

**TOWARDS A QUALITY MODEL FOR A UNIVERSITY OF TECHNOLOGY  
RESEARCH CENTRE IN SOUTH AFRICA**

**This work is submitted in fulfillment of the requirements for the  
Doctor of Technology Degree: Operations and Quality Management  
in the Department of Operations and Quality Management  
Faculty of Management Sciences  
Durban University of Technology**

**JIN ZHENG**

**September 2012**

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**Co-Promoter:           Professor V. McLean (PhD)**

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**With the signature below I, Jin Zheng, hereby declare that the work that I present  
in this dissertation is based on my own research, and that I have not submitted this  
dissertation to any other institution of higher education to obtain an academic  
qualification.**



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**23 August 2012**

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**Approved for final submission**



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**23/08/2012**

**Date**

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## **ABSTRACT**

Over the last decade the institutional framework within which most universities in South Africa operate has undergone major transformation forcing the higher education sector to become more competitive in its approach to attracting and retaining quality students. Against this background, service quality has been put forward as a critical determinant of competitiveness. The purpose of this study therefore was to identify best practice in terms of postgraduate studies and research development and support service delivery in the South African (SA) and Australian (Aus) contexts in order to inform the development of a quality model for postgraduate or research centres (PG/RCs) for universities of technology (UoTs) in SA.

Underpinned by the Gap Model of service delivery and an adapted SERVQUAL instrument, this study sought to determine perceptions and expectations of service quality across five dimensions, namely: tangibles; reliability; responsiveness; assurance; and empathy. Questionnaires and semi-structured interviews were used to gather data from PG/RC staff and postgraduate and research students in SA. Various gaps between students' perceptions and expectations indicating dissatisfaction with PG/RC services particularly among the SA students were identified. The findings revealed that the SA UoTs lag behind the Aus UoTs in terms of communicating their services and forms of support to students and providing satisfactory services according to student expectations. The findings further suggested that issues such as service quality planning and monitoring, establishing recovery mechanisms for service failures, and student-driven service design and standards need to be high on the agenda at higher education institutions to ensure service quality control. All five dimensions of SERVQUAL indicated a negative score or quality gap suggesting that the SA PG/RCs need to urgently the gaps that exist at their institutions; key recommendations were thus made to improve the gaps identified. Based on the literature reviewed, best practice gleaned from the findings of this study, and benchmarking with the Aus UoTs; this study proposed a centralized and decentralized PG/RC model for SA UoTs to provide service quality to its 'customers'.

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## **ABBREVIATIONS USED IN THIS STUDY**

ADR	Associate Dean: Research
ANOVA	Analysis of Variance
ATN	Australian Technology Network
Aus	Australia
CPGS	Centre for Postgraduate Studies
CPUT	Cape Peninsula University of Technology
CRIC	Central Research and Innovation Committee
CUT	Central University of Technology
DRI	Directorate of Research and Innovation
DUT	Durban University of Technology
DVC	Deputy Vice Chancellor
ECARD	Early Career Academic Recruitment and Development
FASFA	Free Application for Federal Student Aid
GDP	Gross Domestic Product
Go8	Group of Eight
HDR	Higher Degree by Research
HE	Higher Education
HEI	Higher Education Institution
MUT	Mangosuthu University of Technology
NFF	New Funding Framework
NPHE	National Plan for Higher Education
NRF	National Research Foundation
OECD	Organisation for Economic Co-operation and Development
PASW	Predictive Analytic Software
PG/RC	Postgraduate or Research Centre

PGDS	Postgraduate Development and Support
QAA	Quality Assurance Agency
QUT	Queensland University of Technology
RMIT University	Royal Melbourne Institute of Technology University
RSC	Research Students Centre
SA	South Africa
SAUVCA	South African Universities Vice-Chancellors Association
SGR	School of Graduate Research
SUT	Swinburne University of Technology
TAFE	Technical and Further Education
TUT	Tshwane University of Technology
UoT	University of Technology
UTS	University of Technology Sydney
VUT	Vaal University of Technology

## **APPENDICES**

### **APPENDIX**

A	Covering letter: Student questionnaire
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H	DUT Research permission
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L	RMIT University Research permission
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## CHAPTER ONE: INTRODUCTION

### 1.1 BACKGROUND

In March 2001, the Minister of Education, Professor Kader Asmal announced the National Plan for Higher Education (NPHE) which included mergers of higher education institutions in a bid to reduce the inequalities of apartheid education and to rationalize offerings and resources (CHE, 2004; Republic of South Africa, 2002). By 2004 the government-mandated merger programme had reduced 36 institutions of higher education to 23 (Kamsteeg, 2008: 435; Makgoba, 2007: 2).

Kotecha and Stumpf (2005) remark that the mergers of different institutional types brought into existence new institutions whose qualifications were designed to be more responsive to labour-market and social needs. In this operation the former technikons disappeared, either becoming part of one of the comprehensive universities, or they were transformed into UoTs (Kamsteeg, 2008: 435). The process of restructuring the higher education system in South Africa (SA) resulted in three types of higher education institutions (*see* Table 2.1 on page 2), namely: traditional, comprehensive and universities of technology. Gibbon (2008: 2) explains them as follows:

- eleven ‘traditional’ universities offering a mixture of discipline-based and professional degree qualifications. Some (but not all) have developed substantial research profiles in both basic and applied research with extensive postgraduate programmes and fairly high levels of research output;
- six ‘comprehensive’ universities that are expected to offer a combination of all of the above types of programme and associated qualifications; and
- six UoTs have a primary focus on technological, vocational, career-oriented and professional programmes, mainly at the certificate and diploma level, but they also offer degrees. Research is conducted in these institutions in applied fields, but at present, postgraduate programmes are very small and research output is low.

*Table 2.1: Three types of higher education institutions*

<b>Eleven ‘traditional’ universities</b>
University of Cape Town
University of Fort Hare (Alice, East London)
University of the Free State (Bloemfontein)
University of KwaZulu-Natal (Durban, Pietermaritzburg, Pinetown, Westville)
University of Limpopo (Polokwane, Ga-Rankuwa)
North-West University (Mafikeng, Mankwe, Potchefstroom, Vanderbijlpark)
University of Pretoria
Rhodes University (Grahamstown)
University of Stellenbosch
University of the Western Cape (Cape Town)
University of Witwatersrand (Johannesburg)
<b>Six ‘comprehensive’ universities</b>
University of Johannesburg
Nelson Mandela Metropolitan University (Port Elizabeth)
University of South African (Pretoria, Distance Education)
University of Venda (Thohoyandou)
Walter Sisulu University for Technology and Science (Buffalo City, Butterworth, Mthatha, Queenstown)
University of Zululand (Empangeni)
<b>Six Universities of Technology</b>
Cape Peninsula University of Technology (Bellville, Cape Town)
Central University of Technology (Bloemfontein, Welkom)
Durban University of Technology (Durban, Pietermaritzburg)
Mangosuthu University of Technology (Durban)
Tshwane University of Technology (Pretoria)
Vaal University of Technology (Vanderbijlpark)

(Source: Kamsteeg, 2008: 435-436)

## 1.2 SOUTH AFRICAN UNIVERSITIES OF TECHNOLOGY

Universities of Technology came into existence in South Africa on 1 January 2004 (SATN, 2012) when the then Minister of Education reformed higher education by re-designating technikons as UoTs (du Plessis 2005: 1379). Du Pré (2010: 4-5) records the merger process as follows:

In January 2004, Technikons Pretoria, Northwest and Northern Gauteng merged to become Tshwane University of Technology; Vaal Triangle Technikon became Vaal University of Technology; and Technikon Free State became Central University of Technology, Free State. In January 2005, Cape Technikon and Peninsula Technikon merged to become Cape Peninsula University of Technology. In 2002, Technikons ML Sultan and Natal had engaged in a voluntary merger and, despite the decision by the Committee of Technikon Principals (CTP) to petition the ministry for the adoption of the term ‘university of technology’, took on the name ‘Durban Institute of Technology’ (DIT). The decision by the Minister of Education to redesignate technikons as universities of technology left DIT out of line with the rest of the sector. In 2006, DIT changed its name again to Durban University of Technology, and in 2008 began to operate as a university of technology in line with the rest of the sector. Mangosuthu Technikon, which had earlier been earmarked to merge with DIT, remained unmerged and also changed its name to Mangosuthu University of Technology.

Maserumule and Mashigo (2010: 5) state that the concept “technology” is about the application of knowledge to carry out practical tasks in the real world of work. When the concept “university” is used with the qualification “technology” it implies a particular distinct focus with regard to the educational programs (Maserumule and Mashigo, 2010: 5). In the case of UoTs both the teaching or learning programmes and research are expected to focus on the needs of business and industry (Lategan, 2005: 191). Maserumule (2005: 17) indicates that the fundamental objective of a UoT is to provide and promote, in close co-operation with the business and government sectors, quality, career-focused and advanced technology education coupled with applied and developmental research to meet the developmental imperatives of a changing world.

A UoT is characterized as being research informed rather than research driven where the focus is on strategic and applied research that can be translated into professional practice (Department of Human Resources Management Handbook, 2011). In addition, to the basic responsibilities of a university, UoTs place particular value on their academic activities in the search for innovative applications of technology in all fields of human endeavor (VUT homepage, 2012a).

As indicated above, UoTs have their roots in technikons. Ogude and Motha (2001: 58) point out that traditionally, technikons and colleges conducted very little research, if any. As technikons were established to address the shortage of technically skilled personnel to meet the needs of commerce and industry, they recruited staff from industry to teach in the various certificate and diploma programmes (Winberg, 2005: 192). In a survey, Pretorius (1998: 9) found that technikon staff because of their institutions' emphasis on teaching and orientation of their research towards applied contractual work were not expected to devote as much time to formal research as university staff. She found that, university academic staff were able to spend on average more than 30% of their time on duty on research, compared to an average of less than 5% for technikons. Moreover, the technikon educator was burdened with high lecture loads, dysfunctional bureaucracies and a high degree of administrative duties (Jinabhai, 2003: 54). Singh (2011: 1190) adds that the technikons did not emphasize the importance of research and subsequently the qualifications of its staff as perhaps they should have; the majority of the lecturers therefore need to re-tool themselves as academics and transcend the role of teachers (Chetty, 2003: 10).

UoTs are relatively new in SA but its concept and institutional type is not new in other parts of the world, for example in Australia and Europe (Committee of Technikon Principals, 2003; du Pré 2009: 10). Some examples are the UoTs in Australia and Hungary, the Universities of Science and Technology in parts of Asia, Africa and the Middle East; the Universities of Applied Sciences known as "Fachhochschulen" in Germany and Switzerland; the Institutes of Technology in the United States and the Republic of Ireland; the Universities of Professional Higher Education or the 'Hogescholen' in the Netherlands and simply Universities in England and Belgium, and each is defined by their vision and mission (du Pré 2009: 26-27).

As research in SA UoTs is at an embryonic stage; they need to benchmark their efforts against those of other leading institutions, both locally and internationally in order to

observe best practice (CUT homepage, 2011; Stella and Woodhouse, 2007: 5). According to Smith (2006: 402), benchmarking seeks to learn from observation and to make improvements necessary to reach identified standards of good or best practice. Assessment of improvement is based on review and comparison with other like organisations (Elmuti and Kathawala, 1997; Longbottom, 2000).

### **1.3 BENCHMARKING WITH AUSTRALIAN UoTs**

This study benchmarked with Australian (Aus) UoTs as Australia has a worldwide reputation for academic excellence, offering internationally recognised qualifications with immediate employment and career development opportunities. The Organisation for Economic Co-operation and Development (OECD) currently ranks Australia's education as the eighth best in the world (Working in Australia, 2012).

According to the QS World University Rankings 2011/2012 (2011), RMIT University, QUT, UTS and Swinburne UoT have been named among the top 500 universities in the world. According to these rankings, out of the 2,000 universities considered, the RMIT University ranked 228 in the world, QUT at 267, followed by the UTS at 268 and Swinburne sits in the 400-450 band. The results also show that the research intensity of RMIT University, UTS and SUT is high, and that QUT has very high research intensity. The UoTs in Australia focus on the development of research as evidenced by clearly articulated areas of research strength, collaborations with other research institutions and industry, an increasing depth and quality of researchers, and a growing, well supported research student population (UTS homepage, 2011a). In Australian UoTs, they also have PG/RCs to support and stimulate the development of the universities' research profile (QUT homepage, 2010).

Another reason for benchmarking with the Aus UoTs follows du Pré's (2009: xi) explanation of the formal signing of a Memorandum of Understanding (MoU) between the South African Technology Network (SATN) and Australian Technology Network

(ATN) which enabled the UoTs to draw on good practice of the ATN experience in developing their UoTs which preceded the South African development by between ten and fifteen years. He adds that the SA UoTs could thus learn lessons and avoid mistakes made by the Aus UoTs in the early years of their development to fast-track their own progress.

#### **1.4 RATIONALE FOR THE STUDY**

The New Funding Framework (de Villiers and Steyn, 2009: 44) is based on output (Department of Education, 2007) and weights the components of teaching output and the components of research output for each unit of subsidy invested by the government (Singh, 2011: 1192). Higher education funding is thus based on the aggregate research outputs of universities and is driven by specific goals such as to stimulate and reward institutional research (Madue, 2008: 128).

The National Plan for Higher Education (NPHE) provides the following two outcomes for research: firstly that research concentration and funding should be linked to outputs (Outcome 13), and secondly that graduate enrolments and outputs should increase at the master's and doctoral level (outcome 14) (Ministry of Education, 2001: 65-67). However, Mutula (2009: 7) points out that the higher education (HE) sector in SA and the transformation of technikons into UoTs has created a serious research skills shortage. Baijnath, Christiansen and Ogude (2007: 402) explain that these shortages stem from the period of technikons whose social mandate was to provide vocational training and development opportunities; as a result, UoTs have a poor track record of research output.

UoTs in SA lag behind traditional universities such as the Universities of Cape Town, KwaZulu-Natal, Pretoria, Stellenbosch and Witwatersrand (De Villiers and Steyn, 2009) in terms of publications in accredited peer-reviewed or subsidy generating journals (Singh, 2011: 1192). This means that the UoTs also lag behind in terms of subsidy or

funding (Madue, 2008: 128). This is aggravated by the incapacities of current academic staff, as well as by the lack of a research infrastructure (Chetty, 2003: 10). Lues and Lategan (2006: 110) add that the UoTs are also faced with challenges in producing accredited research outputs.

After being designated as UoTs, institutions were under pressure to increase their research performance and measurable outputs in particular (Christiansen and Baijnath, 2007; van Zijl, Gericke and Machet, 2006). This resulted in a corresponding demand for a range of services to support and develop postgraduate students, supervisors and early career researchers. Singh (2004: 168) therefore pointed out that for those institutions that planned to increase their postgraduate enrolments and outputs, they first needed to create the institutional conditions for this to occur.

To meet the aforementioned challenges successfully and to develop, enhance and promote postgraduate research activities and postgraduate or research centres (PG/RCs) were established in SA UoTs. They are called by different names at the different institutions, such as the Centre for Postgraduate Studies at CPUT; the Office for Research and Development at CUT; Research and Postgraduate Support Directorate at DUT; the Directorate of Research and Innovation at TUT; and Postgraduate Office at VUT. Regardless of the name, these PG/RCs are dedicated to postgraduate studies and research students, they assist with all aspects of research development, postgraduate studies, and funding and strive to create an enabling environment for emerging researchers. The question to be asked though is what quality of service is being offered by these PG/RCs? Are they providing a quality service in terms of students' perceptions and expectations? These are important considerations because research and knowledge dissemination apart from being the cornerstone of universities, also play a vital role in determining funding for institutions. It is therefore crucial to ensure quality research services to students who are the core business of any educational institution.

While the needs and expectations of undergraduate and prospective/new undergraduates

students have received substantial academic exposure by among others: Bitzer (2005); Bitzer (2009); Nel, Troskie-de Bruin and Bitzer (2009); Saunders (2005); and Tait and de Jager (2009) research regarding postgraduate students' experiences has been scant. The following section is an overview of research conducted both in SA and internationally on postgraduate development and support services at higher education institutions.

The studies of Bitzer (2011); Bitzer and Albertyn (2011); Lessing (2011); and Olivier (2007) address issues and concerns regarding postgraduate supervision. Gbadamosi and de Jager's (2009) investigation into the gap between students' perceived experience and the importance they hold of service delivery and the possible predictors of overall satisfaction with their university showed that students' perceived experience of service delivery was significantly lower than what they considered important in their universities. Perceptions of readiness for change, intention to leave, trust in management and support, living arrangements (accommodation) and academic performance emerged as significant predictors of students' overall satisfaction with the university, explaining up to 30% of its variance.

Albertyn, Kapp and Bitzer's (2008) study investigated exiting postgraduate students' performance and experiences and found that more Ph.D students completed their studies and in a shorter time than M.Phil. students. They also found that the need for supervision support in research skills was requested by more M.Phil. students than Ph.D students. Academic input of assessing progress and evaluating quality were regarded as the most important supervision need for students. Personal attributes, support from supervisors and institutional support were noted as factors contributing to success.

Research conducted by Winberg, Barnes, Ncube and Tshinu (2011) to investigate postgraduate students' experiences was delimited to postgraduate students' experiences in doing interdisciplinary research (IDR) study for a master's thesis. The themes that emerged from this study of postgraduate students' experiences in IDR studies were as

follows: the need for a ‘metadisciplinary’ understanding when conducting IDR; the additional time needed for IDR studies; the need for suitably qualified and experienced supervisors and examiners for IDR; the role of communication in IDR contexts; and developing and sustaining an IDR culture.

While many of the above studies have in common postgraduate researchers’ experience, and have been carried out to give HEIs recommendations for the improvement of their postgraduate development and support service, they tend to have limitations. To the best of the researcher’s knowledge no studies have been conducted on postgraduate students’ perceptions and expectations of research development and support services or on identifying best practice and building a quality model for a UoT PG/RC in terms of postgraduate studies and research development and support service delivery in SA. This study therefore addresses these gaps.

## **1.5 THE AIM AND OBJECTIVES OF THIS STUDY**

The aim of this study was to develop a quality assurance model for a university of technology postgraduate or research centre in South Africa.

In order to meet the above aim, the following objectives were addressed to:

- determine postgraduate students’ expectations of the service quality in terms of their postgraduate studies/research support and development;
- determine postgraduate students’ perceptions of the service quality they actually received from their PG/RCs;
- measure the gaps between students’ expectations and perceptions of service quality in terms of their PG/RCs;
- determine the service quality in terms of the PG/RCs from service providers’ point of view;

- compare service receivers' and service providers' point of views of service quality in terms of the PG/RCs;
- determine the structure and practices at UoTs in SA in terms of the PG/RCs; and
- determine the structure and practices at UoTs in Aus in terms of the PG/RCs.

The researcher intended to identify best practice in terms of postgraduate research development and support service delivery in the SA and Aus contexts in order to inform the development of a quality model for PG/RCs at UoTs in SA.

## **1.6 DEFINITION OF KEY TERMS**

### **1.6.1 Postgraduate study and the postgraduate student**

According to the UK Quality Assurance Agency for Higher Education (QAA) (2011), a postgraduate student is one who has attained a bachelor's degree or equivalent and is now studying for a qualification at a higher level. Postgraduate study refers to study towards an honour's, master's or doctoral degree, or a postgraduate diploma or certificate that is taken after having obtained a bachelor's degree and which may, depending on the degree taken, be through a taught course or through research (University of Kent homepage, 2011). In this study, a postgraduate student refers to a student studying toward a master's or doctoral qualification.

### **1.6.2 Research and Postgraduate or Research Centre**

Research is a process through which people attempt to achieve systematically and with the support of data the answer to a question, the resolution of a problem, or a greater understanding of a phenomenon (Leedy, 1997: 5). Higher Degree by Research (HDR) is indicated as a postgraduate program based on scholarly or scientific investigation or inquiry (QUT homepage, 2012).

The PG/RCs are called different names at different institutions, such as ‘University Graduate School’ at the University of Technology, Sydney; ‘Office of Research’ at the Queensland University of Technology, etc. Lues and Lategan (2006: 111) summarize their role and main function with particular reference to the Office for Research and Development at Central University of Technology as:

the facilitation of the sustainable development of research and postgraduate studies and it administers responsibilities, including research planning, the management of external research projects, postgraduate grant administration, research development programmes and research output administration.

## **1.7 OVERVIEW OF CHAPTERS**

### **1.7.1 Chapter one: Introduction**

Chapter one introduced and highlighted the rationale for the study. It presented the situation at universities of technology in South Africa and the purposes of benchmarking with Australian UoTs. The research aims and objectives were briefly discussed.

### **1.7.2 Chapter two: Literature review**

Chapter two discusses the literature pertinent to this study. It includes an overview of the historical background of SA and Aus higher education, the Gap Model of service quality as the theoretical framework of this study, and the service quality instrument: SERVQUAL in terms of the postgraduate research students’ expectations and perceptions of service quality.

### **1.7.3 Chapter three: Research methodology**

Chapter three discusses the research framework, research design and statistical methods utilized for data analysis in this study. In particular, the data collection methods, questionnaire design, sampling methods and data analysis are explained. The amended

SERVQUAL instrument used for the postgraduate students to assess the service quality of their universities is presented before discussing the need to have a valid and reliable instrument to measure service quality in higher education.

#### **1.7.4 Chapter four: Analysis of results**

Chapter four presents the data analysis and research findings in five themes. The quality of services provided by the PG/RC and analyses of the SERVQUAL dimensions are presented in order to reveal the service quality gaps between students' expectations and perceptions. The organizational structure of the PG/RCs is then presented.

#### **1.7.5 Chapter five: Conclusions and recommendations**

Chapter five discusses the conclusions and recommendations emanating from the findings. A model for a PG/RC is presented. The limitations of the study are also discussed.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.0 INTRODUCTION**

Chapter one provided an introduction to this study. The research problem was identified and the rationale for this study was presented together with the research objectives. The research target and scope were described, and the structure of the dissertation was also clarified.

This chapter begins with a brief overview of higher education in SA, followed by an introduction of the Aus system of education before discussing PG/RCs in SA and Aus. In view of the significance of service quality in higher education it is of benefit to understand what service quality is and how it is conceptualized and measured. The service quality dimensions are therefore described. The service quality instrument: SERVQUAL is discussed in terms of the postgraduate research students' expectations and perceptions of service quality. The chapter concludes with a discussion of the Gap Model of service quality as the theoretical framework of this study.

### **2.1 A BRIEF OVERVIEW OF SOUTH AFRICAN HIGHER EDUCATION**

According to South African Universities Vice-Chancellors Association (SAUVCA, 2006), the University of SA was a federal university with a number of university colleges, over the thirty years following 1930, many of these colleges became fully fledged universities, including the Universities of Pretoria, Potchefstroom, Natal and the Free State. In the 20-year period from the mid-1960s to the mid-1980s, several universities were established, totaling 21 universities in SA prior to the transformation of the higher education landscape (Groenewald and Thulukanam, 2005: 86). With the growing focus on technical and vocational education to address existing imbalances and skills shortages (SAUVCA, 2006) the government identified six technical colleges in SA for establishment and development as Colleges of Advanced Technical Education

(CATEs) in 1967 (du Pré 2009: vi). He adds that in 1979 these CATEs were re-designated technikons and established as post-secondary higher education institutions offering career-oriented certificates.

Prior to the first democratic elections in SA in 1994, resources in the higher education system were inequitably and inefficiently allocated; governance structures were undemocratic; access was highly skewed on racial lines; there was a lack of co-ordination, common goals and systematic planning; and there was an inability to respond to the economic and social needs of the majority of the population (Gillard, 2004: 13). Since the transition from apartheid to a post-apartheid state, higher education systems in SA are in the process of being transformed and restructured (Herbst and Conradie, 2011: 14) and research and development have now become a primary focus of higher education in SA (Waghid and le Grange, 2003: 5).

## **2.2 RESEARCH AND RESEARCH DEVELOPMENT AT SA UNIVERSITIES OF TECHNOLOGY**

### **2.2.1 Funding and research at SA UoTs**

The New Funding Framework (NFF) implemented in 2004 (de Villiers and Steyn, 2009: 45) by the Department of Education advocates one set of funding policies and mechanisms for the higher education system that is, for universities and technikons (Department of Education, 2001a). According to the Council on Higher Education (2007: 31), the New Funding Framework is goal-orientated and performance-related thus enabling the distribution of government grants to institutions in line with national goals, priorities and approved institutional plans. They explain further that the funding allocation is based on three categories, namely: Block Grants which are undesignated amounts to cover the operational costs of higher education institutions linked to the provision of teaching and research-related services; Earmarked Grants which are

designated for specific purposes; and Research and Development Grants which are of paramount concern particularly for the UoT sector.

According to Jinabhai (2003: 56), the Research and Development Grant component comprises three windows, namely: research scholarships, i.e. outputs at master's and PhD level; publication output computed at 0,75 unit allocation; and the facilitation of research collaboration at regional and national levels. Essack, Barnes, Jackson, Majosi, McInerney, Mtshali, Naidoo, Oosthuizen, and Suleman (2009: 277) explain that research output grants are a means of implementing the National Plan's proposals of enhancing research productivity, entrenching accountability for the use of research funds and allocating resources to institutions demonstrating research capacity/potential. It purports to provide incentives for institutions to become efficient, by subsidizing the outputs of research and teaching (Council on Higher Education, 2007: 39).

Govender (2011) states that the universities were due to collect R128 000 from the DoE for every journal article and R640 000 for every book published in 2009. This makes a combined total of R1.2-billion for published work. He adds that the Department paid R1billion to universities with master's and doctoral students involved in research and who graduated in 2009. Thus, it can be gauged that the output grants are determined by publication units and research master's and doctoral graduates (Department of Education, 2003); the latter incentivizing postgraduate studies by research as opposed to coursework although output grants are allocated pro-rata on the percentage of the research component of the postgraduate degree (Essack *et al.*, 2009: 277). Vaughan (2008: 92) stated that the development grant has obviously been included in the funding formula to encourage institutions to develop a stronger research culture.

Singh (2011: 1192) is concerned that in the short term, this funding formula could be detrimental to some institutions, and especially the UoTs that do not have sufficient research capacity or output. She adds that universities with low output will continue to underperform because they will only be receiving small amounts of funding

proportionate to their output. She states further that as such, the research rich institutions will continue to thrive while the research poor will continue to battle with less funding to purchase equipment, develop capacity, provide scholarships or bursaries to postgraduate students, thus perpetuating the cycle of low output.

With increasing competitive allocation of research funding and declining public funds for higher education, institutions are facing increasing pressure to produce research outputs (Madue, 2008), they therefore need to build a critical mass of researchers and academics with doctoral degrees and to offer postgraduate research qualifications to generate research output subsidies (Jinabhai, 2003: 57). In pursuing the priority of managing research development therefore, the UoTs committed themselves to an innovative focus on the management of research and research capacity-building amongst researchers that is staff and students (Lues, 2005: 100). Through various innovative strategies, universities have put in place postgraduate and/or research centres (PG/RCs) or offices to develop, promote and improve research participation and capacity among their staff and students.

### **2.2.2 PG/RCs at SA UoTs**

#### **2.2.2.1 PG/RC at the Cape Peninsula University of Technology**

The Centre for Postgraduate Studies (CPGS) was established in 2009 in order to effectively and efficiently co-ordinate all matters related to postgraduate studies at CPUT (CPUT homepage, 2012), it boasts a study hall where students have access to internet, various computer programmes and other resources. Their services include assistance with funding, research administration guidance, and mentoring of students and research supervisors (CPUT News, 2012).

#### 2.2.2.2 PG/RC at the Central University of Technology

Since 2002, with the structure of the Graduate School Board, Central Research Committee and Research Grants Awards Committee, the Office for Research and Development was positioned as an academic support service; the main purpose of which is to facilitate sustainable development of research and postgraduate studies at the CUT (CUT homepage, 2011b).

#### 2.2.2.3 PG/RC at the Durban University of Technology

At DUT, the Postgraduate Development and Support (PGDS) Directorate primarily focuses on managing the university's research activities and supporting the academic and research staff through research management and development systems, organizing research capacity building initiatives, providing research support and incentive structures to stimulate research. This Office is responsible for the research capacity development of both students and staff and raising awareness and administrating funding in the form of scholarships, grants and internal incentives (DUT homepage, 2012a).

#### 2.2.2.4 PG/RC at the Tshwane University of Technology

The TUT homepage (2012a) states that the Directorate of Research and Innovation (DRI) is the operational arm of the Central Research and Innovation Committee (CRIC) and functions as a central institutional advice and support service for mobilizing resources for Research and Innovation, and aims to ensure effective administrative support systems. The DRI also manages and promotes research and innovation at the University in the focus and niche areas and ensures the development of individual researchers, postgraduate students and postdoctoral fellows (TUT homepage, 2012b).

#### 2.2.2.5 PG/RC at the Vaal University of Technology

The Research Office at VUT provides administrative support for the university's research activities and advises staff on research matters and policy; and the Higher Degree Unit is responsible for the management and administration of all aspects of higher degree applications and scholarships for SA and international candidates (VUT homepage, 2012b).

### **2.3 A BRIEF OVERVIEW OF HIGHER EDUCATION IN AUSTRALIA**

The education system in Australia is governed by each state individually (Uniguru, 2011). He adds that Australia is a federation of states and territories with separate and defined spheres for the two levels of government. The Commonwealth government is mainly concerned with the co-ordination of policies and strategies for higher education; the states and territories, on the other hand, are responsible for delivery of quality higher education within their respective borders (Korobacz and Ferouleva, 2008: 4). The majority of state and territory governments have regulatory responsibility for education and training; they are also responsible for funding the vocational and training sector, while the Australian Government has primary responsibility for public funding of the higher education sector (Australian Government – DFAT, 2008).

According to the Australian Trade Commission (2011), Australia has 37 government-funded public universities and two private universities. Universities engage in teaching and research across a wide range of professional and academic disciplines. University studies can be undertaken at the undergraduate or postgraduate level, leading to awards ranging from graduate certificate to doctorate (Australian Government – ATC, 2011). Universities are multi-disciplinary institutions that are self-governing and are responsible for their own management structure, budgets, resource allocation, staff and student enrolments, accreditation of qualifications, quality assurance and curriculum (Australian Government – AEI, 2011).

According to Puri (2009), Australia's public universities are variously grouped as follows:

- The Group of Eight (Go8) is a coalition of leading Australian universities, intensive in research and comprehensive in general and professional education (Go8 Australia homepage, 2011a). The Go8 includes The Universities of Queensland; The Universities of Sydney; The Universities of Melbourne; The Universities of New South Wales; The Universities of Adelaide, Australia; and The Universities of Western Australia together with the Australian National University and Monash University (Go8 Australia homepage, 2011b).
- Innovative Research Universities represent a number of research-intensive institutions, with most being established in the 1960s and 1970s, e.g. James Cook University, La Trobe University and University of Newcastle (Innovative Research Universities homepage, 2011).
- The Australian Technology Network (ATN) universities grew largely from the former Institutes of Technology and include RMIT University, Queensland University of Technology, Curtin University, the University of Technology Sydney and the University of South Australia (ATN homepage, 2011). According to Education Info Online, during the 1970s to early 1990s, the term 'Institutes of Technology' was used to describe state owned and funded technical schools that offered both vocational and higher education. In the 1990s most of these merged with existing universities, or formed new ones on their own. McLean (2012) comments that the big mergers combined Institutes of Technology with Colleges of Advanced Education; and these occurred in every state and made the ATN institutions more like comprehensive universities rather than narrow science and technology-focused institutions. These new universities often took the title University of Technology.

## **2.4 PG/RCs at Aus UoTs**

### **2.4.1 University of Technology Sydney**

The University Graduate School is one of the key providers of research skills and development at UTS (UTS homepage, 2012) and provides central support for research students, promotes innovation and excellence in research education and researcher development across the university (UTS homepage, 2011c).

### **2.4.2 Swinburne University of Technology**

Swinburne University of Technology (SUT) is an Australian public dual sector university which offers both Technical and Further Education (TAFE) and higher education qualifications (SUT homepage, 2011). Swinburne Research is the administrative hub of research at SUT and it undertakes a range of administrative, communication, reporting and policy functions across a portfolio of responsibilities (SUT homepage, 2012).

### **2.4.3 RMIT University**

The School of Graduate Research (SGR) is responsible for promoting and enhancing research education and training at RMIT University, and works to ensure a high quality research experience for students and supervisors by providing efficient administration, regular operational review and student and supervisor training (RMIT University homepage, 2012).

### **2.4.4 Queensland University of Technology**

QUT Office of Research provides researchers with opportunities to develop their professional skills and make the most of funding and training available (QUT homepage, 2011b). The Office also plans and organizes a variety of research development

initiatives to enhance the research endeavours of academic staff and postgraduate students (QUT homepage, 2007). The Research Students Centre (RSC) provides services in the areas of enrolment, orientation, candidature, scholarships, travel grants, and examinations (QUT homepage, 2011a).

Having briefly considered the role of PG/RCs in SA and Aus, it is necessary to focus on an assessment of the needs of current students in higher education. One approach in meeting this challenge is to focus on ‘service quality’ (Ham, Johnson, Weinstein, Plank, Johnson, 2003: 197). What does ‘service quality’ mean? What is the role of service quality in higher education institutions? How can higher education institutions deliver quality service to their customers? The following sections address all of these issues.

## **2.5 UNDERSTANDING SERVICE QUALITY**

Service quality unlike product quality is hard to define and measure because of the inter-relationship of user expectations and the impact of specific features of service such as intangibility, inseparability, heterogeneity, and perishability (Parasuraman, Zeithaml and Berry, 1985; Zeithaml, Bitner and Gremler, 2006). According to Grönroos (1990: 82), service quality is the result of what consumers receive and how they perceive it. Berry and Parasuraman (1991: 81) concur that clients assess service quality by comparing what they want/expect with their perception of what they actually receive, i.e., customers’ expectations and perceptions of service (Yeo, 2008: 267).

### **2.5.1 Customer expectation and perception of service**

Gbadamosi and de Jager (2009: 881) explain that expectations and perceptions are measured separately to produce a relative measure of how well the service was performed relative to the consumers’ expectation.

#### 2.5.1.1 Customer expectations of service

Customer expectations are pre-trial beliefs about a product or service (Olson and Dover, 1979). In reality, however, customers have many sources of information that lead to expectations about upcoming service encounters with a particular company (Boulding, Kalra, Staelin and Zeithaml, 1993: 7). These sources include prior exposure to the service, word-of-mouth, expert opinion, publicity, and communications controlled by the company (e.g. advertising, personal selling, and price), as well as prior exposure to competitive services (Zeithaml, Berry, and Parasuraman, 1993).

#### 2.5.1.2 Customer perceptions of service

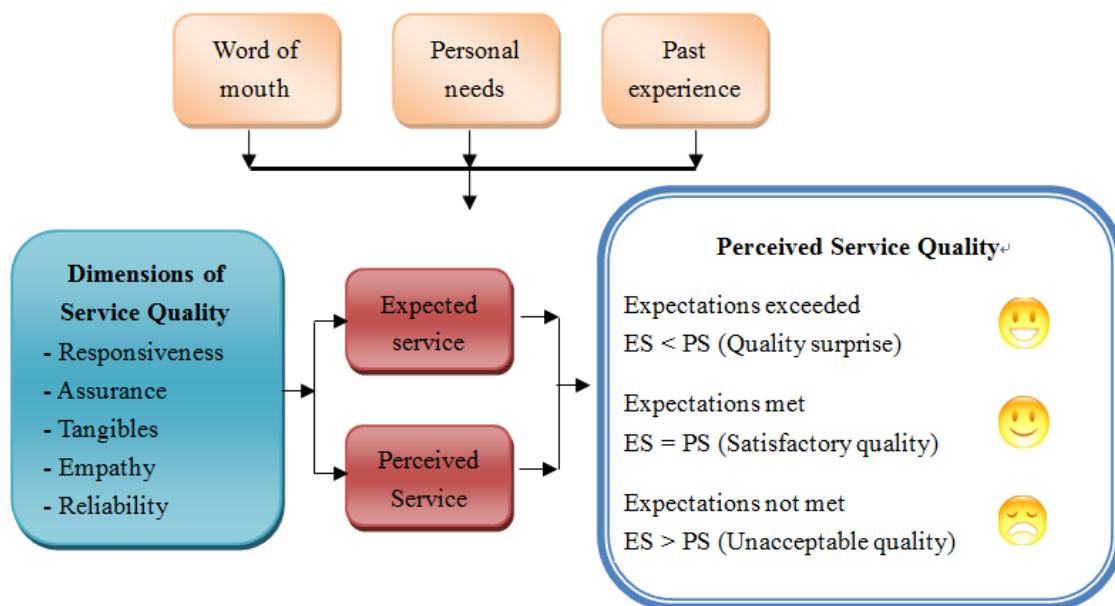
Perceptions of the dimensions of service quality are viewed to be a function of a customer's prior expectations of what will and what should transpire during a service encounter, as well as the customer's most recent contact with the service delivery system (Boulding *et al.*, 1993: 7). Zeithaml and Bitner (2000: 27) describe customer perceptions as the subjective assessments of actual service experiences. This refers to how customers perceive services, how they assess the quality of received service, whether they are satisfied, and whether they have received good value. Therefore, customer perceptions of service are also defined as customer perceptions of quality, satisfaction and value (Zeithaml and Bitner, 2000: 27). In short, customers' perceptions are the way that people see something based on their experience (Pan, 2008: 27).

#### 2.5.1.3 Factors that influence service expectations

According to Figure 2.1 (on page 23), when expectations are exceeded, service is perceived to be of exceptional quality and it is also a pleasant surprise. When expectations are not met, service quality is deemed unacceptable. When expectations are confirmed by perceived service, quality is satisfactory. These expectations are based on several sources, including past experience, word of mouth, and personal needs.

*Past experience* is the customer's previous experiences to the related service and will likely change the customer's expectation, it can therefore efficiently and effectively adjust service expectations and decrease dissatisfaction for customers (Pan, 2008: 27). Indeed, Zeithaml *et al.* (1993) argue that past experience is the most important factor in shaping customer expectations of a service. The fact that customers evaluate much of the service after purchase and consumption has implications for their initial information search (Thwaites, 1999: 513). If customers have no personal experience, they seek and rely more on personal sources (friends, experts), i.e. word-of-mouth communication when evaluating services before purchase (Zeithaml and Bitner, 1996).

*Figure 2.1: Perceived Service Quality*



(Source: Parasuraman, Zeithaml and Berry, 1985: 48)

*Word-of-mouth communication* between customers are rich in information and opinions, and referrals are generally perceived to be among the most influential and unbiased sources of marketplace influence (Claycomb and Martin, 2002: 629). The literature suggests that potential customers will be more influenced by word-of-mouth communication and expert comment rather than, for example, mainstream media advertising (Thwaites, 1999: 513). Experts' comments (which include consumer reports,

friends, and family) can affect the levels of desired and predicted service (Caro and Garc ía, 2006: 64). David Chapman (Joseph and Joseph, 1998: 91) found that comments made by these people may influence students' decision as to which institution they should choose, and their expectations of a particular tertiary institution.

*Personal needs* refer to those states or conditions that are essential to the physical or psychological well being of the customer (Pan, 2008: 25). Each customer has different needs for each service; this need therefore also influences customers to judge the quality of the service, and whether or not it has satisfied their needs (Hensley and Dobie, 2005: 86).

## **2.6 SERVICE QUALITY IN THE HIGHER EDUCATION CONTEXT**

Service quality has been suggested as a means of developing a competitive advantage (Landrum, Prybutok and Zhang, 2007: 104). The interest in service quality therefore finds its way into the higher education arena (Kelsey and Bond, 2001; Pariseau and McDaniel, 1997) as the future success of colleges and universities will increasingly be determined by how they satisfy their customers. Sharabi (2010: 317) points out that only those institutions focusing mainly on the needs of their customers, will survive competition. In view of the above, this section looks at service quality in higher education context.

### **2.6.1 Definition of 'customers' in the higher education context**

In higher education, the definition of 'customer' is quite different from the manufacturing or general services since groups such as students, employers, academic staff, government and families are all customers of the education system with a diversity of requirements (Owlia and Aspinwall, 1996: 18). Contemporary researchers and writers in the field of quality in education (Langford and Clearly, 1995; Sallis, 1993; Siegel and Byrne, 1994) assign the role of external customers to students, employers and the society as a whole. Sallis (1993) classifies external customers into three levels:

primary external customers, i.e. the learners; secondary external customers, i.e. the parents, governors and employers; and tertiary external customers, i.e. the labour market, the government and society. Varnavas and Soteriou (2002: 67) explain that any person next in line within the organization in reference who adds value to the educational service, i.e. teaching and support staff, is assigned the role of internal customer.

### **2.6.2 Quality in the education context**

The most influential factor in quality learning as McLeod and Reynolds (2007: 44) suggest, is not the institution students attend, nor students' socio-economic status, but the quality of teaching that students receive, and the research output of staff. Mizikaci (2006: 37) adds that globally students are becoming more and more assertive and critical; consequently higher education institutions have to address their increasing dissatisfaction with the performance of higher education systems by improving them. Universities too have realized that their long-term survival depends on how good their services are and that quality sets one university apart from the rest (Tsinidou, Gerogiannis and Fitsilis, 2010: 227). As a result, service excellence is becoming a major component of higher education institutions' drive to achieve and maintain sustainable competitive advantage (Khan and Matlay, 2009: 771). Hence, service quality becomes the means for many institutions to retain student numbers and to capture the educational market (Yeo, 2008: 266).

Quality in education is determined by the extent to which students' needs and expectations are satisfied (Tan and Kek, 2004: 17). Chua (2004) looked at quality issues in higher education from a marketing perspective to understand customers' need *via* their perception of quality. His focus was on parents, students, faculty members and employers, and he found that each group understands the concept of quality with regards to higher education in different ways. He also found that: parents view quality as relating to input (e.g. ranking of the universities, reputations) and output (e.g. employability, academic placement); students see quality as relating to the educational

process (e.g. courses and teaching) and outputs; faculty members perceive quality as relating to the whole education system (i.e. input, process and output); and employers see quality as primarily related to the output (e.g. the skill set that the student brings to the workplace) (Gbadamosi and de Jager, 2009: 880).

The Quality Assurance Agency (QAA) for higher education, the body charged with providing an integrated quality assurance service for higher education across the United Kingdom defines academic quality as a way of describing how well the learning opportunities available to students help them to achieve their goal. They add that it is about making sure that appropriate and effective teaching, support, assessment and learning opportunities are provided for them (QAA, 2004: 1).

### **2.6.3 Delivery of top-quality services to customers in education**

In South Africa, traditional students and their expectations have changed and are still changing (Gbadamosi and de Jager, 2009: 880). They add that today's South African higher education students comprise not only the young and mature students; they include more working class people, more women and more part-time students. There are undoubtedly different groups of students who may have both different objectives in studying and different perspectives of their role as customers (Eagle and Brennan, 2007: 47). According to Sharabi (2010: 318), both the students and their parents are looking for added value for their money and the higher education institutes have to deliver quality that is compatible with students' expectations and needs (Smith, Smith and Clarke, 2007: 334). It is therefore important for universities to fully identify their mission with the customers they serve and their needs and expectations (Manuel, 2008: 12).

Continuous improvement of existing standards is necessary for increased student satisfaction (Gbadamosi and de Jager, 2009: 877). Customer satisfaction can be defined as the attitude or feeling of a customer towards a product or service following the usage

of it (Tsinidou, Gerogiannis and Fitsilis, 2010: 228). Both levels of satisfaction and perception of quality will likely determine students' retention at higher education institutions (Gbadamosi and de Jager, 2009: 877).

To deliver top-quality service to their customers, McKinnon, Walker and Davis (2000: 94) suggest that:

- universities should provide student support services which are sufficiently comprehensive and flexible to match closely the student needs implicit in the university's particular mission, values, and strategic plan;
- expectations of support services should be set and levels of success monitored annually;
- services should be well integrated with core teaching and learning functions;
- services should be linked to transparent processes for student feedback and arrangements for frequent adjustments, and
- students and staff should know what administrative and support services are available and how these are to be accessed.

It is also important to find out what factors give rise to customer satisfaction. Accordingly, there is a continuing need to define the quality dimensions in higher education and to measure students' satisfaction based on the relevant quality dimensions in order to improve the higher education systems (Sharabi, 2010: 318).

## **2.7 QUALITY DIMENSIONS AND CRITERIA**

### **2.7.1 Quality dimensions**

The most well-known set of quality dimensions was proposed by Parasuraman, Zeithaml and Berry (1985), and Zeithaml, Parasuraman and Berry (1990) which initially included:

- Reliability: the service is carried out in the way it is promised.

- Responsiveness: services are carried out promptly according to the needs of the customers.
- Competence: the staff of the service provider have the knowledge and skills required for delivering the service in a proper way.
- Access: concerns, e.g. opening hours, physical location, etc.
- Courtesy: the staff is polite, friendly, respectful, etc.
- Communication: keeping the customers informed in a language that they can understand and listening to them.
- Credibility: the service provider is trustworthy, believable and honest.
- Security: freedom from danger, risk or doubt.
- Understanding the customer: the service provider makes an effort to understand the needs and wants of the individual customers.
- Tangibles: physical objects that are needed for carrying out the service such as facilities, equipment, etc.

According to Pan (2008: 28), the ten dimensions above are not necessarily independent of each other; there could be some overlap between the categories. As a result of a further study, Parasuraman, Zeithaml and Berry (1988) combined the ten original determinants into five dimensions of quality: tangibles, reliability, responsiveness, assurance (including competence, courtesy, credibility, security) and empathy (including access, communication and understanding). These five dimensions were found relevant for various business services (Grönroos, 2000: 74) as customers use all or some of the dimensions to determine service quality perceptions (Pan, 2008: 28).

### **2.7.2 Criteria of service quality**

In an alternative framework, Grönroos (2000) presents a compilation of seven criteria of service quality perceived as good. He claims that these criteria are an integration of available studies and conceptual work as follows:

- Professionalism and skills. The service provider has the knowledge and skills required to solve the customer's problem.
- Attitudes and behaviour. The service employees are concerned about the customers and their problems.
- Accessibility and flexibility. It is easy to get access to the service and the provider is prepared to adjust to the demands and wishes of the customers.
- Reliability and trustworthiness. Customers can rely on the service provider to keep promises and perform with the best interest of the customers at heart.
- Service recovery. Whenever something goes wrong, the service provider will take action to find a new, acceptable solution.
- Serviscape. The physical surrounding and other aspects of the environment support a positive experience.
- Reputation and credibility. The service provider can be trusted, gives adequate value for money and stands for values, which can be shared by the customer.

Although these general quality dimensions and criteria are important for a conceptual understanding of services, they may not be sufficient as it is important to study quality in each specific situation. Consequently, it is often valuable to complement the general quality dimensions with specific quality dimensions that are developed for the particular situation that one faces (Lagrosen, Seyyed-Hashemi and Leitner, 2004: 61). For this reason, the next section adopts the SERVQUAL dimensions which are adapted from Zeithaml, Parasuraman and Berry into the higher education context.

## **2.8 SERVQUAL MEASUREMENT THEORY**

Measuring service quality is a challenge because customer satisfaction is determined by many intangible factors, unlike a product with physical features that can be objectively measured, service quality contains many psychological features (Fitzsimmons and Fitzsimmons, 2006: 131). According to Yeo (2008: 268), in contrast to products, services are usually short-lived as they are consumed as long as the activity or process

lasts, hence, service processes are perishable and cannot be stored in the way physical products can. As such each customer's expectation of service quality is different and this has led to a lack of standardization as it varies from situation to situation.

Customers are ideal for appraising how well employees have provided quality service because they are in a better position to observe employee performance than employees' supervisors (Frost and Kumar, 2000: 365). Hence, adapting SERVQUAL to provide a qualitative dimension to the evaluation of service quality in higher education would be appropriate (Yeo, 2008: 272). SERVQUAL has its theoretical foundations in the Gap Model and defines service quality in terms of the difference between what is expected from a service encounter and the perception of the actual service encounter (Parasuraman *et al.* 1988).

In 1988, Parasuraman, Zeithaml and Berry developed a 22-item instrument named SERVQUAL based on the Gap Model to measure service quality (Frost and Kumar, 2000: 365). The instrument assesses customers' perception of quality by comparing their expectation with their perception of the services received across five service quality dimensions, namely: tangibles; reliability; responsiveness; assurance and empathy (Brochado, 2009: 176). The techniques used to develop the measuring instrument were thorough and rigorous with the validity and reliability of the scales well documented (Parasuraman *et al.*, 1985, 1988, 1991; Zeithaml *et al.*, 1990).

The SERVQUAL instrument consists of two sets of 22 statements: the first set aims to determine a customer's expectations of a service firm; while the second set seeks to ascertain the customer's perceptions of the firm's performance (Gregorio and Cronemyr, 2011: 166). The results of the survey are then used to identify positive and negative gaps in the firm's performance on five service quality dimensions: tangibility, reliability, responsiveness, assurance, and empathy (Robinson, 1999) which were discussed above. The SERVQUAL is a seven-point Likert scale instrument which measures consumer expectations and perceptions of service quality. Service quality is determined using gap

analysis, that is, the difference between expectations and perceptions of quality (see Figure 2.2 below). Rowley (1997: 9) also states that managing service quality is concerned with managing the gaps between expectations and perceptions on the part of management, employers and customers. The most important gap is that between customer's expectation of service and their perception of the service actually delivered - and this is the gap that SERVQUAL is designed to investigate (Rowley, 1997: 9).

*Figure 2.2: Measurement of SERVQUAL service quality*



(Source: Gupta and Chen, 1995: 30)

There are many empirical applications of the SERVQUAL paradigm to measure service quality in higher education (Anderson, 1995; Brochado, 2009; Cuthbert, 1996a, b; Hill, 1995; Ho and Wearn, 1995; Kwan and Ng, 1999; O'Neil and Wright, 2002; Sahney, Banwet and Karunes, 2004; Sohail and Shaikh, 2004; Tan and Kek, 2004). An adapted version of SERVQUAL was used by Faganel (2010) to measure the quality perception gap inside higher education institutions; Arambewela and Hall (2009) used SERVQUAL to investigate an empirical model of international student satisfaction; and Manuel (2008) and Arpin (2007) used SERVQUAL as an instrument to find out students' perceptions of service quality.

The SERVQUAL instrument, despite criticisms by some researchers, still seems to be the most practical model for the measurement of service quality available in the literature and thus expectations should be considered when assessing service quality in

higher education (Cuthbert, 1996b: 34). The advantage of this model over others is that the SERVQUAL approach is one that integrates both the dimensions of perception and expectation, eliminating student bias caused by recent assessment experiences as affecting their rating decisions (Yeo, 2008: 272). He adds that asking students to consider their expectations as well as whole-person experiences provides an opportunity for reflection based on personal desires and contextual considerations, in this way; rating and feedback provided by students would be more objective and less erratic.

According to Rowley (1997: 9), while theoretical investigations tend to focus on the gap between expectations and perceptions, there will be occasions when it is necessary to measure, and subsequently to address, one or more of the other gaps in the delivery of service quality. The development of the Gap Model (Figure 2.3 on page 33) by Parasuraman *et al.* (1985) opened new horizons to the understanding of service quality (Nadiri, Kandampully and Hussain, 2009: 525). As Frost and Kumar (2000: 365) explain, SERVQUAL, which is used for performing a gap analysis technique is based on the Gaps Model. The next section discusses the Gap Model as a framework for determining service quality.

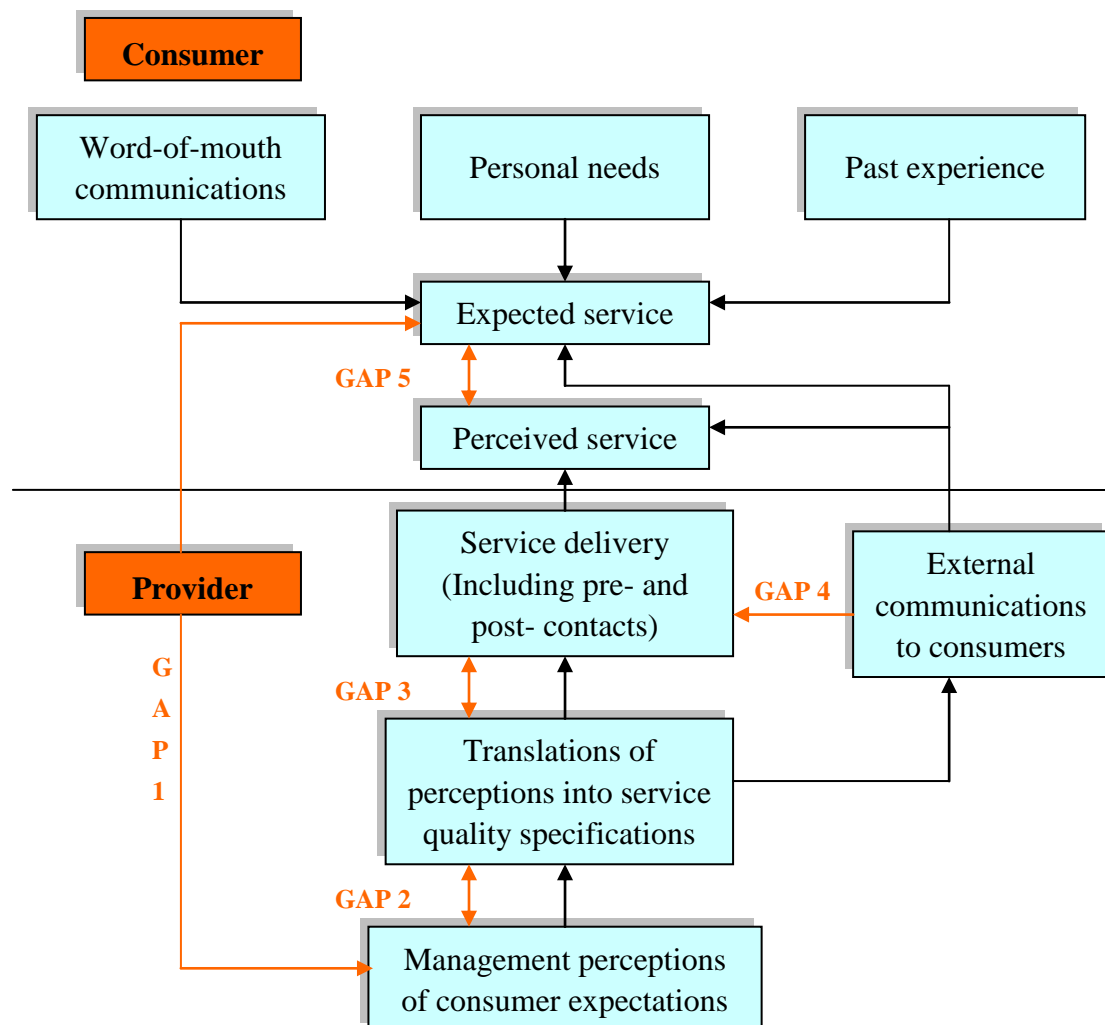
## **2.9 THEORETICAL FRAMEWORK: GAP MODEL OF SERVICE QUALITY**

Having discussed service quality above, this section explains the Gap Model as the theoretical framework of this study. Service quality of the PG/RCs in this study was determined by measuring the service gaps in terms of student perceptions and expectations so that steps may be taken to close these gaps in an attempt to improve service quality.

According to Parasuraman, Zeithaml and Berry (1997); and Nadiri, Kandampully and Hussain (2003), information on service quality gaps can help managers to diagnose where performance improvement can best be targeted. Identifying the largest negative gaps combined with assessment of where expectations are highest, facilitates

prioritization of performance improvement (Shekarchizadeh, Rasli and Hon-Tat, 2011: 69). Equally, positive gap scores will imply expectations are not just being met, but exceeded. This information will allow managers to review whether they may be ‘over-supplying’ this particular feature of the service and whether there is potential for re-deployment of resources into features which are underperforming (Shahin, 2008: 5). It provides a useful and practical framework for considering any service offering. According to Deans and von Allmen (2003), the Gap Model in Figure 2.3 clearly separates the service provider from the customer and demonstrates how service quality emerges. They add that the upper part of the model includes phenomena related to the customer while the lower part shows phenomena related to the service provider.

*Figure 2.3: Gap Model of Service Quality*



(Source: Parasuraman, Zeithaml, Berry, 1985: 44)

In Figure 2.3 (on page 33), expected service is a function of the customer's past experience, personal needs and word-of-mouth communication. It is also influenced by the market communication activities of the company. The service experienced which in this model is called perceived service, is the outcome of a series of internal decisions and activities (Grönroos, 2000: 101). He explains that managements' perceptions of customer expectations guide decisions about service quality specifications to be followed by the organization when service delivery (the execution of the service process) takes place. He states further that the customer experiences the service delivery and production process as a process-related quality component, and the technical solution received by the process as an outcome-related quality component.

In Figure 2.3 (on page 33) five quality gaps are illustrated which are the result of inconsistencies in the quality management process, and these are discussed below.

### **2.9.1 The management perception gap (Gap 1)**

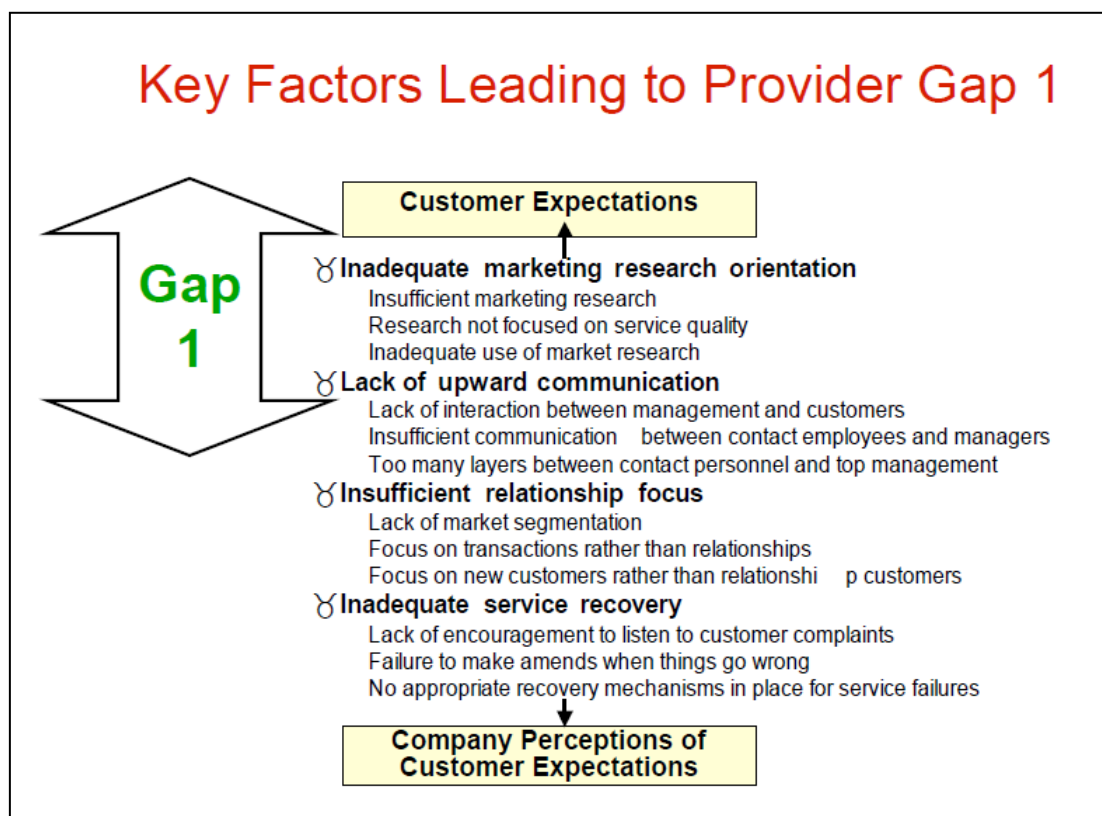
This gap is caused when management perceives quality expectations inaccurately, for example, in the higher education environment, the students may place greater emphasis on faculty office operating hours convenient to them than advanced and modern layout of the office, but management may perceive modern layout to be more important.

#### **2.9.1.1 Reasons for the Gap:**

Four main factors can contribute to the Management Perception Gap (*see* figure 2.4 on page 35), namely: inadequate marketing research orientation; lack of upward communication; insufficient relationship focus; and inadequate service delivery. DeMoranville and Bienstock, (2003: 220); and Pan (2008: 35) caution that it is absolutely necessary to conduct sound market research regularly if service providers want to understand customers' needs.

*Inadequate marketing research orientation:* Management does not do or does not make sufficient use of marketing research based on service quality. Gbadamosi and de Jager (2009: 879); and Moogan, Baron and Bainbridge (2001: 197) caution that universities should be aware of their own offerings and how these are perceived in the market place if they are to satisfy students' expectations. To understand students' needs and expectations, at QUT, for example, the RSC gathers student feedback on a regular basis about all aspects of the postgraduate research experience assist students in resolving difficulties and complaints (QUT homepage, 2011a).

Figure 2.4: Key factors leading to the management perception gap



(Source: Service Management, 2006: 7)

*Lack of upward communication:* Insufficient communication with employees or too much bureaucracy, in other words, too many layers of management can interfere with the flow of objective information (Pan, 2008: 35). This may cause lack of interaction

between management and customers, and insufficient communication between contact employees and managers (Service Management, 2006: 7). In the higher education context there may be too many procedural layers between the front-end employees (professors and non-teaching staff) and board of management such as many redundant layers and sub-layers through head, principal/dean, registrar, and vice chancellor in order to have link with students, teachers and non-teachers (Rajasekhar, Muninarayanappa and Reddy, 2009: 221). Waghid (2009: 847) also says that a lack of communication at all levels of institutional life remains a problem because miscommunication between the governing and management structures of an institution, and/or between academic and administrative staff and students would invariably result in untenable situations which would adversely impact the efficient functioning of higher education.

*Insufficient relationship focus:* There is more focus on business processes rather than relationships, not enough attention is paid to existing relationships, and the management focuses on new customers rather than on keeping good relations with current customers (Service Management, 2006: 7). This inaccurate and unilateral market orientation causes management and empowered employees to ignore and lose their potential customers (Pan, 2008: 35).

*Lack of service recovery:* No recovery mechanisms in place for when things do not go according to plan and insufficient attention to customer complaints leads to an increase in the degree of customers' dissatisfaction (Pan, 2008: 35). Service recovery involves correcting mistakes when they occur and offsetting customers' inconveniences and other negative consequences caused by these mistakes (Claycomb and Martin, 2002: 629).

The customers are those who experience the various aspects of the service, and therefore, ignoring the customers' remarks and complaints will ultimately harm the organization's success; customer complaints should therefore be viewed as a means of

improving service (Sharabi, 2010: 320). Through service recovery, service failures can be transformed into positive acts that strengthen customers' attitudes toward the firm (Bejou and Palmer, 1998; Bitner, Booms and Tetreault, 1990). In fact, customer satisfaction with the process of service recovery is often more important than the initial service attributes in influencing overall customer satisfaction, future purchase intentions, and positive word-of-mouth communication by customers (Claycomb and Martin, 2002: 629).

In the education context, close contact with customers, attention and response to their complaints, criticism and suggestions will help the higher education institutions implement improvements in their systems (Sharabi, 2002). A good example is the University of Technology Sydney. Student Ombuds exist at UTS to ensure that all students receive fair and equitable treatment, they deal with complaints from students who have grievances related to either administrative or academic decisions (UTS homepage, 2011b).

#### 2.9.1.2 Strategies for closing the gap

This gap appears because the service provider does not fully perceive or understand how customers formulate their expectations that arise from past experience with the firm and its competitors, personal needs, and even word-of-mouth (Zeithaml *et al.*, 2006: 35). In short, the service firms could be offering wrong or unsatisfactory service to their customers (Rosene, 2003: 52). The gap can exist because there is insufficient or no dialogue between providers and users or because the organisation is unwilling to investigate expectations or address the issues that do emerge (Deans and von Allmen, 2003). The problem is exacerbated by the fact that not all clients are the same and therefore have different requirements, expectations and needs. This inadequacy can be resolved by always implementing better research so that the needs and wishes of the customer are better observed and appreciated (Grönroos, 2000:102).

It is essential to obtain feedback from staff members regarding the universities' service standards. This feedback should be incorporated in the future service standard updates (Gupta and Chen, 1995: 33). Customer feedback is also an established concept of strategic planning (Lovelock, 1991). It is therefore critical that educational institutions monitor their performance on a regular basis. Marketing controls are also necessary if the institution is to remain an attractive option for potential students (Joseph and Joseph, 1998).

### **2.9.2 The quality specification gap (Gap 2)**

Gap 2 occurs between management's perceptions of customer expectations and the actual specifications set for service delivery (Zeithaml *et al.*, 1990: 41), so even if there is sufficient accurate information on customer expectations, planning of quality specifications may fail due to lack of real commitment to service quality among management (Jaipuria, 2006: 19). For example, in the universities, management may perceive that students expect the faculty office to deal with their scholarship applications in good time. To students 'good time' may mean within one week; however, management may have another interpretation of 'good time' and may design delivery such that funding applications are dealt with within one month (taking into account sub-services, time, people factors, etc.), a service design gap is thus created.

#### **2.9.2.1 Reasons for the Gap:**

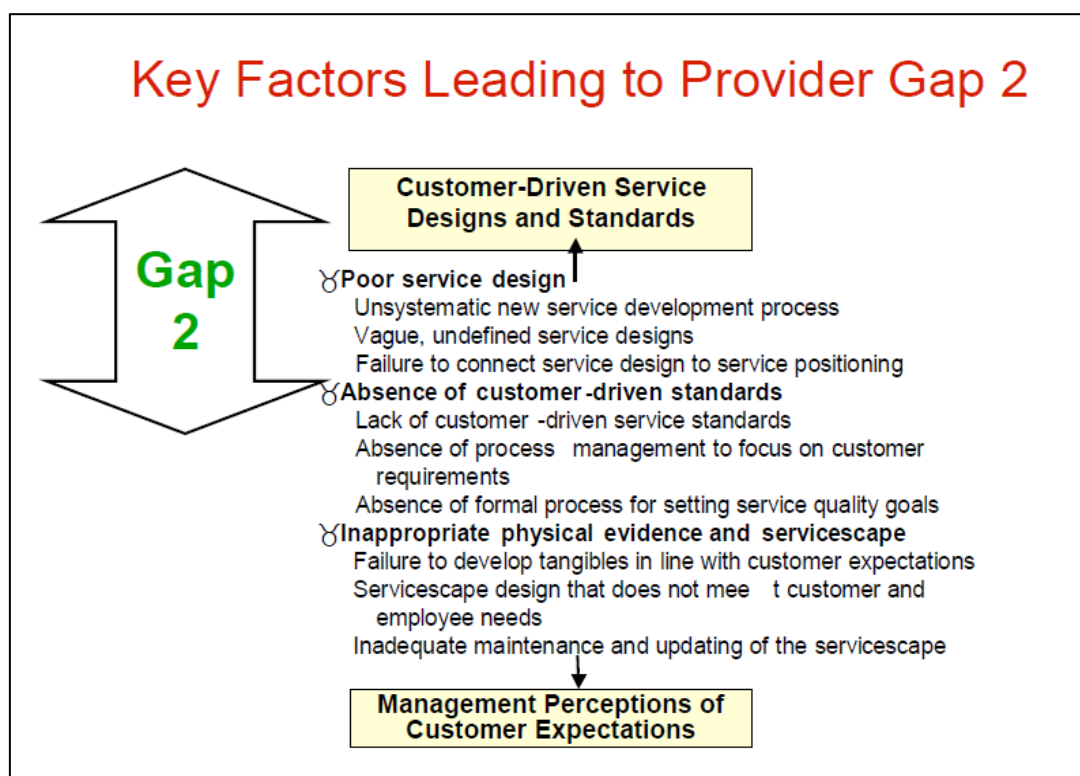
This gap is a result of: failure to connect service design to service positioning; absence of customer-driven standards; inappropriate physical evidence and servicescape (*see* figure 2.5 on page 39):

*Failure to connect service design to service positioning:* According to Moritz (2005: 39) service design is the design of the overall experience of service as well as the design of the process and strategy to provide that service. He explains that service design is a

process across the four D's – Discover, Define, Develop and Deliver, it is about understanding the client, organization and market, developing ideas, translating them into feasible solutions and helping to implement them.

The absence of sound strategic planning (Newall and Dale, 1990; Whalen and Rahim, 1994), giving quality planning low priority (Juran, 1986) and a lack of clear goal-setting in the organization from top management (Grönroos, 2000) can lead to this quality gap. The pre-planning stage of developing the right attitude and level of awareness is therefore considered crucial in achieving success in a quality improvement program (Oakland, 1989); organizations should therefore identify beforehand the stages that their processes will undergo (Talib, Rahman and Qureshi, 2011: 10).

*Figure 2.5: Key factors leading to the quality specification gap*



(Source: Service Management, 2006: 7)

*Absence of customer-driven standards:* Customer focus which emphasizes the service relationship between an organization and its customers (Varnavas and Soteriou, 2002: 66; *see also* Wang, 2010) is a core principle of quality management. Absence of this focus may be the result of managements' focus on cost reduction and short-term profit rather than on customer requirements (Metters, King-Metters, Pullman and Walton, 2006: 187). This holds true for the universities as well. The University of Technology Sydney for example, express this student-focus driven standard through significant improvements in the physical and information technology infrastructure, the services provided to students and the broader conception of the student experience to include the social, sporting and culture life of students (UTS homepage, 2011a).

Wang (2010) points out that customer-driven quality can build trust, confidence, and loyalty from the students and their parents to the universities, providing it is meeting or exceeding customer expectations. Hertz (1999: 1) adds that customer-driven quality addresses not only product and service characteristics of a company but it also includes those features that differentiate products and services from competing companies. Achieving customer-driven quality therefore means focusing on the right existing customer resources and proactively seeking out new sources of information in order to determine needs (Fenner, 2009).

*Inappropriate physical evidence and servicescape:* According to Zeithaml *et al.* (2006), physical evidence refers to tangible cues associated with service quality. It is the environment that enables the organisation to provide the service and communicate to consumers (Aubert-Gamet, 1997). Physical evidence thus includes all aspects of the service provider's physical facilities, as well as other forms of communication with the customer, including facility exterior (e.g. parking), facility interior (e.g. decoration) and other tangibles (websites) (Holde and Berndt, 2011: 391). Holde and Berndt (2011: 390) and Hutton and Richardson (1995) concur that physical evidence (tangibles) is critical in services as it provides the client with an indication of the service offered while

impacting on the way in which the service is positioned and differentiated.

Servicescape is defined as an organisation's physical facility or environment where the service is offered (Countryman and Jang, 2006; Lovelock and Wright, 2002), or as the non-living features that comprise the service environment (Hoffman, Bateson, Wood, and Kenyon, 2009). The term servicescape refers to both exterior attributes (such as building exterior, signage, parking, admission office, and landscape) and interior attributes (such as design, layout, equipment and decoration) (Bitner, 1992; Zeithaml *et al.*, 2006;). The servicescape also influences customers' evaluations of other factors associated with determining perceived service quality (Aubert-Gamet, 1997; Bitner, 1992; Reimer and Kuehn, 2005).

Holde and Berndt (2011: 391) explain that both physical evidence and servicescape are used to evaluate the service before its purchase, and to assess satisfaction with the service during and after purchasing the service (Aubert-Gamet, 1997; Ursin, 2012; Zeithaml *et al.*, 2006).

#### 2.9.2.2 Strategies for closing the gap:

There is a dichotomy between the perceptions of providers and consumers (Jones, 1983; Shams and Hales, 1989). Crick and Spencer (2011: 468) posit that while service providers focus on specific service elements which include production and marketing processes, customers only see a unified whole; their emphasis is therefore on the totality of the experience. The implication for providers is that there must be a clear understanding of how to address the multiplicity of perceptions that are contingent on that subjective totality which is being assessed by customers (Crick and Spencer, 2011: 468).

Fitzsimmons and Fitzsimmons (2006: 131) point out that the gap results from management's inability to formulate target levels of service quality to meet perceptions of customer expectations and translate these into workable specifications. They further

explain that this gap may also result from a lack of management commitment to service quality or a perception of the unfeasibility of meeting customers' expectations; however, setting goals and standardizing service delivery tasks can close this gap. Grönroos (2000: 102-103) adds that commitment to service quality among management as well as service providers is far more important in closing this gap than any too-rigid goal-setting and planning procedure.

### **2.9.3 The service delivery gap (Gap 3)**

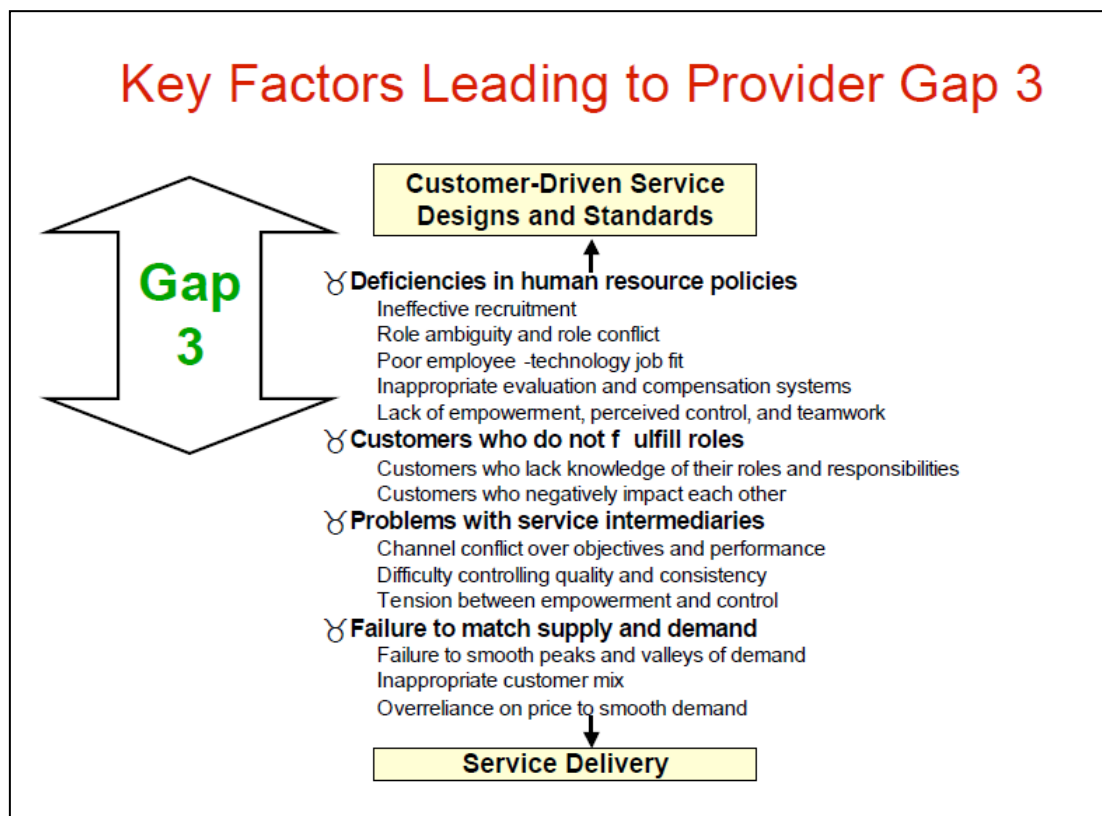
This gap means that quality specifications are not met by performance in the service production and delivery process (Manuel, 2008: 22). For instance, university management may establish a standard such that telephone calls should be answered within thirty seconds. However, if it takes more than thirty seconds for calls to be answered, regardless of the cause, there is a delivery gap (Brown, 2006).

#### **2.9.3.1 Reasons for the Gap:**

Figure 2.6 (on page 43) shows that there are four categories of causes for the existence of the service delivery gap, namely: employee roles; customer participation; intermediaries; and demand and supply (Zeithaml and Bitner, 1996). According to Bruhn and Georgi (2006: 226), service delivery refers to the process of transferring available service products for consumption or use. The service delivery gap will occur when employees cannot correctly translate service standards into actions (Rosene, 2003: 52). In order to achieve greater customer satisfaction, service organisations must manage and develop their employees as their most important resource (Kanji, 2007; Turnois, 2004). Executives must recognize that a service firm's employees exert a strong influence on the service quality perceived by consumers and that employee performance cannot always be standardized (Parasuraman *et al.*, 1985: 45). This is particularly true in higher education where employees need specialist skills to deliver a wide range of face-to-face services (Matlay, 2005, 2006).

Front-line contact employees at universities are those capable of making or breaking the students' or other customers' perception of quality at the moment of truth, they are important elements in the service delivery process (George, 1977; Lehtinen and Lehtinen, 1982). Consequently, it is important to understand the aspects of frontline employees' role that could contribute both to improving work performance and to strengthening the universities' competitive advantage (Slatten and Mehmetoglu, 2011: 88).

*Figure 2.6: Key factors leading to the service delivery gap*



(Source: Service Management, 2006: 8)

This service delivery gap can be also caused by factors which include lack of teamwork, poor employee selection, inadequate training, and inappropriate job design (Fitzsimmons and Fitzsimmons, 2006: 131). The skills and attitudes of personnel may

also cause problems if the wrong people are recruited or where employees are unable to adjust to the specifications and systems that guide operations (Jaipuria, 2006: 20).

The customer is the second vital factor influencing this gap (Pan, 2008: 36; Rowley, 1997: 10) as they are also guilty of not performing their role properly in the service exchange, e.g. by not accurately specifying their requirements which can impact negatively on the service experience of others (Deans and von Allmen, 2003). It is therefore important to consider the role of the student in the service environment. Customer-to-customer interaction especially in the form of recommendations that students make to their friends, family and colleagues also significantly affects customer satisfaction (Brochado, 2009: 175). Tutors and other service suppliers therefore need to appreciate what strategies can be adopted to manage, or to influence positively the ways in which students affect and support one another's experience of higher education (Rowley, 1997: 10). On the other hand, the education services are often intangible and difficult to measure since the outcome is reflected in the transformation of individuals in their knowledge, their characteristics, and their behaviour (Tsinidou, Gerogiannis and Fitsilis, 2010: 227).

Grönroos (2001: 103); and Metters *et al.* (2006: 187) indicate that the inadequacy of tools or technology also widen the gap. Perhaps the technology and operational and administrative systems do not support quality behavior, or they have been improperly introduced to the employees (Jaipuria, 2006: 20). So, while technology can be used to create new services which enable universities to serve customers better and distinguish themselves from their competitors (Zeithaml and Bitner, 2000: 23), inadequate technology could lead to poor service quality.

#### 2.9.3.2 Strategies for closing the gap:

Manuel (2008: 22) states that the solutions to these problems lie with management, they need to: improve recruitment processes so that poor decisions can be avoided;

resources in the form of people, systems and appropriate technology need to be in place and adequately monitored, and training needs to be improved to ensure execution of the quality specifications. Contact personnel must be properly trained, motivated and compensated according to service delivery standards; and there is a need to better control and synchronize supply and demand as peak demand periods can unfairly lead to customer dissatisfaction (Deans and von Allmen, 2003).

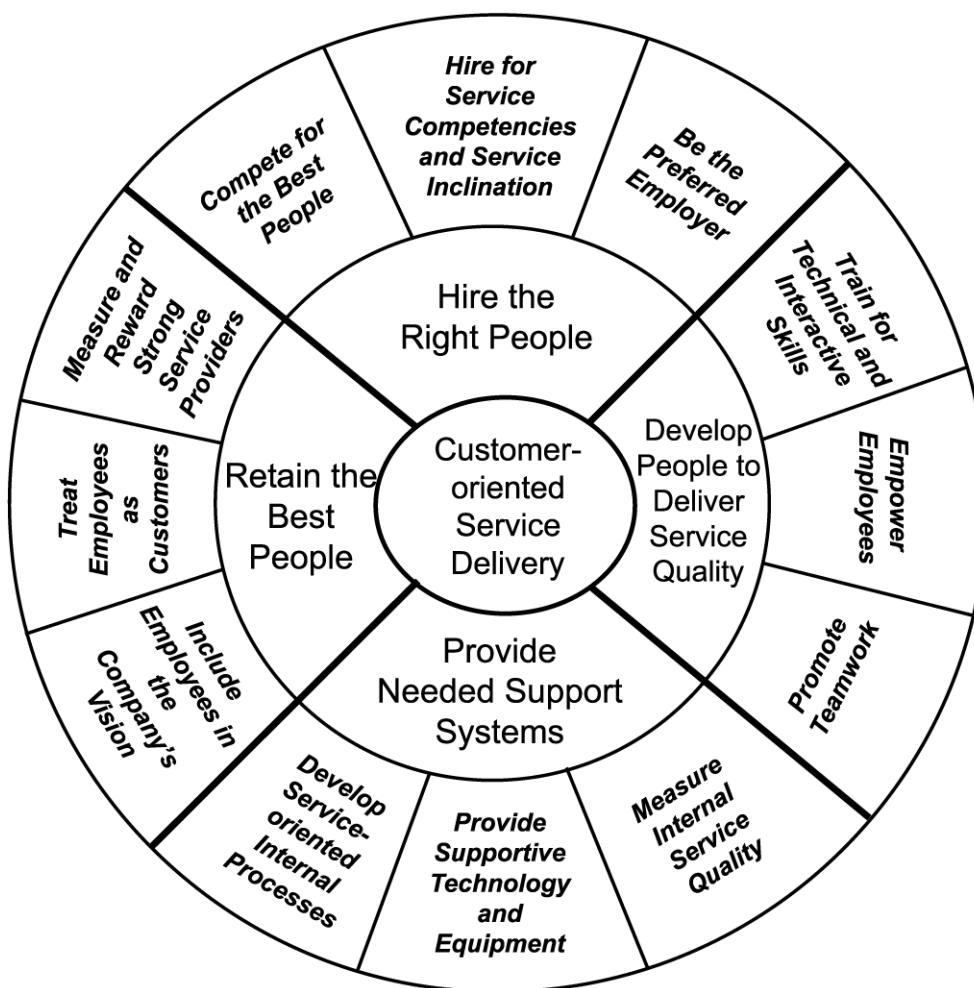
In order to deliver the best service and to gain competitive advantage, higher education institutions must strive to recruit, train and develop highly motivated and committed employees who must be efficiently managed and their skills utilised effectively as they are the key resource in achieving greater customer satisfaction in this type of institution (Khan and Matlay, 2009: 771). Mayer (2002) suggests four HR strategies in Figure 2.7 (on page 46), namely: hiring and recruiting the right people; training and developing people to deliver service quality; providing the needed support system; and retaining the best people.

*Hiring and recruiting the right people:* Employing the best individuals to perform quality services is essential in service marketing, as recruiting the wrong type of employee often results in poor service delivery, which in turn results in dissatisfied or unhappy external customers (Berry and Parasuraman, 1991; Varey and Lewis, 2000). As customers become more aware, more sophisticated, and more demanding, companies will have to hire people who are already predisposed to assume ownership for productivity, quality, profits, and adding value to customers (Kundu and Vora, 2004; Redman and Mathews, 1998: 61).

*Training and developing people to deliver service quality:* In order to grow and maintain a workforce that is customer-oriented and focused on delivering quality, an organization must train and work with these individuals to ensure service performance (Zeithaml and Bitner, 2000). Employees should be trained in both technical and functional skills, trained to listen to customers' problems, to defuse customer anger and

to provide tailored responses (Boshoff and Allen, 2000: 68). Gupta and Chen (1995: 33) state that the training can provide an atmosphere in which employees can identify and improve their attitudes towards service and customers.

*Figure 2.7: HR strategies*



(Source: Mayer, 2002: 170)

Employee empowerment and teamwork are critical factors in developing employees' service delivery quality (du Plessis, 2005; Hickman and Mayer, 2003: 117; Kundu and Vora, 2004; Redman and Mathews, 1998). Empowerment means giving employees the desire, skills, tools, and authority to serve customers (Kundu and Vora, 2004) and to provide efficient, personal and more responsive service and recovery efforts (Bowen and Lawler, 1992; *see also* Farmer, 2004).

Pfeffer (1998) suggests that team based organisations are more successful as most employees, and not just a few individuals in senior management positions in the firm feel accountable, responsible and pull together to achieve goals (Khan and Matlay, 2009: 770). A supportive environment is essential to encourage members to learn from each other and value the efforts of each individual in the attainment of fundamental goals (Boshoff and Allen, 2000: 66). In education institutions, for example, when a front-line staff member is faced with an unruly student, peer support may be a solution because working as a mutually reinforcing team creates an environment where student satisfaction can be increased and employee motivation sustained (Gupta and Chen, 1995: 34).

*Providing the needed support systems:* Appropriate technology, equipment and service-oriented internal processes are essential for the delivery of quality services (Kundu and Vora, 2004). According to Sureshchandar, Rajendran and Kamalanabhan (2001), the following six elements help systemize service delivery:

- a highly standardized and simplified delivery process so that services are delivered without any hassles or excessive bureaucracy;
- a highly simplified and structured delivery process that minimizes service delivery times;
- technological capability (e.g., computerization, networking of operations) to serve customers more effectively;
- a degree to which the procedures and processes are foolproof;
- adequate and necessary personnel for good customer service; and
- adequate and necessary facilities for good customer service.

*Retaining the best people:* The retention of key strategic employees especially managers and professionals can have a major impact on the success or failure of an organisation (Turbin and Rosse, 1990). In the higher education sector, the retention of talented

academic professors and experts increase the reputation and image of the universities and thus increase selection attractiveness which in turn enhances the universities' ability to recruit high-performing staff. An example is the QUT which is committed to developing a sustainable and high-quality workforce by investing in a number of initiatives that will maintain the momentum of building academic quality and achieving major demographic change (Sharma, 2011a). He explains that QUT did this by: recruiting 500 people to the Early Career Academic Recruitment and Development (ECARD) program (currently 167) and appointing 75 research capacity professors (currently 29) to develop capacity at the institution.

Employees also need a manager who cares for and shows an interest in them, and lets them know what is expected of them (Buckingham, 2000; Frank and Taylor, 2004). A good manager helps talented people find satisfaction in their work as satisfaction is the key to an employee's decision to stay in or leave an organization (Buckingham and Coffman, 1999; Kaye and Jordan-Evans, 1999; Zeithaml and Bitner, 2000).

#### **2.9.4 The market communication gap (Gap 4)**

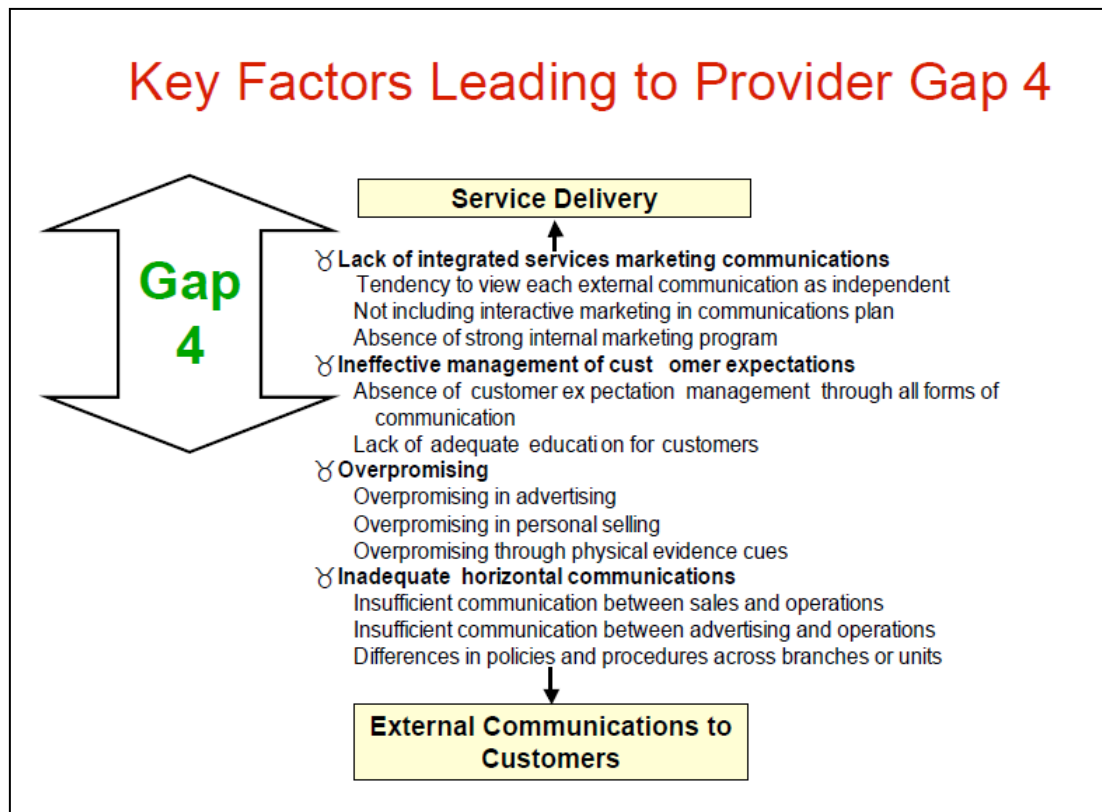
This gap means that promises made by market communication activities are not consistent with the service delivered (Jaipuria, 2006: 21). Advertising, for instance, may indicate to registered or prospective students that they will receive R100 000 per year for three years when in reality students may only receive the money for one year due to funding shortages which subsequently arise.

##### **2.9.4.1 Reasons for the Gap:**

According to Figure 2.8 (on page 49), four main reasons for the gap are proposed by Zeithaml *et al.* (2006: 43) as follows: internal and external communications are not effectively integrated in the service delivery by the service provider; the customers' expectations are not effectively employed and managed by management; the service

providers often deliver over-promise marketing advertising for keeping competitive advantage during the company's external communications process; and horizontal communication between those responsible for the company's external communications and the front office employees is ineffective.

*Figure 2.8: Key factors leading to the market communication gap*



(Source: Service Management, 2006: 8)

According to Mazzei (2010: 221), internal communication is generally defined as the communication flow among people within the boundaries of an organization. Many scholars emphasize that effective internal communication is a prerequisite for a positive external corporate image or reputation (Argenti and Forman, 2002; Goldhaber, 1993; Grunig and Hunt, 1984; Kitchen, 1997; Sholes, 1997; Tench and Yeomans, 2006). Others note the role of internal communication as a relationship management and

commitment-building function (Cutlip, Center and Broom, 2006; Grunig, 1992; Jo and Shim, 2005; Ledinghan and Bruning, 2000).

The communication of messages among different departments of a service organisation is called horizontal communication (Pan, 2008: 56), these messages need to be designed in the most effective way to increase mutual understanding and shared meaning (Lovelock and Wright, 2002:193). Weak horizontal communication within the departments can cause lack of co-ordination between departments and create a barrier to quality management implementation resulting in unsatisfied customers, unfulfilled customer requirements, and an environment of distrust (Talib, *et al.*, 2011: 11).

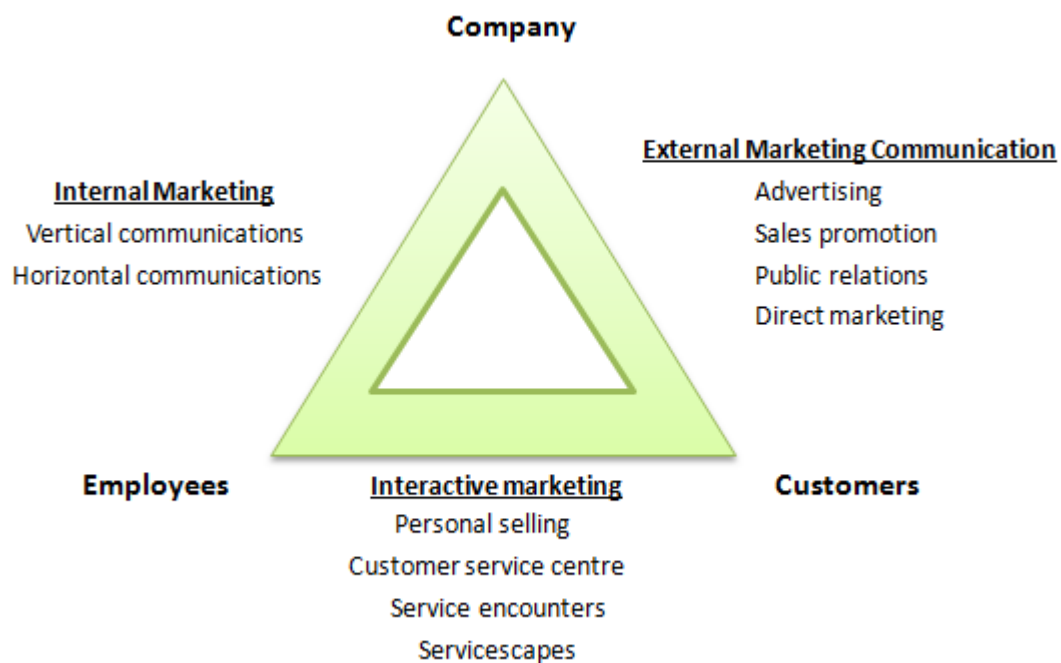
According to Angell (2007: 47), external communication is the process of interaction and the exchange of messages between a service organisation and all factors outside the organisation. The external communication activities of the service provider play a key role in the formation of customers' expectations, because their expectations are affected by the service provider's direct and indirect marketing messages (Strydom, 2004: 30).

A number of service providers believe that the effectiveness of communication is enhanced when the process is interactive (Murphy, 1996). Obviously, personal contact lends itself to engaging customers in dialogue but less personal forms of communication can invite interactivity too (Claycomb and Martin, 2002: 621). For example, university newsletters, campus brochures, and trade advertisements can enhance education institutions' image and give the students, their parents and other customers a favorable impression.

Zeithaml *et al.* (2006: 486) further identify the type of communication in terms of the service marketing triangle. This triangle is shown in Figure 2.9 (on page 51). The triangle is a concept that links the three elements of service marketing: organisation, employees, and customers as follows: internal marketing from the organisation to the employees; external marketing from the organisation to the customer; and interactive

marketing that occurs between the employee and the customer during service consumption (Daly, Gallagher, Gallagher and Mahnert, 2004: 3).

*Figure 2.9: Communication and services marketing triangle*



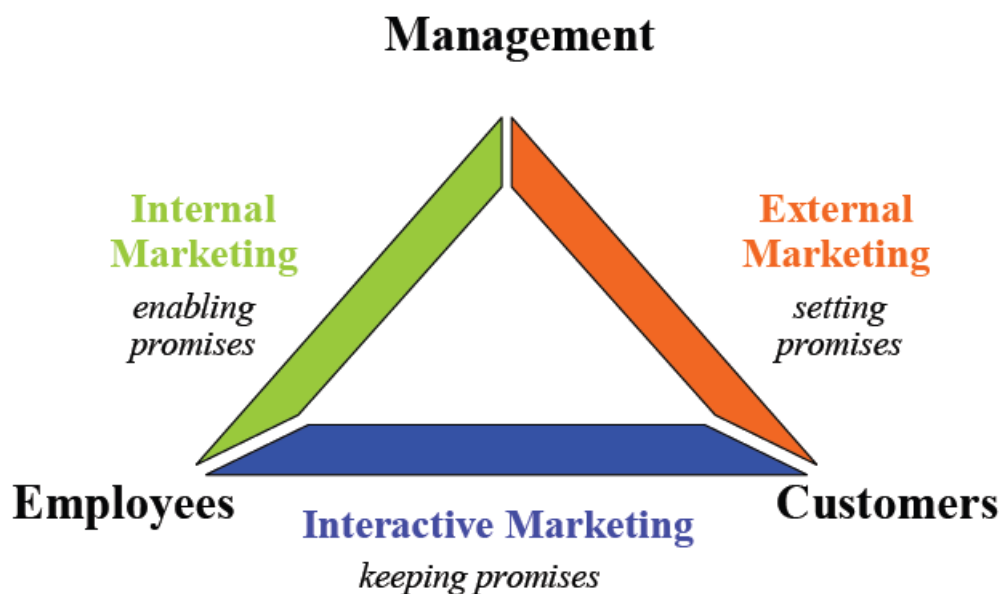
(Source: Zeithaml, Bitner and Gremler, 2006: 486)

The services marketing triangle provides a useful conceptualisation of some of the complexities of the services offered (Thwaites, 1999: 506). It helps higher education institutions to close the market communication gap by dealing with the following challenges: understanding customers' needs and expectations of service; making services tangible to customers; and keeping and dealing with promises made to the customers (Strydom, 2004: 29).

The services marketing triangle in particular stresses the need to integrate the company, employees and customers to ensure that the three elements of the promise - setting, enabling and delivering - can be achieved (see Figure 2.10 on page 52) (Thwaites, 1999:

512). This triangle shows that through external marketing, the company makes promises to the customers (e.g. about service quality), and gives the providers who work on the different channels the means (internal marketing) to keep these promises (interactive marketing) (Ple, 2006: 339).

*Figure 2.10: The Service Marketing Triangle*



(Source: Zeithaml and Bitner, 2000: 23)

The interactive marketing process is about keeping the promises made by the organization to the customer along with delivering a quality service to the customer (Strydom, 2004: 32). Interactive marketing is the actual contact between the service employees and the customers, for example, the service that universities' first-line staff members provide to the students. This service encounter is the decisive moment in the service process where organizations actually show what they can do and how they meet the set expectations (Kasper, Heldsingen and de Vries, 2000; Zeithaml and Bitner, 2000).

The marketing process that enables service marketers to deliver promises to customers is called internal marketing. Through internal marketing, the organization reveals that it consists of individuals and departments who are considered to be each other's customers (Kasper *et al.*, 2000: 371). This means employees do not only provide a service to the external customers but also to each other within the organization (Strydom, 2004: 34).

The last factor of the market communication gap is the customers' expectations are not effectively employed and managed by management. Zeithaml *et al.* (1990: 16) suggest that the only criteria that count in evaluating service quality are defined by customers. Customers only judge quality; all other judgments are essentially irrelevant. Specifically, service-quality perceptions stem from how well a provider performs *vis-à-vis* customers expectations (Zeithaml *et al.*, 1990: 16). Thus, organizations must define who their customers are in order to orientate their strategic planning towards meeting the expectations of these customers (Varnavas and Soteriou, 2002: 67).

#### 2.9.4.2 Strategies for closing the gap:

Grönroos (2000: 105) indicates that the reasons for the occurrence of a market communication gap can be divided into two categories, namely: the planning and executing of external market communication and operations, and a company's propensity to overpromise in advertising and marketing communication. In the first case, possible solutions are to create a system that co-ordinates planning and execution of external market communication campaigns with service operations and delivery (Jaipuria, 2006: 22). For example, every major campaign should be planned in collaboration with those involved in service production and delivery for dual goals to be achieved (Manuel, 2008: 23); promises in market communications should be accurate and realistic, and there should be a greater commitment to what is promised (Jaipuria, 2006: 22). The second category of problems i.e. over-promising can be dealt with by: improving planning of market communication, better planning procedures and closer

management supervision (Grönroos, 2000:105); training employees not to over-promise, encouraging customers to sample the service experience, excelling at service recovery, encouraging and managing customer complaints (Buttle, 2004; Grönroos, 2001; and Looy, Gemmel and Dierdonck, 2003;).

Universities need to keep their promises to students; as customers, students expect the university to: keep their promises (reliability); offer honest communication materials, and clean comfortable facilities (tangibles); provide prompt service (responsiveness); be competent and courteous (assurance); and to provide caring, individualized attention (empathy) (Berry, Parasuraman and Zeithaml, 1994: 40). Failure by the university to keep its promises makes students lose confidence in the institution.

#### **2.9.5 The perceived service quality gap (Gap 5)**

Jaipuria (2006: 22) states that the perceived service quality gap signifies that the perceived or experienced service is not consistent with the expected service resulting in negatively confirmed quality and a quality problem, bad word-of-mouth, a negative impact on corporate or local image and lost business. Parasuraman *et al.* (1988) argue that gap 5 is the total sum of the preceding four gaps. Coppola (2001: 11) points out that if there are any gaps left in steps 1 through 4 the perceived customer service quality will be negatively affected. Thus, firms should try to close or narrow down the other four gaps first in order to manage gap 5. Coppola (2001: 11) adds that, the way to make sure these gaps are closed is through systems design, precise communication with customers, and a well-trained workforce.

#### **2.10 SUMMARY**

As higher education institutions in South Africa have experienced dramatic changes in their structuring, funding and student numbers, the development of service quality as a source of competitive advantage is becoming increasingly important. To understand the

effects of these changes and importance of service quality in South African higher education, chapter two presented the history and changes of South African higher education and then examined the education service field of higher education in the context of South Africa in comparison with Australia.

In order to improve South African education service quality, this chapter analysed and reviewed literature on service quality, SERVQUAL theory and the Gap Model. Chapter two also looked at the potential causes of service quality gaps. These gaps are important in assessing customers' overall perception of what is expected against what is received.

Chapter 3 discusses the research methodology employed in this study.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.0 INTRODUCTION**

As higher education institutions tussle for competitive advantage and high service quality, the evaluation of educational service quality is essential to provide motivation for and to give feedback on the effectiveness of educational plans and implementation (Tan and Kek, 2004: 17). Having identified the variables in the problem situation and having developed the theoretical framework in chapter two, the next step is to design the research in such a way that the requisite data can be gathered and analyzed to arrive at a solution (Sekaran and Bougie, 2009: 102).

Chapter three presents an enhanced approach to using SERVQUAL for measuring student satisfaction and prioritizing the importance of the factors influencing service quality in the PG/RC at UoTs. This chapter starts with a rationale for the research design and strategy followed by a discussion on data collection, sampling and analysis.

### **3.1 RESEARCH DESIGN**

Ghauri and Grønhaug (2002: 47) define research design as the overall plan for relating the conceptual research problem to relevant and practicable empirical research. They explain further that the research design should be effective in producing the wanted information within the constraints put on the researcher. Because of the variety of research activity, research designs can be classified in terms of the research purpose as: exploratory, explanatory or descriptive (Saunders, Lewis and Thornhill, 2009: 139).

An exploratory study is a valuable means of finding out what is happening, to seek new insights, to ask questions and to assess phenomena in a new light (Robson, 2002: 59). Explanatory research refers to the research question and demands that the researcher explain the relationship between variables and demonstrates that change in one variable

causes change in another variable (Bless, Higson-Smith and Kagee, 2006: 43). The emphasis here is on studying a situation or a problem in order to explain the relationship between variables (Saunders *et al.*, 2009: 140). Descriptive research is aimed at casting light on current issues or problems through a process of data collection that enables researcher to describe the situation more completely than was possible without employing this method (Fox and Bayat, 2008: 8) as the object of descriptive research is to portray an accurate profile of persons, events or situations (Robson, 2002: 59). This research employed a descriptive design to identify the critical elements impacting on service quality in terms of postgraduate or research development and support service delivery in the SA and Aus contexts.

### **3.2 RESEARCH APPROACH AND STRATEGY**

According to Hartas (2010: 18), theory generation and theory verification rely on two broad methods of logic, namely inductive and deductive reasoning. The inductive approach works over a specific idea to generalize the situation as per the research topic, which is linked with the interpretivist paradigm (Crowther and Lancaster, 2009). A deductive approach is concerned with developing a hypothesis (or hypotheses) based on existing theory, and then designing a research strategy to test the hypothesis (Wilson, 2010: 7). This study used the deductive approach, which was concerned with applying the general (theory) to the specific (case) (Henn, Weinstein and Foard, 2009: 14).

Service quality theory (discussed in chapter two) proposed that:

- customer satisfaction is based on the service quality dimensions of responsiveness, reliability, assurance, tangibles and empathy;
- and the gap model of service quality is caused by the difference between customers' expectations of a service and their perceptions of the actual service delivered.

The researcher then applied service quality theory to this study to:

- identify and understand the importance of service quality dimensions to postgraduate and research students;
- measuring student satisfaction and prioritizing the importance of the factors influencing service quality in the PG/RC at UoTs; and
- determine the service quality gaps in terms of postgraduate studies and research development and support service delivery in the SA and Aus contexts, and to identify the factors that can influence these gaps.

### **3.3 RESEARCH METHODOLOGY**

The various types of research can be divided into two broad categories or paradigms, namely quantitative and qualitative research (Fox and Bayat, 2008: 7). Quantitative methods are especially helpful with large, complex problems (Sweeney, Anderson, Williams, Camm and Martin, 2009: 6) because the results from quantitative methods are given numerical values and the researcher can use a mathematical and statistical treatment to process and explain data, and then summarize findings and evaluate the results based on the quantitative aspects of the problem (White, 2003: 24). But the quantitative research is weak in understanding the context or setting in which people talk; and also, the voices of participants are not directly heard in quantitative research; further, quantitative researchers are in the background, and their own personal biases and interpretations are seldom discussed (Creswell and Clark, 2010: 12).

Qualitative research is a descriptive, non-numerical way to collect and interpret information (White, 2003: 28). The benefit of using a qualitative approach is its ability to generate theory and gain a contextual understanding of social phenomena, the product of which is often regarded as providing meaning through the accumulation of ‘rich, deep data’ (Bryman, 2004: 288). While qualitative research makes up for weaknesses of quantitative research (Creswell and Clark, 2010: 12), it is typically based on small, nonrandom samples, which means that qualitative research findings are often

not very generalizable beyond the local research participants (Johnson and Christensen, 2010: 429).

This study therefore used the mixed methods research approach, which was defined by Ridenour, Benz and Newman (2008: 8) as a combination of qualitative and quantitative methods within a study. Mixed methods research provides strengths that offset the weaknesses of both quantitative and qualitative research thus the combination of strengths of one approach makes up for the weaknesses of the other approach (Creswell and Clark, 2010: 12). A questionnaire and semi-structured interviews were used in this study which comprised both the qualitative and quantitative data gathering stages to address the research objectives. As Molina-Azorin and Cameron (2010: 343) said, this mixed method research can provide a better, more thorough understanding of the research problems and complex phenomena than either approach alone.

Before explaining the data gathering stages employed, it is important to discuss the target population in this study.

### **3.4 TARGET POPULATION**

Population refers to the group of people, items or units under investigation (Coldwell and Herbst, 2004: 73), in other words, the complete group of special population elements relevant to the research project (Zikmund, 2003: 373).

The target population in this study was:

- postgraduate students at HEIs in SA and Aus who were experiencing or had experienced the services provided by the PG/RC at their institution, e.g. to apply for grants, bursaries, etc. or those who sought assistance pertaining to their studies from the PG/RC; and
- staff members who work in the PG/RC at HEIs and provide services to postgraduate students.

Having discussed the target population, the next section details the research sample in this study.

### **3.5 RESEARCH SAMPLE**

The research sample represents a subset of manageable size of the target population (Angel, 2009: 266). The process of selecting a sample from the population is called sampling (Sharma, 2011b: 203). This process involves selecting a sufficient number of cases from the target population to make conclusions about the whole population, including the process to determine population, sampling frame, sampling method, sample size, and sample selection (Sekaran, 2000).

#### **3.5.1 Population and sample size**

The target population in this study was UoTs in SA and Aus. After determining the population, the sample size was decided. This study used Cohen's (1988) statistical power analysis to determine the sample size. The objective of the analysis was to calculate an adequate sampling size so as to optimize as opposed to maximising sampling effort within the constraint of time and money (Chuan, 2006: 80). According to Cohen's table, the minimum sample size at each university is approximately 64.

#### **3.5.2 Sampling frame and sampling method**

The sampling frame is any source material or device used to obtain observational access to the finite population of interest (Särndal, Swensson and Wretman, 2003: 9). The sampling framework in this research was university student and staff database and mailing list.

The goal of all sampling is to obtain an unbiased (representative) sample of the target population, and the methods used to accomplish this fall into two categories: probability and non-probability sampling (Jensen and Shumway, 2010: 80-81). Churchill and

Iacobucci (2005: 285) explain that for probability samples, each population element has a known, nonzero chance of being included in the sample; and with non-probability samples, in contrast, there is no way of estimating the probability that any population element will be included in the sample.

Following Churchill and Iacobucci (2005), this study used purposive sampling which is confined to specific types of people who can provide the desired information because they are the only ones who have it, and conform to some criteria set by the researcher (Sekaran and Bougie, 2009: 276. The sample drawn for this study had to be specific types of institutions and people, that is, universities of technology; and postgraduate students and staff. The institutions were therefore selected in terms of the following criteria, they had to have: ‘university of technology’ in their name, and a PG/RC. The postgraduate students were master’s or doctoral students who had experienced or were experiencing PG/RC services, and the staff were administrative staff who were/had experience of administering PG/RC services

The SA and Aus UoTs selected were as follows:

- Cape Peninsula University of Technology (CPUT);
- Central University of Technology (CUT) ;
- Durban University of Technology (DUT) ;
- Tshwane University of Technology (TUT) ;
- Vaal University of Technology (VUT) ;
- Curtin University of Technology (CUT) ;
- Queensland University of Technology (QUT) ;
- University of Technology, Sydney (UTS) ;
- RMIT University (RMIT) ; and
- Swinburne University of Technology (SUT).

Five out of six UoTs in SA were selected, as the Mangosuthu UoT did not have a PG/RC at the time. All five UoTs had been in operation between three to six years and each had a PG/RC which provided a range of research services to support and/or develop research students and supervisors.

The Aus UoTs have been in existence for more than fifteen years; they had PG/RCs and were well established in terms of postgraduate research support and development. This study considered the Aus UoTs as internationally they are top performers and rapid improvers in terms of postgraduate or research development and support service; benchmarking with these world-class UoTs could therefore offer SA UoTs information or knowledge on how to improve their own performance, it could also give universities' decision makers guidelines on how to create high quality service systems. All five SA UoTs granted the researcher permission and ethical clearance to conduct research at their institution.

Out of the five Aus institutions selected, SUT did not grant the researcher permission for this study because some other surveys were being conducted at the time (at which the researcher had applied to them for permission) regarding postgraduate students and SUT wanted to avoid survey fatigue. SUT was therefore not included as part of sample in this study. In addition, Curtin University of Technology was excluded from the sample because it officially changed its name to Curtin University. A total of three Aus UoTs therefore participated in this study.

### **3.6 DATA COLLECTION**

Data can be put into two major categories: primary and secondary data (Dlabay, Scott and Scott, 2010: 442). Primary data is the data which is collected for the first time and are original in nature (Shan and Jha, 2009: 4) and is collected to address a special problem (Wiid and Diggines, 2010: 84). Neel (2010) explains that primary data is information collected by the researcher directly through instruments such as surveys,

interviews, focus groups or observation. Tailored to the researcher's specific needs, primary research provides the researcher with the most accurate and up-to-date data (Neel, 2010). Secondary data includes raw data and published summaries which can be quantitative and qualitative data (Schneiders, 2011: 26).

In this study, the researcher used a combination of both primary and secondary data, conducting secondary research first to understand the theory and framework of this study, and then following up with primary data, which were collected from questionnaires and semi-structured interviews. The combination of data gave the researcher a more comprehensive picture.

The design of the instruments to collect this data is important to ensure the accuracy of data collected. The following section therefore describes the data collection approaches employed in this study.

### **3.7 DATA COLLECTION INSTRUMENTS**

Data collection is one of the core activities in the research process (Blaikie, 2000: 30) and should accurately reflect the performance of the process (Dale, Van der Wiele and Van Iwaarden, 2007: 449-450). Interviewing, administering questionnaires, and observing people and phenomena are the three main data collection methods in survey research (Sekaran and Bougie, 2009: 185).

The data collection took place between 30 March 2011 and 30 March 2012. All postgraduate and research students who were experiencing or had experienced service from their PG/RCs, and the members of staff who were working in the centres at each of the selected eight institutions were invited to participate. The researcher was aware of poor returns to the email surveys. She therefore asked that her questionnaires be emailed to all the master's and doctoral students at the UoTs in the sample. A total of 1 029 questionnaires were emailed to SA and Aus students by the UoTs. In addition, 61 staff

questionnaires in total were sent to staff at the PG/RCs in SA and Aus. The following sections explain the questionnaire and semi-structured interview design employed in this study.

### **3.7.1 Questionnaire**

Questionnaires are especially good at collecting information on facts and opinions from large numbers of people (Riley, Wood, Clark, Wilkie and Szivas, 2000: 90). Questionnaires tend to provide highly structured quantitative data that is easily comparable, either between subject groups, or between the same groups studied over an extended time period and are generally straightforward to convert into tables and charts, and to analyze statistically (Gratton and Jones, 2010: 127). The questionnaire in this study was also a powerful aid to assist the researcher in understanding what postgraduate students need and in what ways they want to acquire services.

#### **3.7.1.1 Design and layout of the questionnaire**

Riley *et al.* (2000: 90) state that there are two processes involved in designing a questionnaire: a creative process of writing questions and a design process of devising a structure which is rational in terms of the questionnaire's objectives and intended objectives. The design goal of a questionnaire is to meet research objectives by obtaining valid data from respondents who are properly screened and qualified (Azzara, 2010: 18-19). To achieve this, questionnaire design in this study obeyed three principles which focused on three areas: wording of the questions; planning of issues of how the variables will be categorized, scaled, and coded after receipt of the responses; and the general appearance of the questionnaire (Sekaran, 2006: 237).

Two sets of questionnaires were designed, one for the postgraduate or research students (*see* Appendix D) and the other for staff at the PG/RCs (*see* Appendix E). Each of these sets of questionnaires contained a Covering Letter (*see* Appendix A and B) which

explained the purpose of the study and instructions to the respondents; and a Letter of Informed Consent (*see* Appendix C) which assured participants of their anonymity and confidentiality. They were required to sign the form to indicate their willingness and consent to participate in this study.

The questionnaire for postgraduate research students contained 20 pages and three sections. It included concise instructions on how to complete the questionnaire. Section A had ten questions. The first four closed questions helped the researcher gather background information about participants, such as the institution at which they are registered, their educational level, etc. Questions 5 to 10 contained open-ended questions which asked the respondents for their opinions on service quality as provided by the PG/RC at their university. These questions also asked respondents to give suggestions for service quality improvement.

Section B adapted the SERVQUAL instrument and requested students to rate their levels of expectations as well as their perceived experiences regarding service quality provided by their university's PG/RC. The purpose of this instrument was to assist the researcher to identify weak service dimensions and to develop a model which would outline the services to be provided while ensuring quality thereby attracting and retaining students and government funding.

Section C was optional and requested personal information from participants, such as their name and contact details so that the researcher could contact them for an interview if clarity/more information was required regarding their responses on the questionnaire. Participants were assured that after giving their questionnaire and section C an identifying number, this section would be removed before sending to the statistician for analysis. Participants were also assured that only the researcher and her promoter would have access to their personal contact details.

The PG/RC staff member questionnaire consisted of 22 pages and included 20 questions. Questions were grouped into three sections. Section A asked staff to review the quality of service offered by themselves and their centre. Section B asked staff about the organizational structure of the PG/RC at their institution. Section C was the same as the student's questionnaire with the same purpose.

The questionnaires were administered to a non-probability convenience sample and distributed *via* email to the sample. The email contained a brief introduction of the questionnaire and an explanation of how to answer the questionnaire. Students and staff members were requested to email the completed questionnaires to the researcher. The student questionnaires could also be completed online and the online survey system automatically reported the result to the researcher. Kwik Surveys ([http://www.kwiksurveys.com?s=NOLEFM\\_57ee7827](http://www.kwiksurveys.com?s=NOLEFM_57ee7827)) was used as the online programme for this study, it is a free and unlimited survey tool. Postgraduate students were invited to visit this website and complete the questionnaire, they could choose to participate in this study either *via* email or by completing the questionnaire online.

Questionnaires must be both reliable and valid in order for researchers to have confidence in the data collected with the instrument (Andrew, Pederson and McEvoy, 2011: 202). Saunders (2005: 147) adds that to ensure that the questionnaire was able to deliver the type of information that is needed to address the research problem, the questionnaire should be pilot tested.

#### 3.7.1.2 Pilot Study

Jankowicz (2005: 388) explains pilot testing as an essential stage of work, during which the researcher identifies and resolves doubts about the content, structure, and design of the questions the researcher intends to ask respondents, by conducting a trial on a small subgroup. The researcher worked as a postgraduate student assistant in the PG/RC at the DUT for two years; during this period she developed an interest in the research or

postgraduate centre at UoTs. She talked to postgraduate students about their experiences and their perception of quality of the postgraduate or research development and support services at the institution. The purpose of the conversations was to get an understanding of singular dimensions of perceived quality, and to define the most important factors of the service delivery process as seen from the participants' point of view (Faganel, 2010: 214).

The researcher submitted draft questionnaires to her supervisors to check whether the questions would provide information that would answer the research questions. The wording of the questions was checked to determine if there were any leading questions and to detect if there was order bias in the sequence of the questions. She then consulted postgraduate students and PG/RC staff members from the sample to test and refine the wording and understanding of potential survey questions. A pilot test was thus conducted among a small convenience sample of thirteen respondents which included three PG/RC staff members and ten postgraduate and research students who checked for any ambiguities and confusion in the first draft of the questionnaires.

The respondents raised concerns about the significant length of the questionnaire and the ability of an average participant to understand the questionnaire. Feedback from this pilot test indicated that some of the students did not really understand or they were confused by some of the questions - these questions were reconstructed after the pilot test. The suggestions from staff members regarding the questionnaire construction were adopted and modifications were carried out as required. All of these changes made sentences clearer, comprehensible, and the questionnaire more coherent. Moreover, the pilot study confirmed the reliability of the questionnaire by the use of Cronbach's Alpha. The result of reliability testing of the instrument used in the pilot study was well above 0.7. The validity of the questionnaire was also confirmed indicating that the questionnaire measured what it should to measure and provided answers to all of the study's research objectives.

### 3.7.1.3 Administration of the questionnaire

In terms of distributing the student questionnaire, the researcher requested assistance from the relevant officers at the five SA and three Aus UoTs. One of the SA UoTs provided the most of the staff and student's email addresses and the researcher contacted them herself. At another SA UoT, the Deputy Registrar: Student Administration and the Assistant Registrars assisted the researcher to distribute the questionnaires. The Postgraduate office at another SA UoT assisted the researcher by distributing the questionnaire *via* email using their student mailing list. There was no effective support from the balance of two SA UoTs, the researcher had to send the emails herself.

After obtaining research permission, the researcher initially contacted the principal of the PG/RCs at three Australian UoTs regarding this study; they then notified the administrative officer to co-ordinate the research survey by distributing the questionnaires through their university's internal student portfolio system. These Australian universities sent out emails according to an associated systematization to their entire population of postgraduate students at one-time. The email contained the questionnaire as an attachment and the online survey website link.

Regarding the staff questionnaire, the Aus UoTs, appointed one senior staff member to complete the questionnaire on behalf of their PG/RC, as the staff questionnaire had closed questions. At the SA UoTs, the staff questionnaires were distributed either by the researcher or by their PG/RC.

### 3.7.2 Semi-structured interviews

Semi-structured interviews are often based upon investigator-created interview guides and employ specific but open-ended questions (Tappen, 2010: 234). The semi-structured interview schedule may include some specific items, but considerable latitude is given

to interviewers to explore in their own way matters pertaining to the research question being studied (Grinnell and Unrau, 2010: 306).

Semi-structured interviews in this study were conducted with two staff members from Aus universities *via* telephone. Four staff members from South African UoTs took part in the semi-structured interviews of which three were conducted face-to-face and the other two were conducted telephonically. The key focus of the semi-structured interviews was on sharing good practice, comprehending their PG/RCs' model of operation and structure, and determining their experiences as a service provider. Seven Aus and four SA students voluntarily participated in semi-structured telephonic interviews; and nine SA students were interviewed face-to-face. The key focus was on sharing their experiences as service receivers from their PG/RC. The semi-structured interviews were also used where responses were unclear, incomplete, or where further information was required.

### **3.8 ETHICS**

Ethics refers to moral principles or values that generally govern the conduct of an individual or group (Lamb, Hair and McDaniel, 2008: 63). Researchers have responsibilities to their profession, clients, and respondents, and must adhere to high ethical standards to ensure that both the function and the information are not brought into disrepute (Kumar, Aaker and Day, 2001: 18). In this study, the researcher planned and evaluated ethical issues right from the beginning of the research project by applying for ethical clearance and permission to conduct research (*see* Appendices: F, G, H, I, J, K, L and M) from the different institutions. This research did not expose participants to any situation that could be harmful, either mentally or physically (Bailey, 2011). Participants were only required to answer the questionnaire in this study and no medical or other examination was required and it did not involve any risk to the respondents.

Bailey (2011) points that subjects must volunteer for participation in a research trial, and they must have full knowledge of the activities and associated risks involved in the study. Closely related to the notion of voluntary participation is the requirement of informed consent (Trochim, 2006). Prior informed consent is consent to an activity that is given after receiving full disclosure regarding the reasons for the activity, the specific procedures the activity would entail, the potential risks involved, and the full implications that can realistically be foreseen (Dutfield, 2009: 60). In this research, the Covering Letter and Informed Consent Form were explained to the participants and/or the recipients at the different institutions prior to administration of the questionnaires. The researcher also used appropriate and simple language while interacting with participants. Participation in this study was voluntary and participants were informed that they could withdraw from the study at any time without having to give any reasons. They were assured that the information they provided would remain completely confidential and only aggregate figures would be reported. Participants were assured of their anonymity. Only the researcher and her promoter had access to respondents' personal details.

The personal information participants provided were kept confidential by using a study code. A master list linking the data to individual participants were maintained securely and separately from the data. The page with personal details was removed before the researcher sent the questionnaire for analysis to ensure that they were not identified in any way and that responses remained anonymous.

Each institution was included in a 'group' and identified by using the words such as 'institutions/UoTs in SA' and 'institutions/UoTs in Aus', in other words, the responses and the respondents were not identified as coming from particular institutions but from a UoT in SA or a UoT in Australia.

### **3.9 DATA ANALYSIS**

The process of data analysis begins after the data has been collected, during the analysis stage several interrelated procedures are performed to summarize and rearrange the data so that accurate conclusions and recommendations can be drawn (Han, 2010: 41). This section discusses four important aspects in the data analysis process, namely, transforming raw data into information (editing, coding, data entry and data analysis); data analysis; data interpretation; and reliability and validity.

#### **3.9.1 Data preparation**

The raw data collected in the field were transformed into information to answer the questions. As advocated by Zikmund (2003: 453), the conversion of raw data into information required the data to be edited and coded so that the data could be transferred to a computer or other data storage medium.

The first step in data preparation is data coding. Data coding involved assigning separate code numbers to each category of each variable in the study (Rubin and Babbie, 2012: 322).

In this study, all received questionnaires were assigned a number. The questions and the optional answers were also coded. Responses were thus code and then recorded in an Excel document.

After the data were keyed in, they needed to be edited. Data editing refers to the detection of errors in the data, detection of omissions and the correction of these where possible, and lastly, the certification that the minimal data quality standards have been achieved (Cant, Strydom, Jooste and du Plessis, 2009: 177). Since this research collected primary data using a questionnaire, editing was deemed the only approach to inspect and correct omissions, ambiguities and errors in the responses. The Excel

document was used by the statistician as input for the data analysis in Predictive Analytic Software (PASW) Statistics version 18.0.

After the data collected were captured and stored, they were carefully summarised and analysed using statistical techniques. The third step was data transformation where the data were transformed or consolidated to make the resulting mining process more efficient and so that the patterns found would be easier to understand (Han, Kamber and Pei, 2011: 111). A computerized statistical analysis of the data was necessary to describe and interpret information obtained from the questionnaire, which was introduced as follows.

### **3.9.2 Statistical analysis**

The purpose of analysis is to generate meaning from the collected raw data. Appropriate statistical analysis techniques help to summarize and interpret the data by presenting graphic displays, statistical summary numbers, and results, explaining what the research examined (Siegel, 2011: 419).

Since the purpose of statistics is different, statistical procedures have two major categories, namely, descriptive statistics and inferential statistics (Collis and Hussey, 2003: 196). To meet the purposes of this study, the applicable descriptive and inferential analyses techniques were applied.

#### **3.9.2.1 Descriptive statistics**

Descriptive statistics refers to techniques used to describe data, either numerically or graphically (Burt, Barber and Rigby, 2009: 33).

According to Coldwell and Herbst (2004: 92) descriptive statistics include numbers (i.e. tallies, frequencies and percentages), measures of central tendency (i.e. mean, median and mode) and measures of variation (i.e. range and standard deviation). The researcher

used descriptive statistics to report postgraduate students' demographics and ratings on the PG/RC service quality and satisfaction.

Percentage tests were used to show the scale of students' expectations and perceptions of quality dimension in terms of each statement regarding the SERVQUAL questionnaire. Central tendency statistics combined with variation statistics were applied to test the value of students' expectations and perceptions of quality dimension in order to investigate the mean gap scores on the expectations and perceptions scales for each of the modified thirty service quality attributes and the five related service dimensions.

### 3.9.2.2 Inferential statistics

Inferential statistics refers to the methods utilized in making and evaluating generalizations from the test scores and includes interval estimation and hypothesis testing such as t-test, z-test, chi-square test, and analysis of variance (ANOVA) (Asaad and Hailaya, 2001: 1). In this study inferential statistics were used as follows.

#### *Correlations*

Pearson's correlation matrix can establish relationships between two sets of continuous data obtained from interval or ratio scales (Coldwell and Herbst, 2004: 93). Intra correlations were tested between students' perceptions of service quality and each quality dimensions with aims to find out if these service dimensions influence with each other in terms of respondents' perception of service quality. On the other hand, intra correlations were tested between respondents' expectations of service quality and each quality dimensions to find out if these service dimensions influence each other in terms of respondents' expectations of service quality. Furthermore, inter correlations were used to determine if respondents' perceptions and expectations were influenced in terms of the five related service dimensions.

### *The t-test*

The t-test allows the researcher to compare the mean scores of two groups on a particular variable to determine the probability that any differences between them are real and not due to chance (Coldwell and Herbst, 2004: 93). In this study, the paired t-test was performed to determine whether the differences between the overall expected and perceived scores were significant.

### **3.9.3 Data interpretation**

Data interpretation performs various calculations or operations upon the given data in order to arrive at meaningful conclusions (Bedi, 2011: 4). There were quantitative data and qualitative data need to be interpreted in this study:

#### **3.9.3.1 Interpretation of quantitative data**

Quantitative data is the numerical data which can be quantified in categories, in rank order, or measured in units of measurement to answer the research questions (Cox, 2002: 63). The quantitative data need to be entered on to the computer, and then be countered and analyzed (Singh, 2007: 82). Quantitative analysis techniques assist the interpretation process. In this study, researcher used tables and diagrams that show the frequency of occurrence through establishing statistical relationships between variables to complex statistical modeling (Saunders, Lewis and Thornhill, 2003: 504).

#### **3.9.3.2 Interpretation of qualitative data**

Interpretation is important in qualitative research because interpretations are needed to arrive at understanding of data from the semi-structured interviews and open-ended questions on the questionnaires (Ghauri and Grønhaug, 2002: 137). They contained the descriptive data and the researcher's comments on the data.

### **3.10 INSTRUMENT RELIABILITY AND VALIDITY**

Any measuring instrument used in research must be both reliable and valid (Burns and Bush, 2006: 290). A necessary step is to demonstrate that the instrument used provided a valid and reliable measure of service quality.

#### **3.10.1 Reliability**

According to Miller (2003), reliability is defined as the extent to which a questionnaire, test, observation or any measurement procedure produces the same results on repeated trials. He further adds that it is the stability or consistency of scores over time or across raters. A reliable data collection instrument is one that is relatively free from measurement error (Connaway and Powell, 2010: 64).

In this study, the Cronbach alpha (Cronbach, 1951) which is commonly used as a measure of the internal consistency or reliability of a psychometric test score for a sample of examinees was calculated to measure the reliability of the measurement. The research instrument is considered reliable and consistent if it returns an alpha Cronbach value of 0.7 (Churchill, 1979). The result of reliability testing of the instrument used in this study was well above 0.7 and the overall reliability scores for each section were high (0.913 for Expectations and 0.919 for Perceptions). This indicates a high degree of acceptable, consistent scoring for the different categories for this research. All of the categories have (high), acceptable reliability values.

#### **3.10.2 Validity**

Validity is defined as the degree to which the instrument measures what it's supposed to measure (Yount, 2010: 482).

To investigate the predictive validity of the instrument, correlation and regression analyses were conducted. Pearson's correlation was used to analyze correlation among the five factors and between these factors and the variable of overall service quality. All

five factors were significantly correlated with one another and with the variable of overall service quality at the 0.01 level.

The construct validity test was performed using factor analysis. The factors with Eigen values greater than 1.00 are considered practically significant, that is, as explaining an important amount of the variability in the data. Factor analysis showed that the five dimensions have Eigen values greater than 1. Thus, the research instrument was considered valid, in terms of construct validity.

### **3.11 SUMMARY**

This study used a deductive, quantitative design with qualitative underpinnings. This descriptive research used secondary data and employed questionnaires and semi-structured interviews as data collection approaches to collect both qualitative and quantitative data to address the research objectives. The amended SERVQUAL instrument which provided optimal data reliability and data validity was utilized to assess the expectations and perceptions held by postgraduate students with respect to the quality of services received from the PG/RCs at their institutions.

Chapter four is dedicated to the presentation of the findings, data analysis and discussion of the research results.

## **CHAPTER FOUR: FINDINGS**

### **4.0 INTRODUCTION**

Chapter three presented the research methodology of this study which included a discussion of the research aims and objectives, research design, target population and research sample, data collection instruments, and reliability and validity. This chapter presents the findings of the study.

Data collected from the questionnaires were analysed using Predictive Analytic Software (PASW) Statistics version 18.0. Analysis of data from the student and staff are presented together where common questions were asked. As both questionnaires and the semi-structured interviews yielded a lot of useable data, responses to questions sometimes overlapped, and in order to present data in a consolidated manner, findings were organized around themes. The themes refer to patterns in the data that reveal something of interest regarding the research topic and the aims and objectives of the study (King and Horrocks, 2010: 149, *see also* Bui, 2009). The following five themes were thus identified: services provided by the PG/RC; SERVQUAL dimensions analysis; attracting quality postgraduate students; service quality; and organizational structure of the PG/RC.

A total of 1 029 questionnaires were emailed to SA and Aus students by the UoTs. The researcher acknowledges that this is an enormous number to send out but she was very aware of her peers who had very poor returns to their surveys. She therefore asked that her questionnaires be emailed to all the master's and doctoral students at the UoTs in the sample. Despite having emailed in excess of 1 000 questionnaires, only 472 in total were returned, that is, 249 from SA and 223 from Aus. The questionnaires were reviewed for completeness and 425 were deemed complete and appropriate for data analysis.

61 questionnaires in total were sent to staff at the PG/RCs in SA and Aus, only 8 were returned of which 6 were complete and deemed appropriate for analysis. This comprised 4 SA and 2 Aus responses. Numerous attempts were made *via* telephone calls (to SA sample) and emails to encourage return of the questionnaires but to no avail. Some indicated that they were too busy to fill in the questionnaire; others promised to do so but did not, while others just did not respond. Having tried in vain to get more responses, the researcher had to work with the low returns received. The researcher notes though that this low response does not constitute a valid number for statistical analysis or for any substantial research conclusions to be drawn.

#### 4.1 DATA ANALYSIS

Table 4.1 (below) reflects the breakdown in numbers and percentages of students from the SA and Aus UoTs.

*Table 4.1: Regional distribution of respondents*

Country	Name of University of Technology	Number of Respondents	N % per University	N % per Country
South Africa	Cape Peninsula University of Technology	0	0.00%	0.00%
	Central University of Technology	38	8.9%	16.96%
	Durban University of Technology	102	24.0%	45.54%
	Tshwane University of Technology	42	9.9%	18.75%
	Vaal University of Technology	42	9.9%	18.75%
Total		224	52.7%	100%
Australia	Queensland University of Technology	92	21.6%	45.77%
	RMIT University	37	8.7%	18.41%
	Swinburne University of Technology	0	0.00%	0.00%
	University of Technology Sydney	72	16.9%	35.82%
Total		201	47.3%	100%

#### **4.1.1 Biographical Data**

74.11% of SA respondents were registered for their Master's degree or Master of Technology degree; while 81.59% of Aus respondents were registered for a doctoral degree or Doctor of Technology degree. Information from the UoT websites and data provided by the staff and students revealed that the Aus UoTs have a higher enrolment of doctoral studies as compared to the SA UoTs who have more master's enrolments. This may be attributed to the fact that the Aus UoTs have been in operation for more than 15 years whereas the SA UoTs have only been in operation between three to seven years.

In terms of the educational level of the respondents, the majority of respondents (38.74% SA and 36.82% Aus) were registered for their second year. 21.17% SA and 24.38% Aus respondents were registered for their 1<sup>st</sup> year, while 27.93% (SA) and 20.90% (Aus) were registered for the 3<sup>rd</sup> year. The remainder indicated they were studying for the 4<sup>th</sup> or 5<sup>th</sup> year. The category of 'other' revealed that 0.90% of SA respondents and 3.98% Aus respondents had either graduated or had suspended their study, but they had experience of the services from their PG or research centre and therefore agreed to take part in this study.

At SA UoTs, majority of the respondents had been postgraduate students for two or three years; only 14.29% respondents had one year postgraduate study experience; the remainder, 21.87% had more than three years experiences as a postgraduate student. At Aus UoTs, 28.36% of the respondents had one year of experience as a postgraduate student; 21.29% and 20.40% respondents respectively indicated they had two years and three years' postgraduate studying experiences; the remainder, 29.85% of respondents were postgraduate students for more than three years.

According to the explanation of some respondents from both countries, the reasons for having more than three years postgraduate studying experience were as follows, they:

were doing their fourth year of the doctoral degree; had suspended their study for one year; or they had completed their master's degree and were studying toward their doctoral degree.

Given their years of experience as postgraduate students, it is surprising that 76.8% of SA respondents and 47.2% of Aus respondents did not know the name of the PG/RC at their university.

## **4.2 THEME ONE: SERVICES PROVIDED BY THE PG/RC**

### **4.2.1 Administration services and support**

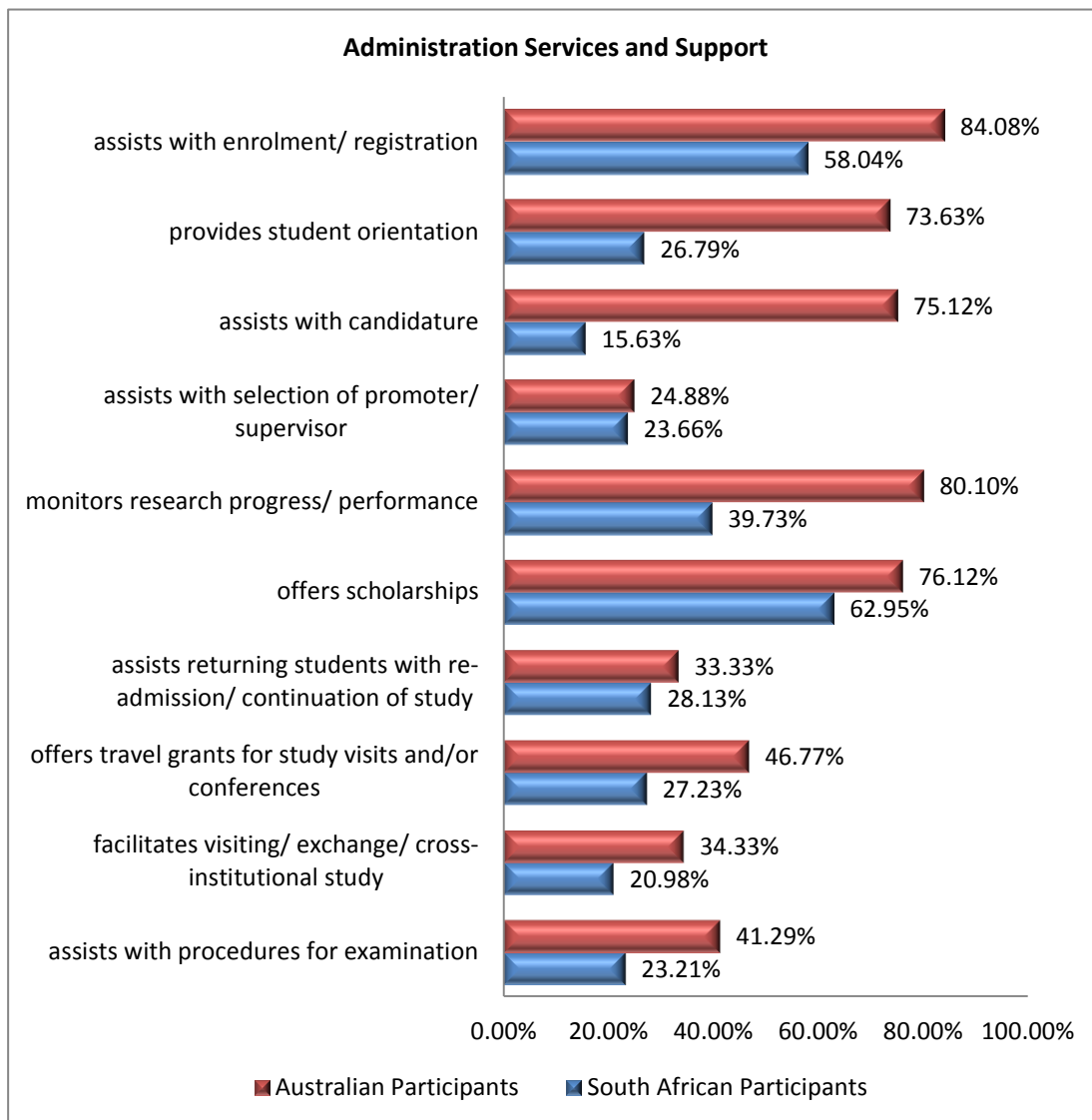
Staff responses confirmed that the PG/RCs in the SA and Aus UoTs do provide service and support in terms of administration services and support, research capacity development and support, quality supervision, and financial support among others. A staff member said *“some of the services are not centrally managed but there are offices at the university that provide them and we promote them to ensure students are aware of services”*.

Regarding the PG/RC service availabilities, all the staff respondents pointed out that students can get assistance directly from the PG/RC and from their departments or faculties, who in turn refer the matter to the PG/RC. The SA staff indicated that there is a comprehensive PG/RC guide which explains the services and support they provide. Students receive this guide when they register. They may also get them from their department, faculty office, or online from the university homepage. This is contrary to what the student responses indicated (discussed later in this chapter). The Aus staff said that the comprehensive guides are given to students during the orientation sessions. They were also available online from the university website, the faculties, and their supervisor/promoter.

Regardless of how the guides were made available, all of them indicated that the guide contains comprehensive and detailed information in terms of postgraduate studies and

research services and includes some information that students look for such as admissions/enrolment/candidature information, selection of a promoter/supervisor, support service information and scholarship/bursary information. Again this was refuted in the SA student responses highlighting the need for effective communication and marketing.

*Figure 4.1: Administration services and support*



#### 4.2.1.1 Enrolment/registration

While 58.04% SA and 84.08% Aus; and 62.95% SA and 60.20% Aus students respectively indicated that their PG/RC assists them with enrolment/registration and that study fees are waived, some of the SA students complained:

- *“The postgraduate centre co-ordinator told me I could register with my faculty officer, but in the Faculty Office, I was told they need a form filled in with registration information from my head of department”;*
- *“The postgraduate centre co-ordinator told me they already waived my study fees, but I was told I had fees outstanding by Finance Department”;*
- *“It almost took me a month to wait for postgraduate centre and Finance Department to co-ordinate with each other to waive my study fees while I was trying to register”; and*
- *“The faculty officer said I owed fees from library and requested me to obtain a clearance letter from them before I could register, but librarian said they could not see anything was defaulted from their system”.*

In addition to the above, only 33.33% (Aus) and 28.13% (SA) indicated that assistance was provided for returning students and re-admission or continuation of study and possibly explains the high numbers of students (*see* Figure 4.1 on page 81) in their 3<sup>rd</sup> or 4<sup>th</sup> year of study. This is definitely an area of concern as students are on average given a minimum of two years to complete a master’s and three years to complete a doctoral qualification with most institutions disallowing completion within one year of registration. To ensure good graduation and throughput rates, UoTs need to pay urgent attention to providing assistance to returning students.

It is apparent that good registration experience requires good co-ordination and sound knowledge of the registration procedures. Shupp (2009) concurs that the registration experience like the orientation service will be most effective when there is faculty and staff collaboration across campus. McKinnon, *et al.* (2000: 93) add that universities

need efficient core student administrative services covering enquiries, admission, progression, fees and other dues, graduation, and scholarships which are oriented to student service.

The low rate of 15.63% by the SA respondents regarding the receipt of candidature services was a result of them not understanding what ‘candidature’ meant. When this was explained during the semi-structured interviews, respondents said they did fill in forms to indicate their intent to register at the institution. They did not however mention anything about being screened or going through any selection procedures regarding enrolment for either a master’s or doctoral qualification. Surely, UoTs need to re-examine their admission policy regarding postgraduate candidates if they want to ensure that they attract and register good quality students who will graduate in the required period thus earning subsidy for the institution.

#### 4.2.1.2 Orientation services

65.38% SA students reported that they did not know what services were provided by their PG/RC, who can apply and how to apply for services. Some of them did not even know the location of their PG/RC thus highlighting the need for orientation services. Cook (2006); Hassanien and Barber (2007); Shupp (2009); and Upcraft, Gardner and Barefoot (2005) confirm that orientation programs play a key role in connecting students to other individuals and resources, assists with their success at university, and provides them with the opportunity to become familiar with the university, its administrative and academic services, and meet faculty and administrators. They add that integrating students into the university can ease the stress of students’ transition into higher education and improves retention. This is possibly the reason why the SA respondents had lower scores than the Aus respondents regarding every statement in the Administration Services and Support sector (*see* Figure 4.1 on page 81), as more (73.63%) Aus respondents received orientation services than SA respondents (26.79%).

The current practice at most SA UoTs is that the student goes directly to the department in which he or she intends registering. Between the department and the Faculty Research Office the student is advised on the processes. But, like undergraduate students, postgraduate students too require orientation into the university and its environment, and into the realm of research. The requirements of postgraduate students are very different from those of undergraduate students as some services *inter alia*: the library (online databases and catalogues, inter-library loans); registration process (from completing a registration form to submitting a proposal); funding (which include scholarships, sponsorships, national and international research funding opportunities, and conference funding); and many others vary between faculties and indeed between departments. In fact, because postgraduate students are often from other provinces or countries, they have specific orientation requirements.

#### 4.2.1.3 Scholarships, grants and exchanges

The majority of the students that is 76.12% (Aus) and 62.95% (SA) indicated that their PG/RC offered university scholarships for postgraduate students. Some UoTs in SA have Research Development Grants from the Department of Education to develop or kick-start research in the institution which they use in the form of scholarships and funding for their postgraduate students. Other UoTs work on the understanding that each master's or doctoral graduate translates into subsidy for the institution, they therefore invest money to earn subsidy later.

46.77% Aus and 27.23% SA PG/RCs offered travel grants to researchers while 34.33% Aus PG/RCs facilitated exchanges with other institutions indicating that services in these two areas need attention.

In terms of the process of applying for funding or scholarships, only 11.16% SA and 18.91% Aus respondents said they experienced less than eight steps or processes to complete their application; while more than half (54.70%) SA and 45.77% Aus

indicated that the funding application process had more the seven steps. While bureaucracy always hampers progress, the researcher acknowledges that the UoTs need to safeguard themselves, they therefore build in checks and balances into their processes to ensure that they fund deserving candidates.

Many students had the following complaints:

- *“I had to run around to get all the signatures on the form”;*
- *“the application processes are too complicated as well as the form”;* and
- *“I live in another city from my university, it is very inconvenient for me to complete such a difficult form. I have to give up many funding opportunities”.*

The last reason may be due to globalization as universities in SA and Aus have many enrolments from other countries. This is also the case in the United States of America where Robillard (2010) found that students perceived the application for federal financial aid as challenging because it contained more than 100 questions, which many students found daunting’. To address this problem, in the Obama-Biden Plan (2012), President Obama introduced a new, simplified Free Application for Federal Student Aid (FASFA) and streamlined the financial aid process by eliminating the federal financial aid application. Lessons may be learned from this by SA and Aus UoTs to simplify funding application processes to make it more accessible to students. Another way to assist students would be for UoTs to hold workshops or briefing sessions where they show students how to complete the required documentation.

In addition, more than 63.96% SA respondents said they wait more than two months for their funding applications to be processed; only 14% said applications are processed within one month. The situation in Aus UoTs is much better, 29.22% said the process takes more than a month and 22.47% said the wait was between two to three weeks. Having worked in a PG/RC, the researcher is aware of this delay - Conference Funding

Committee meetings cannot be held every week or a few times a week as staff from outside the PG/RC serve on this committee and require adequate notice of meetings. Meetings of this committee are also scheduled at the beginning of each year for the whole year to enable the PG/RC and the UoT community to plan in advance.

Among the ‘other’ category, comments included:

- *“I waited for four months only to be told they even never receive my application from the department”;*
- *“I took three months to complete my application with all needed signatures and handed in, now another two months passed, I still did not get any funding”;*
- *“After three months, I called them and were told my form has not been processed because it needs my promoter to sign. I do not know if I did not call them, will they call me to tell me about my form?”; and*
- *“I missed my conference due to the delay of the funding”.*

The findings suggest that universities should clearly specify and inform students of the procedures and processing time, and they should inform applicants of omissions or unfulfilled requirements immediately to ensure quick turnaround times and quality of this service. This is most definitely a gap that needs to be urgently addressed.

#### 4.2.1.4 Monitoring research progress

80.10% Aus respondents indicated their research progress was monitored; this was only the case for 39.73% of the SA respondents. As Mouton (2007: 1078) said, most universities, including the more established research universities, are not doing enough to ensure that the necessary conditions are in place to ensure quality of postgraduate studies across the board. To monitor progress Dietz, Jansen and Wadee (2006: 13) suggest that students should be requested to reflect on each contact session with their supervisor and provide him/her with feedback and goals for the next session. It is

important to monitor research progress to ensure a quality experience for the student and the research supervisor.

#### 4.2.1.5 Selection of promoter/supervisor

Low percentages of students, 32.89% (Aus) and 17.9% (SA) received assistance from their PG/RC in terms of selection of a promoter or supervisor. It is noted that although all UoTs assist students with selecting a promoter or supervisor, this service is not commonly provided by the PG/RC. At some of the Aus UoTs, for instance, the Faculty Research Office is responsible for assisting students to find a suitable supervisor. At some of the SA UoTs, supervisors are appointed by the heads of department.

Students showed a strong demand for this service. One South African respondent said:

- *“I do not know how to select my promoter, what the procedures are, what I should do and whom I should talk to”.*

Others said:

- *“it would be very nice if they would provide assistance and guidance to find a prestigious mentor in my field of study”; and*
- *“we do not know supervisors’ information, their supervision experiences, the research projects they participate in, their research topics and research field, etc”.*

Response from staff members on the other hand indicated that:

- *“We know that finding the right supervisor is crucial to every postgraduate student and we do try our best to provide students with all the information they need in order to give them facilities to find a supervisor [who] matches their research interests, but we do not nominate supervisors for them”;*

- *“we think the process of selecting a supervisor is a two way interactional process that gives both the student and researcher an opportunity to understand each other. During their conversations and discussions, they can get acquainted with each other”*; and
- *“students ask about supervisors’ professional experience to decide if they should go to them or not. But it also means the supervisor must accept the student, so we can’t decide who the supervisor should be”*.

It would seem therefore that while students say they require this support service, members of staff feel that this decision must be made between student and supervisor. A way forward could be for the Faculty Research Office to create supervisor databases for each of the faculties so that they could refer students to potential supervisors/promoters who could then meet and decide on the way forward; making this a function of the PG/RC may not be feasible as supervision requires discipline or subject and research knowledge and expertise.

## **4.2.2 Research capacity development and support**

### **4.2.2.1 Financial support**

More SA (54.91%) than Aus students (37.31%) (*see* Figure 4.2 on page 90) indicated that they were aware that their PG/RC offered various forms of financial support. This is possibly because the desired outcome of the South African National Plan for Higher Education (NPHE) (Ministry of Education, 2001) (discussed in Chapter one) and the funding formula which are very specific when it comes to the role that higher education institutions (HEIs) should play in research (Lues and Lategan, 2006: 108) and they encourage research productivity by rewarding quality research output at public HEIs (Department of Education, 2003: 4). Development grants are therefore made available to build research capacity. According to South African Higher Education: Facts and

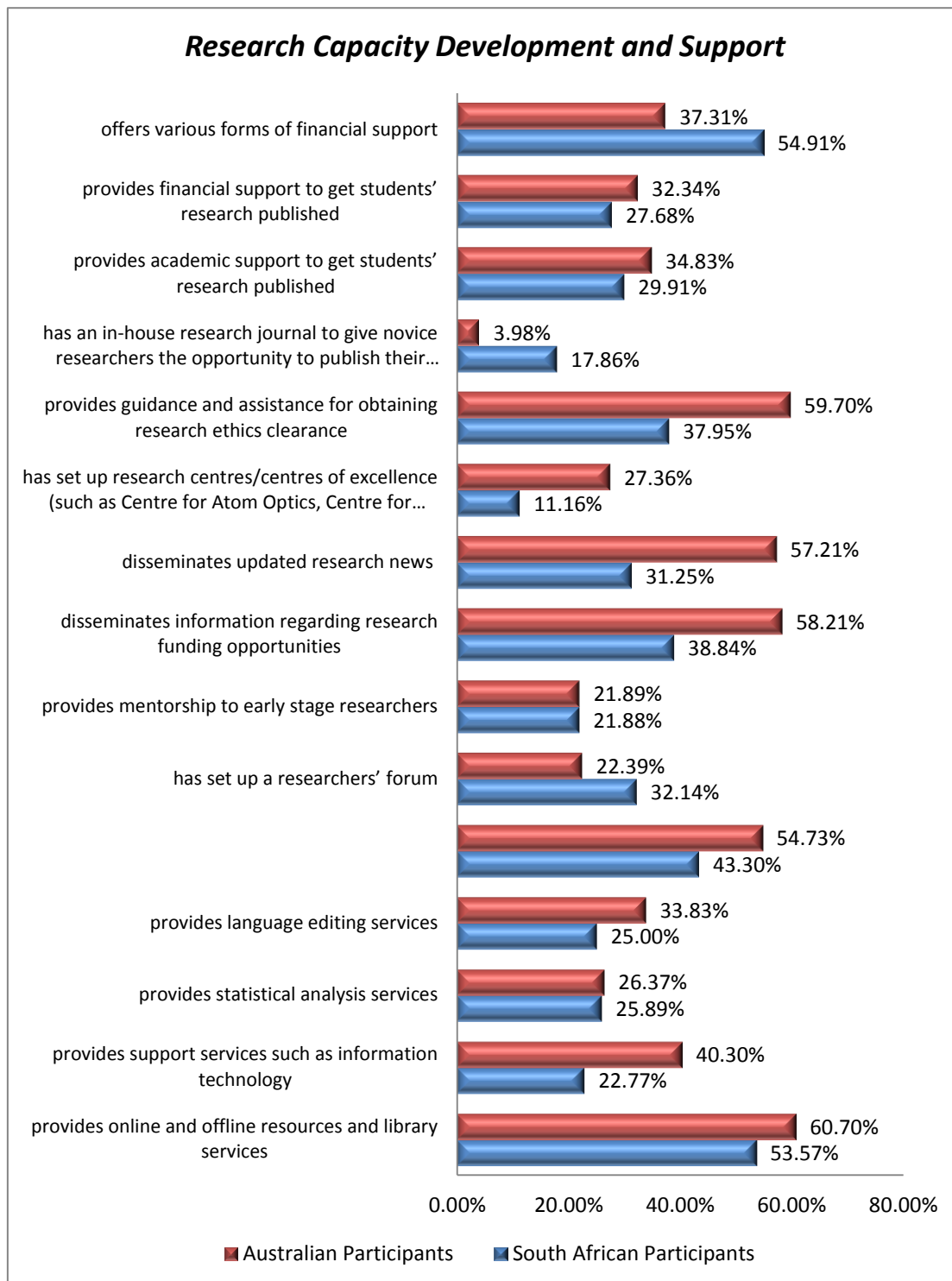
Figures (2010: 17), South Africa spends 0.9% of its Gross Domestic Product (GDP) on research and development, this proportion increased to 1% during 2009/2010.

The majority of the SA students said that although they knew funding was available, they were not made aware of “*exactly what was available*” or “*who qualified for the money*” highlighting once again the need for clear communication and marketing of the PG/RC services.

Responses from staff indicated that generally students are awarded funding, fellowships, scholarships, incentives, and bursaries among others on a competitive basis. One respondent explained “*there are some specialist scholarships funded by areas of research strength but there are also university scholarship funded based on competitive ranking. Specialist scholarships are competitively ranked though the pool is smaller*”. Another said “*we have a number of grants with industry partners that include student scholarship stipends and open doors for work experience, industry linkages for research etc*”.

The above responses from staff members are inconsistent with the responses on the student questionnaire. This finding may indicate that the services and support which the university provides are not adequately communicated to the students as they are not aware of the support and services available. McKinnon, Walker and Davis (2000: 94) point out that it is too much to expect that all students and staff will know (of all the services) but the extent to which there are gaps, the smaller the proportion of the community that do know, the less excellent the service is. This finding once again highlights the importance of orientation programmes and the necessity for wide communication with the university community regarding services provided and services required.

Figure 4.2: Research capacity development and support



#### 4.2.2.2 Staff engagement in postgraduate studies or research

All respondents indicated that their university does provide support to members of staff who are engaged in postgraduate studies to varying extents in the form of reduced workloads, study leave, lecturer replacements among other duties. Other support may be negotiated within the faculty on a case by case basis. Responses to question nine indicated that staff who are not enrolled for postgraduate studies, but are engaged in research also receive research service and support, which may include: funding support to conduct research and to attend conferences; administration services, such as sourcing of external funding, assistance with grant applications, and establishment of research collaborations with external partners, among others; and research skills or development workshops. This reveals that albeit differently, both SA and Aus UoTs attach great importance to research and the academic and professional development of staff.

#### 4.2.2.3 Publishing support

27.68% (SA) and 32.34% (Aus) respondents indicated that they receive financial support to get their research published; and 29.91% (SA) and 34.83% (Aus) respondents indicated that they receive academic support to get published. This may be due to the range of support services being offered at SA UoTs to encourage the publication of work done for higher degrees. The support includes monetary as well as quality assurance functions (Schulze, 2008: 656), such as the payment of page fees, editing or proofreading services, and registration fees to enable publications in accredited peer-reviewed journals.

SA researchers whose works appear in publications accredited by the Department of Education are rewarded in monetary terms, that is, subsidy is earned for the institution. Schulze (2008: 655) explains that a portion of the money that is earned from the state for research output is channelled to researchers' research account which may be used to conduct research, attend conferences or buy resources to support research. Balfour and

Lenta (2009: 9) add that the National Research Foundation Act (NRF 1998) in SA also promotes and supports research through funding and human resource development. The benefit of providing funding is that it serves as an incentive to deliver quality research that may be published. Some staff complained though that as each year passed, the money earned for publications was being “*eroded*” by the institution, they added that “*it is not fair as we do all the work so why should the institution get a bigger portion of the money?*”. The researcher is of the opinion that if UoTs are serious about encouraging publications, they should ‘lure’ staff by rewarding them with more money for each publication. As in any other situation, money or reward is an attractive incentive to get people to improve performance.

27.23% SA and 31.84% Aus respondents indicated that the PG/RC provides grants to attend local and international conferences. Samuel (2000: 69) agrees that attending international conferences has the effect of promoting staff and student perspective on educational matters. It is a great opportunity for researchers to network with and be exposed to scholars from different institutions, disciplines and indeed different countries.

Some SA HEIs offer in-house journals and research series to give novice researchers opportunities to publish their research and also to provide hands-on and best practice solutions for faculty to engage in the research process. This highlights an improvement opportunity for UoTs to increase the publication output which correlates with Lues and Lategan (2006: 114) finding where students and researchers were urged to convert their papers into article format for submission to in-house and other journals which led to an increase in research output.

#### 4.2.2.4 Language editing and statistical analysis services

Only 33.83% and 25% Aus and SA respectively indicated that they received language editing services; and 26.37% and 25.89% Aus and SA respectively received statistical

analysis services. There was therefore a great demand from both countries' respondents for language editing and statistical analysis services. Participants' comments included:

- *"I got stuck as I do not know how to deal with my research data. I need someone assist me with this";*
- *"English is not my first language, if someone can edit my paper, it will be looked much better";*
- *"it will be much easier for my paper getting published if it can be edit before I send it to a journal"; and*
- *"I found a editor by myself. He charged me a lot and took a very long time to edit my dissertation. But he is not familiar with my study field. I spent lots of time and money, but my dissertation did not satisfy with my supervisor. I think this situation does not only happen to me".*

Olivier (2007: 1138) and Schulze (2008: 655) also found that there is a lack of support with quantitative research, in particular with the statistical analysis and interpretation of data in SA HEIs. He added that institutional infrastructure to support quality research should include offices with modern computer facilities, a well-resourced library with efficient staff, a Department of Language Services, and statistical analysis services.

This study found that students are sometimes exploited by statisticians and proofreaders who demand exorbitant payments but often fail to render the required services. Centralizing these services in the PG/RC could provide a valuable and much needed service especially since the majority of SA students do not speak English as a first language and because many students do not have knowledge of statistics.

#### 4.2.2.5 Dissemination of information

57.21% Aus and only 31.25% SA students said they received updated research news while 58.21% Aus and 38.84% of SA students indicated they received information about research funding opportunities. Some of the SA respondents complained:

- *“I only receive the research news from my supervisor”;*
- *“the email were sent to my university email address which I hardly use and when I opened it, the funding opportunity was already expired”;*
- *“I know the news are published on the university’s website, but I cannot find it and I do not know how to access it either”;* and
- *“as a part-time student, I never receive any information”.*

Others suggested that the university should:

- *“release the news on Facebook or Twitter”;*
- *“send us emails to the mailbox we attend regularly, not the one we never use”;* and
- *“sms students regarding all the news and funding information”.*

Seth, Deshmukh and Vra (2005: 939) agree that technology plays an important role in improving quality of service.

Staff indicated that the main channels for disseminating service news are *via* email, while the other approaches, such as display on the university homepage, mailing to departments for display on their noticeboards, sending to the Deans of each faculty for dissemination to staff members and students, and/or scheduling meetings with the university community were also used by some of universities. One respondent added, *“centrally we rely heavily on email but are exploring use of SMS”*. Given the very wide use of cell phones in SA and globally, it is a wonder that institutions are not using the opportunity to send out bulk SMSes to students. It is a quick and very effective means of communicating with students.

#### 4.2.2.6 Research capacity development

43.30% SA and 54.73% Aus students said that their PG/RC organized specific training on students’ request. The results indicate that SA UoTs are not far behind their Aus

counterparts in developing research capacity at their institutions. This may be due to the fact that SA UoTs have a great demand for sustaining current research strengths and promoting the kinds of research and other knowledge outputs required to meet national development needs (Department of Education, 2001b: 60). To meet these demands, the Department of Education (1997) requires institutions to secure and advance high-level research capacity which can ensure both the continuation of self-initiated, open-ended intellectual inquiry, and the sustained application of research activities for technological improvement and social development.

Balfour and Lenta (2009); Boyd and Fresen (2004); Chetty (2003); Fowler, Baird, Baron, Davies, Procter and Salisbury (2009); Lues and Lategan (2006); and Ogude and Motha (2001) agree that there is a need for research capacity development and support services as they contribute positively to the overall student experience and research output rates. As many staff members at UoTs are not qualified at master's level, development and skills workshops are necessary to enable them to engage in research. PG/RCs therefore have to develop research skills of staff and students through seminars, workshops, personal interaction and publication opportunities. Glencross and Mji (2001: 178-179) concur that the PG/RCs were set up to develop staff and students' research knowledge and skills so that they are able to initiate quality research projects and participate effectively in ongoing research.

#### 4.2.2.7 Supervisor training

Supervisor training is provided as indicated by 44.78% Aus and 22.32% SA respondents indicating that SA UoTs do not place too much emphasis on supervisor training. This is supported by Eli (2010: 39) who found that apart from institutional efforts (by research development offices, faculties and departments, in particular) and national workshops and conferences, no formal and coordinated supervision training and development programmes apparently exist in South Africa. This result therefore suggests that support and training for supervisors should be high on the agenda at all SA institutions.

Van Jaarsveld (2009) in Eli (2010: 39) states that since postgraduate training is regarded as one of the building blocks in the research dispensation in South Africa, the training and development of supervisors should be funded by the National Research Foundation (NRF). Schulze (2008: 651) adds that staff development activities should include mentoring of novice supervisors, academic writing workshops, extensive programmes relating to research development for academics (e.g. training in research methods), support for external communication (e.g. via meetings and conferences) and support for internal communication (e.g. seminars, and sponsoring a research report series).

#### 4.2.2.8 Monitoring supervision

Only 28.13% SA and 33.33% Aus students stated that that supervisors' experience/training/academic qualifications are monitored which begs the question: how is supervision quality ensured if supervisors' performance is not monitored? In addition, only 36.32% Aus and 27.68% SA indicated that supervisors are reviewed for accreditation by their institution. This suggests that UoTs should possibly consider evaluating and accrediting supervisors' capacity and preparedness to offer quality supervision at postgraduate level.

The fact that below half, that is, only 33.48% SA and 43.78% Aus supervisors have access to appropriate resources to work with at the university indicates further that much needs to be done in terms of training, monitoring, and provision of adequate resources to ensure quality supervision.

### **4.3 THEME TWO: SERVQUAL DIMENSIONS ANALYSIS**

#### **4.3.1 Reliability**

Only 30.81% SA and 22.76% Aus students said that services are provided in the promised time indicating differences and a service gap of -0.79 between the services promised by the PG/RC and the services which students actually receive. Clement and

Selvam (2006) explain this as the external communication gap where there is inconsistency between what is externally communicated (promised) and what the service delivery system is actually able to provide the customers with. Several factors may contribute to the origin of the gap: a lack of communication between the marketing department's members and the first line service providers, a propensity to overpromise (Zeithaml *et al.*, 1988), or an inability to communicate clearly and accurately the benefits of the service offered to the customers (Brogowicz *et al.*, 1990).

More than two thirds of the Aus respondents were satisfied with the services in terms of fulfillment of promises by the PG/RC suggesting that the internal and external communications are effectively integrated in the service delivery by the service provider.

In cases where a promised service cannot be delivered, 84.38 % SA and 95.52% Aus respondents expect the PG/RC to inform them when the services will be performed. The service gap of -1.04 in SA as compared to -0.49 in Aus indicates that the SA PG/RCs are definitely tardier in informing students when promised services will be performed. The majority of the respondents in both countries said that it may be necessary to use more than one means of communication to inform students about when services will be offered.

Less than 50% in SA and up to 80% Aus respondents were satisfied with the accuracy of information received from the PG/RC suggesting that the SA PG/RCs need to improve their service in terms of the accuracy of information they provide.

#### **4.3.2 Responsiveness**

89.73% SA and 94.52% Aus expect that when they face problems with other departments, the PG/RC would provide a 'one-stop' service for them and resolves issues with those departments but only 21.43% SA in comparison to 62.19% Aus said they receive this service.

It is interesting to note that the Aus respondents had the highest expectation score (4.68) but low perception score (3.72) while the SA students had the lowest perception score (3.00) for this service making the service gap -1.46 for SA and -0.96 for Aus. This result shows poor coordination between the PG/RC and other departments especially at the SA UoTs. Sureshchandar, Rajendran and Anantharaman (2001); Amar and Zain (2002); and Talib, Rahman and Qureshi (2011: 9) explain that the employee relations and coordination between departments influence the performance of the organizational system and consequently determine the nature and extent of service quality implementation.

Staff members as the first line service providers in the PG/RC are important elements in the service delivery process. Respondents said they should have a “*willing*” attitude, knowledge and ability to attend to requests. Abouchedid and Nasser (2002: 198) agree that the first encounter of students at universities is the administrative office, which leaves a lasting impression. Heinonen (1997: 22) adds that in service delivery two components of success and failure are the ability of the personnel to perform the service and the attitude of the employees. This result indicates that staff members must be adequately trained if they are to provide quality service. Bitner, Booms and Tetreault (1990: 71) therefore suggest that staff should be trained, motivated, and rewarded for exhibiting those behaviors.

In terms of responses in the responsiveness dimension, the service gap of -1.29 means that the SA respondents are quite dissatisfied with staff members’ performance while the -0.88 gap for the Aus students indicate they are mostly satisfied that staff members always explain to them patiently about the services and facilities on offer.

#### **4.3.3 Assurance**

SA students are less assured than their Aus counterparts when dealing with the PG/RC, of greatest concern is the accuracy of information provided (service gap of -0.85),

compared to the Aus students' main concern which related to the manner in which queries are handled by the postgraduate or research centre staff (service gap of -0.48).

The lowest gap for SA (-0.59) and Aus (-0.13) was in respect of professionalism of the PG/RC staff and the manner in which they dealt with student queries.

#### **4.3.4 Empathy**

Respondents expect the PG/RC to provide personal attention to each student, to provide individual responses to their problems as they have different circumstances, and to always look after the best interest of the student. The SA student responses indicated the highest gaps in the above regard suggesting that their PG/RCs were not empathetic towards them but it is difficult for staff members satisfy all the demands of all the individuals all the time. It is therefore imperative that the PG/RC adequately communicate the services they provide together with the time required to process applications, their procedures and processes, etc so that students have a clear understanding of what to expect. Proper training of staff members could also go a long way in ensuring that matters are dealt with expeditiously and by taking individual circumstances into account. As Zemke and Schaaf (1989) say, service strategy has to be communicated over and over again to everyone; the employee at all levels must be aligned with a single vision of what the organization is trying to accomplish.

A service gap of -1.00 (SA) in relation to -0.20 (Aus) indicates that the former are not satisfied with the operating hours of the PG/RC suggesting that the PG/RCs in SA should perhaps pay more attention to extended hours of operation for improvement in this aspect of service delivery.

#### **4.3.5 Tangibles**

Only 25.89% SA respondents said that it is easy to find the PG/RC on campus in comparison to 92.04% Aus. A service gap of -1.28 in terms of brochures/application

forms/information from the PG/RC being readily and widely available on campus indicates discrepancies between expectations and perceptions of service in the tangibles dimension. It is evident therefore that the PG/RC needs to make themselves and their services more visible and accessible to the university community.

#### **4.4 THEME THREE: ATTRACTING QUALITY POSTGRADUATE STUDENTS**

Gbadamosi and de Jager (2009: 880) point out that there are various factors which influence scholars to study at a specific tertiary institution, including location, reputation of academic quality, course specifics and career opportunities.

##### **4.4.1 Marketing of the institution**

Responses in terms of their institution using: the recognized reputation of their research fields, (SA, 34.82% and Aus, 70.65%); and qualifications of their professors and promoters/supervisors (SA, 39.29% and Aus, 71,64%) as important tools to market the institution and attract postgraduate students, indicates that SA UoTs still have a long way to go in this regard. It is a given that students will be drawn to institutions that boast excellence. Childs (2012) agrees that research activity is fundamental to the identity of higher education, and research students expect a high-quality research environment. Delany (2008: 2) Cullen, Pearson, Saha and Spear (1994) concur that high calibre students are attracted by a reputation for excellent supervision and a strong research profile as it facilitates in fulfilling their potential which, in turn, enhances the institution's research reputation.

##### **4.4.2 Links with industry**

Only 31.70% SA in relation to 57.21% respondents said their institution regarded the requirement of good partnerships or links with industry as important suggesting that the

UoTs in both countries should place greater emphasis on setting up partnerships with industry in order to ensure employment opportunities for their postgraduate students.

#### **4.4.3 International student exchange programmes**

34.38% SA and 59.70% Aus students agree that their UoT rates the international students' exchange programme as an important requirement to attract more postgraduate students. It is noted more than half of South African (53.13%) and 38.31% of Aus respondents are uncertain about it. The finding suggests that the SA UoTs in particular should provide affordable access to international education for students in order to facilitate postgraduate study and research mobility and to foster campus internationalization.

#### **4.4.4 Safe university environment**

Less than 50% SA students, that is, 46.43% in comparison to 78.61% Aus said their UoT regarded a safe university environment as an important requirement to attract postgraduate students suggesting an area of great concern. If UoTs want to attract students to their campuses, they must ensure that they provide a safe environment that is conducive to studying. It is a given that students will not be attracted to an institution where they do not feel safe. Gbadamosi and de Jager (2009: 890) agree that the issue of safety and security is a society-wide problem and that university specific safety and security concerns may require tighter measures if they are to attract quality students.

#### **4.4.5 Location of university**

39.29% of South African and 57.21% of Aus respondents said their university rates the location of university as an important aspect. A study by the Human Sciences Research Council (HSRC) in South Africa found that the most important influence on students'

choice of institution is its reputation followed by the geographical location (Gbadamosi and de Jager, 2009: 880). They explain that students who live farther from the university tend to be more concerned with a convenient transport arrangement; and one of the reasons why location is important for students in SA is because more than a third of all students do not have suitable quiet place in their home to study or library facilities near their home.

#### **4.5 THEME FOUR: SERVICE QUALITY**

##### **4.5.1 Service quality control**

Less than one third (30.80%) SA and 51.74% Aus students agreed that their UoT has service quality planning and monitoring to ensure service quality suggesting that PG/RCs should do service quality planning in order to identify postgraduate students' needs for the designated services, service gaps and/or surpluses; while service quality monitoring can be carried out to oversee, co-ordinate and monitor the planning related to quality of the PG/RC services. After analyzing the questionnaires, the researcher realizes that the majority of the SA student respondents would probably not be aware of any quality planning or monitoring as they were not even aware of the services provided by their institution's PG/RC.

It is evident though that comprehensive policies and strategies to address service quality should be drawn up and communicated to all stakeholders. Hernon and Altman (2010: 109) point out that the staff should not presume to know what customers expect, nor should they downplay the importance of letting customers voice their expectations and of customers seeing policies shaped around those expectations. Grönroos (2000: 102) adds that: insufficient planning procedures; bad management of planning; lack of clear goal-setting in the organization; and insufficient support for planning for service quality from top management, can lead to this quality gap.

27.23% SA respondents disagreed that the university has recovery mechanisms in place for service failures. As discussed in Chapter two, this is one of the key factors leading to the management perception gap. McKinnon, Walker and Davis (2000: 90) explain that where services fall short of student expectations, in the absence of management action to encourage more realistic expectations, or remedial action to supply additional services, universities lose students unnecessarily, fail to achieve optimal success rates, and/or suffer a lower reputation than may be deserved.

This shows it is necessary for PG/RCs to have recovery mechanisms in place for service failures. Adopting Berry's (1995: 97) point of view, PG/RCs should encourage students to complain or provide feedback when displeased with the service, and in this way, ensure that students' service needs are better understood; on the other hand, the postgraduate or research centre should place sufficiently trained staff members in problem-solving positions and empower them to solve most problems immediately; while the systems and technology sections should invest in to recovery support services.

Similar numbers of SA students agreed (24.55%) and disagreed (26.34%) that their university has student-driven service design and standards to ensure service quality, while in Aus the same applied but the percentages were higher (agree, 42.29% and disagree, 47.26%) suggesting that SA has a severe lack of customer-driven service designs and standards in the PG/RC as compared to Aus. Zeithaml, Bitner and Gremler (2010: 212) point out when service standards are absent or when the standards in place do not reflect customers' expectations, quality of service as perceived by customers is likely to suffer. To be effective then and to close this gap, PG/RCs need to: keep lines of communication open with their customers/students; gather student feedback on a regular basis; and analyse the feedback to determine how they can make services student-driven (*see also* Talib *et al.*, 2011).

#### **4.5.2 Communication and knowledge of students' expectations**

In response to whether the PG/RC staff members have knowledge of students' expectations in terms of their study only 29.02% SA and little more half (55.22%) Aus students were in agreement. This indicates that students and the PG/RCs are not co-ordinating their efforts, in other words, they are working largely independent of each other, but students and PG/RCs should enjoy a mutually beneficial relationship. Maringe and Gibbs (2009: 40) posit that it is important for university staff to have a good understanding of these expectations, to actively design and create ways in which these expectations can be met and to determine the level of student satisfaction in this key area. Management also can use this knowledge to set service quality standards for the PG/RC. Yeo (2008: 153) points out if universities do not know what students expect, they will fail to be prepared for the changing needs of students in providing funding and training that are relevant in developing and supporting students' postgraduate studies. This finding therefore stresses that SA UoTs should take the issue of 'understanding students' expectations' very seriously. After all, how can they ensure service quality if they do not know what services are required or what students expect in the first place?

Fitzsimmons and Fitzsimmons (2006: 131) suggest that service providers can use surveys, complaint systems and customer panels for improving market research; foster better communication between management and its contact employees, and reduce the number of levels of management that distance the customer. Providers might also wish to consider formal brainstorming sessions or gap analysis (Deans and von Allmen, 2003). At the Durban University of Technology, a Postgraduate Forum was launched for postgraduate students to: raise their concerns; alert the PG/RC on statutory issues, and to become more involved in postgraduate research (DUT homepage, 2012b).

It is a matter of serious concern that only 28.13% SA in contrast to over 58.21% Aus students perceive that that their university rates the importance of understanding students' expectations as important indicating that the SA students do not feel like the

valued customers that they are. This was confirmed by two SA staff respondents who said that the university does not gather data about postgraduate students' expectations. Not surprising therefore that 59.82% SA in contrast to 10.45% Aus students said that their PG/RC does not satisfy student needs. This finding indicates the gap in service delivery. Also, if customers feel that they are not important, it stands to reason that they will not encourage other students to attend the institution and they themselves may lose confidence in the institution.

In response to questions regarding the adequacy of communication between the PG/RC and students, an overwhelming 81.69% SA and 64.73% Aus students either disagreed or were neutral and students further emphasizing this gap. Assié-Lumumba (2006, 79) notes that a lack of communication results in student alienation because of the latter's exclusion from the decision-making processes. This could have severe repercussions for the UoT. Assié-Lumumba (2006) found that the lack of communication channels among different constituencies within some African universities contributed to increasing tensions that made instability an inevitable occurrence often resulting in state intervention. All staff were in agreement that it is important for PG/RCs to understand students' expectations. One explained: *"as a growing entity it is vital to understand the needs and expectations of postgraduate students. Important to iron out bottlenecks in the system and this must be understood from a student's perspective, rather than the administrative staff"*.

Four Aus staff responses indicated that the university does in fact gather data about postgraduate students' expectations through surveys, setting up meetings on a regular basis with different levels of administrative and academic staff, and/or holding regular postgraduate student forums to gather information.

Regarding the relationship between student and supervisor, one of respondents said, *"there is a non-mandatory survey tool that we encourage students and supervisors to complete together. We encourage informal resolution before formal grievances are set*

*in place. Informal resolution can involve email, meetings, telephone discussions etc”.* Another added: *“it is not only important to understand expectations but to help students and supervisors to work together to set realistic expectations. Particularly new students to Australia and students returning to study to conduct research may not understand the research culture and struggle to perform if they cannot resolve disparities in expectations early in candidature’.*

It was evident from the responses that these respondents did see the importance of understanding service receivers’ needs. They felt that *“postgraduate students pay fees which sustain the university and as such they should be valued”* and *“it is important that as a service provider, we know what our students’ expectations are so that we can satisfy them as best as possible and ensure that our services are appropriate to the groups that we service”.*

Results also indicated that the PG/RCs concentrate almost all their efforts on attracting new postgraduate students but once they enroll, very little is done to cater for their needs or to communicate regularly with them. Consequently there was high postgraduate student turnover but low student satisfaction. Institutions need to build and maintain trusting relationships with their customers; they need to make them feel valued so that they in turn will serve the institution with pride. As in any business relationship, customer and service provider need each other to transact and both parties play vital roles in relationship.

#### **4.5.3 Management and co-ordination at all levels**

14.73% SA in contrast to 43.78% Aus students agreed that the university has effective and efficient management at all levels within the university. In contrast to student responses, the majority of staff indicated that there was a lack of effective and efficient management at all levels within the university. They felt that as students did not deal directly with management, they often did not understand that *“many of the problems stem from the top. There are no adequate policies in place to ensure that things get*

*done the way they should be*". Staff also complained that they are often blamed for poor or non-delivery of services when in fact they were only carrying out managements' mandate but students do not understand this as *"they regard all staff as being key decision makers"*. Staff and students were in agreement though that communication among the university bodies and structures, the PG/RC and students were inadequate.

In the context of HEIs, good co-ordination among academic and administrative departments is particularly important to create good quality service. As stated by Reddy (2007: 488), academic staff are directly responsible for service delivery but it is also clear that other staff who assist in facilitating the teaching and learning process (administrative and technical) and who play a key role in operational activities of the institution are equally valuable to the service delivery of the institution. Berry, Parasuraman and Zeithaml's (1994: 41) concur that service-performance shortfalls are highly correlated with the absence of teamwork. The finding therefore suggests that academic and administrative departments should support each other and work together as teams to provide good quality services to their customers, the students. The University of Hawaii (2011); New York University (2010); Simon Fraser University (2002); University of Washington (2007); and Brown (2012) among others agree that the quality of any university is reflected in the quality of its staff and faculties. It is therefore important that universities and the SA UoTs in particular, employ quality staff and train them work together to provide quality services.

#### **4.5.4 Students as the service receivers**

66.52% SA and 75.12% of Aus participants agreed that they as the service receivers have knowledge of their roles and responsibilities. As discussed in Chapter two, the service productivity and quality depend not only on the performance of the service provider's personnel, but also on the performance of the consumer. Hill (1995: 11) agrees that in many services, the consumer is required to contribute information and/or effort before the service transaction takes place; and the consumer's input constitutes

the raw material that is transformed by the service organization's employees into a service product. Consequently, the consumer contributes directly to the quality of service delivered, and to his/her own (dis)satisfaction (Mills, Chase and Margulies, 1983: 302).

If the inputs provided by the consumer are inadequate and/or inappropriate, this may well lead to service problems and failures. This finding therefore suggests that the students, as the service receivers, should have knowledge of their roles and responsibilities, in order to ensure service quality. Furthermore, students' service perceptions may be enhanced by educating them to be better users of the service and by adequately explaining to them facets of the service process.

#### **4.6 THEME FIVE: ORGANIZATIONAL STRUCTURE OF THE PG/RC**

##### **4.6.1 Centralized and Decentralised PG/RC**

All the SA and Aus staff said that they have a central PG/RC at their institution which is also decentralized to each faculty albeit differently. The Aus respondents added that there are several divisions within their PG/RCs, each with different responsibilities e.g. development, management, support, etc. The majority of the respondents agreed that the decentralized centres in each faculty (to varying extents) benefitted staff and students as they provide some of the following services specifically at faculty level: a one-stop postgraduate or research; assistance with research queries; dissemination of research information; facilitation of communication on research matters between the faculty and the PG/RC; liaison with the PG/RC; proposal writing and form-filling; informing faculty of funding opportunities specific to them; providing relevant forms; and managing research matters in the faculty. An Aus respondent added that the decentralized PG/RC in each faculty also facilitates distribution of research funding, provision of desk and office space, laboratories, etc, and they provide peer reviews of work in progress to create a research culture to support candidature.

#### 4.6.1.1 Decentralised PG/RCs

At both the SA and Aus UoTs, the decentralized PG/RCs report to the Dean/s of the faculty. An SA respondent explained that the structures are different at each of the UoTs, at some the person in charge of the decentralized PG/RC is a Research Co-ordinator or Research Professor who deals with all research matters pertaining to the faculty, supervision, training and development, and postgraduate student matters.

At the Aus UoTs the structure of the decentralized PG/RC differs from institution and indeed from faculty to faculty, nonetheless at all the institutions; the decentralized PG/RC is headed by a Dean of Research and Graduate Studies/Faculty Research Office or an Associate or Deputy Dean of Research who reports to the Dean of the faculty. Research Directors or Faculty Research and Development Officers form the next level of research management in the faculty and play an important role in the support and administration of Higher Degrees by Research. On average between four to six Research Administrators or Responsible Academic Officers are employed with specific portfolios (eg. approval of changes to candidature, scholarship variations and thesis examination issues) to provide research support services at faculty level.

One Aus respondent explained that at their university, the PG/RC in each faculty is staffed by an Associate Dean: Research (ADR), a Postgraduate Research Co-ordinator and various administrative staff to carry out specific duties. The ADR reports to the Dean of the faculty. The ADR is in charge of the decentralized PG/RC with overarching research responsibilities including publications, grants, research students, infrastructure and researcher development, etc. The Postgraduate Research Co-ordinator deals with student support, academic guidance, training, support for supervisors. One to five administrators are employed with the responsibility of processing paperwork, scheduling research seminars, conducting training and orientation, managing the provision of resources, and other administrative duties.

At others, the decentralized PG/RC is staffed by a head/director and one or two academic staff to deal with specific portfolios, and various administrative support staff dedicated to particular research duties, e.g. co-ordination of research proposals and examination processes and procedures, monitoring of research progress, and provision of research services dedicated to each programme, etc. Administrative staff take care of all research administration issues and paperwork.

It is obvious from the above that the Aus UoTs place a lot of emphasis and person power into research at faculty level while the SA UoTs decentralized PG/RCs are poor in terms of human resources. Perhaps this strong foundational support at faculty level could explain the levels of Aus student satisfaction compared to the levels of SA students' dissatisfaction discussed earlier in this chapter. The fact that the Aus UoTs have a team of dedicated staff at different levels to deal with specific academic and administrative portfolios as compared to one person to perform all the duties in the SA UoTs speaks volumes about the quality of support at faculty level.

It was noted that the research activities arranged by the decentralized PG/RC at the SA UoTs are funded either the central PG/RC or by the PG/RC and the faculty, the latter meaning that the PG/RC still controls the purse strings. At the Aus UoTs, research is funded by the faculty only, in other words each faculty is allocated own funding. The faculties at the Aus UoTs are therefore able to utilize funding for the purposes that they deem appropriate, they do not have to take instruction from the central PG/RC in this regard, of course they have to comply with the institution's financial policies and procedures. The Higher Degrees Committee or Higher Degrees Research Committee both in SA and Aus are part of the centralized PG/RC and responsible for making final decisions and ratifying faculty research committee decisions.

#### 4.6.1.2 Centralised PG/RCs

The SA UoTs generally have tiered structures for the centralized PG/RC. The main function of the central PG/RC is to facilitate the sustainable development of research and postgraduate studies at the institution. This function is supported by various departments, committees and structures and staff that provide specific research support in terms of their portfolio.

In SA, staffing of the central PG/RC varies, some UoTs have a Director, a Manager, and Administrators who are responsible for external grants, internal grants and research outputs data collection; and a Faculty Research Officer (for each faculty) who is responsible for co-ordination between faculties and the PG/RC. The administrative staff and the Faculty Research Officers report to the Manager who in turn reports to the Director. No statistical support services are provided.

At other SA UoTs, senior management takes charge of the PG/RC. A Deputy Vice Chancellor: Research, Innovation and Partnerships is responsible for four divisions, namely: Research; Innovations; Centres and Institutes; and Statistical Services. Each division is headed by a Manager with up to eight staff members to carry out various administrative duties, a Grants Administrator, and a Faculty Research Officer for each faculty. At others still, divisions under the control of the central PG/RC includes (among others) staff development; postdoctoral fellows; institutes and/or centres; and financial administration.

The PG/RCs in Aus have different structures as well. The PG/RCs are however usually one of the divisions of Research and Research Training. Staffing includes: one Manager; three Co-ordinators who are in charge of candidature and examination, research training, and admissions, enrolment and scholarships; twelve Administration Officers to take responsibility for providing quality service to postgraduate students; one Grants Manager, two Grants Officers and two Grants Assistants; one Ethics Officer and one

Ethics Administrative Assistant who deal with research ethics and integrity; one Admin Officer and two Admin Assistants in charge of scholarships; and one Co-ordinator and one Administrative Assistant to deal with research training.

At other Aus UoTs, the Deputy Vice Chancellor: Research is responsible for research policy management and oversees all aspects of research at the institution. Staffing includes: the Dean or Director of the PG/RC; Managers for each of their divisions; one Higher Degree by Research (HDR) Candidature Manager; one Scholarships Co-ordinator; one Graduate Research Officer; one International Liaison Officer; and a Research Training Team. Other central PG/RCs included the division of a Research Information Systems division headed by a Manager who takes responsibility for: the research website and university research bulleting; design and maintenance of research information systems and databases; performance reporting and data analysis; higher education research data collection; and government statutory research data reporting.

The Aus central PG/RCs are responsible for research policy management and oversees all aspects of research including research funding, reporting, collaboration and commercialization; and they assist students with information on all aspects of postgraduate study, from applications, support and scholarships to career development.

The above structures indicate similarities to varying degrees among the SA and Aus central PG/RCs in that in both countries they oversee and support research across the institution. Fundamentally the differences lie in the decentralized PG/RCs as discussed in 4.6.1.1 above. The researcher therefore posits that if the central PG/RCs are playing similar roles in the Aus and SA UoTs, perhaps the SA UoTs need to pay heed to the Aus decentralised structures which are usually the students' first port of call.

#### **4.6.2 Support services to the PG/RC**

Many departments play an important role in providing support to PG/RCs in SA and Aus such as Finance Department, Information Technology, International Education

Office, Registrar's Office, Human Resources Management, Maintenance and Facilities Management, Communications, Printing and Department of Student Services and Development. Where support services were integrated into the PG/RC structure which was mainly the case in the Aus UoTs, there was greater synergy between departments. In the SA UoTs however, many of the support services were not part of the PG/RC but rather served the greater UoT community and as such they did not enjoy dedicated service delivery.

#### **4.7 SUMMARY**

The findings indicate that the SA UoTs lag behind the Aus UoTs in terms of communicating their services and forms of support to students. They also failed to recognize the importance of finding out student expectations; as such they were not providing satisfactory services according to student expectations.

The fact that the Aus UoTs have been in operation for a longer period than their SA counterparts accounts for the higher scores they received from students in terms of the service delivery and support meeting their expectations. All five dimensions of SERVQUAL, that is: reliability, responsiveness, empathy, assurance and tangibles indicated a negative score or quality gap suggesting that the SA PG/RCs need to urgently the gaps that exist at their institutions.

The next chapter presents the conclusions that arose from the research findings, highlights recommendations, offers a quality model and suggests implications for future research.

## **CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS**

### **5.0 INTRODUCTION**

The role of service quality in higher education has received increasing attention during the last two decades (Aldridge and Rowley, 1998; Clewes, 2003; Hill, 1995; Joseph, Yakhou and Stone, 2005; Sumaedi, Bakti, and Metasari, 2012), so measuring quality of service at higher education institutions worldwide is now a common phenomenon (Gbadamosi and de Jager, 2009: 878).

George (2007) and Ferreri (2008) cited in Finney and Finney (2010: 276) add that since the 1990s, an increasing number of colleges have created programs in order to compete for well-qualified students; specifically, many universities have chosen to implement corporate-style 'customer'-oriented programs to increase enrollment. SA is no exception, over the last decade the institutional framework within which most universities operates, has undergone major transformation forcing the higher education sector to become more competitive in its approach to attracting and retaining students. Against this background, service quality has been put forward as a critical determinant of competitiveness and a source of lasting competitive advantage through service differentiation (Sukwadi, Yang and Liu, 2011: 163).

Tait and de Jager (2009: 1026) explain that traditionally institutions assume that students have relatively homogeneous needs and expectations which result in the provision of uniform services but over time this approach has been questioned, particularly arguing that perceptions of services and service expectations change over time. Gbadamosi and de Jager (2009: 877) concur that it is therefore useful for higher education institutions to: understand what students value in their university experience; provide relevant education that best meets the needs of the various constituencies served; and to do an assessment of factors that influence students' choices and satisfaction.

## 5.1 SUMMARY OF THE STUDY

This study highlighted the significance of service quality to service organizations in general and to the higher education service sector in particular. The Gap Model of service quality was employed as the theoretical framework for this study.

The study investigated SA and Aus postgraduate students' expectations and perceptions of service quality at their UoTs. The Aus UoTs served as the benchmarking organizations in order to develop a quality model for a UoT PG/RC in SA. The adapted SERVQUAL instrument was employed to assess postgraduate students' perceptions of service quality by comparing their expectation with their perception of the services received across five service quality dimensions, namely: tangibles; reliability; responsiveness; assurance; and empathy.

## 5.2 ACHIEVEMENT OF THE OBJECTIVES

**5.2.1 Objective one:** To determine postgraduate students' expectations of the service quality in terms of their postgraduate studies/research support and development.

**Objective two:** To determine postgraduate students' perceptions of the service quality they actually received from PG/RCs.

**Objective three:** To measure the gaps between students' expectations and perceptions of service quality in terms of their PG/RCs.

Findings revealed a number of the challenges experienced by students. A major finding revealed that students' perceived experience of service delivery were significantly lower than their expectations. Of particular concern for the SA students were the problems they experienced with registration; some complained that they did not receive accurate or timeous information, while others said that there was no real support for returning students.

There was a strong demand from SA students regarding assistance from their PG/RC in terms of selection of a promoter or supervisor; students complained that they did not know the academic staff or their qualifications and therefore required assistance with selection of their supervisor or promoter.

The findings revealed that more SA than Aus students were aware that their PG/RC offered various forms of financial support. However, the majority of the SA students were not aware of “exactly what funding was available” or “who qualified for the money”. They requested that the funding application procedure be simplified, that students receive assistance with the completion of their applications, and that the turnaround time be revisited, in other words, that applications be processed faster. The shortage of available travel grants for researchers and inadequate support of exchanges with other institutions were also sources of concern for the students.

There was also a call for the PG/RCs in SA to pay closer attention to the preparedness and qualifications of supervisors, quality of supervision, supervisor training, provision of adequate resources and technology for supervisors, and evaluation or accreditation of supervisors to ensure quality. Language editing, statistical analysis services, research capacity development and support services were highlighted as important needs as they contribute positively to the overall student experience and research output rates.

Although respondents from both countries agreed that their institutions support and fund research activities, they stated that more financial support was required for published research to incentivize researchers to increase output and to encourage other researchers to start publishing.

As the findings in theme two show, the respondents’ perceptions of five SERVQUAL dimensions are negative. It means that all five service quality dimensions had a negative quality gap. The biggest quality problems (and opportunities to improve quality) regard reliabilities and responsiveness. This indicates that for example, the PG/RC did not

perform the service as promised; they did not provide services in the promised time; services were inadequate, ineffective; and internal and external communication regarding service delivery process were very poor.

Another major gap related to the empathy dimension that is staff members' attitude, care, and personal attention to each student suggesting that staff need to be properly trained to deal with students as individuals. This gap calls for adequate communication between PG/RC and students, and proper training and monitoring of PG/RC staff members.

A service gap in terms of brochures/application forms/information from the PG/RC being readily and widely available on campus indicates discrepancies between expectations and perceptions of service in the tangibles dimension. Findings also indicate that SA students are less assured than their Aus counterparts when dealing with the PG/RC, indicating that the SA PG/RC staff members need to continually improve their knowledge and maintain a courteous attitude in order to better convey trust and confidence to students, and to deal with queries in a professional manner.

Respondents agreed that they expect and are attracted by a reputation for excellent supervision and strong research profile of the university. If UoTs want to attract and retain quality students, they need to market their research excellence widely. Links with industry, and international staff and student exchange programmes were also rated as important requirements to attract quality staff and students.

While the issue of safety and security is a larger society-wide problem, university specific safety and security as well as the location of university become a concern and pre-condition of students to select their university.

Staff and students were emphatic that the PG/RCs need to improve their internal and external communication. They requested that UoTs make use of SMSes to communicate

with them to ensure reliable and quick delivery of information. They also asked that research news be disseminated timeously to all concerned.

SA and Aus respondents agreed that issues such as service quality planning and monitoring; putting recovery mechanisms in place for service failures; and student-driven service design and standards should be high on the agenda to ensure service quality control.

**5.2.2 Objective four:** to determine the service quality in terms of the PG/RCs from service providers' point of view.

**Objective five:** to compare service receivers' and service providers' point of views of service quality in terms of the PG/RCs.

Staff responses indicated that the PG/RCs in the SA and Aus UoTs do provide service and support in terms of administration services and support, research capacity development and support, quality supervision, and financial support among others. However, students overall perceptions of these services was very negative. They regarded the services as inadequate and said they were not satisfied with their PG/RC service experiences.

PG/RC staff indicated that a comprehensive PG/RC guide which explains the services and support they provide were available online from the university website, the faculties, and their supervisor/promoter. This response is inconsistent with the response on the student questionnaire, which showed that there was a service gap in terms of brochures/application forms/information from the PG/RC being readily and widely available on campus. Many indicated that they did not receive this guide or that they did not know how or where they could get same.

The importance of understanding service receivers' needs regarded as essential by both staff and students. However, while staff responses indicated that the university does in

fact take cognizance of postgraduate students' expectations, student responses indicated that the PG/RCs concentrate almost all their efforts on attracting new postgraduate students but once they enroll, very little is done to cater for their needs or to communicate regularly with them.

In contrast to student responses which indicated that their UoT has effective and efficient management at all levels within the university, the majority of staff disagreed. They said that they had to do management's bidding and therefore appeared as the problem to students and that if only students dealt directly with management would they understand where the problems lay.

**5.2.3 Objective six:** to determine the structure and practices at UoTs in SA in terms of the PG/RCs.

**Objective seven:** to determine the structure and practices at UoTs in Aus in terms of the PG/RCs.

Both the Aus and SA UoTs have a central PG/RC which is also decentralized to each faculty with different staff and service structures at each UoT. Their main functions however are the same, which is to oversee and facilitate the sustainable development of research and postgraduate studies at their institution. Their function/s, staffing, structure and practices were discussed in Chapter four. Based on literature and best practice gleaned from the findings of this study especially from the Aus UoTs, a PG/RC model for the South African context is proposed in Figures 5.1 (on page 129), 5.2 (on page 130) and 5.3 (on page 131) below.

#### 5.2.3.1 Integral structure of the centralized PG/RC

Figure 5.1 (on page 129) proposes that senior management, e.g. Deputy Vice Chancellor (DVC) of Research should take responsibility for research policy management and oversight of all aspects of research. Underpinning the role of the DVC

is the centralized PG/RC which collaborates with the decentralized offices in each faculty to look after all aspects of postgraduate studies and research development and support. This structure has tangible functionality to benefit staff and students as services are delivered across a more comprehensive range, specifically at faculty level. It is important to note that in this structure, many of the support departments such as Finance Department, Registrar's Office, International Education Office and Information Technology, among others play an integral role to ensure that the PG/RC operates effectively and efficiently.

#### 5.2.3.2 Structure of centralized PG/RC

As shown in Figure 5.2 (on page 130), the model suggests that the centralized PG/RC should implement three functions/responsibilities, i.e. Research Student Centre; Research Development and Support; and Research Grants, Contracts and Ethics. The staff structure of RG/RC should be headed by a Director or Manager and three managers at the helm of each department indicated above. Appropriate numbers of academic and administrative co-ordinators and administrative support staff should be employed to take charge of specific portfolios.

*Research Student Centre* is the administrative unit that oversees higher degree research programs at university level. It manages and supports postgraduate and research students with among others, the following responsibilities:

- dealing with postgraduate and research queries;
- facilitating student scholarship, funding, grants and financial support applications; communicating rules, terms and conditions, requirements and processes regarding financial support and awards;
- international liaison and staff and student exchange programmes;
- providing support to foreign students regarding study permit, study programme, accommodation, etc;
- administrating higher degree processes at university level;

- surveying student needs and service requirements;
- monitoring service quality and research performance;
- co-ordination of examination processes by providing detailed guidelines about the thesis submission and examination process to students, and co-ordination with decentralized PG/RC in this regard;
- co-ordination of candidature with decentralized PG/RCs to manage candidature, enrolment, faculty contacts, etc;
- co-ordination of postgraduate admission, enrolment, re-registrations and continuation of study;
- dissemination of information to inform students about: research information and activities; scholarships and grants; research skills and training; policies and procedures; etc;
- providing opportunities for research students to discuss research issues, obtain information, update their knowledge and skills, explore ideas and share experiences with other postgraduate students across the university;
- marketing of services internally by disseminating information; PG/RC brochures, posters, application forms, etc. in order to inform students and staff about the latest PG/RC news, developments and services;
- marketing and advertising to attract quality students and to build strong relationships with current students to ensure good word-of-mouth marketing of the university to attract potential students; and
- liaising with decentralized PG/RC offices.

*Research Development and Support* promotes innovation and excellence in research education, research and researcher development across the university. It provides a range of services to support and develop research students, supervisors and early career researchers including research education programs, policy development, advice and guidance. It plays a vital role in establishing and fostering a culture conducive to research and innovation through the following roles:

- organizing and providing research skills and development training and workshops for early career or emerging and senior or seasoned researchers, staff and students, and specific training on request (such as research writing skills, analyzing data, etc.);
- offering tiered workshops for different areas and levels of research, eg. development of research capabilities for novice researchers, research supervisors, examiners, postdoctoral fellows, etc;
- mentoring early stage researchers to development knowledge and skills which are central to a successful research career;
- giving researchers opportunities to form social and scholarly links or collaboration with others at a similar career stage;
- providing supervisory training, development, mentorship and accreditation; and organizing workshops and online resources that contribute to the ongoing support, training and development of research supervisors;
- monitoring of staff academic qualifications and supervisors' experience, training and academic qualifications;
- providing staff, student and supervisor support and resources;
- formulating research development and support policies, and higher degree rules, procedures and guidelines, and communicating same to the university community;
- providing academic and financial support to get research published;
- offering statistical, editing and proofreading services;
- liaising with research support services such as IT, Registrar's office, Library, etc.; and
- liaising with decentralized PG/RC offices.

*Research Grant, Contracts, Ethics* provides information about sourcing research grant opportunities and university's grants and contracts administration policies and procedures, as well as advice on research ethics policy and procedures to ensure

compliance with internal and external regulatory and funding requirements including proper monitoring and reporting. This includes:

- internal and external grant administration to increase research output and the number of master's and doctoral graduates;
- administration of research contracts, sponsored research, partnerships and collaboration with other institutions/ bodies; and facilitate research visits, staff and student exchange programmes and cross-institutional studies;
- negotiating Memoranda of Understanding with institutions and industry partners;
- Ensure that students and researchers are aware of their ethical responsibilities by providing them with discipline-specific research ethics information, assistance and advice, including how to obtain appropriate ethical clearance;
- Administrate research output and subsidy information by capturing research output data for subsidy and marketing purposes, to increase quality and quantity of research output, and to measure and analyze research performance; and
- liaison with decentralized PG/RC offices.

#### 5.2.3.3 Structure of decentralized PG/RC

Figure 5.3 (on page 131) proposes a structure for a decentralized PG/RC which is housed in each faculty. The decentralized PG/RC liaises with the centralized PG/RC; facilitates communication on research matters between the faculty and the PG/RC; and provides a one-stop postgraduate and research service at faculty level. To achieve this, adequate communication within the decentralized office and between the decentralized office and the centralized PG/RC is required.

The decentralized PG/RC is headed by a Deputy/Associate Dean: Research, who is responsible for overseeing all research matters in the faculty. More specifically the Deputy/Associate Dean: Research is responsible for the faculty's research students, developing and supporting research for all levels of researchers, students and

supervisors; chairing the faculty research committee; representing the faculty on all higher degree and institutional research committees and bodies; and liaising with management and research structures in the faculty to inform and be informed of research and research related matters.

The staffing of decentralized PG/RC at each faculty includes: a Postgraduate Research Co-ordinator, a Research Academic Officer, Administration staff, and two Faculty officers each playing important roles in the support and administration of higher degrees by research. The Postgraduate Research Co-ordinator deals with all research and academic matters pertaining to the faculty including supervision, examination, and postgraduate staff and student matters. For the decentralized PG/RC to function optimally and provide quality service, there must be co-operation and co-ordination within this office, and between this office and: the faculty; and the central PG/RC.

Responsibilities of the *Postgraduate Research Co-ordinator* include among others:

- facilitating the research proposal processes at faculty level by organizing presentations or research cohorts;
- sourcing suitably qualified examiners; and nominating and appointing examiners in collaboration with heads of department;
- overseeing postgraduate examination processes in collaboration with administrative staff, sending reminders to examiners where necessary, following up on any overdue reports, etc;
- organizing, co-ordinating and/or presenting research workshops and training programmes at faculty level;
- arranging faculty postgraduate fora to encourage collegiality and information sharing among students, and to provide a platform for student queries, comments and discussions;
- overseeing orientation programme at faculty level;
- organizing research and academic fora at faculty to promote and enhance research;

- proving academic guidance and research leadership in the faculty;
- assisting with selection of supervisors by providing information of suitably qualified supervisors in the same or relevant research field/s, and putting mechanisms in place to support the student-supervisor relationship;
- assisting with funding, grant and scholarship applications by disseminating information to faculty, assisting with funding queries and the application process, processing funding applications, and informing students of the status and outcome of their applications;
- determining staff, student, supervisor and examiner needs in order to provide quality service and support;
- monitoring student research progress through regular review processes which include students, supervisors/ promoters, and research support structures to ensure that they make generally satisfactory progress in accordance with plans in the research outline; to address any comments, problems, changes or delays that may have negatively influenced their work; to arrange specialist training or resources to ensure that quality research is completed in the prescribed time; and
- liaising with the central PG/RC.

The *Research Academic Officer* is responsible among others for:

- liaising with departmental research structures to ensure that proposals serve before subject specialists or experts;
- constituting departmental research committees;
- providing research services dedicated to each programme in the faculty;
- assisting staff and students at departmental and/or level with research queries;
- determining the needs of staff, students, supervisors and management in each department and taking the appropriate steps to address these needs;
- co-ordinating training sessions in consultation with the faculty Research Co-ordinator to cater for staff, student and supervisor requests;

- researching visiting professorship and staff and student exchange programme opportunities on behalf of/in conjunction with heads of departments;
- sourcing industry partnerships, sponsorships, and research opportunities or projects on behalf of/in conjunction with heads of departments;
- facilitating projects; meetings and collaborations among local and international institutions for departments in the faculty;
- providing staff and student support by assisting with general academic research matters;
- co-ordinating orientation service at departmental level with heads of department, faculty student bodies, and administrative staff and faculty officers;
- monitoring staff qualifications;
- assisting students with completion of research forms, leave applications, interruption of study, etc;
- assisting with candidature information and support at departmental level;
- monitoring student progress by meeting with students and supervisors on a regular basis;
- keeping up-to-date records of research output in each department in the faculty; and
- liaising with the Research co-ordinator.

The *Administrative Staff* are responsible among others for:

- processing all research administrative matters;
- providing administrative assistance to the Research Co-ordinator and the Research Academic Officer;
- administrating research seminars, workshops, training and orientation;
- managing provision of resources;
- disseminating research news and information regarding research funding opportunities;
- liaising with staff, students and supervisors in the faculty regarding administrative

matters;

- dealing with postgraduate and research queries in the faculty;
- managing the research laboratory, research notices and the notice-boards;
- booking and setting up venues;
- sending out notices and collating responses to invitations, queries;
- email correspondence with faculty; and
- liaising with faculty research support structures, eg. the library, finance department, etc.

*Faculty Officer A* is charged with:

- administrating proposals and proposal presentations;
- administrating all examination processes and procedures from accepting students' notice of intention to submit for examination to compilation of examiners' reports;
- submitting examiners' reports and documents to Higher Degrees Committee and other institutional fora;
- being responsible for all faculty graduation matters;
- keeping faculty informed of policy matters, rules, regulations and research procedures;
- administrating funding applications;
- administrating conference funding and research travel applications, and reports arising from these activities;
- administrating research output;
- sending out invitations and collating responses to activities arranged by the central PG/RC;
- all administrative matters pertaining to the Faculty Research Committee including notice, agenda and minutes, and preparation and dissemination of documents;
- administrating research ethics processes.

*Faculty Officer B* is charged with:

- administrating candidature, enrolment, registration and continuation of study registrations; changes or extension to candidature, withdrawal from study and thesis examination issues, etc;
- dealing with requests for placement, supervision etc. and directing these students to the appropriate bodies;
- administrating orientation services;
- administrating survey on faculty research needs and services required;
- administrating quality control mechanisms;
- liaising with external examiners and supervisors;
- keeping updated student and supervisor databases;
- keeping updated examiner databases; and
- liaising with and assisting foreign or international students with all their study requirements and processes.

Figure 5.1: Integral PG/RC structure

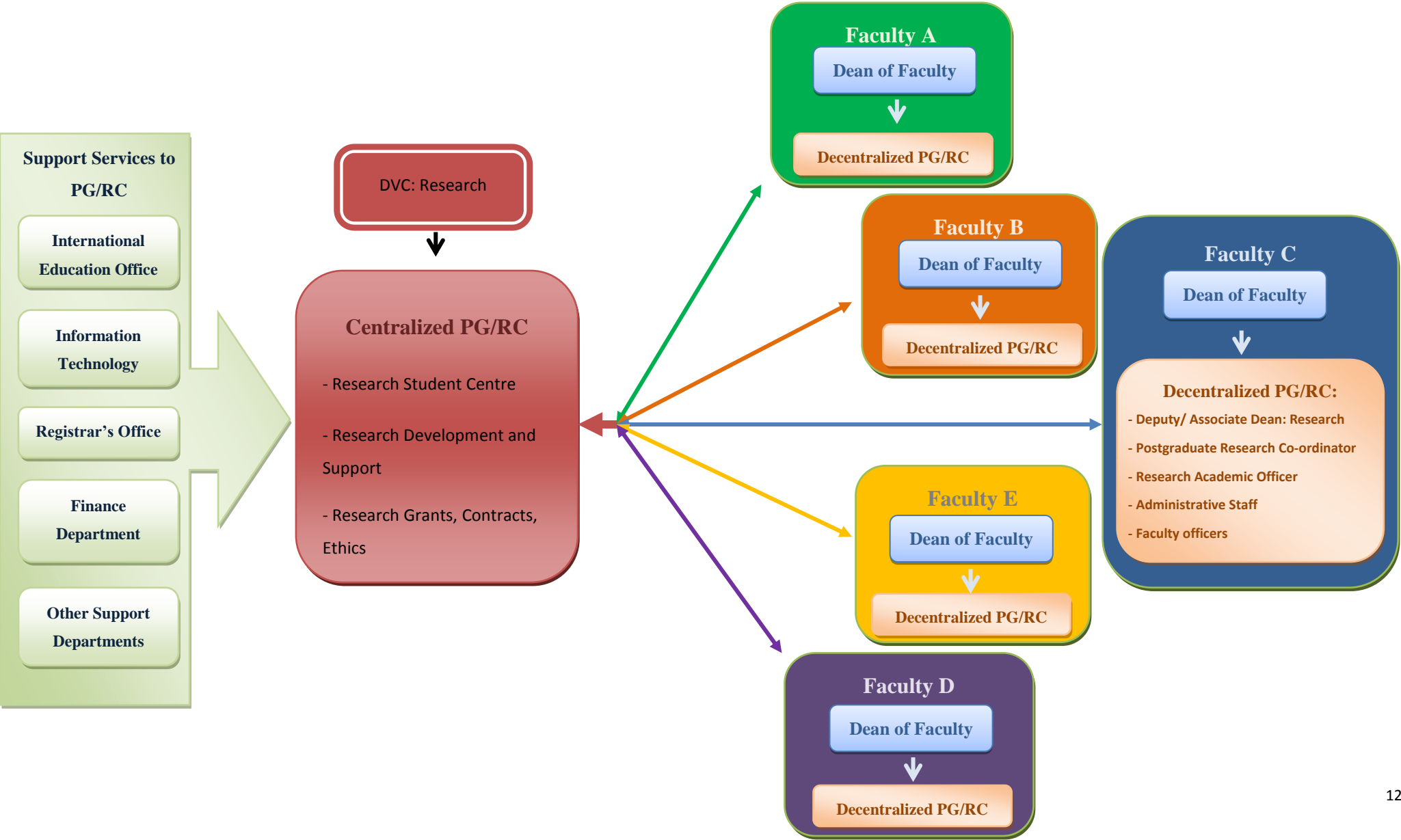


Figure 5.2: Structure of centralized PG/RC

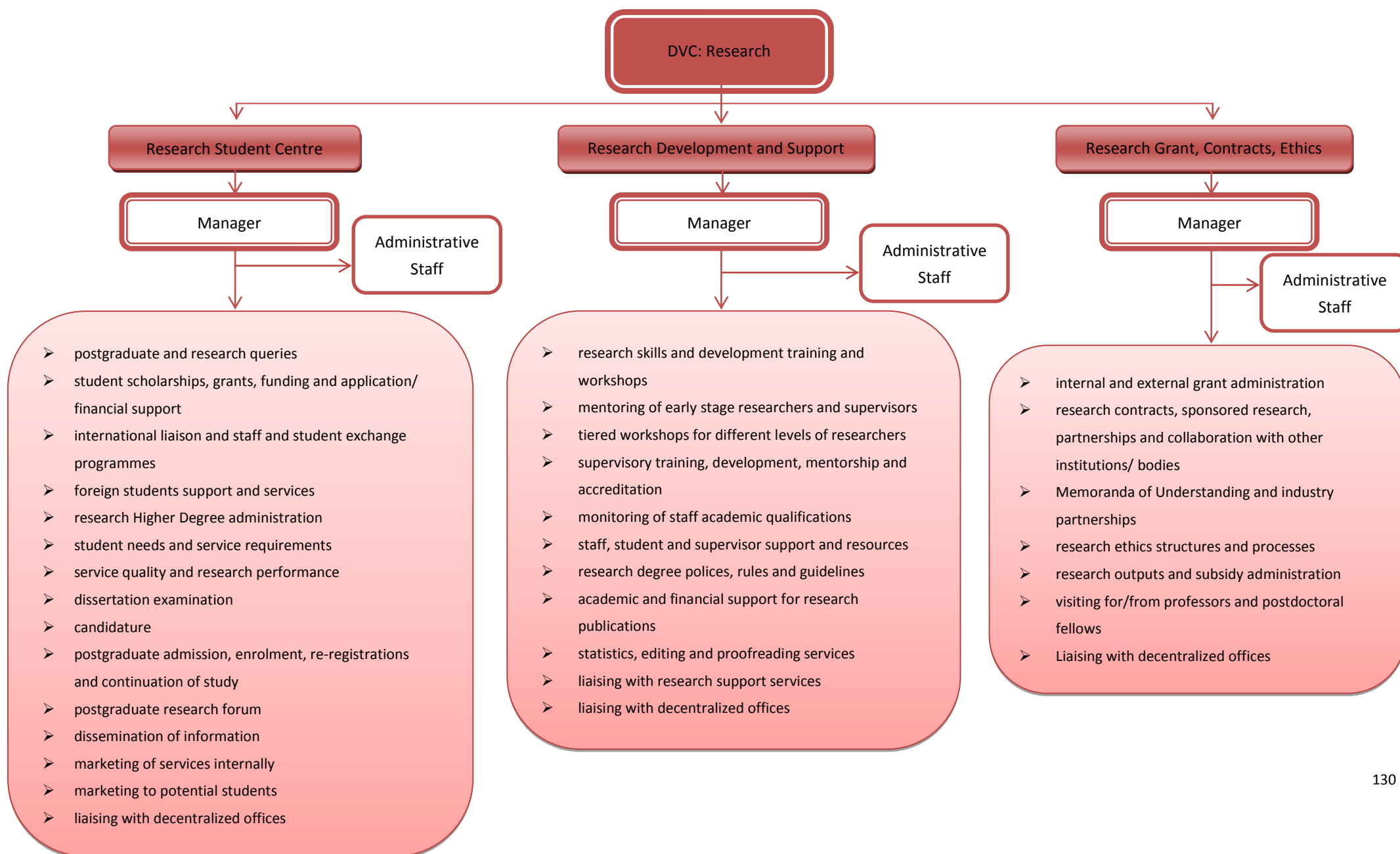
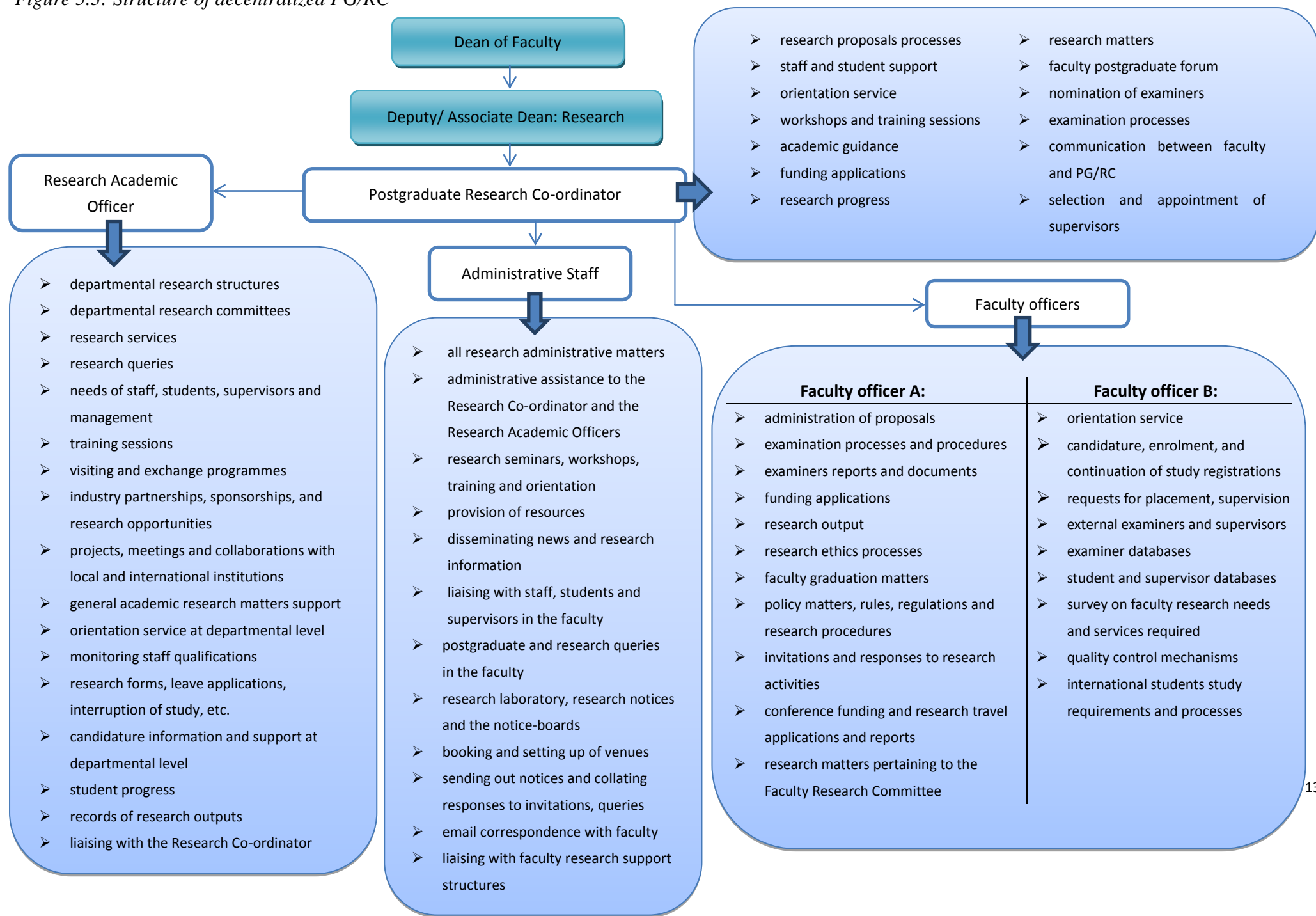


Figure 5.3: Structure of decentralized PG/RC



## **5.3 KEY RECOMMENDATIONS TO IMPROVE SERVICE QUALITY**

The recommendations emanating from the research findings are presented below.

### **5.3.1 Improving the reliability of the PG/RC**

The PG/RC should institute a system to regularly check overall processing times of student funding applications, enrolment processes and other procedures. Funding application processes must be simplified so that students are able to understand and complete the processes.

Adequate and efficient communication with students should be established to inform them of services, status of their applications and processing time, new services/funding opportunities, research developments, etc. The university should use SMSes to communicate quickly and reliably with their customers. In particular, the PG/RC should have more interaction with students on a regular basis in the form of surveys, meetings, fora, discussions and workshops so that they are kept informed of student needs and expectations, and what aspects students value most. This will enable them to set up student-driven service standards and to convert these insights into new marketing strategies to attract quality students.

The extent to which students actually use the services provided by the PG/RC and their levels of satisfaction should also be monitored on a regular basis. Suggestion boxes placed in the PG/RC foyer or reception and in the faculties could assist to identify problem areas, make required changes and enhance quality service. PG/RC customer complaints and compliments must be circulated among their staff so that they can work on or improve areas that require attention.

The PG/RC should have adequate and efficient communication with faculties, departments and supervisors, to make sure that students receive consistent and accurate information.

As supervisor satisfaction is a pre-requisite for good service provision, universities

should handsomely reward supervisors and researchers who produce output so that it serves as incentives for them and also benefit the institution in the form of subsidy earned. This will also serve to encourage other staff and students to engage in research so that they too can earn funds.

### **5.3.2 Improving the responsiveness, assurance and empathy of the PG/RC**

The PG/RC should have clear criteria and measures for determining the level of knowledge, skills and abilities required of staff members when recruiting employees. They should also ensure that all services providers are trained and mentored to enhance service quality.

Staff should be empowered to solve service problems in a personal or individualized manner. Good teamwork and collaborative co-ordination with all academic, administrative and research support service departments must be fostered so that the PG/RC can provide a 'one-stop' service for postgraduate students.

### **5.3.3 Improving tangibles of PG/RC**

The PG/RC should ensure that their brochures, application forms, guides, policies, etc. are easily and widely accessible.

Regarding the request for longer operating hours, the PG/RC should invest in an automated answering service linked to a computer so that general student queries can be easily resolved telephonically; but where there are personal queries; students will have to wait to speak to someone in person. To cater for the latter, the PG/RC could use a rotational or shift basis where one or two staff members are available until late in the evenings to attend to students. In addition, the PG/RC could perhaps use electronic delivery channels (e.g. SMS, Facebook, Twitter) or billboards stationed around campuses to broadcast important events and notices and keep students informed of the full range of services on offer.

### **5.3.4 Improving service quality**

To satisfy student needs, the university should pay attention to the following issues, they should:

- know the local industry needs and wants from the university and students, in order to create training opportunities for students;
- use temporary support staff during peak registration and pre-registration periods in order to provide postgraduate students with efficient and comprehensive registration services;
- offer work-study programs to give full time students who require financial assistance, the opportunity to earn income by working part-time on campus. The programs can be designed to provide financial assistance and career-related work experience during the academic year;
- ensure continuous improvement of existing service standards, and they should drive to increase students' satisfaction by providing the services they really desire, such as simplified application procedures and editing and statistical analyses services;
- create supervisor databases for each of the faculties in order to refer students to potential supervisors/promoters who could then meet and decide on the way forward;
- identify and utilize the services of expert researchers to provide research workshops to staff and students.

Generally, universities accept that master's and doctoral students do not require orientation services as they are senior students and are thus already familiar with the campus/es and their services. This assumption does not take cognizance of the fact that postgraduate students may move to different institutions for their postgraduate studies or they may be international or foreign students, or simply that the requirements of a postgraduate student are very different from those of undergraduate students. They therefore need to be orientated into the research service sector of the university. As

indicated I the results of this study, the Aus students benefitted greatly from this service. Orientation services should be arranged for postgraduate services, this should be offered in two parts, first by the decentralized PG/research offices in the faculty to familiarize students with all the research services and support available at faculty level; second by the central PG/RC so that students are made familiar with the specialized and overall services on offer.

## **5.4 LIMITATIONS**

The following factors afford potential limitations to this research.

The poor return from PG/RC staff members could perhaps be attributed to the length of the questionnaire. While a shorter questionnaire may not have provided richness of data, it perhaps may have succeeded in getting more staff members to respond. As the researcher could not get direct access to student and staff database at some of the institutions, she was forced to rely on the contact at the PG/RC to disseminate the questionnaires. She therefore could not follow-up with all respondents to encourage them to complete the questionnaires.

The questionnaire did not target Research Co-ordinators or Research Officers in the faculties because as stated above, the researcher relied only on the contact she had in the PG/RC to disseminate the data collection instrument. Informal telephone and email discussions conducted by her research promoter (who is also a Research Co-ordinator in her faculty at a UoT) with her colleagues in her and other institutions revealed that the Research Co-ordinators or Officers are overloaded with research responsibilities but that they are not recognized or rewarded for all their efforts. Many indicated that they could not cope with their workloads while some resigned from their positions for this reason. They said that the person who promotes, develops and enhances research and research output in the faculty has to put in a lot of effort to do so while still supervising their own students, publishing, participating in research projects, and applying for rating as

researchers. Many therefore suggested that the decentralized PG/Research Office should be adequately staffed and the head of that centre should be at a professorial level to give the position status, excellence and respect. They believe that research requires a lot of administration and that if the institution is serious about research development, support and promotion that they should ensure they have the correct structures in place.

This study benchmarked SA UoTs PG/RC service quality with the Aus UoTs but given the nature of this study benchmarking with other similar successful international institutions could have yielded richer results.

The sample in this study was confined five SA and four Aus UoTs institutions as cost was a major factor but given the problems with permission from one SA and one Aus UoT, the sample was further reduced. Any significant results emerging from this study therefore may not reflect the situation at all UoTs in SA and Aus but will undoubtedly prove useful in beginning to understand and address issues around PG/RC service quality and student perceptions and expectations at UoTs.

## **5.5 DIRECTIONS FOR FURTHER STUDY**

The findings of this study present a number of possibilities regarding the prospects of improving student satisfaction as well as the opportunity for further research. However, consideration of the management gaps across PG/RC service quality and students' satisfaction in the higher education sector could present interesting insights.

For reasons stated earlier, this study did not canvas the responses of academic staff who are under pressure from their institutions to upgrade their qualifications and increase their research output. A study into academic staff expectations and perceptions of service quality would complement this study and could address pertinent issues that would be of interest to academics not only at UoTs but at all higher education institutions.

This study only selected Australian universities with ‘technology’ in their titles, future studies should place emphasis on Australian Technology Network (ATN) grouping as they encompass all UoTs.

A study into whether the perceived service quality levels differ between the first year postgraduate students and the senior postgraduate students could yield interesting results. This study included both part-time and full-time students but did not differentiate in terms of their expectations and perceptions. Further research should separate and intensely investigate their different needs regarding postgraduate studies and research development support and services.

Research into training, monitoring and accreditation of supervisors could go a long way in assisting UoTs and indeed other universities to develop programmes to suit their context.

## **5.6 FINAL WORD**

The researcher hopes that the findings of this study will encourage UoTs in SA to revise the structures of their centralized and decentralized PG/RCs to optimize service quality to their customers. Valuable lessons were learned from benchmarking with the Aus UoTs in informing the models proposed in this study. To promote and enhance research and provide a quality research experience to customers, PG/RCs have to ensure that they take their customers’ expectations and perceptions into account and provide services designed to enhance the level of satisfaction of the customers (Mallik, 2010: 103).

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### **Personal Communication**

- McLean, V.S. 2012. Email communication with Emeritus Professor Mclean, Queensland University of Technology, Australia on 10 May re: mergers in Australian higher education.

## APPENDICES

## **Appendix A – Covering letter: Student questionnaire**

Dear Student

I am studying towards a Doctor of Technology degree in Quality Management at the Durban University of Technology. The aim of my study is to develop a quality model for a university of technology postgraduate/research centre in South Africa.

Kindly assist me by completing the attached questionnaire. The information you provide will be kept strictly confidential and you will remain completely anonymous.

Participation in this research study is voluntary and you may withdraw from the study at any time without having to give any reasons. If you have any questions, please email me on: mia.zhengjin@gmail.com.

Please complete the questionnaire, and return to me *via* email on: mia.zhengjin@gmail.com by 30 December 2011. The questionnaire is also available online at: [http://www.kwiksurveys.com?s=NOLEFM\\_57ee7827](http://www.kwiksurveys.com?s=NOLEFM_57ee7827). You can choose any method to answer the questionnaire which you think is accessible for you.

Thank you very much for your time and effort.

Ms Jin Zheng

Email: mia.zhengjin@gmail.com

DTech: Quality Management (Student number: 20358181)

Faculty of Management Sciences

Durban University of Technology, Durban, South Africa.

## **Appendix B – Covering letter: Staff questionnaire**

Dear member of staff

I am studying towards a Doctor of Technology degree in Quality Management at the Durban University of Technology. The aim of my study is to develop a quality model for a university of technology postgraduate/research centre in South Africa.

Kindly assist me by completing the attached questionnaire. The information you provide will be kept strictly confidential and you will remain completely anonymous.

Participation in this research study is voluntary and you may withdraw from the study at any time without having to give any reasons. If you have any questions, please email me on: mia.zhengjin@gmail.com.

Please complete the questionnaire, and return to me *via* email on: mia.zhengjin@gmail.com by 30 December 2011.

Thank you very much for your time and effort.

Ms Jin Zheng

Email: mia.zhengjin@gmail.com

DTech: Quality Management (Student number: 20358181)

Faculty of Management Sciences

Durban University of Technology, Durban, South Africa.

## Appendix C – Letter of Informed Consent

Dear Participant

Thank you for agreeing to participate in this research study entitled: *A quality model for a university of technology postgraduate development and support centre in South Africa*.

The aim of this study is to develop a quality model for a university of technology postgraduate development and support centre in South Africa. The purpose of this study therefore is to identify best practice in terms of service delivery in the South African and Australian contexts in order to inform the development of a quality model for a postgraduate development and support centre at a university of technology in South Africa.

The researcher undertakes to assure you of the following:

- to maintain your confidentiality;
- to protect your rights and welfare, i.e. to ensure that no harm comes to you as a result of your participation in this research;
- to present information and transcripts used in this research in such a way as to maintain your dignity, and if in doubt to first consult with you;
- to make available to you the final copy of this research publication;
- you are free to withdraw from this research at any time, if the need should arise; and
- no manipulation or withholding of information is involved in this study.

Thank you for volunteering to add to a body of academic knowledge in quality management.

Yours sincerely

J. Zheng

DTech: Quality Management  
Student No: 20358181

Please place a [x] in the box below to indicate your consent:

<b>I HAVE READ THE CONSENT FORM AND HEREBY AGREE TO PARTICIPATE IN THIS STUDY</b>	
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## Appendix D – Student questionnaire

PLEASE ANSWER THIS QUESTIONNAIRE BY PLACING A CROSS (X) NEXT TO THE OPTION/S THAT APPLY IN EACH CASE.

**Please Note:** The ‘postgraduate/research centre’ referred to in this questionnaire may be called a different name at your institution, such as ‘Research Project Office’, ‘Research Office’, ‘Research Centre’, ‘Postgraduate Development and Support Directorate’, ‘Research Students Centre’, ‘Research and Research Training Office’, ‘University Graduate School’, ‘Research and Innovation Office’, etc. Regardless of the name, it refers to a centre/office/s dedicated to postgraduate students. It assists with all aspects of postgraduate study.

### Section A: Support and Services

1. Please indicate the name of the university at which you are registered:

Cape Peninsula University of Technology	
Central University of Technology	
Durban University of Technology	
Tshwane University of Technology	
Vaal University of Technology	
Queensland University of Technology	
RMIT University	
Swinburne University of Technology	
University of Technology Sydney	

2. Please answer the following questions regarding your postgraduate studies.

- 2.1 Please indicate your current registration:

Honours Degree	
Bachelor of Technology Degree	
Masters Degree	
Master of Technology Degree	
Doctoral Degree	
Doctor of Technology Degree	

2.2 Year/level of study for the above:

1 <sup>st</sup> year	
2 <sup>nd</sup> year	
3 <sup>rd</sup> year	
4 <sup>th</sup> year	
5 <sup>th</sup> year	
Other Please explain:	

2.3 Total number of years as a postgraduate research student at the present university:

1 year	
2 years	
3 years	
4 years	
5 years	
More than 5 years	

3. What is/are the dedicated postgraduate/research centre/s at your university called?

--

4. Please indicate how many year/s (you as a postgraduate student) received service in any form from the postgraduate/research centre at your university?

Less than 1 year	
1 year – 2 years	
3 – 4 years	
More than 4 years	

5. Please indicate the services and support you received from your postgraduate/research centre throughout your course of study in each of the following (five) sectors.

<b><i>Sector 1: Administration Services and Support</i></b>	
S1.1 assists with enrolment/ registration	
S1.2 provides student orientation	
S1.3 assists with candidature	
S1.4 assists with selection of promoter/ supervisor	
S1.5 monitors research progress/ performance	
S1.6 offers scholarships	
S1.7 assists returning students with re-admission/ continuation of study	
S1.8 offers travel grants for study visits and/or conferences	
S1.9 facilitates visiting/ exchange/ cross-institutional study	
S1.10 assists with procedures for examination	
Other Please explain:	

<b><i>Sector 2: Research Capacity Development and Support</i></b>	
S2.1 offers various forms of financial support	
S2.2 provides financial support to get students' research published	
S2.3 provides academic support to get students' research published	
S2.4 has an in-house research journal to give novice researchers the opportunity to publish their research	
S2.5 provides guidance and assistance for obtaining research ethics clearance	
S2.6 has set up research centres/centres of excellence (such as Centre for Atom Optics, Centre for Systems Research, etc.)	
S2.7 disseminates updated research news	
S2.8 disseminates information regarding research funding opportunities	
S2.9 provides mentorship to early stage researchers	
S2.10 has set up a researchers' forum	
S2.11 organizes specific training on students' request (such as research writing skills, analyzing data, etc.)	
S2.12 provides language editing services	
S2.13 provides statistical analysis services	
S2.14 provides support services such as information technology	
S2.15 provides online and offline resources and library services	
Other Please explain:	

<b>Sector 3: Quality Supervision</b>	
S3.1 supervisor training is provided	
S3.2 supervisors are reviewed for accreditation by their faculty and/or university	
S3.3 supervisors' experience/training/academic qualifications are monitored	
S3.4 supervisors can access appropriate resources to assist them in their work	
Other Please explain:	

<b>Sector 4: Financial Support</b>		
S4.1 external funding is sourced for students		
S4.2 postgraduate students are given tuition remission/remission of fees		
S4.3 a loans scheme is offered		
S4.4 a financial aid scheme is provided		
S4.5 Incentive funding is provided to:	S4.5a graduate assistants	
	S4.5b conduct research	
	S4.5c attend local and international conferences/symposia/seminars/workshops	
	S4.5d get published, e.g. payment of page fees, etc	
	S4.5e purchase experimental instruments/equipment	
	S4.5f purchase equipment (such as laptop, 3G internet modem, digital voice recorder, etc.)	
S4.6 Free services provided:	S4.6a research based workshops	
	S4.6b language editing	
	S4.6c statistical services	
S4.7 Free library services provided:	S4.7a on-campus loans	
	S4.7b inter-library/external loans	
	S4.7c printing	
	S4.7d photocopying	
	S4.8e internet access	
Other Please explain:		

<b>Sector 5: Technology Transfer and Innovation Services</b>	
S5.1 sets up industrial partnerships for students to get work experience	
S5.2 assists students to establish research linkages with external organizations/industry	
Other Please explain:	

5.1 Is there any service (may also be from Question 5 above) that you really want to receive, but is not provided by the postgraduate/research centre at your university?

Yes	
No	

If you answered 'yes', please indicate which service/s these are (if you are referring to Question 5 above, you may use only the code number used):

--

5.2 Please rate the adequacy of each service sector (in Question 5), depending on the services you received from the postgraduate/research centre at your university:

<b>Sector 1: Administration Services and Support</b>				
Very adequate	Adequate	Neutral	Inadequate	Very inadequate
<b>Sector 2: Research Capacity Development and Support</b>				
Very adequate	Adequate	Neutral	Inadequate	Very inadequate
<b>Sector 3: Quality Supervision</b>				
Very adequate	Adequate	Neutral	Inadequate	Very inadequate
<b>Sector 4: Financial Support</b>				
Very adequate	Adequate	Neutral	Inadequate	Very inadequate
<b>Sector 5: Technology Transfer and Innovation Services</b>				
Very adequate	Adequate	Neutral	Inadequate	Very inadequate

6. What is the normal channel/process that you have to follow when applying for funding/scholarship? **Please number the statements according to the order of the process you follow:**

Student fills in application form and signs	
Application form is sent to promoter/supervisor for signature	
A letter of support must be provided by promoter/supervisor	
Application form is sent to head of the department for signature	
A letter of support must be provided by head of the department	
Application form is sent to the Executive Dean/Dean of the Faculty for signature	
A letter of support must be provided by Executive Dean/Dean	
Application form is handed in to the postgraduate/ research office by student	
Application form is handed in to postgraduate/ research office by department/ faculty	
Application form is signed by Director/Dean of postgraduate/ research office	
A letter of support must be provided by Director/Dean of the postgraduate/ research office	
Application form is submitted to a committee for decision	
On approval of funding, application form is sent to the Finance department for processing	
Student receives the funding	
Other Please add:	

7. How long does it normally take for funding applications to be processed?

Less than one week	
One - two weeks	
Two - three weeks	
One month	
Two months	
More than two months	
Other Please explain:	

8. Do you think your university knows what your expectations are in terms of your postgraduate research studies?

Yes	
No	

- 8.1 From your point of view as a service receiver, please indicate how your university rates the understanding of students' expectations:

Important	Neutral	Unimportant

9. From your point of view as a service receiver, please indicate how your university rates the following requirements to attract postgraduate/research students:

9.1 Marketing of the university		
Important	Neutral	Unimportant
9.2 Recognized reputation of research fields		
Important	Neutral	Unimportant
9.3 Qualified professors/promoters/supervisors in their professional research fields		
Important	Neutral	Unimportant
9.4 Good partnerships with industry		
Important	Neutral	Unimportant
9.5 International students' exchange programmes		
Important	Neutral	Unimportant
9.6 Good career opportunities after graduating from this university		
Important	Neutral	Unimportant
9.7 Rich financial support (scholarships/ bursaries/ awards, etc.)		
Important	Neutral	Unimportant

9.8 Professional quality of service		
Important	Neutral	Unimportant
9.9 Supportive study atmosphere		
Important	Neutral	Unimportant
9.10 Safe university environment		
Important	Neutral	Unimportant
9.11 Convenient location of university		
Important	Neutral	Unimportant
9.12 Convenient transportation to university		
Important	Neutral	Unimportant

10. From your point of view as a service receiver, please rate your university in terms of the following requirements to provide best quality service to postgraduate/research students:

10.1 Has service quality planning and monitoring		
Agree	Neutral	Do Not agree
10.2 Has program-based quality policies and strategies		
Agree	Neutral	Do Not agree
10.3 Has student-driven service design and standards		
Agree	Neutral	Do Not agree
10.4 Has recovery mechanisms in place for service failures		
Agree	Neutral	Do Not agree
10.5 Has knowledge of students' expectations in terms of their study		
Agree	Neutral	Do Not agree
10.6 Satisfies students' needs		
Agree	Neutral	Do Not agree
10.7 Provides promised service effectively		
Agree	Neutral	Do Not agree

10.8 Establishes relationships with current students		
Agree	Neutral	Do Not agree
10.9 Has effective and efficient management at all levels within the university		
Agree	Neutral	Do Not agree
10.10 Has good co-ordination among academic and administrative departments		
Agree	Neutral	Do Not agree
10.11 Has adequate communication between university and students regarding university's performance in terms of service provided		
Agree	Neutral	Do Not agree
10.12 Has adequate internal communication between university management and staff members for an effective decision-making process		
Agree	Neutral	Do Not agree
10.13 Has quality staff and faculties		
Agree	Neutral	Do Not agree
10.14 Has superior hardware (library, IT infrastructure, equipment, student housing, etc.) for providing quality service		
Agree	Neutral	Do Not agree
10.15 Has advanced electronic delivery channels (such as telephone, internet and mobile channel) for effective service delivery		
Agree	Neutral	Do Not agree
10.16 Students, as the service receivers, have knowledge of their roles and responsibilities		
Agree	Neutral	Do Not agree

## Section B:

*This section of questionnaire deals with EXPECTATIONS and PERCEPTIONS of service delivery quality provided by your university's postgraduate/research office.*

### ***Principle of this Questionnaire:***

*This questionnaire uses an amended SERVQUAL instrument which contains 30 parallel-related statements pertaining to expectations (E) and perceptions (P) distributed across five factors.*

*Customer **expectations** are described as the desires or wants of the consumer. The crux is that customer expectations are what the customer expects from the organisation and its range of product or services, i.e. what customers feel the organisation should offer them. These expectations are, in most instances, different from what the customer gets in real-life situations from the organisation. In other words, **what kind of services do you expect to receive?***

*Customer **perceptions** are the process of receiving, organising and assigning meaning to information or stimuli detected by the customer's five senses and opinion that it gives meaning to the world that surrounds the customer. Perceptions are also described as the end result of a number of observations by the customer. Customers perceive services in terms of quality of services provided and the satisfaction level attained. In other words, **what is your perception/opinion of the quality of the services you receive?***

*Please rate each of the statements on the five-point Likert scale below. The purpose of this questionnaire is to determine the gaps (if any) between 'expectation' and 'perception'.*

**Method to Answer:**

- a. Based on your experience as a service receiver, please think about the kind of service that would deliver excellent quality and one which you would be pleased to experience.
- b. For each of the following statements, please indicate your level of agreement as they apply to your **EXPECTATIONS** and **PERCEPTIONS** of the service quality provided by the postgraduate/ research office.
- c. Please place a cross (x) next to relevant number regarding your **EXPECTATIONS** and **PERCEPTIONS** for each statement that truly reflects your feelings:

**1=completely agree**

**2=agree**

**3=neutral**

**4=disagree**

**5=completely disagree**

- e. If you have any further comments, you are most welcome to write them down.
- f. Please remember to answer all questions.
- g. Example:

No	Statement		1	2	3	4	5
1.	Postgraduate/research centre is very committed to assisting students	My EXPECTATION		x			
		My PERCEPTION				x	
2.	Services are provided at the promised time	My EXPECTATION	x				
		My PERCEPTION					x

***\*\* There are no right or wrong answers \*\****

<b>Reliability: Ability to perform the promised service dependably and accurately</b>									
No	Statement		1	2	3	4	5		
1.	The postgraduate/research centre provides services as promised	My EXPECTATION							
		My PERCEPTION							
Comment:									
2.	The postgraduate/research centre provides services right the first time/ at the promised time	My EXPECTATION							
		My PERCEPTION							
Comment:									
3.	The service from the postgraduate/research centre satisfies my needs	My EXPECTATION							
		My PERCEPTION							
Comment:									
4.	The information (registration procedure, procedure of applying for the funding, etc.) I get from my faculty is consistent with the information from the postgraduate/research centre	My EXPECTATION							
		My PERCEPTION							
Comment:									
5.	The information (recruitment information, National Research Funding, etc.) I get from the postgraduate/research centre is accurate	My EXPECTATION							
		My PERCEPTION							
Comment:									
6.	The submitted application forms are kept confidential by the postgraduate/research centre	My EXPECTATION							
		My PERCEPTION							
Comment:									

7.	The postgraduate/research centre staff members always inform students as to when services will be performed	My EXPECTATION					
		My PERCEPTION					
Comment:							

8.	The postgraduate/research centre staff members always informs students about services offered/provided	My EXPECTATION					
		My PERCEPTION					
Comment:							

<b><i>Responsiveness: Willingness to help students and provide prompt service</i></b>							
No	Statement		1	2	3	4	5

9.	When students face problems with other departments, the postgraduate/research centre provides a 'one-stop' service for students and resolves issues with those departments	My EXPECTATION					
		My PERCEPTION					
Comment:							

10.	Staff members at the postgraduate/research centre always explain to students patiently services and facilities on offer	My EXPECTATION					
		My PERCEPTION					
Comment:							

11.	The postgraduate/research centre staff members are always willing to help students	My EXPECTATION					
		My PERCEPTION					
Comment:							

12.	The postgraduate/research centre staff members always attend to students promptly	My EXPECTATION					
		My PERCEPTION					
Comment:							

13.	The postgraduate/research centre provides research capacity development and support to postgraduate students as requested	My EXPECTATION					
		My PERCEPTION					
Comment:							

<i>Assurance: Knowledge and courtesy of staff members and their ability to convey trust and confidence.</i>							
No	Statement		1	2	3	4	5

14.	The postgraduate/research centre staff members are very knowledgeable about services they provide	My EXPECTATION					
		My PERCEPTION					
Comment:							

15.	The postgraduate/research centre staff members always provide students with correct information	My EXPECTATION					
		My PERCEPTION					
Comment:							

16.	The postgraduate/research centre staff members deal with student queries in a professional manner	My EXPECTATION					
		My PERCEPTION					
Comment:							

17.	The postgraduate/research centre staff members have good communication skills (in other words, they provide clear, helpful, complete and easy to understand answers when they attend to students' requests)	My EXPECTATION					
		My PERCEPTION					
Comment:							

18.	The manner in which queries are handled by the postgraduate/research centre staff instils confidence in students	My EXPECTATION					
		My PERCEPTION					
Comment:							

<b>Empathy: Caring individualised attention the postgraduate/ research office provides its customers.</b>										
No	Statement		1	2	3	4	5			
19.	The postgraduate/research centre staff members always welcome students	My EXPECTATION								
		My PERCEPTION								
Comment:										
20.	The postgraduate/research centre always look after the best interest of students	My EXPECTATION								
		My PERCEPTION								
Comment:										
21.	The postgraduate/research centre provides personal attention to each student	My EXPECTATION								
		My PERCEPTION								
Comment:										
22.	The postgraduate/research centre has operating hours convenient to students	My EXPECTATION								
		My PERCEPTION								
Comment:										
23.	The postgraduate/research centre provides individual responses to students' problems	My EXPECTATION								
		My PERCEPTION								
Comment:										
<b>Tangibles: Appearance of physical facilities, equipment, personnel and communication materials.</b>										
No	Statement		1	2	3	4	5			

24.	The postgraduate/research centre brochures/ application forms/ information of postgraduate/research centre services/ postgraduate guide are widely available	My EXPECTATION					
		My PERCEPTION					
Comment:							
25.	Visually appealing materials associated with the service is displayed in the postgraduate/research centre	My EXPECTATION					
		My PERCEPTION					
Comment:							
26.	It is easy to find the postgraduate/research centre on campus	My EXPECTATION					
		My PERCEPTION					
Comment:							
27.	It is easy to access the services of the postgraduate/research centre	My EXPECTATION					
		My PERCEPTION					
Comment:							
28.	The postgraduate/research centre is clean and tidy	My EXPECTATION					
		My PERCEPTION					
Comment:							
29.	The equipment (telephone, computer, etc.) in the postgraduate/research centre are advanced and modern	My EXPECTATION					
		My PERCEPTION					
Comment:							
30.	Members of staff in the postgraduate/research centre have a neat and professional appearance	My EXPECTATION					
		My PERCEPTION					
Comment:							

## Section C: Interview

**\*\* This section is optional\*\***

Please indicate your name, email address and/or your contact telephone number if you are willing to participate in an interview. You will only be contacted for an interview if clarity/more information is required regarding your responses on this questionnaire.

Please be assured that:

- Only my research promoter and I will have access to your personal details.
- The information you provide below will remain completely confidential.
- This page will be removed before I send the questionnaire for analysis.

Your name:
Your email address:
Your contact telephone number:

Reference Number:  (Official use only)
--

**Thank you for taking the time to complete this questionnaire.**

## Appendix E – Staff questionnaire

PLEASE ANSWER THIS QUESTIONNAIRE BY PLACING A CROSS [X] NEXT TO THE OPTION/S THAT APPLY IN EACH CASE.

**Please Note:** The ‘postgraduate/research centre’ referred to in this questionnaire may be called a different name at your institution, such as ‘Research Project Office’, ‘Research Office’, ‘Research Centre’, ‘Postgraduate Development and Support Directorate’, ‘Research Students Centre’, ‘Research and Research Training Office’, ‘University Graduate School’, ‘Research and Innovation Office’, etc. Regardless of the name, it refers to a centre/office/s dedicated to postgraduate students. It assists with all aspects of postgraduate study.

### Section A: Support and Services

1. Please indicate the name of the university at which you work.

Cape Peninsula University of Technology	
Central University of Technology	
Durban University of Technology	
Tshwane University of Technology	
Vaal University of Technology	
Queensland University of Technology	
RMIT University	
Swinburne University of Technology	
University of Technology Sydney	

2. Please indicate the number of formally registered postgraduate/research students at your university where applicable:

Number of the formally registered <i>Honours Degree/ Bachelor of Technology Degree</i> students:	
Number of the formally registered <i>Masters Degree/ Master of Technology Degree</i> students:	
Number of the formally registered <i>Doctoral Degree/ Doctor of Technology Degree</i> students:	

3. What is/are the dedicated postgraduate/research centre/s at your university called?

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4. Please indicate how many year/s the postgraduate/research centre is in operation?

Less than 1 year	
1 – 3 years	
4 – 7 years	
8 – 11 years	
12 – 15 years	
More than 15 years	

5. Please indicate the services and support your postgraduate/research centre offers to **students** throughout their course of study in each of the following (five) sectors.

<b><i>Sector 1: Administration Services and Support</i></b>	
S1.1 assists with enrolment/ registration	
S1.2 provides student orientation	
S1.3 assists with candidature	
S1.4 assists with selection of promoter/ supervisor	
S1.5 monitors research progress/ performance	
S1.6 offers scholarships	
S1.7 assists returning students with re-admission/ continuation of study	
S1.8 offers travel grants for study visits and/or conferences	
S1.9 facilitates visiting/ exchange/ cross-institutional study	
S1.10 assists with procedures for examination	
Other Please explain:	

<b><i>Sector 2: Research Capacity Development and Support</i></b>	
S2.1 offers various forms of financial support	
S2.2 provides financial support to get students' research published	
S2.3 provides academic support to get students' research published	
S2.4 has an in-house research journal to give novice researchers the opportunity to publish their research	
S2.5 provides guidance and assistance for obtaining research ethics clearance	
S2.6 has set up research centres/centres of excellence (such as	

Centre for Atom Optics, Centre for Systems Research, Centre for Micro-Photonics, etc.)	
S2.7 disseminates updated research news	
S2.8 disseminates information regarding research funding opportunities	
S2.9 provides mentorship to early stage researchers	
S2.10 has set up a researchers' forum	
S2.11 organizes specific training on students' request (such as research writing skills, analyzing data, etc.)	
S2.12 provides language editing services	
S2.13 provides statistical analysis services	
S2.14 provides support services such as information technology	
S2.15 provides online and offline resources and library services	
Other Please explain:	

<b><i>Sector 3: Quality Supervision</i></b>	
S3.1 supervisor training is provided	
S3.2 supervisors are reviewed for accreditation by their faculty and/or university	
S3.3 supervisors' experience/training/academic qualifications are monitored	
S3.4 supervisors can access appropriate resources to assist them in their work	
Other Please explain:	

<i>Sector 4: Financial Support</i>		
S4.1 external funding is sourced for students		
S4.2 postgraduate students are given tuition remission/remission of fees		
S4.3 a loans scheme is offered		
S4.4 a financial aid scheme is provided		
S4.5 Incentive funding is provided to:	S4.5a graduate assistants	
	S4.5b conduct research	
	S4.5c attend local and international conferences/ symposia/seminars/workshops	
	S4.5d get published, e.g. payment of page fees, etc	
	S4.5e purchase experimental instruments/equipment	

	S4.5f purchase equipment (such as laptop, 3G internet modem, digital voice recorder, etc.)	
S4.6 Free services provided:	S4.6a research based workshops	
	S4.6b language editing	
	S4.6c statistical services	
S4.7 Free library services provided:	S4.7a on-campus loans	
	S4.7b inter-library/external loans	
	S4.7c printing	
	S4.7d photocopying	
	S4.8e internet access	
Other Please explain:		

<b><i>Sector 5: Technology Transfer and Innovation Services</i></b>		
S5.1 sets up industrial partnerships for students to get work experience		
S5.2 assists students to establish research linkages with external organizations/industry		
Other Please explain:		

6. How do students get assistance regarding their postgraduate/research studies at your university?

Students get assistance directly from the postgraduate/research centre	
Students get assistance from their departments/faculties, and then the departments/faculties refer the matter to the postgraduate/research centre	
Neither of the above Please explain:	

7. In terms of financial support for postgraduate students, how (at what stages) is funding (fellowship, scholarship, incentive, bursary, etc.) awarded to students?

Following a successful application, funding is awarded regularly:	monthly	
	every semester	
	every year	
	Other Please explain:	

Following a successful application, funding is awarded according to student's research process	
Students are awarded scholarships on a competitive basis	
Other Please explain:	

8. Does your university provide any additional support to **members of staff** who are engaged in postgraduate studies?

Yes	
No	

If you answered 'yes', please indicate what kind of additional support is provided.

Staff are given reduced workloads	
Staff are given leave to study	
Lecturer replacements are funded by the university	
Other Please explain:	

9. What research services does the postgraduate/research centre provide to staff who are engaged research, but who are **not enrolled** for postgraduate studies?

Funding is provided by the university to conduct research	
Funding is provided by the university to attend conferences	
Staff are assisted with grant applications	
External funding is sourced for researchers	
Staff are assisted to secure external grant opportunities	
Staff are assisted to establish research collaborations with external partners	
Staff are assisted with the financial management of a grant	
Workshops are offered on project management skills	
Workshops are arranged to assist staff to get published	
Other Please explain:	

10. Is there a comprehensive guide provided by the postgraduate/research centre for postgraduate students?

Yes	
No	

10.1 If you answered 'yes' to Question 10, please answer the following questions:

10.1.1 When do postgraduate students receive this guide?

On request/anytime they require information about postgraduate studies	
When they register their postgraduate degree	
Other Please explain:	

10.1.2 How can postgraduate students get this guide?

The guide may be downloaded from the university homepage	
It is available from the postgraduate/research centre	
It is available from each department	
It is available from each faculty's research office	
Other Please explain:	

10.1.3 What information does this guide contain?

Orientation for postgraduate students	
Information about services provided by the postgraduate/research centre	
A step-by-step guide to the postgraduate research process at the university	
Information about the role/s of the various postgraduate bodies at the university	
Admissions information	
Enrolment information	
Candidature information	
Selection of a promoter/supervisor	
Supervisor/student contract	
Support service information	
Research resource information	
Library services information	
Scholarship/bursary information	
Process of applying for funding	
Research ethics information	
Examination process	
Other Please explain:	

10.2 If you answered 'no', please indicate how postgraduate students obtain information/guide regarding their postgraduate studies:

Postgraduate/research centre staff members answer student queries	
Students consult with their supervisor/promoter	
Information is available from the faculty research offices	
New students are assisted by their mentors	
Other Please explain:	

11. How are the services provided (by the postgraduate/research centre) communicated to staff and students?

Via email	
Via short message service (SMS)	
Notices are displayed on the university homepage	
Notices are sent to the students' university online personal account	
Notices are displayed on faculty noticeboards	
Notices are mailed/emailed to departments for display	
Notices are sent to the Executive Deans of each faculty for dissemination to staff members and students	
Meetings are scheduled with the university community when information has to be communicated	
Other Please explain:	

12. Does the university gather data about postgraduate students' expectations?

Yes	
No	

12.1 If you answered 'yes', please indicate how the university gathers data about postgraduate students' expectations.

Surveys are conducted to investigate students' expectations	
Offices/centres are set up on the campus to deal with students' complaints and requirements	
Meetings are set up on a regular basis with different levels of administrative and academic staff members to determine student needs	

Regular postgraduate student forums are held to gather information	
Other Please explain:	

12.2 From your point of view as a service provider, please rate the importance of understanding students' expectations.

Important	Neutral	Unimportant

Please explain your answer above:

13. From your point of view as a service provider, please indicate how your university rates the following requirements to attract more postgraduate/research students:

13.1 Marketing of the university		
Important	Neutral	Unimportant
13.2 Recognized reputation of research fields		
Important	Neutral	Unimportant
13.3 Qualified professors/promoters/supervisors in their professional research fields		
Important	Neutral	Unimportant
13.4 Good partnerships with industry		
Important	Neutral	Unimportant
13.5 International students' exchange programmes		
Important	Neutral	Unimportant
13.6 Good career opportunities after graduating from this university		
Important	Neutral	Unimportant
13.7 Rich financial support (scholarships/ bursaries/ awards, etc.)		
Important	Neutral	Unimportant
13.8 Professional quality of service		
Important	Neutral	Unimportant
13.9 Supportive study atmosphere		
Important	Neutral	Unimportant

13.10 Safe university environment		
Important	Neutral	Unimportant
13.11 Convenient location of university		
Important	Neutral	Unimportant
13.12 Convenient transportation to university		
Important	Neutral	Unimportant

14. From your point of view as a service provider, please rate your university in terms of the following requirements to provide best quality service to postgraduate/research students:

14.1 Has service quality planning and monitoring		
Agree	Neutral	Do not agree
14.2 Has program-based quality policies and strategies		
Agree	Neutral	Do not agree
14.3 Has student-driven service design and standards		
Agree	Neutral	Do not agree
14.4 Has recovery mechanisms in place for service failures		
Agree	Neutral	Do not agree
14.5 Has knowledge of students' expectations in terms of their study		
Agree	Neutral	Do not agree
14.6 Satisfies students' needs		
Agree	Neutral	Do not agree
14.7 Provides promised service effectively		
Agree	Neutral	Do not agree
14.8 Establishes relationships with current students		
Agree	Neutral	Do not agree
14.9 Has effective and efficient management at all levels within the university		
Agree	Neutral	Do not agree

14.10 Has good co-ordination among academic and administrative departments		
Agree	Neutral	Do not agree
14.11 Has adequate communication between university and students regarding university's performance in terms of service provided		
Agree	Neutral	Do not agree
14.12 Has adequate internal communication between university management and staff members for an effective decision-making process		
Agree	Neutral	Do not agree
14.13 Has quality staff and faculties		
Agree	Neutral	Do not agree
14.14 Has superior hardware (library, IT infrastructure, equipment, student housing, etc.) for providing quality service		
Agree	Neutral	Do not agree
14.15 Has advanced electronic delivery channels (such as telephone, internet and mobile channel) for effective service delivery		
Agree	Neutral	Do not agree
14.16 Students, as the service receivers, have knowledge of their roles and responsibilities		
Agree	Neutral	Do not agree

## Section B: Organizational Structure

15. What is the function/s of the postgraduate/research centre at your university?

Increase the pool of internal and international researchers	
Assist existing staff to upgrade their qualifications	
Facilitate postgraduate research studies	
Develop and maintain research related policies and procedures	
Provide enabling services that support the goals and activities for research	
Improve students' postgraduate experience	
Support and increase postgraduate research in alignment with niche areas	
Establish a conducive learning environment	
Enhance the quality of student life	
Promote technology transfer and innovation	
Promote external engagement and partnerships	
Foster the development of international partnerships	
Establish and retain a critical mass of appropriately qualified research staff	
Provide research support and development	
Other Please explain:	

16. Please indicate the organizational structure of the postgraduate/research centre at your university.

There is one central postgraduate/research centre at my university	
The postgraduate/research centre is decentralized to each faculty	
There is a central postgraduate/research centre at my university, and it is also decentralized to each faculty	
There are no decentralized postgraduate/research centres in each faculty	
There are no decentralized postgraduate/research centres in each faculty, but members of staff at the postgraduate/research centre takes responsibility for research in each faculty	
There are several postgraduate/research centres at my university, each with different responsibilities, e.g. development, management, support postgraduate research, etc. If you choose this option, please explain how many postgraduate/research centres there are and what they are called:	

None of the above Please explain:	
--------------------------------------	--

17. If there are no decentralized postgraduate/research centres in each faculty at your university, please indicate whether you think staff and students could benefit from such a centre:

Yes	
No	

17.1 If you answered 'yes' in Question 17, please provide a reason/s for your answer:

A decentralized postgraduate/research centre in each faculty would:

Provide a one-stop postgraduate service at faculty level	
Provide a one-stop research service at faculty level	
Assist with research queries specific to each faculty	
Disseminate research information specific to each faculty	
Facilitate communication on research matters between the faculty and the postgraduate/research centre	
Liaise with the postgraduate/research centre on each faculty's behalf	
Assist faculty with funding applications	
Inform faculty of funding opportunities specific to them	
Assist faculty with all the form-filling regarding research	
Provide faculty with all the relevant forms and guides	
Arrange workshops and training programmes specifically for programmes in each faculty	
Provide faculty with research information pertinent to them	
Other Please explain:	

17.2 If you answered 'no' to Question 17, please provide a reason/s for your answer:

Our present structure works fine without a faculty research centre/office	
Having to deal with a faculty research centre/office would just complicate matters	
Matters would just take a longer time to get resolved	
There would be too many people for students to deal with	
Research problems are generic and can be resolved by a central office	
Students can liaise directly with the postgraduate/research centre	
The postgraduate/research centre already assists all students with funding applications	
The postgraduate/research centre already informs the university of funding opportunities	
The postgraduate/research centre already assists students with all the form-filling regarding research	
The postgraduate/research centre provides all the relevant forms and guides	
The postgraduate/research centre arranges workshops and training programmes for all students	
Other Please explain:	

18. If there are decentralized postgraduate/research centres in each faculty at your institution (or if members of the postgraduate/research centre are arranged to work in each faculty), please answer the following questions.

18.1 The purpose/s of the decentralized postgraduate/research centre in each faculty is/are to:

Manage research matters in the faculty	
Facilitate communication on research matters between the faculty and the postgraduate/research centre	
Provide a one-stop postgraduate research service at faculty level	
Provide a one-stop research service at faculty level	
Assist with funding applications	
Assist students with their research proposals	
Assist faculty with postgraduate matters	
Provide a research service dedicated to programmes in the faculty	

Arrange workshops and training specific to faculty needs	
Attend research meetings at the university	
Disseminate news on research matters pertinent to the faculty	
Disseminate news on funding opportunities specific to the faculty	
Co-ordinate all research matters for the faculty	
Chair the faculty research committee	
Other Please explain:	

18.2 The decentralized postgraduate/research centre in each faculty reports:

Directly to the director/manager of the postgraduate/research centre	
To the Dean/Executive Dean of the faculty	
Other Please explain:	

18.3 Please indicate the structure of the decentralized postgraduate/research centre in each faculty:

Job Title	No. of staff	Responsibility

18.4 Research activities arranged by the decentralized postgraduate/research centre in each faculty are funded by:

The postgraduate/research centre	
The faculty	
Other	
Please explain:	

18.5 Who can make final decisions regarding postgraduate matters?

<b>Items →</b>	Admission	Candidature	Examination	Funding
<b>Decision makers ↓</b>				
Faculty committee				
Dean/Executive Dean of faculty				
Faculty Research Co-ordinator				
Committee of the central postgraduate/research centre				
Staff members in the central postgraduate/research centre assigned to this duty				
Higher/higher degrees research committee				
Promoter/supervisor				
Other Please explain under relevant item/s				

19. Please answer the following questions regarding staffing at your postgraduate/research centre.

<b>EXAMPLE OF HOW TO ANSWER THIS QUESTION:</b>		
<b>Position</b>	<b>Job Title</b>	<b>Number of staff</b>
Directorate	Deputy Vice-Chancellor: Research	1
	Director: Research	1

<b>Position</b>	<b>Job Title</b>	<b>Number of staff</b>
Directorate/Senior Management		

Position	Job Title	Number of staff
Middle Management		

Position	Job Title	Number of staff
Junior Management		

Position	Job Title	Number of staff
Research Grants Management		

Position	Job Title	Number of staff
Research Ethics and Integrity		

Position	Job Title	Number of staff
External Funding		

Position	Job Title	Number of staff
Internal Funding		

Position	Job Title	Number of staff
Scholarships		

Position	Job Title	Number of staff
Research Training		

Position	Job Title	Number of staff
Research Outputs Administration		

Position	Job Title	Number of staff
Research Development		

Position	Job Title	Number of staff
Research Planning and Operations		

Position	Job Title	Number of staff
Management of External Research Projects/ Industry Engagement and Commercialization		

Position	Job Title	Number of staff
Marketing and Communications		

Position	Job Title	Number of staff
Finance		

Other positions Please add:		
Position	Job Title	Number of staff

20. Which department/s from the following list provide support services to the postgraduate/research centre at your university?

Academic departments		
Academic faculties		
Finance department		
Information technology		
International education office		
Co-operative education office		
Research centres		
Technology transfer and innovations' office		
Registrar's office		
Quality promotion and assurance		
Library		
University restaurants		
Human resources		
Institutional planning		
Projects and services		
Maintenance and facilities management		
Protection services/ health and safety separate		
Transport		
Division of corporate affairs office	Advertising, corporate branding and marketing	
	Audiovisual services	
	Communications	
	Design studio	
	Fundraising	
	Logistics	
	Printing	
	Public relations and protocol	
Student services and development	Financial aid services	
	Sports centre	
	Student counselling and health centre	
	Student affairs	
	Student housing	
Other Please explain:		

## Section C: Interview

**\*\* This section is optional\*\***

Please indicate your name, email address and/or your contact telephone number if you are willing to participate in an interview. You will only be contacted for an interview if clarity/more information is required regarding your responses on this questionnaire.

Please be assured that:

- Only my research promoter and I will have access to your personal details.
- The information you provide below will remain completely confidential.
- This page will be removed before I send the questionnaire for analysis.

Your name:
Your email address:
Your contact telephone number:

Reference Number:  (Official use only)
--

**Thank you for taking the time to complete this questionnaire.**

## Appendix F – CUT Research permission



Mia Zheng <mia.zhengjin@gmail.com>

### RE: Fwd: Apply permission to conduct research at Central University of Technology

2 封邮件

Antoni Szubarga <szubarga@cut.ac.za>

2011年8月4日 上午10:38

收件人: Desere Kokt <koktd@cut.ac.za>, "mia.zhengjin" <mia.zhengjin@gmail.com>

Ms Zheng

IT is my pleasure to inform you that you have been granted permission to conduct survey at CUT.

The conditions of the permission are:

- a) The survey will not interrupt the any of the official activities at CUT.
- b) You will supply us with the copy of your report
- c) The cost of all related activities will be covered by researcher
- d) Recruitment of participants is the sole responsibility of researcher.
- e) Voluntary nature of the potential participant's decision to consent to participate should be strictly observed.
- f) Additionally researchers should not disclose a potential participant's decision to participate or otherwise to any other party
- g) Permission does not compel, in any sense, participation of the staff members or students in survey.

Dr Antoni Szubarga  
Acting Director Institutional Planning

-----Original Message-----

From: Kokt Desere  
Sent: 04 August 2011 10:32 AM  
To: Szubarga Antoni  
Cc: Dessels Riana  
Subject: FW: Fwd: Apply permission to conduct research at Central University of Technology

## Appendix G – CPUT Research permission



9 October 2011  
CPUT/IERB 2011/H06

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P.O. Box 1906 • Bellville 7535 South Africa • Tel: +27 21 442 6162 • Fax +27 21 447 2963  
Symphony Road Bellville 7535

**OFFICE OF THE CHAIRPERSON:**  
**HEALTH AND WELLNESS SCIENCES RESEARCH ETHICS COMMITTEE**  
Registration Number NHREC: REC- 230408-014

Ethical clearance is granted to Ms Jin Zheng, a registered D Tech student at the Durban University of Technology, for a study involving the survey of students and staff at CPUT.

**TITLE:**  
A quality model for a university of technology postgraduate development and support centre in South Africa

**Comment:**  
Research activities are restricted to those detailed in the proposal submitted in August 2011.

Individual participation by CPUT students and staff members is voluntary and the ethical standard of confidentiality of participants must be upheld.

The ethical standard of confidentiality of institutions must be upheld unless permission is given by the Executive Management of the university/ies to identify the institution/s.

The Institutional Ethics Review Board of CPUT requires a short report on the research process and findings at the completion of this study.

Approval will not extend beyond 8 October 2012. An extension must be applied for should data collection for this study continue beyond this date.



**Prof PENELOPE ENGEL-HILLS**  
**CHAIR: HEALTH AND WELLNESS SCIENCES RESEARCH ETHICS**  
**COMMITTEE**

E-mail: engelhillsp@cput.ac.za

## Appendix H – DUT Research permission



*Research Management and Development  
Durban University of Technology  
Tromso Annexe, Steve Biko Campus  
P.O. Box 1334, Durban 4000  
Tel.: 031-3732576/7  
Fax: 031-3732946  
E-mail: [moyos@dut.ac.za](mailto:moyos@dut.ac.za)*

15<sup>th</sup> April 2011

Ms. J. Zheng  
c/o Department of Operations and Quality Management  
Durban University of Technology

Dear Ms. Zheng

### **PERMISSION TO CONDUCT RESEARCH AT THE DUT**

Your email correspondence dated 11<sup>th</sup> April 2011 in respect of the above refers. I am pleased to inform you that the Institutional Research Committee (IRC) has granted permission for you to conduct your research at the Durban University of Technology.

We would be grateful if a summary of your key research findings can be submitted to the IRC on completion of your studies.

Kindest regards.  
Yours sincerely



**PROF. S. MOYO**  
**DIRECTOR: RESEARCH MANAGEMENT AND DEVELOPMENT (ACTING)**

cc.: Prof. P. Singh - Department of Information and Corporate Management

## Appendix I – TUT Research permission



### Research Ethics Committee

*The TUT Research Ethics Committee is a registered Institutional Review Board (IRB 00005968) with the US Office for Human Research Protections (IORG# 0004997) (Expires 19 Jan 2014). Also, it has Federal Wide Assurance for the Protection of Human Subjects for International Institutions (FWA 00011501) (Expires 31 Jan 2014)*

June 17, 2011

Ref #: REC Sub-Committee/2011/06/Q001  
Name: Zheng J  
Student #: 20358181 DTech [DUT]

Ms J Zheng  
Faculty of Management Sciences  
Durban University of Technology  
Durban  
South Africa

Dear Ms Zheng,

**Name:** Zheng J  
**Project title:** A quality model for a university of technology postgraduate development support centre in South Africa  
**Qualification:** DTech Quality Management [DUT]

The application for ethical consideration of the abovementioned project bears reference. The review panel wishes to table the following comments/notes for your consideration/attention/notification:

#### General comment on questionnaires

- Consider adding "For office use" coding blocks to the questionnaires as it would make the data capturing and statistical analysis much easier.

#### Student Questionnaire

- Section A, Item 2.3: Clearly indicate whether this item is applicable to the student's current qualification or all postgraduate studies at the specific university. Keep in mind that a doctoral student may have also been registered for his/her masters' degree at the same university.
- Section A, Item 5, Statement S1.1: This is a double-barrelled statement as enrolment and registration can be regarded as two separate processes. It is recommended that the current statement be split into two statements.



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- Section A, Item 5, Statement S1.6: This statement seems to better fit under the statements in Sector 2.
- Section A, Item 5, Statement S1.8: This statement seems to better fit under the statements in Sector 2.
- Section A, Item 5, Statement S3.1: Most postgraduate students will not be in a position to respond to this statement. It is recommended that it be deleted from the student questionnaire.
- Section A, Item 5, Statement S4.1: This statement is a repeat of Statements S2.1 and S2.2. It is recommended that either of the statements be deleted to avoid the use of redundant statements.

Institutional requirement

- A copy of the final thesis should be provided to the TUT Directorate: Research and Innovation for notification and implementation of the research findings.

The application for permission to distribute questionnaires for the abovementioned project is approved with some recommendations.

Note:

*The reference number [top right corner of this communiqué] should be clearly indicated on all forms of communication [e.g. Webmail, E-mail messages, letters] with the intended research participants.*

Yours sincerely,



WA HOFFMANN (Dr)  
Chairperson: Research Ethics Committee  
[Ref#: REC Sub-Committee=2011=06=Q002=ZhengJ]



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## Appendix J – VUT Research permission



### Vaal University of Technology

Date: 21 April 2011


Name: Lin Zheng

#### REQUIREMENTS FOR PERMISSION TO BE GRANTED TO CONDUCT A RESEARCH PROJECT AT THE VAAL UNIVERSITY OF TECHNOLOGY

- Copy of structured questionnaire to be provided to the Dean of Research.
- A list of policies/documents you require to review must be provided to the Dean of Research.
- Approval must be obtained from the Executive Committee of the Central Research Committee/Rectorate member via the Dean of Research.
- The following forms need to be completed:
  - Request by Researcher for Access to the Vaal University of Technology Confidential Data.
  - Oath of Secrecy
  - Oath of Secrecy of Supervisor/Promoter
- It is not compulsory for staff to provide information/complete questionnaires it is done voluntarily.
- A copy of the findings/report must be submitted to the Dean of Research.

Signed (Researcher)

Approval by DVC Academic + Research Prof. HA Louw

Approved <input checked="" type="checkbox"/>	Rejected <input type="checkbox"/>
	<u>3/09/11</u>
Signature	Date

## Appendix K – QUT Research permission



Mia Zheng <mia.zhengjin@gmail.com>

### Survey enquiry

11 封邮件

Susan Gasson <s.gasson@qut.edu.au>  
收件人: Mia Zheng <mia.zhengjin@gmail.com>

2011年6月23日 上午1:57

Dear Mia

I am happy to complete the staff survey and can cover most of the information required. Re the students I would recommend you putting the survey into an online format. I can then send out the link to students as part of other communication. Usually we get a reasonable response rate from online surveys –hopefully about 5% or more.

All the best

Susan



**Susan Gasson** | Manager, Research Students Centre | Division of Research and Commercialisation  
Level 4, 88 Musk Ave, Kelvin Grove Q 4059 | t: 07 3138 5166 | f: 07 3138 1304 | e: [s.gasson@qut.edu.au](mailto:s.gasson@qut.edu.au)

w: [www.rsc.qut.edu.au](http://www.rsc.qut.edu.au) | CRICOS 00213J

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## Appendix L – RMIT University Research permission



Mia Zheng <mia.zhengjin@gmail.com>

### Request to include RMIT in your PhD research

Denise Cuthbert <denise.cuthbert@rmit.edu.au>

2011年8月5日 下午3:51

收件人: mia.zhengjin@gmail.com

抄送: Susanne Tzamouranis <susanne.tzamouranis@rmit.edu.au>

Dear Mia,

Thanks for this reply which addressed my concerns. I am happy for this project to proceed.

Please now liaise with M/s Susanne Tzamouranis who will:

- a. advise on how to approach senior SGR staff for the staff survey
- b. advise on access to the student cohort.

I look forward to seeing the findings from your research and apologise again for the delays you have experienced in getting a response from RMIT.

Kind regards  
Denise Cuthbert  
Dean, SGR

## Appendix M – UTS University Research permission



Research and Innovation Office  
City Campus  
Building 1 Level 14 Room 14.31  
PO Box 123 Broadway  
NSW 2007 Australia  
T +61 2 9514 9681  
F +61 2 9514 1244  
www.uts.edu.au  
UTS CRICOS PROVIDER CODE 00096F

11 May 2011

Ms Jin Zheng  
27 Raylene, 60 Ritson Rd  
Berea  
Durban 4001  
SOUTH AFRICA

Dear Mia,

**UTS HREC 2011-201 – ZHENG, Ms Jin (Mia) – “A quality model for a university of technology postgraduate development and support centre in South Africa”**

In conjunction with the Dean of the University Graduate School, I have reviewed your request to conduct research for the above project. I am pleased to inform you that we are happy to grant permission for the distribution of questionnaires to all postgraduate students at UTS as well as members of staff in the University Graduate School.

For tracking purposes, you have been provided with an ethics reference number, which is UTS HREC 2011-201N.

I also refer you to the AVCC guidelines relating to the storage of data, which require that data be kept for a minimum of 5 years after publication of research. However, in NSW, longer retention requirements are required for research on human subjects with potential long-term effects, research with long-term environmental effects, or research considered of national or international significance, importance, or controversy. If the data from this research project falls into one of these categories, contact University Records for advice on long-term retention.

If you or anyone connected with this research have any queries please do not hesitate to contact either myself, or the Research Ethics Officer, Ms Racheal Laugery on 02 9514 9772.

Yours sincerely,



Professor Marion Haas  
Chairperson  
UTS Human Research Ethics Committee