ABBREVIATIONS/ACRONYMS

AAU	Addis Ababa University
CAES	College of Agriculture and Environmental Sciences
CDEO	Continuing and Distance Education Office
CEDU	College of Education
CEMS	College of Economic and Management Sciences
CFA	Confirmatory Factor Analysis
CGS	College of Graduate Studies
CHE	Council of Higher Education
CHS	College of Human Sciences
CLAW	College of Law
COL	Commonwealth of Learning
CSET	College of Science, Engineering and Technology
CVI	Content Validity Index
DCCAD	Directorate for Counselling, Career and Academic Development
DHDC	Departmental Higher Degrees Committee
EFA	Exploratory Factor Analysis
FVI	Factor Validity Index
HERQA	Higher Education Relevance and Quality Assurance Agency
ICC	Intraclass Correlation
ICT	Information and Communication Technology
I-CVI	Item Content Validity Index
IRA	Inter-rater Agreement
IRR	Inter-rater Reliability
KMO	Kaiser-Meyer-Olkin
M&D	Master's and Doctoral
MOE	Ministry of Education
ODeL	Open Distance electronic Learning
ODL	Open Distance Learning
OUM	Open University of Malaysia
PCA	Principal Component Analysis
RLC	Regional Learning Centre
RPL	Recognition of Prior Learning
S-CVI	Scale (instrument) Content Validity Index
SE	Standard Error
SPSS	Statistical Package for the Social Sciences
T	Tau
TSDL	Tutorial Services, Discussion Classes and Work-Integrated Learning

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Education is an important instrument that has the capacity to cultivate society. It should be managed properly so that it brings about the desired results. The need for managing education applies to all levels (from kindergarten to university) and all modes of education (formal, informal, non-formal). Education managers are responsible for managing not only the academic aspect of teaching and learning but also all other necessary aspects that make students' learning an enjoyable and fruitful experience. This is the contribution of education in developing a whole person experience and in producing graduates that meet the current market needs of any country (Clewes, 2003:74; Ogunleye, 2013:49).

One of the most important aspects which education managers should consider in educational institutions is quality; for example, the quality of teaching and learning, the quality of educational materials and the quality of the student support services that are provided. In the open distance mode of education, quality is arguably even more important for education providers. The main aim of focusing on quality is to improve the educational offerings. The continued improvement, in turn, assists in taking the distance out of the distance mode of teaching and learning and giving students individualised attention. This enhances students' learning experience, to produce qualified graduates, and ultimately to secure societal development.

Quality is contextually bound. Whatever can be regarded as quality in one context may not be applicable in another (Evans, Brian & Oladeji, 2011:164; Maila & Pitsoe, 2012:8). Therefore, a valid, reliable and context-sensitive instrument is required to accurately measure, for example, student support service quality, and for managers to identify areas of the educational practice for which they are responsible and that require attention.

This chapter of the study deals with the background of the study, its main research question and sub-questions, and the aims and objectives of the investigation. It includes an indication of the significance of the study, the conceptualisation of some of the terms used in this study, a broad overview of the sampling technique applied, methods of data collection and analysis as employed in the study. The chapter also includes a reference to ethical considerations that were taken into account, a chapter breakdown and a summary of the chapter.

1.2 BACKGROUND OF THE STUDY

Since the onset of the new millennium, Ethiopia has entered an era of rapid social and economic development, in which human capacity building has become one of the priorities of the Ethiopian government. In its effort to become a lower middle-income economy by 2025, the government, among other things, has set its sights on the creation of opportunities for its citizens to develop the type of skills they were expected to require in meeting the continuously changing and upcoming demands of the country (Federal Ministry of Education, 2015:105). This also applied to the higher education sector that is considered to generate and contribute to transfer of knowledge, and to develop skilled human power that, in turn, has a stake in reducing poverty and in bringing about socioeconomic development (Donlagić & Fazlić, 2015:40; Van Deuren, TsegazeAb, Seid & Wondimu, 2016:158). Since it was argued that conventional education cannot satisfy the ever-increasing needs of the country, the need for skills development at a higher education level had to be supplemented by other modes of learning such as Open Distance Learning (ODL) (Moore, Tait, Resta, Rumble & Zaparovanny, 2002:3; Stella & Gnanam, 2004:143). ODL was preferred because it employs technological aids (Nakpodia, 2010:50) to bring knowledge closer to the people without them being displaced from their home and/or work areas (Zenebe, 2005:68; Rumble, 2000:218). In this regard, Latchen and Hanna (2001) cited in Phillips, Hawkins, Lunsford & Sinclair-Pearson (2004:192) state that “one of the reasons for the success of ODL as a learning mode has been the ability to combine high quality flexible educational opportunities with mass production and delivery methods”. ODL gives educational opportunities to disadvantaged groups of people who previously may not

have had access, especially in the field of higher education. Examples of these groups of people were mothers who were raising small children, persons with tight work schedules who did not have time to visit conventional (residential) universities and people who resided in places where there was no easy access to higher education (Ludwig-Hardman & Dunlap, 2003:1). It is argued that ODL is the best modality in cases where there is an increasing demand for higher education, because it has the potential to provide more students with access to higher education (Sharma, 2002:1; Mackintosh, 2015:2). This actually is the case in Ethiopia where the demand for post-graduate studies is high whereas the supply had been minimal before the employment of ODL. For example, in the 2016 academic year, there were more than 400 doctoral candidates studying through the University of South Africa (UNISA) (in only one institution operating in the country), a case which has never been seen before.

Another very important reason why ODL was regarded as the best modality was the fact that it is continually directed at quality assurance (Stella & Gnanam, 2004:153; Tait, 1997:5), an aspect which, until very recently, appeared to be under-emphasised in Ethiopia. It was only in 2003 that the Higher Education Relevance and Quality Assurance Agency (HERQA) was established with the aim of conducting accreditation and institutional quality audits of regular and distance education programmes exclusively in local Higher Learning Institutions (HERQA, 2011b:4). Since 2011, however, it has formulated guidelines for the accreditation of Cross-Border Higher Education to be applied in institutions offering cross-border education in Ethiopia; be the education offered through the mode of branch campus, franchised, twinning or the distance learning model (HERQA, 2011b: 5-6).

With the onset of the General Education and Training Policy that was put in place in 1994, many private and public higher learning institutions were opened in Ethiopia. A considerable number of these institutions introduced a dual mode of education (both distance and conventional system) in a variety of fields of study. Towards the end of 2006, in a renewed effort to increase and develop the capacity of the Ethiopian population, the Ethiopian government invited the UNISA to operate in the country. This

was the result of a general agreement of cooperation between the Ethiopian and the South African governments that was signed in 2004. To this effect, the opening of the UNISA-Ethiopia Regional Learning Centre (RLC) took place in January 2007. The RLC is the first of its kind outside the borders of South Africa, which shows the commitment UNISA has to the relationship. The RLC is located on the outskirts of the city of Addis Ababa, in the Akaki-Kalty sub-city, on a rent-free premise that was provided by the Ethiopian government (which in turn shows the commitment from the Ethiopian side). Currently, it houses 16 staff members: one South African who works as the Regional Director and fifteen Ethiopians. The establishment of the RLC can be regarded as symbolic of UNISA's intentions as expressed by Prof Pityana, the then Principal and Vice-Chancellor of UNISA. In a speech Pityana (2007:2-3) made during the inaugural ceremony, the vision and mission of UNISA were outlined with special reference to the student support services UNISA intended providing:

> As a distance education institution, we are proud to assert that by means of distance education we make it possible for many to realise their dreams; to extend opportunities for higher education to many who might not have benefited from such opportunities as may have been available. We trust that *through learner support* [emphasis added], we shall enhance effective and successful learning, and increase participation in higher education, especially at the level of higher degrees in Ethiopia.

Despite such a promise from UNISA's side to supply quality teaching and learning as well as effective student support services, Ethiopian doctoral students have been repeatedly heard complaining about the student support services that are provided by UNISA (cf. Appendices VI and VII). These complaints are related, among other things, to problems experienced by students with supervision (delayed communication from supervisors), the lack of user-friendliness of the myLife e-mail account, the myUnisa learning management system and the online library services, the inaccessible location of the RLC in Addis Ababa, as well as delayed admission processes and unsatisfactory feedback on the approval of research proposals or submitted chapters. All these may be indications that the experiences of students in Ethiopia of the support services they receive from UNISA do not correspond with what they have expected to receive, which might account for the dissatisfaction on the part of a number of students. The

researcher further went on to investigate the possible gaps between the students' expectations and experiences.

Problems such as the ones mentioned above tend to be more severe when cross-border education is offered, as UNISA is doing in Ethiopia. The kind of problems that result from offering cross-border education have also been the experiences of British and American open universities that faced major problems regarding quality assurance in distance education (Ferreira & Walker, 2009:6; Stella & Gnanam, 2004:156). In addition, the limited exposure of students to ODL systems might also have contributed to students experiencing problems in getting acquainted with the systems and procedures of the ODL mode of education.

The flourishing of privatised regular and distance mode of education in Ethiopia seems to have gone hand-in-glove with a lack of appropriate quality assurance mechanisms. Subsequently, in August 2010, the Ethiopian government temporarily prohibited all local public and private institutions from offering distance education. In December 2011, after passing through quality audit processes, the institutions that were found to have implemented the appropriate systems for quality assurance, were reinstated (HERQA, 2011a:5); some were given a grace period to improve themselves; and accreditation was permanently withdrawn from those that were found not to be meeting the criteria. Five institutions were allowed to offer cross-border education at the Master's degree level. UNISA was not part of this process as it operates on the basis of an agreement between the governments of the two countries (Ethiopia and South Africa).

Quality audit processes require standardised instruments to measure various aspects of service quality. An example of such an instrument is SERVQUAL, a well-known instrument developed in 1988 for the purpose of measuring the gap between customer expectations and customer experiences as major issues in the provision of service quality (Mwongoso, Kazungu & Kiwia, 2015: 299; Ong & Nankervis, 2012:283). Another example is an instrument named SERVPERF which was developed by Cronin and Taylor in 1992 (Bahroom, Latif & San, 2009:2; Firadus, 2005:306). These authors

argued that measuring only the quality of actual performance is sufficient and that there is no need to include customer expectations in quality measurements. In 2004, yet another instrument named HEdPERF was developed (Firadus, 2005:306). It was directed at measuring service quality performance specifically in a higher education context. Later, Shaik, Lowe and Pinegar (2006:3) introduced DL-sQUAL, which was intended to measure service quality in distance learning in the United States of America, and Bahroom, et al. (2009) launched ODLPERF which was developed with the purpose of measuring service quality among the students of the Open University of Malaysia (OUM).

However, as the nature of all the instruments mentioned above suggests, service quality is a context-specific construct. None of these measuring instruments can, for example, be utilised to measure service quality among students of UNISA based in Ethiopia or any other ODL institution without further ado. If the quality of the service that UNISA provides in Ethiopia has to be measured, an instrument relevant to the Ethiopian context should be found or developed.

1.3 PROBLEM STATEMENT

From a research point of view, there are several aspects of the situation outlined above that have not been investigated before and which merit scientific investigation. Among other things, two issues stand out: the Ethiopian students' perceived dissatisfaction with the student support services offered by UNISA, and the question on how service quality within an Ethiopian context can be measured. The realisation that this seems to be an unexplored field of research, pregnant with numerous research possibilities, gave rise to the research questions posed in the following section.

1.3.1 Main Research Question

What is the quality of the support services provided by UNISA to Ethiopian doctoral students?

1.3.2. Sub-questions

1. How can the quality of the support service provided to doctoral students of UNISA in Ethiopia be measured effectively?
2. What are the specific expectations of doctoral students of UNISA in Ethiopia regarding the student support services that should be provided by UNISA?
3. What are the experiences of doctoral students of UNISA in Ethiopia in practice, regarding the quality of the student support services provided by UNISA?
4. To what extent do the expectations of the above-mentioned students correspond with their practical experiences of student support services?
5. What are the causes of the apparent student dissatisfaction in Ethiopia regarding the provision of student support services?
6. Assuming that adequate answers to the above questions can be found, what implications do the findings of this study have for managers at UNISA?

1.4 AIM AND OBJECTIVES OF THE STUDY

The aim of this study was to determine the quality of support services provided by UNISA to doctoral ODL students based in Ethiopia. In order to achieve this aim, a valid and reliable, context-sensitive measuring instrument had to be developed to measure the students' expectations and experiences of student support service quality.

Therefore, the specific objectives of the study were to:

- develop a context-sensitive instrument that could accurately measure the quality of the student support services provided by UNISA to its doctoral students in Ethiopia;
- determine the expectations and actual experiences of doctoral students concerning student support services offered by UNISA (utilising the newly developed instrument);

- compare the abovementioned expectations and experiences of doctoral students in order to fathom the quality of the student support services provided in Ethiopia by UNISA;
- relate the dimensions of service quality to the students' level of satisfaction with the services provided by UNISA; and
- identify the shortcomings in UNISA's provision of student support services to Ethiopian students, bring it to the attention of managers at UNISA and offer suggestions for improvement in this regard

It was argued that, if all these objectives were achieved, the broad aim of the study, namely determining the quality of student support services provided by UNISA to doctoral students in Ethiopia, would also have been achieved. At this stage, the question arises as to why it was necessary to conduct this research. This is the question that is considered in the following section.

1.5 SIGNIFICANCE OF THE STUDY

This study is expected to make policy makers and managers in the field of education aware of the important role which quality of student support services plays in the process of providing ODL, or at least reiterate the importance thereof. The results of this study are also expected to enable the relevant line managers at UNISA to become acquainted with the expectations and experiences of doctoral students in Ethiopia. This may possibly lead to an improvement of student support services provided by UNISA and eventually to an increase in the degree of student satisfaction. From a broader perspective, this might sensitise staff members of UNISA to the varied needs of its students located in all the foreign countries in which UNISA operates.

This study might be of significance to ODL higher education institutions other than UNISA. In addition to drawing special attention to the importance of focusing on the quality of student support services, the measuring instrument to be developed may constitute a basis for the development of other, similar context-specific instruments. ODL institutions that operate in Ethiopia on a cross-border basis, may possibly be able

to utilise this instrument. Finally, as a result of this study, the general public may also acquire a better understanding of ODL because working on improving quality is believed to curb the stigma attached on ODL offerings.

1.6 PRELIMINARY EXPLANATION OF CONCEPTS

This section briefly describes the key terms that are found in this study. In chapter 2, the terms are discussed in more detail.

1.6.1 Distance Education

Distance education is a form of education that is different from conventional education. It is mainly characterised by physical (geographical) separation between students and teachers, and among students themselves. It is also marked by the employment of the available technology of the time and by a gradual change from the use of a postal system for the conveyance of content to almost exclusive online education. Its flexible mode of delivery fits the different needs of students who come from different walks of life and who are not present at a specific place at a specified time (Moore et al., 2002:22; Yener, 2013:51).

1.6.2 Open Learning

As the name, open learning, indicates, this concept refers to learning that is open in the sense that it provides learners with a variety of choices; for example, choices in regard to medium of instruction, place of study, pace of study, support mechanisms, and qualification entry and exit points (Weimin & Dhanarajan, 1999:1-6). The concept, open learning, therefore has a stronger bearing on policy than on a specific mode of education in which students are given access to education, and in which they also make use of the available technological learning media (Bates, 2008:1).

1.6.3 Open Distance Learning

In open distance learning, students come from different socio-economic backgrounds. They are given open access to schooling whereas support services are provided by

using different media, especially ICT. Teaching and learning activity is conducted at places and times where and when both the students and the teachers may not meet. Students get the provision of flexibility on choices of courses, learning materials and the pace at which they undertake their study (Moore et al., 2002:23; Ferreira & Walker, 2010:10).

1.6.4 Quality

There are five ways of defining quality: quality as exceptional (excellence), as perfection, as fit-for-purpose, as value for money and as transformational (Ferreira & Walker, 2010:14; Harvey & Green, 1993). When these qualifiers of quality are applied in an educational setting, students are assisted to develop skills and knowledge that prepare them for future challenges. With specific reference to the distance education system, students are transformed from being dependent learners into increasingly becoming independent learners. For this reason, this study mainly utilises the definition of quality as transformational (Scriven, 1993a, cited in Smith, 2004:30; Houston, 2008, cited in Mwenje & Saruchera, 2013:132).

1.6.5 Student Support Services

Student support services represent the offerings made to students in their educational journey at institutions of higher education, from entry to exit points. These services are meant to assist the students to cope with the possible challenges students face. With particular reference to the ODL system, educational providers work hard in an effort to remove the distance from distance learning systems by means of student support services. These services, being the most essential elements that qualify the ODL system, involve the process of giving pre-registration information, conducting registrations, providing counselling, Information and Communication Technology (ICT) and library services, providing of all forms of support that can strengthen the bond between students and institutions and by enhancing the academic lives of registered students. The nature of student support services is known to be context-specific so as

to meet the specific needs of individual students (Dzakiria, 2005:99; Ferreira & Walker, 2010:32; Owens, Hardcastle & Richardson, 2009:57; Tait, 2000:289).

1.7 RESEARCH DESIGN AND METHODS

This study is concerned with the student support service quality as expected and experienced by doctoral students of UNISA found in Ethiopia. The researcher was motivated to take up this study because of the repeated complaints the students were reporting that centred upon the unavailability of sufficient support systems. This is as opposed to the need to offer strong student support services for ODL students by the educational provider (Owens, Hardcastle & Richardson, 2009:57). This study therefore made a point of investigating the quality of student support services as offered by UNISA.

As indicated in Chapter 3, this study is located in a positivist paradigm. This paradigm assumes that knowledge is empirical and objective, with the research undertaken from the point of view that the researcher is distant from the researched (Okeke & van Wyk, 2015:60). Quantitative methods and statistical procedures mark the positivist paradigm. In this study, statistics like Cohen's kappa, Cronbach's alpha, a t-test and regression analysis were employed after collecting data by means of a questionnaire. Using deductive reasoning, the study used the Gaps Model to explain the findings of the gaps between students' expectations and their experiences of student support service quality.

The specific research strategy that was followed in the study was design-based research. Design-based research is understood to develop an intervention (however small it may be) through cyclic and iterative processes. Not only is design-based research iterative, but it also gives consideration to the context in which the research is done (Plomp, 2007:17). Using the four phases of design-based research (informed exploration, enactment, evaluation of local impact and evaluation of broader impact) (Urlich & Eppinger, 2000, cited in Bannan-Ritland, 2003:21), this study aimed at developing an instrument that would help to identify the expectations and experiences of students regarding student support services. It further observed the gaps between

the students' expectations and experiences of service quality and the causes of satisfaction/dissatisfaction of student support services.

The population of interest in this study was all doctoral students of UNISA in Ethiopia. A total of 465 doctoral students were registered during the 2014 academic year. From this population, a sample of 260 students was reached through the method of convenience sampling. Although non-probability sampling (such as convenience sampling) is criticised for its alleged lack of generalisability, a comparison can be made between the sample data and the population to check if the findings from the sample considered are generalisable to the target population of interest (Sousa, Zauszniewski & Musil, 2004:130).

In this study, data were collected by means of an instrument that was specifically designed to measure student support service quality in an ODL setting. The questionnaire comprised a five-point Likert scale with two types of response required: a response concerning student expectations in one column and a response concerning student experiences in another. The data that were collected by means of this questionnaire were used to both describe and compare the students' expectations and experiences. Attempts were made to determine whether there were gaps between the expectations and the experiences of students, and also how each of the five dimensions of student support service quality that were highlighted in the questionnaire, influenced students' general levels of satisfaction. The data were analysed by means of the different statistical tools that were mentioned earlier. Detailed information in this regard is supplied in Chapters 3 and 4.

This study aimed at achieving and maintaining the highest possible levels of validity and reliability, both in the development and utilisation of the measuring instrument and in the interpretation of the findings that resulted from the use of the instrument. The validity of the study was guaranteed through the employment of rigorous content validity procedures and exploratory factor analysis. Among other things, inter-rater reliability

and the Cronbach's alpha test were used to attain reliability (Tavakol & Dennick, 2011:53).

1.8 ETHICAL CONSIDERATIONS

Ethics in research takes note of "what is proper and improper in the conduct of scientific inquiry" (Babbie, 2013:32). Research ethics has a bearing on the protection of respondents (participants) from physical or psychological harm. They must not be emotionally affected; should not feel stressed, embarrassed or harmed as a result of their participation in the study (Gay, Mills & Airasian, 2011:19). Ethics also includes ensuring that the respondents participate in the research voluntarily (knowing that they can withdraw any time if they want), that their anonymity is preserved, their privacy is protected, and the confidentiality of the responses they have given is guaranteed (Saunders, Lewis & Thornhill, 2009:185). The collected data need to be treated with total confidentiality.

Ethical considerations were paramount during all phases of the research: during the design of the research, gaining access to the research site and respondents, during data collection, data processing and storage, and during analysis and reporting (McMillan, 2012:18-19). In this study, ethical requirements were satisfied by first obtaining an ethical clearance certificate from the Ethics Committee of the College of Education at UNISA (cf. Appendix VIII). Permission was also obtained from Senate to involve students of UNISA for research purposes (cf. Appendix IX). In addition, at the stage of data collection, respondents were requested not to write their names or numbers on the questionnaire. Since data were collected via e-mail, the students' personal e-mail addresses (as opposed to official UNISA, myLife addresses) were used to send and receive the students' responses. Special attempts were made to keep their responses confidential during all stages of the study, including but not limited to the presentation of findings, interpretations and discussions. Each questionnaire was, for example, coded before data capturing took place.

1.9 CHAPTER BREAKDOWN

In this study, chapter 1 focused on the background, problem statement, aims and objectives, and research methodology pertaining to the study. Chapter 2 concentrates on both theoretical and empirical evidence related to the areas this study focuses on, whereas chapter 3 deals with the research approach that was adhered to and the data collection and analysis procedures employed. Chapter 4 deals with the development of a valid and reliable instrument whereas chapter 5 concentrates on data analysis. The last chapter, chapter 6, comprises a discussion of the findings of the study in accordance with the related, existing body of knowledge. It also contains the conclusions of the investigation and a number of relevant recommendations.

1.10 CHAPTER SUMMARY

This chapter commenced with a brief discussion of the circumstances that led to this study. Ideas related to the need for mainstreaming ODL, the quest for quality in distance higher education, student support services and their importance in ODL, and the possibility of measuring service quality, were discussed. The chapter also included an indication of the problem statement of the study, the main research question, sub-questions, aims and objectives of the study. After a consideration of the significance of the study, a brief explanation of the key concepts was provided, followed by a very broad overview of the research methods used. Attention was also paid to a number of ethical considerations.

In the next chapter, relevant literature in the field of ODL, student support services, service quality, measurement and dimensions of student support service quality as well as the theoretical framework which guided this research, are discussed.

CHAPTER 2

QUALITY AND DIMENSIONS OF STUDENT SUPPORT SERVICES

2.1 INTRODUCTION

This chapter presents a literature review that mainly deals with the meaning and history of distance education, student support services in distance education, the essence of quality and its application in a higher education context. It includes a discussion of the concept “service quality”, its measurement and dimensions. In the final section of the chapter, the Gaps Model is discussed as the framework to be used in explaining the findings of the study.

2.2 CONTEXTUAL BACKGROUND

Ethiopia is a country located in eastern Africa. It is generally regarded as the cradle of humankind and has a history of more than 3000 years. Recent estimates put the size of the Ethiopian population at close to 100 million people which makes the country the second most populated in Africa (after Nigeria). About 80 languages are spoken in Ethiopia with its many ethnic groups. Only 19% of the population lives in cities; which implies that Ethiopia’s economy is largely agricultural (Central Statistical Agency, 2014:16; Van Deuren, et al., 2016:158). The total size of the country is 1.127 million km² (offTheLeftEye, 2016). The country is known for its biodiversity as it enjoys different geographical landscapes that range from tall mountains to low depressions, with the Rift Valley splitting the country into two from north east to south as it passes from Syria to Mozambique.

Currently, Ethiopia houses 36 public universities (33 of which receive students directly from high school) that are located in different regions of the country. With its effort to provide access to larger numbers of students, the government aims to establish 11 more universities in the near future (Federal Ministry of Education, 2015:102). The government regards education as one of the major concerns in its efforts to eradicate poverty. For this reason, there is a strong movement towards the massification of higher education with an emphasis on the teaching of natural science and engineering. These

fields of study are intended to be studied by 70% of all students who enter tertiary education. Ideally the government wants no more than 30% of all students to enrol for the social sciences and arts. This measure is geared towards achieving the objective of becoming a lower middle-income economy by 2025 (Federal Ministry of Education, 2015:105). The aim is “to promote the development of a vibrant industrial sector and accelerate overall economic growth” (Federal Ministry of Education, 2010:9-10; Van Deuren et al., 2016:158-59).

During the past two decades, privately owned higher education institutions participated in the human capacity development programmes of the country enrolling 15% of the total student population (Federal Ministry of Education, 2015:24). Many of the public and private higher education institutions are known to offer distance education. A few do it in partnership with international distance education institutions whereas others offer a replica of the regular programmes in distance mode. Distance education is taken as a means of enhancing increase in access to higher education and had an enrolment share of 12.6% in the academic year 2008/09 (Abeya, 2014:146-47; Federal Ministry of Education, 2010:60).

HERQA is responsible to control the external quality standards of both public and private higher education institutions. Moreover, every higher education institution is expected to have an internal quality control and enhancement mechanism (Federal Ministry of Education, 2010:63; Van Deuren et al., 2016:161-62). Quality audit procedures should be in place for all aspects of academic institutions as stipulated in the Higher Education Act:

> The internal system of quality enhancement of every institution shall provide for clear and comprehensive measures of quality covering professional development of academic staff, course contents, teaching-learning processes, student evaluation, assessment and grading systems, which shall also include student evaluation of course contents together with the methods and systems of delivery, assessment, examinations and grading (Federal Negarit Gazette, No. 650, 2009:4988)

There is a strong need to increase the number of qualified academics in universities so as to cater for the increasing number of universities as well as students that are enrolled in higher education institutions. The target is to have a proportion of "0:70:30 (Bachelor: Master's: Doctorate degree holders, respectively)" teaching staff in higher education institutions though this had not materialised by 2015 (Federal Ministry of Education, 2015:24-25). To reach this target requires the utilisation of a range of mechanisms (like sending faculty abroad to improve their qualifications and strengthening the capacity of local universities to offer relevant programmes). UNISA's operation in Ethiopia is part of this effort to produce qualified academics at the master's and doctoral level (Federal Ministry of Education, 2010:64). The section below deals with distance education – its meaning and history.

2.3 MEANING AND HISTORY OF DISTANCE EDUCATION

In this section of the study, the meaning of distance education and open distance learning is discussed. In addition, the history of distance education in Ethiopia, in Africa and internationally is briefly presented.

2.3.1 Meaning of Distance Education

Researchers in the field of distance education are relatively unanimous in the way they define the concept, distance education. For example, Moore and Kearsley (2005:2) define distance education as "… teaching and planned learning in which teaching normally occurs in a different place from learning, requiring communication through technologies as well as special institutional organizations" whereas Keegan (1986), cited in Melese (2014:17-18) defines distance education as a "method of imparting knowledge, skills and attitudes to learners, using high quality materials for those learners who are geographically departed from their teachers". Embedded in these two definitions is the fact that distance education is characterised by the geographical separation between students and teachers. In addition, distance education keeps itself abreast of the current technological platforms so as to undertake successful education.

By employing technological media, communication between students and teachers or students and students can take place in real time (synchronous) or at different times (asynchronous). Distance education is also different from conventional education because decisions of what to learn and how to learn are not taken in the classroom setting. The manner in which technology is employed in education is often different between distance and conventional education: the former depends on technology whereas the latter is complemented by technology (Cunningham, 2006:12; Moore & Kearsley, 2005:3). In this study, the definition of distance education by Keegan is preferred because the doctoral students, who are the respondents in this study, develop research skills and knowledge of their fields of study by using the high-quality journal articles found in the UNISA Library in addition to the support that they get from their supervisors.

Distance education is often a preferred mode of learning because it gives opportunities to people to study and develop themselves even though they are physically far apart from the educational institutions at which they are registered. Persons that generally prefer distance education are women with young children, health workers who work in remote areas, the military, and persons with tight work schedules. Though the offerings of distance education usually focus on higher education, it has widespread coverage starting from primary education to advanced degrees. The focus is usually on adults who are viewed as independent learners (Moore & Kearsley, 2005:8; Stella, 2001:135).

Distance education can be used for both formal and non-formal education, primary and secondary education, and technical and vocational education. However, its applicability is more pronounced in the higher education sector to address students who, for different reasons, are unable to join face-to-face universities. The greater population of distance students consists of middle-aged adults but recently the age range is encompassing students who are in their early twenties, too. This is also related to the technological advancement of the internet whereby the number of single-mode, distance education universities is increasing. Moreover, the internet has encouraged many well-known

conventional universities in the world to employ a system of dual mode education (Khvilon & Patru, 2002:35-36; Mhalanga, 2010a:10).

From its inception, distance education has been reaching people who could not get access to conventional schooling and hence it opens opportunities to a wide range of students. In addition, it gives people the liberty of using their time effectively and efficiently, and studying as and when it suits them. It is indicated that "each student is a class of his own, can study when and how long it suits him, interrupt the work when he feels like it" (Hermods, 1908, cited in Holmberg, 2008:19).

In the course of time, the concept distance education has changed to "open distance education**"**. The reference to openness stresses the fact that distance education provides opportunities to students in terms of their geographical location, when to study, how to study, which media to use, and with whom to communicate for support. Open distance learning is a reconceptualisation of the term distance education, which from its inception, had the intention of giving educational opportunities to those, who for various reasons, could not go to conventional face-to-face classrooms and also providing flexible support systems that meet the needs of adult learners. Terms like "flexible learning" and "distributive learning" are interchangeably used to indicate the openness of distance education (Kelly & Mills, 2007:156; Mhalanga, 2010a:10). In open distance education mode, the teacher employs various forms of technology in efficiently delivering the content to the students, whereas students are independent learners who control their own learning. In this mode, the students, the teachers and the resources for learning can be located in different spaces. In addition, Mills (2011) cited in Proctor, Steyn and Goodwin-Davey, (2012:88) asserts that the essence of open distance education is that students are assisted relatively more intensively in the earlier years and then made more and more independent learners as the years go by (Khvilon & Patru, 2002:38-39).

The evolution of education calls for more distance than conventional, face-to-face education because, as peoples' lives become more complex and as technologies

advance, the distance education modality is becoming increasingly prominent. Its principles of openness, flexibility, life-long learning, individualised attention and student-centeredness in student support makes distance education unique. Currently, many universities in the world are changing the delivery of education from mere conventional to dual mode as a result of which the number of students in the distance system is increasing significantly (Khvilon & Patru, 2002: 35-36; Zenebe, 2005:68). In this regard, for example, the Ethiopian Education and Training Policy indicates that conventional education cannot cater for the ever-increasing demands of education and it must therefore be supported by the distance education mode of delivery. Following this policy, there were remarkable changes in the higher education institutions of the country whereby conventional universities and private higher education institutions launched distance education and introduced courses that were offered in their regular programmes in distance mode as well. There was, however, hardly any well-prepared distance-specific material, nor were teachers trained to support the same cause (Khvilon & Patru, 2002:25; Tadesse, 2008:13).

The major problems of education provision at any level are equity, accessibility, quality and relevance (Education and Training Policy, 1994:2). Among other things, distance education can address the problem of accessibility as students, who could not access or participate in face-to-face conventional education, can make use of the distance education mode (Ntuli, 2008:3).

Studying through distance education benefits not only individuals but also the institutions where they work because the individuals can continue working and being productive in their institutions and, in the meantime, develop their knowledge and skills through education. In addition, by using distance education, institutions can have a larger number of their employees trained, even if they are stationed at different locations, which is not possible in conventional education (Sumner, 2000:268). Distance education students, however, experience feelings of isolation because of the potential lack of human touch in the system. This can be a demotivating factor for some students who do not have the readiness for or prior experience of a distance mode of education

to appreciate and make use of the system. For example, Borstorff and Lowe (2007), cited in Yener (2013:51), describe it as follows: “with the lack of human contact and personal instruction, students feel themselves isolated and DL [distance learning] can seem cold and impersonal”.

It appears as though there is a stigma attached to the distance education mode among the general public (Zenebe, 2005:84). A study by Habtamu (2015:18) that was done at two Ethiopian Universities (Haramaya and Bahir Dar) which provide a dual mode of education, found that the perception of distance education among the general public and especially among students enrolled in the system, is negative. Habtamu’s findings suggest that students prefer to study in the conventional system if they have the opportunity, and think of distance education systems as providing education of a lower quality than conventional education systems. A similar finding was made by Yener (2013:62) in a study undertaken among students in the Beykoz Vocational School of Logistics in Turkey.

2.3.2 Brief History of Distance Education in Ethiopia and the World

Distance education has a relatively long history in Ethiopia. According to local literature, the Haile Selassie I University-College trained teachers through the distance mode as early as the 1940s. Yallew (2004) cited in Tadesse (2008:11) states that “… it [distance education] began in early 1940s to upgrade the level of primary school teachers without taking them out of their work places”. However, distance education in Ethiopia faced both successes and disappointments. For example, the Ethiopian Ministry of Education (MOE) wanted to upgrade the capacity of secondary school teachers. Consequently, in collaboration with the Addis Ababa University (AAU), it established a Distance Education Unit and located it within the University’s Continuing and Distance Education Office (CDEO). Although this Distance Education Unit was primarily intended for the further training of teachers, its programmes were also accessible to employees of various public ministries, factories and the military force. The Distance Education Unit achieved considerable success in its time as a relatively large number of teachers graduated from the system. However, the Unit needed to transfer from one space to

another as it became part of the Department of Adult and Continuing Education in the MOE and was later transferred to the Educational Media Agency (Tadesse, 2008:11-13). This instability resulted in distance education not being well regarded in Ethiopia.

In the African context and in many developing countries of the world, distance education is utilised to provide advanced training to teachers. In this way, the knowledge and skills of practising teachers are upgraded without taking them out of their classrooms for lengthy periods of time. This strategy also assists in reaching a larger population and has been in use in many countries like South Africa, Nigeria and Burkina Faso (Khvilon & Patru, 2002:29).

Internationally, four successive generations of distance education can be distinguished. It started from what was known as "correspondence education**"**, where printed materials were delivered to students by postal system. Students' assignments and exams were exchanged between teachers and students through letters and print media under the postal system. In the UK, for example, Isaac Pitman taught the subject, short-hand, via correspondence education as early as 1840 (Holmberg, 2008:13). The University of South Africa (UNISA), which was the first of its kind in the history of distance education, was also reaching students in this mode of education since its establishment as an examination centre by the name of the University of Good Hope in 1873. Having a history of 143 years, UNISA is now heading towards becoming a fully digital university (Makhanya, 2015:5; UNISA, 2012:3).

The history of distance education is intimately tied to attempts to satisfy a world-wide, growing thirst for education. Hence, correspondence education in its time assisted in reaching many, especially at remote places, where conventional education was either inaccessible or the lifestyle of learners did not allow for attending conventional institutions of education. In effect, "correspondence education paved the way for modern distance education as applied in the last decades of the twentieth century" (Holmberg, 2008:20). With the growth of technology and the call for globalisation,

resources are becoming more shared than before and the open distance learning system is, therefore, getting more recognition (Tait, 2003a:1).

The correspondence education system was followed by a second generation of distance education named “television and radio systems” which supplemented print materials (Anderson & Dron, 2011:81). In the second half of the 20th century, proponents of distance education started to point out the importance of focusing on the needs of the adult learner; what, when and where does the learner want to learn? This led to the foregrounding of distance education as a system of education (Holmberg, 2008:23). The number of students, the course offerings and the institutions that employed distance education also grew along with the technology.

The third generation of distance education brought the employment of more interactive multi-media where radio, television, audio cassettes, VHS, CD-ROMs and the computer were added to the print materials. The fourth generation comprised computer-mediated and internet-based systems whereby the continuously developing technologies (especially the World-Wide Web) are employed. Such learning systems are known to facilitate independent learning. These technologies use e-libraries, e-tutors, video-/audio-conferences and address students individually or in groups, live (real time) or otherwise (Council on Higher Education (CHE), 2014:6).

Currently, distance education is mostly delivered online. This is the fourth (some refer to it as the fifth) generation of distance education. This generation is characterised by the use of various types of media accompanied by a high level of technological advancement. Technology in distance education is said to bridge the gap between students and teachers. These latest technologies better facilitate the interaction between teachers and students, and students and students in synchronous or asynchronous forms (Kilfoil, s.a., 4). With the advancement in technological media, the interaction between students and teachers developed from one-way to two-way (multiple) interaction, which encourages communication not only between students and teachers but also among the students themselves. The nature of modern media has

assisted the development of students' skills to be interactive and critical in the learning process. It allows time to reflect and constructively argue about ideas, and to critically comment on concepts, which, in turn, result in more effective and better quality learning. Among research students, this situation enables students to become critical friends with their supervisors. Hence, students' development of cognitive skills is achieved (enhanced) and the distance is taken out of the distance education mode. All stakeholders (students, teachers, and the institution) that form a community through the interactive media, are kept abreast of current issues.

At present, distance education make use of advanced technology, more so than older forms of media, like print or CD that made learning one-directional and contributed less to students' cognitive development. Employing technology has provided more and better access to students and hence distance education changed into open distance learning (ODL). At UNISA, openness in open distance learning, as its business model, refers to giving better access to students with meaningful student support services. It includes the recognition of prior learning (RPL), flexible learning, and life-long learning. Currently, ODL is changing into ODeL (Open Distance electronic Learning) because of the intensity of employment of electronic media in teaching and learning, and student support services. It is referred to as "intelligent flexible learning" (Kelly & Mills, 2007:155; Van den Berg, 2012:73; Yener, 2013:53). The section below discusses student support services with particular reference to distance education.

2.4 STUDENT SUPPORT SERVICES IN DISTANCE EDUCATION

In defining student support services in distance education, Tait (2000:289) refers to these services as "the range of services both for individuals and for students in groups which complement the course materials or learning resources that are uniform for all learners, and which are often perceived as the major offering of institutions using ODL." On the other hand, Brindley (1995) Cited in Phillips (2003:170), defines student support as:

> … a holistic approach to the provision of non-subject-based support for the individual learner in the context of a study career which operates from the first enquiry to the completion of studies. A learner support service offers advice, guidance and study support as developmental factors in the whole learning process and aims to identify and remove barriers to learning. It should be responsive to the actual needs of learners, which vary from individual to individual, course to course and year to year.

The two definitions stated above stress the fact that students under the ODL system must be given various forms of support from entry to exit points that work to take out the distance from the distance education modality and that assist students to succeed in their educational journey. Student support services are the interface between students and different university structures and are essentially known to be the backbone of the distance education system. With specific reference to the distance education system, students in this mode of learning suffer from feelings of isolation and lack a sense of belongingness to, for example, the education provider. These feelings must be curbed by the institutions giving the necessary support in different forms like timely and accurate information, improved quality of interaction which positively impacts on students' satisfaction and retention, timely responses to students' queries and assessments, and recognising diversity (Dzakiria, 2005:99).

It is added that the dissatisfaction level and the dropout rate of ODL students are higher than the students who learn in the traditional (face-to-face) systems (Allen, et al., 2004, cited in Owens, et al., 2009:57). Similarly, the success rate of students in an open distance e-mode of education is generally lower than students in conventional systems of education (Tait, 2015:3). Student support services are therefore core elements in making the learning process efficient and effective by assisting students to become competent, by decreasing attrition, and also by guaranteeing the success of distance education programmes (Southard & Mooney, 2015:56; Wheeler, 2008, cited in Mwenje & Saruchera, 2013:132). The support services encourage retention of students in the system and ensure more graduates from the programmes, resulting in lower dropout rates as the student stays linked with the system. Student support services also assist in boosting students' confidence and self-esteem and in enabling the student to be self-

directed and independent which, in turn, improve students' persistence and success in their studies. All these things can happen if the student support services are well planned and delivered (Dzakiria, 2005:106).

In an ODL system, student support is more individualised as individual students are given special support that assists in curbing the impersonal (disengaged) part of the mode of learning that is caused by the geographic location, which results in not having face-to-face contact. Making students the central point of student support services and a consideration of their heterogeneity enables one to target their individualised needs and hence in improving their experiences (Carter, 2007:26; Dowling & Ryan, 2007:88). In addition, Mhalanga (2010b:32) states that "they [student support services] are developed with the specific needs of learners in mind, and so are context-specific ... learner support activities are aimed at meeting the unique needs of the individual (although this may occur in groups)". Conversely, lack of or insufficient student support services result in high dropout rates, student anxiety, and finally ineffectiveness of the programme. For this reason, institutions that offer education through the open distance mode must always consider the need for student support schemes that should be designed along with the course offerings (Prinsloo, 2010:10).

2.4.1 Examples of Student Support Services in Distance Education

All student support schemes may not necessarily fit all types of students and programmes. This is mainly because the context where the programme is offered and the unique nature of distance students have an impact on the types of support service offered (Mhalanga, 2010b:32). In addition, the notion of students as customers of higher education institutions and their expectations thereof, and also the employment of the continuously advancing ICT systems in ODL, greatly encourage the individualised nature of student support services (Tait, 2003b:196).

To assist students to achieve the desired qualifications, various forms of student support services should be rendered to students. For example, Carter (2007:21), says that student support schemes in ODL include "… academic services, administration

services for tutorial organization, information and communication technologies, and specialized student support systems and services." Other authors, for example, O' Shea, Stone and Delahunty (2015:55) also mention these services. According to them academic support is expressed in terms of tutorial, supervision or mentoring support and a giving of timely and constructive feedback. These have a remarkable impact on the students' learning, and also on reducing attrition rates. Feedback from tutors (currently e-tutors) and supervisors is very important in enhancing conversation between students and academics. It is from the comments students get on their submissions that students know their level of understanding of the concept at hand, and how much they are expected to work on the issue. They also discover how caring and supportive their supervisors are and this contributes to the students' engagement in their studies. It also has an impact on building their confidence, enhancing students' self-directedness, making them critical thinkers, encouraging them to work even harder on their studies, and also on curbing feelings of isolation and loneliness which is common among distance students (Jancey & Burns, 2013:316).

After conducting a survey on doctoral students who were studying online, Templeton, Ballenger and Thompson (2015:13) found that "students agreed that instructor to learner interaction was an important factor in the online learning environment ... especially timely response to concerns". In contrast to this, discouraging and negative feedback could make students lose motivation for working hard. For example, in the study undertaken by Manathunga (2005:225) on the postgraduate supervisor-student relationship, students reported that their supervisors are consistently busy with other duties and hence lack time and interest in the students' research, and ultimately avoid the students. The students also noted that their supervisors never care about their students' academic progress. This therefore asks for supervisors to be cautious in how they encourage and motivate their students and also in how they relate with their students by being aware of (and making students aware of) the roles and responsibilities of each other.

Within the academic support domain, an important aspect of distance education research students includes periodic face-to-face meetings between supervisors and students. This can be in the form of workshops, seminars or one-on-one discussions. Such opportunities enhance thorough discussions on components of research that include topics of interest, conceptual and theoretical frameworks, research design and methodological aspects, and write-up and publication. These opportunities are said to be intellectually engaging and stimulating for the students and academics as well (Jancey & Burns, 2013:312). It is said that "students seek face-to-face interaction, immediate feedback, and the social presence of the instructor" (Templeton et al., 2015:15).

Another important and related student support service that is emphasised by researchers in the field, is communication**.** In student support services, communication refers to the human touch where there are conversations, dialogue and interaction between students and supervisors (including other support givers) in the process of knowledge co-construction (Hodgson, 1993, cited in Nutli, 2008:28-29). It shows that the greater the interaction between students and support givers, the more encouraged the students would be to achieve goals and hence more throughputs are earned (Stella, 2001:137). Holmberg (1989), cited in Smith (2004:31), also emphasises the need for empathy (warm, accepting and supportive communication) between students and the support staff, which ultimately results in "feelings of belongingness" in the students.

In ODL, the library is the students' best friend, especially for research students. With technological advancement, for example, e-journals and e-books reach students wherever they are located, and at all times throughout the year. The library is therefore known to be a 'vital ingredient' of the student support services in ODL (Tripathi & Jeevan, 2009:49). Bates (2014:18) says that "supporting students as they navigate through the wealth of learning materials available online will both motivate and help them to develop lifelong learning skills".

Other student support services in distance education include enrollment and registration, which involves managing students' applications, selection, registration and re-registration. Enrolling students into the system, working on their retention, graduation, examination, and also following up the alumni (all of which are sometimes referred to as the 'student walk') contribute to facilitating student life in an academic environment (CHE, 2014:6).

In relation to this, counselling is another student support service in ODL that focuses on the affective domain. With particular emphasis on undergraduate students, counselling related to career choices and to academic and personal challenges is a mandatory service. It can also be customised to serve post-graduate students. In addition, accessibility of study centres and necessary facilities like the library, computer labs, video-conference centres and wi-fi connectivity, as well as assessment and evaluation are other important aspects in the success of students studying in an open distance mode (SahleMariam, 2004:44-45; McCracken, 2008:66; Yared, 2000:100).

ICT is an extremely important student support medium in open distance learning. With the ever-growing technological platforms and with the nature of distance education in employing current technological advancement in delivering its offerings and support services, ICT plays a crucial role. It facilitates online interaction between students and supervisors (or tutors), among students themselves, and also between students and support service providers in the university community either in real time (synchronous) or at delayed times (asynchronous). In addition, it is through technological infrastructure that students can access resources, especially the library online resources. Hence, ICT not only enhances learning and teaching in ODL but has resulted in remarkable qualitative changes in ODL platforms and promises many further developments in flexibility. The current flourishing of distance education offerings through the online mode exemplifies the high importance of the employment of ICT services (Jancey & Burns, 2013:312; Van den Berg, 2012:71).

Generally speaking, student support services are understood to guarantee learning effectiveness in open distance education. The above-mentioned student support services, along with others that are not mentioned here, add remarkable value in delivering quality learning experiences to the students. Stakeholders of student support provision should encourage and motivate their students to make use of the available services by communicating with the students through different media, for example, by organising orientation sessions, sending of e-mails and SMSs and even employing social media like Facebook (Tripathi & Jeevan, 2009:49).

2.4.2 Students Support Services at UNISA

UNISA was founded in 1873 to be an examining body under the name of the University of Good Hope. In 1918, it became a federal university and, in 1946, it was declared a distance education university. “UNISA emerged in 2004 as South Africa’s single, dedicated, comprehensive distance education institution (amalgamating the old UNISA, Technikon Southern Africa and the Vista University for Distance Education Campus)” (UNISA, 2012:3; UNISA, 2014:4). The University of South Africa is based in the city of Tshwane (previously Pretoria), and has regional learning centres in various locations all over South Africa and in certain countries abroad. The major purpose of these centres is to facilitate and provide student support services (Khvilon & Patru, 2002:27). The services in the regional centres range from processing applications and registration of students to library and counselling services, ICT-related support, as well as academic literacy services and the organisation of workshops/seminars/one-on-one discussions.

Employment of the current information and communication technologies is found to be an essential tool in facilitating student support services (Prinsloo, 2010:5-6). ICT is regarded as a guarantee of UNISA’s current initiative of becoming a fully ODeL university by 2020. UNISA is moving towards an ODeL mode of learning as the world-wide advancement in technology demands it, and also because the university benefits from exploiting these rapidly-changing media. According to Makhanya (2015:5), ODeL is the best modality both for giving access to students who want to enrol in higher education institutions and to meet the “cardinal importance of quality”.

The range of student support services currently offered by UNISA took on a more prominent role after 1995 (Prinsloo, 2010:54). With UNISA's becoming a full-fledged ODL university, the services that were previously in the hands of academics, the former Tutorial Services, Discussion Classes and Work-integrated Learning (TSDL), the former Directorate for Counselling, Career and Academic Development (DCCAD), ICT, Registrar and Dean of Students, needed to be integrated to have an institutional base, with better quality assurance and better coordinated services (Prinsloo, 2010:5-6). Currently, more than ever before, UNISA emphasises the need for client-centredness with service excellence as its core function. At UNISA, students are regarded as major stakeholders who must be well-serviced (UNISA, 2014:6). In this regard, the Principal and Vice-Chancellor affirms that "the students who get support are the students who eventually succeed" (Makhanya, 2015:5). UNISA is committed to supporting its students in all areas, including their cognitive, affective and administrative needs; and also during the three most important phases of a student's life which are at the entry point, during the learning-teaching phase and the exit point (Prinsloo, 2010:7).

For masters and doctoral students, UNISA provides supervision support whereby each student is allocated a supervisor and/or a co-supervisor/mentor, in principle, upon registration. Supervision support for this group of students is one of the basic support services that must be offered by ODL institutions. Prinsloo (2010:30) says that "the effectiveness of supervision and mentoring of postgraduate students plays a crucial part in their success. Though it is definitely not the only factor in postgraduate students' success, there may be a number of possibilities to increase the effectiveness of supervision and mentoring of postgraduate students."

The UNISA Library is the largest academic library in Africa. It annually subscribes to multitudes of peer-reviewed journals and e-books in different fields, which are essential resources for students. In addition, various documents uploaded in the UNISA repository, the e-thesis and e-dissertation section and the physical resources like research books and periodicals, are very useful sources if one intends undertaking research. All the e-resources can be accessed online throughout the year.

In offering customised support to Ethiopian doctoral students, UNISA offers various forms of face-to-face programmes that are relevant to research students. Examples of these are workshops, seminars, one-on-one consultations, training on doctoral-level proposal writing and on data analysis methods. UNISA also provides research students with bursaries.

Currently, UNISA gives access to the myUnisa learning management system and the myLife e-mail account. myUnisa can be taken as a "form of Moodle, Blackboard, and any other similar system that allows communication, sharing of information, submission of assignments, sitting for quizzes and other related learning activities between learners and lecturers" (Suradi, Rani, & Khan, 2013:52). In the UNISA system with particular reference to research students, myUnisa mainly assists to access the library e-resources. The myLife e-mail is the communication medium between students and their supervisors, and students with the university community. Since the main focus of this study is student support services and quality, the researcher now turns to discuss issues related to quality: its definition, meaning and application in a higher education context.

2.5 QUALITY AND ITS MEANING IN THE CONTEXT OF HIGHER EDUCATION

There are different conceptions of quality: some take it as relative, which means that what is of the best quality for some people in the circumstances that they are found may not be the best quality for others in differing contexts (Harvey & Green, 1993:10). Maila and Pitsoe (2012:8) also emphasise the importance of context when they indicate that the concept of quality changes from time to time and from place to place. Mhlanga (2010:14) shares the same view by stating that quality is 'in the eye of the beholder' because it is the receiving customers who judges quality of services that they receive and that it goes along with the context (Evans, et al., 2011:164). Others view quality in terms of consistently meeting or exceeding what customers expect of a certain service or product (Sandmaung & Khang, 2013:262).

Quality is understood to be a slippery and elusive concept which cannot be easily defined (Harvey & Green, 1993:10-11; Mwenje & Saruchera, 2013:142). It is something that is "value-laden" for the user of a product or service and hence it is better described in terms of the activity (the service or the product) about which quality is an issue. Juran (1999:2.2) agrees with the "slippery" nature of the concept of quality, in the sense that it is difficult to label quality with one distinct definition as it means different things in different contexts and under different circumstances. However slippery or elusive it may be, quality is needed in any organisation, be it a service or a manufacturing one, in that it is the base for economic success, improved product or service, customer satisfaction, competitiveness and general survival (Talib, Rahman & Qureshi, 2013:281). Basically, however, Harvey and Green (1993:11) state that there are five ways of thinking about quality: "quality can be viewed as exception, as perfection, as fitness for purpose, as value for money, and as transformative".

The inherent meaning of quality as an exception, is that it is special. This specialty implies that the product or service is distinctive and not accessible to everyone, only to elites. It is also defined in terms of excellence of products/services and setting standards in that regard (Harvey & Green, 1993:11-12; Mhlanga, 2010:15).

Quality as perfection is expressed in terms of consistency, in which case a product or service has "zero defects" and is "right the first time" when it is checked against specifications. It is therefore conformance to a pre-determined specification and has no defects every time it is checked (Harvey & Green, 1993:15; Ndudzo, 2014:40). Juran (1999:2.2) also accepts this definition by stating that quality means "freedom from deficiencies" whereas Crosby (s.a.) cited in Evans et al. (2011:164) says that quality is "conformance to requirements".

Quality is also viewed as fitness for purpose in which case the functionality of the product or service is the main concern. According to this view, if a product or service serves the purpose that it is designed for, then it has met the definition of quality (Harvey & Green, 1993:16; Mhlanga, 2010:15). Juran (1999:2.2) agrees that the term

“fitness for use” is utilised to provide a consolidated meaning of the two definitions of quality above (quality as excellence and quality as perfection) though this phrase (fitness for purpose) falls short of explaining the depth of quality. In addition, Harvey and Green (1993:17) claim that fitness for purpose suffers from subjectivity on who determines the purpose of a product or service: is it the customer or the product or service provider?

The fourth definition of quality labels quality as value for money. This is related to an organisation’s financing of product or service providers and demands effectiveness and efficiency for the cost that they have incurred, which is labelled by Mhlanga (2010:16) as a “return on investment”. In addition, the product or service providers are held accountable to the source of finance; be it from government, individual customers, or other organisations. According to Juran (1999:2.1-2.2), by providing customer satisfaction, product or service providers increase their income as they continue to be chosen by their customers, make their products or services saleable, and gain a larger market share.

The last definition of quality is quality as transformation. In this case, quality is seen in terms of bringing about a “qualitative change” in the consumer which has the effect of enhancing and empowering the consumer (Harvey & Green, 1993:24-25). Moreover, Harvey (2002) cited in Mulu (2012:31) states that “in an era of mass higher education, value-added transformation ought to become the central element of any concept of quality”. The next paragraphs focus on how these definitions apply to the higher education context.

The higher education sector is influenced by various stakeholders, which may include government(s) that finance the sector, students that are enrolled in the system and who pay fees, senior management and staff members of the higher education institutions, employers who require quality graduates to recruit from, and the society at large. All of these stakeholders demand quality graduates from higher education institutions because the social and economic growth that is envisioned in every country comes as a

result of well-trained personnel from these institutions (Jung, Wong, Li, Baigaltugs & Belawati, 2011:64; Maila & Pitsoe, 2012:9). This, in turn, creates a competitive atmosphere in the higher education environment which results in higher education institutions continually working harder to be able to secure a competitive edge.

Open Distance Education systems, like all other systems of higher education, are marked by processes of assuring the quality of their offerings. ODL institutions continuously strive to provide the best quality education and student support services possible; the latter of which is the foundation of the students' and the institution's success (Tripathi & Jeevan, 2009:46).

There are different views on how quality is assessed in ODL. Some commentators hold the opinion that the principles of quality assessment that apply in conventional education must be directly applied to assessment of the quality of ODL (Perraton, 2000, cited in Jung et al., 2011:64). On the other hand, it is argued that the openness, flexibility and continuous employment of technology that make up the distinctive nature of ODL, constitute important criteria for evaluating quality in an ODL system (Stella & Gnanam, 2004, in Jung et al., 2011:64).

The five aspects in the definition of quality by Harvey and Green mentioned above can all be applied to higher education. Quality as exception is related to joining high profile universities like Harvard and Oxford which target exceptional candidates only. This approach involves only a small group of people and also creates a problem of sound measurement (Harvey & Green, 1993:15). It is also not applicable to open distance higher learning institutions, mainly because the mission of ODL is to give access to disadvantaged groups who could not go to conventional universities (Jung & Latchem, 2007:236), and may not be classified as exceptional candidates.

The perfectionist approach is difficult to apply in the higher education context because of its notion of a quality culture where every point (input – process – output) is free of errors. This conception of quality relies heavily on meeting pre-set specifications.

However, “higher education is not about delivering specifications … it is, arguably, about encouraging … the analytic and critical development of the student” (Harvey & Green, 1993:16). Perfection in quality mainly works for products that can prove to have zero defects. This does not apply to services and is especially true in education that develops human knowledge, which can never be perfect. However, ODL institutions should somehow consider quality as perfection in the planning of distance education and student support services so as to overcome potential challenges (Mhlanga, 2010:15). In contrast to this, Ndudzo (2014:41) states that higher education institutions should meet their students’ needs and expectations, which are specifications of students’ requirements.

Fitness for purpose, as applied in higher education institutions, implies “fulfilling the mission of the institution” (Harvey & Green, 1993:19). The conception of quality as fitness for purpose emphasises the mission of the institution; however, it does not include the major customers of higher learning institutions when it is checked against to what extent the educational service has satisfied students’ needs. Conversely, Mhlanga (2010:16) contends that the definition of quality as fitness for purpose fits the open distance education context which must progressively change its offerings based on the ever-changing developmental needs of society and technological platforms.

In the higher education context, quality as value for money appears to be particularly applicable since students are increasingly regarded as customers and hence they require getting quality services for the money that they have paid. In addition, other stakeholders of higher learning institutions, especially the government, parents and sponsors, require value for the money that they have invested in the education service, and hence require accountability from higher learning institutions (Pereda, 2006:48).

Quality as transformation is also more pronounced in the field of education as the students or the researchers who participate in the process have their skills and abilities enhanced and become empowered in the co-production of knowledge (Maila & Pitsoe, 2012:12). This makes education “value adding” to the development of the students’

personality in becoming independent and self-confident in the course of teaching and learning (Teeroovengadum, Kamalanabhan & Seebaluck, 2016:247). Mhlanga (2010:16) holds a similar opinion when he states that “this is central to determining the worth of any schooling system”. Muller and Funnell (1992), cited in Harvey and Green (1993:25) purport that students are part of the decision-making process which results in their transformation. Quality as transformation in the higher education context becomes clearer in the distance education mode where students are assisted to become more and more independent and self-confident as they progress in the system (Scriven, 1993, cited in Smith, 2004:30). In addition, Mwenje and Saruchera (2013:132) cite Houston (2008) who holds the opinion that “service quality assessment in the learning enhancement paradigm … focuses on changing behaviors among learners. This service quality enhancement is concerned with transformation of the life experiences of students”. Dill (2003), cited in Mulu (2012:29-30) views the conception of quality in higher education as “the specific levels of knowledge, skills and abilities that students achieve because of their engagement in higher education”.

In this study, unless specifically indicated otherwise, the concept “quality” predominantly carries the meaning of quality as transformation because the respondents are all doctoral students who strive to attain higher levels of knowledge as well as co-produce new knowledge with the assistance of their supervisors. In their doctoral journey, there comes a qualitative change in their research skills and knowledge of the subject matter that they are working on. The section below deals with the nature, characteristics and conceptions of service quality.

2.6 SERVICE QUALITY

This section of the study discusses the four characteristics of services that differentiate them from tangible goods. In addition, service quality as applied in the higher education system and the argument over ‘who’ students are in the higher education context (products or customers) are briefly presented.

2.6.1 Nature and Characteristics of Service Quality

The current trend in the human need for goods and services is to regard services as playing a more important role in economic development than goods (Cronin & Taylor, 1992:55; Malhotra, Ulgado, Agarwal, Shainesh & Wu, 2005:257). Service-providing institutions (and even product-manufacturing firms) therefore focus on service quality and how to improve it. Institutions that wish to succeed and be sustainable must pay much attention to ensuring service quality (Zeithaml, Berry & Parasuraman, 1996:31). This, however, starts with an understanding of the meaning of service quality. “Service quality is an approach to manage business processes in order to ensure full satisfaction of the customer to increase competitiveness and effectiveness of the industry” (Nyenya & Bukaliya, 2015:45). The two core ideas contained in this statement are that service-providing firms should focus on satisfying their customers’ needs and on gaining a competitive advantage over their competitors (Pereda, 2006:27).

At this stage, it may be worthwhile looking at a definition of services as differing from physical goods. Kotler (1991), cited in Ong and Nankervis (2012:278), defines services as “any act or performance that one partly can offer to another that is essentially intangible and does not result in ownership of anything”. This definition focuses on services being intangible, involving both participants and hence no one claiming ownership. Similarly, Parasuraman, et al. (1985:42) regard intangibility, heterogeneity and inseparability to be the three most important factors that define services. These factors make service quality an abstract construct different from products or goods (Parasuraman, et al., 1988:13). Intangibility refers to acts or actions that are difficult to measure or verify. Heterogeneity points to the inconsistent nature of services from one firm to another and from one customer to the other whereas inseparability constitutes the interaction between the staff providing the service and the customer. In a discussion on the meanings of quality, the literature provides a fourth factor, namely perishablity. This means that service production and consumption happen simultaneously where customers take part in the process. These four factors, commonly referred to as IHIP (intangibility, heterogeneity, inseparability, perishability), distinguish services from goods (Lovelock & Gummesson, 2004:21; De Oliveira & Ferreira, 2009, cited in Nyenya &

Bukaliya, 2015:46). It is as long as there is a process that services exist and which characterises services to be short-lived. Services are also affected by time constraints (Yeo & Li, 2014:97).

In the higher education context, education can undoubtedly be regarded as a service (Hill, 1995:11). Shank, et al. (1995) cited in Joseph, Yakhou and Stone (2005:68) state that "higher education possesses the characteristics of a service industry. Educational services are intangible, heterogeneous, inseparable from the person delivering it, variable, perishable, and the customer (student) participates in the process". The main purpose and outcome of education is not awarding educational certificates (though educational institutions do so to signify that the student is their graduate). The main purpose of education is the development of knowledge. Knowledge in turn is abstract as it is found in the minds of students and teachers and hence no one can take ownership of it (Ong & Nankervis, 2012:279; Tait, 2003b:190). Consequently, education can be categorised as a service rather than a product or something tangible. This is explained as follows: "the higher education sector can be considered a market place and university education a marketable service" (Sultan & Wong, 2010:267).

2.6.2 Service Quality in Higher Education

Studies on service quality in the higher education context are relatively scanty. Among the existing literature, studies on post-graduate students are even scantier (Barnes, 2007:317). This is even worse when it comes to studies of service quality in open distance and cross-border higher education systems. Examples of studies that have concentrated on service quality among post-graduate students are Lamply (2001) who concentrated on doctoral students in six state-supported universities in the US; Pereda (2006) who focused on overseas postgraduate students enrolled in a university in the UK; Barnes (2007) who engaged Chinese post-graduate students enrolled in one business university in the UK; and Sultan and Wong (2013) who completed an exploratory study among both undergraduate and post-graduate students in one university in Australia.

In the higher education context, student satisfaction is the major ingredient in influencing the existing students to stay in the same institution, to re-enrol in the future, and to attract new ones to join that specific institution, hence to ensure that the institution secures its competitive edge. Students' complaints, on the other hand, are mostly caused by dissatisfaction with the services rendered by the relevant higher education institutions (Jancey & Burns, 2013:311; Watson, 2003:148). Tan and Kek (2004:17) also hold the opinion that quality is evaluated by taking student satisfaction, which translates into meeting students' needs and expectations, into account. Universities must make it a priority to secure students' satisfaction so that more and more students can be attracted and more funding can be secured (Sultan & Wong, 2010:260). With specific reference to distance education, it is argued that whether or not students complete their studies or discontinue in the middle is determined by how much they are satisfied. For example, Dann (2008:339) states that when research students do not get the expected service from their supervisors, they tend to drop out. Similarly, it is argued that the major cause for postgraduate students' satisfaction is the quality of educational services they receive from the higher education institution they are enrolled at (Bolliger & Halupa, 2012:82). According to Evans, et al (2011:165) "satisfaction will result in motivation and increase the effectiveness of the organizational members, leading to high quality services to the customers (learners), parents, and employers". In cross-border education, the issue of quality should be prioritised by paying attention to the context of the education-receiver. Maila and Pitsoe (2012:9) assert that "quality education must be locally relevant and culturally appropriate". All the above arguments call for ODL institutions to focus on providing services that satisfy their students' needs, and to consider the context of the country they are exporting education to, in cases of cross-border education.

2.6.3 Students in the Higher Education System

The role of students in the higher education system is still under debate. Are they customers or products? Does a higher education system have a customer at all? Different views are suggested as to who the actual customers of higher education are: students, parents, employers, the government, or the society at large (Dann, 2008:342;

Watson, 2003:148). Some scholars regard students as “products” which can be sold and consider employers as the primary customers, whereas others claim that students themselves are the primary customers to care for and to provide a quality service to. For example, Yeo and Li (2014:97) cited Jaraiedi and Ritz (1994) who support the view that potential employers are the primary customers and students only secondary customers who are preparing themselves for future challenges and benefits. Harvey and Green (1993:9) also consider employers as primary customers who are concerned about the quality of the graduates they intend recruiting. Similarly, it is asserted that higher education institutions are academic institutions by nature, not commercial entities, and hence students must not be regarded as customers at all (Waugh, 2002, cited in Kitchroen, 2004:19). It is also noted that in treating students as customers “it does not make sense to assume that customers are always right and their expectations serve the best interest of the institution” (Yeo, 2009:64). Higher education is not only preparing students for what they want but also for what they need as they grow academically and become strong in knowing what to choose in addition to preparing them for the work force. Universities also have the right to award or deny degrees to students based on the students’ achievements and hence the notion of students as customers and the idea of the “customer is the king” is not always valid in the higher education context (Tait, 2003b:190).

However, there are studies that regard students as the primary customers of higher education institutions. Some argue that students are customers because they pay fees and they consequently expect to get quality service. The quality service in turn is used as evidence of choosing the best higher education institutions. For this, higher education institutions must work hard to improve their service quality to get a competitive advantage, to win a larger number of students and to eliminate student dissatisfaction (Sultan & Wong, 2010:260; 2013:71; Teeroovengadum et al., 2016:245). It is also contended that students are the primary customers of higher education institutions because “when institutions are in competition, working practices have to foreground the student interest as a consumer, and therefore the student should be constructed as the customer” (Field, 1994, 2000, cited in Tait 2003b:189). Certain other

authors hold the opinion that students are customers because major services in the higher education context like supervision, preparation of course materials and delivery thereof, library services and counselling are all prepared for the benefit of students (Yeo & Li, 2014:97). Although employers, parents, alumni, the government and the society at large are also customers of higher education institutions, "students are described as customers of higher education because they are the one group affected by service quality in higher education each and every day" (Ong & Nankervis, 2012:279).

Students are customers of higher education institutions when they are seen as knowledge co-constructors who directly participate in the production and delivery of educational services, which are geared towards the mental development of the students. At the post-graduate level, students' contribution to knowledge co-construction is even more significant as they have higher levels of active learning and engagement in the learning process (Dann, 2008:336). Wang (2003:76) also states that students are customers of higher education because interaction between instructors and students is the major cause that results in either satisfaction or dissatisfaction. If students are satisfied by the service they get from the university they are enrolled in, they promote that university as a best education service provider (Ong & Nankervis, 2012:277). In conclusion, students, as customers of higher education, have two roles: an internal role as they have direct participation in the process of knowledge generation, and an external role as they are future employers (Yeo, 2009:64). In this study, students are regarded as the primary customers of open distance higher education who have a direct influence in the educational transaction. Students are aware of their own needs and expectations and know exactly why they enrol at a higher education institution. It is essential for these institutions to understand their customers' needs and the level of service quality required.

2.7 MEASUREMENT AND DIMENSIONS OF SERVICE QUALITY

This section of the chapter discusses two issues: first the concepts related to the measurement of service quality, followed by the dimensions used in measuring service quality with particular reference to higher education.

2.7.1 Measuring Service Quality

At the heart of the conception of quality is a continuous review of activities for continued improvement (Maguad & Krone, 2012:27). However, exactly what to improve is not always clear if managers are not able to identify areas that need improvement. Hence the starting point in quality improvement is identifying areas that need intervention. Only when customers' views and needs are understood, and problems of performance are identified, can a means of service improvement be designed (Jain, Sinha & De, 2010:144; Barnes, 2007:314). Therefore, with specific reference to the higher education context, measuring service quality "from the students' perspective is indispensable" (Teeroovengadum, et al., 2016:245).

Service-providing firms should also focus on measuring the level of quality of their offerings in order to identify how they perform in comparison with similar service providers, and ultimately to increase their competitiveness. This is in addition to identifying whether gaps exist between customers' expectations and experiences, and hence to work on improving the quality of the services they provide (Yeo & Li, 2014:95). In the higher education context, for example, students are requested to fill in forms that evaluate the services that are offered by the higher education institutions (Pereda, 2006:58). Identification of these areas demands a standardised measuring instrument. This is the spring-board from which this study has emanated. This is more true in education wherein customers (students) are directly involved in knowledge co-production (Maguad & Krone, 2012:44).

In service quality literature, one of the most influential instruments is the SERVQUAL scale, which was developed by Parasuraman, et al. in 1988. It has 22 items that are grouped into five dimensions. These items are inter-related and to some extent overlap one another. They measure both expectations and experiences of service quality (Parasuraman, et al., 1988:38-40). As a result of the rigorous steps the authors went through in developing SERVQUAL, this instrument satisfies all the psychometric requirements of an instrument of its nature (Dann, 2008:336).

Most importantly, SERVQUAL has the advantage of providing a balanced view of service quality (by comparing expectations and perceptions). Consequently, it is “more objective and less erratic” than most other similar scales (Yeo, 2009:65). SERVQUAL is known for its strong diagnostic power (Tan & Kek, 2010:23; Parasuraman et al., 1991b:445) that assists to identify the major problem areas that need improvement in the services provided, and also to which areas resources should be channelled by the service firms for increased effectiveness (Kitchroen, 2004:17). In addition, Parasuraman et al. (1993:145) commented that “the SERVQUAL items represent *core* [original emphasis] evaluation criteria that transcend specific companies and industries. The SERVQUAL items are the basic ‘skeleton’ underlying service quality that can be supplemented with context-specific items when necessary”. This corresponds with the purpose of the current research which is to develop a context-sensitive instrument in order to explain the study’s findings through the Gaps Model on which SERVQUAL is also based.

SERVQUAL addresses “the whole-person experience” of students (Sultan & Wong, 2013:77). Services in the higher education sector are not limited to classroom experiences which are expressed in terms of tangibles like availability of course materials or assignment feedback. They should also encompass the different non-academic factors that highly influence the development of students’ personalities. These non-academic factors involve the human touch that promote student-centeredness (Yeo, 2009:62) which could be exemplified through individualised attention, and technical and administrative support services, and which enhance the quality of the student support services. The SERVQUAL scale, as applied in higher education, is deemed to address such support services (Hill, 1995:17).

As much as it is famous and as objective as can be, SERVQUAL has been severely criticised as a measuring instrument. Cronin and Taylor (1992) cited in Kitchroen (2004:17) indicate that “… SERVQUAL is paradigmatically flawed because of its ill-judged adoption of the disconfirmation model”. It is argued that the SERVQUAL scale is weak for having lengthy questionnaire items that measure expectations, on the one hand, and experiences/perception, on the other hand. Its five dimensions are also

questioned for their validity when they are applied in all service types (Jain & Gupta, 2004:27). In addition, it is claimed that there are two reasons why SERVPERF (service performance which focuses only on experience/perception) is superior to SERVQUAL (service quality resulting from comparison of expectation and experience/perception) when the two instruments are applied in a higher education context. It is argued that SERVPERF explains customer satisfaction better than SERVQUAL and that the scores that are found when the gaps are measured and when only perception is measured are very similar (Sultan & Wong, 2010:265). The SERVPERF scale, as mentioned above, concentrates only on the experience/perception part of measuring service quality. In their publication, Cronin and Taylor (1992:58) state that rather than taking the 44-item SERVQUAL scale, using only the 22-item SERVPERF scale is sufficient as the perception part makes a more significant contribution to the explanation of quality of service. These authors criticize SERVQUAL as time consuming, boring and confusing (Bouman & Van Der Wiele, 1992, cited in Kitchroen, 2004:18).

The current study focuses on understanding the problem of service quality in an ODL context. Towards achieving this goal, the gap analysis model was adopted. This is because the gap analysis model on which SERVQUAL is based, has better diagnostic power, which assists to identify in which areas quality suffers and singles out where the focus should be in the process of improving quality of services. In addition, the expectation part of the scale is important to gain richer information in the process of measuring service quality (Tan & Kek, 2010:23). The gap analysis model was chosen in this study for the reason that SERVQUAL is based on clear, scientific and rigorous procedures which were followed in its development. It is also a valid and reliable instrument with its main strength the ability to measure the whole person experience instead of concentrating on a specific aspect of students' experience in higher education (Yeo, 2009:65).

However, since service quality is a contextual issue, the SERVQUAL scale could not be directly applied to the current study. In this regard, Hill (1995:15) convincingly argues that there is a need to develop a measuring instrument that is appropriate to the

relevant higher education context. It was also found that there is a "need for [a] sector-specific scale to measure service quality" (Jain, et al., 2010:145). Similarly, in their review on service quality in higher education, Sultan and Wong (2010:264) came to the conclusion that the five dimensional SERVQUAL scale is not directly replicable in all higher education contexts. The contextual nature of quality calls for developing a scale that fits particular circumstances. Apart from studies that focus on higher education, a study done in relation to the dimensions of service quality in developed and developing nations respectively, shows that variations in these dimensions exist between cultures and economies. Based on all these arguments, it can be claimed that measuring scales of service quality that have been successfully utilised in, for example, developed western countries, cannot be directly be applied in developing countries. Factors like socio-economic levels, affluence and level of education affect the applicability of the dimensions in the different cultures and economies (Malhotra, et al., 2005:259). There is undoubtedly a necessity to develop a scale that best measures specifically Ethiopian ODL students' expectations and perceptions of service quality.

2.7.2 Dimensions of Service Quality

Service quality is a multi-dimensional construct. Service features vary from one context to another which, in turn, presupposes the dimensions varying from one kind of service to the other (Parasuraman, et al., 1994:114; Teeroovengadum, et al., 2016:246) and also varying across cultures and economies (Malhotra et al., 2005:260). According to Sultan and Wong (2010:262), "the major benefit of using the dimensional approach is that it gives an understanding of the service features". It has also been determined that richer findings can be gained as a result of adopting a multi-dimensional approach in measuring service quality (Barnes, 2007:329).

Different factors influence the dimensions of service quality. These are schools of thought (Nordic versus American), types of industries, organisations in the same industry, service types or culture (Sultan & Wong, 2010:262; Yener, 2013:52). According to Chumpitaz and Swaen (2002) cited in Jain et al. (2010:144), "the number and nature of service quality dimensions are directly related to the service under investigation". For example, Grönross' Nordic model identified three dimensions of

“perceived service quality”: technical quality (which is what the customer gets), functional quality (which is about how the customer gets the service) and image (which is the brand of the service on offer) (Hasan & Kerr, 2003:287).

The American model of Parasuraman, et al. (1985:46) comprises ten dimensions (or categories) which they labelled as “service quality determinants”. These are tangibles, reliability, responsiveness, communication, credibility, security, competence, courtesy, understanding or knowing the customer, and access. From the outset, these authors were aware that these dimensions have overlapping characteristics and must be subjected to empirical research for further refinement. In their study, Parasuraman et al. (1988:17) employed a rigorous purification processes, which involved the generation of items, collection of data from selected service-firm users (done twice at different locations), and employment of statistical procedures like Cronbach’s alpha and factor analysis. After all these actions have been taken, they were able to formulate five dimensions (three original and two combined) consisting of 22 measuring items. These dimensions are tangibles (appearance of physical materials and front-line staff members), reliability (accuracy and dependability in service provision), responsiveness (willingness in assisting customers and provision of prompt service), assurance (winning customer trust through knowledgeable and skilful service provision and courteousness), and empathy (being caring to each customer by giving individual attention) (Teeroovengadum, et al., 2016:246).

In the process of doing research, new instruments may be developed or previously developed ones may be adopted. In the latter case, the instruments may be contextualized by adding or deleting items and/or dimensions in order to meet the needs of the service under investigation (Barnes, 2007:315; Sultan & Wong, 2010:262). An example is Yeo and Li’s (2014:108) study which proved that when SERVQUAL is adopted in the educational system, the “empathy” dimension stood out to be the most influential one as students must be cared for and given individualised attention.

Other examples of dimensions of service quality include Lehtinen and Lehtinen's three major dimensions which are physical quality, corporate quality and interactive quality (Hasan & Kerr, 2003:287). Li and Kaye (1999:146) further cited Leblanc and Nguyen (1988) who suggested five dimensions, namely corporate image, internal organisation, physical support of the service, staff/consumer interaction, and the degree of customer satisfaction. It was also indicated that service quality is measured through fifteen items that can be clustered into three dimensions, namely hygiene, enhancing and dual-threshold dimensions (Johnston, Silvestro, Fitzgerald & Voss, 1990, cited in Kitchroen, 2004:15).

In higher education context, support services should include those services that are different from classroom experience, like the library and other physical facilities (Yeo & Li, 2014:114). Similarly, Barnes (2007:324) added "university" and "guidance" dimensions in addition to the five dimensions of SERVQUAL. Moreover, the curriculum, the academic facilities and the teaching methodology are important aspects to consider as dimensions (Jain, et al., 2010:150). A study by Pereda, Airey and Bennett (2007) adopted the three dimensions of Lehtinen and Lehtinen (1991) in studying service quality among post-graduate overseas students in UK. They formulated a total of 18 items that were categorised under four dimensions rather than the three that they used as a model. In their study, the 'recognition' dimension, which is the corporate quality of the university as perceived by the students, accounted for 34% of the variance in explaining the dependent variable. They concluded that "provision of services is not only about the actual facilities ... it also highlights the fact that ... they [students] judge their institution" (Pereda et al., 2007:62). According to Yener (2013:52) "university image can be defined as the sum of all the beliefs an individual has towards the university". Such an image increases (or decreases) the brand of the university in the country and among students who in turn recommend (or fail to recommend) the university to prospective students. These arguments affirm the need to develop appropriate dimensions to measure services in the context of the ODL system and with particular reference to a postgraduate group of students. Table 2.1 below provides an indication of some of the

instruments that were developed to measure service quality in the higher education context.

Table 2.1: Examples of service quality dimensions in the higher education context

AUTHOR AND YEAR	PURPOSE	DIMENSIONS	NUMBER OF ITEMS	CONTEXT
Lampley, 2001	To identify gaps between expectations and experiences, and determine level of satisfaction	Seven dimensions: • Responsiveness/caring • Records/paperwork • University services • Accessibility/safety • Knowledge/scheduling • Facilities/equipment • Public relations	25 items that measure expectations and experiences, and satisfaction	Doctoral students enrolled in six state universities in USA
Pereda, 2006	To identify service quality measures and their impact on satisfaction	Four dimensions: • Recognition • Quality of instructions and interaction with faculty • Sufficiency of resources • Quality of facilities	18 items that measure students' experiences and their satisfaction	Overseas master's students enrolled at one university in UK
Firadus, 2005	To come up with an instrument named HEdPERF by comparing its efficacy with SERVPERF	Six dimensions: • Non-academic aspects • Academic aspects • Reputation • Access • Program issues • Understanding	41 items that measure service performance	Students in six higher learning institutions based in Malaysia
Shaik, et al., 2006	To design an instrument named DL-sQUAL	Three dimensions: • Instructional service quality • Management and administrative services • Communication	23 items that measure online distance learning services	Undergraduate and postgraduate students in a distance learning institution located in South-east region of USA
Sarrico, Ferreira, and Silva, 2013	POLQUAL	Six dimensions: • Empathy • Assurance • Tangibles • Responsiveness • Reliability • Promptitude		Persons who use the service of Portuguese National Police

Teeroovengadum, et al., 2016	To design an instrument named HESQUAL	Five dimensions with nine sub-dimensions:
		• Administrative quality
		  ○ Attitude and behaviour
		  ○ Administrative procedures
			48 items that measure service performance	Students in the University of Mauritius

		• Support facilities quality
		• Code educational quality
		  ○ Curriculum
		  ○ Attitude and behaviour
		  ○ Competence
		  ○ Pedagogy
		• Transformative quality
		• Physical environment quality
		  ○ Support infrastructure
		  ○ Learning setting
		  ○ General infrastructure		

This study therefore considered the multi-dimensionality of measuring service quality and tried to develop a multi-dimensional, context-specific instrument that measures students' expectations and experiences of service quality. The section below discusses the Gaps Model which constitutes the theoretical framework that guided this study.

2.8 THEORETICAL FRAMEWORK: THE GAPS MODEL

Scientific research usually starts by stating the theoretical framework within which the new study is located and which will eventually be used to explain the findings of the current research. In this study, the Gaps Model devised by Parasuraman, Zeithaml and Berry (1985) is taken as a point of departure. This theory was first developed in 1985 through exploratory research procedures and further strengthened in 1988 through the development of a five-dimensional psychometrically sound measuring instrument named SERVQUAL (Parasuraman, et al., 1988:23). The authors continued to refine the model in their articles that were published in the early 1990s (Mauri, Minazzi, & Muccio, 2013:136). In the 1985 study, the authors conducted 14 in-depth interviews with executives who "held titles such as president, senior vice president, director of customer relations, and manager of consumer market research" (Zeithaml, et al., 1988:37). The four service-providing companies in which the in-depth interviews were conducted, were a retail banking company, a credit card service industry, a security broker's organisation, and a product repair and maintenance business. These interviews resulted in the establishment of the four "company gaps", which were all internal gaps of

service-providing firms, and were labeled as gaps 1 to 4 (see section 2.7.1 for a detailed description of each).

In the meantime, the authors held 12 focus-group interviews with customers that made use of the selected four service industries, which in turn helped the authors to identify the fifth gap, which is called the "customer gap" (gap 5). This gap emphasises the difference between perceptions and expectations of customers and shows the level of service quality (Parasuraman, 1985:43; Mauri, et al., 2013:136). The Gaps Model of service quality and the SERVQUAL instrument are still being employed in various studies that focus on service quality across different geographical locations and service firms (Teeroovengadum, et al., 2016:245; Blešić, Ivkov-Džigurski, Dragin, Ivanović, & Pantelić, 2011:42).

Service quality, especially as seen from a marketing perspective and as described in the Gaps Model, is "the consumer's judgement about an entity's overall excellence or superiority" (Parasuraman, et al., 1985:42), and mainly results from the difference between what customers expect to get from a certain service firm and what they experience in the service encounter (Parasuraman, et al., 1990:34; Kuo, Wu & Deng, 2009:888). The definition of service quality centres on the disconfirmation paradigm whose major emphasis is on the difference between expectations and performances that serves as the base to assess service quality (Bolton & Drew, 1991a, b, cited in Parasuraman, et al., 1994:112). According to Miguel, Moliner and Sánchez (2003:421), perceived quality can be defined as "the difference between service perceived and service expected, so that a service is perceived as being one of quality when prior expectations are exceeded". It was with this understanding that the SERVQUAL instrument that measures service quality by observing the difference between expectations and experiences/perception, was developed by Parasuraman, et al. in 1988. The sections below discuss the five gaps as outlined by Parasuraman, et al., (1985) and as refined and further elaborated upon in the studies of the same authors in 1988, 1990, 1991, 1993 and 1994.

2.8.1 Description of the Five Gaps

Gap 1 is named the “customer expectation vs. management perception gap”. This refers to the discrepancy between how executives of companies perceive the expectations of their customers and the actual expectations of customers who make use of those services. The executives may not always recognise the features and performance levels which customers use to judge a service to have fulfilled the desired quality (Parasuraman, et al., 1985:44). This gap is influenced by three important aspects. These are a marketing research orientation (which is the managers’ efforts to try to get information concerning what customers may need or expect), upward communication (which is how much the managers at the top level facilitate getting information from front-line staff members who have direct interaction with customers), and level of management (which are the number of hierarchical levels between the top managers and the front-line staff members) (Parasuraman, et al., 1991a:339). These three aspects in turn determine the size of this gap. The size of this particular gap becomes larger if the information managers receive about their customers is scanty. The gap also widens if the information that flows from front-line staff members is inadequate or when the hierarchy between the managers and the front-line staff members is extensive (Zeithaml, 1988:39).

Gap 2 of this model is called the “management perception of service quality specification” gap. It concentrates on the discrepancy between how executives of companies perceive customers’ expectations and how accurately these perceptions are translated into specifications of service quality. Constraints related to resources, the unpredictable nature of market conditions and customers’ demand, and the lack of well-trained personnel impact on the way in which the perceptions of executives are translated into specifications. A more important problem related to this, however, was found to be the extent of commitment of company executives to service quality. The absence of total management commitment results in the essence and practice of service quality not being put at the heart of the company’s objectives, and in service quality not being an integral part of the organisational culture. This, in turn, results in twisted specifications that affect customers’ perceptions of quality of services

(Parasuraman, et al., 1985:45; Parasuraman, et al., 1991a:339). According to Zeithaml, et al. (1988:39), “the size of gap 2 in any service firm is proposed to be a function of management commitment to service quality, goal setting, task standardization, and perception of feasibility”.

Gap 3, the “service quality specifications vs. service delivery gap,” is the gap between how service quality should be provided (as determined by executives) and how service is delivered in practice (Parasuraman, et al., 1985:45). Front-line staff members are the face of the company and represent the company in the eyes of customers. However, the service delivery cannot be strictly standardised (though companies usually have guidelines for doing so) as human beings differ in their personalities, and in the ways they interact with customers, which result in variations in the manner front-line staff members perform the delivery of services. This gap is also influenced by factors that are related to staff members. These include teamwork for a common goal among employees, matching of skills of staff members with their jobs, the technologies used in service delivery, staff members’ ability to control their jobs with flexibility, the way employees’ working behavior is evaluated, employees’ level of role conflict in satisfying customers’ needs, and role ambiguity as perceived by employees in understanding what they are expected by their managers to do (Parasuraman, et al., 1991a:339; Zeithaml, et al., 1988:41). It is argued that “service quality is highly dependent on the performance of employees, an organizational resource that cannot be controlled to the degree that components of tangible goods can be engineered” (Zeithaml, et al., 1988:35). This situation affects the way customers perceive the services.

Gap 4 refers to the “service delivery vs. external communications gap”. This gap refers to either the existence or absence of external communication about services to customers. If the company, for example, advertises itself widely (and hence raises the expectations of customers) but delivers less than what it promises, then it creates a service quality gap because what customers understand to be on offer and what they perceive to have received in practice. Executives of the four companies that were interviewed in the development of the Gaps Model held the opinion that companies

should inform their customers on what is done behind the scenes in an effort to improve service quality. Such explanations can affect consumer perceptions of service quality by making the customers understand that the company is committed to providing improved services (Parasuraman, et al., 1985:46). Basically, this gap is influenced by two important aspects: the interaction and communication of different sections of the company in serving customers, and the promise the company makes to customers in the effort of gaining more market share and establishing competitive advantage. The latter aspect could result in a mismatch between what is promised and what is delivered (Parasuraman, et al., 1991a:339). Hence, more interaction and communication is needed between different departments of the company in meeting its strategic objectives. This is in addition to minimising the difference between the promised and the delivered, both of which help to reduce the size of gap 4 (Zeithaml, et al., 1988:44-45).

Gap 5, the "expected service vs. perceived service gap," is a gap that primarily refers to customers. This gap of service quality was originally established from the focus-group discussions that were held with customers of the four companies mentioned above. It is the gap that exists between what customers expect to get from a certain service and how they perceive the delivered service: does the service correspond with their expectations? Has it frustrated, simply met or exceeded their expectations? Service quality is guaranteed when services meet or exceed customers' expectations. Service quality is related to the direction and the magnitude of the differences between what customers expect and what they perceive to have received in the service encounter (Zeithaml, et al., 1988:36). Service quality is therefore a function of the four company gaps, and is referred to as the customer gap that results in perceived service quality (Parasuraman, et al., 1991a:338). The authors of the Gaps Model therefore take service quality as "*a function* of the discrepancy between customers' expectations and perceptions" (Parasuraman, et al., 1993:142). To them, "judgments of high and low service quality depend on how consumers perceive the actual service performance in the context of what they expected" (Parasuraman, et al., 1985:46). Therefore, if customers' expectations exceed their perceptions of what they actually received, the direction of judgment is negative, leading to dissatisfaction; if customers' expectations

and perceptions of the service quality they received are equal, then it signifies mere satisfaction. If, in the third instance, customers' perceptions of what they receive exceed their expectations, this influences their judgment in a positive direction and brings about evaluation of the service quality as excellent or ideal. If the first four gaps have been identified and properly described, it is relatively easy for an institution to understand and deal with the fifth gap, which is the "service quality gap" (Parasuraman et al., 1985:48; Celwey, 2003:72).

Gap 5 is the most important gap for the purposes of this study because this study intends to investigate the gap (the difference) that possibly exist between students' expectations of student support services and their perception (or experience) of the same. The Gaps Model is best represented by Figure 2.1 below.

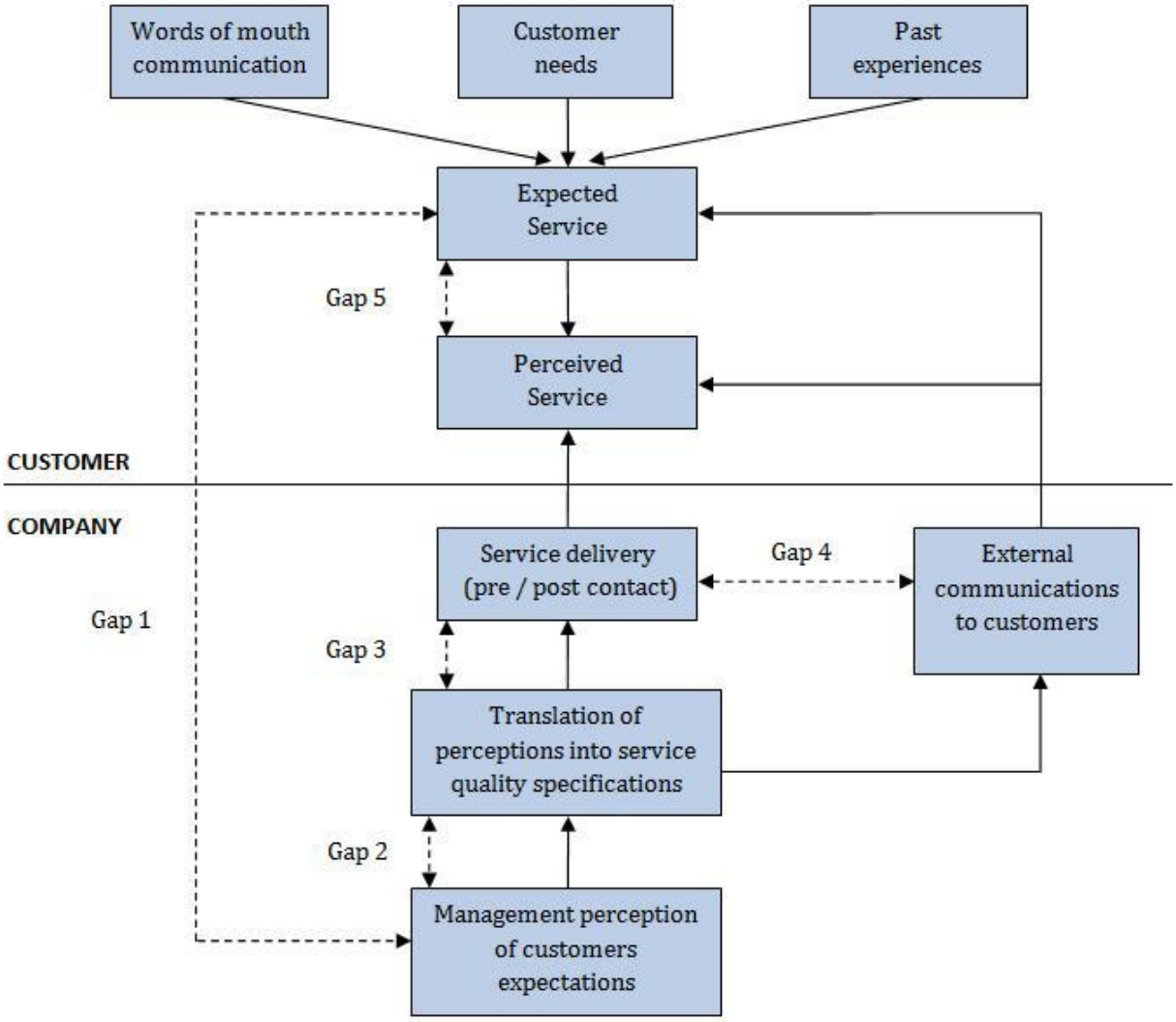

Figure 2.1: The Gaps Model of service quality
Source: (Parasuraman, et al., 1985:44)

This model, as applied to this study, implies that:

Gap 1 is the difference between what students (customers) expect and what the university management (service provider) perceives to be students' expectations

Gap 2 is the difference between what UNISA Management perceives to be students' expectations and the translation of those perceptions into service quality specifications

Gap 3 is the difference between what UNISA Management specified to be service quality and the actual student support services delivered to students

Gap 4 is the difference between the student support services delivered to students and the promise of UNISA (through different media like University news and the UNISA website) to students about its service quality. These four gaps are university gaps.

Gap 5 is the students' (customer) gap. It is the difference between students' expectations of student support services and their perceptions of the services. Students' expectations are influenced by what they have heard from others describing the student support services UNISA provides, their own personal needs, and their past experiences, for example, their experiences in a conventional system of education, which has a different modality from distance education.

2.8.2 Expectations of Service Quality

Expectation is a key element in service quality. It has a strong bearing on what customers desire or want to get from the service encounter because this "component of service quality represents a form of 'ideal' standard" (Parasuraman, et al., 1993:144). According to Parasuraman, et al. (1990:34) "service expectations provide a context for assessment of the service". Customers' expectations are influenced by three important factors, namely word of mouth communication (what customers hear about the service provider from other persons); personal needs of customers (what services customers desire to get from the service provider); and customers' past experiences during previous encounters with the company (Parasuraman, et al., 1985:48; Rajasekhar, Muninarayanappa, & Reddy, 2009:219). Hill (1995:12-13) contends that two more aspects, namely external communication and the price of the service can be added. However, according to Sultan and Wong (2013:75-76, 79-80), information and past experiences in the higher education context are the most influential of these aspects.

Expectations form the most important part of service quality because it is only when customers' expectations are known, that better services can be rendered and continuous improvements can be made. Customers' expectations can be clearly defined

if service providers are well aware of the context of service provision. Identifying customers' needs must precede decisions on what to offer so that customers' expectations are met and quality of services is guaranteed. To be able to identify customers' needs (expectations), service providers usually conduct a needs-assessment. They also advertise their offerings by including ideas that suggest that they understand customers' needs. Such advertisements highly influence the way customers perceive the services by shaping up their expectations (Joseph et al., 2005:67-68). In the educational context and according to Jain et al. (2010:144), "students have become more discriminating in their selection and more demanding of the colleges and universities they choose. Therefore, it is important for universities to understand their [students'] expectations". This emphasises the importance of measuring expectations so that they are better understood and clearly guide the means of further improvement by the service providers (Sultan & Wong, 2010:262).

An important issue that must be dealt with, with caution, while observing the expectation side of service quality, is the fact that customers can have ill-defined expectations especially if situations are unfamiliar to them. This particularly applies to the higher education context where the high school background of undergraduate students could result in "wrong" expectations when they join universities. For example, it is recorded in Hill (1995:15) that undergraduate students' expectations lack the required background for them to have clear expectations from higher education institutions. This implies that prior knowledge influences expectations (Yeo & Li, 2014:108). As opposed to this, postgraduate students are mature enough to know their needs and motivations for joining higher education institutions, and hence they have clearer expectations (O'Donnell et al., 2009, cited in Jancey & Burns, 2013:318).

2.8.3 Experiences/Perception of Service Quality

A very important aspect of service quality is customers' experience of the service encounter. Research on service quality highlights the importance of customers' perceptions of service performance as customers experience it in the service encounter (Kuo, et al., 2009:888). Customers form perceptions of the services that they

experience from the very beginning of the service encounter leading to formation of an overall impression of the quality of the services on offer (Ong & Nankervis, 2012:284). It is noted that customers' perception of services is their evaluation of the performance of service providing firms (Parasuraman, et al., 1990:35). Jain and Gupta (2004:28) believe that "a higher perceived performance implies higher service quality".

The Gaps Model (Parasuraman, et al., 1985:42) argues that service quality can be precisely measured by determining the difference between expectations and experiences. These authors state that the assessment of service quality through the Gaps Model helps to identify drawbacks that in turn help to further improve services (Parasuraman et al., 1990:37). This model is strongly criticised by other researchers. Cronin and Taylor (1992:56), for example, argue that focusing only on experiences leads to a more accurate measuring and understanding of service quality. In contrast to the SERVQUAL model, which makes use of both expectations and experiences in measuring service quality, the focus on experiences only has led to the development of SERVPERF. It is argued that by using the SERVPERF scale, customers' response on service quality is better understood, (meaning that the results explain greater variance in service quality) than the difference in scores for expectations and experiences (Jain & Gupta, 2004:28; Tan & Kek, 2004:22). However, the authors of the Gaps Model clearly stated that "questions and rating scales that focus exclusively on customers' perceptions [experiences] of a company's performance are *imprecise* [emphasis added] measures of service quality" (Parasuraman, et al., 1990:37).

2.8.4 Customer Satisfaction

In the Gap Model theory, the construct of service quality is based on an expectancy-disconfirmation paradigm (EDP) which "was developed to conceptualize satisfaction" (Oliver, 1980, cited in Sultan & Wong, 2010:261). The EDP centres on the idea that if the difference between expectation and perception is positive, it implies satisfaction (Dann; 2008:337; Jain & Gupta, 2004:27). When perception equals expectation, it signals mere satisfaction. Thirdly, when perception is less than expectation, it can be regarded as an indication of dissatisfaction (Barnes, 2007:314; Kitchroen, 2004:17). As

a result of this description, however, EDP is strongly criticised for overlooking the complexity of the constructs of service quality and satisfaction (Sultan & Wong, 2010:261).

Satisfaction is “related but not equivalent to service quality” (Parasuraman, et al., 1988:15; Teeroovengadum, et al., 2016:246). It is asserted that perceived service quality consists of different aspects, the most important of which is satisfaction (Sultan & Wong, 2013:78-79). However, perceived quality is an outcome of specific service encounters and the judgement is cognitive whereas satisfaction is an outcome of the general thoughts of certain services and it is a more emotional reaction (Miguel, et al., 2003:422). It is an assumption of this study that institutions that provide services to their customers should continuously consider the importance of satisfying their customers’ needs. Satisfaction of customer needs leads organisations not only to securing sustainability but also to getting the advantage of increasing their market share (Dann, 2008:334; Watson, 2003:149). This starts from understanding customers’ expectations and perceptions that leads to providing a better quality service. In this way, customers would be satisfied and hence retained; services would be continuously improved; organisations would sustain their business; and their competitive advantage would increase (Jain, et al., 2010:144).

In this study the Gaps Model was adopted because the point of departure was to investigate the causes of students’ complaints which can be construed as the discrepancy between what students expect and what they perceive to be receiving. The two major reasons for adopting the Gaps Model are the possibility of judging service quality by comparing expectations and experiences, and both the strong diagnostic power (Barnes, 2007:328; Tan & Kek, 2010:23) and fairly consistent results (Yeo, 2009:65) which SERVQUAL has delivered. In this process, however, the study attempts to formulate and employ dimensions of service quality that are contextual both to the open distance and cross-border education and also to the Ethiopian situation as suggested by studies like that of Hill (1995:15), Jain, et al., (2010:145), Sultan and

Wong (2010:264) and Malhotra, et al., (2005:258-259) in which they concluded that sector- and context-specific instruments are needed to measure service quality.

2.9 CHAPTER SUMMARY

This chapter provided a brief description of the Ethiopian context and its higher education system. It also presented a description of the meaning and history of distance education, student support services in distance higher education, and the essence of quality in a higher education system. It analysed concepts related to service quality and considered the dimensions of measuring service quality as evidenced from empirical research. The chapter concluded by adding the theoretical framework of the study, which is the Gaps Model. All these elements of the chapter significantly contribute to the issues of the study as it is concerned with the development of an instrument that measures student support service quality, the identification of the gaps between the students' expectations and experiences and the observation of the extent of the students' satisfaction as a result of the services provided. In the following chapter, the research paradigms, research design and the tools used in data analysis are discussed.

CHAPTER 3

RESEARCH DESIGN AND METHODS

3.1 INTRODUCTION

This chapter deals with issues related to the procedures followed to accomplish the investigation. These include the means in which validity and reliability are secured, the research design or plan, the research approach, and the research strategies employed. Among other things, this chapter focuses on the data collection and data analysis strategies that include factor analysis, dependent t-test and regression analysis.

3.2 VALIDITY AND RELIABILITY

Researchers use survey instruments that have previously been standardised, or they have the freedom to develop new instruments. Whether or not these instruments are newly-developed or adopted from the standardised ones, instruments need to be characterised by the qualities of validity and reliability. Validity and reliability increase the credibility of the specific instrument and, as a result, also the findings of the research (McMillan, 2012:131). Validity refers to how accurate the instrument measures the construct it is intended to measure. Reliability, on the other hand, has a bearing on how consistent the instrument is in measuring the construct under study (Tavakol & Dennick, 2011:53).

There are three main types of validity, namely content, construct and criterion validity. Content validity, often regarded as the sophisticated feature of face validity, is established by asking experts to rate if each item fits the measuring instrument. The items are checked against a sample frame of dimensions that are intended to be included in the instrument. Content validity is more relevant in achievement tests but it is also fully applicable in affective tests, like the one that was developed in this study (Coolican, 1994:153; Domino & Domino, 2006:53; Murphy & Davidshofer, 2005:173). This issue is discussed in more detail in section 3.6.4.2 of this chapter. Construct validity is usually achieved through exploratory or confirmatory factor analysis. Exploratory factor analysis is discussed in some detail in section 3.6.4.4 of this chapter. Criterion validity, which did not constitute a part of this study, refers to the statistical significance of relationships (Nunnally & Bernstein, 1994, cited in Rubio, Berg-Weger, Tebb, Lee & Rauch, 2003:95).

Reliability also has different forms, like inter-rater, split-half and test-retest reliability. Inter-rater reliability analysis, as discussed in section 3.6.4.1 of this chapter, is used to observe the agreement (or disagreement) between two or more persons who independently rate a specific subject of research or behaviour (Domino & Domino, 2006:48; McMillan, 2012:140). Split-half reliability refers to splitting (dividing) the items in an instrument randomly and expecting the scores from the two halves to show a meaningful relationship, which indicates a high reliability of the instrument. Test-retest reliability comprises administering the instrument to the same respondents with space of time and if the results of the two tests correlate, it shows the reliability of the instrument (Field, 2009:673-74; Domino & Domino, 2006:47).

Another way to increase the reliability and validity of an instrument is to consider data which are missing from the data set, including data cleaning and missing data analysis. Data cleaning is done by conducting a frequency distribution on the data set so that items that have been incorrectly coded can be identified and corrected. Missing data can be the result of many different causes, one of which is non-response on the part of the respondents. Individual items or respondents with more than 10% missing values should be excluded from the data set (Hair, Black, Babin & Anderson, 2014:45; Everitt & Hothorn, 2011:5-6). In this study, inter-rater reliability, content validity, and factor analysis were utilised to increase the reliability and validity of the instrument and also the findings of the study.

3.3 RESEARCH DESIGN

Research design, which is the manner in which the researcher tries to answer the research questions, is the plan upon which the “how” of addressing the problem under investigation is structured. In this plan, the research questions and objectives of the study should be outlined along with the sources of data that are collected to answer the questions, the ways of how to analyse and interpret them and related ethical considerations (Creswell, 2009:3; Leedy & Ormrod, 2010:85; Saunders, et al., 2012:159). The table below shows the research plan that was employed in this study. It shows the phases of the design-based research along with the research questions, the objectives, the sample used as a data source, data collection tools and data analysis techniques employed.

Table 3.1: Research Plan

Research questions	Research objectives	Phases of design	Sample	Data collection tools	Data analysis techniques
How can the quality of student support services in ODL be objectively measured?	To develop a context-sensitive instrument that can accurately measure the quality of the student support services provided by UNISA to its doctoral students based in Ethiopia.	*Informed exploration*	Literature and other documents	Literature review	
		Enactment	• Raters/judges • Front line staff members • Experts in the field of services marketing, educational measurement, and a sample of the actual respondents	• Instrument used to match items with dimensions • Instrument used to check items' relevance, clarity and dimension	• Inter-rater reliability (IRR) • Content validity index (CVI) through Inter-rater agreement (IRA)
		Evaluation: local impact	• Students sampled for pilot test. • Students sampled for the main study.	• Instrument pilot tested. • Instrument further standardised.	• Cronbach's alpha test. • Factor analysis.
What are the expectations and experiences of the students regarding the quality of student support services offered by UNISA?	To determine the expectations of doctoral students based in Ethiopia and to record the actual experiences of these students with regard to student support services.	*Evaluation: broader impact*	Students sampled for the main study.	Utilization of newly developed instrument.	Descriptive statistics; means and standard deviations.
What is the quality (judged by the extent in which students' experiences deviate from their expectations) of the student	To compare the abovementioned expectations and experiences in order to judge the quality of the		Students sampled for the main study.	Utilization of newly developed instrument.	Dependent (pair-wise) t-test.

support services that doctoral ODL students based in Ethiopia receive?	provided student support services, and to identify if there are any gaps.				
How can the level of satisfaction of doctoral ODL students based in Ethiopia with student support services provided, be accurately determined?	To observe the level of student satisfaction with various dimensions of service quality.		Students sampled for the main study.	Utilization of newly developed instrument.	Simple and multiple regression analysis.
Assuming that adequate answers to the above questions can be found, what implications does the findings of this study have for managers at UNISA?	To identify the shortcomings in UNISA's provision of student support services to Ethiopian students, bring it to the attention of managers at UNISA and offer suggestions for improvement in this regard.				Synthesis of findings so as to recommend the way forward.

3.4 RESEARCH PARADIGMS

Research is influenced by paradigms which are lenses that guide the types of questions that should be identified by a specific investigation, the methods that should be used in addressing the research questions, and how data should be interpreted (Aliyu, Bello, Kasim, & Martin, 2014:80; Bryman, 2012:630). There are four major types of paradigms; the positivist (knowledge being empirical and objective), the interpretivist (knowledge being socially constructed and subjective), the critical (knowledge based on many truths) and the afrocentric (knowledge being indigenous) (Okeke & van Wyk, 2015:60-61). All these paradigms have their ontological, epistemological and methodological assumptions. Ontology refers to the nature of reality whereas epistemology refers to acceptable knowledge (Saunders, et al., 2012:130-32). In this chapter, only the first two paradigms will be highlighted.

In the positivist paradigm, the ontological assumption is that reality is objectively found in the outer world. It is an objective, independent and separate entity from the researcher, who tries to understand what is in the world of objective reality through quantifiable strategies, and as experienced by the senses. This is in contrast to the interpretivist paradigm whose ontological assumption is that reality is subjectively constructed in the minds of both the researcher and the research participants, who are also part of the reality. In the interpretivist paradigm, there are multiple realities as socially constructed and perceived by different persons (Neuman, 2000, cited in Okeke & van Wyk, 2015:23).

Research is also guided by the epistemological premises of a paradigm, which involves the relationship between the researcher and the subject/object of research. Positivists take an independent and a value-free approach. The researcher has minimal or no interaction with the research participants so as to secure objectivity by avoiding bias. Moreover, for positivists, knowledge is gained by means of reasoning and not by speculation. On the other hand, for interpretivists, the researcher and the researched have closer relationships in co-constructing knowledge which is influenced by the culture, history and values of societies, which in turn can be studied ethnographically

(Aliyu, et al., 2014:81; Cohen, Manion, & Morrison, 2005:8; Jayasundara, 2009:135; Okeke & van Wyk, 2015:23; Wilson, 2013:9).

The two paradigms have clear preferences for the use of research methods. The positivist paradigm provides for research to be done quantitatively by employing experimental studies or statistical procedures that basically emanated from checking relationships between (among) independent and dependent variables. Experimental results and scientific statistical investigation have, among others, the ability of generalisability of the findings from the sample to the general population (Aliyu, et al., 2014:81-82; Creswell, 2009:4; Okeke & van Wyk, 2015:25; Wilson, 2013:9, 12). A deductive approach in doing research encompasses collection of data through survey instruments, giving concepts operational definitions, and accomplishing the research in a strictly structured manner (Wilson, 2013:14). The positivist paradigm is characterised by its use of deductive reasoning which starts from the general theory followed by answering the variables in question empirically. In the interpretivist paradigm, research is undertaken inductively from the specific to the general. The procedures employed in this paradigm focus on building theories rather than testing them (Okeke & van Wyk, 2015:25). In the interpretivist paradigm, tools like interview guides or focus-group discussions are employed like in qualitative studies. In addition, inductive reasoning is used in which case "the researcher logically establishes a general proposition (or **grounded theory** [emphasis original], based on the observed facts" (Okeke & van Wyk, 24-25). The war between positivist and interpretivist paradigms subsided when the mixed-methods approach was introduced (Bryman, 2012:650). In mixed methods, the researcher may employ quantitative methods to be supported by qualitative methods or use qualitative methods dominantly, supported by quantitative data (Saunders, et al., 2012:164).

In this study, the Gaps Model of services marketing (discussed in chapter 2, section 2.8) was adopted as a theoretical model upon which the concepts of student support service quality were discussed. This study followed the positivist paradigm, which presupposes that knowledge is external to the researcher, because the major focus of this study

(student support service quality) is a reality that is separate from how it is perceived by the students who responded to the instrument that was used in this study.

3.5 GENERAL RESEARCH STRATEGY

To achieve its aims, the study adopted an educational design research strategy which has its roots in the fields of design and engineering. The educational design research strategy is also called *design-based research* so as to show that it mainly accounts for characteristics of "design-analysis-redesign cycles" (Shavelson, Phillips, Towne & Feuer, 2003:26). Being different from everyday life of educational processes but with a purpose of improving them, the educational design research strategy, involves non-linear, cyclic and iterative processes. Some of these processes may run simultaneously whereas others run on their own. At the end, all processes help develop context-based educational research outcomes that would give applicable solutions to problems at hand (Bakker, 2014:38; Design-Based Research Collective, 2003:5).

Design-based research is also called "developmental research" because of its nature that encompasses, among other things, processes that go back-and-forth so as to reach the desired outcome (Bakker, 2014:37; Design-Based Research Collective, 2003:5; Lijnse, 1995, cited in Plomp, 2007:19). A design / developmental research strategy was regarded as ideal for this study because, through iterative processes, a measuring instrument inevitably had to be developed.

The design-based research strategy closely collaborates with all research strategies, and also encapsulates disciplines from fields in both the natural and social sciences. In this regard, proponents of design-based research, Blessing and Chakrabarti (2009:102) maintain that, "because of the variety of factors involved in design, the study of design often requires the selection and combination of research methods from various disciplines." In addition to this, design-based research is applicable to different kinds of research problems. It is "used successfully in a wide range of domains and for a variety of research questions" (Edelson, 2002, cited in Bakker, 2014:37). However, when it is applied to specific situations, like it is used in this study, design-based research gives

each research strategy the liberty of its uniqueness. “Every design project is by definition unique: the aim of a project is to create a product that does not exist yet … the uniqueness may relate to a *particular detail* [emphasis added] as well as to the overall concept; the tools, methods, resources and *context* [emphasis added] in which the project takes place will differ...” (Blessing & Chakrabarti, 2009:2). This research strategy is believed to be most fitting for a study such as the current one because of its emphasis on the setting / context, and which corresponds with the nature of quality which is also context-specific. Design-based research also tailors interventions that are fit for the specific purpose under consideration (Design-Based Research Collective, 2003:6; Kelly, 2006:175; Tait, 1997:1). This is apart from its wisdom in allowing flexibility and iterative approaches to come up with some result. Since contextual factors differ from place to place, the importance of finding practical solutions to problems or challenges in one context rarely has the same solution to those in another context (Tilya, 2003:63). Design-based research, as applied in this study, involves the development of an instrument that measures student support service quality and using this instrument to determine students’ expectations and experiences of service quality, as well as to identify gaps between students’ expectations and experiences of service quality. In addition, the instrument is used to observe whether service quality measures are related to students’ satisfaction. This study accounted for “context-sensitivity” by having been done in cross-border education, in an ODL environment, in Ethiopia. As the design-based research strategy allows for incorporating different disciplines and methods, this study employed survey as a strategy in data collection along with accompanying statistical tools for data analysis like Cronbach’s alpha, factor analysis, dependent t-tests, and regression analysis. Examples of studies that employed the design-based research include Mafumiko (2006) who developed ways of improving the high school Chemistry curriculum in Tanzania, and Bakker (2004) who developed methods of teaching statistics to junior high school (grades 7 and 8) students.

3.6 SPECIFIC RESEARCH STRATEGIES

The specific research strategies employed in this study correspond with the general design-based research strategy that has been discussed above. Bannan-Ritland’s

(2003) study on the role of design in research can be regarded as a hands-on guide to implement the different strategies employed in this study. In Bannan-Ritland's study, the steps a researcher needs to follow in making use of the design-based research were clearly highlighted. The four phases of the design-based research strategy comprised informed exploration, enactment, evaluation of local impact and evaluation of broader impact (Urlich & Eppinger, 2000, cited in Bannan-Ritland, 2003:21).

Informed exploration is the first step of the design-based research strategy. It is geared towards identifying and defining the problem under investigation. It involves exploring and consulting possible sources like related literature and other documents that may give an idea of what is intended to being designed; in case of this study, it is the development of an instrument. This phase is understood to be the foundation in building a new model (Bannan-Ritland, 2003:22; Sloane & Gorard, 2003:29).

The second stage, enactment, involves the development of a preliminary intervention that works as a base for further refinement. It involves multiple iterative steps of remoulding the design, which could take a considerable amount of time. Stakeholders like researchers, experts, teachers and parents may contribute by providing the necessary inputs (Bannan-Ritland, 2003:23). In this study, it comprised getting feedback from different groups of knowledgeable persons.

The third and fourth phases of design-based research involve evaluation. The third phase concentrates on an evaluation of local impact which consists of two stages. The first stage can be taken to be a formative assessment that assists to secure feedback from the actual users of the design (Bannan-Ritland, 2003:23). The second stage aims at getting a response from a larger group of respondents and can be regarded as summative evaluation (*ibid*.). These two stages of the evaluation phase usually result in changes in the design that can bring about substantial transformation. Chapter 4 of this study elaborates on the processes as applied in this study: whereas the first stage of formative assessment was undertaken as a pilot test procedure, the second stage

implied summative assessment and was demonstrated by administering the instrument within a larger sample.

The fourth phase of design-based research is the evaluation of broader impact phase. It is the phase where “publication or presentation of findings [is] seen as a closure event. [It also has] concerns related to the adoption (and adaptation) of researched practices and interventions” (Bannan-Ritland, 2003:23). In this phase, the final product of the design is applied on what the design is planned to be used for. Further research can continue from the outcome of the design (Bannan-Ritland, 2003:24) as “it often leads to products that are useful in educational practice because they have been developed in practice” (Bakker, 2014:38). In this study, the data set that resulted from an application of the final version of the instrument led to findings which lent itself to practical interventions. The details of this last phase are covered in chapter 5 of the current study. In design-based research, it is recommended that the researcher should be more concerned about the parts of the final design that did not function very successfully. Consistently identifying failures in the design (in this study: the measuring instrument) assists in further refinement and improvement of the model (Sloane & Gorard, 2003:31).

3.6.1 Population

The concept “population” represents a defined set of persons, objects, items, or organisations, which constitute the major focus of the research. This is the group in which the researcher is interested and intends making generalisations about. All elements in a population must have some common characteristics to be categorised as a single group of interest. The population of any scientific investigation is the group on which inferences are ultimately based and from which the sample is drawn. It should be identified by the researcher before sample selection and data collection starts (Babbie, 2013:134; Gay, et al., 2011:130; Saunders, et al., 2012:260). A population is classified into a target population and an accessible population. The target population is “the population to which the researcher would *ideally* [emphasis added] like to generalize study results” whereas an accessible population is “the population from which the

researcher can *realistically* [emphasis added] select subjects" (Saunders, et al., 2012: 130). Once the accessible population is clearly known, the researcher draws samples to accomplish the actual research. In the case of this study, the ideal population is all doctoral students enrolled in the UNISA-Ethiopia Centre in the academic year of 2014 whereas the real population is the 260 students who responded by filling out the instrument that was developed in the study.

3.6.2 Sampling

Sampling is a technique for selecting a sub-section of a population of interest, whereas the concept "sample" refers to a "group of participants from whom data are collected". Methods of sampling can broadly be classified into probability and non-probability sampling (McMillan, 2012:95; Saunders, 2012:130).

Probability sampling procedures give every member of the population an equal chance of being selected. Commonly-employed probability sampling techniques include simple random, stratified, and cluster sampling. Non-probability sampling, on the other hand, does not give every member of the population an equal chance of being selected. Non-probability sampling techniques include convenience sampling, quota sampling, purposive sampling and snowballing (Saunders, et al., 2012:140-41).

From the population of doctoral students registered at the UNISA-Ethiopia campus, selection of participants in this study was done by using the convenience sampling technique "in which respondents [were] chosen based on their convenience and availability" (Babbie, 1990, cited in Creswell, 2009:148). The students were reached telephonically and asked for their willingness to participate in the study. Once they confirm their willingness, they were asked for their private (non-UNISA) e-mail addresses (this was done for the sake of confidentiality) through which the instrument was sent to each one of them and data was collected by means of their forwarding the filled-out instrument to the researcher's private e-mail address. Convenience sampling is often criticised for a perceived lack of generalisability to a larger population (Babbie, 2013:128; Creswell, 2009:148; McMillan, 2012:103; Saunders, et al., 2012: 141).

However, the advice of McMillan (2012:104) was followed “not to dismiss the findings but to limit them to the type of subjects in the sample”. A study that was done by Sousa, et al. (2004:130), on the other hand, justifies that findings from respondents that are chosen through convenience sampling can be taken to indicate about the target population. These authors cited Cochran (1977) who “… suggests that known data from a population can be compared with data from a sample in terms of average variability to determine whether there are similarities between the two data sets” (Sousa, et al., 2004:130).

3.6.3 Data Collection Procedures

Once the population and sample are determined, the researcher progresses to the stage of data collection. Data are usually collected through different means like surveys, observation, interviews, and focus-group discussions. This study employed the survey method, which is geared towards describing the characteristics of the target population by getting responses from a sample of respondents. Surveys can be conducted cross-sectionally or longitudinally, with questionnaires and tests as the most widely-used data collection tools. Questionnaires can be open-ended (where the respondent is offered an opportunity to provide his/her own ideas) or close-ended (where the respondent chooses from a set of predetermined alternatives). Questionnaires are also uniform for all respondents, who can be very large in number. Data can be collected by sending the questionnaire through the postal system or by e-mail to respondents, or they can be collected by having the questionnaires completed in the presence of the researcher or research assistants, for example, among students in a classroom or among respondents in their local environment (Gay et al., 2011:184-85; McMillan, 2012:146-47; Saunders, et al., 2012:416-17). In this study, data were collected by means of an instrument (questionnaire), the development of which is thoroughly discussed in the next chapter.

Questionnaires are used to pose research questions that have the purpose of describing or explaining the subject, construct or object which constitutes the focus of the research. Unlike the methods that are used for qualitative studies (like in-depth

interviews, observation, document analysis or focus-group discussions), questionnaires are less useful in exploratory studies (Saunders, et al., 2012:419). To be able to collect reliable data, questionnaires should be designed carefully. They may include, for example, dichotomous (yes/no) questions or Likert scales. Likert scales show agreement or disagreement with statements, most commonly on a five- or seven-point scale. In cases where each item has two response setups, it is advised to pair either the items or the response formats (McMillan, 2012:157; Parasuraman, et al., 1990:35; Saunders, et al., 2012:424). Once the questionnaire is designed and distributed via different means (like face to face, online, e-mail, postal and the like), response rate is calculated. Generally, a 50% response rate is considered to be acceptable (Gay, et al., 2011:193). Data that come by means of questionnaires are analysed using statistical methods (McMillan, 2012:146). In the case of this study, two response types were required in the multi-dimensional questionnaire (instrument) that was used to collect data. For attractiveness and ease of reference by the respondents, the items were designed to have two-column response types. SPSS was used to analyse the quantitative data that were collected by the instrument. In addition, the one item that was included in the instrument to get some qualitative information from the respondents was analysed thematically.

3.6.4 Data Analysis Procedures

This section of the chapter provides a discussion of the procedures and techniques that have been employed in analysing data sets that come from different data sources related to the last three phases of design-based research. Once the instrument was developed and the first phase of informed exploration was met, then the collected data were analysed by employing different statistical techniques. An indication of these are presented in the sub-sections below, in the sequence of their use in the design.

3.6.4.1 Inter-rater Reliability (IRR)

Inter-rater reliability (IRR) is one of the techniques of statistical analysis that was employed in this study. It forms part of the enactment phase of the design-based

research. IRR is regarded by various authors as a manner in which to achieve or enhance research reliability. For example, it is stated that “IRR measures homogeneity ... by two or more raters in order to establish the extent of consensus on use of the instrument” (Wakeling, Mann & Milner, 2011:1325). Another explanation reads: “IRR indices relate to the extent to which raters can consistently distinguish between different items on a measurement scale” (Gisev, Bell & Chen, 2013:331). Employing the technique of IRR in research helps to increase the meaningfulness and accuracy of data, and gives valuable information to both the researcher and the reader (Gisev et al., 2013:331; McHugh, 2012:277). IRR was used in this study to check if raters agreed on the assignment of the items to respective dimensions. This procedure mainly involved alignment between items and the dimension the items fall into (cf. Chapter 4, section 4.3.1.).

IRR measures the similarity of ratings by two or more raters. This is done in two ways, namely through calculation of percentages and kappa statistics (LeBreton & Senter, 2008:816; Maclure & Willett, 1987, cited in Wynd, Schmidt, & Schaefer, 2003:512). The application of percentages is simple in that the researcher determines where raters have agreed on the status of the items. The total number of items on which the raters agreed, is divided by the total number of items contained in the questionnaire and the percentage then gets calculated. However, this technique is questioned by Cohen (1960:39) who holds the opinion that when percentages are used, the proportion of “chance agreement” is not accounted for. For this reason, Cohen developed the so-called “kappa statistic” that takes into account not only the number of agreements on items, but also the possibility of random agreements when rating is done only by two raters (Cohen, 1960, cited in McHugh, 2012:277; Domino & Domino, 2006:48). The formula for kappa statistics as promoted by Cohen (1960:40) is as follows:

$k = \frac{p_o - p_c}{1 - p_c}$; where p_o is the proportion of agreement between the judges and p_c is the proportion of agreement expected by chance.

Subsequent studies developed the kappa statistic to also take account of cases where the number of raters is more than two. The best-known method was developed in 1971 by Joseph Fleiss which is an extension of Cohen's work. Fleiss' kappa extends the calculation of inter-rater reliability from being limited to two raters to three or more than three raters and still makes provision for chance agreements (Fleiss, 1971:379). The formula for Fleiss' kappa is the following:

$k = \frac{\bar{P} - \bar{P}_e}{1 - \bar{P}_e}$, where $\bar{P}$ is the overall extent of agreement and $\bar{P}_e$ is the mean proportion of agreement.

Other statistical techniques that can be used to calculate inter-rater reliability include Pearson's r, Krippendorff's alpha, intraclass correlation (ICC), *T* (Tau), and Spearman's Rho (Gisev et al., 2013:335; McHugh, 2012:277; Polit, Beck & Owen, 2007:461). Similar to all other reliability coefficients, kappa ranges from 1.0 to -1.0. These two extreme values are regarded as an indication of either perfect reliability (1.0) or perfect non-reliability (-1.0). The negative value shows perfect disagreement between the raters, and hence it is not of value in calculating inter-rater reliability (McHugh, 2012:279; Wynd et al., 2003:512-13). Experts in the field of statistics are not unanimous as far as the interpretation of values less than 1.0 are concerned. Some consider kappa values as "substantial" when they are greater than 0.75 whereas they view values between 0.40 and 0.74 as between "fair" and "good". Values less than 0.40 are deemed to be "very poor" and of little help to make meaningful conclusions (Fleiss, Levin & Paik, 2003: 604; Gisev, et al., 2013:333). Other authors describe kappa values as follows: "*k* below 0.2 = poor agreement, *k* of 0.21-0.4 = fair agreement, *k* of 0.41-0.6 = moderate agreement, *k* of 0.61-0.8 = substantial agreement and *k* of 0.81-1.0 = almost perfect agreement" (Morris, MacNeela, Scott, Treacy, Hyde, O'Brien, Lehwaldt, Byrne & Drennan, 2008:646).

Although the cutoff point for acceptable kappa values varies slightly from one researcher to another, an acceptable coefficient should at least be 0.70 (Hutchison & Burch, 2011:429) with a minimum of 0.60 still acceptable under certain conditions (Gelfand & Hartmann, 1975, cited in Wynd, 2003:513; McHugh, 2012:279;). The kappa

statistic is criticized for being sensitive to rater bias and number of observations (Wynd, 2003:513). Moreover, kappa is known to be specific and unique to a study at hand and hence cannot be generalised (Gisev, et al., 2013:336). Since rating is the function of the particular situation and particular judges, there is a need to further check the instrument by means of the technique of content validity (Hutchison & Burch, 2011:428). Presenting percentage values along with the kappa results is recommended for provision of a "better" interpretation (Morris, et al., 2008:646). Understanding IRR gives the instrument a preliminary categorization in different domains which work as a starting point before content validity is done (Murphy & Davidshofer, 2005:157). In this study, Fleiss kappa was used for four raters who first judged the alignment of items with dimensions. Afterwards, only two raters' responses were taken in determining the IRR values for the overall instrument and for each of the dimensions, for which Cohen's kappa was employed (cf. Chapter 4, section 4.3.1.).

3.6.4.2 Content validity

The 'enactment' phase of design-based research involves getting information from different sources so as to cyclically check and re-check the design of the subject under consideration. In this study, this phase includes observing the content validity of the instrument from two directions. As in the case of inter-rater reliability, researchers in different fields of study tend to hold diverse views on the issue of content validity. One of the views, for example, is articulated by researchers in the field of Nursing Science (Polit, et al., 2007:459), who emphasise the role of content validity in the development of the survey instrument. In this regard, researchers are expected to show clearly that the instrument satisfies the requirements of content validity by subjecting it to a small sample of actual respondents, experts in the field, and persons in the field of measurement who have to rate each item's relevance and clarity (Wynd, et al., 2003:509). This is done to minimise the possibility that some items in the measuring instrument are omitted and others regarded as irrelevant when the instrument is utilised to obtain the views of the actual respondents of the study (Magasi, Ryan, Revicki, Lenderking, Hays, Brod, Snyder, Boers & Cella, 2012:743). Taking into account the degree in which "experts" agree on the relevance and clarity of each of the items and of

the instrument as a whole, finally helps to ensure content validity (Chadha, 2009:147; Domino & Domino, 2006:53; Magasi et al., 2012:743).

In contrast to the above assertions, another view in the process of content validity is done deductively by sampling out from a big pool of items. “So, [content validity] concerns only the test items (i.e. stimuli) and makes no mention of the responses that people provide to the test items” (Beckstead, 2009:1275). It is further argued that in developing instruments, “content domain sampling” is an important step in securing a sufficient sample of items in a test. However, what is called “content validity” is non-existent and “naught” (Guion, 1977, cited in Beckstead, 2009:1276).

The current study, as indicated in section 4.3.2., adopts the conceptualisation of content validity as employed by researchers in Nursing Science. It also cites the application of content validity in the development of instruments in areas of social work (Rubio et al., 2003) and in service quality in higher education (Lampley, 2001). Content validity implies the presence of a sufficient number of items in an instrument to adequately measure a certain construct (Polit et al., 2007: 459; Rubio et al., 2003:94). In addition, content validity is defined as “... the degree to which individual items represent the construct being measured, and cover the full range of the construct” (Field, 2009:12). Content validity usually concerns the relevance/importance, clarity/unambiguity, dimension, and overall comprehensiveness of the items included in an instrument. Relevance refers to the extent to which each item in the instrument (the questionnaire) adequately measures the construct under study, whereas clarity refers to whether or not the wording of each item is clear enough to be understood by respondents. Dimension is the category into which an item falls and it is the latent variable which gets measured through the common result of the items that represent it. In this regard, a preliminary factorisation that resulted from the IRR process along with theoretical and operational definitions of the dimensions under consideration should be presented to the experts so that they rate each item in terms of whether or not it actually belongs to the specific dimension. This kind of procedure assists to calculate a Factor Validity Index (FVI) (Rubio et al., 2003:98, 100). Comprehensiveness refers to how well all the items in the

instrument measure the construct and whether there is a need for addition or deletion of items (Rubio, et al., 2003:95-97).

The question that arises at this point is exactly who the “content experts” should be. The answer to this question has a significant effect on the level of soundness of the process of ensuring content validity. Instrument developers should align their choice of “experts” with the theoretical and conceptual framework they adhere to (Grant & Davis, 1997: 270; Davis, 1992:194; Lampley, 2001:10). In this study, for example, the selected theoretical framework for the study is the Gaps Model of service quality. Consequently, services marketing specialists are potential experts to check if the new instrument includes a sufficient number of relevant items within the context of service quality. Another potential pool of experts is professionals in the field of scientific testing and measurement. The need for this group of experts is to evaluate the rating scales, the type of statistics that the instrument is geared towards, and the general structural format of the instrument. A third pool of experts may be a small sample of potential respondents. This group can make a contribution by checking the clarity of items and also by identifying if there are items missing from the instrument that should be included. In addition to these three groups of experts, front-line staff members of the service provider can also be regarded as content experts. Since they have direct interaction with service receivers, such front-line staff members are knowledgeable about the characteristics of the respondents and are in a good position to check relevance and clarity of items in an instrument that is designed to collect data from the service users (Davis, 1992:194; Lampley, 2001:10; Rubio, et al, 2003:96,103). Expert choice from the four pools above usually leads to the desired result in securing the content validity of a newly developed instrument. Such a group of experts helps in identifying omissions, deleting less relevant items, checking clarity of the items, and giving the instrument an appropriate format and structure (Davis, 1992:195).

After securing their consent, the experts should be made aware of the study at hand by giving them documents on the general background of the study, the research questions/hypothesis, definitions of concepts and the purpose of the study with the

major aim of preparing the experts “to provide a comprehensive review of the instrument” (Davis, 1992:195; Lynn, 1986:384). The content reviewing session can be done face-to-face by having the experts act as a panel or individually. The number of experts may vary from one study to another. Lynn (1986:383), for example, recommends a minimum of three but prefers to have five to ten experts so as to secure control over chance agreement among experts. Other authors recommend 6 to 20 experts (Grant & Davis, 1997:270; Rubio et al., 2003:96). For example, in a study of service quality in higher education, Lampley (2001:10) used 15 doctoral students as experts whereas Rubio et al. (2003:99) used two sets of six persons each, which had links with family care-giving and well-being, to develop an instrument in the field of Social Work.

Experts requested to rate the relevance, clarity and dimension of each item, should also be requested to write notes (provide suggestions) on any item that they think needs modification: items they regard as unnecessary and feel should be deleted, items that should be split into two separate questions because they constitute double-barrelled items and items that were perceived as missing. Finally, the experts should be asked to give an overall rating of the comprehensiveness of the instrument as a whole. All these steps are essential to ensure the content validity of the instrument (Polit et al., 2007:459; Rubio et al., 2003:96). Ensuring and enhancing content validity is a rigorous process that eventually renders the instrument more objective (Lynn, 1986:385; Rubio, et al., 2003:102).

The statistical technique that is commonly employed to calculate the content validity index for each item (I-CVI) and the factor validity index for each dimension (FVI) is Inter-rater agreement (IRA). This technique is different from inter-rater reliability because IRA measures consensus among experts who “share a common interpretation of the construct” (Stemler, 2004, cited in Polit, et al., 2007:461) whereas inter-rater reliability shows the consistency of the raters in rating the subject of the study. In addition, IRA does not account for chance agreements whereas IRR takes account of chance agreements (*ibid*.). However, it is strongly argued that IRA, which is the proportion of

agreement, is the best method to calculate CVI for many reasons, among which is the ease of calculating and understanding its meaning. It also gives information both at an item level and over the whole instrument (Polit, et al., 2007:462). To be able to calculate CVI in terms of IRA, experts are asked to rate each item on a four-point scale for each of the item's relevance, clarity, dimension, and then overall comprehensiveness of the instrument (Polit & Beck, 2006:491; Polit, et al., 2007:460; Rubio, et al., 2003:98; Wynd et al., 2003:510). The four-point scale is chosen mainly because it avoids a mid-point that in turn contributes to ease of interpretation of results (Lynn, 1986, cited in Polit and Beck, 2006:491; Wynd, et al., 2003:510). In calculating IRA, the four categories are further dichotomised into two sections; grouping responses 1 and 2 showing disagreement, and responses 3 and 4 showing agreement. The procedure for calculating the item content validity index (I-CVI) and factor (dimension) validity index (FVI) is counting the number of experts that rate an item 3 or 4 and dividing that number by the total number of experts. For example, if there are seven experts and if six of these allocate 3 or 4 for one specific item, then the I-CVI of that item is 6/7, which is 0.86. This simple procedure, as indicated above, shows the proportion of agreement between raters. In this study, Table 4.5 in section 4.3.2.1 and Table 4.7 in section 4.3.2.2. show the results of IRA as employed for establishing I-CVI for each of the items in the instrument that as it was developed and also for FVI values that help to align items with dimensions.

Content validity involves not only item level content validity but also the instrument (scale) level content validity index (referred to as S-CVI) which is the index for the comprehensiveness of the overall instrument. This is done in two ways: having one item at the end of all the items that asks if experts generally rate the overall instrument to be comprehensive, on the one hand, and counting the items that have an I-CVI of 0.8 or more and dividing them by the total number of items, on the other hand (Grant and Davis, 1997:271; Rubio, et al., 2003:97). The first method is calculated exactly like I-CVI values (use of IRA) because it is one item indicating the S-CVI of the instrument. To illustrate the second method, if, for example, there are 30 items in an instrument and if there are 26 items with an I-CVI value ≥ 0.80, then the S-CVI score of the instrument is

26/30, which is 0.87 (Polit & Beck, 2006:491). Generally, the acceptable range of I-CVI, FVI and S-CVI values is between 0.80 and 1.0 (Lynn, 1986:383-84; Polit & Beck, 2006:491; Rubio, et al., 2003:96). Since IRA is criticised for not accounting for chance agreements, it is recommended that a standard error of variance (SE) should be calculated for the proportion to account for chance agreement. This helps to overcome the problem that may decrease the CVI value as the number of experts increases (Lynn1986, cited in Rubio et al., 2003:96-97; Waltz & Bausell, 1983, cited in Wynd et al., 2003:510). For this reason, the modified kappa (k*) that helps to adjust for chance agreement is devised. An evaluation standard for reference by instrument developers so as to determine the acceptable level of agreements against number of experts was also developed. For example, as indicated above, if there are seven experts and if six of them rate an item 3 or 4, then the I-CVI becomes 6/7 = 0.86. The modified kappa is calculated in a manner similar to Cohen's kappa whereby k*= (I-CVI minus p_c) divided by 1 minus p_c. Hence, k* for I-CVI of 0.86 is calculated to be 0.85, which still falls in the acceptable range (Polit, et al., 2007:465).

All procedures of content validity (determining I-CVI for relevance, I-CVI for clarity, FVI for representativeness of an item to a dimension, and S-CVI for the overall instrument) involve iterative processes of checking and re-checking the items by evaluating them against the marginal index level (the cut point). This process is mainly undertaken by involving a subset of experts (3 to 5) from the pool that evaluated the content or by soliciting new ones. If the researcher decides to use the experts from the first round, then they must be given a 10-14 day interval from the first rating time (Lynn, 1986:385; Polit, et al., 2007:466). In this study, three persons from the pool of front-line staff members of the Ethiopia Centre and six persons from the expert group were taken to re-evaluate the instrument. This iterative nature of the procedures satisfies the requirement of the design-based research strategy.

3.6.4.3 Cronbach's Alpha

The Cronbach's alpha test was employed under the 'evaluation: local impact' phase of design-based research in this study. This test was developed by Lee J. Cronbach in

1951. It is commonly used by instrument developers in disciplines like education, economics and medicine. It has the ability to measure the internal consistency of instruments whereby the items in an individual dimension consistently measure that same dimension because they correlate with one another. The benefit of Cronbach's alpha over other measures of reliability is the fact that it can be used to observe internal consistency whether or not the measuring scales are dichotomous (like yes or no) or of an interval-type (like the Likert scale). The greater the value of alpha in an instrument, the better the instrument is in measuring some kind of trait because instruments with a bigger alpha value are understood to have better statistical power and less measurement error (Heo, Kim & Faith, 2015:8; McMillan, 2012:139; Tavakol & Dennick, 2011:53).

In measuring internal consistency, alpha is substantially affected by the number of items in an instrument. The more the number of items, the higher is the coefficient of alpha and therefore test developers are advised to add more and more related items to the instrument in order to obtain a better alpha value (Field, 2009: 675; Tavakol & Dennick, 2011:53). If the instrument under construction is multi-dimensional, like the one in this study was, calculating alpha for the whole instrument is not meaningful as it may inflate the value of alpha because of a large number of items. Alpha should rather be calculated for each dimension so as to check if the items that are associated with one dimension consistently measure only that specific dimension and no other (Cortina, 1993:101; Nunnally, 1978, cited in Sijtsma, 2009:114; McMillan, 2012:139; Schmitt, 1996:350; Tavakol & Dennick, 2011:53). Cronbach's alpha is the result of the average of correlations for every possible split. This means that if items in an instrument are divided into two with every possible method of dividing, and each split results in a correlation coefficient, then the average value of those different coefficients from the splits is what is called Cronbach's alpha (Cronbach, 1951:331; Field, 2009:674; Murphy & Davidshofer, 2005:127; Sijtsma, 2009:114).

Another characteristic of alpha as a measure of internal consistency is that it does not necessarily tell unidimensionality of items in a dimension "but can be used to *confirm*

[emphasis added] whether or not a sample of items is actually unidimensional" (Tavakol & Dennick, 2011:54). For this reason, alpha cannot be taken as a conclusive measure of unidimensionality and hence the instrument should be checked through other means like factor analysis (Cortina, 1993:103; Domino & Domino, 2006:47; Heo, et al., 2015:2). When Cronbach's alpha is used in studies like the current one, which had two responses for an item, absolute value differences should be used (Ford, Walker & Churchill, 1975:100; Parasuraman, et al., 1988:19; Parasuraman, et al., 1991b:424).

The coefficient of alpha values ranges between 0 and 1.0, whereas the cut-off point that demarcates a reliable alpha value usually is above 0.7. However, in affective tests like the one in this research, an alpha value below 0.7 (about 0.6) is also acceptable. A maximum alpha value is recommended to be 0.9, which becomes senseless if the value is more than 0.9 (Cornina, 1993:103; Field, 2009:675; Heo et al., 2015:2; Tavakol & Dennick, 2011:54). If the coefficient of alpha is lower than 0.7, the cause for this lower result could be a small number of items, lack of interrelationship between the items or a lack of unidimensionality. It is advised that if the cause of a low alpha value is "poor correlation between items, then some should be revised or discarded" (Tavakol & Dennick, 2011:54). This is why it is necessary to check the two columns in the SPSS output of Cronbach's alpha, namely the "corrected item-total correlation" and "Cronbach's alpha if item deleted." The "corrected item-total correlation" items have a higher correlation with the total alpha value of the dimension if they are homogenous. This means that the items in the dimension measure the same construct (Field, 2009:677; Konerding, 2013:2939). If there are items where the relationship with the total score of the dimension is below 0.3, then those items should be discarded because they do not actually represent that specific dimension. The cut-off point for "corrected item-total correlation" varies. For example, some authors argue that it should be 0.4 (Erhart, Hagquist, Auquier, Rajmil, Power, Ravens-Sieberer & the European KIDSCREEN Group, 2009:476), whereas others say that results over 0.30 are in the right range (Field, 2009:678; Hair, et al., 2014:115). On the other hand, in the case of "Cronbach's alpha if item deleted," the alpha level for each item is compared with the alpha level for the dimension under study. Then items with a higher alpha value than the alpha level for the construct should be deleted because the presence of such items in the dimension

decreases the total alpha value for the dimension as it indicates that these are redundant items (Tavakol & Dennick, 2011:54). This study employed the Cronbach's alpha test to measure the internal consistency of each of five dimensions and for the entire instrument. This is similar to a study that was done by Bolliger and Halupa (2012:86) that used Cronbach's alpha for the scale that was developed to measure students' anxiety level to ICT-related technology.

3.6.4.4 Factor Analysis

There are two types of factor analysis; Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) (Everitt & Hothorn, 2011:135-36; Sass, 2010:558). The purpose of EFA is to "identify the factor structure or model for a set of variables" (Bandalos, 1996, cited in Henson & Roberts, 2006:395) whereas CFA confirms the theory that was proposed by EFA, and emphasises hypothesis testing (Henson & Roberts, 2006:395; Field, 2009:636). The main goal of exploratory factor analysis is to extract as few dimensions as possible from a big data set and to show the common variance explained by the items (Field, 2009:637; Henson & Roberts, 2006:398). In the current study, only EFA was employed to determine possible dimensions in the instrument that was developed to measure student support service quality.

Factor analysis is defined as "... a statistical procedure used to identify relations among variables in a correlation matrix. [It] is commonly used to reduce a large number of responses or questions to a few more meaningful groupings, known as factors" (Gay et al., 2011:368) – in this study, referred to as dimensions. Another definition of factor analysis reads: "an interdependence technique whose *primary purpose is to define the underlying structure among the variables in the analysis* [original emphasis]" (Hair et al., 2014:92). These descriptions stress that factor analysis involves a kind of statistics that groups strongly related (correlated) variables together so that some meaningful understanding can be deduced from the group of variables.

Factor analysis is one of the methods worth employing to understand the inherent structure of latent variables, which in turn, are the dimensions that cannot be directly

measured but through the group of items that fall under each one of them (Everitt & Hothorn, 2011:135; Field, 2009:628; Pedhazur & Schmelk, 1991, cited in Henson & Roberts, 2006:395). The use of factor analysis extends to securing construct validity of an instrument by employing quantitative methods. For constructs to be considered as constructs, some relationship among the involved variables should be articulated. Factor analysis is an advanced form that assists to secure content validity in an instrument. In general, it is a statistical technique that simplifies complexities to be easily understood and interpreted (Kerlinger, 1979, cited in Henson & Roberts, 2006:394; Murphy & Davidshofer, 2005:169).

There are three important benefits of employing factor analysis: “to understand the structure of a set of variables, construct a questionnaire to measure an underlying variable and reduce a data set to a more manageable size while retaining as much of the original information as possible” (Field, 2009:628). In this study, the latent dimensions were foregrounded by a factor analysis which revealed the underlying commonality of items. In this sense factor analysis is not only a statistical technique but also a conceptual one involving art. When items or variables are grouped together to form different dimensions, it is the researcher’s responsibility to give names to the various dimensions based on the conception of the research. Factor analysis identifies the groups through correlations, but the naming should be done by the researcher (Field, 2009:639; Gay, et al., 2011:368; Hair, et al., 2014:101).

Similar to Cronbach’s alpha test, EFA was utilized in this study in the ‘evaluation: local impact phase’ of the design-based research. This study attempted to develop an instrument that is purported to measure student support service quality. Factor analysis enabled the researcher to reduce the number of items in the instrument, among other things, in order to make the instrument more attractive to respondents, and to avoid redundant items that may have caused the instrument to become unwieldy (cf. Section 4.4.2. in chapter 4). Factor analysis, in addition, serves as a base for other multivariate statistical procedures, like multiple regression analysis (Field, 2009:636; Henson & Roberts, 2006:394, 396).

Before subjecting a data set to factor analysis, important guiding features should be checked. One of these involves a scree plot, which helps to understand into how many dimensions the data should be grouped. This is very useful especially if the sample size is larger than 200 (Everitt & Hothorn, 2011:72; Field, 2009:639). Another aspect is Bartlett's test of sphericity which should be less than 0.05 and shows if there are necessary correlations among the variables (Henson & Roberts, 2006:399). Thirdly, Kaiser–Meyer–Olkin (KMO), which is a measure of sampling adequacy shows how much the variables in the data set are interrelated (intercorrelated) and which should be greater than 0.5 (Field, 2009:647). The last one is "eigenvalue greater than one" which is the default factorisation structure, and which shows the variation explained by a dimension. It can be replaced by specifying the number of factors into how many of which the researcher decides to classify the data based on prior theory or investigation like content validity study that has been done in this study (Chadha, 2009:321). A 60% total variance is more recommended in factor analysis; however, it is also argued that less than 60% total variance is satisfactory in social science fields (Hair, 2014:107). Considering the eigenvalue which can be replaced by specifying the number of dimensions the researcher decides to use, it is explained that "… if we have a conceptual basis for understanding the relationships between variables, then the dimensions may actually have meaning for what they collectively represent" (Hair, et al., 2014:92). This was applied in this study in such a way that factor analysis was run by asking SPSS to classify the data into five dimensions based on what was identified through the content analysis procedure (cf. section 4.4.2.3 in chapter 4).

In factor analysis, there are different extraction methods like 'maximum likelihood,' 'principal axis factoring' and 'alpha factoring.' From these methods, principal component analysis (PCA) is the default in SPSS. The current study made use of PCA because it is argued that both PCA and EFA are linear methods and generally bring about similar results. These, in turn, are more objective compared to other extraction methods (Chadha, 2009:302; Everitt & Hothorn, 2011:157; Field, 2009:638; Hair, et al., 2014:105). Moreover, in factor analysis, there are rotation methods (orthogonal and

oblique) whose major duty is making interpretation of dimensions easier. In this study, varimax rotation, which falls under orthogonal method, was employed. This is because it helps factor loadings to be more clustered around their respective dimensions and to have only smaller (close to 0 loadings) on other dimensions where they do not belong. Apart from showing the magnitude of loadings, varimax has simplicity of explanation as it shows loadings' direction (positive or negative). This makes explanation of the loadings easier to understand and interpret (Carraher, 1993:413; Everitt & Hothorn, 2011:146; Field, 2009:644; Hair, et al., 2014:110; Sass, 2010:563).

In relation to this, what discriminates items to fall under their respective dimensions is the extent of their loadings. Factor loadings, which are correlation coefficients between an item and a dimension, exhibit how much an individual item is related to its dimension, and also the extent of its contribution in building that dimension. The items that fall in one dimension are understood to be homogenous and related with one another (Field, 2009:631; Domino & Domino, 2006:24). For an item to be taken as belonging to a certain dimension, the cut point ranges from 0.3 to 0.4 (Nunnally, 1978, cited in Sass, 2010:559). Similarly, it is argued that "Factor loadings in the range of ±.30 to ±.40 are considered to meet the minimal level for interpretation of structure. Loadings ±.50 or greater are considered practically significant" (Hair, et al., 2014:114). In this study, a cut-off point of ±.50 was used in the first round of factor analysis (cf. Table 4.13 in chapter 4) whereas a cut-off point of ±.40 was used in the second round (cf. Table 4.14 in chapter 4). Moreover, only the metric data were used as variables in factor analysis as the demographic factors did not contribute to the factorisation (Hair, et.al, 2014:100).

The data analysis techniques discussed above represent the 'enactment' phase and the 'evaluation phase: local impact' of design-based research as employed in this study. In the enactment phase interrater reliability and content validity were utilised. During the 'evaluation phase: local impact', the researcher's decisions were guided by a calculation of Cronbach's alpha and by exploratory factor analysis. In design-based research, the final phase is 'evaluation: broader impact'. In this study, the data that were collected by

means of the final version of the instrument, were analysed by using descriptive statistics, including means, standard deviations, a dependent t-test and regression analysis. These statistical techniques are briefly discussed in the sections below.

3.6.4.5 Means and standard deviations

The “mean”, also called an “average”, of data is a measure of central tendency. It is the exact central position in raw data, and is the base for parametric tests though it has the disadvantage of being affected by extreme values. “Standard deviation”, on the other hand, is a measure of dispersion, the square of which is variance. Standard deviation shows how much the values in the data vary around (or deviate from) the mean (Coolican, 1994:202; Murphy & Davidshofer, 2005:82;). In this study, both of these statistics show the level (extent) of students’ expectations and experiences of the student support service quality, and the deviation of each dimension from its grand mean.

3.6.4.6 Dependent t-test

A t-test is a type of parametric statistics that is usually employed to test if there are statistically significant differences between two means. It can also be used to test significance of correlation coefficients as well as in hypothesis testing. There are two types of t-tests, namely an independent and a dependent t-test. An independent t-test requires two sets of data that come from two different sources, for example from students and from teachers. On the other hand, dependent (matched-pair) t-tests are done when one has only one group of participants who responded to two different issues. In experimental situations, pre-test and post-test scores that result from the same group of subjects can also be compared by using a dependent t-test. To be able to apply the t-tests (both independent and dependent), the data is required to be normally distributed (Coolican, 1994:281; Field, 2009:325; Gay et al., 2011:351, 355; McMillan, 2012:258). The t-test formula, as adopted from Statistical Solutions (2013:6), is:

$$t = \frac{\bar{d}}{\sqrt{s^2 / n}}$$

where $\bar{d}$ is the difference between the two means, s^2 indicates the sample variance and *n* refers to the sample size.

In the current study for example, $\bar{d}$ is the difference between the means of students' expectations and their experiences of student support service quality. The denominator is the sample variance divided by the sample size of the study. After running SPSS, the recommended way of reporting this statistical result is to "… state the finding to which the test relates and then report the test statistic, its degrees of freedom and the probability value of that test statistic" (Field, 2009:333). Recently, there is also the tendency of reporting the effect size of such tests. Effect size is calculated in different ways, the most commonly used one being Pearson's r, using the following formula:

$$r = \sqrt{\frac{t^2}{t^2 + df}}$$

where t^2 is the value of t-test squared and *df* is the degrees of freedom from the t-test result.

Effect size shows how much the statistical results of a test are really significant. The acceptable cut-off point of effect size is 0.5. For example, after doing an assessment on subjects' anxiety level to real spiders and picture spiders, Field (2009:333) used the dependent t-test to observe the mean differences and reported the results as follows: "On average, participants experienced significantly greater anxiety to real spiders (*M* = 47.00, *SE* = 3.18) than to pictures of spiders (*M* = 40.00, *SE* = 2.68), *t*(11) = –2.47, *p* < .05, *r* = .60". This study employed the same procedure in reporting the t-test results (as discussed in chapter five, section 5.5).

3.6.4.7 Regression analysis

Regression analysis is a technique that shows relationships between one or more independent (predictor) variables with a dependent (criterion) variable. Regression

analysis can be simple (linear) regression that shows relationship between one independent variable with the dependent variable with the equation that reads as $Y_i = (b_0 + b_1X_i) + \varepsilon_i$ (Babbie, 2013:465; Field, 2009:199). On the other hand, regression can be multiple, which shows the relationship between two or more independent variables with a dependent variable. The equation for multiple regression is $Y_i = (b_0 + b_1X_{i1} + b_2X_{i2} + \ldots + b_nX_{in}) + \varepsilon_i$ (Field, 2009:210; Higgins, 2005:2). The reason why such relationships should be observed in any study is to check if the independent variables explain the variation in the dependent variable (Babbie, 2013:467; Brace, Snelgar & Kemp, 2012:206; Hair et al., 2014:165). In regression analysis, explaining one variable by using either a single or multiple variables does not necessarily mean that they are sufficient or they are valid in all situations. According to Brace et al. (2012:206), for example, "it is not possible to produce totally accurate predictions, but multiple regression allows us to identify a set of predictor variables which together provide a useful estimate of a participant's likely score on a criterion variable." Hence, it can be said that all the variables that are used to predict or explain the dependent variable in question in any regression study do not fully explain the variance in that dependent variable. The researcher must therefore understand that there can still be other variables that influence the dependent variable.

After conducting a regression analysis, be it simple or multiple, the most important value to observe, is the beta coefficient, which is measured in units of standard deviations. The beta coefficient shows the extent of influence by the independent variable(s) on the dependent variable (Field, 2009:239). A positive beta value shows that the two variables are going in the same direction whereas a negative beta-value shows that they are inversely related. Hence a beta-value shows the change in the standard deviation of the dependent variable for one unit of change in the standard deviation in the independent variable (Brace et al., 2012:208; Hair et al., 2014:159). Another important aspect to observe in regression analysis is the R^2 which is called the "coefficient of determination." It is the value that shows the extent of explanation in the variance of the dependent variable by the independent variable(s). It is usually reported in a percentage form, and a value of 0.5 and above is required in order to say that the model is fit to explain the

dependent variable (Brace et al., 2012:209; Campbell & Campbell, 2008:9; Talib et al., 2013:307; Yener, 2013:58).

An important reason why regression analysis needs to be done in a study like the current one is because it has the quality of showing which dimension(s) better explain the dependent variable. This goes along with the use of the Gaps Model that has a major benefit of diagnostic power, and it is important in determining which dimensions need to be emphasised in order to improve on the issue at hand. Multiple regression analyses allow researchers to observe the relative contribution of the independent variables in explaining the dependent variable. One of the methods is step-wise regression, which identifies each dimension's contribution step-by-step from higher to lower, and then deletes the dimensions with no (minimal) contribution from the model (Brace et al., 2012:210; Field, 2009:212-13). In a study like this one, where there are two responses for one item, absolute value differences can be used to run regression analysis so far as the difference scores are not used as dependent variables (Parasuraman, et al., 1993:143).

3.6.4.8 Qualitative data analysis

Items in a quantitative instrument cannot be conclusive (Magasi et al., 2012:743). For this reason, the instrument used in this study included a single item that required the respondents to write down any additional points they wanted to raise with regard to student support service quality. This may have included strengths, weaknesses or possible recommendations for improvement. The responses to this item were analysed qualitatively by, among other things, identifying common themes and related patterns (Gay, et al., 2011:466).

3.7 CHAPTER SUMMARY

This chapter focused on the research design, paradigm, approach, data collection and data analysis strategies that have been employed in this study. Design-based research with its distinctive four phases was discussed. Attention was also paid to the statistical

data analysis techniques that fit each phase in the development and utilisation of a survey instrument. The chapter also includes a description of the population and the sampling procedure employed, followed by the data collection procedures. In the next chapter, the procedures followed in developing the instrument that has been used in this study are presented.

CHAPTER 4

DEVELOPMENT OF AN INSTRUMENT

4.1. INTRODUCTION

This chapter discusses the processes that have been undertaken in the development/design of a valid and reliable instrument. The first three phases of the design-based research, as outlined by Bannan-Ritland (2003), were employed to design the instrument in this study. These were *informed exploration, enactment* and *evaluation: local impact*. The sections below discuss each phase along with the processes undertaken in this study.

4.2. THE PHASE OF INFORMED EXPLORATION

During the phase of informed exploration, the researcher consulted various documents, most important of which was literature that focused on service quality. Apart from the literature search, the other documents that were explored to get information for the to-be-developed instrument were two records of students' complaints, previously developed scales like SERVQUAL (Parasuraman et al., 1985, 1988), HEdPERF (Firadus, 2005), DL-sQUAL (Shaik et al., 2006), and UNISA's Master's and Doctoral policy. As a result, a total of 63 items of service provision to doctoral students and that also had the potential to measure students' expectations and experiences of service quality were identified and recorded. These items were given to two staff members of UNISA in Ethiopia who were active in the fields of Marketing Management and who were simultaneously registered as doctoral students at UNISA, to appraise the items from three perspectives; namely as staff members, as doctoral students, and most importantly from the angle of services marketing. These two evaluators recommended the exclusion of four of the items because of redundancy and perceived irrelevancy of the items in measuring service quality. This process reduced the number of items to 59. The processes undertaken during the phase of informed exploration is presented in figure 4.1 below.

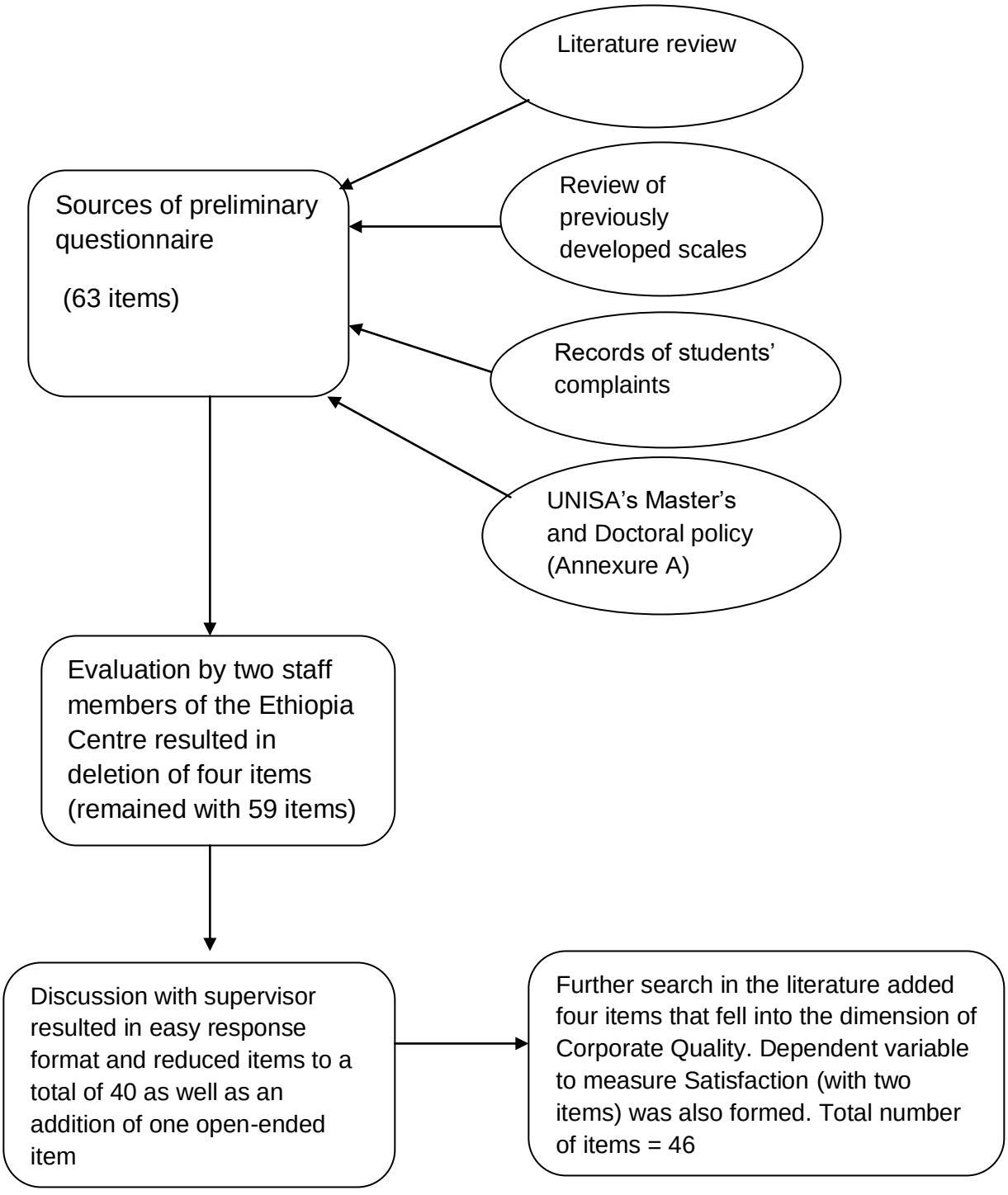

Figure 4.1: Schematic presentation of the phase of informed exploration

The 59-item instrument (minus the socio-demographic items) comprised two parts, intended to measure, on the one hand, the expectation, and on the other hand, the

actual experiences of respondents of student support service quality. At that stage, the instrument was submitted to my supervisor, who suggested an attractive and easy-to-complete format. Instead of repeating the items in two different parts of the instrument, first requiring a response regarding the respondent's expectations and later his/her actual experiences of the different aspects of service provision, the suggestion was that provision should be made for respondents to indicate their expectations and experiences in two columns next to a single set of items. This implied that all the items had to be slightly reformulated and two sets of scales had to be provided next to each item. The perceived advantage would be a considerable shortening of the instrument and a prevention of possible respondent fatigue. This process resulted in a further decrease of items from 59 to 40. In the final version, a blank space was provided at the end of the instrument for respondents to air their views if there were any additional issues that they wished to bring to the attention of the researcher.

In the meantime, additional literature study convinced the researcher that two important dimensions that were initially overlooked should be included in the emerging service quality instrument. One of these was Corporate Quality, which included four items. In addition, when measuring service quality, it is plausible to check the service receiver's satisfaction, and hence two items that would measure the respondent's overall satisfaction were added. Including the later dimension created the opportunity that it could be used as a dependent variable during the analysis of results at a later stage. This process resulted in an instrument comprising a total of 46 items that were categorised under seven dimensions (six of which measuring service quality and one of which measuring students' satisfaction of the services offered). It also satisfied the 'informed exploration' phase of the design-based research (Bannan-Ritland, 2003:22). Table 4.1 below gives an indication of sources that were consulted on various dimensions of service quality.

Table 4.1: Dimensions included in the instrument and related sources

NO	NAME OF DIMENSION	RELATED SOURCES
1	ACADEMIC	• Pereda, 2007:55 = quality of instruction • Jain et al., 2010:150 = teaching methodology • Shaik et al., 2006:5 = instructional service quality • Yared, 2000:100 = tutor-related variables • Morgan, 2014:179 = learning and teaching • Smith, 2004: 32 = academic
2	INFRASTRUCTURE	• Pereda, 2007:55 = physical quality • Li and Kaye, 1999:146 = physical support of the service • Parasurraman et al., 1985:47; 1988:23 = tangibles
3	COMMUNICATION	• Li and Kaye, 1999:146 = staff/consumer interaction • Ehlers, 2004:5 = interaction centredness • Shaik et al., 2006:5 = communication • Morgan, 2014:179 = clear communication from all staff • Parasuraman et al., 1985:47; 1988:21 = communication
4	FACILITATION	• Yeo and Li, 2014:114 = “support services” which are different from direct classroom experience • Ehlers, 2004:7 = support of learning
5	ADMIN	• Li and Kaye, 1999:146 = internal organizations • Shaik et al., 2006:5 = management and admin services • Yared, 2000:91 = responsiveness of the study centre
6	CORPORATE QUALITY	• Pereda, 2007:62 = recognition • Li and Kaye, 1999:146 = corporate quality (company image)
7	SATISFACTION*	• Li and Kaye, 1999:146 = degree of customer satisfaction • Pereda, 2006:171-172 = Satisfaction • Shaik et al., 2006:4 = loyalty and commitment; perceived value

*to be used as a dependent variable

4.3. THE PHASE OF ENACTMENT

Design-based research requires using different sets of experts who assist in the design and re-design of the subject of research at hand. For this reason, the study made use of three groups of persons who assessed the instrument at different stages of the design. This is in line with the development of SERVQUAL that has used iterative procedures to come up with a valid and reliable instrument (Parasuraman, et al., 1988:14). The first group involved in the first stage were four raters to whom the instrument, accompanied with meanings of dimensions, was presented. The main aim of the assessment by this group was to match each item with its respective dimension. This group of raters constituted two staff members of UNISA and other two staff members of AAU who were considered to be knowledgeable about the context of higher education.

The second stage made use of five front-line staff members of the Ethiopia Centre. At this stage, the instrument was subjected for comments on the items' relevance and clarity, on the one hand, and comprehensiveness of the instrument, on the other hand. These front-line staff members helped at this stage for their position of having direct interaction with clients (students). The third stage was assessment of the instrument based on four criteria, i.e. each item's (1) relevance, (2) clarity, (3) respective dimension and (4) overall comprehensiveness of the instrument. This stage was undertaken by 10 experts who were able to evaluate the instrument on the basis of their expert knowledge of services and scientific measurement. This group included six advanced postgraduate students at UNISA, three staff members of AAU, and one alumnus of UNISA, all of whom have strong background either in the fields of Marketing or Educational Measurement. Figure 4.2 below shows the schematic presentation of the phase of enactment.

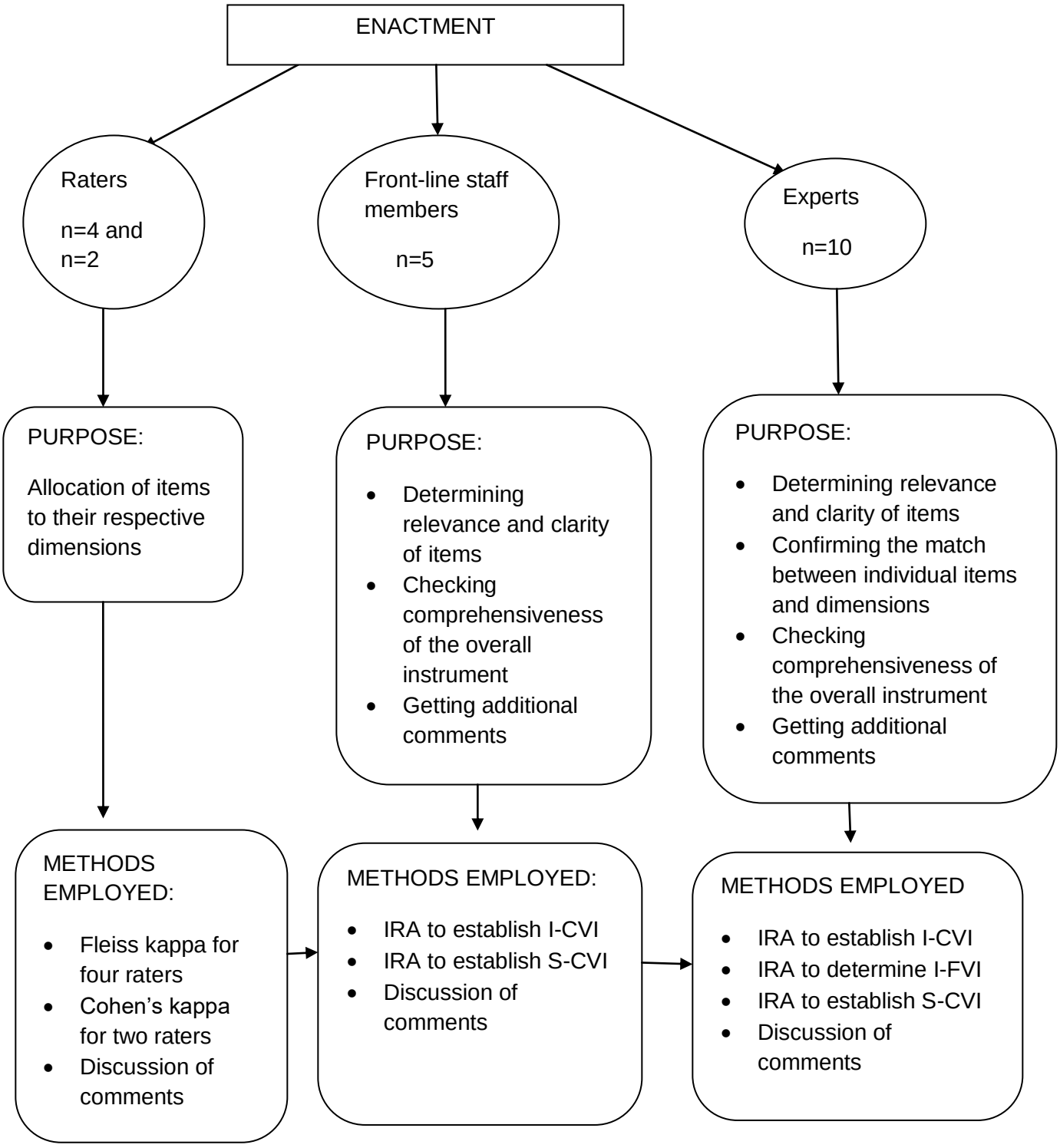

Figure 4.2: Processes undertaken during the enactment phase

4.3.1. Matching items with dimensions

Since one of the objectives of the study was to develop a valid and reliable instrument that could measure student support service quality, the instrument (with 46 items) that passed through the informed exploration phase (cf. Section 4.2) also had to be subjected to a process of inter-rater reliability (IRR). Four out of eight possible raters/judges agreed to rate the instrument: two from AAU who specialised in Educational Measurement and in Statistics, and two from UNISA's Colleges of Education and Economic and Management Sciences, respectively. The other four possible raters did not respond and hence they were not part of the procedure. The procedure went in such a way that the items were listed in a mixed up form (not reflecting any direction towards possible dimensions). For ease of reference, however, the raters were provided with the operational definitions of each of the dimensions (cf. Appendix I), which were numbered 1-7. The raters were then requested to categorise each item into the most appropriate service dimensions by allocating a number (1-7) before each item. They were also asked to comment on the general construction of the instrument.

After receiving the ratings from the four raters, the responses were observed using percentages. In regard to 17 of the 46 items, all the raters agreed on the specific dimensions that these items represented (an agreement of 100%). Another 17 items were agreed upon by three of the raters (an agreement of 75%), and the remaining 12 items were agreed upon by two of the raters (which was an agreement of 50%). However, as percentages do not account for chance agreements or disagreements, Fleiss kappa was employed to measure IRR. The result of the overall kappa value was k=0.53. The kappa values of individual dimensions were also observed as shown in Table 4.2 below.

Table 4.2: Kappa values of individual dimensions as rated by four judges

NR	NAME OF DIMENSION	KAPPA VALUE	JUDGEMENT (according to Morris et al., 2008:646)
1	ACADEMIC*	0.80	Substantial agreement
2	ADMIN	0.38	Fair agreement
3	COMMUNICATION	0.45	Moderate agreement
4	INFRASTRUCTURE	0.58	Moderate agreement
5	FACILITATION**	0.76	Substantial agreement
6	CORPORATE QUALITY	0.88	Almost perfect agreement
7	SATISFACTION***	0.64	Substantial agreement

*Changed to “Supervision Support”

**Changed to “Academic Facilitation”

*** Dependent variable

Even though the “Admin” and “Communications” dimensions were the least qualifying ones in this process, it cannot, at this stage, be concluded that they were the sole causes for the small value of the overall kappa index of 0.53 that was found among the four raters. The presentation of the same finding to a doctoral students’ discussion forum gave rise to three possible problems attached to the overall kappa value (k=0.53) that is below the cut-off point (0.6): perhaps the way in which the various dimensions of service quality were defined lacked clarity; perhaps the instructions given to the raters were not clear enough; or perhaps the raters did not have a clear understanding of student support service elements in the context of Open Distance Learning.

Consequently, the researcher decided to determine whether there was a higher degree of conformity between any two raters (instead of among four) by calculating IRR using Cohen’s kappa. This resulted in k= 0.66 between two raters who were both professors at UNISA, and who were attached to the College of Education and College of Economic and Management Sciences. These two professors fully agreed on 26 items from a total of 46 items.

The fact that the rating of these two raters showed a k = 0.66 may indicate that those who were thoroughly familiar with the context in which the instrument was intended to be utilised (UNISA and open distance learning) showed better IRR results than the raters who were from AAU, which is a conventional university. Consequently, the researcher continued communicating with these two professors and requested them to recheck the items on which they differed. This rechecking process, in the meantime, satisfied the design-based research approach that has an iterative and cyclic nature. The slight change in the ratings of these two raters increased the kappa value from 0.66 to 0.89 (which was statistically significant at p=0.001). When the agreement between these two raters was observed using percentages, it showed 91% agreement. The kappa values for the individual dimensions were as observed in Table 4.3 below.

Table 4.3: Results of IRR on individual dimensions by two raters after re-rating

NR	NAME OF DIMENSION	KAPPA VALUE	PERCENTAGE AGREEMENT	NUMBER OF ITEMS PER DIMENSION
1	SUPERVISION SUPPORT	0.93	90%	10
2	ADMIN	0.85	75%	3
3	COMMUNICATION	0.80	67%	3
4	INFRASTRUCTURE	0.89	86%	12
5	ACADEMIC FACILITATION	0.83	77%	12
6	CORPORATE QUALITY	0.99	100%	4
7	SATISFACTION	1.00	100%	2
TOTAL				46

4.3.2 Items' relevance, clarity and dimension

In this study, the process of determining the content validity of the instrument comprised assessing the instrument from two angles. These were rating items' relevance, clarity and comprehensiveness by front-line staff members of the UNISA-Ethiopia Centre, on the one hand, and evaluating items' relevance, clarity, dimension and comprehensiveness by experts. At a structured meeting undertaken with the front-line

staff members of the Ethiopia Centre, a short presentation on the intention of the study was made before they were asked to evaluate the instrument. For the second group (panel of experts), the abstract of the study was sent before the meeting date and then a presentation of the intention of the study was done as the panel met for evaluation.

4.3.2.1 Evaluation of the instrument by front-line-staff members

Five staff members who have direct interaction with students volunteered to participate in the instrument evaluation process. This group included a branch librarian, an ICT specialist, two student advisors and a supervisor employed in the registration section. These staff members were asked to check the relevance and clarity of each of the 46 items and the comprehensiveness of the overall instrument. After the researcher gave a power point presentation concerning the essence of her study and explained the major questions the study intended to address, a hard copy of the instrument was distributed to each of the staff members mentioned above. Information on how the items had to be checked was provided and they were asked to give an independent rating.

After rating the items of the instrument, members of the panel of front-line staff members raised issues that they believed were not included. This discussion led to the addition of four items in the instrument as shown in Table 4.4 below. The researcher then placed these items in their possible dimensions, which were subject to be rechecked by the content validity experts. The total number of items in the instrument increased from 46 to 50.

Table 4.4: Four items added in the process of content validity by front-line staff

ITEM	POTENTIAL DIMENSION
UNISA registrar should give response over admission decisions of first application within reasonable period of time	Admin
Supervisors and staff members of the Ethiopia Centre should give information over bursary and research fund possibilities	Communication
The Ethiopia Centre should ensure that self-sponsored students' payment processes are finalized timely	Admin
The orientation program that is given by the Ethiopia Centre members of staff should be early enough in the new academic year	Academic Facilitation

Table 4.5 below shows the results of the content validity tests of the instrument as evaluated by front-line staff members. Using IRA (Inter-rater Agreement), the researcher computed the I-CVI values for each item (cf. Section 3.6.4.2). One item (item 42 that read as follows: “The Ethiopia Centre should have staff members who are freely accessible to respond to students’ enquiries”) was found to have I-CVI of 0.6 for relevance and I-CVI of 0.4 for clarity. It was later discarded from the instrument because the cut-off point for acceptable I-CVI values ranges between 0.8 and 1.0. For the rest of the items with an I-CVI value under the cut-off point of 0.8, a recheck was done by four of the front-line staff members and the final results were presented in Table 4.5 in parenthesis. From the 46 items, seven items were rechecked; three of them for relevance, namely item 10: "Supervisors should be fairly consistent over time in the comments they give to their students (not reversing ideas on what they have suggested before),” item 23: “UNISA is a leading research university” and item 45: “I recommend UNISA to friends/relatives/family members”. Four other items (item 4: “Supervisors should reflect an approachable attitude when communicating with their students,” item 9: “Supervisors should encourage their students to complete and submit draft chapters on a regular basis,” item 12: “UNISA should set up the web-based Learning Management System [myUnisa] to curb students’ loneliness by providing a dedicated discussion forum for doctoral students” and item 39: “UNISA should make sure that supervisors and students sign supervision agreements and codes of conduct” were re-checked for clarity as the I-CVI of these items was 0.6. The rechecking process by front-line staff members was done after the content validity check was undertaken by experts (cf. next section 4.3.2.2.). Hence the seven items that were rechecked by front-line staff were first rephrased based on the comments given by experts. After the recheck, all the items proved to have I-CVI of 1.0.

Table 4.5: Content Validity Index by front-line staff members (n=5)

NR	ITEMS	CVI FOR RELEVANCE	CVI FOR CLARITY	COMMENTS
1	Clear comments from supervisors	1.0	1.0	
2	Supervisors acknowledge receipt of students' submissions	1.0	1.0	
3	Information on ethical clearance procedures	1.0	1.0	
4	Supervisors approachable attitude to students	0.8	0.6 (1.0)*	Rechecked for clarity
5	Alerting students on useful resources	1.0	1.0	
6	Using different technological media for communication	0.8	1.0	
7	Guidance on governing rules and policies	1.0	1.0	
8	Supervisors' timely responses to students' submissions	1.0	0.8	
9	Supervisors' periodically encouraging their students	0.8	0.6 (1.0)	Rechecked for clarity
10	Comments of supervisors being fairly consistent over time	0.6 (1.0)	0.8	Rechecked for relevance
11	e-book and e-journal collections in the library	1.0	1.0	
12	myUnisa to curb students' loneliness	0.8	0.6 (1.0)	Rechecked for clarity
13	Library accessible after working hours	1.0	1.0	
14	Online library accessible 24/7 throughout the year	1.0	1.0	
15	Accessibility of workshop/ seminar/training venues	1.0	1.0	
16	Uptodate ICT resources in labs and library	1.0	1.0	
17	User-friendliness of the myUnisa system	1.0	1.0	
18	User-friendliness of the myLife e-mail	1.0	1.0	
19	Assistance for ICT-related challenges	1.0	1.0	
20	Library possess subject-related and research books	1.0	1.0	
21	Accessibility of computer labs	1.0	1.0	
22	Accessibility of Ethiopia Centre	1.0	1.0	

23	UNISA is leading research university	0.6 (1.0)	0.8	Rechecked for relevance
24	Alumni of UNISA having high status	0.8	1.0	
25	UNISA's degree meets international standard	0.8	1.0	
26	Graduates have pride in their qualifications from UNISA	1.0	1.0	
27	User-friendliness of registration and re-registration	0.8	1.0	
28	Information on admission requirements	1.0	1.0	
29	Provision of information on doctoral application	0.8	1.0	
30	Orientation to newly admitted students to acquaint them with distance learning	1.0	1.0	
31	Assignment of mentors for students who have local supervisors	1.0	1.0	
32	Assignment of supervisors upon registration	1.0	1.0	
33	Training on how to write proposal	1.0	1.0	
34	Ethiopia Centre staff members supporting students	1.0	0.8	
35	Training on accessing online library resources	1.0	1.0	
36	Delivery of books received from South Africa	0.8	0.8	
37	Assignment of subject librarians	1.0	0.8	
38	Relevance of training to students' research	1.0	1.0	
39	Supervisors and students signing agreement	0.8	0.6 (1.0)	Rechecked for clarity
40	Training on data analysis softwares	1.0	0.8	
41	Provision of programs for post-proposal students	1.0	0.8	
42	Ethiopia Centre staff members being freely accessible to students	0.6	0.4	Discarded
43	Communicating decisions on proposal	1.0	0.8	
44	Provision of information on administrative procedures	1.0	0.8	
45	Students' recommending UNISA to others	0.6 (1.0)	1.0	Rechecked for relevance
46	Overall satisfaction over student support services	1.0	1.0	

*Numbers in parenthesis are CVI values after re-checking

In this procedure, there was a last item that asked the front-line staff members to rate the overall instrument. The item reads as “Overall, the items included in this instrument representatively measure the construct of student support service quality in an Open-Distance Learning environment.” This resulted in Scale (instrument) Content Validity Index (S-CVI) of 1.0. The next section of the study discusses the evaluation of the instrument by experts.

4.3.2.2 Evaluation of the instrument by experts

Ten persons that can be regarded as experts participated in the content validity process. Among these experts, there were six doctoral students of whom four were enrolled for the degree, Doctor of Business Leadership at UNISA. Of these four, three were specialists in the field of Marketing. Two of the six doctoral students were specialists in Educational Measurement. The four experts other than the six doctoral students comprised two colleagues from the Department of Management, one of whom is a Marketing specialist, and one from the Department of Psychology (AAU) with a background in Educational Measurement. The last member of the panel was one alumnus of UNISA who graduated from the College of Education.

One of the Marketing specialists volunteered to chair the session. Among other things, he made a number of remarks regarding the existence of different measuring instruments for service quality of which SERVQUAL is probably the best known. He maintained that SERVQUAL cannot be used universally as it can be affected by factors like type of industry and context. He then gave the researcher an opportunity to make a presentation on the intention of the study, the abstract of which was sent to the experts beforehand. After the introductory presentation, the instrument was distributed to the experts and instruction was provided on how each item should be evaluated. The experts were asked to rate the instrument there and then.

The instrument consisted of four columns to judge relevance, clarity, and dimension for each item, and then a space to give comments wherever applicable. There were measuring scales for each (as stated in Table 4.6 below), which were adopted from Rubio, et al. (2003:96) and Polit, et al. (2007:460). Over the dimension, the items were

placed under the seven dimensions they were defined to fit from the results of the inter-rater reliability (IRR) process, and how the writer placed the four additional items that came from the content validity process with front-line staff members. The content experts were asked to check how representative an item was in its predetermined dimension. For ease of reference, the meaning of each dimension was stated. This process showed how different the content validity procedure was as compared to the IRR process, in which the items were randomly set and the raters were asked to place the items in their respective dimensions. It can also be taken as a preliminary procedure for factor analysis which is discussed later in section 4.4.2.3.

After the evaluation by the experts was finalised, an open discussion of the comments given by each of the experts for every item ensued. The experts provided detailed comments. They, for example, identified so-called double-barrelled items (items of which the meaning could be interpreted in more than one way or items which had two different concepts stated in one statement) and missing items. Concerns were raised about the “restrictedness” of items within the dimension of Corporate Quality. During the discussion, the raters unanimously recommended that the word “quality” be replaced by “image” and the dimension be named corporate image.

Table 4.6: Rating scale as used by content experts

RELEVANCE	CLARITY	DIMENSION
1. Not relevant	1. Not clear	1. Not representative
2. Somewhat relevant	2. Somewhat clear	2. Somewhat representative
3. Quite relevant	3. Quite clear	3. Quite representative
4. Highly relevant	4. Highly clear	4. Highly representative

NR	ITEMS AND DIMENSIONS WITH THEIR MEANINGS	ITEM RELEVANCE/ IMPORTANCE				ITEM CLARITY				DIMENSION AN ITEM FALLS INTO				RECOMMENDATION FOR IMPROVEMENT
										Items 1-10 fall under Supervision Support				
	SUPERVISION SUPPORT: issues that are directly linked to the academic activities of the students in relation to the instructions/ guidance rendered by supervisors	1	2	3	4	1	2	3	4	1	2	3	4	
1	Supervisors should give clear comments on students' submissions like proposals or chapters													
2														
3														

The experts also recommended that items should be arranged in a more logical manner. They posed questions on how respondents were to be selected from the target population and recommended that the instrument should be sent only to students whose proposals were approved. The experts advised the researcher of the possibility that the survey results could show larger gaps between the respondents' expectations and experiences of student support service quality, on the one hand, and the possibility of a higher score on overall satisfaction, on the other hand. In order to cater for this possibility, they recommended that an item should be added to each dimension that was intended to determine to what extent the respondents were satisfied by the student support services they received in regard to that specific dimension.

The experts questioned the fact that the "Communication" dimension was investigated in isolation. They were unanimous in their view that communication is an integral part of all the other dimensions. Finally, they recommended that the dimension named "Admin" be changed to "Administrative Support" as the former has a different and allegedly more informal meaning.

The researcher then worked on incorporating the experts' recommendations into the instrument as rated by the experts, and also in processing the Content Validity Index of the items (I-CVI). Similar to what was done with the responses of front-line staff members, the procedure for calculating I-CVI by means of IRA was followed in this case too.

Table 4.7: Results of the Item-Content Validity Index (I-CVI) by experts (n=10)

NR	ITEMS	I-CVI FOR RELEVANCE	I-CVI FOR CLARITY	I-FVI FOR DIMENSION	COMMENTS
Items 1-10 were factored under the dimension of Supervision Support					
1	Clear comments from supervisors	1.0	1.0	1.0	
2	Supervisors acknowledge receipt of students' submissions	1.0	1.0	1.0	
3	Information on ethical clearance procedures	0.7	0.9	0.7	
4	Supervisors approachable attitude to students	1.0	0.7 (1.0)*	0.9	Re-checked for clarity
5	Alerting students on useful resources	1.0	1.0	1.0	

6	Using different technological media for communication	1.0	0.7 (1.0)	1.0	Re-checked for clarity
7	Guidance on governing rules and policies	0.7	1.0	0.8	
8	Supervisors' timely responses to students' submissions	1.0	1.0	1.0	
9	Supervisors' periodically encouraging their students	1.0	0.78 (1.0)	0.89	This item was not rated by one expert. It was re-checked for clarity
10	Comments of supervisors being fairly consistent over time	0.9	1.0	1.0	
Items 11-22 were factored under the dimension of Infrastructure					
11	e-book and e-journal collections in the library	0.9	1.0	1.0	
12	myUnisa to curb students' loneliness	1.0	0.9	0.9	
13	Library accessible after working hours	0.9	0.9	1.0	
14	Online library accessible 24/7 throughout the year	1.0	1.0	1.0	
15	Accessibility of workshop/ seminar/training venues	0.9	1.0	1.0	
16	Uptodate ICT resources in labs and library	1.0	0.9	1.0	
17	User-friendliness of the myUnisa system	1.0	1.0	1.0	
18	User-friendliness of the myLife e-mail	1.0	1.0	1.0	
19	Assistance for ICT-related challenges	1.0	1.0	1.0	
20	Library possess subject-related and research books	0.9	0.9	1.0	
21	Accessibility of computer labs	0.9	1.0	1.0	
22	Accessibility of Ethiopia Centre	0.9	0.9	1.0	
Items 23-27 were factored under the dimension of Administrative Support					
23	Information on admission requirements	1.0	0.9	0.9	
24	Provision of information on doctoral application	0.9	1.0	0.89	This item was not rated by one expert for dimension
25	Responses on admission decisions	1.0	0.9	0.89	This item was not rated by one expert for dimension
26	User-friendliness of registration and re-registration	1.0	0.9	1.0	
27	Timely finalization of students' payment processes	0.9	0.9	1.0	
Items 28-31 were factored under the dimension of Corporate Image					
28	UNISA is a leading research university internationally	1.0	0.9	1.0	
29	Alumni of UNISA have high status in Ethiopia	1.0	1.0	1.0	
30	UNISA grants doctoral degrees	1.0	1.0	1.0	

	that are of an international standard				
31	Ethiopians that have graduated from UNISA are proud of their UNISA qualifications	0.9	1.0	0.9	
Items 32-44 were factored under the dimension of Academic Facilitation					
32	Orientation to newly admitted students to acquaint them with distance learning	1.0	1.0	1.0	
33	Provision of orientation early in the new academic year	1.0	0.78 (1.0)	1.0	This item was not rated by one expert. It was re-checked for clarity
34	Assignment of mentors for students who have local supervisors	1.0	1.0	1.0	
35	Assignment of supervisors or contact persons upon registration	1.0	0.9	1.0	
36	Training on how to develop proposal	1.0	1.0	1.0	
37	Ethiopia Centre staff members supporting students	0.8	0.8	0.89	This item was not rated by one expert for dimension
38	Training on accessing online library resources	0.9	0.8	0.89	This item was not rated by one expert for dimension
39	Delivery of books received from South Africa	0.89	1.0	0.88	This item was not rated by one expert for relevance and clarity and by two experts for dimension
40	Assignment of subject librarians	1.0	1.0	1.0	
41	Relevance of training to students' research	1.0	0.8	0.88	This item was not rated by two experts for dimension
42	Supervisors and students signing agreement	1.0	1.0	1.0	
43	Training on data analysis softwares	1.0	1.0	1.0	
44	Provision of programs for post-proposal students	1.0	1.0	1.0	
Items 45-48 were initially factored under the dimension of Communication					
45	Ethiopia Centre staff members being freely accessible to students	1.0	1.0	Since the experts unanimously decided that the Communication dimension cannot stand per se, I-CVI was not calculated for these four items. They were rechecked for dimension after having been distributed in other dimensions	
46	Communicating decisions on proposal	1.0	0.9		
47	Provision of information on administrative procedures	1.0	1.0		
48	Information over bursary and research fund possibilities	0.9	1.0		

Items 49-50 were factored under Satisfaction					
49	I recommend UNISA to friends/ relatives/ family members	1.0	1.0	0.9	
50	Overall, I am satisfied with the services rendered by UNISA	1.0	1.0	1.0	
A last item asked the experts to rate the overall Content Validity Index of the instrument. Only four experts rated this item and the result was Scale (instrument) Content Validity Index (S-CVI) = 1.0					

*Numbers in parenthesis are the results after re-rating.

In Table 4.7 above, both items 3 and 7, which read: “Supervisors should give adequate information to their students on ethical clearance procedures” and “Supervisors should give guidance to their students regarding policies and rules (like plagiarism or structural requirements of the thesis) that govern doctoral studies” respectively achieved an I-CVI of 0.7 for relevance. In addition, item 3 was also allocated an I-CVI score of 0.7 for dimension. Although these scores were lower than the other items, an I-CVI score of 0.7 is not unacceptably low. Both of these items were adopted from Appendix A of the M and D Policy of UNISA, which describes the role of a supervisor/promoter. Consequently, these two items were retained unaltered, and after consultation with the supervisor of the study, it was decided that the validity of these two items would be reconsidered after the pilot test of this study has been completed. The formulation (wording) of items 4, 6, 9 and 33 was changed as a result of the comments received from the experts. These were rechecked for clarity by six of the experts.

Three of the four items that initially appeared as aspects of the “Communication” dimension were placed under Administrative Support (which was redefined to accommodate “provision of information of value to students” in its definition), and the remaining one item was transferred to academic facilitation. All these items were rechecked by six of the content experts, as recommended by Lynn (1986:385) who states that only some of the experts need to be involved in this (cf. section 3.6.4.2.). The results of the re-rating process showed that the experts found the repositioning of the four “Communication” items acceptable. At this stage, all ratings showed an I-CVI score equal to 1.0 (cf. Appendix III).

One of the items (“Supervisors and staff members of the Ethiopia Centre should give information concerning bursary applications and research fund possibilities”) that was found to be “double-barrelled”, was split into two different items, namely, “Centre

supervisors should provide information about research fund possibilities", and placed under the dimension of supervision support. The second part of the original item "UNISA should ensure that the bursary section provides timely responses concerning bursary applications", was placed under the dimension of Administrative Support.

Another item which experts also regarded as double-barrelled read "The Ethiopia Centre should ensure that its library possesses a wide range of subject-related and research books". It was then changed to "The Ethiopia Centre should ensure that its library possesses a wide range of subject-related materials" and "The Ethiopia Centre should ensure that the library is equipped with recent research books" respectively. These two items remained part of their original dimension of infrastructure.

The discussion with the experts also added an item that read: "UNISA should ensure that payment made by self-sponsored students is reflected on their accounts as quickly as possible". This item was classified under Administrative Support which resulted in this dimension consisting of nine items.

In total, 50 items went through a content validity check by both front-line staff and experts. Then two items were each split into two (resulting in four separate items), one item was deleted, and one other item was added as a result of the discussion with experts. This then totalled 52 items. In addition, seven items were added on satisfaction following each dimension as recommended by the experts so as to determine how satisfied respondents were with regard to each dimension. An example of such an item was "I am satisfied with the Administrative Support Services UNISA provides". Eventually the questionnaire consisted of 59 items, which were distributed in their respective dimensions as shown in Table 4.8 below.

Table 4.8: Number of items per dimension after content validity procedure

NO.	NAME OF DIMENSION	NUMBER OF ITEMS/DIMENSION (AFTER RE-RATING)
1	SUPERVISION SUPPORT	11
2	ADMINISTRATIVE SUPPORT	9
3	INFRASTRUCTURE	13
4	ACADEMIC FACILITATION	13
5	CORPORATE IMAGE	4
6	SATISFACTION (dependent variable)	2 (7)*
		52 (59)

*The items that measure the students' satisfaction level after each dimension were not numbered.

4.3.3 Comprehensiveness of the Instrument

Apart from the content validity of each item in an instrument, the other important issue in the process of instrument development is the content validity of the overall instrument, which is referred to as S-CVI (to mean Scale Content Validity Index). In the case of this study, scale refers to instrument. For the sake of discriminating "instrument" from "item", the wording of scale validity index (S-CVI) was used for the instrument whereas item content validity (I-CVI) was used for the individual items. S-CVI can be determined in two ways; counting the number of items that have an I-CVI value above 0.8 and dividing them by the total number of items in the instrument, or having one item that asks how comprehensive the instrument is in measuring the construct under study. This study made use of the latter case where an item was added at the end of the instrument so that both front-line staff members and experts rate the comprehensiveness of the instrument as shown below.

COMPREHENSIVE MEASURE: Please circle the number of your choice:

Overall, the items included in this instrument representatively measure the construct of student support service quality in an Open-Distance Learning environment.

1. Not representative
2. Somewhat representative
3. Quite representative
4. Highly representative

The results for this item was arrived at by calculating the value as for I-CVI that employs the method of IRA (counting the number of experts who rated the item 3 and 4 and dividing the result by the number of experts). Of the ten experts, only four responded to this item and the result was S-CVI of 1.0. All five of the front-line staff members of the UNISA-Ethiopia Centre also rated the item and the result was the same (S-CVI=1.0).

All the procedures that have been discussed above left the instrument ready for the pilot test. As the 'enactment' phase involves cyclic processes, these procedures pass through different steps and iterations.

4.4 THE EVALUATION PHASE: LOCAL IMPACT

This was the phase during which the instrument had to be tested by sending it to the actual respondents. Hence, the instrument that was refined by the previous processes (inter-rater reliability and content validity) was used to collect data from a sample of 32 doctoral students. This data had the purpose of pilot-testing the instrument. After using the results of the pilot test and refining the instrument, it was again sent to a larger sample of doctoral students enrolled at the UNISA-Ethiopia Centre for further refinement and standardisation.

4.4.1 Pilot test

After the content validity processes had been implemented, the instrument comprised 59 items. Of these items, 46 were item types that were intended to measure the students' expectations and experiences of student support service quality. Four of the items were set to measure the students' perception of the corporate image of UNISA, and nine items were used to collect data on the students' level of satisfaction (two items measuring overall satisfaction and seven items following the dimensions). In this regard, seven items followed the dimensions even though there were only five dimensions because the items in the two of the dimensions (infrastructure and academic facilitation) had a bearing on two different aspects, namely students' satisfaction with UNISA in general and with the Ethiopia Centre in particular (cf. Appendix IV). All the items that constituted the dimension "Satisfaction" were set to act as Dependent Variables of the

study. For the pilot test, the instrument was distributed to 32 doctoral students by e-mail. Of these students, 31 of them responded. From among the 31 completed instruments, one was discarded because it was not properly filled out. A total of 30 instruments were therefore used for the pilot study. The students who responded to the pilot test were excluded from the main study.

The main aim of the pilot study was to identify which items better measured the construct under study, i.e. Student Support Service Quality through five dimensions: supervision support, infrastructure, administrative support, academic facilitation and corporate image (items in each ranging from 4-13). The statistical tool used to identify which items better measure which dimension was Cronbach's alpha.

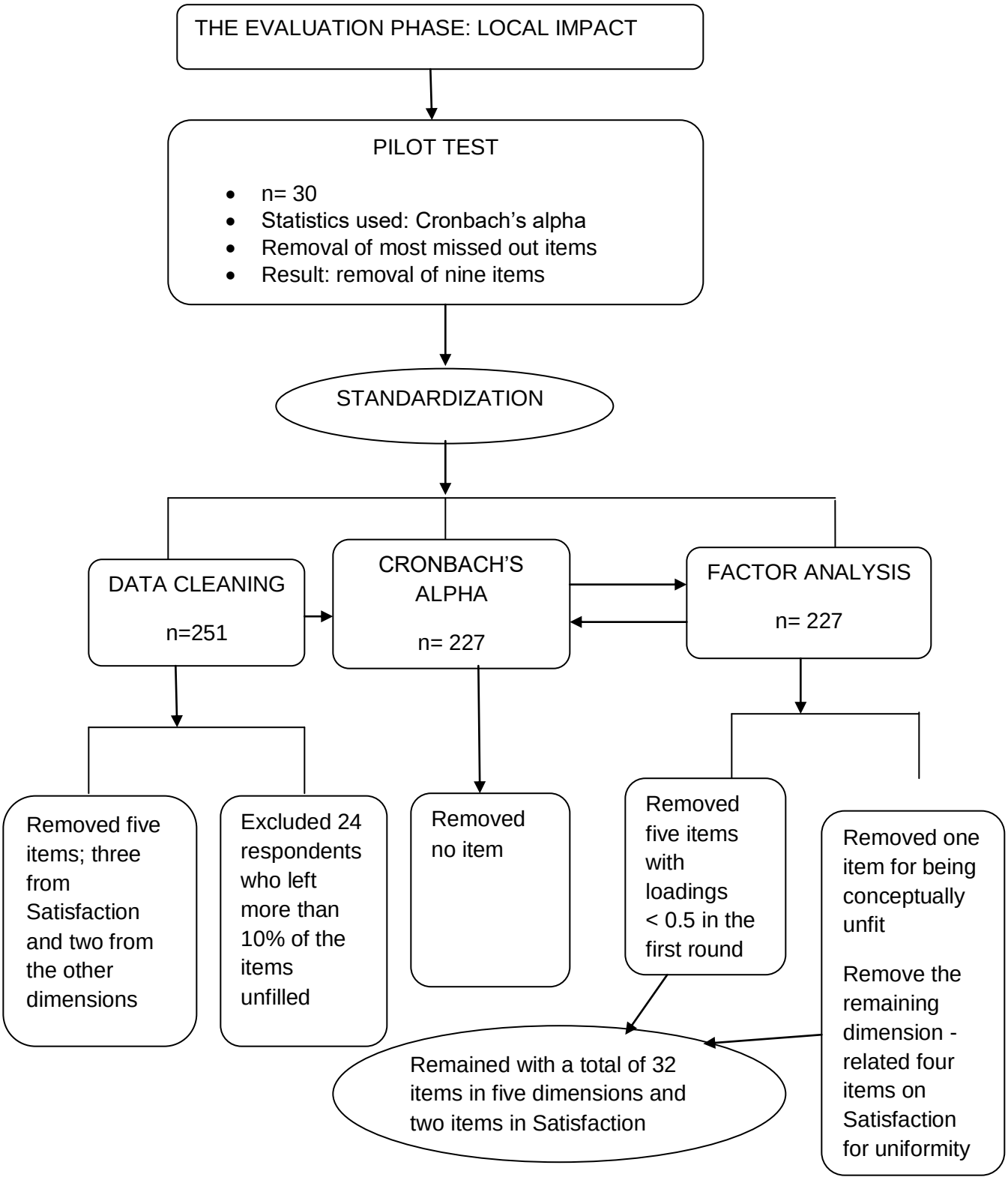

Figure 4.3: Schematic presentation of the evaluation phase: local impact

From the two criteria in Cronbach's alpha test, which are "Cronbach's alpha if item deleted" and "corrected item-total correlation," the former was used to identify the less reliable items which should be dropped from the instrument. Using this criterion, the alpha level for each item was compared with the alpha level for the dimension under study. For example, there were eleven items under the dimension of supervision support. The alpha value for the whole dimension was 0.71. Using the criterion of "Cronbach's alpha if item deleted" the alpha level for each of the eleven items was compared with 0.71. This was with the purpose that if there were items whose alpha level exceeded 0.71, they would be dropped. What the alpha value for the individual item (that exceeds the alpha value for the dimension) tells us, is that the alpha value for the dimension would have increased if that specific item was not there. Accordingly, seven items of this nature were deleted from the instrument (reducing the number of items from 59 to 52). In this study, the other criterion ("corrected item-total correlation") was not used at this level because of its iterative nature (deleting more and more items from the dimension until a satisfactory level is achieved). The researcher decided that employing this process and deleting many items at the level of the pilot test, was too early. Another reason was that the Cronbach's alpha test would, in any event, be repeated with the two criteria when data were collected from a larger number of respondents.

Apart from using Cronbach's alpha, item 32, which read "UNISA should ensure that self-sponsored students' payment processes are user-friendly" and item 33, which read "UNISA should ensure that payments made by self-sponsored students is reflected on their accounts as quickly as possible," were deleted because many of the respondents in the pilot study (26 respondents out of 30, which accounted for 86.7% of the pilot group) left these two items unanswered. On the basis of the results of the pilot test (and the two most missed items), the number of items in the questionnaire were reduced from 59 to 50. The table below shows the results of the pilot study.

Table 4.9: Items removed in the pilot test procedure

ITEMS		Cronbach's Alpha if Item Deleted	ACTION	No. of items retained
Cronbach's alpha - Supervision Support = 0.71				
1	Clear comments from supervisors	.680		
2	Supervisors acknowledge receipt of students' submissions	.680		
3	Information on ethical clearance procedures	.700		
4	Friendly/warm communication from supervisors	.744	DROPPED	
5	Alerting students on useful resources	.646		
6	Using different technological media for communication	.699		
7	Guidance on governing rules and policies	.664		
8	Supervisors' timely responses to students' submissions	.675		
9	Supervisors' periodically encouraging their students	.701		
10	Comments of supervisors being fairly consistent over time	.667		
11	Supervisors' giving information on research fund possibilities	.706		10
Cronbach's alpha - Infrastructure = 0.80				
12	e-book and e-journal collections in the library	.791		
13	Accessibility of online library throughout the year	.796		
14	User-friendliness of the myLife e-mail	.789		
15	User-friendliness of the myUnisa system	.794		
16	Facilitation of interaction among students	.789		
17	Accessibility of workshop/seminar/training venues	.788		
18	Up-to-date ICT resources	.781		
19	Assistance for ICT-related challenges	.789		
20	Centre library stocking subject-relating materials	.784		
21	Accessibility of Centre library after working hours	.810	DROPPED	
22	Centre library stocking recent research books	.788		
23	Accessibility of computer labs	.793		
24	Accessibility of Ethiopia Centre	.767		12
Cronbach's alpha - Administrative Support = 0.62				
25	Provision of information on admission requirements	.639	DROPPED	
26	Provision of information on doctoral application	.618		
27	Responses on admission decisions	.520		
28	User-friendliness of registration and re-registration	.528		
29	Communicating decisions on proposal	.547		
30	Provision of information on administrative procedures	.595		6

ITEMS		Cronbach's Alpha if Item Deleted	ACTION	No. of items retained
31	Timely responses on bursary applications	.599		
32	User-friendliness of fee payment processes		MISSED MOST	
33	Payments being reflected on students' accounts		MISSED MOST	
Cronbach's alpha - Academic Facilitation = 0.72				
34	Assignment of supervisors upon registration	.748	DROPPED	
35	Assignment of mentors to students with local supervisors	.681		
36	Signing of supervisor-student agreement	.738	DROPPED	
37	Doctoral proposal development training	.705		
38	Relevance of training to students' research	.667		
39	Provision of programs for post-proposal students	.654		
40	Training on data analysis softwares	.696		
41	Training on accessing online library resources	.691		
42	assignment of subject librarians	.725	DROPPED	
43	Delivery of books received from South Africa	.710		
44	provide orientation on distance education	.738	DROPPED	
45	Provision of timely orientation to newly admitted students	.707		
46	Active Support from staff members of the Centre	.702		9
Cronbach's alpha - Corporate Image = 0.70				
47	UNISA is a leading ODL university	.609		
48	Image of UNISA graduates in Ethiopia	.602		
49	UNISA's degree meets international standard	.700		
50	Graduates have pride in their qualifications from UNISA	.620		4
			TOTAL NUMBER OF ITEMS	41*
*The nine items on Satisfaction did not pass through the pilot test procedure (total number of items=50)				

The fifty items that remained were distributed as follows: 37 items belonging to four different dimensions were item types that were set to measure the students' expectations and experiences. Four items were intended to measure the students' perception of the corporate image of UNISA in Ethiopia. The remaining nine items that were not part of the table above were set to measure satisfaction which was to be used as a dependent variable. As a result of the pilot test, therefore, these items were constituted in the instrument that was finally used to collect data for standardisation.

4.4.2 Standardising the instrument

The population of this study was doctoral students registered at UNISA, and who were based in Ethiopia. This group of students was chosen because they accounted for 62% of the total UNISA student population in Ethiopia during the 2014 academic year and for convenience of data collection. This student population is larger than all the other groups (undergraduates, honours and master's students) taken together, mainly because of the bilateral agreement UNISA has with the Ethiopian government. In a meeting between UNISA and the Ethiopian Ministry of Education (that represents the Ethiopian government), it was agreed that UNISA should focus on master's and doctoral candidates in order to increase and strengthen the profiles of academics who work in the different local universities in Ethiopia (Minutes of the meeting between UNISA and Ethiopian Ministry of Education; March 21, 2011). Since the Ministry envisages a gradual increase in the number of local universities (currently aiming to increase the number from 33 to 44 public universities nationally), UNISA was tasked to train and capacitate the staff members in these universities so that they will be able to deliver quality education. In addition, doctoral students of UNISA in Ethiopia come from other government-sponsoring agencies, non-government organisations (NGOs) and a few from the international and diplomatic community. In the 2014 academic year, there was a total of 465 doctoral students registered at the Ethiopia Centre, 332 of whom were sponsored by the Ethiopian Ministry of Education. Most of the remaining 133 students were self-sponsored while a few of them were sponsored by other institutions. The data collection technique employed in this study was reaching students who were accessible and willing to participate in the study. In this process, the 32 students who participated in the pilot test were excluded.

The students were approached by the writer telephonically. Those students who answered the telephone calls, were asked for their willingness to participate in the study. In cases where they were willing (most of them were), they were asked for their personal e-mail addresses (like yahoo or gmail), which were used to send out the questionnaire. For the sake of confidentiality and ethical considerations, use of the students' myLife e-mail accounts was deliberately avoided (to prevent students being

identified by means of their student numbers). The major obstacle in this process was that telephones of quite a number of students were either switched off, constantly busy or never got picked up. Accordingly, a total of 260 copies of the instrument were received from the students (the 32 students who participated in the pilot test were excluded). This is a response rate of 60% (260/433), which is well acceptable. Each of the completed instruments was then scrutinised to check if it was fully completed. Nine of them were found not to have been filled out properly, some neglected to complete both the expectation and the experience items, some filled out only a few items and left many items unanswered whereas some others provided more than two responses per item. These copies of the instrument were discarded. The remaining 251 were coded with numbers and then entered into SPSS version 21.0.

4.4.2.1 Data cleaning procedure

The first step in the processing of the data was to clean the data and to do a missing data analysis. The data cleaning was done by obtaining frequency scores, especially for the range of the entered values. Only in one case, there was a value of 999 (the code for missing items). After having corrected that mistake, a missing data analysis was done. The missing data analysis was conducted in SPSS where all metric data were used; i.e. social and demographic factors were excluded as they were not part of the main analysis. The analysis was done by using absolute value differences between the respondents' expectations and experiences for the first 37 items. The items on corporate image and satisfaction did not have difference scores as the students were required to fill out only one response in the scale that varied from Strongly Disagree (1) to Strongly Agree (5). Table 4.10 shows the results. Two items from the dimensions to be used as independent variables and three items that measure satisfaction were dropped because they had missing values of more than 10%.

Table 4.10: Most missed out items (n=251)

ITEMS FROM THE INDEPENDENT VARIABLES			
ITEM	**COUNT MISSING**	**PERCENT**	**DIMENSION IT FELL INTO**
Item 28: UNISA should ensure that bursary section should provide timely responses concerning bursary applications	28	11.2	Administrative Support
Item 29: UNISA should assign mentors from the main campus to doctoral students who have local supervisors	32	12.7	Academic Facilitation
ITEMS FROM THE DEPENDENT VARIABLE			
ITEM	**COUNT MISSING**	**PERCENT**	**DIMENSION IT FELL AFTER**
I am satisfied with the Supervision Support provided by UNISA	28	11.2	Followed Supervision Support
I am satisfied with the infrastructure UNISA provides	29	11.6	Followed infrastructure provided by UNISA
I am satisfied with the infrastructure provided at the UNISA-Ethiopia Campus	37	14.7	Followed infrastructure provided by UNISA-Ethiopia

The other aspect in missing data analysis was checking the data set in terms of respondents (cases). There were 251 students who completed the instrument. Out of these respondents, 24 failed to provide a response to more than 10% of the items and hence were dropped from the major analysis as shown in the table below. Accordingly, the data set ended up having a total of 227 respondents that were used for final analysis. On the other hand, from the 50 items (nine of which belonging to satisfaction), a total of 45 items were utilized for further analysis after having dropped five items as shown in Table 4.10 above. Therefore, there were 35 expectation-experience items, four items that measured the corporate image of UNISA and six items that measured satisfaction.

Table 4.11: Respondents/Cases that missed out more than 10%

CASE/ RESPONDENT	COUNT MISSING	PERCENT	CASE/ RESPONDENT	COUNT MISSING	PERCENT
10	6	12.0	211	6	12.0
11	11	22.0	212	8	16.0
18	11	22.0	218	6	12.0
23	9	18.0	222	6	12.0
26	9	18.0	223	8	16.0
34	6	12.0	224	11	22.0

CASE/ RESPONDENT	COUNT MISSING	PERCENT	CASE/ RESPONDENT	COUNT MISSING	PERCENT
73	14	28.0	225	12	24.0
89	6	12.0	227	9	18.0
107	6	12.0	232	12	24.0
113	6	12.0	234	5	10.0
115	9	18.0	236	5	10.0
209	10	20.0	237	6	12.0

The sections below discuss the procedures undertaken to refine the data set and to arrive at items that accurately measure the construct under study by using Cronbach's alpha test and factor analysis. Like the pilot study and the missing data analysis, the data set that was used to perform these two analyses for the items that measured students' expectations and experiences was absolute value differences. In addition, only the metric data were used to conduct the analyses as the demographic factors did not make a contribution in this respect.

4.4.2.2 Application of Cronbach's alpha test

Using the Cronbach's alpha test, the items in the instrument were checked for their appropriateness to fit the dimension they were placed into. In this case, both criteria (Cronbach's alpha if item deleted and corrected item-total correlation) were employed. As shown in the table below, no item was dropped as a result of these procedures because all items did not exceed the total alpha value for the dimension nor did they have an item-total correlation below 0.30. Hence all the items were taken for processing factor analysis.

Table 4.12: Results of Cronbach's alpha test

NR	DIMENSION	ALPHA FOR THE DIMENSION	RANGE OF ALPHA IF ITEM DELETED	CORRECTED ITEM-TOTAL CORRELATION	REMARK
1	SUPERVISION SUPPORT	0.90	0.887-0.894	≥0.583	Accept all ten items
2	INFRASTRUCTURE	0.87	0.855-0.868	≥ 0.466	Accept all twelve items
3	ADMINISTRATIVE SUPPORT	0.78	0.714-0.752	≥0.501	Accept all five items
4	ACADEMIC FACILITATION	0.78	0.739-0.777	≥0.361	Accept all eight items

NR	DIMENSION	ALPHA FOR THE DIMENSION	RANGE OF ALPHA IF ITEM DELETED	CORRECTED ITEM-TOTAL CORRELATION	REMARK
5	CORPORATE IMAGE	0.83	0.766-0.807	≥0.622	Accept all four items

4.4.2.3 Employment of factor analysis

A factor analysis was done by using the extraction method of Principal Component Analysis (PCA), with varimax rotation and Kaiser-Meyer-Olkin (KMO) Normalization method of sampling adequacy. Similar to the Cronbach's alpha test, the absolute value differences of items that measured the respondents' expectation and experience of student support services were used to run the analysis, wherever applicable. Items on satisfaction (dependent variable) did not form part of this analysis. The first step in the analysis was to create a Scree plot that assisted to determine in how many dimensions the data should be clustered. The inflexion point on the Scree plot below shows that the data could be classified into five to six dimensions.

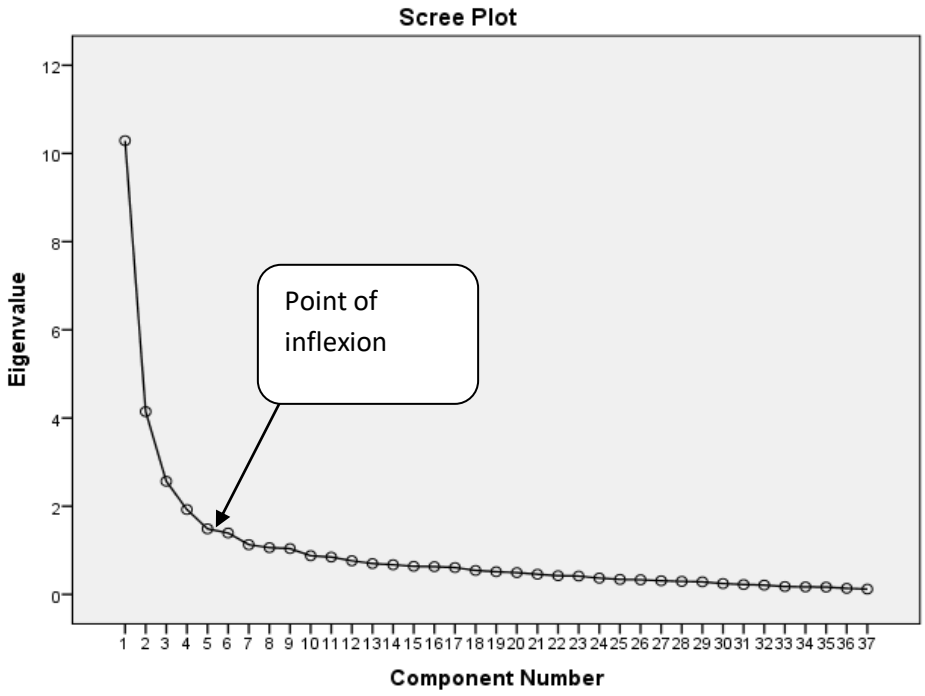

Figure 4.4: Scree plot that shows inflexion point for EFA

The data was therefore factored by determining the number of dimensions into five. Though there was the option of using eigenvalue greater than one, the researcher

decided to use the five dimensions so as to fit the result of the scree plot. Here, the six-factor solution was not used for the major reason that it was found to have four items (namely item 14, 16, 19, and 20) cross-loading into two dimensions. This process explained 54.2% of the total variance as shown in Table 4.13 below.

Table 4.13: Total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.325	27.171	27.171	10.325	27.171	27.171	6.010	15.816	15.816
2	4.233	11.141	38.312	4.233	11.141	38.312	4.703	12.377	28.194
3	2.542	6.689	45.001	2.542	6.689	45.001	3.690	9.711	37.904
4	1.973	5.192	50.192	1.973	5.192	50.192	3.118	8.207	46.111
5	1.534	4.037	54.229	1.534	4.037	54.229	3.085	8.118	**54.229**
6	1.429	3.759	57.988						
7	1.134	2.983	60.971						
8	1.100	2.895	63.867						
9	1.077	2.835	66.702						
10	.939	2.472	69.174						
11	.866	2.280	71.454						
12	.816	2.148	73.602						
13	.758	1.994	75.596						
14	.693	1.823	77.419						
15	.666	1.754	79.173						
16	.625	1.645	80.818						
17	.601	1.582	82.400						
18	.548	1.442	83.843						
19	.520	1.369	85.211						
20	.517	1.359	86.571						
21	.494	1.299	87.869						
22	.443	1.167	89.036						
23	.433	1.139	90.175						
24	.419	1.102	91.277						
25	.370	.974	92.251						
26	.336	.885	93.136						
27	.320	.842	93.978						
28	.297	.781	94.759						
29	.285	.749	95.508						
30	.272	.716	96.224						
31	.248	.651	96.875						

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
32	.228	.601	97.476						
33	.201	.528	98.004						
34	.180	.475	98.479						
35	.171	.450	98.929						
36	.160	.422	99.351						
37	.130	.341	99.692						
38	.117	.308	100.000						

In this study, taking the table of rotated component matrix in factor analysis, factor loading of ±0.50 was used for the first round of factor analysis and then the cut-off point of ±0.40 was employed in the second round analysis. Table 4.14 below shows these results and the actions taken on some of the items after the first round of the factor analysis procedure.

Table 4.14: First round of factor analysis

ITEM NO	ITEMS	COMPONENTS					ACTIONS
		1	2	3	4	5	
1	Clear comments from supervisors	**.759**	.016	.017	.178	-.154	
2	Supervisors acknowledge receipt of students' submissions	**.734**	.053	.108	.114	-.136	
3	Information on ethical clearance procedures	**.652**	.310	.047	.007	-.111	
4	Alerting students on useful resources	**.711**	.138	.003	.218	-.117	
5	Using different technological media for communication	**.711**	.192	.149	.041	-.073	
6	Guidance on governing rules and policies	**.737**	.109	.126	.043	-.015	
7	Supervisors' timely responses to students' submissions	**.755**	-.014	.228	-.039	-.094	
8	Supervisors' periodically encouraging their students	**.751**	.062	.094	.099	-.140	
9	Comments of supervisors being fairly consistent over time	**.745**	-.003	.074	.137	-.114	
10	Supervisors' giving information on research fund possibilities	**.743**	.203	.102	.024	.019	
11	e-book and e-journal collections in the library	.045	**.530**	-.101	.431	.017	
12	Accessibility of online library throughout the year	.000	**.551**	-.051	.226	.105	
13	User-friendliness of the myLife e-mail	.028	.145	**.541**	.393	.218	
14	User-friendliness of the myUnisa system	.061	.287	.470	**.542**	.064	
15	Facilitation of interaction among students	.138	.483	.169	.056	-.098	DROPPED (loading <0.5)
16	Accessibility of workshop/seminar/training venues	.048	.319	.447	.468	.043	DROPPED (loading

ITEM NO	ITEMS	COMPONENTS					ACTIONS
		1	2	3	4	5	
							<0.5)
17	Up-to-date ICT resources	.036	**.543**	.279	.340	.003	
18	Assistance for ICT-related challenges	.144	**.644**	.408	.017	.052	
19	Centre library stocking subject-relating materials	.126	**.740**	.097	.162	.079	
20	Centre library stocking recent research books	.146	**.682**	.127	.153	-.015	
21	Accessibility of computer labs	.048	**.661**	.131	.124	-.042	
22	Accessibility of Ethiopia Centre	.114	**.558**	.340	-.056	-.059	
23	Provision of information on doctoral application	.133	.073	**.620**	.111	-.053	
24	Responses on admission decisions	.125	.133	**.715**	.072	-.104	
25	User-friendliness of registration and re-registration	.063	.147	**.742**	.091	-.193	
26	Communicating decisions on proposal	.373	.196	**.523**	.095	-.243	
27	Provision of information on administrative procedures	.267	.422	**.516**	.029	-.082	
30	Doctoral proposal development training	.108	.105	.058	**.575**	-.340	
31	Relevance of training to students' research	.093	.196	.285	**.641**	-.238	
32	Provision of programs for post-proposal students	.170	.281	.255	**.614**	-.007	
33	Training on data analysis softwares	.268	.145	.048	**.672**	.002	
34	Training on accessing online library resources	.105	**.510**	-.115	.495	-.220	
35	Delivery of books received from South Africa	.118	.434	.218	.147	-.102	DROPPED (loading <0.5)
36	Provision of timely orientation to newly admitted students	.074	.458	.141	-.014	.103	DROPPED (loading <0.5)
37	Active Support from staff members of the Centre	.148	.354	.393	.055	-.097	DROPPED (loading <0.5)
38	UNISA is a leading ODL university	-.293	-.061	-.193	-.099	**.785**	
39	Image of UNISA graduates in Ethiopia	-.112	-.032	-.083	-.091	**.820**	
40	UNISA's degree meets international standard	-.229	.069	-.084	-.005	**.736**	
41*	Graduates have pride in their qualifications from UNISA	-.077	-.048	-.020	-.082	**.832**	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
Rotation converged in 8 iterations.

*Items 28 and 29 were not part of the analysis as they were dropped in the process of missing data analysis. Hence it was 39 items that was subjected to the factor analysis procedure.

The result of the five-factor solution was found to have similarity with the results of the content validity. Two dimensions (supervision support and corporate image) were found to have been intact. Items in the other three dimensions as found from the content

validity procedure (infrastructure, administrative support and academic facilitation) showed only some variability in the factor analysis procedure. Because of these results, the researcher was motivated to keep the names of the dimensions that were commonly identified by the inter-rater reliability and content validity procedures.

This PCA procedure dropped items 15, 16, 35, 36 and 37 because their factor loadings were less than 0.5. In addition, the procedure placed items 13, 14 and 34 in other dimensions than their original placement: item 13 under Administrative Support, item 14 under academic facilitation, and item 34 under infrastructure. The next step undertaken was to drop the five items that showed factor loadings below 0.5, and categorise the three items (13, 14 and 34) in their new dimensions before conducting a second round of the Cronbach's alpha test.

4.4.2.4 Iterations with Cronbach's alpha and factor analysis

Cronbach's alpha and factor analysis were used iteratively so as to meet two criteria, namely gaining psychometrically sound items and satisfying the design-based research where the development of a model is characterized by iterative processes.

Subjecting the amended data to a second test for Cronbach's alpha showed that the dimensions of supervision support (with ten items) and the corporate image (with four items) were still within their respective factorization and alpha values. The dimension, infrastructure, which had nine items (11, 12, 17-22, and 34), reached an alpha value of 0.852, and the result of an inter-item correlation of all items was >0.40. For the dimension of administrative support, which had six items (13, 23-27), the overall alpha value was 0.78 with a minimum inter-item correlation of 0.397 for item 13. Lastly, the dimension of academic facilitation, which had five items (14, 30-33), had a Cronbach alpha value of 0.763 for the dimension, with all inter-item correlation coefficients above 0.4. After this procedure, the researcher decided to retain item 13 (which read: "UNISA should make the myLife e-mail account user-friendly") in the dimension of Administrative Support (where it was previously allocated by the factor analysis procedure) because the doctoral students make regular use of the mylife e-mail, which, in turn, needed to be user-friendly. Conversely, it was decided to drop item 34 from the

dimension of infrastructure and item 14 from the dimension of academic facilitation because both items did not give sensible meaning in the dimensions where the factor analysis procedure categorised them. The conceptual nature of factor analysis also allows making such kinds of decisions. After dropping items 14 and 34, the factor analysis process was re-run on 32 items that remained from the previous procedures and which were set to measure student support service quality (set as independent variables within five dimensions). The result is shown in the table below.

Table 4.15: Second round of factor analysis

ITEM NO	ITEMS	COMPONENTS				
		1	2	3	4	5
1	Clear comments from supervisors	**0.751**	0.008	0.038	0.185	-0.135
2	Supervisors acknowledge receipt of students' submissions	**0.738**	0.004	0.085	0.062	-0.136
3	Information on ethical clearance procedures	**0.642**	0.269	0.094	-0.013	-0.123
4	Alerting students on useful resources	**0.702**	0.151	0.032	0.19	-0.138
5	Using different technological media for communication	**0.715**	0.139	0.17	0.097	-0.04
6	Guidance on governing rules and policies	**0.732**	0.136	0.12	0.051	-0.029
7	Supervisors' timely responses to students' submissions	**0.759**	-0.051	0.183	-0.032	-0.109
8	Supervisors' periodically encouraging their students	**0.738**	0.018	0.086	0.151	-0.096
9	Comments of supervisors being fairly consistent over time	**0.727**	-0.026	0.101	0.167	-0.085
10	Supervisors' giving information on research fund possibilities	**0.726**	0.215	0.083	-0.009	-0.064
11	e-book and e-journal collections in the library	0.074	**0.661**	-0.135	0.197	-0.053
12	Accessibility of online library throughout the year	0.031	**0.705**	-0.088	-0.032	-0.017
17	Up-to-date ICT resources	0.042	**0.664**	0.229	0.194	-0.048
18	Assistance for ICT-related challenges	0.165	**0.612**	0.428	-0.051	0.058
19	Centre library stocking subject-relating materials	0.117	**0.708**	0.158	0.185	0.113
20	Centre library stocking recent research books	0.114	**0.649**	0.241	0.159	0.014
21	Accessibility of computer labs	0.063	**0.597**	0.149	0.18	-0.036
22	Accessibility of Ethiopia Centre	0.092	**0.484**	0.397	0.07	0.034
23	Provision of information on doctoral application	0.097	0.085	**0.671**	0.084	0.02

ITEM NO	ITEMS	COMPONENTS				
		1	2	3	4	5
24	Responses on admission decisions	0.132	0.097	**0.713**	0.11	-0.113
25	User-friendliness of registration and re-registration	0.065	0.098	**0.769**	0.111	-0.186
26	Time span in communicating HDC decisions on proposal	0.353	0.147	**0.547**	0.176	-0.157
27	Provision of information on administrative procedures	0.264	0.371	**0.551**	0.046	-0.092
13	User-friendliness of the myLife e-mail	0.045	0.253	**0.475**	0.153	0.173
30	Doctoral proposal development training	0.113	0.107	0.024	**0.664**	-0.302
31	Relevance of training to students' research	0.096	0.25	0.282	**0.735**	-0.185
32	Provision of programs for post-proposal students	0.168	0.253	0.278	**0.711**	0.058
33	Training on data analysis software	0.267	0.238	0.024	**0.648**	0.029
38	UNISA is a leading ODL university	-0.319	-0.026	-0.202	-0.047	**0.781**
39	Image of UNISA graduates in Ethiopia	-0.106	-0.048	-0.084	-0.13	**0.819**
40	UNISA's degree meets international standard	-0.225	0.094	-0.062	0.021	**0.761**
41	Graduates have pride in their qualifications from UNISA	-0.075	0.002	-0.046	-0.134	**0.816**

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
Rotation converged in 6 iterations.

As shown in Table 4.16 below, this process explained 58% of the total variance, which is better than the first round. Though the cut-off point is achieving 60% explanation power, this result is also acceptable in social science research (cf. 3.6.4.4).

Table 4.16: Total variance explained

C	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.647	27.894	27.894	8.647	27.894	27.894	5.828	18.799	18.799
2	3.681	11.873	39.767	3.681	11.873	39.767	3.838	12.379	31.179
3	2.436	7.857	47.624	2.436	7.857	47.624	3.007	9.700	40.879
4	1.711	5.519	53.143	1.711	5.519	53.143	2.867	9.248	50.127
5	1.390	4.485	57.628	1.390	4.485	57.628	2.325	7.501	**57.628**
6	1.177	3.796	61.424						
7	.973	3.139	64.563						
8	.904	2.915	67.477						
9	.831	2.682	70.159						
10	.771	2.488	72.647						
11	.735	2.370	75.018						
12	.676	2.180	77.198						
13	.639	2.060	79.257						
14	.601	1.940	81.198						
15	.579	1.869	83.066						
16	.557	1.796	84.863						
17	.502	1.619	86.482						
18	.458	1.477	87.959						
19	.430	1.388	89.347						
20	.412	1.328	90.674						
21	.360	1.163	91.837						
22	.346	1.115	92.952						
23	.330	1.064	94.016						
24	.306	.986	95.002						
25	.279	.901	95.903						
26	.264	.851	96.754						
27	.244	.788	97.542						
28	.238	.767	98.309						
29	.201	.647	98.956						
30	.175	.565	99.522						
31	.148	.478	100.000						

Table 4.17 below shows the measure of sampling adequacy and test of sphericity. The results indicate a very good sampling adequacy of 0.85 (values >0.5 are acceptable) and a statistically significant Chi-square result for sphericity, namely p=0.001.

Table 4.17: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.852
Bartlett's Test of Sphericity	Approx. Chi-Square	2275.149
	Df	465
	Sig.	0

The Cronbach's alpha test was re-run only for the dimensions of infrastructure, which included item 22 with its factor loading of less than 0.5 (0.484), and Administrative Support, which included item 13 with a factor loading of 0.475. The result was a total alpha result of 0.844 for Infrastructure; all items having a value of "alpha if item deleted" below 0.84 and an item-total ranging from 0.493 to 0.66. Consequently, item 22 was retained because loadings in the range of 0.30-0.40 could be regarded as the item meeting the minimum requirement for acceptance. In the case of Administrative Support, the total alpha value for the dimension was 0.782, with all items showing a value of "alpha if item deleted" below 0.78 and an item-total correlation ranging from 0.397 to 0.624. In conclusion, after all these procedures, the total number of items that fell into five dimensions and that were set to work as independent variables, became 32.

From the items that measure satisfaction, three of them were deleted during the process of missing data analysis. A fourth item of the same nature and that was connected to the dimension of academic facilitation provided by the Ethiopia Centre was also dropped because the two expectation-experience items (items 36 and 37) that it was originally linked to were dropped in the process of factor analysis. For the sake of uniformity, similar items that accompanied the other dimensions (administrative support, academic facilitation UNISA provides, and corporate image) were then dropped from the analysis. Only two items that were intended to measure the students' overall satisfaction ("I recommend UNISA to friends/relatives/family members" and "Overall, I am satisfied with the services rendered by UNISA") were retained for further analysis and to serve as dependent variables. The result of the above stated procedures was that, eventually, the instrument consisted of a total of 34 items; 32 items categorised in five dimensions that stood as independent variables to measure student support service quality and two items that measure overall satisfaction of the services (cf. Appendix V). In conclusion, Table 4.18 below shows the final result of the instrument, which could then be regarded as standardised for purposes of this research.

Table 4.18: Factor loadings and Cronbach's alpha test results

ITEM NR	ITEMS	COMPONENTS				
		SUPERVISION SUPPORT	INFRA-STRUCTURE	ADMINISTRATIVE SUPPORT	ACADEMIC FACILITATION	CORPORATE IMAGE
1	Clear comments from supervisors	**0.751**	0.008	0.038	0.185	-0.135
2	Supervisors acknowledge receipt of students' submissions	**0.738**	0.004	0.085	0.062	-0.136
3	Information on ethical clearance procedures	**0.642**	0.269	0.094	-0.013	-0.123
4	Alerting students on useful resources	**0.702**	0.151	0.032	0.19	-0.138
5	Using different technological media for communication	**0.715**	0.139	0.17	0.097	-0.04
6	Guidance on governing rules and policies	**0.732**	0.136	0.12	0.051	-0.029
7	Supervisors' timely responses to students' submissions	**0.759**	-0.051	0.183	-0.032	-0.109
8	Supervisors' periodically encouraging their students	**0.738**	0.018	0.086	0.151	-0.096
9	Comments of supervisors being fairly consistent over time	**0.727**	-0.026	0.101	0.167	-0.085
10	Supervisors' giving information on research fund possibilities	**0.726**	0.215	0.083	-0.009	-0.064
Cronbach's alpha (Supervision Support – 10 items)		***0.90***				
11	e-book and e-journal collections in the library	0.074	**0.661**	-0.135	0.197	-0.053
12	Accessibility of online library throughout the year	0.031	**0.705**	-0.088	-0.032	-0.017
17	Up-to-date ICT resources	0.042	**0.664**	0.229	0.194	-0.048
18	Assistance for ICT-related challenges	0.165	**0.612**	0.428	-0.051	0.058
19	Centre library stocking subject-relating materials	0.117	**0.708**	0.158	0.185	0.113
20	Centre library stocking recent research books	0.114	**0.649**	0.241	0.159	0.014
21	Accessibility of computer labs	0.063	**0.597**	0.149	0.18	-0.036
22	Accessibility of Ethiopia Centre	0.092	**0.484**	0.397	0.07	0.034

ITEM NR	ITEMS	COMPONENTS				
		SUPERVISION SUPPORT	INFRA-STRUCTURE	ADMINISTRATIVE SUPPORT	ACADEMIC FACILITATION	CORPORATE IMAGE
Cronbach's alpha (Infrastructure - eight items)			***0.84***			
13	User-friendliness of the myLife e-mail	0.045	0.253	**0.475**	0.153	0.173
23	Provision of information on doctoral application	0.097	0.085	**0.671**	0.084	0.02
24	Responses on admission decisions	0.132	0.097	**0.713**	0.11	-0.113
25	User-friendliness of registration and re-registration	0.065	0.098	**0.769**	0.111	-0.186
26	Time span in communicating HDC decisions on proposal	0.353	0.147	**0.547**	0.176	-0.157
27	Provision of information on administrative procedures	0.264	0.371	**0.551**	0.046	-0.092
Cronbach's alpha (Administrative Support - six items)				***0.78***		
30	Doctoral proposal development training	0.113	0.107	0.024	**0.664**	-0.302
31	Relevance of training to students' research	0.096	0.25	0.282	**0.735**	-0.185
32	Provision of programs for post-proposal students	0.168	0.253	0.278	**0.711**	0.058
33	Training on data analysis softwares	0.267	0.238	0.024	**0.648**	0.029
Cronbach's alpha (Academic Facilitation – four items)					***0.76***	
38	UNISA is a leading ODL university	-0.319	-0.026	-0.202	-0.047	**0.781**
39	Image of UNISA graduates in Ethiopia	-0.106	-0.048	-0.084	-0.13	**0.819**
40	UNISA's degree meets international standard	-0.225	0.094	-0.062	0.021	**0.761**
41	Graduates have pride in their qualifications from UNISA	-0.075	0.002	-0.046	-0.134	**0.816**
Cronbach's alpha (Corporate Image – four items)						***0.83***
Items on Satisfaction						
42. Recommending UNISA to others						
43. Overall satisfaction with the services of UNISA						

As shown in Table 4.18 above, all dimensions had a Cronbach's alpha result greater than 0.7, which was well above the acceptable level. The overall Cronbach's alpha of the 32-items instrument that was meant to measure Student Support Service Quality was 0.878 (0.88), which implied an instrument with a strong reliability. This table also substantiated the convergent and the discriminant validity of the instrument as all the items clearly fell in their respective dimensions. When items converge/cluster around a construct, it means that they measure the same thing. The figure below shows the service quality model by Parasuraman, et al. (1985:48) as adopted in this study. The procedures undergone in the pilot test and the standardisation of the instrument also go along with how the SERVQUAL instrument was developed (Parasuraman, et al., 1988).

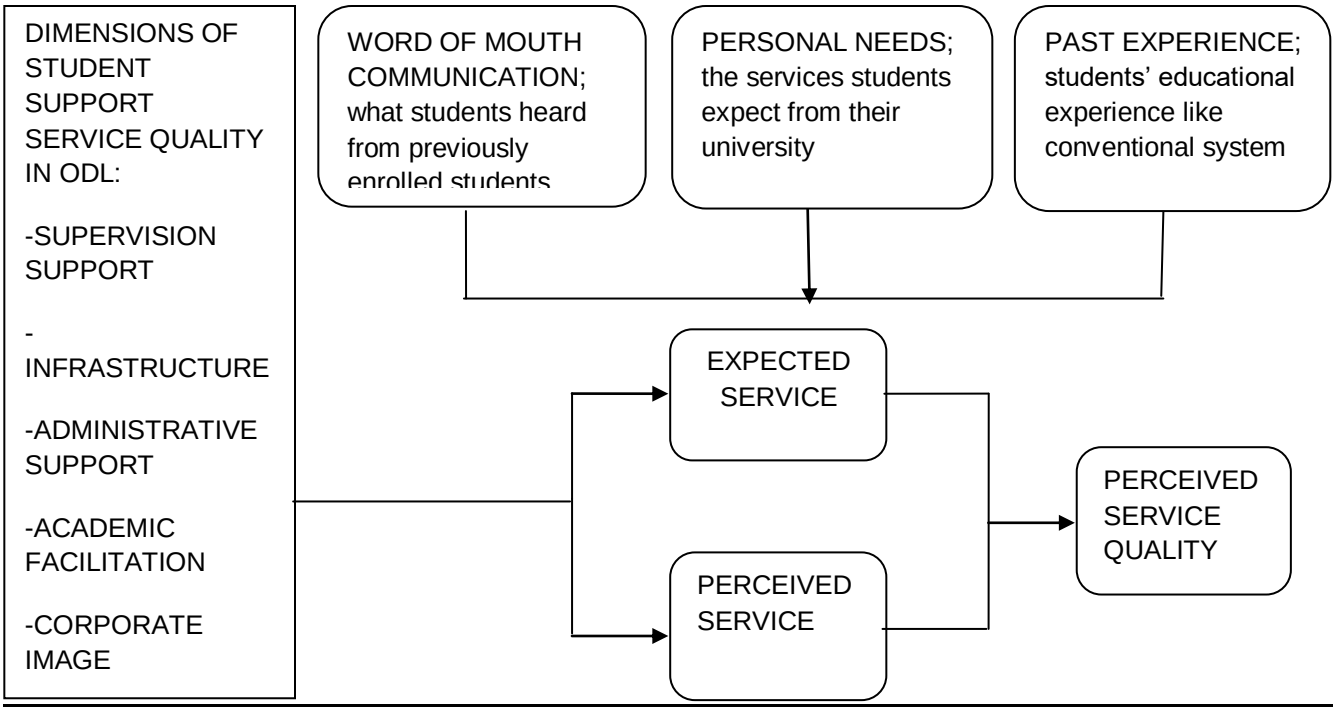

Figure 4.5: Dimensions of student support service quality in ODL

4.5 CHAPTER SUMMARY

This chapter covered the processes undergone in coming up with a standardised instrument to be used in this study. It started from development of items from different sources and went through preliminary observations of the questionnaire through inter-rater reliability and content validity. It went to discuss the pilot test procedure and then

the final standardisation procedure through the employment of Cronbach's alpha and factor analysis. The instrument ended up with 32 items that were categorised in five dimensions and two items that measured overall satisfaction. The next chapter discusses the findings of this research by using the standardised instrument.

CHAPTER 5

EVALUATION: BROADER IMPACT

5.1 INTRODUCTION

In design-based research, the last phase is 'evaluation: broader impact'. This is the intervention phase that focuses on using the model that has been designed so far, and is referred to as the closure event. This chapter therefore discusses the application of the standardised instrument in the process of answering the research questions that guided this study. These questions focused on the extent of students' expectations of student support services, the extent of their actual experiences of these services, an identification of service quality by observing the gaps between the expectations and experiences, and finally the relationship of service quality with satisfaction. Before proceeding to other details, the researcher needs to describe the profiles of the students who responded to the instrument by way of orientation.

5.2 PROFILES OF RESPONDENTS OF THE STUDY

Table 5.1 below describes the socio-demographic characteristics of the students who participated in this study. It is observed that the age range of the majority of the respondents was between 31-50 years; the range of 31-40 constituting 41% (93 respondents) and the age range of 41-50 constituting 44% (99 respondents) of the total group. As regards gender composition, 96% (217) of the respondents were males and only 4% (10) of the respondents were females. The third socio-demographic characteristic of the respondents of this study was marital status. A total of 188 (83%) of the respondents were married and 15% (34) of the respondents were single, the other categories (divorced, separated, and widowed) constituting only 2% of the total group. The regions where the students resided were assessed and the findings show that the students were distributed in the different regions of Ethiopia as follows: most students resided in Amhara (26.4%) followed by Addis Ababa (24.6%), the Southern Nations, Nationalities and Peoples' region (22%), Oromia (17.2%) and Tigray (7%). The respondents were registered in all Colleges of UNISA: 35% (79) of the students in the

College of Education (CEDU), 29% (65) in the College of Human Sciences (CHS), 14% (31) in the College of Agriculture and Environmental Sciences (CAES), 12% (28) in the College of Economic and Management Sciences (CEMS) including Doctor of Business Leaderships (DBL) students, 8% (18) in the College of Science, Engineering and Technology, and 1.8% (4) in the College of Laws (CLAW).

Table 5.1: Socio-demographic characteristics of respondents

Socio-demographic variables	Category	Count	n=227 %	Valid %	Cumulative percentage
	21-30	10	4.4	4.4	4.4
	31-40	93	41	41.2	45.6
	41-50	99	43.6	43.8	89.4
	51 AND ABOVE	24	10.6	10.6	100
AGE	Total	226	99.6	100	
	MALE	217	95.6	95.6	95.6
	FEMALE	10	4.4	4.4	100
GENDER	Total	227	100	100	
	SINGLE	34	15	15	15
	MARRIED	188	82.8	82.8	97.8
	DIVORCED	2	0.9	0.9	98.7
	WIDOWED	1	0.4	0.4	99.1
	SEPARATED	2	0.9	0.9	100
MARITAL STATUS	Total	227	100	100	
	ADDIS ABABA	56	24.6	24.6	24.6
	AMHARA	60	26.4	26.4	51
	SNNP	50	22	22	73
	OROMIA	39	17.2	17.2	90.2
	TIGRAY	18	7.9	7.9	98.1
	OTHERS	4	1.9	1.9	100
REGIONAL STATE	Total	227	100	100	
	CAES	31	13.7	13.8	13.8
	CEDU	79	34.8	35.1	48.9
	CEMS	28	12.3	12.4	61.3
COLLEGE REGISTERED IN	CHS	65	28.6	28.9	90.2
	CLAW	4	1.8	1.8	92.0
	CSET	18	7.9	8.0	100.0
	Total	225	99.1	100.0	

5.3 EXTENT OF STUDENTS' EXPECTATIONS OF STUDENT SUPPORT SERVICE QUALITY

One of the objectives of this study was to describe the students' expectations of service quality. From the total of 32 items that measured student support service quality, 28 items measured students' expectations and experiences. For the analysis of determining the students' expectations, descriptive statistics (means and standard

deviations) were used along with minimum and maximum values to describe the extent of the students' expectations.

To define the level of the students' expectation of service quality, each of the four dimensions (supervision support, infrastructure, administrative support and academic facilitation) was considered separately. The expected range of each of the items was to fall between 0 (none) and 4 (very much). Table 5.2 below shows the results of the descriptive statistics.

Table 5.2: Students' expectations of student support service quality

DIMENSIONS	ITEMS	N	Minimum	Maximum	Mean	Std. Deviation
SUPERVISION SUPPORT	Clear comments from supervisors	223	1.00	4.00	3.54	.61
	Supervisors acknowledge receipt of students' submissions	225	1.00	4.00	3.48	.74
	Information on ethical clearance procedures	220	0.00	4.00	3.43	.78
	Alerting students on useful resources	225	1.00	4.00	3.43	.76
	Using different technological media for communication	227	1.00	4.00	3.41	.73
	Guidance on governing rules and policies	227	1.00	4.00	3.48	.71
	Supervisors' timely responses to students' submissions	226	1.00	4.00	3.58	.72
	Supervisors' periodically encouraging their students	226	1.00	4.00	3.46	.72
	Comments of supervisors being fairly consistent over time	220	1.00	4.00	3.50	.67
	Supervisors' giving information on research fund possibilities	225	0.00	4.00	3.12	1.01
GRAND MEAN VALUE OF EXPECTATION ON SUPERVISION SUPPORT					**3.45**	**0.53**
INFRA-STRUCTURE	Online materials collection in the library	227	0.00	4.00	3.58	.72
	Accessibility of online library throughout the year	221	0.00	4.00	3.49	.79
	Up-to-date ICT resources	225	0.00	4.00	3.53	.69
	Assistance for ICT-related challenges	224	0.00	4.00	3.40	.78
	Centre library stocking subject-relating materials	225	0.00	4.00	3.56	.70

DIMENSIONS	ITEMS	N	Minimum	Maximum	Mean	Std. Deviation
	Centre library stocking recent research books	224	0.00	4.00	3.53	.73
	Accessibility of computer labs	222	0.00	4.00	3.29	.944
	Accessibility of Ethiopia Centre	223	0.00	4.00	3.32	.95
GRAND MEAN VALUE OF EXPECTATION ON INFRASTRUCTURE					**3.47**	**0.62**
ADMINISTRATIVE SUPPORT	User-friendliness of the myLife e-mail	224	1.00	4.00	3.61	.63
	Provision of information on doctoral application	227	1.00	4.00	3.59	.63
	Responses on admission decisions	227	1.00	4.00	3.55	.69
	User-friendliness of registration and re-registration	226	1.00	4.00	3.55	.68
	Time span in communicating HDC decisions on proposal	224	1.00	4.00	3.51	.73
	Provision of information on administrative procedures	226	0.00	4.00	3.45	.74
GRAND MEAN VALUE OFEXPECTATION ON ADMINISTRATIVE SUPPORT					**3.56**	**0.53**
ACADEMIC FACILITATION	Doctoral proposal development training	226	0.00	4.00	3.64	.62
	Relevance of training to students' research	226	0.00	4.00	3.62	.62
	Provision of programs for post-proposal students	223	0.00	4.00	3.48	.70
	Training on data analysis softwares	220	0.00	4.00	3.53	.68
GRAND MEAN VALUE OF EXPECTATION ON ACADEMIC FACILITATION					**3.57**	**0.54**

The grand mean value for the dimension of supervision support was 3.45 on a scale of 4.0, with a maximum mean value of 3.58 and minimum mean value of 3.12. The standard deviation of the grand mean was 0.53 which means that the variation in the students' responses was very low (the students' responses were largely similar). This finding shows that the students had very high expectations of student support service quality to be provided by UNISA. The next dimension was infrastructure. This dimension had a grand mean value of 3.47 with maximum and minimum mean values 3.58 and 3.29, respectively. The items' means had a dispersion of 0.62 from the grand mean showing a small variation in the students' responses. Similar to Supervision Support, the students' expectations of the physical and the soft format infrastructure provided by UNISA was high.

The dimension, Administrative Support, had a minimum mean value of 3.45 and a maximum mean value of 3.61. The grand mean was 3.56 with standard deviation of 0.53. The fourth dimension, academic facilitation, had a minimum mean value of 3.48 and a maximum mean value of 3.64. Similar to the other dimensions discussed above, the dispersion of the mean values from the grand mean (3.57) was 0.54, showing small variation among the students' responses. Like the first two dimensions discussed above, there was minimal dispersion among the means of the items under the dimensions of administrative support and academic facilitation, testifying that the students' responses were closely similar.

As shown in table 5.2 above, all four grand means (3.45 for supervision support, 3.47 for infrastructure, 3.56 for administrative support, and 3.57 for Academic aacilitation) were much closer to the top of the scale of 4.0 (which is the maximum possible value) than to the lower end of the scale. Expressed in percentage form, they are 86%, 87%, 89% and 89% for the four consecutive dimensions respectively. The dispersion of the students' responses was also small as the standard deviation for the four dimensions ranged from 0.53 to 0.62, which shows that the students' expectations were closely similar. Considering the total score, out of the maximum total value (n=227 $\times$ 4 (maximum value) $\times$ 28 (expectation items)) of 25,424, the score on expectations was 16,793 (n=169; accounting for 66%). These facts show that, overall, the students' expectations of the student support service quality were high.

5.4 EXTENT OF STUDENTS' EXPERIENCES OF STUDENT SUPPORT SERVICE QUALITY

The section below discusses the extent or level of the students' actual experiences of the student support services that they received from UNISA.

Table 5.3: Students' actual experiences of student support service quality

DIMENSIONS	ITEMS	N	Minimum	Maximum	Mean	Std. Deviation
SUPERVISION SUPPORT	Clear comments from supervisors	221	0.00	4.00	2.82	1.01
	Supervisors acknowledge receipt of students' submissions	224	0.00	4.00	2.84	1.02
	Information on ethical clearance procedures	216	0.00	4.00	2.44	1.14
	Alerting students on useful resources	222	0.00	4.00	2.35	1.19
	Using different technological media for communication	226	0.00	4.00	2.51	1.06
	Guidance on governing rules and policies	224	0.00	4.00	2.65	1.05
	Supervisors' timely responses to students' submissions	226	0.00	4.00	2.68	1.07
	Supervisors' periodically encouraging their students	224	0.00	4.00	2.56	1.12
	Comments of supervisors being fairly consistent over time	220	0.00	4.00	2.71	1.00
	Supervisors' giving information on research fund possibilities	226	0.00	4.00	1.67	1.38
GRAND MEAN VALUE OF EXPERIENCE ON SUPERVISION SUPPORT					**2.54**	**.83**
INFRA-STRUCTURE	Online materials collection in the library	227	0.00	4.00	2.98	.96
	Accessibility of online library throughout the year	220	0.00	4.00	2.86	.96
	Up-to-date ICT resources	224	0.00	4.00	2.67	.94
	Assistance for ICT-related challenges	225	0.00	4.00	2.63	1.09
	Centre library stocking subject-relating materials	225	0.00	4.00	2.44	1.02
	Centre library stocking recent research books	225	0.00	4.00	2.40	.98
	Accessibility of computer labs	219	0.00	4.00	2.12	1.19
	Accessibility of Ethiopia Centre	223	0.00	4.00	1.68	1.08
GRAND MEAN VALUE OF EXPERIENCE ON INFRASTRUCTURE					**2.45**	**.73**
ADMINISTRATIVE SUPPORT	User-friendliness of the myLife e-mail	226	0.00	4.00	3.06	.91
	Provision of information on doctoral application	227	0.00	4.00	3.12	.87
	Responses on admission decisions	227	0.00	4.00	2.88	1.00
	User-friendliness of registration and re-registration	227	0.00	4.00	2.94	.97
	Time span in communicating HDC decisions on proposal	222	0.00	4.00	2.46	1.11
	Provision of information on administrative procedures	225	0.00	4.00	2.66	.97
GRAND MEAN VALUE OFEXPERIENCE ON ADMINISTRATIVE SUPPORT					**2.85**	**.69**

DIMENSIONS	ITEMS	N	Minimum	Maximum	Mean	Std. Deviation
ACADEMIC FACILITATION	Doctoral proposal development training	226	1.00	4.00	3.25	.82
	Relevance of training to students' research	225	0.00	4.00	2.84	.96
	Provision of programs for post-proposal students	218	0.00	4.00	2.39	1.07
	Training on data analysis softwares	219	0.00	4.00	2.46	1.02
GRAND MEAN VALUE OF EXPERIENCE ON ACADEMIC FACILITATION					**2.74**	**.75**

Table 5.3 above indicates that the mean values on the students' actual experiences of the four dimensions of student support service quality were largely below 3.0 on the scale of 0.0 – 4.0. The grand mean values for each of the dimensions were 2.54 (64%) for the dimension of supervision support, 2.45 (61%) for the dimension of infrastructure, 2.85 (71%) for the dimension of administrative support and 2.74 (69%) for the dimension of academic facilitation. These results show that the students' actual experiences of the support services at UNISA were much lower (less favourable) than their expectations. Considering the dispersion of the means of the items from the grand mean, the grand standard deviation for all of the four dimensions is below 1.0 (0.83 for supervision support, 0.73 for infrastructure, 0.69 for administrative support and 0.75 for academic facilitation) testifying that the students' responses of their actual experiences of the student support service quality were by-and-large similar. With regard to the total score, out of the maximum total value (n=227 $\times$ 4 (maximum value) $\times$ 28 (experience items)) of 25,424, the score on experience was 11,433 (n=157); accounting for 45%.

The difference of the means between the students' expectations over all the four dimensions and their experiences of the same was also observed. The mean value of expectation was 3.55 whereas the mean value of experience was 2.62. The section below contains a discussion on whether these mean differences were statistically significant.

5.5 GAPS IN STUDENT SUPPORT SERVICE QUALITY

This section of the study observes if there are gaps between the students' expectations and experiences of the quality of student support services. This is based on the Gap Analysis Theory, which assesses quality by observing the differences between the client's expectations and actual experiences. A dependent t-test was the statistical technique employed because the data came from one sample and a t-test helps to analyse if there are statistically significant differences of means between the data – in this instance, between expectations and experiences. The analysis was done in such a way that each of the four dimensions (supervision support, infrastructure, administrative support and academic facilitation) was treated separately. Afterwards, comparison of means between the cumulative results of expectations and the cumulative results of experiences was done.

5.5.1 Supervision Support

The dimension of supervision support was checked to see if there was a statistically significant difference between the students' expectations and experiences of the support that they got from their supervisors. The matched pair t-test results show that on average, students' actual experiences of supervision support were statistically significantly less (Mean = 2.54, SE = 0.061) than their expectations (Mean = 3.45, SE = 0.038), $t_{(188)} = 13.57$, $p<0.001$. This result shows a statistically significant difference at p value of 0.001, meaning that the students' expectation of the supervision support service quality was higher than their actual experiences. The effect size (which shows how practically significant a statistically significant result is) of the result above was observed by using Pearson's correlation, and found to be r=0.50. All these results justify that the gap between the students' expectations and experiences of student support service quality as observed by using the dimension of supervision support was both statistically and practically significant.

Table 5.4: Gaps between students' expectations and experiences over individual dimensions

DIMENSION	Paired Differences					t	Df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
MEAN EXPECTATION – MEAN EXPERIENCE **SUPERVISON SUPPORT**	.901	.913	.066	.770	1.032	13.569	188	.000
MEAN EXPECTATION – MEAN EXPERIENCE **INFRASTRUCTURE**	1.013	.850	.060	.894	1.132	16.825	198	.000
MEAN EXPECTATION – MEAN EXPERIENCE **ADMINISTRATIVE SUPPORT**	.698	.746	.051	.597	.798	13.705	214	.000
MEAN EXPECTATION - MEAN EXPERIENCE **ACADEMIC FACILITATION**	.832	.834	.058	.718	.946	14.376	207	.000

5.5.2 Infrastructure

As shown in Table 5.4 above, the t-test result for the dimension of infrastructure showed that on average, students' actual experiences of the Infrastructure provided by UNISA were statistically significantly less (Mean = 2.45, SE = 0.052) than their expectations (Mean = 3.47, SE = 0.044), $t_{(198)}$ = 16.83, p<0.001, r = 0.59. This result is statistically significant. It shows that there is a gap between the students' expectations and actual experiences of student support service quality with regard to the infrastructure that UNISA provides; the gap showing negative direction as expectations exceed experiences.

5.5.3 Administrative Support

The dimension of Administrative Support was observed to check if there was a gap between students' expectations and experiences of student support service quality. The result shows that on average, students' actual experiences of administrative support

were statistically significantly less (Mean = 2.85, SE = 0.047) than their expectations (Mean = 3.56, SE=0.036), $t_{(214)}$ = 13.71, p<0.001, r = 0.50. The result of this dimension also showed that the difference of the means was high. As it was discussed in the preceding two dimensions, the students' expectations exceed their experiences with regard to the dimension of administrative support.

5.5.4 Academic Facilitation

The fourth dimension that was used to describe the expectations and experiences of students regarding the student support service quality offered by UNISA, was academic facilitation. The result of the t-test as shown in Table 5.4 above is that, on average, students' actual experiences of the services under this dimension were statistically significantly less (Mean = 2.74, SE = 0.052) than their expectations (Mean = 3.57, SE=0.037), $t_{(207)}$ = 14.38, p<0.001, r = 0.50. This result shows that there are gaps between students' expectations and experiences; experiences being lower than expectations.

5.5.5 Overall difference between expectations and experiences

This section compares the sum of the scores on expectation and experience items. Table 5.5 below shows that, on average, students' actual experiences of the quality of student support services were statistically significantly less (Mean = 2. 62, SE = 0.048) than their expectations (Mean = 3.53, SE=0.034), $t_{(151)}$ = 16.41, p<0.001, r = 0.64. This result shows that there is a gap between the students' expectations and their experiences of the student support service quality. The effect size, r=0.64, was also very high; indicating the real significance of the statistically significant result of the differences between the two means. This study provides evidence for the fact that there is overall dissatisfaction by the students as their expectations were higher than their experiences.

Table 5.5: Gap between students' overall expectations and experiences

DIMENSION	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
MEAN EXPECTATION – MEAN EXPERIENCE **TOTAL**	.911	.685	.056	.801	1.021	16.405	151	.000

5.6 RELATIONSHIP BETWEEN STUDENT SUPPORT SERVICES AND STUDENTS' SATISFACTION

This section of the study deals with identifying the satisfaction level of the students with the student support services that were rendered by UNISA. Unlike the previous section that discussed the four dimensions that measure students' expectations and experiences as identified in this study, this section deals with the relationship between satisfaction and all the five dimensions (supervision support, infrastructure, administrative support, academic facilitation, and corporate image) that are used as independent variables. The statistical tools employed are both simple and multiple regression analyses so as to describe the relationship between the independent variable(s) and the dependent (predicted) variable. Regression analysis was used to explain the dependent variable through the five dimensions. The explanation shows the size of each independent variable's influence on the dependent variable, its direction (whether it is positive or negative) and also whether the result is statistically significant. Before discussing the results of the regression analysis, the writer wishes to describe a few of the assumptions that are underlined in regression analysis in relation to this study so as to show that the utilisation of the model is possible in this data set.

5.6.1 Some assumptions of regression model as applied in this study

Regression analysis has a number of assumptions to be met like normality and non-collinearity, some of which are discussed in this study. As can be observed in Figure 5.1 below, the data in this study were checked to determine if they satisfied the assumption

of normality. The curved line on the histogram shows that their peak falls on the mode showing the normal distribution of the data.

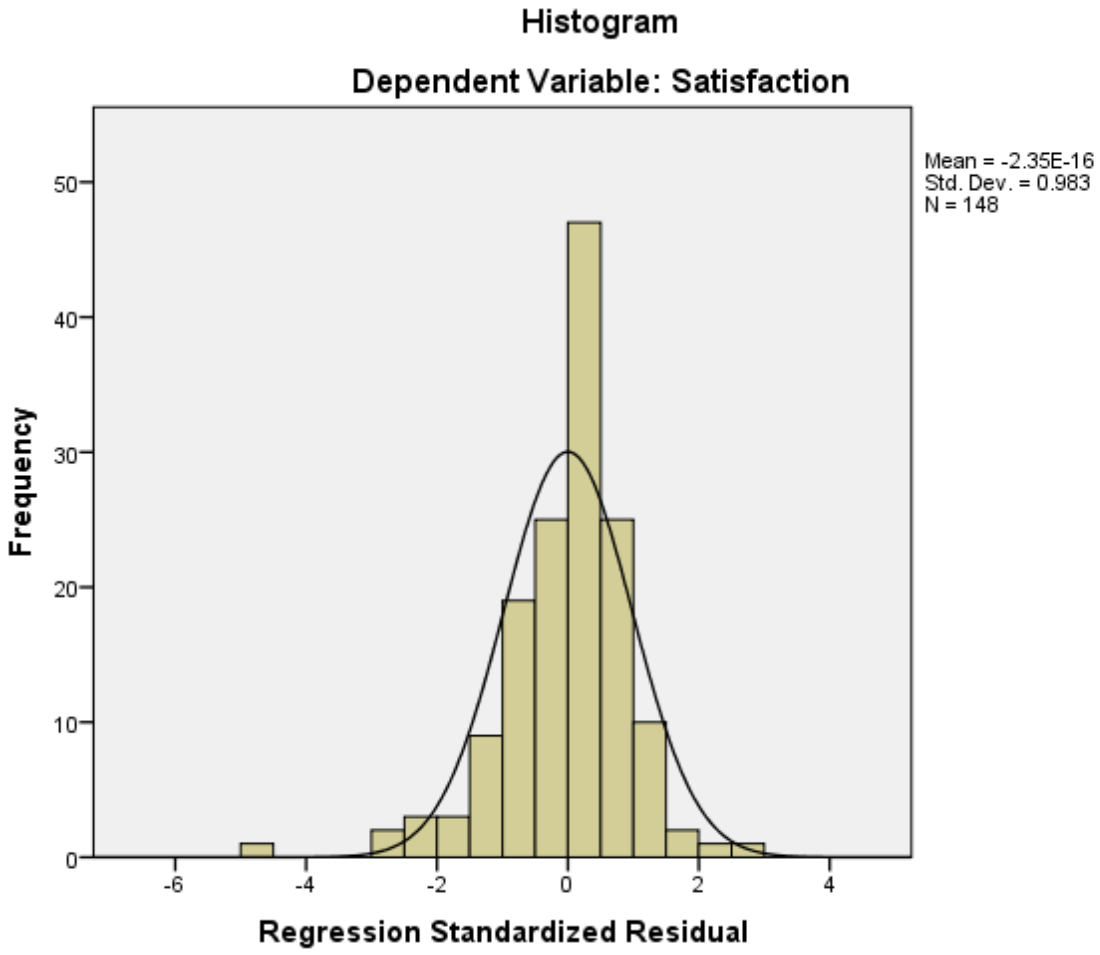

Figure 5.1: Histogram on the distribution of the dependent variable

A second observation is that the relationship between the dependent variable and the independent variables is linear. Figure 5.2 below shows the results of the closeness of the data of this study to the linear line.

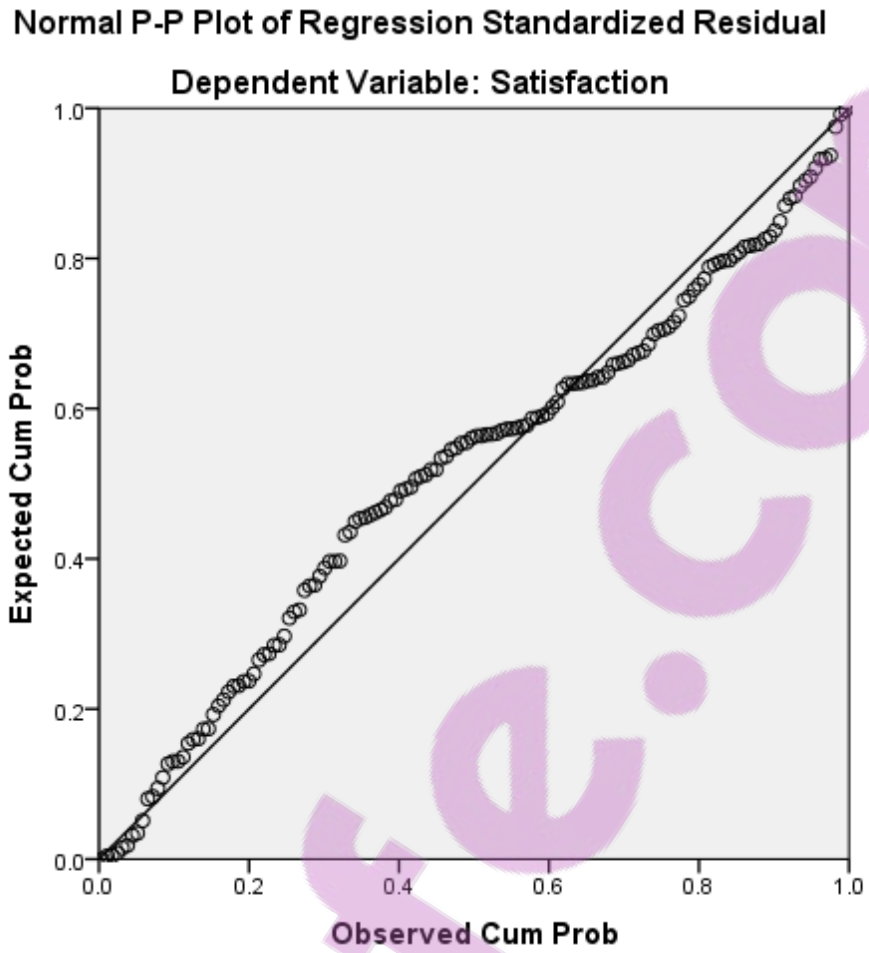

Figure 5.2: Linear relationship between the dependent and independent variables

The data were also checked for multicollinearity through collinearity diagnostics in SPSS. Collinearity diagnostics helped to check multicollinearity both in terms of VIF (Variance Inflation Factor) and tolerance statistics. Table 5.6 below indicates that all VIF values of the five independent dimensions in this study, are below 2.0 (much less than the cut-off point of a maximum of 10) and tolerance statics results range from 0.627-0.838 (cut-off point being above 0.2). The average VIF of the five dimensions is 1.46, which is in the acceptable range. The dimensions are therefore taken as not suffering from multicollinearity, which means that they are independent of one another in explaining satisfaction.

Table 5.6: Coefficients[a] of multicollinearity

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	SUPERVISION SUPPORT	.732	1.367
	INFRASTRUCTURE	.633	1.579
	ADMINISTRATIVE SUPPORT	.627	1.596
	ACADEMIC FACILITATION	.666	1.503
	CORPORATE IMAGE	.838	1.193
		Average VIF	1.455

a. Dependent Variable: SATISFACTION

As discussed above, the data set was found to fit the assumptions of normality, linearity and non-collinearity. The section below therefore discusses the relationship between the independent variables and satisfaction as found in the process of regression analysis.

5.6.2 Satisfaction as explained by each of the five dimensions

In this study, five different simple regression analyses were done to observe the direction and magnitude in the relationship between each of the five dimensions that work as independent variables and satisfaction, which is the dependent variable. Absolute value differences were taken for the expectation-experience dimensions. This is unlike the dimension of corporate image which has only one value per item. In addition to analysing each dimension through tests of simple regression, the findings from the qualitative part of the study on the same theme were also considered. This was done by focusing on the last open-ended item in the instrument that asked the respondents to write additional comments. In the following sections these details are reported.

5.6.2.1 Supervision support and satisfaction

UNISA's doctoral degree is exclusively research-based. To make students successful in their doctoral journey, one of the major support schemes is the allocation of a supervisor (with or without a co-supervisor) to doctoral students. The e-mail system is

the most dominantly used communication medium between students and supervisors. For this purpose, UNISA provides a “myLife” e-mail account to all registered students. Upon agreement between the supervisors and students, other communication media like Skype, WhatsApp chatting and the telephone are used.

5.6.2.1.1 Supervision support: quantitative findings

The ten items that constituted part of this dimension measured issues that concentrated on the various forms of support that the students received from their supervisors (for example, clarity of supervisor’s comments, sharing of useful resources, encouraging and motivating students, and timely responses). The regression analysis showed that the dimension of supervision support explains 14% (R=0.377) of the variation in the dependent variable, namely the students’ satisfaction. The regression result showed R^2=0.138, $F_{(1,185)}$ = 30.739, p<0.001. This result indicates that supervision support was statistically significantly related with satisfaction. In this study, supervision support and satisfaction were inversely (negatively) related (t=-5.54), supporting the finding of the gap analysis which was discussed in section 5.5.1 above.

Table 5.7: Supervision support and satisfaction

	Dependent variable: Satisfaction				
Independent variable	Beta	t-value	p value	R	R^2
SUPERVISION SUPPORT	-0.091	-5.544	0.001	0.377	0.138

5.6.2.1.2 Supervision support: qualitative findings

In this study, some students commented on the strengths of supervision support. They stated that their supervisors were encouraging, supportive, interactive and friendly. Respondent 152, for example, wrote “Fortunately, I have a wonderful supervisor.” Additionally, respondent 151 stated that “I am lucky to get an energetic supervisor who is always standing by my side and encouraging me to go forward” whereas respondent 186 wrote: “They [supervisors] give very constructive comments”. Students therefore expressed their satisfaction with the supervision support that they got from their supervisors.

However, many students also contradicted the statements made above. They said that there was slow or delayed feedback from supervisors on students' submissions. The students time and again stated that there were supervisors who were neither helpful nor gave timely responses. Respondent 144, for example wrote: "The main problem of supervisors of UNISA, not all but some, that should improve is that of advisory [supervision] service". Respondent 225 added: "I am really disappointed with the academic staff of my department for their weakness to advise properly". The students said that there was an unnecessary wastage of time which caused students to stay too long in the system. To many respondents this was discouraging and even forced some of them to drop out, being tired of waiting to hear from their supervisors for as long as six months or even a year after work has been submitted for scrutiny. In addition, the students said that supervisors did not encourage their students, and that such a lack of motivation was one of the reasons that students did not finish their studies on time. On the issue of a lack of encouragement from supervisors, respondent 126, for example, wrote: "if the student disappears for different reasons, the supervisor disappears too". Students also noted that UNISA experienced a lack of supervisors, especially in multi-disciplinary fields, and they also alleged that they have experienced poor (inadequate) responses (information) to specific requests.

Moreover, the students wrote that some supervisors provided comments on a separate sheet of paper, as opposed to using track changes which, according to them, does not help much in improving a student's work. Many students' comments on the nature and extent of their supervisors' support was extremely negative. They maintained that there were supervisors who did not act in a responsible manner, nor did they commit themselves to the task at hand. They were not faithful to their professional ethics. Respondent 189, for example, wrote that "the commitment of supervisors is a challenge in studying at UNISA". Other students added that some supervisors did not seem to have adequate supervision experience, whereas others displayed autocratic behaviour.

Students also indicated that, in cases where supervisors had to be replaced, for example, when the original supervisors left the university or retired, no timeous arrangements were made to properly give effect to the transfer. Apparently the students' documents were not submitted to Postgraduate Administration in an appropriate fashion. In addition, the newly assigned supervisors often did not agree with the previous supervisor's comments and this created further challenges on the part of the students. Other causes of dissatisfaction on the part of the students included delayed allocation of supervisors (or co-supervisors) in some departments. There were also a sizable number of students (especially in the departments of Geography and Environmental Science, and in Doctor of Business Leadership program) who were allocated of local supervisors in Ethiopia. Some of these students said that there was a need to have mentors or co-supervisors from the main campus in South Africa that could orientate the local supervisors regarding the system of UNISA.

The students related the problems they had experienced with regard to supervision support with UNISA's corporate image, which they said was negatively affected. According to respondent 25, UNISA's corporate image is affected by supervisors' "sluggish responses and sometimes total silence." Respondent 28 added, that "supervisors are lenient in responding to their supervisees" whereas respondent 152 stated that "not getting feedback from supervisors highly affects the successful completion of the study on the part of the students. This in turn will erode the reputation of UNISA". The students, in general, said that both the image of the university and the programme can be harmed because even repeated reminders do not encourage certain supervisors to respond. In this regard, respondent 43 wrote: "I tried to remind my supervisor on my proposal more than three times, yet no response". The students added that there does not appear to be a system in the university that controls, manages or checks on supervisors.

In general, the quantitative section of this study showed that the dimension of supervision support was negatively related to students' satisfaction. The qualitative

data, as discussed above, revealed the repeated complaints of students in support of the finding from the quantitative data.

5.6.2.2 Infrastructure and satisfaction

UNISA provides its students with access to its online library every day of the year. The library subscribes to multitudes of internationally accredited peer-reviewed journals that are very important to research students like the ones who responded to this study. The Ethiopia Centre, in addition, has physical collections of research books. There are computer laboratories in the Ethiopia Centre whereas the ICT and library personnel attend to students' needs. Students are provided with software packages free of charge, especially relative expensive packages like SPSS and Atlas-ti.

The UNISA-Ethiopia Centre is located at Akaki which is located at the southern tip (an outskirt) of the city of Addis Ababa. The premises were given to UNISA by the Ethiopian government rent-free, based on the bilateral agreement between the government of Ethiopia and UNISA. It has all the necessary facilities for education – classrooms, computer laboratories, a library, a video-conference centre, and offices for staff members.

5.6.2.2.1 Infrastructure: quantitative findings

This dimension consisted of eight items that focused on library and ICT support services like the physical collection and the online resources of the library, the computer laboratories and ICT-related assistance, and the accessibility of the Ethiopia Centre. The summary of the SPSS results on the dimension of infrastructure showed that this dimension, as shown in Table 5.8 below, explained only 1.5% (R=0.141) of the students' dissatisfaction level; put in statistical terms R^2=0.015, $F_{(1,195)}$ = 3.95, $p<0.05$. Though this is a very small result, it is statistically significant at p=0.048. Similar to the previously discussed three expectation-experience dimensions and the result of the paired t-tests, infrastructure is negatively (inversely) related with satisfaction (t=-1.99).

Table 5.8: Infrastructure and satisfaction

	Dependent variable: Satisfaction				
Independent variable	Beta	t-value	p value	R	R^2
INFRASTRUCTURE	-0.045	-1.986	0.048	0.141	0.015

In the instrument, there was one item that asked the students about the location of the Ethiopia Centre. The experience part of this item read as follows: “In your experience, to what extent is the UNISA-Ethiopia Centre actually in an accessible location so that students can make use of its services.” As many as 75% of the students rated it 0-2 on a scale of 0-4 (none, little, some, much and very much). This showed that the students did not find the location of the Ethiopia Centre easily accessible.

5.6.2.2.2 Infrastructure: qualitative findings

With regard to the qualitative data, students noted that UNISA’s employment of technology is exemplary. The two most commonly discussed points in the dimension of infrastructure were the library and the location of the Ethiopia Centre. As a strength of the UNISA Library, many students in this study affirmed that the library was equipped with the necessary academic resources and facilities. They said that the library service is satisfactory as good research books can be found and online resources are available. Its collection is rich and up-to-date. Respondent 206, for example, wrote that the UNISA Library is “well equipped … with up-to-date books and journals. I am very satisfied with the e-journals and books that are easily accessible”.

Conversely, some respondents stated that there are not sufficient subject-specific books available at the Ethiopia Centre library, and the available ones are outdated, less relevant or focused on the Social Sciences. In addition, the respondents commented on the huge delays involved in obtaining hard copy books from South Africa and also the problem they faced to have been asked to pay overdue fees (library fines) for books that never reached them. Other respondents added that they experienced poor internet connectivity and old computers as challenges that they faced at the Ethiopia Centre library and computer laboratories.

The other most commented on issue in the qualitative data of this study was the location of the Ethiopian Centre, which is not situated on a taxi route. It is found along the road to the port of Djibouti (which is the port Ethiopia mainly uses to import and export goods), which is a very busy route crammed with big trucks. This has made the Centre difficult to access.

Not a single respondent referred to strengths of the location of the Ethiopia Centre. Generally, they wrote that the inconvenience of the location had discouraged them from visiting the library and making use of the other services of the Ethiopia Centre. Respondent 133, for example, wrote that “the location of the UNISA-Ethiopia Centre is almost unreachable. For me, it is easier to come from Mekelle to Addis rather than to come from Addis to Akaki”. Respondent 66 further alluded to problems they experienced: “The location of the Ethiopia Centre is a big hindrance to students. It is far away from the city centre. So, one spends the whole day to accomplish one small issue like returning a book to the Library”.

5.6.2.3 Administrative support and satisfaction

In the context of this study, administrative support is provided to students both from the Ethiopia Centre and from the main campus. The Ethiopia Centre is a support centre that assists students in regard to registrations, counselling, ICT and Library-related matters. The Centre engages in the facilitation of academic programmes too. The administrative support from main campus usually comes from Chairs of Departments (CoDs), Master’s and Doctoral (M&D) Coordinators, the Registrar’s Office, Departmental Higher Degree Committees (DHDCs) and the Colleges at large.

5.6.2.3.1 Administrative support: quantitative findings

The six items in the quantitative section of this dimension mainly concentrated on support schemes that were provided in relation to the user-friendliness of the myLife e-mail account, application procedures, decisions concerning admission, registration, re-registration, information and communication from sections of UNISA. The SPSS output

that was run to observe its relationship with satisfaction gave the model summary where administrative support explained 6% (R=0.251) of the variation in the students' dissatisfaction; $R^2 = 0.058$, $F_{(1,211)} = 14.154$, $p<0.001$. Like the dimension of supervision support, the relationship of administrative support with satisfaction was negative (t= -3.76).

Table 5.9: Administrative support and satisfaction

	Dependent variable: Satisfaction				
Independent variable	Beta	t-value	p value	R	R^2
ADMINISTRATIVE SUPPORT	-0.118	-3.762	0.001	0.251	0.058

5.6.2.3.2 Administrative support: qualitative findings

In their comments on the administrative support they received from UNISA, the students contended that they had received fast and caring responses from staff members of the Ethiopia Centre. Respondent 94, for example, wrote: "UNISA-Ethiopia office workers are very kind and responsible". Other respondents indicated that the staff members were polite, diligent and disciplined. Respondent 102 described the staff members of the Ethiopia Centre as "***the right people in the right place*** [emphasis original]".

In contrast to the above, some students complained that the Ethiopia Centre landline telephone is often out of service. Respondent 112, for example, wrote that he/she was "least satisfied about the accessibility of the student support service staff through telephone". Some students also claimed that the Ethiopia Centre is not as active and responsive as it is expected to be.

The administrative support that UNISA provides for its students includes financial assistance via a bursary fund. For students who had been granted a bursary, the fund provides for the tuition fee to be paid and financial assistance for aspects of research. In fact, the respondents regarded the availability of a bursary as one of the strengths of UNISA.

In regard to the administrative support services the students received from the main campus of UNISA in Tshwane, South Africa, the respondents stated that decisions of the departmental higher degree committees pertaining to the approval of submitted proposals and the process of securing ethical clearance, took exceptionally long. Respondent 83 commented that “getting response[s] related to ethical clearance takes more than a year … leading to problem[s] to collect data from the field”. Similarly, respondent 131 complained that “it takes long for students’ proposals to get ethical clearance”. Respondent 211 added that “[there is a] lengthy and tedious process to obtain ethical clearance”. It appears as though students particularly experienced challenges with regard to getting ethical clearance in good time.

A number of the respondents mentioned problems with regard to decisions on admission to advanced postgraduate study, re-registrations and thesis examination. They said that there are some departments that do not give timely feedback on new students’ applications. With regard to online registration, a few students said that they were blocked from re-registering online for reasons unknown to them. Some students also said that thesis examination results are long overdue before they are released. They said that it takes too much time before they are informed about the status of theses they have submitted for examination purposes.

5.6.2.4 Academic facilitation and satisfaction

Since 2010, UNISA has provided PhD proposal development training to its doctoral students in Ethiopia. The major objective is to participate in the capacity building programme of Ethiopia through higher education. In offering this programme, UNISA contracted Santrust for a period of three years (2010-2012) during which 100 doctoral students were involved in the programme each year. From 2011, UNISA’s College of Graduate Studies (CGS) conducted similar programmes for students who were admitted at a later stage. From 2013, CGS took over the full responsibility of providing the training. These programmes are eye-openers for many of the students and assist them to understand the rigorous requirements of writing proposals at a doctoral level. In addition to such programmes, students are assisted by specific Colleges (like the

College of Education and the College of Law) and departments with large numbers of students (like Health Studies and the Institute of Science and Technology Education). Seminars are conducted and students are further assisted. Apart from these, data analysis workshops are conducted for senior students who have already collected data.

5.6.2.4.1 Academic facilitation: quantitative findings

The four items in the dimension, academic facilitation, focused on the provision of different types of training (doctoral proposal writing, and the utilisation of software packages like SPSS and Atlas-ti). These four items also included an emphasis on the relevance of the training schemes. The summary below shows that this dimension explained 2.6% (R=0.175) of the variation in students' dissatisfaction; $R^2 = 0.026$, $F_{(1,204)} = 6.46$, $p<0.005$. This result, though small, corresponds with the results of the previously discussed dimensions that measured expectation and experience, and the dependent t-test results related to the gap analysis. The direction of the relationship is negative (t=-2.54).

Table 5.10: Academic facilitation and satisfaction

	Dependent variable: Satisfaction				
Independent variable	Beta	t-value	p value	R	R^2
ACADEMIC FACILITATION	-0.110	-2.542	0.012	0.175	0.026

5.6.2.4.2 Academic facilitation: qualitative findings

An analysis of the qualitative data indicates that students highly appreciated the modular training that they received from UNISA; be it through Santrust, CGS, Colleges or Departments. Some said that the academic support programmes were effective and that they were provided with soft copy materials. The training touched every part of the research project. In this regard, respondent 131 wrote: "I really appreciate the rigorous process students' proposals undergo". Other students claimed that the high level of expertise of professors of UNISA was beyond their expectation, and that the support of the professors confirmed that distance was not a barrier for learning. Respondent 92, for example, explained that he "would like to appreciate the commitment of scholars

who come to Ethiopia for the issues of the postgraduate program[me]". Respondent 118 also supported the idea by mentioning that "the vivid strength of UNISA include its arrangement of continuous training and seminars". Respondent 159 further added: "Workshops and seminars provided by the university in collaboration with Akaki campus [are] … commendable". In general, the respondents affirmed that the orientation programme provided by the Ethiopia Centre and the seminars given by professors from main campus, were very good and gave them a firm grounding base for their research projects. In this regard Respondent 139 wrote: "I am pleased with the service provided by UNISA-Ethiopia Centre particularly facilitation of research methodology courses". Respondent 28's comment can be regarded as a feather in the cap of UNISA. This respondent mentioned that "UNISA is doing its best so that quality graduates are produced."

However, there were also a number of respondents who declared that the training given for proposal development was not adequate and was dominated by individual decisions. Others supported the idea by saying that it was too theoretical by nature and that further training should be given on, for example, library services. Quite a number of students commented that the post-proposal stage of their studies was not well taken care of. Respondent 121, for example, stated that "most of the training [is] provided at proposal stage or during the first year of the studies but it is advisable if training is provided at each stage of the doctoral phase". They also indicated that there was a need for stronger programmes that support students in both qualitative and quantitative (statistical) data analysis, and software packages like SPSS and Atlas-ti as well as with the required referencing style. In this regard, Respondent 70 expressed the wish that "the seminars and workshops on data analysis could be held regularly". Respondent 161 added that "quantitative and qualitative data analysis software with practical training should be given."

With regard to the academics that come to conduct the modular programs, the students said that there was a need to reconsider some of the presenters who come for the modular training as some had only a little information to convey. According to

Respondent 105, certain “professors who provide seminars seem to lack sufficient knowledge and information on a number of areas such as data analysis methods beyond certain fields. They are comfortable only on certain specific areas, leaving the rest of the students without sufficient support”. The students also commented on the visiting professors to have been from the same fields of study all the time.

To improve the academic support services, the students recommended that the section of data analysis should be given at a later stage when students reach the stage of data analysis instead of during the proposal stage. In addition, many students recommended that the modular programme should be revised to be department-/discipline-specific. In this regard, Respondent 120 stated that “the trainings and seminars … were not subject (department) related”. The generic nature of the training was taken as a problem by some students because it was regarded as wasting the time of others who found it unrelated to their fields of study.

5.6.2.5 Corporate image and satisfaction

This section of the study checked the perception of the students based in Ethiopia of UNISA as the university they are enrolled at to study their doctoral degrees.

5.6.2.5.1 Corporate image: Quantitative findings

The four items that comprised this dimension mainly centred on the students’ perception of UNISA as a leading ODL university, the degree it grants being of an international standard, its graduates being proud and accepted favourably. The result of the regression analysis showed that this dimension contributed 55.2% (R=0.744) of the variation in students’ satisfaction. Putting the result in statistical terms, $R^2 = 0.552$, $F_{(1,217)} = 269.34$, $p<0.001$. This dimension not only made the biggest contribution to explaining satisfaction, but its relationship with satisfaction is positive. Table 5.11 below shows the results.

Table 5.11: Corporate image and satisfaction

	Dependent variable: Satisfaction				
Independent variable	Beta	t-value	p value	R	R^2
CORPORATE IMAGE	0.439	16.412	0.001	0.744	0.552

5.6.2.5.2 Corporate image: Qualitative findings

The qualitative responses of the students confirmed the findings of the quantitative data above. The students wrote that they were happy and satisfied to have been students of UNISA which they said is an icon for Africa. Respondent 7, for example, wrote “I am very pleased for attending my doctoral study at this very renowned University that makes real change on my academic performance.” Respondent 147 added “UNISA is a very good institution for education especially for Africans who cannot access further education.” A third quote from respondent 131 reads: “UNISA is one of the world wide recogni[s]ed universities. I am proud of being a UNISA student.” Respondent 134 further added that “UNISA is doing a great job.” All these quotes affirm that the students’ perception of UNISA was positive.

As opposed to what students stated above, a few commented on UNISA’s reputation to have been negatively affected. According to respondent 140, for example, “The program is frustrating as it takes too much unnecessary time for finishing a study. Even payment of [external] supervisors is not made on time which defames the reputation of the institute.”

5.7 RELATIVE WEIGHT (CONTRIBUTION) OF THE FIVE DIMENSIONS

This section discussed the relative weight of the five independent variables (supervision support, infrastructure, administrative support, academic facilitation and corporate image) in explaining the dependent variable (satisfaction). This procedure assists to check which dimension(s) from among the five contribute more in explaining the dependent variable. The major reasons why this procedure should be undertaken is to identify the dimensions that need more concentration in efforts to improve the quality of student support services rendered to research students like the ones who responded in

this study. Multiple regression with particular reference to step-wise regression was the statistical tool employed. The regression analysis conveyed the message that only two out of the five dimensions bore relative importance. These two dimensions were corporate image and supervision support, in order of importance. They explained 60% of the variance in the students' satisfaction; $R^2 = 0.599$, $F_{(2,145)} = 110.684$, $p<0.001$. As it is observed in section 5.6.2.5.1 above, the influence of corporate image on satisfaction was positive (showing students' satisfaction on the corporate image UNISA holds) at t=12.54 whereas that of supervision support was negative (showing students' dissatisfaction of the support that they got from their supervisors) at t=-3.23.

Table 5.12: Result of step-wise regression

	Dependent variable: Satisfaction						
Independent Variables	Beta	t-value	p value	R	R^2	Collinearity statistics	
						Tolerance	VIF
Corporate Image	0.420	12.543	0.001	0.777	0.599	0.883	1.132
Supervision Support	-0.041	-3.233	0.002			0.883	1.132

Even though the step-wise regression removed the other three dimensions (infrastructure, administrative support, and academic facilitation) as having made a smaller contribution to explaining satisfaction, it does not mean that these dimensions were unimportant. The individual regression analysis of each of the dimensions showed that each of them was statistically significant in explaining satisfaction. In addition, the gap analysis in section 5.5 above showed that there are statistically significant gaps between expectations and experiences in these three dimensions too.

For the sake of curiosity, the four dimensions that measure the students' expectations and experiences were observed through step-wise regression. As shown in Table 5.13 below, the dimensions of infrastructure and academic facilitation were dropped as having made a less significant contribution as opposed to the other two dimensions (supervision support and administrative support), which explained 19% of the variance in satisfaction; $R^2 = 0.190$, $F_{(2, 147)} = 18.44$, $p<0.001$.

Table 5.13: Step-wise regression of expectation-experience dimension

	Dependent variable: Satisfaction						
Independent Variables	Beta	t-value	p value	R	R^2	Collinearity statistics	
						Tolerance	VIF
Supervision Support	-0.081	-4.342	0.001	0.448	0.190	0.831	1.203
Administrative Support	-0.079	-2.087	0.039			0.831	1.203

5.8 PEER COLLABORATION

This is a potential dimension that has clearly stood out from the qualitative data and it is, therefore, discussed separately. Students stated that their academic life was more of a one-man's island. Students did not have links with other UNISA students in similar programmes, be it in Ethiopia or abroad. Respondent 48 wrote that there is "no opportunity for experience sharing with other UNISA students ... It has to be taken into consideration that sharing experience with other students will increase knowledge". The respondents said that peer learning must be given a forum whereby senior students assisted the junior ones and engaged in a form of mentoring. Some of the respondents recommended that the UNISA-Ethiopia Centre should facilitate experience-sharing programmes by Ethiopian-UNISA alumni. Existing students should have an opportunity to learn from former students. The respondents stated that creating networks among the students was highly beneficial. They advised that UNISA should create such a network and make full use of such networks. A few students suggested that there must be a forum whereby students are given an opportunity to air their views and frustrations and which makes it possible for supervisors to follow their progress. Respondent 120, for example, said that "as we are distance students, it is better to have a forum or any kind of program[me] for doctoral students to express our ideas and experiences". In effect the students requested opportunities that would assist in curbing their loneliness.

5.9 CHAPTER SUMMARY

This chapter provided the findings of the research with regard to student support service quality. It has identified the students' levels of expectation, on the one hand, and actual experiences, on the other. It has also demonstrated the gaps between the students' expectations and experiences of student support service quality through the utilisation

of paired t-tests. In a sense, the content of this chapter also justified the five dimensions that were identified to measure student support service quality. The relationship of these five dimensions with student satisfaction was highlighted, which in turn was analysed using regression analysis. The findings are related to design-based research as the designed instrument was applied to determine the service quality level of the students and their satisfaction level in relation to the services. The next and the final chapter of this study includes summary, conclusions and recommendations.

CHAPTER 6

SUMMARY, DISUSSION, CONCLUSION AND RECOMMENDATIONS

6.1 INTRODUCTION

This chapter shows the link between the research objectives, views obtained from the literature study as discussed in chapter 2 of this study, the methods employed in answering the research questions presented in chapter 3, and the findings as presented in chapters 4 and 5. After a discussion of the major findings, the chapter is structured in such a way to accommodate the conclusions drawn from the findings, possible recommendations for the way forward, a consideration of the contributions the study has made to existing scientific knowledge, and a few recommendations for further study.

6.2 SUMMARY AND DISCUSSION OF FINDINGS

This section presents answers to the first four research questions of the study. The study objectives are discussed along with an emphasis on their inter-relationship with the existing literature, the methods employed and the findings.

6.2.1 Development of a Context-Sensitive Instrument

The first objective of the study was to develop a context-sensitive instrument that could accurately measure the quality of the student support services provided by UNISA to its doctoral students in Ethiopia. It is, after all, imperative that the starting point in understanding and improving quality is measuring it (Maguad & Krone, 2012:27). How to measure quality depends on the context in which the goods and services are offered and the type of industry. In measuring quality, therefore, there is a need to have a sector-specific instrument that meets the requirements of the context. As service quality is a multidimensional construct, this, in turn, calls for dimensions that can possibly measure the quality of the goods and services on offer (Teeroovengadum, et al., 2016:246). Moreover, the ODL system is marked by openness in accessibility of

education for students. It also gives flexibility for students to choose what to learn and when to learn it. Thirdly, ODL is known for striving to fully make use of the available technology of the time (Tait, 2014:15). These characteristics call for distinct means of evaluating quality in the ODL system (Stella & Gnanam, 2004, cited in Jung et al., 2011:64).

In the case of this study, the intention was to develop a valid and reliable instrument that could accurately measure the quality of student support services. This was done with particular reference to a cross-border open distance learning system which fits the characteristics of measuring quality in terms of sector-specific ways (Jain, et al., 2010:145). The way of going about developing such an instrument was by employing design-based research that allows for iterations in developing and improving the material under consideration (Bannan-Ritland, 2003:21).

The context-sensitive instrument was developed by employing statistical techniques like kappa statistics, inter-rater agreement (IRA), Cronbach's alpha and exploratory factor analysis (EFA). The kappa statistics were used for checking the IRR that had the purpose of assigning each item to a dimension. The IRA was used to work on the content validity of each item individually and on the overall instrument in general. This had the purpose of checking each item's relevance in the overall instrument, if each item was clear enough to be understood by the respondents, if the IRA was still valid as observed by the content experts and also if the overall instrument was comprehensive enough to measure student support services in ODL. Thirdly, Cronbach's alpha was important to observe the relationship between an item and each dimension. Lastly, EFA was used to check on the dimensionality of each of the items as an advanced version of observing the relationship between the items and the dimensions.

Since service quality proved to be a multidimensional construct (cf. 6.2.1), a five-dimensional instrument with a total of 32 items, and which was meant to measure student support service quality, was developed. The five dimensions in the instrument were corporate image, supervision support, administrative support, academic facilitation

and infrastructure. In contrast to the four items under the dimension of corporate image, the remaining 28 items in the other four dimensions measured the respondents' expectations and experiences of student support service quality. All 32 items explained 58% of the variance in the construct of student support service quality, which is an acceptable range in the social sciences. Apart from these 32 items, the instrument that was developed in this study contained two items that measured the construct satisfaction, which was the dependent variable in this study. The rigorous steps that were undertaken to develop this instrument are in line with how SERVQUAL was developed (Parasuraman, et at., 1988:24).

An interesting aspect of this study was that the students' responses to the one open-ended question of the instrument that required them to provide additional information, focused the researcher's attention on a possible new dimension that could be referred to as Peer Collaboration. The students wrote that there is a need for forum(s) that assist students to meet and share their experiences. This has the benefit of taking the student from a one-man's island to the community of students who are all registered for similar programmes. These forums can curb the students' feelings of loneliness (Cain, Marrara, Pitre & Armour, 2003:51; Yener, 2013:51). This finding suggests that the five dimensions that constituted the final instrument, might not fully explain the construct under consideration.

6.2.2 Expectations and Actual Experiences of Doctoral Students

The second objective of this study was to determine the expectations and actual experiences of doctoral students concerning student support services offered by UNISA. The authors of the Gaps Model (cf. section 2.8) emphasise the importance of understanding expectations, because expectations provide a meaningful context for measuring service quality. Expectations are generally considered to be an indication of the ideal services in the eyes of customers (Parasuraman, 1990:34). Expectations are customers' wants or desires in their encounter with particular forms of services. For this reason, measuring expectations reveals points that need to be improved in the process of service provision (Sultan & Wong, 2010:262). On the other hand, customers'

experiences of services constitute their perceptions about the services at hand. Experiences are the overall impressions customers hold in the process of getting served and hence they should be well understood through certain means of measurement. Some authors even contend that measuring experiences only, is enough to understand service quality (Ong & Nankervis, 2012:284).

With reference to the design-based research strategy, this objective was given prominence during the fourth and last phase named 'Evaluation: broader impact'. Data for this section and the ones that followed were gathered through administering the refined instrument. The statistics used to fulfil this objective were mainly descriptive by nature, comprising means and standard deviations (and percentages, in a few cases). After calculating the mean for each item, an overall mean for the dimension was calculated. The standard deviation of the means showed the extent of variation each item's mean had from the grand mean. In this way, the findings of the study on the students' expectations, on the one hand, and experiences, on the other hand, were checked. It was found that, generally, the extent of the students' expectations was closer to the possible maximum point of 4.0 (means ranging from 3.45-3.57). These results also had small variations in the students' responses (standard deviations ranging from 0.53-0.62).

As concerns the experiences of students of student support services, the findings of this study show that the means of the students' experiences for each dimension were below 3.0 (still on a four-point scale). The range of the means of the four dimensions that measure the students' actual experiences of student support service quality was 2.45-2.85. The standard deviations also showed that the variation in the students' responses were very similar. The values of the standard deviations ranged from 0.69-0.83. From these data, the conclusion can be drawn that students' expectations are higher than their experiences. These findings correspond with the studies of Sarrico, Ferreira and Silva (2013:283) who studied service quality in the traffic police force using a modified SERVQUAL (named POLQUAL) and Chopra, Chawla and Sharma (2014:65) who studied service quality in the higher education system, using SERVQUAL.

6.2.3 Gaps in Student Support Service Quality

The third objective of this study was to compare the expectations and experiences of doctoral students in order to understand the quality of the student support services provided by UNISA to its students in Ethiopia. Student support services are important aspects in the development of a whole-person experience in any educational system. They are more pronounced in the distance education system and labelled as anchors of student success. This is more so because feelings of isolation that are commonly experienced by distance students can be curbed through individualised attention provided by student support schemes. In addition, students' successful stay in the system and high rate of throughput from the system are partly guaranteed by the student support services as provided by the distance education institutions (Dzakiria, 2005:99). These services are best known for increasing students' satisfaction; in making the educational journey more engaging, efficient and effective; in decreasing attrition and dropout rates; in making students self-directed, confident and independent; and in making the educational system more student-centred (Southard & Mooney, 2015:56; Wheeler, 2008, cited in Mwenje & Saruchera, 2013:132).

As this study was concerned with student support service quality, defining the concept of quality was one of the priorities of the study. It was found that definitions of quality vary and to some extent reflect different perspectives of the individual and society. Quality appears to be "stakeholder-relative" and needs to be defined, not as a unitary concept, but as a range of qualities. It is essential to understand the different conceptios of quality that inform the preferences of different stakeholders (Harvey & Green, 1993:28). However "elusive or slippery" this concept may be, this study took the conception of quality as "transformative" because the students' engagement in thesis writing for a doctoral degree makes them active participants and transforms their research skills to a higher level (Mulu, 2012:31).

Using a dependent (paired) t-test, this study compared the students' responses with their expectations and experiences of student support service quality in order to identify whether gaps existed for possible intervention and improvement. This procedure

corresponds with Yeo and Li's (2014:98) argument which states that identifying gaps between expectations and experiences has the major "aim of closing the gap between the two". The findings of the current study show that there are statistically significant gaps between the students' expectations and experiences in all four dimensions (supervision support, infrastructure, administrative support and academic facilitation). The paired t-test results are all statistically significant at $p<0.001$. Moreover, the statistically significant difference of the gap between the overall expectations and overall experiences has effect size of $r=0.64$, testifying that, in this study, the student support service quality gap was both statistically significant and practically high. This finding matches the results of a study conducted by Lampley (2001:11) who took doctoral students as respondents and who found that there were gaps between the students' expectations and experiences of service quality in all dimensions identified in the study. Similar findings were recorded in the study of Chopra, et al. (2014:65) and Sarrico, et al. (2013:286), where there were gaps between expectations and experiences of service quality, and all differences were negative (expectation being higher than experiences).

6.2.4 Service Quality Dimensions and Satisfaction

The fourth objective of this study was to observe the relationship between each of the five dimensions of service quality (as identified in this study) and the students' level of satisfaction with the services provided by UNISA. This study originated in students' complaints and their apparent dissatisfaction over the quality of student support services. For this reason, determining the satisfaction level of the students became a necessary aspect of the study. It is based on the Gaps Model which assumes that customer satisfaction results from meeting or exceeding customers' expectations (Parasuraman et al., 1985:48). Satisfaction is a component in service quality whereby the better the quality of the service provided, the more satisfied the customers are (Ho & Foon, 2012:2; Sultan & Wong, 2010:260). Service providing organisations, including institutions of higher education, can retain their customers better and work on improving their services more than ever before if their customers are satisfied (Jain, et al., 2010:144). With particular reference to educational services, satisfied students are more likely to be retained in the system, to advertise the institution among others, and to

return in order to study for other qualifications (Jancey & Burns, 2013:311). For this reason, institutions that offer ODL (especially on a cross-border basis) should consider their students' needs by also paying attention to the context of the education-receiver so as to bring about satisfaction in their students.

To this effect, this study employed linear regression analysis and regarded five dimensions of service quality as independent variables and satisfaction as a dependent variable. Simple regression analysis was consecutively conducted between each dimension and satisfaction.

The result shows that the dimension of corporate image has a positive relationship with satisfaction and explains 55% of the variance in the students' satisfaction. This implies that UNISA students based in Ethiopia are very satisfied with the image UNISA holds both in Ethiopia and internationally, and for its being a leading research university. This has also been well articulated in the students' responses to the one open-ended item of the instrument. The students reported that they are happy and proud to study under such a world-wide recognised university, which gives educational access to disadvantaged students in Africa. The other dimensions (like infrastructure that accommodate an online library that is accessible throughout the year or academic facilitation that gives modular training by highly qualified academics) may increase the image of UNISA in the eyes of students. The importance of corporate image is also recorded in the study of Pereda, et al. (2007:62-63) that was done on overseas post-graduate students in the UK.

The second successive dimension was supervision support, which was found to explain 14% of the variance in satisfaction. The relationship between these two variables is statistically significant and shows an inverse direction (unlike the dimension of corporate image). This negative direction indicates that the students were not satisfied with the support that they get from supervisors (for reasons such as delayed feedback, lack of motivation and encouragement, and poor guidance on research rules). When students worked with helpful supervisors, their comments tended to be that they were fortunate

or lucky unlike many of their fellow students. The students' qualitative feedback revealed that the delayed feedback from supervisors resulted in their studies not being completed on time. It also forced some students to drop out from the system because they became tired of waiting to hear from supervisors for half year or more. This finding reminds one of the findings in the study of Dann (2008:339). In a similar vein, some students described the behaviour of their supervisors as detached, neglecting, autocratic and discouraging. However, it is recorded that distance post-graduate students have higher expectations from their professors (Cain et al., 2003:50). Cain et al. used qualitative methods to study students' needs, expectations and experiences.

The third, fourth and fifth dimensions were administrative support, academic facilitation, and infrastructure, in this order of importance. These dimensions contributed 6%, 2.6% and 1.5% in explaining satisfaction, respectively. However, minimal these results were, all of them were inversely related to satisfaction and statistically significant. This implies that the students were dissatisfied with the quality of the services rendered by UNISA in these three areas. These findings seem to confirm that of Lampley (2001:12-13) who conducted his study among doctoral students in the United States of America where he also found that gap scores and overall satisfaction were inversely related.

6.3 CONCLUSION

This study has tried to discover important insights in the area of student support service quality with particular reference to the ODL system. Continuous improvement of service quality is an essential element of success for any service-providing organisation, including higher education. The first stage of improving service quality is to identify the areas that need improvement by means of measurement schemes. Based on this premise, and by using the first three stages of a design-based research strategy (informed exploration, enactment and evaluation: local impact), this study devised a sector-specific instrument that is capable of measuring student support service quality in ODL in Ethiopia.

The other findings of this study resulted from the administering of the developed instrument to doctoral students of UNISA based in Ethiopia. This section of the findings is aligned with the last phase of design-based research (evaluation: broader impact). It also meets the objectives of the study starting from the exploration of the students' expectations and experiences, checking the gaps between these two constructs showing the level of service quality, to observing the relationships of each of the dimensions of service quality with satisfaction. Using descriptive statistics, the results showed that the students' expectations of student support services in almost all areas were higher than their actual experiences. In addition, dependent t-tests indicated that there were statistically significant gaps between the students' expectations and experiences of student support service. This shows that the quality of the student support services offered by UNISA was perceived by the students as not meeting their expectations.

On the level of satisfaction of the students with regard to the quality of the student support services, a regression analysis revealed that the expectation-experience dimensions were negatively related with satisfaction. This suggests that the students were dissatisfied by the services offered by UNISA, which were encapsulated in at least four dimensions of the study. These dimensions were supervision support, administrative support, academic facilitation and infrastructure. However, students that participated in this study were highly satisfied by the corporate image that UNISA holds. They appeared to be highly satisfied by the fact that UNISA is regarded as an internationally credible and leading ODL university.

Finally, this study was able to meet its objective of identifying areas for improvement. This was done by means of step-wise regression analyses. Two dimensions on which UNISA should work on in order to be able to improve its service quality, stood out. These dimensions were corporate image and supervision support. The students themselves recommended that UNISA should magnify the ODL system that has given access to many students who otherwise would not be able to study for their doctoral degrees. UNISA should emphasise that it is a university that does not compromise

quality by conducting poor research. UNISA should also strongly work in the area of supervision support by planning mechanisms that are transparent enough to check the pitfalls in the student-supervisor relationship. Areas that need improvement are pronounced to be delayed responses, comments that do not assist to make a meaningful contribution to students' submissions, a lack of motivation and encouragement on the side of the supervisor, and a lack of sufficient guidance on ethical clearance procedures and other rules pertaining to doctoral studies. A second round of regression analysis also revealed that administrative support is the third area of concern UNISA should work on. This is related with issues of delays with regard to proposal approval and ethical clearance.

6.4 RECOMMENDATIONS

The final objective of this study was to try to identify the shortcomings in UNISA's provision of student support services to students in Ethiopia, bring it to the attention of managers at UNISA and to offer suggestions for improvement. This matches the intentions and assumptions of the Gaps Model on the importance of measuring expectations and experiences of service quality in order to identify where the gaps lie and to give effect to the necessary improvements. SERVQUAL of the Gaps Model also has the major benefit of diagnosing problems for further intervention (Parasuraman, et al., 1990:39). Accordingly, this study has identified some important points of concern.

As students are the major customers of higher learning institutions, their needs and concerns should be given the necessary attention by managers of the educational institutions (Yeo & Li, 2014:97). Though UNISA strives to provide student-centred services (UNISA, 2014:6), there are some issues that might have been overlooked, some of which, as identified by this study, are discussed below.

6.4.1 Students' Recommendations

This section of the study includes the recommendations the students outlined on the one open-ended question in the instrument that asked them to add any information of

value. The qualitative responses were organized in accordance with the five dimensions of this study.

6.4.1.1 Supervision support

As recommendation for improvement and to bring about changes with regard to the issue of supervision support, the students wrote that timely allocation of supervisors was important. In addition, many of them recommended having mentors or co-supervisors from Ethiopia, in order for the "busy" professors from UNISA to get assistance. This would in turn have an impact on the students' expected date of completion. For example, respondent 189 wrote: "If possible, it is better if local advisors are assigned as co-supervisors to proceed our study effectively". The students added that supervisors should give timely responses with detailed information preferably through track changes on the submitted piece itself rather than using a separate sheet of paper. To better motivate students to keep track of their studies, students recommended that supervisors should conscientiously monitor the progress of their students. According to respondent 123, for example, "supervisors have to inspire their students and strictly follow up their status". Respondents also suggested that experienced professors with publications in the relevant field of study be assigned as supervisors for doctoral students. Respondent 44, for example, mentioned that "the support from all supervisors is not equal, thus UNISA has to orient and inform its supervisors to provide all the necessary support students need, review documents submitted and respond timely". The students added that the university should devise and maintain a system for the monitoring of supervisors, too, to ensure that they give timely and supportive responses to their students. In cases where supervisors had left the service of UNISA, the students wrote that there should be a mechanism to transfer the supervisees smoothly and promptly to new supervisors.

6.4.1.2 Infrastructure

The respondents suggested that the regional office of Unisa in Ethiopia should be moved to a place where it is more accessible for students so that they can make use of the services. According to respondent 52, more students would have used the UNISA facilities had the UNISA-Ethiopia Centre been located within Addis Ababa city.

Respondent 109 added: “I suggest that the Library in Ethiopia Centre, which is located at Akaki campus, should be relocated to the city centre in order to make it accessible for all doctoral and masters students. It is too far to use it”. The students also said that the branch library should look into its collection and balance the reference books to accommodate both Social Science and Natural Science books.

6.4.1.3 Administrative support

The students stated that delays concerning the approval of proposals and that of granting ethical clearance should be minimised so as to improve on the support offered to students. They added that the myLife e-mail account should be user-friendly and accessible all the time. Apparently, it malfunctioned many times in a year. Another administrative issue was the follow-up that should be made on alumni. Respondent 139, for example, described the need for follow-up on alumni by stating “… more work is required in following up students who graduated from UNISA apart from establishing an alumni association. The main objective of education is to equip students for better service after graduation”.

6.4.1.4 Academic facilitation

The respondents further recommended that it would be better if they had opportunities to present their research during seminars and on other scientific platforms. They added that there should be forums where students present their theses before they are submitted for examination purposes. This is one of the clear expressions of students’ desire for what may be called, “academic community”; for a regular connection between both fellow-students and supervisors. In substantiating this, Respondent 114 wrote: “Each phase of students’ study (proposal, literature review, research design and methods, data analysis and the whole write up stages) should be evaluated via students’ presentations in the presence of international research paper evaluators”. Many students expressed the need for a “live defence” of their work which can operate as a quality check. The respondents asked for increasing the frequency of seminars/workshops as it could constitute opportunities for them to meet with UNISA

staff members and fellow students and to discuss “puzzling” issues. However, this gives rise to the question whether these doctoral candidates have succeeded in making the required transition from being “course-takers” (which is a highly familiar practice for students by the time they become doctoral candidates) to that of independent researchers and scholars (which are complex undertakings to which these students may only partially have been exposed to previously).

6.4.1.5 Corporate image

The students stated a lot of issues that would improve the corporate image that UNISA holds. It has been the comment of many students that UNISA must, for example, work hard to sell itself much better and make people become aware of the distance education system in general and of the role of UNISA in particular. According to the students, the general understanding of distance education is relatively poor. They feel that the general public do not accept that the outcomes of distance education are of the same standard as that of conventional education. The demands of distance education also appear to be underestimated. Therefore, UNISA should build its image so that it is understood that the qualifications it offers are of an international standard. Respondent 25, for example, said that “UNISA does not have the corporate image that it deserves to have. One reason for this is almost everybody views UNISA as rendering distance education that cannot be symmetrical to regular education”. Respondent 121 added to this by stating that “most people do not have understanding of the ODL modality as important as face to face… Therefore, the area requires more promotion for raising awareness about the importance of ODL approach as a unique educational modality”.

It appears as though, despite a long and generally successful track record, ODL is still required to prove that the quality of student learning is at least equivalent to face-to-face teaching. Because senior officials in some of the local universities (where the students work) do not understand the demanding nature of distance learning, they tend to allocate higher teaching loads, more office responsibilities, and increased committee engagements to UNISA PhD students than to other PhD students who study at conventional education institutions. This, according to the students, showed a lack of

understanding of the nature of research work which needs time and concentration. Respondent 118 explained the need for UNISA's image building in the following manner: "UNISA [should] strengthen its endeavours and image in Ethiopia and the world through increasing its regional academic staff, organising international research conferences/ seminars on important issues of the world, Africa and/or Ethiopia at Centres like UNECA or the AUC; … and institutionalising frequent support and follow up from supervisors". Respondent 139 added that "UNISA should make itself visible and known to the Ethiopian community". Students were generally satisfied with the corporate image of UNISA, but expressed the need for improvements in marketing strategies that would further strengthen UNISA and ODL's image in Ethiopia.

6.4.2 Recommendations Emanating Directly from the Study

Two dimensions of student support seem to require specific attention, namely corporate image and supervision support. Together these two dimensions explained 60% of the variance in the students' satisfaction. A second round of step-wise regression analysis was conducted during which only those dimensions that measured students' expectations and experiences were taken into account. This repeated procedure identified a third area of concern which definitely requires improvement, namely administrative support though it explained only 6% of the variance in satisfaction. In the following sections, these three dimensions are briefly discussed.

6.4.2.1 Corporate image

It was recommended by the students that UNISA should work hard to build its own as well as the general image of ODL in Ethiopia by seizing all available opportunities that assist in promoting its image. In addition, the students stated that the other services (especially supervision support) should be improved in order to promote UNISA's image and to avoid the negative impact such situations may bring about for how it is perceived by the public. Both UNISA in general and the Ethiopia Centre, in particular, should seek mechanisms to promote UNISA's image, and show how much the university is contributing to human capacity-building in Ethiopia. Many students have successfully

graduated from UNISA with master's and doctoral degrees. Most of them hold high posts in academe, in NGOs and in government sectors. Such alumni should knowingly be used in the image building of the University. They should also be utilised to demonstrate how much ODL is contributing to the educational sector of the country. Strengthening the alumni chapter could be part of this venture. In addition, improving the student support programmes from all directions will render both the students and the alumni as ambassadors of the University. Satisfying external supervisors' needs (like concluding contractual agreements and ensuring that payments of supervision/ examination fees are made in good time) can also contribute to building UNISA's image. UNISA should therefore work hard to consider improving all these factors, for example, by having a dedicated desk on the main campus that oversees the general activities of the Ethiopia Centre.

6.4.2.2 Supervision support

Timely and constructive feedback on students' submissions by supervisors is a point that definitely requires improvement. This is in addition to motivating, inspiring and meticulously following up on the students' academic progress. It would be very beneficial for UNISA to develop a system that checked whether supervisors gave on-time and supportive feedback to their students. This may contribute to increasing the satisfaction level and success rates of students and to decreasing dropout rates. Doctoral students should be regarded as critical friends in the process of knowledge co-creation. Satisfied students always contribute to "selling" their university to other persons.

6.4.2.3 Administrative support

The main points of concern in this dimension were delayed approval of proposals and difficulties in obtaining ethical clearance for their research. The user-friendliness of the myLife e-mail system (which gets blocked during some parts of the year) is also an issue in this regard. Timely approval of proposals and a provision of timely responses to applications for ethical clearance can contribute much to the improvement of services in

UNISA. The offices of the Masters and Doctoral (M&D) Coordinators who deal with such issues must closely work with supervisors so as to minimise the delay the students complained about. ICT staff should also check if mechanisms are in place that would ensure that students' access to the myLife e-mail are not disrupted whenever maintenance is done on the system.

6.5 CONTRIBUTIONS OF THE STUDY

This part of the study deals with the possible contributions this study can make to the existing body of knowledge in the fields of education management and services quality.

In the course of this study, a sector-specific instrument was developed that measures student support service quality in an ODL setting. Since Ladhari (2008:68) contends that the generic SERVQUAL is not applicable to all contexts and industries, a need existed for a sector-specific instrument that measures service quality (Jain et al., 2010:145). This instrument can be adapted to be used in similar areas.

The study has also contributed to the relatively scanty body of knowledge in the areas of student support services as offered to post-graduate students and service quality with particular reference to the ODL system. It includes ideas in relation to offering cross-border distance higher education (Barnes, 2007:317; Sultan & Wong, 2010:264).

From a research methodological point of view, this study has managed to import and use a design-based research strategy, which is mostly employed in natural science fields, to a social science discipline.

6.6 THE RESEARCH PROCESS IN RETROSPECT

The issue of student support service quality appears to be better undertaken through a mixed methods research design where data are gathered from both a qualitative and a quantitative perspective than through a singular design. Such a procedure could bring a much richer understanding of the construct at hand. On the other hand, the developed

instrument through which data were collected in this study was organised dimension-by-dimension before it was distributed to the students. This seems to have limited the students' contribution in the one item that required them to add anything of value (including strengths, weaknesses and areas of improvement). Had the items in the instrument been presented in a mixed manner, it might have been possible that the students would have written more ideas that could complement the five dimensions.

Another limitation of the current research is that data were not collected from different stakeholders. In this study, data were gathered only from students. However, if data had been collected from academics and front-line staff members who have had direct interaction with students, it would have enabled the researcher to triangulate the findings of the study and to obtain more information. This idea is strengthened by the argument of Parasuraman, et al. (1990:41-42) that says employees identify the 'why' of the problem whereas customers identify the 'what' of the problem.

In this study, the two items that constituted the construct, 'satisfaction', were formulated as follows: "I recommend UNISA to friends/relatives/family members" and "Overall, I am satisfied with the services rendered by UNISA". The first item was placed under the heading, satisfaction, with the understanding that satisfied customers recommend the service provider. However, literature which came to the attention of the researcher when the study had already reached an advanced stage, indicates that such an item measures the loyalty of the customer to the service provider rather than satisfaction (Parasuraman, Zeithaml & Malhotra, 2005:231). Therefore, this item requires reconsideration.

The major limitations of this study appear to be the retrospective nature of the responses provided by the target group and the dimension of satisfaction which were measured by only two items. This seemed to be especially true when the respondents completed the items that asked about their expectations. Since the target population was the students who have been with UNISA for more than one year, they may not

have been clear enough about the expectations they had when they joined the University.

As regards the dimension of ‘satisfaction’ being measured by only two items, there doesn’t appear to be consensus among experts. Some authors say that satisfaction can be measured by means of only one single item (like “Overall, I am satisfied...”) whereas other authors hold the opinion that there should be a minimum of three items for a dimension to be called a dimension. If the latter case holds, this can be taken as a limitation in this study.

6.7 IDEAS FOR FURTHER RESEARCH

Doctoral students seem to experience a loss of momentum at various stages of proposal and thesis writing due to, for example, a lack of academic community, procrastination, delays in feedback from supervisors, a lack of self-motivation or the hindrance of perfectionism. Throughout this study students problematised their relationships with their supervisors. This probably exacerbates the lack of academic community (cf. 6.4.1.4) to which students have referred. An in-depth investigation into aspects that can be perceived as hurdles to doctoral candidates in completing their research proposals and theses, therefore appear to be warranted.

The evidence collected in this mainly quantitative study, succeeded in confirming the findings of other researchers and focused on the relationship between the, to a large extent, predefined expectations and experiences of doctoral students. However, a qualitative study into the special needs of doctoral students may also bring forth expectations and experiences of students of which the relevant community of academics are not yet aware of. Especially more research into the lived experiences of doctoral students appear to be required.

In this study, the students strongly recommended the implementation of a system by means of which the involvement of supervisors on the main campus in the work of

doctoral students located in Ethiopia can be monitored. Research will be required to determine the nature of such a to-be-developed system and especially what the attitudes of supervisors toward such a system would be.

6.8 FINAL WORD

During the past two decades, institutions of higher learning all over the world have become preoccupied with the quality of their offerings. In their efforts to determine how effective their teaching and learning undertakings are and how its quality can be improved, various quality assurance mechanisms have been devised and implemented. These mechanisms have gradually become very significant tools in the hands of managers to gauge and improve the quality of their institutions' functioning and service delivery. Managers realise that they are compelled to make choices on what is desirable and what is possible, and that such choices should be informed by their contextual specificities.

This applies to ODL institutions too: irrespective of their structures or context, quality is receiving increased attention and most institutions providing ODL now have quality assurance systems and procedures in place. However, since they deal with a much larger variety of students, programmes, educational cultures and geographical spaces than conventional institutions for higher learning, the quality of ODL sometimes varies and, in turn, this often leads to doubts concerning the quality of qualifications gained through ODL. Consequently, ODL institutions constantly (but unjustly) have to justify their existence, try to counter prejudice and criticism, and provide evidence to show that their graduates have attained the same knowledge and skills as graduates from conventional institutions.

Regular, in-depth research on issues of quality and on the functioning of quality assurance systems in ODL institutions has therefore become essential. The first step to improve the quality of ODL in general, and of academic support services in particular, is to determine what the status quo in this regard is. This is what this study set out to achieve.

It is hoped that this study will contribute empirical evidence for decision-makers and policy developers of ODL in general, and within the UNISA-Ethiopia agreements in particular, to build on in their efforts to enhance the quality of UNISA's offerings to doctoral students in Ethiopia. Any improvement in the quality of student support services will undoubtedly lead to a reduction in the dropout rate of students, an improvement of the standard of qualifications and to greater credibility of the ODL system as a whole. In addition, it is hoped that the findings and recommendations of this study will stimulate more studies in the field of ODL.

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APPENDIX I

Instrument to be rated by judges

Dear ……

Thank you very much for your kindness to assist me in rating the questionnaire that I will use to collect data for my DED project. Below, please find a small introduction about the intention of the study and the meaning of the seven dimensions as employed in this study. The yellow highlighted parts in the text below are meant to give you information. If you need any clarification, please communicate with me at +251 927 171 388 or at abertg@unisa.ac.za.

INTRODUCTION

This study focuses on ***student support service quality*** with particular reference to an Open Distance education environment. The study emphasizes on two major points: observing the perceived gap between students' expectations and experiences of service quality and simultaneously developing a test that would be valid and reliable to measure service quality in an Open Distance Learning (ODL) environment in the Ethiopian context. In the service industry, users insist on receiving quality services. In turn this influences service providers to continually work towards improving their services (Yeo & Li, 2014:95). The starting point for improvement of services is identifying users' views and needs (Jain, Sinha & De, 2010:144). This implies that the quality of services should be measured, and customers' expectations should be understood.

This study relies heavily on a quantitative research design where a questionnaire (the to-be developed instrument) will be administered to doctoral students of Unisa residing in Ethiopia. The major purpose of the questionnaire is measuring the construct of service quality. This construct is intended to be measured through seven dimensions; six of which will serve as independent variables while one of them is the dependent variable. The meanings of the dimensions as suitably put for this study are stated below.

MEANINGS OF THE DIMENSIONS

1. ACADEMIC: issues that are directly linked to the academic activities of the students like the instructions/guidance rendered by supervisors
2. ADMIN: services that are given decisions by different-level officials of the university and also those that are related with application and registration processes
3. COMMUNICATION: the interaction and dissemination of information to students by all-levels of staff members of the university that also includes the existence of friendly atmosphere
4. INFRASTRUCTURE: services related to both physical and non-physical (soft format) set-up that the university provides
5. FACILITATION: activities that the university provides to ease and assist in the academic journey of doctoral students that also has the intention of increasing throughput (retention and graduation)
6. CORPORATE QUALITY: issues related to the status/reputation of the university in the eyes of different stakeholders
7. SATISFACTION: items that show the feelings of fulfillment (pleasure) by students resulting from the different services the university provides

Using the above information, please use the first column of the table that contains the questionnaire to put the number designating the dimension (1-7 above) each item falls in. If item 10, for example, falls under the dimension of INFRASTRUCTURE, please put number 4 in front of item 10.

THE QUESTIONNAIRE

Dear Student,

Thank you so much for taking your time to fill in this questionnaire. This research is being conducted by a member of Unisa in fulfilment of her studies for Doctor of Education. Your participation in this study is strictly confidential. To guarantee the anonymity of your response, you should NOT write your name or student number in the questionnaire. The questionnaire involves two parts. The first part asks the social and demographic variables of the respondents, the second part is over your expectations of the student support services that should be provided by Unisa. Kindly respond frankly and accurately.

INFORMATION TO THE RATER: The items below are set to measure the 'expectations' of the students from Unisa. While administering the questionnaire to the students, an equivalent item that measures the students' actual 'experiences' will be set.

Part I: Social and Demographic variables

Age: 21-30_____ 31-40_____ 41-50_____ ≥51 _____

Gender: Male_____ Female_____

Marital status: Single__ Married__ Divorced__ Widowed__ Separated__

College you are enrolled in Unisa: CAES __ CEDU__ CEMS __ CHS __ CLAW__ CSET__ CGS__

Field of study: _____

Sponsorship: Self __ MOE__ Unisa (bursary) __ Other __

First year of registration: 20____ (please write the year of your enrolment)

Supervisor: From South Africa __ From Ethiopia __ From both (students who have two supervisors) __ Other (eg. Ethiopians living overseas)__ (Please state)_____

Part II: Doctoral students' expectations from Unisa with regard to student support services

Please circle the one response that best indicates your answer in each scale.

(INFORMATION TO THE RATER: A scale of 1-5 will be used to measure the extent of the students' expectations over the student support services; i.e.

SCALE 01	1 2 3 4 5 None Little Some Much Very Much
SCALE 02	1 2 3 4 5 Strongly disagree Disagree Indecisive Agree Strongly agree

The question the respondents will be asked to use Scale 01 (in the table above) is "**To what extent do you expect to get each one of these services?**" When Scale 02 is

used, the instruction reads as "**Please circle the <u>one</u> response that best indicates the extent in which you agree or disagree with the statement made.")**

Dimension an item falls in	ITEMS
	1) Supervisors should give clear comments on students' submissions like proposals or chapters
	2) Unisa should ensure that the Library is rich in e-journal and e-book collections
	3) Unisa should set up the web-based Learning Management System [myUnisa] to curb students' loneliness by providing a dedicated discussion forum for doctoral students
	4) Supervisors should acknowledge the receipt of their students' submissions without delay
	5) The Ethiopia CenterCenter should ensure that its Library is accessible to doctoral students after normal working hours
	6) Unisa is a leading research university
	7) Unisa should ensure that the online Library is accessible 24/7 throughout the year
	8) The Ethiopia CenterCenter should provide orientation programs to all newly admitted doctoral students to help them get acquainted with the nature of distance learning
	9) Supervisors should give adequate information to their students on ethical clearance procedures
	10) Unisa should assign mentors from the main campus to doctoral students who have local supervisors
	11) The Ethiopia Center should make venues available for doctoral workshops/seminars/ training that are easily accessible to students
	12) Unisa should assign supervisors upon first registration
	13) Unisa should provide training to students on how to write a doctoral proposal
	14) The Ethiopia Center should have staff members who actively encourage and support doctoral students in their academic endeavors
	15) Alumni of Unisa have high status in Ethiopia
	16) Unisa should provide training on how to access and download sources from the library
	17) The Ethiopia Center should have staff members who are freely accessible to respond to students' enquiries
	18) Supervisors should reflect an approachable attitude when communicating with their students
	19) Unisa grants doctoral degrees that are of an international standard

	20) The Ethiopia Center should keep ICT resources in the computer labs and Library up-to-date
	21) Unisa should ensure that the administrative processes of registration and re-registration are user-friendly
	22) Unisa should make the e-mail account it provides to its students (myLife) user-friendly
	23) Supervisors should alert students of useful resources related to the students' doctoral projects
	24) Unisa should deliver hard copy books that are borrowed from the Unisa Main library in Pretoria to students' personal addresses
	25) Supervisors should communicate with their students via different technological media
	26) Unisa should assign subject librarians to the task of providing assistance in finding relevant sources
	27) Unisa should ensure that the web-based Learning Management System [myUnisa] is user-friendly
	28) Supervisors should give guidance to their students regarding policies and rules (like plagiarism or structural requirements of the thesis) that govern doctoral studies
	29) Unisa should address issues in the doctoral workshops/seminars/ training that are relevant to the various projects students are involved in
	30) Unisa should ensure that departmental higher degrees committees communicate with doctoral students on their decisions regarding students' proposals within a reasonable time
	31) Unisa should provide information about administrative procedures involving doctoral students
	32) Supervisors should respond to their students' enquiries and submissions within a reasonable period of time
	33) The Ethiopia Center should make technical assistance readily available when students face ICT-related problems
	34) Unisa should make sure that supervisors and students sign supervision agreements and codes of conduct
	35) Ethiopians that have graduated from Unisa are proud of their Unisa qualifications
	36) Unisa should provide training on data analysis software packages (like SPSS and Atlas-ti)
	37) Unisa should provide training programs in the form of seminars/colloquia beyond the proposal phase
	38) Supervisors should encourage their students to complete and submit draft chapters on a regular basis
	39) The Ethiopia Center should ensure that its Library possesses a wide range of subject-related and research books
	40) Unisa should provide full information on the admission requirements of doctoral study (e.g. admission criteria, cost, and potential fields of study) before students apply for registration

	41) Supervisors should be fairly consistent over time in the comments they give to their students (not reversing ideas on what they have suggested before)
	42) Unisa should make computer labs accessible to students
	43) I recommend Unisa to friends/ relatives/ family members
	44) Unisa should provide information on doctoral applications in both hard copy and digital (online) format
	45) The Ethiopia Center should have facilities in a reachable location so that students can access available services in person
	46) Overall, I am satisfied with the services rendered by Unisa

Please use the space below to write down additional points you wish to mention in relation to the services Unisa offers to its students:

_____

_____

_____

_____

_____

_____

APPENDIX II

Instrument to be evaluated by front-line staff members of the Unisa-Ethiopia Centre

Rating Scale;

RELEVANCE: 1. Not relevant 2. Somewhat relevant 3. Quite relevant 4. Highly relevant

CLARITY: 1. Not clear 2. Somewhat clear 3. Quite clear 4. Highly clear

NR	ITEMS	ITEM RELEVANCE/ IMPORTANCE				ITEM CLARITY				RECOMMENDATION FOR IMPROVEMENT
		1	2	3	4	1	2	3	4	
1	Supervisors should give clear comments on students' submissions like proposals or chapters									
2	Supervisors should acknowledge the receipt of their students' submissions without delay									
3	Supervisors should give adequate information to their students on ethical clearance procedures									
4	Supervisors should reflect an approachable attitude when communicating with their students									
5	Supervisors should alert students of useful resources related to the students' doctoral projects									
6	Supervisors should communicate with their students via different technological media									
7	Supervisors should give guidance to their students regarding policies and rules (like plagiarism or structural requirements of the thesis) that govern doctoral studies									
8	Supervisors should respond to their students' enquiries and submissions within a reasonable period of time									
9	Supervisors should encourage their students to complete and submit draft chapters on a regular basis									
10	Supervisors should be fairly consistent over time in the comments they give to their students (not reversing ideas on what they have suggested before)									
11	Unisa should ensure that the Library is rich in e-journal and e-book collections									
12	Unisa should set up the web-based Learning Management System [myUnisa] to curb students' loneliness by providing a dedicated discussion forum for doctoral students									
13	The Ethiopia Centre should ensure that its Library is accessible to doctoral students after normal working hours									

14	Unisa should ensure that the online Library is accessible 24/7 throughout the year									
15	The Ethiopia Centre should make venues available for doctoral workshops/seminars/ training that are easily accessible to students									
16	The Ethiopia Centre should keep ICT resources in the computer labs and Library up-to-date									
17	Unisa should make the e-mail account it provides to its students (myLife) user-friendly									
18	Unisa should ensure that the web-based Learning Management System [myUnisa] user-friendly									
19	The Ethiopia Centre should make technical assistance readily available when students face ICT-related problems									
20	The Ethiopia Centre should ensure that its Library possesses a wide range of subject-related and research books									
21	Unisa should make computer labs accessible to students									
22	The Ethiopia Centre should have facilities in a reachable location so that students can access available services in person									
23	Unisa is a leading research university									
24	Alumni of Unisa have high status in Ethiopia									
25	Unisa grants doctoral degrees that are of an international standard									
26	Ethiopians that have graduated from Unisa are proud of their Unisa qualifications									
27	Unisa should ensure that the administrative processes of registration and re-registration are user-friendly									
28	Unisa should provide full information on the admission requirements of doctoral study (e.g. admission criteria, cost, and potential fields of study) before students apply for registration									
29	Unisa should provide information on doctoral applications in both hard copy and digital (online) format									
30	The Ethiopia Centre should provide orientation programs to all newly admitted doctoral students to help them get acquainted with the nature of distance learning									
31	Unisa should assign mentors from the main campus to doctoral students who have local supervisors									
32	Unisa should assign supervisors upon first registration									
33	Unisa should provide training to students on how to write a doctoral proposal									
34	The Ethiopia Centre should have staff members who actively encourage and support doctoral students in their academic endeavours									
35	Unisa should provide training on how to access and download sources from the library									

36	Unisa should deliver hard copy books that are borrowed from the Unisa Main library in Pretoria to students' personal addresses									
37	Unisa should assign subject librarians to the task of providing assistance in finding relevant sources									
38	Unisa should address issues in the doctoral workshops/seminars/ training that are relevant to the various projects students are involved in									
39	Unisa should make sure that supervisors and students sign supervision agreements and codes of conduct									
40	Unisa should provide training on data analysis software packages (like SPSS and Atlas-ti)									
41	Unisa should provide training programs in the form of seminars/colloquia beyond the proposal phase									
42	The Ethiopia Centre should have staff members who are freely accessible to respond to students' enquiries									
43	Unisa should ensure that departmental higher degrees committees communicate with doctoral students on their decisions regarding students' proposals within a reasonable time									
44	Unisa should provide information about administrative procedures involving doctoral students									
45	I recommend Unisa to friends/ relatives/ family members									
46	Overall, I am satisfied with the services rendered by UNISA									

COMPREHENSIVE MEASURE: Please circle the number of your choice:

Overall, the items included in this questionnaire representatively measure the construct of student support service quality in an Open-Distance Learning environment. 1. Not representative 2. Somewhat representative

3. Quite representative 4. Highly representative

APPENDIX III

Instrument to be evaluated by experts

Rating Scale;

RELEVANCE

1. Not relevant
2. Somewhat relevant
3. Quite relevant
4. Highly relevant

CLARITY

1. Not clear
2. Somewhat clear
3. Quite clear
4. Highly clear

DIMENSION

1. Not representative
2. Somewhat representative
3. Quite representative
4. Highly representative

NR	ITEMS	ITEM RELEVANCE/ IMPORTANCE				ITEM CLARITY				DIMENSION AN ITEM FALLS INTO				RECOMMENDATION FOR IMPROVEMENT
	SUPERVISION SUPPORT: issues that are directly linked to the academic activities of the students in relation to the instructions/guidance rendered by supervisors									Items 1-10 fall under ***Supervision Support***				
		1	2	3	4	1	2	3	4	1	2	3	4	
1	Supervisors should give clear comments on students' submissions like proposals or chapters													
2	Supervisors should acknowledge the receipt of their students' submissions without delay													
3	Supervisors should give adequate information to their students on ethical clearance procedures													
4	Supervisors should reflect an approachable attitude when communicating with their students													
5	Supervisors should alert students of useful resources related to the students' doctoral projects													
6	Supervisors should communicate with their students via different technological media													
7	Supervisors should give guidance to their students regarding policies and rules (like plagiarism or structural requirements of the thesis) that govern doctoral studies													
8	Supervisors should respond to their students' enquiries and submissions within a reasonable period of time													
9	Supervisors should encourage their students to complete and submit draft chapters on a regular basis													
10	Supervisors should be fairly consistent over time in the													

	comments they give to their students (not reversing ideas on what they have suggested before)													

NR	ITEMS	ITEM RELEVANCE/ IMPORTANCE				ITEM CLARITY				DIMENSION AN ITEM FALLS INTO				RECOMMENDATION FOR IMPROVEMENT
	INFRASTRUCTURE: resources related to both physical and non-physical (soft format) set-up that the university provides									Items 11-22 fall under ***Infrastructural Support***				
		1	2	3	4	1	2	3	4	1	2	3	4	
11	The Unisa Library should ensure that the Library is rich in e-journal and e-book collections													
12	Unisa should set up the web-based Learning Management System [myUnisa] to curb students' loneliness by providing a dedicated discussion forum for doctoral students													
13	The Ethiopia Center should ensure that its Library is accessible to doctoral students after normal working hours													
14	Unisa should ensure that the online Library is accessible 24/7 throughout the year													
15	The Ethiopia Center should make venues available for doctoral workshops/seminars/ training that are easily accessible to students													
16	The Ethiopia Center should keep ICT resources in the computer labs and Library up-to-date													
17	Unisa should make the e-mail account it provides to its students (myLife) user-friendly													
18	Unisa should ensure that the web-based Learning Management System [myUnisa] user-friendly													
19	The Ethiopia Centre should make technical assistance readily available when students face ICT-related problems													
20	The Ethiopia Centre should ensure that its Library possesses a wide range of subject-related and research books													
21	Unisa should make computer labs accessible to students													
22	The Ethiopia Centre should have facilities in a reachable location so that students can access available services in person													

NR	ITEMS	ITEM RELEVANCE/ IMPORTANCE				ITEM CLARITY				DIMENSION AN ITEM FALLS INTO				RECOMMENDATION FOR IMPROVEMENT
	ADMIN:									Items 27-29 fall under ***Admin Support***				
		1	2	3	4	1	2	3	4	1	2	3	4	
23	Unisa should provide full information on the admission requirements of doctoral study (e.g. admission criteria, cost, mode of education, and potential fields of study) before students apply													
24	Unisa should provide information on doctoral applications in both hard copy and digital (online) format													
25	Unisa registrar should give response over admission decisions of first application within reasonable period of time													
26	Unisa should ensure that the administrative processes of registration and re-registration are user-friendly													
27	The Ethiopia Centre should ensure that self-sponsored students' payment processes are finalized timeously.													

NR	ITEMS	ITEM RELEVANCE/ IMPORTANCE				ITEM CLARITY				DIMENSION AN ITEM FALLS INTO				RECOMMENDATION FOR IMPROVEMENT
	CORPORATE QUALITY: issues related to the status/reputation of the university in the eyes of different stakeholders									Items 23-26 fall under ***Corporate Quality of Unisa***				
		1	2	3	4	1	2	3	4	1	2	3	4	
28	Unisa is a leading research university internationally													
29	Alumni of Unisa have high status in Ethiopia													
30	Unisa grants doctoral degrees that are of an international standard													
31	Ethiopians that have graduated from Unisa are proud of their Unisa qualifications													

NR	ITEMS	ITEM RELEVANCE/ IMPORTANCE				ITEM CLARITY				DIMENSION AN ITEM FALLS INTO				
	ACADEMIC FACILITATION: activities that the university provides to ease and assist the academic journey of doctoral students that also have the intention of increasing throughput (retention and graduation)									Items 30-41 fall under ***Academic Facilitation***				
		1	2	3	4	1	2	3	4	1	2	3	4	
32	The Ethiopia Centre should provide orientation programs to newly admitted doctoral students to help them get acquainted with the nature of distance learning													
33	The orientation program that is given by the Ethiopia Centre members of staff should be early enough in the new academic year													
34	Unisa should assign mentors from the main campus to doctoral students who have local supervisors													
35	Unisa should assign supervisors or contact persons upon first registration													
36	Unisa should provide training to students on how to develop a doctoral proposal													
37	The Ethiopia Centre should have staff members who actively encourage and support doctoral students													
38	Unisa should provide training on how to access and download sources from the library													
39	Unisa should deliver hard copy books that are borrowed from the Unisa main Library (in South Africa) to personal addresses of students from Ethiopia													
40	Unisa should assign subject librarians to the task of providing assistance in finding relevant sources													
41	Unisa should address issues in the doctoral workshops/seminars/ training that are relevant to the various projects students are involved in													
42	Unisa should make sure that supervisors and students sign supervision agreements and codes of conduct as early as the assignment of the supervisor													
43	Unisa should provide training on data analysis software packages (like SPSS and Atlas-ti)													
44	Unisa should provide training programs in the form of seminars/colloquia beyond the proposal phase													

NR	ITEMS	ITEM RELEVANCE/ IMPORTANCE				ITEM CLARITY				DIMENSION AN ITEM FALLS INTO				
	COMMUNICATION: the interaction and dissemination of verbal and/or written information to students by all-levels of staff members of the university									Items 42-44 fall under ***Communication***				
		1	2	3	4	1	2	3	4	1	2	3	4	
45	The Ethiopia Centre should have staff members who are freely accessible to respond to students' enquiries													
46	Unisa should ensure that departmental higher degrees committees communicate with doctoral students on their decisions regarding students' proposals within a reasonable time													
47	Unisa should provide information about administrative procedures involving doctoral students (eg. Intention to submit, Library block)													
48	Supervisors and staff members of the Ethiopia Centre should give information over bursary and research fund possibilities													
NR	ITEMS	ITEM RELEVANCE/ IMPORTANCE				ITEM CLARITY				DIMENSION AN ITEM FALLS INTO				
	SATISFACTION: items that show the feelings of fulfillment (pleasure) by students resulting from the different services the university provides									Items 49-50 fall under ***Satisfaction***				
		1	2	3	4	1	2	3	4	1	2	3	4	
49	I recommend Unisa to friends/ relatives/ family members													
50	Overall, I am satisfied with the services rendered by Unisa													

COMPREHENSIVE MEASURE: Please circle the number of your choice:

Overall, the items included in this questionnaire representatively measure the construct of student support service quality in an Open-Distance Learning environment. 1. Not representative 2. Somewhat representative 3. Quite representative 4. Highly representative

APPENDIX IV

Actions undertaken on the items in the instrument during the process of standardization

Supervisors' Support	**Actions**
1) give clear comments on students' submissions like proposals or chapters	
2) acknowledge the receipt of their students' submissions without delay	
3) give adequate information to their students on ethical clearance procedures	
4) alert students of useful resources related to the students' doctoral projects	
5) communicate with their students via different technological media like e-mail, Skype, chatting, and the like	
6) give guidance to their students regarding policies and rules (like plagiarism or structural requirements of the thesis) that govern doctoral studies	
7) respond to their students' submissions within an agreed upon period of time	
8) periodically encourage their students to make the required submissions, like chapters	
9) be fairly consistent over time in the comments they give to their students unless new developments in the field dictate so	
10) provide information over research fund possibilities	
I am satisfied with the Supervision Support Services provided by Unisa	Dropped by missing value analysis
Infrastructure Unisa or the Unisa-Ethiopia Centre provides	
11) ensure that the library is rich in e-journal and e-book collections	
12) ensure that the online library is accessible seven days a week throughout the year	
13) make myLife e-mail account user-friendly	
14) ensure that the myUnisa system is user-friendly	Dropped for not meaningfully fit in the dimension of academic facilitation
15) set up a discussion forum on the myUnisa platform in order to facilitate interaction among doctoral students	Dropped by first round principal component analysis
I am satisfied with the infrastructure Unisa provides	Dropped by missing value analysis
16) make venues of doctoral workshops/seminars/training easily accessible to students	Dropped by first round principal component analysis
17) ensure that ICT resources are up-to-date	
18) provide technical assistance when students face ICT-related problems	
19) ensure that its library possesses a wide range of subject-related materials	
20) ensure that the library is equipped with recent research books	
21) make computer labs accessible to students	
22) be in an accessible location so that students can make use of its services	
I am satisfied with the infrastructure provided at the Unisa-Ethiopia campus	Dropped by missing value analysis
Administrative Support Services provided by Unisa	
23) provide information on doctoral applications in both hard copy and digital (online) format	

24) provide a response regarding admission decisions on first applications within a reasonable period of time	
25) ensure that registration and re-registration processes are user-friendly	
26) ensure that decisions of Departmental Higher Degrees Committees on doctoral students' proposals are communicated to students as quickly as possible	
27) provide information about administrative procedures involving doctoral students (eg. intention to submit, library procedures)	
28) ensure that the bursary section should provide timely responses concerning bursary applications	Dropped by missing value analysis
I am satisfied with the Administrative Support Services Unisa provides	Dropped by for sake of uniformity
Academic Facilitation Services Unisa or Unisa-Ethiopia Centre provide	
29) assign mentors from the main campus to doctoral students who have local supervisors	Dropped by missing value analysis
30) provide training to students on how to develop a doctoral proposal	
31) make sure that the doctoral workshops/seminars/training address issues that are relevant to the various research projects students are involved in	
32) provide training programs in the form of seminars/colloquia for students who have progressed beyond the proposal phase	
33) provide training on data analysis software packages (like SPSS and Atlas-ti)	
34) provide training on how to access and download materials from the library	Dropped for not meaningfully fit in the dimension of infrastructure
35) deliver hard copy books that are borrowed from the main campus library (Pretoria, South Africa) to students' personal addresses	Dropped by first round principal component analysis
I am satisfied with the Academic Facilitation Services Unisa provides	Dropped for sake of uniformity
36) provide an orientation program to newly admitted students as soon as registrations are finalized	Dropped by first round principal component analysis
37) have staff members who actively engage in supporting doctoral students	Dropped by first round principal component analysis
I am satisfied with the Academic Facilitation Services the Unisa-Ethiopia Centre provides	Dropped because items 36 and 37 were dropped
The **Corporate Image** Unisa holds	
38) Unisa is a leading Open Distance Learning university	
39) Graduates of Unisa have a favorable image in Ethiopia	
40) Unisa grants doctoral degrees that are of international standard	
41) Ethiopians that have graduated from Unisa are proud of their Unisa qualifications	
I am satisfied with the Corporate Image Unisa holds in Ethiopia	Dropped for sake of uniformity
Overall **Satisfaction** level	
42) I recommend Unisa to friends/relatives/family members	
43) Overall, I am satisfied with the services rendered by Unisa	
Total number of items = 50	Dropped during various procedures =16
TOTAL NUMBER OF ITEMS THAT REMAINED IN THE INSTRUMENT = 34	

APPENDIX V

Final questionnaire after standardization

Dear Colleague,

Thank you so much for your willingness to complete this questionnaire. This research is being conducted by a staff member of UNISA in order to comply with the requirements of her studies for the degree, Doctor of Education. Your participation in this study is strictly confidential. To guarantee the anonymity of your response, you should NOT write your name or student number in the questionnaire. The questionnaire involves two major parts. The first part poses questions concerning your social and demographic background. The second part comprises two types of expected responses. On the one hand I would like to determine what your expectations are of the student support services that ***should*** be provided by UNISA. On the other hand I need to know what ***actual*** experiences are of the student support services provided to you since you enrolled for a program at UNISA. Kindly respond frankly and accurately. Should you face any difficulty in completing this questionnaire, please call me (Mrs Tsige GebreMeskel Aberra) on +251 927 171 388.

Part I: Social and Demographic variables

By means of a tick (✓), please indicate the various options that are applicable to you:

Age: 21-30_____ 31-40_____ 41-50_____ older than 51 _____

Gender: Male____ Female_____

Marital status: Single__ Married__ Divorced__ Widowed__ Separated__

College in which you are enrolled at UNISA: CAES __ CEDU__ CEMS __ CHS __ CLAW__ CSET__ Other (please specify) _____

Your field of study (please specify): _____

Status of your proposal: approved ____ not yet approved____

Level of your study: proposal___ Literature review and methodology ___Data collection___ Write-up___ Submitted___

Who pays for your study? Self __ MOE__ UNISA (bursary) __ Other (please specify) _____

First year of registration: 20__ (please write the year of your enrolment)

Supervisor: From South Africa __ From Ethiopia __ From both South Africa and Ethiopia (students who have two supervisors) __ Other (eg. Ethiopians living overseas)___

Regional state you reside at (e.g. Afar, Amhara): _____

Part II: Below, please find items for which your responses must mainly be recorded in the second and third columns. You are kindly requested to indicate your ***expectations*** in the second column and your ***actual experiences*** in the third column. Please note that there are items/questions that ask your satisfaction level under each category of services. Kindly respond to these items too.

The scale to be used is **0=None, 1=Little, 2=Some, 3=Much, and 4=Very Much**

Please highlight/underline/encircle the one response that best describes your views in BOTH columns A and B

	A. To what extent do you feel that supervisors *should* provide this type of service?	**B. In your experience, to what extent do supervisors *actually* provide this type of service?**
1) give clear comments on students' submissions like proposals or chapters	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
2) acknowledge the receipt of their students' submissions without delay	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
3) give adequate information to their students on ethical clearance procedures	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
4) alert students of useful resources related to the students' doctoral projects	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
5) communicate with their students via different technological media like e-mail, Skype, chatting, and the like	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
6) give guidance to their students regarding policies and rules (like plagiarism or structural requirements of the thesis) that govern doctoral studies	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
7) respond to their students' submissions within an agreed upon period of time	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
8) periodically encourage their students to make the required submissions,	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much

like chapters		
9) be fairly consistent over time in the comments they give to their students unless new developments in the field dictate so	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
10) provide information over research fund possibilities	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
11) ensure that the library is rich in e-journal and e-book collections	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
12) ensure that the online library is accessible seven days a week throughout the year	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
13) make myLife e-mail account user-friendly	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
14) ensure that ICT resources are up-to-date	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
15) provide technical assistance when students face ICT-related problems	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
16) ensure that its library possesses a wide range of subject-related materials	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
17) ensure that the library is equipped with recent research books	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
18) make computer labs accessible to students	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
19) be in an accessible location so that students can make use of its services	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
20) provide information on doctoral applications in both hard copy and digital (online) format	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
21) provide a response regarding admission decisions on first applications within a reasonable period of time	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
22) ensure that registration and re-registration processes are user-friendly	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
23) ensure that decisions of Departmental Higher Degrees	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much

Committees on doctoral students' proposals are communicated to students as quickly as possible		
24) provide information about administrative procedures involving doctoral students (eg. intention to submit, library procedures)	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
25) provide training to students on how to develop a doctoral proposal	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
26) make sure that the doctoral workshops/seminars/training address issues that are relevant to the various research projects students are involved in	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
27) provide training programs in the form of seminars/colloquia for students who have progressed beyond the proposal phase	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
28) provide training on data analysis software packages (like SPSS and Atlas-ti)	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
29) Unisa is a leading Open Distance Learning university	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
30) Graduates of Unisa have a favorable image in Ethiopia	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
31) Unisa grants doctoral degrees that are of international standard	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
32) Ethiopians that have graduated from Unisa are proud of their Unisa qualifications	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
33) I recommend Unisa to friends/relatives/family members	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much
34) Overall, I am satisfied with the services rendered by Unisa	0 None 1 Little 2 Some 3 Much 4 Very Much	0 None 1 Little 2 Some 3 Much 4 Very Much

APPENDIX VI

ISSUES RAISED AT STUDENTS' MEETING WITH DEAN OF STUDENTS

On the 20th of May, 2011, the dean of students held a meeting with Ethiopian students of all levels (undergraduate, honours and M&D). His major intention was to find out Ethiopian students' complaints, problems and challenges. Issues related to M&D students were extracted.

1. Doctoral students complained that they assignment of supervisors was too slow that most of them got one at the earliest after six months while there were a few who got supervisors after 18 months. A major problem in MOST cases is however delayed (or even lack of) responses (communications) from supervisors. The students feel so discouraged and detached from the whole process.
2. The process of receiving books from Pretoria library was also delayed or never reached students.
3. The location of the RLC is another point of complaint. Students experience problems in relation to Internet facilities in their locations (cities or townships). It was therefore ideal to them to use the VSAT that is available in the RLC which has a better connection to download materials In relation to this, the students suggested that the library be open on the weekends.
4. Students get invitations on their myUnisa and SMSs inviting them to conferences and workshops
5. Bursary fund for students who registered and paid but who were not at all assisted as supervisors were not assigned for them or that the supervisors never communicate their students.

APPENDIX VII

Report on Workshop with Ethiopian Students (21 to 24 June 2011)

The workshop was divided into a two-day workshop for Masters by research students (6) and a two-day workshop for PhD students (ca. 60). Before each workshop started we asked Masters and PhD candidates to inform us about the challenges they face in their graduate studies. The challenges are:

- Majority of candidates (Masters and PhD) do not have a supervisor
- Candidates with supervisors complained that their supervisors do not respond immediately
- Lack of financial support for field work (particularly expressed by candidates from environmental studies)
- Lack of clearly defined schedule and communication structure
- No clear guidance in proposal writing
- Regional centre is located too far for the students to access
- Lack of information regarding regulations addressing grievance procedures

We asked the students who have a supervisor whether they signed a contract with their supervisor. None of the students has signed such a contract yet.

The candidates reported the interaction with the library as positive experience. Any request was addressed immediately.

It was important to note that the majority of the PhD candidates work on their studies full-time due to generous agreements with their employers.

As it became clear in the discussion with the PhD candidates and the regional learning staff, the workshops provided by UNISA-Santrust do not accommodate all students, which means that alternative arrangements need to be developed for the future.

Although, the experiences with the library were described as positive, the following challenges were named:

- Candidates wait too long for their library books. They suggest that the regional library should arrange a courier service from Addis Ababa to the different regions the students are located in.
- The Search Requests from the library via the Search librarians takes too long. The waiting period for a search can sometimes take about 2 months.
- Students request books online and receive a confirmation that the request has been registered, only to find that the book is never sent.
- Sometimes students receive books long after the due date and in most cases a fine is already implemented especially for those students in the outskirts of Addis (rural areas).
- The registration process for Mylife and MyUnisa is perceived as too complicated. Students are also not too sure which of these will enable them to access the library systems
- The library needs to improve its research collection to focus on Ethiopia and/or has to develop co-operations with libraries in Ethiopia.

Challenges which need to be addressed urgently are:

Supervision for Students

UNISA should provide immediate information about the Departments which cannot supervise students due to shortage of supervisors.

UNISA should also reimburse students who have been registered and have paid their fees given that no supervisor was allocated.

Campus in Addis Ababa

In order to provide access to library, PCs, internet etc. for students in Ethiopia, UNISA should reconsider the location of the campus. Due to the lack of transport, the majority of students (even located in Addis Ababa) are not able to use the facilities currently provided.

Continuous Training in Research Methodology

Research Methodology training should be provided to all students. The research methodology training should also be conducted in alliance with the supervisors. It seems that the current strategy (Santrust develops research proposals with students and UNISA has to find supervisors) does not work. UNISA has to provide information to Masters and PhD candidates which clearly stipulate the research programmes and areas in which supervision can be provided.

Since the cooperation with Ethiopia is a rather long-term project it would be useful to develop a sustainable strategy which serves both the Ethiopian students and UNISA. The UNISA School of Graduate Studies could take a lead in developing a sustainable programme in research methodologies in order to increase the success rate of the Ethiopian candidates.

APPENDIX VIII

UNISA college of education

Research Ethics Clearance Certificate

This is to certify that the application for ethical clearance submitted by

TG Aberra [48692255]

for a D Ed study entitled

Assuring the quality of student support services in Ethiopian Open Distance Education: The case of UNISA

has met the ethical requirements as specified by the University of South Africa College of Education Research Ethics Committee. This certificate is valid for two years from the date of issue.

Prof KP Dzvimbo
Executive Dean : CEDU

Dr M Claassens
CEDU REC (Chairperson)
mcdtc@netactive.co.za

Reference number: 2014 MAY /48692255/MC

19 MAY 2014

APPENDIX IX

PROF L LABUSCHAGNE
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Address: Theo van Wijk Building, 10th Floor, Office no. 50 (TvW 10-50)

10 July 2014

Ms TG Aberra
Regional Services Ethiopia
College of Education

Dear Ms Aberra

PERMISSION TO DO RESEARCH INVOLVING UNISA STAFF, STUDENTS OR DATA

A study into "Assuring the quality of student support services in Ethiopian open distance education: the case of Unisa"

Your application regarding permission to conduct research involving Unisa staff, students or data in respect of the above study has been received and was considered by the Unisa Senate Research and Innovation and Higher Degrees Committee (SRIHDC) on 05 June 2014.

It is my pleasure to inform you that permission has been granted for this study as set out in your application.

We would like to wish you well in your research undertaking.

Kind regards

PROF L LABUSCHAGNE
EXECUTIVE DIRECTOR: RESEARCH

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