency of use	Frequency	Percentage
Daily	79	24.2%
Weekly	143	43.9%
Monthly	53	16.3%
Quarterly	41	12.6%
Never	9	2.8%
No response	1	0.3%
TOTAL	326	100%

Table 4.6a shows that the library resources were used on either a daily or weekly basis by 222 (68.1%) respondents. The highest number of respondents, 143 (43.9%) indicated that they used the library resources on a weekly basis. Interestingly, nine (2.8%) respondents indicated that they never used the library resources.

Table 4.6b: (Question 1.5) Overall frequency of use of library resources by user category

N= 325

User category	Daily		Weekly		Monthly		Quarterly		Never		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Academic Staff	5	1.5	42	12.9	18	5.5	4	1.2	4	1.2	73	22.4
Postgraduate	0	0	15	4.6	20	6.1	28	8.5	4	1.2	67	20.6
Undergraduate	74	22.6	86	26.3	16	4.9	9	2.7	1	.3	185	56.7
No response											1	0.3
TOTAL	79	24.2	143	43.9	53	16.3	41	12.6	9	2.8	326	100

The largest user group was the undergraduate students with 86 (26.3%) using the library resources on a weekly basis. The second largest group using the library on a weekly basis was the academic staff with 42 (12.9%) doing so. The user category that used the library resources most often on a daily basis was the undergraduate students: 74 (22.6%) of a total of

79 respondents. It is not surprising that postgraduate students indicated that they used the library less frequently as they are, in the main, part-time students who work.

4.1.2.2 Frequency of use of computer catalogue (iLink) and the Internet

Questions 1.7 and 1.8 asked how often respondents used the computer catalogue (iLink) and the Internet respectively to access library resources and search for information.

Table 4.7: (Question 1.7) Use of library computer catalogue (iLink) by user category

N= 326

User category	Daily		Weekly		Monthly		Quarterly		Never		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Academic staff	2	.6	27	8.3	15	4.6	6	1.8	21	6.4	71	21.8
Postgraduate	0	0	10	3.1	21	6.4	15	4.6	20	6.1	66	20.2
Undergraduate	33	10.1	117	35.9	17	5.2	11	3.3	8	2.5	186	57.0
No response											3	1
TOTAL	35	10.7	154	47.2	53	16.3	32	9.8	49	15	326	100

Of the 326 respondents, 49 (15%) never used the library catalogue to search for resources. The responses also illustrated that the clear majority 277 (84%) of respondents used the library catalogue to search for resources. The user category with the highest response rate in terms of using the library catalogue was undergraduate students of whom 117 (35.9%) used it on a weekly basis.

Table 4.8a: (Question 1.8) Internet usage for information searching by user category

N= 326

User category	Daily		Weekly		Monthly		Quarterly		Never		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Academic Staff	61	18.7	8	2.5	0	0	0	0	2	.6	71	21.8
Postgraduate	27	8.3	7	2.1	3	.9	29	8.9	0	0	66	20.2
Undergraduate	132	40.5	40	12.3	12	3.7	2	.9	0	0	186	57
No response											3	1
TOTAL	220	67.5	55	16.9	15	4.6	31	9.5	2	.9	326	100

The category with the highest usage was “daily” with 220 (67.5%) respondents using the Internet on a daily basis. This was followed by 55 (16.9%) respondents that used it on a

weekly basis. It is interesting that there were only two (0.9%) respondents who never used the Internet to search for information and both were academic staff.

Table 4.8b: (Question 1.8) Frequency of Internet usage for information searching by age group of users

N= 326

Age category	Daily		Weekly		Monthly		Quarterly		Never		Total	
18 – 20	42	12.9	12	3.7	1	.3	0	.0	0	.0	55	16.9
21 – 30	118	36.1	36	11.0	12	3.7	31	9.5	0	.0	197	60.4
31 – 40	25	7.7	1	.3	2	.6	0	.0	0	.0	28	8.6
41 – 50 (over)	35	10.7	6	1.8	0	.0	0	.0	2	.6	43	13.2
No response											3	0.9
TOTAL	220	67.5	55	16.9	15	4.6	31	9.5	2	.6	326	100

The age group with the highest Internet usage was the 21-30-year-old group with 118 (36.1%) respondents who fell into this group indicating “daily” usage. The two (0.6%) respondents who indicated never using the Internet were both in the 41-50-year-old and over age group.

4.1.3 Users’ expectations and perceptions of service quality

Questions 2 and 5 determined respondents’ expectations and perceptions of service quality at MUT-NSL. These two questions were fundamental to the study in terms of answering the research questions and identifying the gap between expectations and perceptions.

4.1.3.1 Users’ expectations of service quality

Question 2 had 28 statements regarding users’ expectations of service quality. The respondents were asked to rate the statements (on a scale of 1 = strongly agree; 2 = agree; 3 = neutral; 4 = disagree; and 5 = strongly disagree) by indicating the number that best described their expectations of the service quality that the library provides. The categories to which the various statements belonged and respondents’ expectations are reflected below.

4.1.3.1.1 Access to information

The statements reflected in this category are listed in Table 4.9 below. The respondents’ expectations of service quality in respect of the second category (library facilities) are reflected in Table 4.10.

Table 4.9: (Question 2.1) Users' expectations of access to information

N= 326

Statements	Strongly agree		Agree		Neutral		Disagree		Strongly disagree	
	Count	%	Count	%	Count	%	Count	%	Count	%
Website which enables location of information	250	76.7	40	12.3	14	4.3	10	3.1	12	3.7
Adequate printed library materials	221	67.8	68	20.9	16	4.9	12	3.7	9	2.8
Adequate printed journal collection	206	63.2	71	21.8	26	8.0	13	4.0	10	3.1
Easy access to electronic databases	266	81.6	29	8.9	12	3.7	9	2.8	10	3.1
Electronic journals that are easily accessible	257	78.8	35	10.7	12	3.7	11	3.4	11	3.4
Access to the Online Public Access Catalogue	260	79.8	34	10.4	15	4.6	8	2.5	9	2.8
An efficient short loan	238	73.0	53	16.3	15	4.6	6	1.8	14	4.3
An efficient interlibrary-loans service	234	71.8	27	8.3	16	4.9	11	3.4	38	11.7

The three statements which elicited the highest percentage of “Strongly agrees” were “Easy access to electronic databases”, 266 (81.6%), “Access to the Online Public Access Catalogue”, 260 (79.8%) and “Electronic journals that are easily accessible”. The statement with which the highest number of respondents disagreed with was “An efficient interlibrary-loans service” with 49 (15.1%) respondents indicating their disagreement (including strongly disagree).

4.1.3.1.2 Library facilities

The respondents' expectations of library facilities are reflected in Table 4.10 below.

Table 4.10: (Question 2.2) Users’ expectations of the library facilities and library as place

N= 326

Statements	Strongly agree		Agree		Neutral		Disagree		Strongly disagree	
	Count	%	Count	%	Count	%	Count	%	Count	%
Adequate hours of service	264	81	31	9.5	14	4.3	7	2.1	10	3.1
Adequate photocopying facilities	234	71.8	36	11.0	38	11.7	6	1.8	12	3.7
Adequate number of computer workstations	230	70.6	31	9.5	27	8.3	27	8.3	11	3.4
Adequate printing facilities	224	68.7	44	13.5	37	11.3	9	2.8	12	3.7
Computers work well in library	236	72.4	15	4.6	15	4.6	31	9.5	29	8.9
Library space inspires study and learning	230	70.6	60	18.4	16	4.9	4	1.2	16	4.9
Quiet and comfortable space for individual activities	274	84	26	8	8	2.5	9	2.8	9	2.8
Sufficient space for group learning and group study	224	68.7	23	7.1	7	2.1	13	4	59	18.1

Most of the respondents had high expectations of the library facilities. The highest percentage of respondents, 274 (84%) strongly agreed that they expect a “Quiet and comfortable space for individual activities”, and this was closely followed by 264 (81%) strongly agreeing that they expect “Adequate hours of service”. The highest percentage of respondents, 72 (22%) in

terms of disagreement were those who disagreed with the statement “Sufficient space for group learning and group study” and surprisingly this was closely followed by “Computers that work well in the library” (60 or 18.4%).

4.1.3.1.3 Staff services

The respondents’ expectations of service quality in respect of the third category, staff services, are reflected in Table 4.11 below.

Table 4.11: (Question 2.3) Users’ expectations of the staff services

N =326

Statements	Strongly agree		Agree		Neutral		Disagree		Strongly disagree	
	Count	%	Count	%	Count	%	Count	%	Count	%
Staff who instil confidence	230	70.6	63	19.3	14	4.3	8	2.5	11	3.4
Staff who are willing to help	255	78.2	45	13.8	10	3.1	5	1.5	11	3.4
Staff who give individual attention	248	76.1	41	12.6	23	7.1	4	1.2	10	3.1
Staff who deal with users in a caring fashion	200	61.3	70	21.5	30	9.2	12	3.7	13	4.0
Subject librarian who improve user’s research skills	220	67.5	75	23.0	11	3.4	9	2.8	11	3.4
Staff who understand the needs of users	245	75.2	52	16.0	12	3.7	9	2.8	8	2.5
Staff who are knowledgeable to answer questions	231	70.9	44	13.5	30	9.2	12	3.7	9	2.8
Staff who provide information skills needed for work or study	214	65.6	77	23.6	11	3.4	11	3.4	13	4.0

Most of the respondents had high expectations of staff services. The highest percentage of respondents, 255 (78.2%) strongly agreed that they expected staff to be willing to help users. The statement with the highest percentage of respondents, 55 (16.8%) disagreeing was “Staff who deal with users in a caring fashion” and the statement with the lowest number of

respondents disagreeing was “Staff who give users individual attention” with 14 (4.3%) respondents indicating their disagreement (including strongly disagree).

4.1.3.1.4 Research and teaching

The respondents’ expectations of service quality in this category are reflected in Table 4.12.

Table 4.12: (Question 2.4) Expectations regarding research and teaching needs

N =326

Statements	Strongly agree		Agree		Neutral		Disagree		Strongly disagree	
	Count	%	Count	%	Count	%	Count	%	Count	%
The library helps with my teaching needs	87	26.7	87	26.7	130	39.9	12	3.7	10	3.1
The library helps with my research needs	171	52.5	74	22.7	58	17.8	13	4.0	10	3.1
The library helps me to advance in my academic field	163	50.0	107	32.8	36	11.0	11	3.4	9	2.8
The library helps me stay abreast of developments in my field(s) of study	155	47.5	93	28.5	48	14.7	18	5.5	12	3.7

With the first statement “The library helps me with my teaching needs” the high “Neutral” response, 130 (39.9%) can be attributed to the students not being involved with teaching. Regarding the second statement, “The library helps me with my research needs”, 23 (7.1%) respondents did not expect the library to assist them with their research needs and 58 (17.8%) were neutral. Two hundred and seventy (83%) of the respondents, either strongly agreed or agreed that the library helps them to advance in their academic field.

4.1.3.2 Users’ perceptions of service quality

Question 5 had 28 statements on service quality. The statements in question 2 referred to user expectations and the statements in question 5 referred to user perceptions. The respondents were asked to rate the statements (on a scale of 1 =strongly agree; 2=agree; 3=neutral;

4=disagree; and 5=strongly disagree) by indicating the number that best described their perceptions of the service quality that the library provides. The statements were divided into four categories and these are illustrated below.

4.1.3.2.1 Access to information

The respondents' perceptions of service quality in this category are reflected in Table 4.13.

Table 4.13: (Question 5.1) Users' perceptions of access to information

N= 326

Statements	Strongly agree		Agree		Neutral		Disagree		Strongly disagree	
	Count	%	Count	%	Count	%	Count	%	Count	%
Website enables location of information	143	43.9	118	36.2	45	13.8	10	3.1	10	3.1
Adequate printed library materials	69	21.2	198	60.7	24	7.4	30	9.2	5	1.5
Adequate printed journal collection	44	13.5	192	58.9	59	18.1	19	5.8	11	3.4
Easy access to electronic database	104	31.9	158	48.5	38	11.7	17	5.2	8	2.5
Electronic journals easily available	107	32.8	131	40.2	35	10.7	42	12.9	10	3.1
Access to Online Public Access Catalogue	201	61.7	60	18.4	43	13.2	12	3.7	10	3.1
An efficient short loan	136	41.7	133	40.8	32	9.8	21	6.4	4	1.2
An efficient interlibrary-loans service	63	19.3	81	24.8	78	23.9	29	8.9	75	23.0

The highest percentage of respondents (44.1%) indicated that they agreed or strongly agreed in terms of their perceptions regarding access to information. The statement with the lowest number of respondents strongly agreeing was "Adequate printed journal collection" with 44 (13.5%) respondents.

Table 4.14: (Question 5.2) Users’ perceptions of library facilities

N =326

Statements	Strongly agree		Agree		Neutral		Disagree		Strongly disagree	
	Count	%	Count	%	Count	%	Count	%	Count	%
Adequate hours of service	235	72.1	48	14.7	25	7.7	12	3.7	6	1.8
Adequate photocopying facilities	48	14.7	125	38.3	122	37.4	19	5.8	12	3.7
Adequate number of computer workstations	36	11.0	25	7.7	188	57.7	53	16.3	24	7.4
Adequate printing facilities	37	11.3	147	45.1	100	30.7	24	7.4	18	5.5
Computers that work well in the library	31	9.5	52	16.0	34	10.4	137	42.0	72	22.1
Library space which inspires study and learning	44	13.5	170	52.1	77	23.6	21	6.4	14	4.3
Quiet and comfortable space for individual activities	208	63.8	44	13.5	47	14.4	11	3.4	16	4.9
Sufficient space for group learning and group study	35	10.7	23	7.1	26	8.0	43	13.2	199	61.0

The respondents did not have high perceptions of the library facilities and the library as place. The only statements with a “Strongly agree” response above 60% were “Adequate hours of service” with 235 (72.1%) followed by the library being a “Quiet and comfortable space for individual activities” with 208 (63.8%). The statements which elicited the most

disagreements (including strongly disagree) were “Sufficient space for group learning and group study” with 242 (74.2%) respondents and “Computers that work well in the library” with 209 (64.1%) respondents.

Table 4.15: (Question 5.3) Users’ perceptions of staff service

N =326

Statements	Strongly agree		Agree		Neutral		Disagree		Strongly disagree	
	Count	%	Count	%	Count	%	Count	%	Count	%
Staff who instil confidence in users	146	44.8	129	39.6	30	9.2	10	3.1	11	3.4
Staff who are willing to help users	139	42.6	151	46.3	15	4.6	12	3.7	9	2.8
Staff who give users individual attention	124	38.0	159	48.8	24	7.4	13	4.0	6	1.8
Staff who deal with users in a caring fashion	73	22.4	200	61.3	32	9.8	15	4.6	6	1.8
Subject librarian who improve user’s research skills	70	21.5	200	61.3	34	10.4	11	3.4	11	3.4
Staff who understand the needs of users	136	41.7	143	43.9	24	7.4	16	4.9	7	2.1
Staff who are knowledgeable to answer users’ questions	82	25.2	195	59.8	25	7.7	16	4.9	8	2.5
Staff who provide users with the information skills needed for work or study	66	20.2	206	63.2	23	7.1	14	4.3	16	4.9

The majority of respondents either agreed or strongly agreed with the statements regarding staff service. The statement with the highest agreement was “Staff who are willing to help

users” with a total of 290 (89%). Only 10 (3.1%) respondents disagreed that staff instil confidence in users and six (1.8%) respondents strongly disagreed that staff deal with users in a caring fashion.

Table 4.16: (Question 5.4) Users’ perceptions regarding research and teaching

N=326

Statements	Strongly agree		Agree		Neutral		Disagree		Strongly disagree	
	Count	%	Count	%	Count	%	Count	%	Count	%
The library helps me with my teaching needs	55	16.9	78	23.9	165	50.6	16	4.9	12	3.7
The library helps me with my research needs	69	21.2	166	50.9	71	21.8	14	4.3	6	1.8
The library helps me to advance in my academic field	93	28.5	164	50.3	50	15.3	12	3.7	7	2.1
The library helps me stay abreast of developments in my field(s) of study	82	25.2	161	49.4	50	15.3	25	7.7	8	2.5

Most of the respondents appeared to have positive perceptions towards the services relating to research and teaching. Half the respondents (165 or 50.6%), however, were neutral in terms of the library helping them with their teaching needs. As mentioned above, this was due to the majority of the respondents being students.

4.1.4 Users' comments about MUT-NS Library services

The six open-ended questions used in the questionnaire provided qualitative data. The questions were arranged to give respondents the opportunity to voice their views about the nature of the library services.

Question 1.6 asked for reasons if the respondent indicated that he/she had never used the library resources. No respondents answered this question. Questions 3, 4, 6, 7, and 10 asked the respondents to add any comments about the services listed or add comments about any further services they expected from the library. A total of 171 comments resulted from the open-ended questions. Of the 89 academic staff, 21 (23.6%) provided comments. Only four (2.4%) of the 164 postgraduate students responded to the comments and 39 (12.3%) of the 318 undergraduate students added comments.

Table 4.17a below shows the total number of comments out of 171; the most (89 or 52.0%) were offered by the undergraduate students.

Table 4.17a: Summary of respondents' comments by user category

User category	No. of comments	Percentage
Academic staff	67	39.0
Postgraduate students	15	9.0
Undergraduate students	89	52.0
Total	171	100

Tables 4.17b to 4.17f illustrate respondents' comments and suggestions grouped according to the broad categories of services under investigation. Table 18e is a new category, namely, Library collection and was created by the researcher because the respondents included it in their comments and suggestions. Where appropriate, the tables are split into two categories – the first reflecting negative comments and the second, comments of a more positive nature.

Table 4.17b: Respondents' comments on access to information

Description: Access to information	No. of respondents
Internet problems	17
Problems associated with opening hours	6
Electronic databases need to be made easily available	2
Problems with remote access	2
“Allow interlibrary-loans to get the appropriate information”	1
“I am currently not studying since working”	1
“In case I need some information from literature I normally depend on Internet from my office desktop as normally little information I may need from outside sources currently because study notes are there for my work”	1
“Bring back amnesty week please”!	1
“It’s me who really does not have time to use the library optimally”	1
“I need to access postgraduate labs, reading labs and research commons”	1
“I have never used the library for the whole year because of work and only attending on Saturdays and there is no time to go to the library even though they are opened on Saturdays and Sundays”	1
“I’ve never used the library for the past two years because of work and only attending Saturdays. Time was not on my favour. Plus our professor provided everything (reading materials) for us”	1
TOTAL	35

The two most mentioned responses concerned the poor Internet connection (17) and the problems associated with opening hours (6).

Table 4.17c: Respondents' comments on library facilities

Description: Library facilities	No. of respondents
Issues to do with computers (e.g. not enough in the library, those which are there are too slow and outdated)	29
Improvement of library facilities. “I personally think the library should provide quiet study places maybe by installing a soundproof area separating the library reception and study area because sometimes there is noise near study stations.”	10
Discussion rooms needed for group learning	9
More Internet labs with up-to-date computers, presently too slow, has virus	6
Need for printing facilities	4
“Video library needed with new resources”	1
“Current awareness about the library to be improved”	1
“I think we should have postgraduate labs in Natural Sciences Library and reading labs for academics/ research space to avoid going to main campus every time”	1
“They should have statistical package analysis and other tools that are research friendly”	1
“There are teaching resources but not always up to date if more could be procured it would help”	1
“Access to DSTV in faculty of Natural Sciences Building virtual library and lecture rooms”.	1
“Suggest they review their filing system”	1
TOTAL	56

The majority of comments for this section were concerned with issues to do with computers such as the need for new computers and the poorness of the Internet connection. The need for discussion rooms was also mentioned. Ten of the responses concerned the improvement of library facilities generally.

Table 4.17d: Respondents' comments on staff services

Description: Staff services (Negative)	No. of respondents
Staff need to be professional in doing their job	12
Fines for late books discourages library use	2
Library orientation/ induction for students and staff	2
How about playing the middleman between staff and book companies if staff wants to buy books for period use?	1
Training for student assistants needed	1
If the subject librarian is on leave we tend to experience difficulties	1
Control of noise. Even though it is not a service, it's a means of control	2
Subject librarian can help with location of appropriate literature material	1
TOTAL	22
Description: Staff services (Positive)	No. of respondents
Research skills with regard to practical work have to be handled by the individual. Library staff has nothing to do with this.	1
Staff are helpful and provide efficient assistance	2
I found my library service staff very helpful and efficient assistance.	2
TOTAL	5

In this section the highest number of comments focused on the need for staff to be professional in doing their job – 22 respondents mentioned this need.

Table 4.17e: Respondents' comments on library collection

Description: Library collection (Negative)	No. of respondents
Library to provide more updated and relevant books	17
Library needs to provide latest journals and they are few	8
"I need access to South African National standards (SANS) and International Standards Organisation (ISO)"	1
"Skills in terms of literature acquisition"	1
"Some books cannot be located where system has them allocated"	1
TOTAL	28
Description: Library collection (Positive)	No. of respondents
Even if the material that one is looking for is not available in the library they organise it from other universities (inter-library loans)	2
TOTAL	2

The highest number of respondents (17) commented on the need for more relevant and up-to-date books. A little fewer than half that number (eight) expressed a need for more of the latest journals.

Table 4.17f: Respondents’ comments on library as place

Description: Library as place (Negative)	No. of respondents
Extend the library as it is too small for the number of students	10
Need for a better Internet lab	4
“A library that contributes to capacity building of staff with respect to searching of information”	1
“Short-loans should be increased – the length of loan hour is not enough”	1
“Air-condition should be beneficial to all because it is very cold and the coldness makes you lose concentration”	1
TOTAL	17
Description: Library as place (Positive)	No. of respondents
“Library provides a good service to students”	1
“With the library available, I can do my research at any time with all the materials in”	1
TOTAL	2

The issue which had the highest number of comments was the need to extend the size of the library – mentioned by 10 respondents. This was followed by four respondents who pointed to the need for a revamped Internet lab.

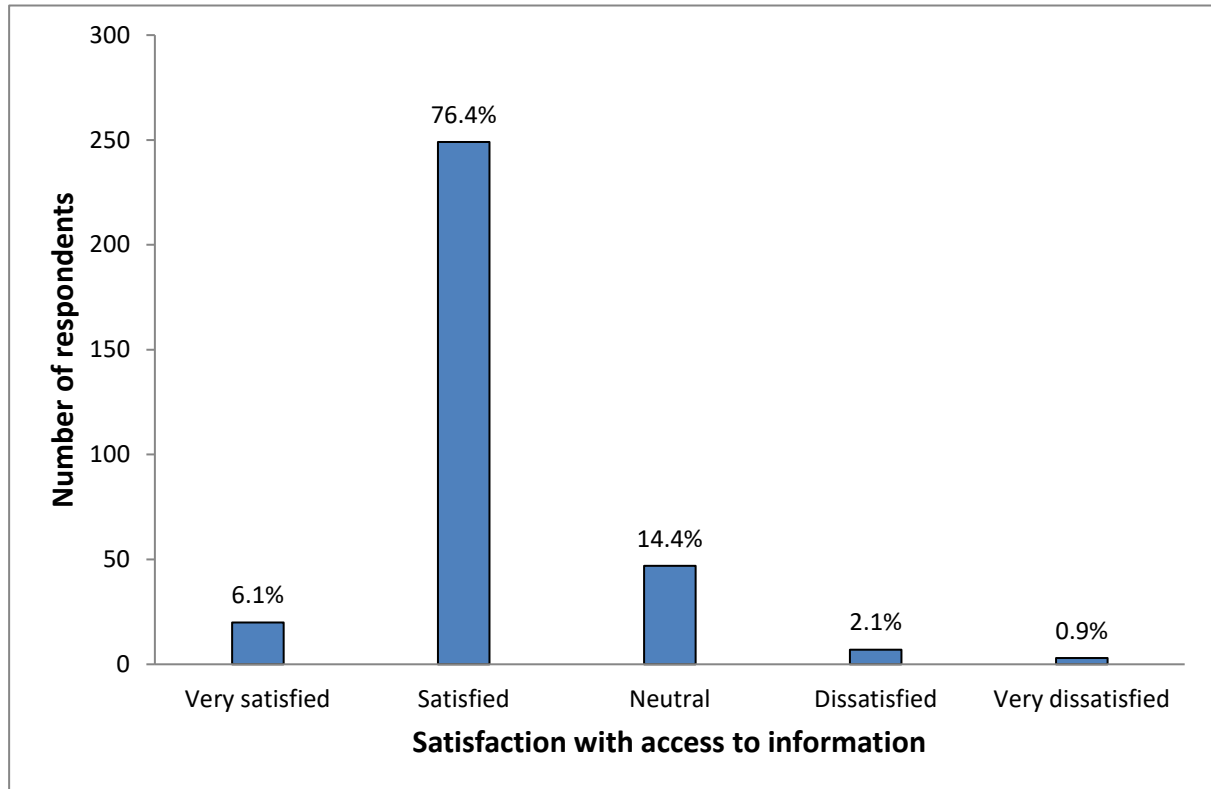
4.1.5 Level of user satisfaction

This section had four closed questions which investigated the users’ satisfaction with access to information, library facilities, staff services and overall quality of library services. In questions 8.1 to 8.3, respondents were asked to indicate their level of satisfaction and question 9 asked respondents to rate the overall quality of the services offered by the MUT-NS library. The figures show the number of respondents and the percentages next to them. Each figure is followed by a table which indicates the level of user satisfaction by user category.

4.1.5.1 Satisfaction with access to information

Figure 4.1: Satisfaction with access to information

N= 326



Most respondents, 249 (76.4%) were satisfied with access to information; 47 (14.4%) were neutral which means they were undecided regarding their satisfaction with access to information. Only 10 (3%) of the respondents expressed some level of dissatisfaction with the access to information. Table 4.18 below further illustrates users' satisfaction with access to information by user category.

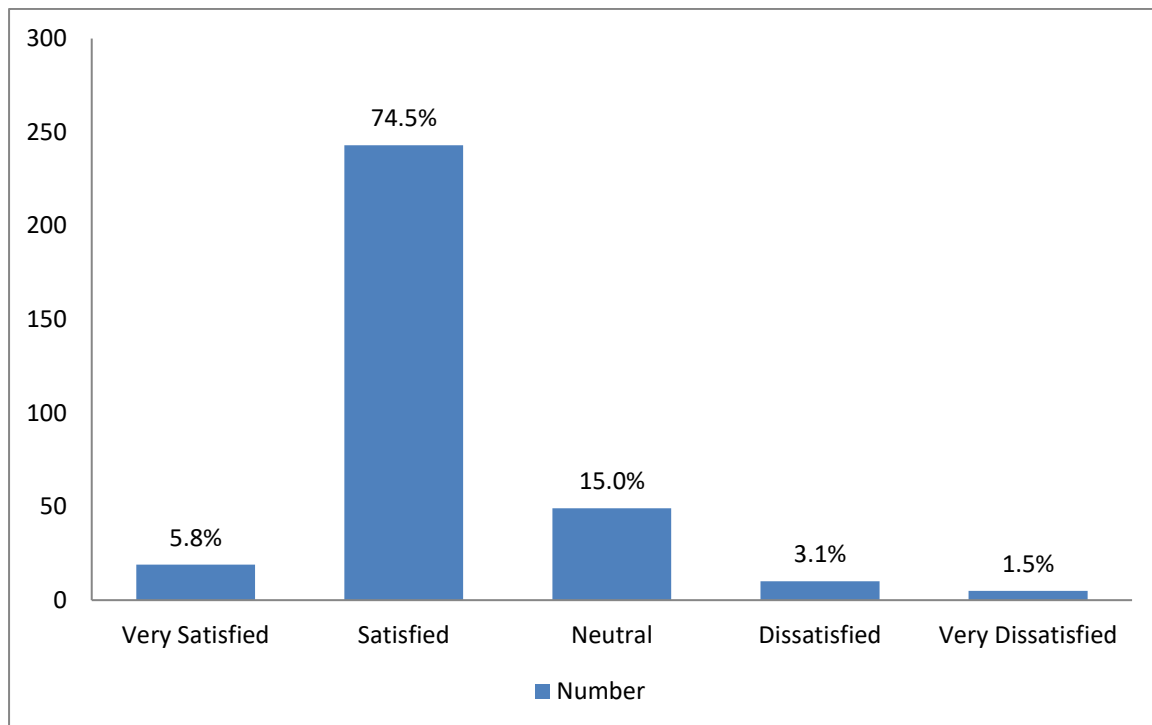
Table 4.18: (Question 8.1) Satisfaction with access to information by user category

Description	Academic Staff		Postgraduate		Undergraduate		Total	
	Count	%	Count	%	Count	%	Count	%
Very satisfied	5	6.8	0	0	15	8.1	20	6.1
Satisfied	59	80.8	63	94.0	127	68.3	249	76.4
Neutral	7	9.6	4	6.0	36	19.3	47	14.4
Dissatisfied	2	2.7	0	0	5	2.7	7	2.1
Very dissatisfied	0	0	0	0	3	1.6	3	0.9
Total	73	99.9	67	100	186	100	326	100

Generally, all the groups expressed satisfaction regarding access to information. The undergraduate students however, had the smallest percentage (68.3%) who was satisfied and the highest percentage (19.3%) that was neutral.

4.1.5.2 Satisfaction with library facilities

Figure 4.2: Satisfaction with library facilities



A majority of respondents, 243 (74.5%) were satisfied with library facilities. Again, only a small percentage (4.6%) were dissatisfied (including very dissatisfied) with the facilities. Also again, a fairly large number 49 (15%) were neutral. Table 20 shows user satisfaction with the library facilities by user category.

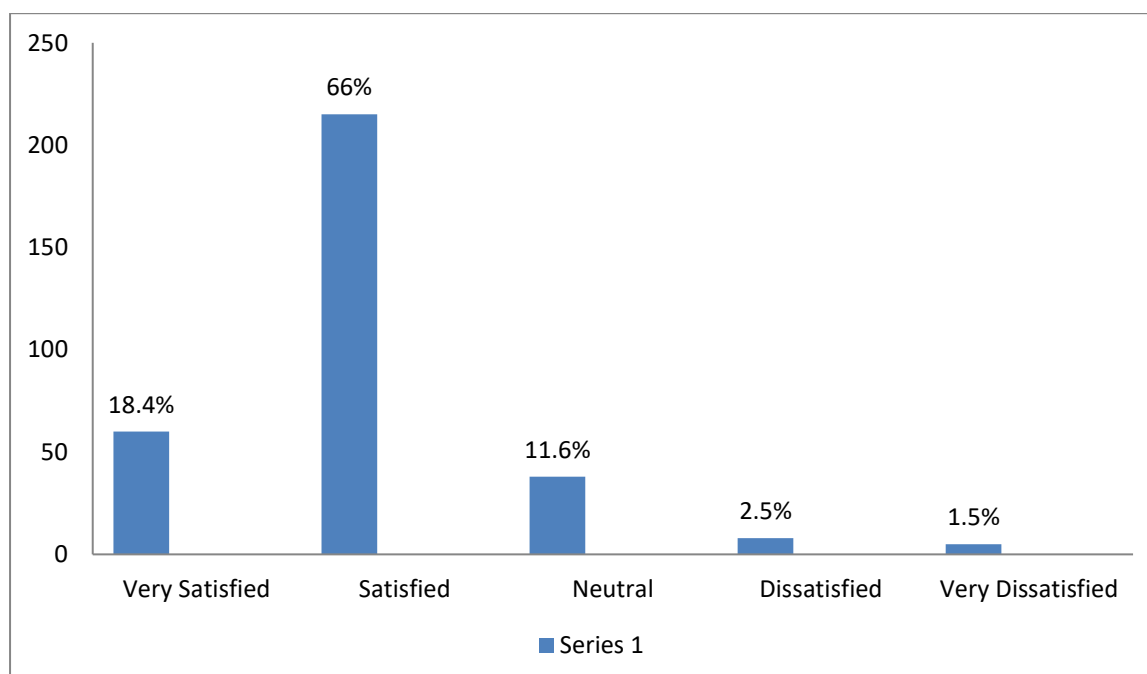
Table 4.19: (Question 8.2) Satisfaction with library facilities by user categories

Description	Academic staff		Postgraduate		Undergraduate		Total	
	Count	%	Count	%	Count	%	Count	%
Very satisfied	7	9.6	0	0	12	6.5	19	5.8
Satisfied	54	74	63	94	126	67.7	243	74.5
Neutral	9	12.3	2	3	38	20.4	49	15
Dissatisfied	3	4.1	2	3	5	2.7	10	3
Very dissatisfied	0	0	0	0	5	2.7	5	1.5
Total	73	100	67	100	186	100	326	

Findings here are similar to those in Table 4.18 above, namely, a general satisfaction with library facilities across user groups but the percentages were higher amongst staff and postgraduate students (74% and 94% respectively) as opposed to the 67.7% amongst undergraduates. Again, the number of undergraduates (38 or 20.4%) remaining neutral was relatively high.

4.1.5.3 Satisfaction with staff services

Figure 4.3: Satisfaction with staff services



A substantial majority of respondents (84.4%) were either very satisfied (18.4%) or satisfied (66%) with staff services. The level of dissatisfaction was again low (4%). Table 4.20 illustrates users' satisfaction with staff services by user category.

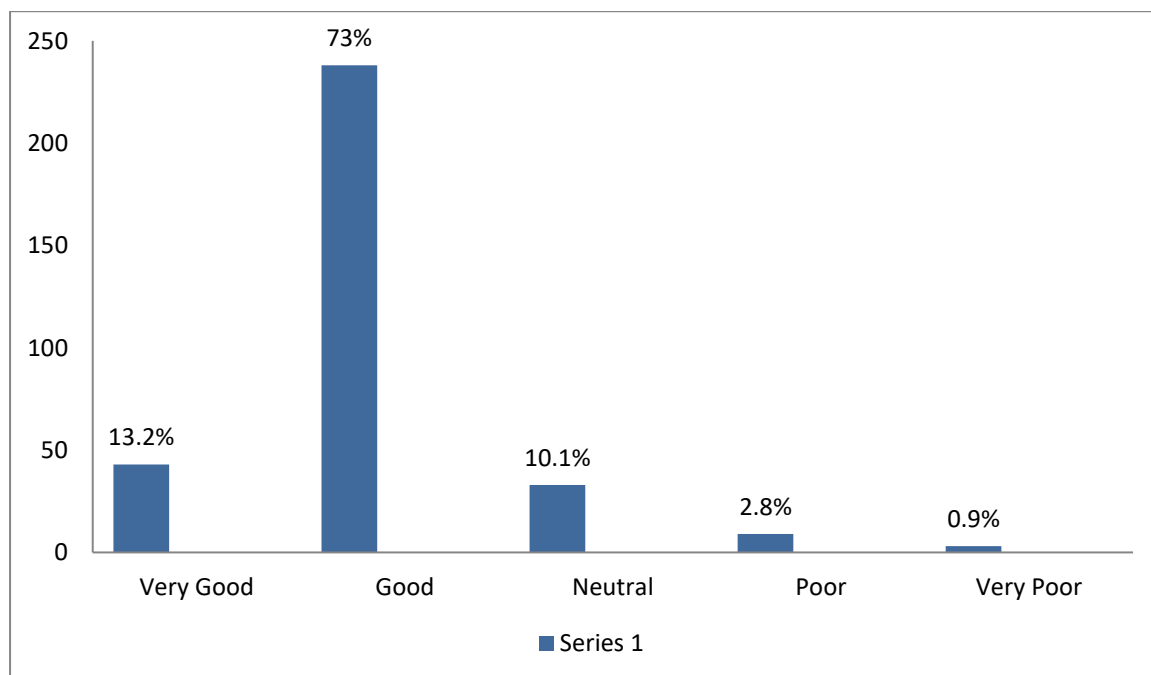
Table 4.20: (Question 8.3) Satisfaction with staff services

Description	Academic staff		Postgraduate		Undergraduate		Total	
	Count	%	Count	%	Count	%	Count	%
Very satisfied	21	28.8	0	0	39	21	60	18.4
Satisfied	45	61.6	63	94	107	57.5	215	66
Neutral	7	9.6	4	6.0	27	14.5	38	11.6
Dissatisfied	0	0	0	0	8	4.3	8	2.5
Very dissatisfied	0	0	0	0	5	2.7	5	1.5
Total	73	100	67	100	186	100	326	100

Nearly a third of the academic staff (21 or 28.8%) were very satisfied with staff services and none were dissatisfied. The only user group to express dissatisfaction was the undergraduates but again this was a small proportion (13 or 7%) in total.

4.1.5.4 Satisfaction with overall quality of library services

Figure 4.4: Satisfaction with overall quality of library services



The graph in Figure 4.4 shows that 238 (73%) respondents indicated that the overall quality of the services provided by the library was good. Forty-three (13.2%) regarded the quality as very good. Only nine (2.8%) respondents rated the overall quality as poor and three (0.9%) as very poor. Table 4.21 shows the overall quality of the services provided by the library by user category.

Table 4.21: (Question 9) Overall quality of the services provided by the library by user category

Description	Academic staff		Postgraduate		Undergraduate		Total	
	Count	%	Count	%	Count	%	Count	%
Very Good	27	37.1	1	1.5	15	8.1	43	13.2
Good	41	56.1	62	92.5	135	72.6	238	73
Neutral	5	6.8	1	1.5	27	14.5	33	10.1
Poor	0	0	3	4.5	6	3.2	9	2.8
Very Poor	0	0	0	0	3	1.6	3	0.9
Total	73	100	67	100	186	100	326	100

As with the previous results, the clear majority of respondents across all user categories were positive about the quality of services provided by the library. Negative views were again in the minority and came from the two student groups – six (4.5%) postgraduates and 12 (4.8%) undergraduates rating service quality as either poor or very poor.

4.2 The gap between users' expectations and perceptions

The aim of the study was to establish the gap between users' expectations and perceptions of service quality at the Natural Sciences Library and thereafter to identify the strengths and weaknesses of the existing library services. According to Ladhari and Morales (2008, in Naidu 2009) for each item, a so-called "gap score" is calculated as the difference between the raw "expectations score" and the raw "perceptions score".

In this section, users' expectations and perceptions of service quality are numerically reported. This study used the method adopted in Bhim's (2010) study at the Bessie Head Library. This is a simplified method of measuring the gap in comparison to other studies, for example, Naidu (2009) and Simba (2006).

The positive and negative responses, namely, “strongly agree” and “agree”, and “strongly disagree” and “disagree”, were combined to form one positive (agree) and one negative (disagree) response. In order to determine the difference in total between the expectations and perceptions categories, the “agree” total of perceptions was subtracted from the “agree” total of expectations. In the Difference column under the “Agree” heading, the larger the number, the bigger the gap. According to Bhim (2010, 73) the reason for this method is to enable easier tabulation, comparison and clarity. Under the “Neutral” and “Disagree” headings, the smaller the number, the smaller the gap. Also reflected under “Agree” is the percentage of the gap calculated by taking the gap difference and dividing it by the total “Agree” for expectations and perceptions and expressing the result as a percentage.

Table 4.22: The gap between users’ expectations and perceptions for access to information

N= 326

Access to information	Expectations			Perceptions			Difference		
	Agree	Neutral	Disagree	Agree	Neutral	Disagree	Agree	Neutral	Disagree
Website enables location of information	290	14	22	261	45	20	29 (5.3%)	-31	2
Adequate printed library materials	289	16	21	267	24	35	22 (3.9%)	-8	-14
Adequate print journal collection	277	26	23	236	59	30	41 (8.1%)	-33	-7
Easy access to electronic database	295	12	19	262	38	25	33 (5.9%)	-26	-6
Electronic journals that are easily accessible	292	12	22	238	35	52	54 (10.2%)	-23	-30
Access to OPAC	294	15	17	261	43	22	33 (5.9%)	-28	-5
An efficient reserve service	291	15	20	269	32	25	22 (3.9%)	-7	-5
Timeous interlibrary-loans	261	16	49	144	78	104	117 (28.9%)	-62	-55
Total	2289	126	193	1938	354	313	351	-218	-120

The results for access to information indicated that overall the respondents' expectations were higher than their perceptions. For the response category "Agree" as reflected in the above table, respondents' expectations exceeded their perceptions in all instances.

Services that have a relatively large gap difference between agree for expectations and perceptions for access to information were:

- Timeous inter-library loans, 117 (28.9%);
- Electronic journals that are easily accessible, 54 (10.2%); and
- Adequate print journal collection, 41 (8%).

Table 4.23: The gap between users' expectations and perceptions for library facilities and library as a place

N = 326

Library Facilities	Expectations			Perceptions			Difference		
	Agree	Neutral	Disagree	Agree	Neutral	Disagree	Agree	Neutral	Disagree
Adequate hours of service	295	14	17	283	25	18	12 2.1%	-11	-1
Adequate photocopying facilities	270	38	18	173	122	31	97 21.9%	-84	-13
Adequate number of computer workstations	261	27	38	61	188	77	200 62.1%	-161	-39
Adequate printing facilities	268	37	21	184	100	42	84 18.6%	-63	-21
Computers that work well in the library	251	15	60	83	34	209	168 50.3%	-68	-149
Library space inspires study and learning	290	16	20	214	77	35	76 15%	-61	-15
Quiet and comfortable space for individual activities	300	8	18	252	47	27	48 8.7%	-39	-9
Sufficient space for group learning & study	247	7	72	58	26	242	189 62%	-19	-170
Total	2182	162	264	1308	619	681	874	-506	-417

The results for library facilities and library as a place indicated that overall respondents' expectations were higher than their perceptions. Facilities that have a large gap difference between agree for expectations and perceptions for library facilities and library as place were:

- Adequate number of computer workstations, 200 (62.1%);
- Adequate printing facilities, 200 (62.1%);
- Sufficient space for group learning and group study, 189 (62%);
- Computers that work well in the library, 168 (50.1%); and
- Adequate photocopying facilities, 97 (21.9%).

Facilities that have a relatively smaller gap included:

- Adequate printing facilities, 84 (18.6%);
- Library space inspires study and learning, 76 (15%);
- Quiet and comfortable space for individual activities, 48 (8.7%); and
- Adequate hours of service, 12 (2.1%).

Table 4.24: The gap between users' expectations and perceptions for staff services

Staff service Statements	Expectations			Perceptions			Difference		
	Agree	Neutral	Disagree	Agree	Neutral	Disagree	Agree	Neutral	Disagree
Staff who instil confidence in users	293	14	19	275	30	21	18 3.2%	-16	-2
Staff who are willing to help users	300	10	16	290	15	21	10 1.7%	-5	-5
Staff who gives users individual attention	289	23	14	283	24	19	6 1%	-1	-5
Staff who deal with users in a caring fashion	270	30	25	273	32	21	-3 -0.5%	-2	4
Subject librarian who improve users' research skills	295	11	20	270	34	22	25 4.4%	-23	-2
Staff who understand the needs of users	297	12	17	279	24	23	18 3.1%	-12	-6
Staff who are knowledgeable to answer users' questions	275	30	21	277	25	24	-2 -0.4%	5	-3
Staff who provide users with the information skills needed for work or study	291	11	24	272	23	30	19 3.4%	-12	-6
Total	2310	141	156	2219	207	181	91	-66	-25

As can be seen from the table above, the gaps relating to the different aspects of staff services were generally small – less than five percent. Interestingly for two categories, namely, “Staff

who are knowledgeable to answer users’ questions” and “Staff who deal with users in a caring fashion”, perceptions exceeded expectations.

Table 4.25: The gap between users’ expectations and perceptions for research and teaching

Research and teaching	Expectations			Perceptions			Difference		
	Agree	Neutral	Disagree	Agree	Neutral	Disagree	Agree	Neutral	Disagree
The library helps me with my teaching needs	174	130	22	133	165	28	41 13.3%	-35	-6
The library helps me with my research needs	245	58	23	235	71	20	10 2.1%	-13	3
The library helps me to advance in my academic field	270	36	20	257	50	19	13 2.5%	-14	1
The library helps me stay abreast of developments in my field of study	248	48	30	243	50	33	5 1%	-2	-3
Total	937	272	95	868	336	100	69	-64	-5

The results for research and teaching indicated that overall respondents’ expectations were again higher than their perceptions. For the response category “Agree” as reflected in the above table, respondents’ expectations exceeded their perceptions in all instances.

The only aspect which reflected a gap of more than 15 was “The library helps me with my teaching needs” with the difference in terms of agreeing being 41 (13:4%).

In all service categories, the vast majority of perceptions exceeded the expectations for the response category “Disagree” as reflected in Tables 24 – Table 26, thus leading to negative scores. This means that the respondents’ expectations of the services were not met.

4.3 Summary

In this chapter, the results and validation for each section of the questionnaire were presented and the results of the survey clearly tabulated. Further descriptions were provided below each table or graph.

The research results pertaining to the following areas were presented:

- Library usage patterns;
- Users' expectations and perceptions of service quality;
- Users' comments about MUT-NS Library services;
- Level of user-satisfaction; and
- Gap between users' expectations and perceptions.

The interpretation and discussion of these results can be found in Chapter 5 which follows.

Chapter 5

DISCUSSION OF THE RESULTS

This chapter discusses the findings of the study in light of the research problem, key questions asked and the reviewed literature. The purpose of the study was to determine users' perceptions of the quality of library service they receive at the Mangosuthu University of Technology Natural Sciences Library (MUT-NSL) and their level of satisfaction regarding service delivery. The key questions of the study were:

- What are the perceptions of users regarding the quality of the MUT-NSL service?
- Are users satisfied with the service they receive?
- What are the users' expectations of the MUT-NSL service?
- What are the gaps between user expectations and user perceptions?
- What recommendations can be made based on the findings of the study?

This chapter discusses the information collated from the self-administered questionnaire that was presented in the previous chapter. The different library services which encompassed the majority of services were grouped into five categories. These categories refer to access to information, library as place, library facilities, staff services and research and teaching needs. In each category, the services are discussed in the light of the first three key questions asked. The gap between users' expectations and users' perceptions of service quality is then discussed. According to Simba (2006, 93), the gap is considered significant if the difference is greater than 25% and insignificant if it is less than 25%. The level of satisfaction is also an important component of this study and the results pertaining to this will be discussed. The significance of the data collection instrument used in this study is also commented on. The discussion below is based on the results the researcher considered significant.

5.1 Demographic profile of respondents

This section outlines the profile of the respondents with regard to their demographic attributes, namely gender, age and academic department they were associated with.

5.1.1 Gender, age and department

A small majority of respondents, 167 (51.2%) were female and 159 (48.8%) were male. The largest group of respondents in terms of age were those respondents between the ages of 21-

30 years old, numbering 199 (61%) and the smallest group were in the range of 31- 40 years with 29 (8.9%) respondents. The largest user category was 186 (57.1%) undergraduates and the department with the highest majority number of respondents was the Chemistry Department, with 61 (18.7%).

5.2 Library usage patterns

This section discusses the findings related to the usage frequency of library resources, computer catalogue and the Internet.

5.2.1 Frequency of use of library resources

The library at all higher education institutions needs to provide quality resources to its users so that their information needs will be satisfied. Naidu (2009, 5) agreed that “the library is the heart of the institution and it needs to provide excellent resources for its current users and prospective users.” In general, most respondents in the study had knowledge of the various resources in the library but there were variations in terms of how often such resources were used.

The low frequency of usage of library resources by postgraduate students 67 (20.6%) can possibly be explained by the fact that they are, in the main, working and studying part-time. This means that they are not on campus during the week and only attend classes on the weekends or by block sessions.

The largest number of respondents, 143 (43.9%) indicated that they used the library resources on a weekly basis and this was followed by 79 (24.2%) who indicated that they used the library resources on a daily basis. It is interesting to note that only nine (2.8%) respondents indicated that they never used the library resources.

These results suggest that the clear majority of respondents were familiar with the library and its resources and were thus able to respond to the questions posed on an informed basis.

5.2.2 Frequency of use of computer catalogue (i-Link) and use of Internet

A significant number of respondents (274 or 84%) used the library catalogue to search for books and 220 (67.5%) used the Internet daily. Forty-nine (15%) respondents never used the library catalogue to search for books and only two (.9%) respondents never used the Internet to search for information. This illustrates the popularity of the Internet as a source of information to the respondents.

5.3 Staff services

“The new wisdom has become: only customers judge quality” (Nixon 2008, 22). Libraries are judged through the services they give to their users and they are judged by the users. According to Naidu (2009, 135), an academic library needs staff that are passionate about customer care, who are loyal, and dedicated to their users. Bhim (2010, 84) agreed, stating that libraries need staff that are committed to their professions and dedicated to providing a service that will meet the needs of users who frequent the library. Thus, it is important for staff to be committed and willing to give of their time in assisting the users.

5.3.1 Discussion of closed questions relating to staff services

The closed questions focused on the attention staff gave to users, staff who are willing to help users, subject librarians who improve users’ research skills, and staff who understand the needs of the users. The results of the survey showed that respondents had high expectations concerning certain staff services. The substantial majority of respondents, 300 (92%) agreed that they expected staff to be willing to help users, a similar majority of 297 (91.1%) expected staff to understand the needs of the users and, finally, 295 (90.4%) expected subject librarians to improve users’ research skills.

However, respondents’ perceptions regarding staff services were lower for all the services in this category. For example, 290 (88.9%) respondents perceived that staff are willing to help users; 283 (86.8%) agreed that staff gives users individual attention; and 279 (85.5%) respondents perceived that staff understand the needs of users.

5.3.2 Gap differences on staff services

The study showed that the users of MUT-NS Library had high expectations of the staff services provided by the library while their actual perceptions of those staff services were, across the board, lower. However, the gap between expectations and perceptions in all instances in this category was not significant – in all instances, the gap was small (less than five percent).

The services with the biggest (but still small) percentage gap were: subject librarians who improve users’ research skills (25 or 4.4%), staff who provide users with the information skills needed for work or study (19 or 3.4%), staff who instil confidence to help users (18 or 3.2%) and staff who understand the needs of users (18 or 3.2%). Thus, in terms of staff services, users’ perceptions did not differ markedly from their expectations.

The MUT-NS Library has one professional librarian, one professional technician, one stack attendant, one person who mans the front counter and one evening supervisor for student assistants. There is no professional librarian on duty in the library in the evenings to assist students and staff and this could be a factor contributing to the higher scores in instances which required the expertise of a professional librarian. For example, improving users' research skills and providing users with information skills needed for their work or studies would both be the domain of a professional or qualified librarian.

5.3.3 Discussion of results of open question on staff services

There were only 26 (15.2%) respondents who commented on the open question regarding this category of service. The key issues which the respondents raised were related to the staff needing to be professional in doing their job, commitment of staff, a need for professional staff, and the need for staff to be friendly and helpful. In general, all the issues raised were related to people who were not doing their job properly. Crowley and Gilreath (2002) in Bhim (2010, 85) stated that the attitude of library staff in terms of friendliness, helpfulness and willingness to assist were critical in satisfying users' needs. The comments from MUT-NS Library were similar those of the MUT Main Library. Naidu (2009: 162) explained that the comments from the latter library included: "Staff needs to be friendly and welcoming and staff to be approachable when students seek help".

Similarly, in her study of the Bessie Head Library, Bhim (2010) explained that the comments from users reflected the need for courteousness, professional and approachable staff. The comments relating to staff services in MUT-NS Library clearly showed the manner in which staff should treat the user. For example, one of the respondents commented that "the staff should pay more attention to their work and give good service to the users of the library".

5.4 Access to information

Access to information for this study refers to a library website which enables location of information, adequate printed library materials, an adequate print journal collection, easy access to electronic database, electronic journals that are easily accessible, access to OPAC, an efficient reserve service and timeous interlibrary-loans.

The purpose of academic libraries is to support the teaching, learning and research needs of their users. This purpose cannot be fulfilled if the resources and information required are not accessible to users. Naidu (2009, 164) stated that the library collection plays a vital role in

support of the institution's mission and vision. Gill (2000, 7) pointed out that "libraries are made up of collections of information and cultural materials in a variety of formats including access to the resources of other libraries." Therefore, it is very important for the library to manage its collections properly. Naidu (2009, 164) explained that a balanced library collection plays a significant role in terms of service quality in an academic library.

Nitecki and Herson (2000, 259) looked at the elusive concept "quality", in terms of collection size, titles held and breadth of subject coverage, while Majid, Anwar and Eisenschitz (2001) (in Naidu 2009, 139) indicated that factors such as size, relevance and currency of collections can also be used measuring the effectiveness of a library. According to Bhim (2010, 86-87) concepts of quality and effectiveness are interrelated and quality plays a significant role in determining whether an effective service is provided or not. As is pointed out in 5.4.3 below, a number of respondents in this study showed concern about the outdated books in the library.

5.4.1 Discussion of closed questions relating to access to information

As with staff services above, the clear majority of respondents had high expectations regarding the various statements comprising access to information. Many respondents (295 or 90.5%) indicated that they expected easy access to electronic database, and slightly less (294 or 90.2%) access to the OPAC. The other categories making up access to information elicited similar responses. The statement with the highest number of respondents expressing disagreement was timeous interlibrary-loans with (49 or 15%) respondents doing so.

As with staff services, perceptions regarding access to information were all lower than expectations. The statements with a high number regarding perceptions of the users were an efficient reserve service with 269 (82.5%) and adequate printed library materials with (267 or 82%). The statement with lowest perception rating was timeous interlibrary-loans with (144 or 44.1%).

5.4.2 Gap difference on access to information

A significant gap difference (more than 25%) between users' expectations and perceptions of service quality in this category was for timeous interlibrary loan (117 or 28.9%). Electronic journals that are easily accessible reflected the second highest gap with (54 or 10.2%). The services that indicated a small gap of under five percent were adequate printed library materials (22 or 3.9%) and an efficient reserve service (22 or 4.1%).

5.4.3 Discussion of open questions relating to access to information

A total of 19 responses for comments on access to information were received. There was a wide variety of responses and the two most frequently mentioned responses by three (15.8%) respondents were Internet problems on the one hand and problems associated with opening hours on the other. Remote access and making the electronic databases available were each mentioned by two respondents. All other responses (9) were mentioned by one respondent each including a plea by an undergraduate student to be allowed to use the interlibrary-loans facility.

In the 31 responses for comments on library collection, most respondents commented about the out-of-date books and/ or lack of relevant books. One of the main reasons for the inadequate book collection is a financial one. An insufficient budget for the purchase of new books has characterised the situation over the last few years. It does appear that university management is now considering the issue based on an auditors' report which mentioned the issue of outdated books in the library. It is evident that issues related to the collection need to be addressed by the MUT-NS Library.

Convey (2000, 156) in Naidu (2009, 148) mentioned that “the library is a marketplace penetrated by technology and free and easy access to information on the web serves great purposes for higher education”. Access to information is one of the contributing factors for users to be satisfied with the services in this category, so the reliable access to Internet for online journals and databases was needed.

5.5 Library as place

On the questionnaire “library as place” includes both the library environment as well as library facilities. In order to accommodate the amount of discussion which was elicited by this category, this discussion will present each separately starting with the library environment of “library as place”. Ladhari and Morales (2008) in Naidu (2009, 168) mentioned that “library as place” considers “how well a library meets the individual needs of users who research and study on site”.

5.5.1 Discussion of the results of the closed questions on library as a place

The statements in the category of library as place refers to a library environment which inspires studying and learning, a quiet and comfortable space for individual activities, sufficient space for group learning and group study, and adequate hours of service.

The views expressed by the respondents in connection to library as a place revealed that 295 (90.4%) respondents expected adequate hours of service while 283 (86.8%) respondents perceived the library as currently providing adequate hours. The library as a space which inspires study and learning had 290 (88.9%) respondents expecting this and a smaller number 214 (65.6%) agreeing that this was indeed the case. This latter perception is surprising given that the MUT-NS Library only has a small space for seating which would impact on studying and learning.

Three hundred (92%) respondents expected the library to be a quiet and comfortable space for individual activities, while again, a smaller number 252 (77.3%) of respondents perceived the library being like this. As expected, the expectations for all the statements in this category were higher than the perceptions.

5.5.2 Discussion of the results of open questions on library as a place

A total of 35 responses were received for this category. It is not surprising that a little under a third of the comments (10) related to the inadequate seating space in the library. The library only accommodates 90 students whereas there are 1 854 registered students in the Faculty of Natural Science which puts seating at a premium. Most concerns of the respondents regarding the space were based on the time during which tests and examinations were conducted – a period when seating space for study purposes is in high demand.

The comments of the respondents in this category showed that the library management together with the university management need to do something about the space shortage in the library.

5.5.3 Gap difference on library as a place

As with the other categories, the respondents' expectations were higher than their perceptions regarding the library as place category. The gap in terms of adequate hours of service was 12 (2.1%); 48 (8.6%) for a quiet and comfortable space for individual activities; and 76 (15.1%) for a library space that inspires study and learning. The biggest gap was on sufficient space for group learning and group study (189 or 61.9%). This is not surprising because at the MUT-NS Library there are no group discussion rooms and, as emphasised above, there is insufficient seating space.

The size of the library, which is housed on one floor, is clearly problematic. Three of the respondents summed up the situation when they commented that “size of the library seems to be a challenge therefore some facilities to satisfy the users might be a challenge”.

5.6 Library facilities

Library facilities play a critical role in satisfying user’s needs. Library users expect to find relevant information resources and they also expect good facilities. According to Bhim (2010, 107), the absence of good facilities would be an indication of a library that is not adequately equipped to assist users with their relevant needs.

5.6.1 Discussion of the closed questions on library facilities

In this study library facilities referred to the adequate opening hours, adequate photocopying facilities, an adequate number of computer workstations, adequate printing facilities and computers that work well in the library. “The provision of sufficient and reliable equipment should facilitate easy and efficient access to information” (Bhim 2010, 107). The facilities mentioned above were expected to be available and in good working order so as to accommodate users at the MUT-NS Library.

Only 270 (82.8%) respondents expected adequate photocopying facilities, 261 (80%) indicated that they expected an adequate number of computer workstations, 268 (82.2%) expected adequate printing facilities and 251 (76.9%) expected computers that work well in the library. Respondents’ expectations once again exceeded their perceptions regarding library facilities.

5.6.2 Discussion of the results of open questions on library facilities

Library facilities play an important role in meeting users’ expectations. This category received 71 responses which is the largest number of comments when compared with other categories.

Most comments in this category were on the need for new computers, poorness of the Internet connection and the printing facilities. This is evident from the comments made by respondents; eight, for example, stated “new computers must be added to the computer lab” and “Internet is always down”. Similar comments were also made in Naidu’s study of the MUT Main Library where 200 (61.3%) respondents commented about the inadequate number of computer workstations and 168 (51.5%) on computers that work well in the library.

5.6.3 Gap difference on library facilities

Facilities that had a large gap difference were adequate number of computer workstations (200 or 62.1%), sufficient space for group learning and group study (189 or 62%) and computers that work well in the library (168 or 56.6%).

The gaps indicate that the library has not met the needs of all the respondents in terms of providing sufficient and well-maintained library facilities.

5.7 Services pertaining to research and teaching

The mission statement of MUT Library is to provide access in support of the teaching, learning and research needs of students and staff of the University as well as the broader community (MUT website, 2015). The MUT-NS Library as a branch of the Main Campus Library plays an integral role in fulfilling the research and teaching needs of users at the University. This is related to the comment made by Begum (2003) that “the primary purpose of the academic library is to support the teaching, research and other academic programmes of its parent organisation”.

5.7.1 Discussion of closed questions on research and teaching

The results showed that the respondents had high expectations of the services in this category: 171 (52.4%) claimed they expected the library to help with their research needs and 163 (50%) agreed that they expected the library to help them to advance in their academic field.

The highest perceptions of the services in this category were the “library helps me to advance in my academic field” with 93 (28.5%) and the “library helps me stay abreast of developments in my field(s) of study, 82 (25.2%).

5.7.2 Discussion of open-ended questions relating to research and teaching

There were no comments related to this category.

5.7.3 Gap difference relating to research and teaching

In this category, the study showed that there were relatively small gaps: “the library helps me with my teaching needs” (41 or 12.6%) and “the library helps me to advance in my academic field” (13 or 4.1%).

5.8 User satisfaction with library services

This section deals with users' level of satisfaction with access to information, library facilities, staff services and the overall quality of library services.

D'elia and Walsh (1983) in Bhim (2010, 147) stated that user satisfaction has been used primarily to describe a library's level of performance of services. The higher the user satisfaction, arguably the higher the level of performance of the library services. According to Chua, Mentol and Kau (2004), there is a strong correlation between the concept of service quality and satisfaction. For the library to satisfy its users, it has to fulfil their needs and this it can do by providing a quality service. Cullen (2001, 662) agreed that the library needs to compete both in terms of service quality and customer satisfaction.

According to Naidu (2009, 149), attention to customers and the services they want and receive are of utmost importance. Naidu continued by saying that "the library needs to ensure that its services both meet customer needs and customer expectations to the highest degree". The results for user satisfaction are discussed below.

5.8.1 User satisfaction with access to information

The majority of respondents (269 or 82.5%) were satisfied with access to information; 47 (14.4%) were neutral which means they were undecided regarding their satisfaction with access to information. Only 10 (3%) respondents were dissatisfied with access to information. The results showed differences within user groups regarding satisfaction with access to information.

The user category that has the highest level of satisfaction with access to information was postgraduates (63 or 94%). The user category that had the highest level of dissatisfaction with access to information was undergraduate students (18 or 4.3%). This group also had a relatively high neutral response (19.3%). Thus, it is evident that while levels of satisfaction are quite high across all groups, it is the postgraduate students who are more satisfied with access to information. This could be explained by their accessing electronic databases when off-campus – a process which is convenient to them and for which they have received training from library staff.

5.8.2 User satisfaction with library facilities

A majority of respondents (269 or 82.5%) were satisfied with library facilities. Only 15 (4.5%) respondents were dissatisfied with library facilities and the remainder (47 or 14.4%) took a neutral stance.

As with access to information, the results showed differences within user groups regarding satisfaction with library facilities. The user category that had a high level of satisfaction with library facilities was again the postgraduate students (63 or 94%). The user category that had a high level of dissatisfaction with library facilities was also again, the undergraduate students (10 or 5.4%).

This means that the postgraduate students were more satisfied with the library facilities than the undergraduate students and academic staff. Obviously, the postgraduate students, given the nature of their library usage, do not interact with the library in a similar way to the students who are on campus and, consequently, do not experience the problems which are experienced by the undergraduate students such as poor Internet connections and insufficient and inefficient computers. What is perhaps surprising is that user satisfaction with library facilities was generally high despite the quite significant gap scores in this regard.

5.8.3 User satisfaction with staff services

The majority of respondents (275 or 82.4%) were satisfied with staff services and 38 (11.7%) respondents were neutral about staff services. A minority (13 or 4%) expressed their dissatisfaction with the staff services.

The results showed differences with user groups regarding satisfaction with staff services. The user category that had a high level of satisfaction with staff services was postgraduate students (63 or 94%). The user category with the highest level of dissatisfaction with staff services was undergraduate students (13 or 8%). Postgraduate students being largely off-campus interact with library staff via email and telephone with little face-to-face contact. Evidently, this appears to be working well. In the absence of reasons for their dissatisfaction with staff services it is difficult to speculate why the 13 undergraduate students were dissatisfied.

5.9 Overall quality of services provided by the library

The findings revealed that a significant majority of respondents (281 or 86.2%) rated the overall quality of library services as good or very good. A small number of respondents (12 or 3.7%) rated the overall quality of library services as poor or very poor. Given the latter, it does suggest that there is room for improvement with regard to services provided by the library. Of interest are the 33 (10.1%) respondents who remained neutral – also suggesting room for improvement.

The results showed differences within user groups regarding satisfaction with the overall quality of library services. Again, it was the postgraduate students (63 or 94%) who were the most satisfied, closely followed by academic staff (68 or 93.2%). This means that the clear majority of postgraduate students and academic staff indicated that the overall quality was good. The user category that indicated a lower level of satisfaction with the overall quality of services provided by the library was again the undergraduate students who had the highest number of respondents expressing dissatisfaction. The number and percentage was, however, small (9 or 4.8%).

5.10 Assessment of the instrument in measuring service quality in academic libraries

The survey methodology was used in this study. The questionnaire, adapted from LibQUAL+™, was used to collect data from the respondents who comprised the different user categories. The results indicated that not all respondents answered the open questions. However, those who did provided some interesting and useful comments for library improvement.

The questionnaire was useful and successful in obtaining users' feedback and identifying the levels of user satisfaction regarding service quality at MUT-NSL. The researcher was also successful in interpreting the feedback in a systematic manner. The appropriate design of the research instrument allowed for determining the gap between users' expectations and their perceptions of the actual services of the MUT-NS Library. This provided a means to identify the strengths and weaknesses of the library keeping in mind that an excellent service must be rendered in order to exceed and not merely meet the expectations of the users. The data, in conclusion, could be considered adequate in terms of answering the research questions asked.

5.11 Summary of chapter

This chapter discussed the respondents' demographic information and library usage patterns. The bulk of the chapter was directed at discussing users' expectations and perceptions of library service quality and the gap, in a number of instances, between the two. The chapter also discussed the level of user satisfaction and the overall quality of service provided by the library. Finally, the instrument used in measuring service quality in academic libraries was briefly assessed.

Chapter 6, the final chapter, provides a summary, findings, conclusions and recommendations and follows next.

Chapter 6

SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

The main aim of this study was to determine whether there is a gap between users' expectations and perceptions of service quality with regard to the MUT-NS Library and to establish the level of user satisfaction with the services offered to them by the Library. In order to fulfil this aim, the following key questions were asked:

- What are the perceptions of users regarding the quality of MUT-NSL services?
- Are users satisfied with the service they receive?
- What are the users' expectations of the MUT-NSL services?
- What are the gaps between user expectations and user perceptions?
- What recommendations can be made based on the findings of the study?

The study was important in terms of identifying the strengths and weaknesses of the current library services and on the basis of the findings, making recommendations to the library management with the aim of improving those services. This chapter presents a summary of the thesis, an overview of the findings and the conclusions. The recommendations based on the findings are then presented and the chapter ends with suggestions of areas for further research.

6.1 Summary of thesis

Chapter 1 of the thesis introduced and outlined the research problem, rationale, the purpose of the study, broader issues to be investigated, key questions to be asked, the delimitations, definition of relevant terms used and theoretical perspectives. A brief outline of the structure of the remainder of the study was also provided.

In Chapter 2, the literature review, the conceptual definition of service quality and service quality assessment in academic libraries were discussed. Also discussed in this chapter were the relevant models that are used in service quality assessment, the related studies on service quality in academic libraries and the impact and challenges of library assessment models.

Chapter 3 focused on the research methodology and method. This included a description of the research design, population and sampling, data collection methods and the data analysis procedures that were followed.

In Chapter 4, research results were presented. Information collected from the respondents was reported in the form of tables and graphs.

In Chapter 5, the results were discussed in the light of the relevant literature. The discussion centred on library usage patterns, and users' expectations and perceptions of, library service quality. The overall quality of services provided by the library and the assessment of the instrument in measuring service quality in academic libraries were also discussed.

6.2 Overview of findings

The results of the survey support the usefulness of the LibQUAL+™ instrument used in this study and its relevance in the context of academic library service. The results show that there are gaps between user expectations and perceptions of service quality in users of the MUT-NS Library. While the gaps are generally small (below 10%), it is evident that there are certain instances where the gaps are large (more than 25%) and this is particularly apparent in the categories of library facilities and library as place.

Findings follow that are considered by the researcher to be important.

Findings in terms of library usage:

- Most respondents (68.1%) used the library resources on either a daily or weekly basis.
- The clear majority (84%) of respondents used the library catalogue to search for resources.
- 67.5% of respondents used the Internet to search for information on a daily basis.

Findings in terms of level of user satisfaction with the aspects of library service:

- Aspects, namely, access to information, library facilities, and staff services were rated as either good or very good by most respondents – in all instances 80% or more.
- Respondents' rating of overall library services was equally high with a significant majority (86.2%) rating them as good or very good.
- The user group expressing the least satisfaction with the various aspects of library services was the undergraduate students.

Findings in terms of significant gaps (more than 25%) between user expectations and perceptions of service quality:

- Timely interlibrary loans (under access to information) – 28.9%.
- Adequate number of computer workstations – 62.1%; Sufficient space for group learning and group study – 62%; Computers that work well in the library – 56.6% (under Library facilities and Library as place).

Findings in terms of gaps which, while not significant (more than 5% but less than 20%), need to be taken cognisance of:

- Electronic journals which are easily accessible – 10.2%; adequate print journal collection – 8% (under Access to information).
- Adequate printing facilities – 18.6%; library space inspires study and learning – 15%; quiet and comfortable space for individual activities – 8.7% (under library facilities and library as place).
- The library helps me with my teaching needs – 13.45% (under research and teaching).

Findings in terms of gaps which could be considered “small” but in their own way significant:

- The gaps relating to the different aspects of staff services were generally small – less than 5%.
- Two categories of staff services namely “Staff who are knowledgeable to answer users’ questions” and “Staff who deal with users in a caring fashion” had negative scores indicating that perceptions exceeded expectations.

The findings of the study revealed the strengths and weaknesses of the library in terms of service delivery to users and recommended, under 6.4 below, areas that need improvement.

6.3 Conclusions

Based on the findings of this study it is evident that mostly the gaps between users’ expectations and users’ perceptions of service quality delivered at the MUT-NS Library were small. However, as noted above, there were instances where the gaps were significant and clearly these do need to be addressed by library management (see 6.4 below).

The results indicate that the MUT-NS Library is providing a quality service to a certain extent because while most responses indicated satisfaction with library services there was a small minority that indicated dissatisfaction with services thus suggesting a need for

improvement. The areas which users indicated they are not satisfied with would need to be improved because for the MUT-NS Library to achieve total quality in the information service it provides, a comprehensive collection, adequate library facilities and excellent services to users are needed.

There were perhaps understandable variations which were illustrated within the different user categories of respondents, namely postgraduate students, undergraduate students and academic staff, concerning library usage, perceptions and level of satisfaction of service quality at the MUT-NS Library. The variations were presumably caused by the levels of study and the different user needs of the members of the three categories. In terms of the latter, for example, the types of resources used when accessing information are not the same. In this regard, the academic staff and postgraduate students generally do not use the computers in the library when they are looking for books and information on the databases. The staff use computers in their offices while the postgraduate students access the resources off campus presumably either from their places of work or from home. The undergraduate students, on the other hand, use the computers in the Internet Labs or in the Library itself.

The conclusions below are presented in terms of the key questions underpinning the study.

6.3.1 Users' expectations

The first question of the study was to determine users' expectations of service quality. The study revealed that the users had high expectations of access to information. They expected a website which enables location of information, adequate printed library materials, an adequate print journal collection, easy access to electronic databases and electronic journals that are easily accessible. They also expected access to the OPAC, an efficient short loan and an efficient interlibrary-loans service.

The study revealed that the users had high expectations of library service quality. They expected library facilities such as adequate hours of service, discussion rooms, adequate photocopiers, printing facilities, computer workstations and quiet and comfortable reading areas. In essence, the users expected more from services and facilities in order to enrich their learning, studying, teaching and research needs.

Users further expected staff who instil confidence, staff who are willing to help them, staff who give them individual attention, staff who deal with them in a caring fashion, staff who improve their research skills, and staff who understand their needs. They also expected staff

who are knowledgeable to answer users' questions and staff who train and guide them to acquire relevant information.

6.3.2 Users' perceptions

The second key question of the study was to determine user's perceptions of the quality of library service. The study showed that the users' perceptions for some services were higher than their expectations but for most, perceptions were lower than their expectations. Services with high perceptions included: staff who deal with them in a caring manner and staff who are knowledgeable to answer their questions. Services with low perceptions included: access to information, library facilities and library as a place, some staff services and research and teaching.

The responses of users' actual experiences with the access to information revealed that they were dissatisfied with certain aspects of this service, their main concerns being timeous interlibrary loan and electronic journals that are easily accessible. They were also concerned about certain aspects of library facilities and library as place, with the main concerns relating to computers (their lack and not working well) and insufficient space for group learning and group study.

6.3.3 Gap between users' expectations and perceptions

The third key question of the study aimed to establish whether there was a gap between the users' expectations and their perceptions of the services offered at the MUT-NS Library. It is evident from the findings and the above discussion that only a few services met the quality expectations of the users while the majority did not. This means that the users' expectations mostly exceeded their perceptions. However, the gaps were in the main small, below the 25% threshold considered as significant. Where significant gaps did exist, these concerned an aspect of access to information and aspects of library facilities and library as place (these are not repeated here – see overview of findings above).

6.3.4 Level of satisfaction

The fourth question aimed to determine the level of satisfaction of users of the MUT-NS Library. The findings of the study revealed that most the users who were the students and staff rated the overall quality of service as good.

A small minority of users were neutral in terms of their responses regarding service quality. In addition, there were some respondents (albeit a very small minority) who expressed

dissatisfaction with the service quality provided by the library. These users were in the main undergraduate students. This suggests that there is still room for improvement on the part of the library regarding improving the quality of services provided particularly as far as the undergraduates are concerned.

6.4 Recommendations

The final key question was as follows: “What recommendations can be made based on the findings of the study?” In the light of this question and the conclusions listed above, the following recommendations are proposed for the library management to consider and, ideally, implement:

6.4.1 Access to information

Access to information is critical to users and the library resources must be accessible to users for convenience. According to Bhim (2010, 101), access to the various resources in the library can be considered a vital aspect of evaluating users’ satisfaction with a library’s services. She also claimed that it was important for libraries to address the needs of their users and ensure that their resources are easily available and accessible.

- It is apparent that the interlibrary loan system could be more efficient and it is recommended that attention be given to seeing how this could be addressed.
- Attention could also be given to ensuring electronic journals are easily accessible particularly given the perceived inadequacy of the print journal collection on the part of some users.
- What emerged quite strongly where respondents were able to make their own comments was the need for a more up-to-date and relevant collection of books. In this regard, it is recommended that the Library’s collection development policy be reviewed with the relevant stakeholders with a view to addressing the critical needs of users. Following this, it is recommended that the lecturing staff be informed that students are complaining about the lack of relevant books.

6.4.2 Library facilities and library as a place

The study revealed the importance of library facilities as they play a critical role in satisfying users’ needs. Bhim (2010, 102) agreed with this saying “A library that is not adequately

equipped with the necessary facilities will not be fulfilling its obligation in providing a quality service and meeting the information needs of the community it serves”.

It is under these aspects that most concern was expressed by respondents and in the light of this concern:

- It is strongly recommended that management investigate the possibility of increasing the number of computer workstations available and also ensure that those which are available are in working order. Computer access to the OPAC as well as the ever-increasing amount of resources offered in digital format underscore the importance of this recommendation.
- Linking to the increasing amount of material available in digital format, it is recommended that attention also be given to ensuring adequate printing facilities.
- Finally, considering the ever-increasing student numbers, consideration be given to increasing the space available for learning and study in the Library – particularly during tests and examination times given that the Library only has seating for 90 persons. This might well mean building extensions or, alternatively, making better use of existing space. However, in the light of the increasing intake of students each year, the former is something which probably needs to be addressed soon.

6.4.3 Library staffing

Staffing was a service which was generally viewed positively by respondents and as noted above there were two categories of staff services where perceptions exceeded expectations. Given this,

- It is recommended that this finding be communicated to library staff by management and that the staff be congratulated for what appears to be work well done.

However, there were comments from students pointing to the fact that they were at times treated like children by staff. Given this,

- It is recommended that staff (and in particular student library assistants) also be made aware of this finding and that should the need arise, customer care and people skills workshops could be arranged.

Finally, in terms of staff services, also emerging in the comments from respondents was the lack of a professional librarian after hours. Thus,

- It is recommended that the library recruits an evening librarian at the MUT-NS Library. It should be noted that such a position is available at the Main Library.

6.4.4 Research and teaching

The final aspect of library services examined in the study concerned research and teaching and it is obvious that the role of the library in this regard is an important one. One area which emerged as a problem (but not a major one) is the extent to which the Library assisted staff members with their teaching needs. Given this,

- It is recommended that both management and library staff engage with academic staff with a view to determining if this aspect of service could be improved and if so, how this could be done.

6.5 Suggestions for further research

Two suggestions for further research stem from the findings of the present study.

- The perspective of the present study has been the users of the library services namely, the students (both undergraduate and postgraduate) and academic staff. It is suggested that the staff of the MUT-NS Library be the focus of a follow-up study – determining their perspectives of the quality of library services offered. Given the small number of staff at the Library, this investigation could well include the staff of the Main MUT Library making it an investigation of the library services at MUT as a whole.
- The second suggestion stems from the finding that while levels of user satisfaction with the various aspects of library services were generally high, the category of respondent or library user who was most likely to be only satisfied, neutral or dissatisfied with the various aspects was the undergraduate student. Given that it is this user category who is arguably the most dependent on using the resources in the MUT-NS Library it is suggested that there is a follow-up investigation focusing only on undergraduate students. A further suggestion is that the investigation be largely

qualitative in nature using focus groups and that the findings of the present study be points of departure for discussion in the groups.

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Appendices

Appendix 1: Informed Consent form

Dear Participant

My name is Siyabonga E. Ncwane (211559627). I am a Masters student studying at the University of KwaZulu-Natal, Pietermaritzburg Campus. The title of my research is: User perceptions of service quality and level of user satisfaction at the Mangosuthu University of Technology's Natural Sciences Library, Umlazi, Durban. In terms of the study I am currently conducting a survey called LibQual. This survey helps libraries to assess and improve the library services provided on campus. This survey consists of 3 themes:

- Access to information
- Library facilities
- Staff service

The aim of the study is to identify users' expectations of service quality and their perceptions of the service delivery with reference to the Mangosuthu University of Technology's Natural Sciences Library. Measurement of the performance of libraries as well as information services is used to evaluate whether the library is operating effectively and efficiently. The findings of the survey, which is directed at both academic staff and students, will be used to identify whether the services meet, do not meet, or indeed exceed expectations of users. It will also assist in determining which dimensions of the services need improvement in the eyes of the library users.

I am inviting you to participate in the research because of the valuable contribution you can make in terms of highlighting the quality of service that is being provided by the library.

If you agree to participate I would like you to complete the questionnaire. Be assured that anonymity will be guaranteed and your information will be kept confidential. Taking part in the research is voluntary. You have the right to withdraw at any point from the study without any prejudice. If you agree to participate please sign the declaration attached to this form.

I can be contacted at: Mangosuthu University of Technology's Natural Sciences Library. Email: Siyab@mut.ac.za; Tel: 031 9077619/7676 cell: 082 200 9646. My supervisor is Mr Athol Leach who is located at the School of Social Sciences, Pietermaritzburg Campus. Contact details: email: leach@ukzn.ac.za. Phone number: 033 260 5098.

Thank you for your contribution to this research.

I..... (Full names of participant) hereby confirm that I understand the contents of this document and nature of the research project, and I consent to participate in the above-mentioned research project. I understand that am at liberty to withdraw from the project at any time, should I so desire.

SIGNATURE OF PARTICIPANT
.....

DATE.....

Appendix 2: Questionnaire

Questionnaire Number _____

Survey to determine user perceptions of the service quality and the level of user satisfaction at the Mangosuthu University of Technology's Natural Sciences Library, Umlazi, Durban

PLEASE COMPLETE THE SURVEY BELOW. ALL RESPONSES WILL BE CONFIDENTIAL.

1. Questions about yourself: Please put a cross [X] next to your choice

1.1 Please indicate your gender

Male

Female

1.2 Please select the option that best describes you

Academic staff

Postgraduate student

Undergraduate student

If undergraduate please indicate your year of study

.....
.....

1.3 Please indicate your age

18 - 20

21 - 30

31- 40

41- 50

1.4 Please select your department

- Agriculture
- Biomedical Science
- Chemistry
- Community Extension
- Environmental Health
- ICT
- Mathematical Science
- Nature Conservation

1.5 How often do you use the resources in the library?

- Daily
- Weekly
- Monthly
- Quarterly
- Never

1.6 If your answer to 1.5 is never, please give a reason/s and then answer questions 2-4 (ignore all the other questions).

.....

.....

.....

.....

.....

1.7 How often do you access library resources through the library computer catalogue (ilink)?

- Daily
- Weekly
- Monthly
- Quarterly
- Never

1.8 How often do you use the Internet to search for information?

Daily	<input type="checkbox"/>
Weekly	<input type="checkbox"/>
Monthly	<input type="checkbox"/>
Quarterly	<input type="checkbox"/>
Never	<input type="checkbox"/>

2. Please put a cross [X] in the table below the number that best describes your “EXPECTATIONS” (Expectations refer to what you personally want) of the service in the library.

1 = Strongly Agree; 2 = Agree; 3 = Neutral; 4 = Disagree; 5 = Strongly Disagree

2.1 Access to information

	I expect the library to provide...	1	2	3	4	5
2.1.1	A website which enables me to locate information on my own					
2.1.2	Adequate printed library materials (books)					
2.1.3	An adequate print journal (periodical collection)					
2.1.4	Easy access to electronic database					
2.1.5	Electronic journals that are easily accessible					
2.1.6	Access to the Online Public Access Catalogue (OPAC)					
2.1.7	An efficient short loan (Reserve service)					
2.1.8	An efficient Interlibrary-loans service (books from other libraries)					

2.2 Library facilities

	I expect...	1	2	3	4	5
2.2.1	Adequate hours of service					
2.2.2	Adequate photocopying facilities					
2.2.3	An adequate number of computer workstations					
2.2.4	Adequate printing facilities					
2.2.5	Computers that work well in the library					
2.2.6	Library space which inspires study and learning					
2.2.7	Quiet and comfortable space for individual activities					
2.2.8	Sufficient space for group learning and group study					

2.3 Staff service

	I expect the library to provide...	1	2	3	4	5
2.3.1	Staff who instil confidence in users					
2.3.2	Staff who are willing to help users					
2.3.3	Staff who give users individual attention					
2.3.4	Staff who deal with users in a caring fashion					
2.3.5	Subject librarian who improve users' research skills					
2.3.6	Staff who understand the needs of users					
2.3.7	Staff who are knowledgeable to answer users' questions					
2.3.8	Staff who provide users with the information skills needed for work or study					

2.4 General

	The library...	1	2	3	4	5
2.4.1	Helps me with my teaching needs					
2.4.2	Helps me with my research needs					
2.4.3	Helps me to advance in my academic field					
2.4.4	Helps me stay abreast of developments in my field(s) of interest					

3. If you would like to add any comments about any of the services mentioned in question 2.1 to question 2.4, please do so.

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4. If you would like to add comments about any further services you expect from the library, please do so.

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5. Please put a cross [X] in the table below the number that best describes your “PERCEPTIONS” (your actual experiences) of the services the library currently provides.

1 = Strongly Agree; 2 = Agree; 3 = Neutral; 4 = Disagree; 5 = Strongly Disagree

5.1 Access to information

	The library currently provides...	1	2	3	4	5
5.1.1	A website which enables me to locate information on my own					
5.1.2	Adequate printed library materials (books)					
5.1.3	An adequate print journal (periodical collection)					
5.1.4	Easy access to electronic database					
5.1.5	Electronic journals that are easily accessible					
5.1.6	Access to the Online Public Access Catalogue (OPAC)					
5.1.7	An efficient short loan (Reserve service)					
5.1.8	Timeous Interlibrary-loans (books from other libraries)					

5.2 Library facilities

	The library currently provides...	1	2	3	4	5
5.2.1	Adequate hours of service					
5.2.2	Adequate photocopying facilities					
5.2.3	An adequate number of computer workstations					
5.2.4	Adequate printing facilities					
5.2.5	Computers that work well in the library					
5.2.6	Library space which inspires study and learning					
5.2.7	Quiet and comfortable space for individual activities					
5.2.8	Sufficient space for group learning and group study					

5.3 Staff service

	The library currently provides	1	2	3	4	5
5.3.1	Staff who instil confidence in users					
5.3.2	Staff who are willing to help users					
5.3.3	Staff who give users individual attention					
5.3.4	Staff who deal with users in a caring fashion					
5.3.5	Subject librarian who improve users' research skills					
5.3.6	Staff who understand the needs of users					
5.3.7	Staff who are knowledgeable to answer users' questions					
5.3.8	Staff who provide users with the information skills needed for work or study					

5.4 General

	The library...	1	2	3	4	5
5.4.1	Helps me with my teaching needs					
5.4.2	Helps me with my research needs					
5.4.3	Helps me to advance in my academic field					
5.4.4	Helps me stay abreast of developments in my field(s) of interest					

6. If you would like to add any comments about any of the services mentioned in question 5.1 to question 5.4, please do so.

7. If you would like to add comments about any further services of the library, please do so.

8. User satisfaction

Please put a cross [X] in ONE box only.

8.1 In general, how satisfied are you with access to information?

Very satisfied	<input type="checkbox"/>
Satisfied	<input type="checkbox"/>
Neutral	<input type="checkbox"/>
Dissatisfied	<input type="checkbox"/>
Very dissatisfied	<input type="checkbox"/>

8.2 In general, how satisfied are you with library facilities?

Very satisfied	<input type="checkbox"/>
Satisfied	<input type="checkbox"/>
Neutral	<input type="checkbox"/>
Dissatisfied	<input type="checkbox"/>
Very dissatisfied	<input type="checkbox"/>

8.3 In general, how satisfied are you with staff services offered by the library?

Very satisfied	<input type="checkbox"/>
Satisfied	<input type="checkbox"/>
Neutral	<input type="checkbox"/>
Dissatisfied	<input type="checkbox"/>
	<input type="checkbox"/>

Very dissatisfied

9. How would you rate the overall quality of the services provided by the library?

Put a cross [X] in ONE box only.

- | | |
|------------------|--------------------------|
| Very good | <input type="checkbox"/> |
| Good | <input type="checkbox"/> |
| Neutral | <input type="checkbox"/> |
| Poor | <input type="checkbox"/> |
| Very Poor | <input type="checkbox"/> |

10. If you have any further comments and/or suggestions to make Mangosuthu University of Technology's Natural Sciences Library, please do so below.

Thank you for your participation.

Please return the completed questionnaire at the Library Issue Counter.

Should you need clarification, please contact me using the following contact details:

Siyabonga E. Ncwane: Subject Librarian

Tel: 031- 9077619/7676

Fax: 086 5467903

Cell: 0822009646

E-mail: Siyab@mut.ac.za

Appendix 3: Gateway letter from research director



17 September, 2014

Mr. S.E. Ncwane

Dear Mr. S.E. Ncwane

It is my pleasure to inform you that permission to conduct survey titled: "*User perceptions of service quality and level of user satisfaction at the Mangosuthu University of Technology Natural Science Library, Umlazi, Durban*" amongst MUT staff members was granted.

Permission to conduct the survey is granted on the condition that any changes to the project must be brought to the attention of the MUT Research Ethics Committee as soon as possible.

Good luck with your research.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Anette Mienie", is written over a thin, light-colored line that extends from the left towards the right.

Dr. Anette Mienie

Director: Research

031 9077354/7450

anette@mut.ac.za