

**MEASURING THE ACCESSIBILITY OF ACCOUNTANCY
PROGRAMMES WITH SPECIAL EMPHASIS ON
CHARTERED ACCOUNTANCY IN SOUTH AFRICA**

by

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Abstract

South Africa is experiencing a financial skills shortage with a severe shortage of accountants and chartered accountants in particular. The aim of this study was to measure accessibility of public higher education in South Africa, in general and specifically relating to accountancy programmes with special emphasis on chartered accountancy programmes in South Africa, by making use of selected accessibility indicators. Although some of these indicators have been used to measure accessibility of higher education in general both locally and internationally, they are not often used to measure accessibility of a programme for a particular profession such as accountancy or chartered accountancy. This study aimed to fill this gap by measuring the selected accessibility indicators and providing subsequent rankings of the four public universities selected for this study. The results can be used by institutions that offer accountancy and chartered accountancy programmes as well as the South African Institute of Chartered Accountants, as the profession's Education and Training Quality Assurance body, to evaluate the accessibility of accountancy as well as chartered accountancy programmes.

Key words:

- Accessibility of higher education
- Accessibility indicators
- Financial skills shortage
- Shortage of accountants and chartered accountants
- Participation rate
- Educational attainment
- Educational Equality Index
- Gender Parity Index
- Gross Enrolment Rates
- Net Enrolment Rates
- Graduation rates
- Level of attainment

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CHAPTER 1

INTRODUCTION TO THE STUDY

1.1 INTRODUCTION

To introduce this study on the subject of measuring the accessibility of accountancy programmes with special emphasis on chartered accountancy in South Africa, Chapter 1 provides background information on the financial skills shortages in South Africa, especially as these include a shortage of accountants as well as chartered accountants.

In addition, the chapter will explain the objectives of this study as well as the intended methods to be used to enable the reader to gain a better understanding of the purpose of this study.

1.2 BACKGROUND INFORMATION

The financial skills shortage in South Africa has been described as “*the war on talent*” (SAIPA, 2014). With high levels of financial skills shortages in the private and public sectors (SAICA, 2010), the financial skills shortage is and has been a debated topic in South Africa, not only in recent years but for several decades (SAICA, 2008a; SAICA, 2010; FASSET, 2013; SAIPA, 2014). For instance, the South African Institute of Chartered Accountants (hereafter referred to as SAICA) conducted a *Financial management, accounting and auditing skills shortage* study for a period up to and including 2007 to evaluate the financial skills shortage in South Africa (SAICA, 2008a). The financial skills shortage has now reached a critical level in South Africa (Marshall, 2014) with a poor Mathematics pass rate contributing to the current financial skills shortage especially in the field of Accountancy (Molefi, 2014).

The executive president of SAICA at the time, Mr Sehoole, expressed his concerns about the financial skills shortage as the future of economic growth in South Africa is heavily reliant on persons with financial skills (SAICA, 2008b). This notion is supported by Kurihara (2013), who examined the relationship between financial skills and economic growth and concluded that financial skills promote economic growth

by allowing financially skilled persons to make sensible and effective decisions relating to financial and other economic resources.

The study performed by SAICA revealed an international shortage of financial management, accounting and auditing skills (SAICA, 2008a), indicating that this shortage is a global phenomenon. South Africa is in competition with other countries in terms of scarce financial skills and consequently the country has to produce individuals with the required skills to address the local growth in demand (SAIPA, 2014).

The benefits to be derived from addressing the financial skills shortage in South Africa are thus indisputable. It is clear that for South Africa to improve on its economic growth, this shortage cannot be ignored. The financial skills shortage includes a shortage of accountants in general and of chartered accountants in particular.

The *Global Leadership Survey on the Accountancy Profession* for 2008 by the International Federation of Accountants (IFAC) indicates that the leaders of accountancy bodies internationally view the accounting profession as crucial for a country's economic growth and development. These leaders also anticipate an increase in demand for accountants in audit, assurance, accounting, taxation and advisory services as well as for professional accountants in business, industry and in the public sector (IFAC, 2008).

During 2013, the ManpowerGroup released their research results on their *2013 Talent Shortage Survey*. As part of this annual survey, 38 000 employers in over 42 countries were surveyed during the 2013 survey. These employers report on positions which they find difficult to fill. On the list of the top ten vacancies that employers struggle to fill, accounting and finance staff ranked in fifth place overall. The *2013 Talent Shortage Survey* also indicates that accounting and finance staff ranked in sixth place for South Africa specifically (ManpowerGroup, 2013). This position had worsened from the *2012 Talent Shortage Survey*, where the accounting and finance staff ranked in tenth place for South Africa specifically (ManpowerGroup, 2012). This climb in the ranking indicates that employers in South Africa found it

even more difficult to fill these accounting and finance staff positions in 2013 than they did in 2012 (SAIPA, 2014).

The Finance and Accounting Services Sector Education and Training Authority (FASSET) provided the Department of Higher Education and Training (DHET) with the *FASSET Sector Skills Plan update for the period 1 April 2014 to 31 March 2019* during 2013. The Finance and Accounting Services Sector Education and Training Authority takes overall responsibility for finance, accounting, management consulting and other various financial service activities. An assessment of the skills shortages in the finance and accounting services sector was performed to examine certain indicators of skills shortage (FASSET, 2013). The *FASSET Sector Skills Plan update for the period 1 April 2014 to 31 March 2019* indicates a shortage of finance professionals with relevant accounting skills as well as of accounting and auditing trainees; these individuals account for 66% of the professional scarce-skill vacancies. Of the 66%, 15% relate to accountants in general, 4% specifically to chartered accountants, 3% to external auditors and 40% to accounting and auditing trainees. According to the assessment, there is a shortage of accountants and specifically chartered accountants in South Africa particularly in the public sector, as not enough accountants and chartered accountants are produced to meet the growing demands. (FASSET, 2013.)

During 2014, the Minister of Higher Education and Training published the *National Scarce Skills List: Top 100 occupations in demand*. This document lists the top 100 occupations that are in short supply in South Africa. Accountants in general feature in the list. Furthermore, the document specifically states that chartered accountants are in very high demand in South Africa. (South Africa. DHET, 2014.)

As mentioned above, SAICA's research relating to financial skills shortages in South Africa reported a shortfall of 22 000 persons in financial occupations across all levels. Included in this figure was a shortfall of 5 000 chartered accountants (SAICA, 2010). This report by SAICA predicted that the shortfalls would most likely increase in the years ahead (SAICA, 2008a).

From the above it is clear that South Africa currently faces a significant scarcity of accountants and specifically chartered accountants. The responsibility of addressing

the financial skills shortage in South Africa can however not rest on a few individuals, certain organisations or the South African government alone. In order to address this shortage, there needs to be a holistic approach with the buy-in of all relevant stakeholders as well as well-structured plans and regular progress reports.

One of the most important determinants of a country's economic growth is education (Barro, 2001). Higher levels of education facilitate improved economic growth and higher living standards (ILO, 2011). Quality education and training in general and for accountants in particular will provide individuals with the required skills that the South African economy so desperately needs and will assist in addressing the country's high unemployment rates (SAIPA, 2014).

The benefits of a high-quality educational system combined with good quality training that addresses the shortages of skills in the labour market include the following (ILO, 2011):

- Empowerment of individuals to reach their full potential and take up employment opportunities;
- Increased productivity, not only of the workforce but also of organisations;
- Heightened innovation and development;
- Encouragement of investors, both nationally and internationally, to invest, thus creating more jobs and decreasing unemployment;
- Increase in wages and salaries; and
- Increased labour market opportunities and decreased social inequalities.

On the whole, graduates have a better chance of being employed in the formal sector compared to those without a degree. Individuals with a higher education degree have improved chances of getting a job in South Africa, as shown by the unemployment rate of only 5.2% in the 2nd quarter of 2013. The unemployment rate for those without matric was 30.3% in the same quarter. (Statistics South Africa, 2013a.)

For South Africa to realise its optimal economic potential, it is crucial that adequate numbers of accountants and specifically chartered accountants qualify each year to ease the shortages. The onus thus rests on all stakeholders, and in particular the professional institutes and higher education institutions in South Africa that are currently offering programmes for students who wish to qualify as chartered accountants, to confront this issue and to investigate solutions in order to increase enrolments, graduates and ultimately the number of qualified chartered accountants in South Africa (Odendaal and Joubert, 2011).

Ms Kater, the Head of the Association of Certified Chartered Accountants South Africa (ACCA SA), shares this view; she explains that the basic education system in South Africa is struggling to supply enough individuals who meet the admission requirements of universities and universities of technology. In her view, the individuals who do in fact meet these admission requirements often face more constraints due to limited places available at these institutions, coupled to the fact that many of them cannot afford to study on a full-time basis (The skills portal, 2011).

The goal of the Department of Higher Education and Training, as set out in *the White Paper for Post-School Education and Training*, is to have enrolments of 1.6 million (from 938 200 enrolments in 2011) in public universities in South Africa by 2030. This is not only a case of increasing the number of places available in public universities but also requires affordable education for potential students. The development of the scarce skills that South Africa needs in order to improve on economic development is of particular importance to the Department of Higher Education and Training and should be the focus when public universities increase accessibility (DHET, 2013a).

It is thus clear from the above that increased accessibility to higher education is of paramount importance in the process of addressing the financial skills shortage and in particular the shortage of accountants and chartered accountants in South Africa. In order to gauge the progress that has been made in this regard, the accessibility of higher education should be measured. This should not only be done comprehensively for the public universities in South Africa, but should also

specifically measure the accessibility of accountancy programmes with specific emphasis on chartered accountancy programmes in South Africa.

It is for this reason that the concept of accessibility of higher education is the cornerstone of this study. Accessibility of higher education refers to the ability of persons from all backgrounds, with the necessary capabilities and skills, to gain access to higher education on a relatively equal basis (Usher and Cervenán, 2005).

In 2005 the Educational Policy Institute released a report, the *Global Higher Education Rankings 2005: Affordability and Accessibility in Comparative Perspective* report (hereafter referred to as the “2005 Global Higher Education Rankings report”) (Usher and Cervenán, 2005), which attempted to measure accessibility of higher education indicators (hereafter referred to as “accessibility indicators”) in order to provide international rankings based on the results. The follow-up report by the Higher Education Strategy Associates, the *Global Higher Education Rankings 2010: Affordability and Accessibility in Comparative Perspective* report (hereafter referred to as the “2010 Global Higher Education Rankings report”) (Usher and Medow, 2010) reported on the same basis but attempted to include a wider range of countries. The accessibility indicators used in these reports were used as a basis in this study.

The importance of the above-mentioned *2005 Global Higher Education Rankings report* and the *2010 Global Higher Education Rankings report* and a review of the accessibility indicators measured in these reports will be discussed in Chapter 2 of this study. Chapter 3 will provide more information on the history of higher education and the current higher education system in South Africa. The next section will present the problem statement of this study based on the above background information.

1.3 PROBLEM STATEMENT

Accessibility indicators are measured regularly on a high level, internationally as well as in South Africa. These accessibility indicators are, however, not measured regularly for specific professions such as the accountancy profession or specifically the chartered accountancy profession to enable public universities that offer these

programmes to assess their overall accessibility of these programmes or to compare themselves in this regard with other universities.

As mentioned in the background information, there is currently a general shortage of accountants and specifically chartered accountants in South Africa. This shortage could possibly be addressed if regular measurements of accessibility indicators are performed on accountancy programmes and specifically chartered accountancy programmes offered by these universities and if subsequent rankings are done based on the results. The pressure of these rankings could possibly motivate the public universities in South Africa to address and improve on their overall accessibility as well as the accessibility of their accountancy and specifically chartered accountancy programmes.

1.4 RESEARCH OBJECTIVES

The aim of this study was to measure the accessibility of higher education using selected indicators. In order to achieve this objective, this study set out to answer the following questions:

Research question 1: What are the possible indicators and methods used to measure accessibility of higher education?

Chapter 2 of this study will attempt to address research question 1.

Research question 2: What are the current challenges faced by South African students that could possibly have an influence on the accessibility of higher education?

Chapter 3 of this study will attempt to address research question 2.

Research question 3: Could the past injustices brought about by apartheid still have a possible influence on the accessibility of higher education in South Africa?

Chapter 3 of this study will attempt to address research question 3.

Research question 4: What is the influence of governing bodies, legislation and other higher education regulators on the accessibility of higher education in South Africa?

Chapter 3 of this study will attempt to address research question 4.

Research question 5: What influence could the different admission criteria to chartered accountancy programmes set by the four universities selected for this study have on the accessibility of chartered accountancy programmes in South Africa?

Chapter 4 of this study will attempt to address research question 5.

Research question 6: Through the application of certain accessibility indicators, could the overall accessibility of South African public higher education as well as accountancy programmes with special emphasis on chartered accountancy programmes be measured?

Chapter 6 and 7 of this study will attempt to address research question 6.

1.5 IMPORTANCE AND BENEFITS OF THIS STUDY

This study can contribute to further studies on the design of more comprehensive policies or improvement of existing policies relating to the accessibility of higher education for the 23 public universities and in particular the accessibility of accountancy programmes with special emphasis on chartered accountancy programmes in South Africa. This could possibly lead to increased public debate and

awareness on the issues surrounding the accessibility of South African higher education.

This study could also encourage higher education policy-makers as well as other relevant stakeholders to address the shortage of scarce skills in South Africa by confronting the issues regarding the accessibility of higher education and in particular of accountancy and chartered accountancy programmes.

Although regular high-level studies are conducted internationally as well as in South Africa to measure certain accessibility indicators for higher education, there are limited studies where South African public universities are ranked based on the results of the measurement of accessibility indicators. Studies that measure accessibility indicators for a specific profession such as the accountancy profession and specifically the chartered accountancy profession, are even more limited. This study aims to partially fill this gap.

The rankings provided in terms of the results of the measurement of the accessibility indicators could present the four selected public universities as well as the other public universities in South Africa with an overview of how they rank in terms of accessibility of higher education. Future studies could be conducted where accessibility indicators could be measured for all public universities and where these universities could possibly be ranked annually. This could allow public universities to compare themselves in terms of accessibility and possibly motivate them to improve on their overall accessibility as well as in terms of accountancy programmes and chartered accountancy programmes offered by accredited universities. The accessibility indicators used in this study could lay the foundation for such future studies.

A further benefit of this study is that it could possibly influence certain future developments in or adjustments to the subsidy formula which is used to determine public funding of Higher Education Institutions in South Africa.

1.6 DEFINITION OF KEY TERMS

This study uses a number of key terms. The definitions for these terms are supplied below.

Contact student: A student in a higher education institution who is registered mainly for courses offered in contact mode. A contact mode course involves personal interaction with lecturers or supervisors through lectures, tutorials, seminars, practicals, supervision or other forms of required work, which is presented on the institution's premises or at a site of the institution (DHET, 2013b).

Chartered accountant: A professional accountant (as described below) who is a member of SAICA and who has the designation "Chartered Accountant (SA)" (SAICA, 2008a).

Distance student: A student in a higher education institution who is registered mainly for courses offered in distance mode. A distance mode course involves interaction with lecturers or institution supervisors through "distance education" techniques (for example through the use of correspondence, telematics or the Internet) (DHET, 2013b).

Professional accountant: A person who

- has at least an NQF level 7 qualification (for example an Honours Degree in Accounting or a Certificate in the Theory of Accounting);
- has completed the required learnership or practical training for professional body membership;
- has passed the required qualifying examinations for professional body membership; and
- is a full member of a professional accounting body such as:
 - The South African Institute for Chartered Accountants (SAICA);
 - The South African Institute for Professional Accountants (SAIPA);

- The Association for Chartered Certified Accountants (ACCA); or
- The Chartered Institute of Management Accountants (CIMA).
- The term excludes learners in learnerships (trainee accountants or articled clerks). (SAICA, 2008a).

Skills shortage: A situation where not enough people are available in the local (South African) occupational labour market to fill the vacant positions (SAICA, 2008a).

1.7 RESEARCH PHILOSOPHY AND APPROACH

The data, facts and figures obtained to measure the accessibility indicators in this study are considered to be objective and independent from the researcher. It is for this reason that the philosophical stance of the natural scientist is adopted and the positivism research philosophy is reflected in this study (Saunders, Lewis & Thornhill, 2007). Chapter 5 provides more detail on this philosophical stance and the reasons for adopting it in this study.

The positivism research philosophy will most likely lead to a deductive research approach (section 5.2.2, page 133). The following are some of the main characteristics of the deductive research approach (Saunders, *et al.*, 2007):

- The researcher is likely to make use of a very structured research methodology in order for others to replicate the research;
- The researcher should be seen as independent from the research;
- Concepts should be operationalised to allow facts, figures and data collected to be measured quantitatively; and
- Conclusions reached should be generalisable.

1.8 RESEARCH DESIGN AND METHODOLOGY

To measure the accessibility of higher education in South Africa as well as that of accountancy programmes with special emphasis on chartered accountancy

programmes at the four selected public universities, quantitative facts, figures and data were obtained to populate four accessibility indicators as set out below. These indicators were derived from the *2005 Global Higher Education Rankings report* and the *2010 Global Higher Education Rankings report*. Chapter 2 provides insight into these indicators as well as possible methods that could be used to measure each of them. Chapter 5 presents the methods on which this study based its measurements of the accessibility indicators. The accessibility indicators and the method(s) used to measure each of them are as follows:

1. **Participation Rate:** using enrolment rates (Gross Enrolment Rate and Net Enrolment Rate);
2. **Educational Attainment:** using level of attainment and graduation rate;
3. **Educational Equality Index:** using parental educational level; and
4. **Gender Parity Index:** using Gross Enrolment Rates and level of attainment.

The selection of the four public universities included in this study was based on the major role they play in the provision of candidates that successfully complete part one of the SAICA Qualifying Examination. Chapter 4 of this study presents the SAICA accredited universities and explains where this examination fits into the career path of a prospective chartered accountant.

Table 1.1 sets out the examination statistics relating to part one of the SAICA Qualifying Examination with the total passes for the period 2009 to 2012 for all the SAICA accredited universities.

TABLE 1.1: TOTAL PASSES FOR PART ONE OF THE SAICA QUALIFYING EXAMINATION FOR 2009 TO 2012

Name of university	2009 total passes	2010 total passes	2011 total passes	2012 total passes	Total	Percentage
					passes over period 2009 - 2012	of total passes over period 2009 - 2012
Nelson Mandela Metropolitan University	67	45	63	60	235	3.16%
North-West University	59	52	63	66	240	3.23%
Rhodes University	34	22	34	21	111	1.49%
University of Cape Town	214	249	287	259	1009	13.58%
University of Fort Hare	17	22	19	15	73	0.98%
University of Free State	39	44	44	57	184	2.48%
University of Johannesburg	241	254	232	256	983	13.23%
University of KwaZulu-Natal	204	100	116	105	525	7.07%
University of Pretoria	143	125	164	168	600	8.08%
University of South Africa (Unisa)	654	291	585	586	2116	28.49%
University of Stellenbosch	147	131	164	193	635	8.55%
University of the Witwatersrand	145	146	191	181	663	8.93%
University of the Western Cape	8	11	16	19	54	0.73%
TOTAL	1972	1492	1978	1986	7428	100.00%

Source: Author's own calculation; SAICA, 2011; SAICA, 2013a.

From the results as set out in Table 1.1 it is clear that the four SAICA accredited universities with the highest total number of passes over the period 2009 to 2012, were:

- The University of Cape Town;
- The University of Johannesburg;
- The University of South Africa (hereafter referred to as Unisa); and
- The University of the Witwatersrand.

Although the University of KwaZulu-Natal and the University of Stellenbosch had a higher number of passes than the University of the Witwatersrand in 2009, the University of the Witwatersrand managed to obtain a higher number of passes over the period 2009 to 2012 and is therefore selected for inclusion in this study.

The measurement of the four above-mentioned accessibility indicators is performed on the following **three levels**:

- **Level one:** for public higher education in South Africa (based on the 23 public universities in South Africa combined).
- **Level two:** for each of the four public universities (selected for this study) on an overall basis. These universities include (based on the selection criteria as set out above):
 - The University of Cape Town;
 - The University of Johannesburg;
 - Unisa;
 - The University of the Witwatersrand.
- **Level three:** for accountancy programmes offered at each of the four public universities selected for purposes of this study and mentioned for **level two** above, with special emphasis on chartered accountancy programmes.

The facts, figures and data collected to populate the **three levels** for each of the accessibility indicators as described above, were derived from secondary data as was done in the *2005 Global Higher Education Rankings report* and the *2010 Global Higher Education Rankings report*.

This study provides the measurements of these accessibility indicators for the period 2009 to 2012. The academic years 2009 to 2012 were selected with the purpose of establishing possible improvements in accessibility indicators or worsening trends over this period. Only measuring the accessibility indicators for one academic year will merely provide a snapshot and will not establish trends or facilitate comparisons. During 2014 two new public universities, the Sol Plaatje University and the University

of Mpumalanga, started operating (Sol Plaatje University 2014; University of Mpumalanga, 2014). Since this study measures accessibility indicators for the period 2009 to 2012 and the two new public universities only started operating in 2014, these institutions were not included in the measurements.

For **level one**, where the accessibility indicators were measured for public higher education in South Africa based on the combined results of the 23 public universities, comparisons were made (where possible) with other countries as well as with targets set for South African higher education. For **level two**, where the accessibility indicators were measured for each of the four selected public universities on an overall basis, comparisons were made between these four universities and subsequent rankings were done based on the results of the measurements. For **level three**, where accessibility indicators were measured for accountancy programmes offered by the selected four public universities with special emphasis on chartered accountancy programmes, comparisons were made between these four universities and subsequent rankings were based on the results of the measurements.

1.9 ETHICAL APPROVAL

Ethical approval was obtained from the Ethics Review Committee of the School of Accounting of Unisa and a clearance certificate was obtained for the research performed in this study.

1.10 DELIMITATION OF THIS STUDY

This study reports on a baseline study on the accessibility of higher education in South Africa and on South African accountancy programmes with special emphasis on chartered accountancy programmes.

Due to the unavailability of cohort student data, certain internationally used accessibility indicators and methods could not be measured.

As mentioned above, the *2005 Global Higher Education Rankings* and the *2010 Global Higher Education Rankings* reports were used to lay the foundation for this study. These reports measured not only the accessibility of higher education but also

its affordability. This study did not attempt to measure affordability of higher education indicators as these were beyond the scope of this study. This study does not underestimate the importance of the affordability of higher education, nor its impact on the accessibility of higher education. A rise in education costs does create obstacles in terms of higher education accessibility; higher education is less accessible for students from poor or working-class families who cannot afford the fees (DHET, 2013a). Although the measurement of affordability indicators is beyond the scope of this study, a short overview of the challenges caused by unaffordable higher education costs is provided in Chapter 3.

As with the *2005 Global Higher Education Rankings report* and the *2010 Global Higher Education Rankings report*, this study did not attempt to distinguish between higher education systems that are accessible versus those that are inaccessible. It merely measured accessibility indicators in order to make certain comparisons and conclusions. This study did therefore not attempt to classify the four selected universities as accessible or inaccessible but merely attempted to rank these four universities based on the results of the measurements of each of the four accessibility indicators.

This study did not attempt to compare accessibility indicators for South Africa, as measured in this study, with the results of the measurements included in the *2005 Global Higher Education Rankings report* and the *2010 Global Higher Education Rankings report*. This is mainly due to the difference between the periods covered in these reports and the period covered in this study. The *2005 Global Higher Education Rankings report* mainly covered the 2002 to 2003 academic years, whilst the *2010 Global Higher Education Rankings report* mainly covered the 2007 to 2008 academic years. This study covered the 2009 to 2012 academic years.

This study focused on the 23 public universities (excluding the Sol Plaatje University and the University of Mpumalanga), with specific attention to the selected four public universities. Private higher education institutions therefore fell outside the scope of this study.

In the following section a short overview of the chapters in this study is provided.

1.11 CHAPTER OVERVIEW

This study comprises the following chapters:

- ***Chapter 1: Introduction to the study***

Chapter 1 has provided background information regarding the financial skills shortage as well as the shortage of accountants and in particular chartered accountants in South Africa. This chapter has also presented the problem statement, the benefits and the objectives of this study.

- ***Chapter 2: Literature review on the accessibility of higher education***

This chapter provides an introduction to the *2005 Global Higher Education Rankings report* and the *2010 Global Higher Education Rankings report*. The accessibility indicators used in these reports laid the foundation for this study and Chapter 2 sets out how accessibility of higher education was defined and measured in these reports. Other international studies conducted on the measurement of the accessibility of higher education with subsequent rankings based on the results are also discussed in Chapter 2. The chapter further provides a literature review on possible methods that could be used to measure each of the accessibility indicators.

- ***Chapter 3: An overview of the higher education system in South Africa***

This chapter provides a brief overview of the history of education in South Africa as it could possibly still have an impact on the accessibility of higher education in South Africa. In addition, Chapter 3 reviews the current higher education system, providing an overview of the higher education regulators and legislation that govern higher education in South Africa. Furthermore, the chapter offers an outline of some of the major challenges experienced by South African higher education students, including students aspiring to become accountants and specifically chartered accountants.

- ***Chapter 4: An overview of chartered Aaccountancy programmes in South Africa***

Chapter 4 outlines the process of becoming a chartered accountant in South Africa. The higher education regulatory bodies and legislation that govern higher education in South Africa also govern chartered accountancy programmes. In addition, Chapter 4 discusses the additional professional bodies and regulators that specifically govern chartered accountancy programmes in South Africa. The chapter also gives more detail on the four public universities selected for this study and a short overview of the chartered accountancy programmes that they offer.

- ***Chapter 5: Research philosophy, approach, design and methodology***

This chapter details the research philosophy and the approach taken in this study. It also provides information on the research design and the methodology that was used in measuring accessibility of higher education in South Africa as well as the measurement thereof specifically relating to South African accountancy programmes with special emphasis on chartered accountancy programmes.

- ***Chapter 6: Findings on accessibility indicators***

Chapter 6 of this study presents the findings on the measurement of each of the four accessibility indicators on all ***three levels***. In addition, the chapter provides an analysis of the results of the accessibility indicators for this specific study. Comparisons between the four universities are made and overall rankings are assigned based on the results of the accessibility indicators measured for ***level two*** and ***level three***.

- ***Chapter 7: Final Conclusions and recommendations***

Apart from providing the overall final conclusions relating to the measurement of the accessibility indicators in this study, Chapter 7 also draws final conclusions on the research questions and makes certain recommendations for future studies that could be conducted on this topic.

CHAPTER 2

LITERATURE REVIEW ON THE ACCESSIBILITY OF HIGHER EDUCATION

2.1 INTRODUCTION

Chapter 1 introduced the concept of accessibility of higher education as defined by the *2005 Global Higher Education Rankings report* and the *2010 Global Higher Education Rankings report*. In both these reports, the accessibility of higher education is measured and countries are ranked in terms of the results.

Section 1.4 (page 7) presented the research objectives of this study. The main aim of Chapter 2 is to address the following research question:

Research question 1: What are the possible indicators and methods used to measure accessibility of higher education?

This chapter provides insight into the various indicators and methods used to measure higher education accessibility and subsequent rankings based on the results thereof. This is done in order to determine whether the definitions, methods and indicators used in the *2005 Global Higher Education Rankings report* and the *2010 Global Higher Education Rankings report* are appropriate for the purposes of this study.

The following section provides a literature review on studies that have been conducted on the measurement of the accessibility of higher education; however, it is limited to studies that were aimed at measuring these accessibility indicators in order to provide subsequent rankings based on the results. This was done to address research question 1, where possible indicators that could be used to measure accessibility of higher education were investigated.

2.2 STUDIES CONDUCTED ON THE ACCESSIBILITY OF HIGHER EDUCATION WITH SUBSEQUENT RANKINGS BASED ON THE RESULTS

As stated in Chapter 1, the *2005 Global Higher Education Rankings report* and *2010 Global Higher Education Rankings report* are two of the most comprehensive studies

on the measurement of accessibility indicators with subsequent rankings based on the results (Usher and Cervenán, 2005; Usher and Medow, 2010)). These reports are discussed in the following sections, after which other relevant international studies conducted on this topic are examined. Similar studies that have been conducted in South Africa where rankings are provided based on the results of the measurement of accessibility indicators could not be obtained.

2.2.1 Global higher education rankings reports (2005 and 2010)

During 2005, the Educational Policy Institute released the inaugural edition of the Global Higher Education Rankings in the *2005 Global Higher Education Rankings report* (Usher and Cervenán, 2005). After the success of the 2005 inaugural edition, the *2010 Global Higher Education Rankings report* was released by the Higher Education Strategy Associates (Usher and Medow, 2010). The *2010 Global Higher Education Rankings report* specifically mentioned that the *2005 Global Higher Education Rankings report* had been well received and was widely used by various countries in their higher education policy making. It also mentioned that even organisations as well known as the World Bank made use of the approaches followed in the *2005 Global Higher Education Rankings report* (Usher and Medow, 2010). The Educational Policy Institute, as it was known before a restructure, was the publisher of the *2005 Global Higher Education Rankings Report*. This was an independent, non-profit and non-governmental organisation with offices in Washington and Toronto. The organisation consisted of a collective group of researchers and policy analysts from across the world. Extensive partnerships and arrangements with other leading research and educational organisations further supported research conducted by the Educational Policy Institute. Their research was aimed at the enhancement of knowledge relating to the significant barriers faced by students and their families. The Educational Policy Institute's mission was to increase educational opportunities for all students, which would result in increased enrolment and completion statistics for higher education. (Usher and Cervenán, 2005.) The Educational Policy Institute was converted to the Higher Education Strategy Associates in January 2010. The new institution aims to deliver innovative research and strategies in the higher education market (Higher Education Strategy

Associates, 2013a) to its clients, who include United Nations Educational Scientific and Cultural Organisation (hereafter referred to as UNESCO) and the World Bank (Higher Education Strategy Associates, 2013b).

The *2005 Global Higher Education Rankings report*, which was considered to be the first systematic and rigorous research conducted on this topic, was aimed at exploring affordability and accessibility of higher education within an international context (Usher and Cervenak, 2005). The focus of the 2005 report was on Europe (Sweden, Finland, the Netherlands, Belgium, Austria, France, Italy and Germany), the United Kingdom and Ireland, Northern America (the United States of America and Canada) and Australia (Usher and Cervenak, 2005). The *2010 Global Higher Education Rankings report* was aimed at providing a more expansive study with more countries to compare. Due to issues experienced with data comparability and availability, the *2010 Global Higher Education Rankings report* unfortunately failed somewhat in this regard as it could not (with the exception of Mexico) expand the study to more middle and low income countries. The *2010 Global Higher Education Rankings report* did, however, aim to include a somewhat different array of countries than the *2005 Global Higher Education Rankings report* (Usher and Medow, 2010) and these are discussed below.

The accessibility section of the *2010 Global Higher Education Rankings report* compared accessibility of higher education for fourteen countries, as opposed to the twelve countries compared in the *2005 Global Higher Education Rankings report*. On the other hand, Belgium, Ireland, Austria and Italy were included in the *2005 Global Higher Education Rankings report*, but did not form part of the *2010 Global Higher Education Rankings report*. Five new countries not included in the initial *2005 Global Higher Education Rankings report* were added to the *2010 Global Higher Education Rankings report*. These countries included Estonia, Mexico, Norway, New Zealand and Portugal. Similar to the *2005 Global Higher Education Rankings report*, South Africa and other African countries did not form part of the countries compared in the *2010 Global Higher Education Rankings report*. (Usher and Medow, 2010.)

In both the reports, access to higher education is defined as the ability of persons from all backgrounds to gain access to higher education on a relatively equal basis.

The researchers based their accessibility indicators on the Type I and Type II accessibility indicators as described in the study *Accessibility to postsecondary education in Canada: a review of the literature* (Anisef, 1985). Anisef (1985) identified two types of access that have to be considered. Type I access provides insight into the number of places that are available in higher education, whilst Type II access provides insight into the social composition of the student body. Anisef (1985) believes that Type I and Type II access are of equal importance and should be assigned equal weights (therefore 50% to Type I and 50% to Type II).

Anisef (1985) points out that Type I access is generally measured through indicators measuring participation and attainment and in his opinion these are of equal importance and deserve equal weights as well. Both the *2005 Global Higher Education Rankings report* and the *2010 Global Higher Education Rankings report* (Usher and Cervenán, 2005; Usher and Medow, 2010) made use of participation rates and educational attainment rates to measure Type I access. Type II access was measured in the *2005 Global Higher Education Rankings report* and the *2010 Global Higher Education Rankings report* through the Educational Equality Index and the Gender Parity Index, which provide insight into the student body composition (Usher and Cervenán, 2005; Usher and Medow, 2010).

Weightings were assigned to the accessibility indicators to enable overall conclusions and comparisons as well as to provide subsequent rankings of the countries based on the results. As mentioned above, Anisef (1985) viewed participation and attainment indicators equally important and hence both the *2005 Global Higher Education Rankings report* and the *2010 Global Higher Education Rankings report* assigned an equal weight to participation rate (25%) and educational attainment rate (25%). The researchers in the *2005 Global Higher Education Rankings report* and the *2010 Global Higher Education Rankings report* believed that the indicator measuring the extent to which students from a higher socio-economic background are better represented in higher education than those from a lower socio-economic background deserved a much higher weighting than the indicator measuring gender inequality due to the fact that there was no significant difference between male and female enrolments in the countries examined. An 80% weighting was therefore assigned to the Educational Equality Index (80% of the

remaining 50%, therefore 40% of total accessibility weighting) and a weighting of 20% to the Gender Parity Index (20% of the remaining 50%, therefore 10% of total accessibility weighting). (Usher and Cervenán, 2005; Usher and Medow, 2010.)

From the review performed in the Usher and Cervenán (2005) as well as the Usher and Medow (2010) report, it emerged that mainly four indicators are used for measuring the accessibility of higher education.

Figure 2.1 provides an illustration of these four indicators and the weightings that were assigned to each of them in the *2005 Global Higher Education Rankings report* and the *2010 Global Higher Education Rankings report*.

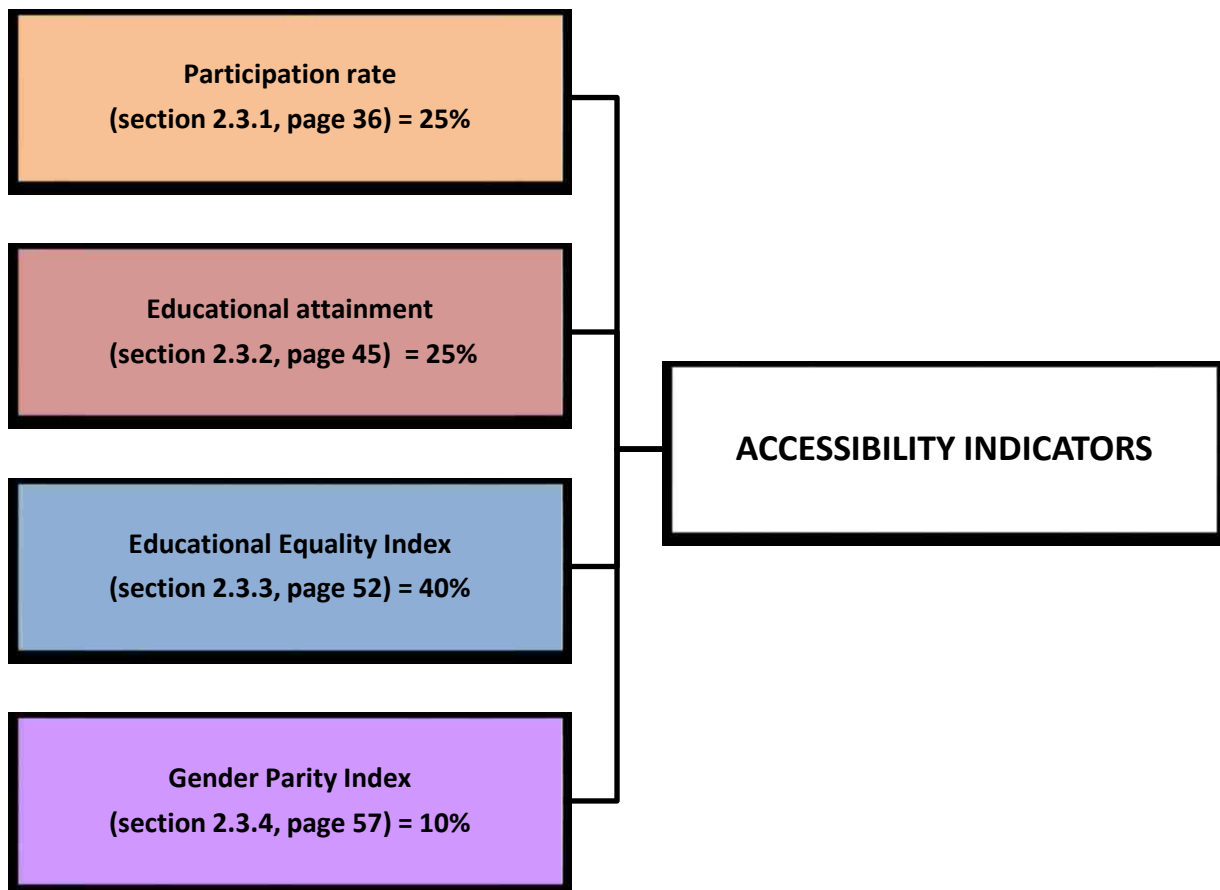


Figure 2.1: Accessibility indicators and weightings from Global Higher Education Rankings reports (2005 and 2010)

Sections 2.3.1 (page 36) to 2.3.4 (page 57) provide more insight into each of these indicators and the possible methods that could be used to measure them. Chapter 5 sets out the method(s) that have been selected to measure each of these indicators for the purposes of this study.

Table 2.1 presents the overall results of the measurement of the four accessibility indicators with the subsequent rankings of the countries assessed in the *2005 Global Higher Education Rankings report*, whilst Table 2.2 sets out the same for the *2010 Global Higher Education Rankings report*.

TABLE 2.1: OVERALL RESULTS AND RANKINGS AS PER THE 2005 GLOBAL HIGHER EDUCATION REPORT

Country	Participation rate	Participation ranking (25%)	Educational attainment rate	Educational attainment ranking (25%)	Educational Equality Index score	Educational Equality Index ranking (40%)	Gender Parity Index (distance from parity)	Gender Parity Index ranking (10%)	Overall ranking
Netherlands	29.6%	3	25.0%	3 (tie)	67	1	0.08	1 (tie)	1
Finland	39.7%	1	21.0%	8	61	5	0.23	5 (tie)	2
United Kingdom	24.1%	5	23.0%	5 (tie)	64	2	0.23	5 (tie)	3
United States	20.3%	7 (tie)	31.0%	1	57	7	0.35	12	4
Canada	20.3%	7 (tie)	26.0%	2	63	3 (tie)	0.34	10 (tie)	5
Australia	22.0%	6	25.0%	3 (tie)	59	6	0.24	7	6
Ireland	19.0%	12	23.0%	5 (tie)	63	3 (tie)	0.29	9	7
France	25.2%	4	19.0%	9	55	8 (tie)	0.27	8	8
Sweden	19.4%	9 (tie)	22.0%	7	55	8 (tie)	0.54	13	9
Italy	32.4%	2	12.0%	12	47	10	0.34	10 (tie)	10
Germany	17.5%	13	13.0%	11	43	11	0.08	1 (tie)	11
Belgium	19.4%	9 (tie)	18.0%	10	37	13	0.18	3	12
Austria	19.4%	9 (tie)	7.0%	13	38	12	0.19	4	13

Source: Usher and Cervenán, 2005 – adapted.

TABLE 2.2: OVERALL RESULTS AND RANKINGS AS PER THE 2010 GLOBAL HIGHER EDUCATION REPORT

Country	Participation rate	Participation ranking (25%)	Educational attainment rate	Educational attainment ranking (25%)	Educational Equality Index score	Educational Equality Index ranking (40%)	Gender Parity Index (distance from parity)	Gender Parity Index ranking (10%)	Overall ranking
Finland	41.0%	1 (tie)	29.0%	6 (tie)	70	4	0.24	4	1
Netherlands	31.0%	7	34.0%	3	74	1	0.40	8 (tie)	2
Norway	33.0%	4	40.0%	1	58	8	0.62	13	3
United States	30.0%	9	35.0%	2	64	6	0.40	8 (tie)	4
Australia	25.0%	10	29.0%	6 (tie)	74	2	0.30	6	5
New Zealand	30.0%	8	30.0%	5	67	5	0.48	11	6
Canada	23.0%	12	29.0%	6 (tie)	71	3	0.36	7	7
United Kingdom	34.0%	3	29.0%	6 (tie)	53	9	0.40	8 (tie)	8
Sweden	23.0%	11	31.0%	4	59	7	0.59	12	9
France	33.0%	5	24.0%	11	44	11	0.28	5	10
Germany	32.0%	6	15.0%	14	49	10	0.09	2	11
Portugal	41.0%	1 (tie)	20.0%	12	32	13	0.22	3	12
Estonia	20.0%	13	24.0%	10 (tie)	41	12	0.69	14	13
Mexico	19.0%	14	17.0%	13	24	14	0.02	1	14

Source: Usher and Medow, 2010 – adapted.

Based on the measurements of accessibility indicators and subsequent rankings, the Netherlands and Finland ranked in the top two spots in terms of overall accessibility in both the *2005 Global Higher Education Rankings report* and the *2010 Global Higher Education Rankings report* (Usher and Cervenán, 2005; Usher and Medow, 2010). In the 2005 report, the Netherlands ranked number one and Finland number two. The Netherlands did exceptionally well as a result of excellent ratings in the Type II access indicators, the Educational Equality Index and Gender Parity Index, which together contributed 50% of the final accessibility weighting. Finland had exceptionally high participation rates (with almost 40% of the persons in the 21-24 age group enrolled in higher education), which contributed 25% of the final weighting of accessibility, and performed fairly well in the other indicators. In the 2010 report (Usher and Medow, 2010), Finland ranked number one and the Netherlands number two. Finland still had the highest participation rates but improved on their ratings in the other indicators to outperform the Netherlands overall. Although the Netherlands still had the best rating in terms of the Educational Equality Index scores, it performed worse in the participation rate and Gender Parity Index scores than in the 2005 report. These two countries consistently ranked in the top two spots in terms of accessibility of higher education and much can be learnt from them with the aim of addressing accessibility issues.

It can therefore be concluded that the success of the countries that performed the best in the overall accessibility rankings in these reports (Finland and the Netherlands) was largely attributable to their high participation rates and the Educational Equality Index scores.

2.2.2 Accessibility and affordability of tertiary education in Brazil, Colombia, Mexico and Peru within a global context

The World Bank's Human Development sector: Latin American and Caribbean region, released the *Accessibility and Affordability of Tertiary Education in Brazil, Colombia, Mexico and Peru within a Global Context* report (hereafter referred to as the "2008 Latin American Ranking report") during February 2008 (Murakami and Blom, 2008). This report was mainly aimed at estimating affordability and accessibility of higher education in certain Latin American countries. This was done to provide higher quality and objective information for Latin American higher

education policy makers and to obtain an understanding of whether student assistance policies really have an impact on increased student enrolment (Murakami and Blom, 2008).

It was considered to be the first study undertaken in Latin America that attempted to measure accessibility and affordability of higher education in these countries and to rank them within a global context. Brazil, Colombia, Mexico and Peru were compared to the countries as reported on in the *2005 Global Higher Education Rankings report* in order to rank them within the Global Higher Education Rankings as reported on by the Educational Policy Institute (Murakami and Blom, 2008). Brazil, Colombia, Mexico and Peru were however the only countries selected for the study. Murakami and Blom (2008) considered them to be suitable for this report because:

- They represented approximately 66% of the Latin American population at the time of the report;
- These countries have dissimilar approaches related to the financing of higher education; and
- The information and data for accessibility and affordability of higher education for these countries could be obtained relatively easily, bearing in mind budget constraints.

The *2008 Latin American Ranking report* made extensive use of the methodology as set out in the *2005 Global Higher Education Rankings report* (Usher and Cervenán, 2005). The *2008 Latin American Ranking report* employed a variety of data sources including household surveys, expenditure surveys and various databases (administrative and institutional) to attempt measuring accessibility and affordability of higher education (Murakami and Blom, 2008) based on the *2005 Global Higher Education Rankings* indicators. The same four accessibility indicators and the same weightings for these indicators, as set out in figure 2.1 (page 23), were used to measure accessibility of higher education in the *2008 Latin American Ranking report*. These indicators were split into the same two categories as in the *2005 Global Higher Education Rankings report*. Type I indicators were represented by the participation rate and the educational attainment and Type II indicators were

represented by the Educational Equality Index and the Gender Parity Index (Murakami and Blom, 2008).

Table 2.3 sets out the overall results of the measurement of the four accessibility indicators with the subsequent rankings of the countries assessed in the *2008 Latin American Ranking report*.

TABLE 2.3: OVERALL RESULTS AND RANKINGS AS PER THE 2008 LATIN AMERICAN RANKING REPORT

Country	Participation rate	Participation ranking (25%)	Educational attainment rate	Educational attainment ranking (25%)	Educational Equality Index score	Educational Equality Index ranking (40%)	Gender Parity Index (distance from parity)	Gender Parity Index ranking (10%)	Overall ranking
Netherlands	29.6%	3	25.0%	3	67	1	0.08	2 (tie)	1
Finland	39.7%	1	21.0%	8	61	5	0.23	7 (tie)	2
United Kingdom	24.1%	5	23.0%	5 (tie)	64	2	0.23	7 (tie)	3
United States	20.3%	7 (tie)	31.0%	1	57	7	0.35	16	4
Canada	20.3%	7 (tie)	26.0%	2	63	3 (tie)	0.34	14 (tie)	5
Australia	22.0%	6	25.0%	4	59	6	0.24	9	6
Ireland	19.0%	13	23.0%	5 (tie)	63	3 (tie)	0.29	12	7
France	25.2%	4	19.0%	9	55	8 (tie)	0.27	11	8
Sweden	19.4%	9 (tie)	22.0%	7	55	8 (tie)	0.54	17	9
Italy	32.4%	2	12.0%	12	47	10	0.34	14 (tie)	10
Germany	17.5%	14	13.0%	11	43	11	-0.08	2 (tie)	11
Belgium	19.4%	9 (tie)	18.0%	10	37	13 (tie)	0.18	5	12
Austria	19.4%	9 (tie)	7.0%	17	38	12	0.19	6	13
Colombia	20.5%	7	10.8%	13	26	15	0.09	4	14
Mexico	19.3%	12	8.0%	15	17	16	0.05	1	15
Peru	10.0%	16	7.4%	16	37	13 (tie)	-0.30	13	16
Brazil	12.5%	15	8.5%	14	12	17	0.25	10	17

Source: Murakami and Blom, 2008 – adapted.

The Latin American countries included in the *2008 Latin American Ranking report* performed weaker in terms of overall accessibility than the higher-income countries included in the *2005 Global Higher Education Rankings report*, as can be seen from table 2.3. The report concludes that the northern European countries, such as the Netherlands and Finland, have a highly successful model in terms of accessibility of higher education with very high attainment rates and large enrolment numbers. These European countries have student bodies that closely resemble the socio-economic standing of the country and they mostly have fee-free or close to fee-free higher education systems with highly successful financial aid to students (Murakami and Blom, 2008). Although Colombia has the highest ranking when compared to the other Latin American countries in terms of participation rate (20.5% for the period reviewed), it is still much lower than countries such as Finland (39.7%), Italy (32.4%) and the Netherlands (29.6%). The participation rate had a weighting of 25% of the total weighting for accessibility and contributed to the overall lower ranking of the Latin American countries. The position of these Latin American countries is even worse in terms of attainment scores, which also had a weighting of 25%. Compared to countries such as the United States (attainment rate of 31%) and Canada (26%), the Latin American countries such as Columbia (attainment rate of 10.8%) and Brazil (8.5%) fared the best of the four Latin American countries, but still much lower than the top ranking countries. Similar findings on the Educational Equality Index were reported (Murakami and Blom, 2008).

Overall, the Latin American countries have high tuition fees with insufficient student financial aid, which contributes to low accessibility of higher education (Murakami and Blom, 2008).

2.2.3 *Measuring Up 2008* - the National Report Card on Higher Education

The National Center for Public Policy and Higher Education, an independent, non-profit organisation in the United States of America, released the *Measuring Up 2008, the National Report Card on Higher Education* report in 2008 (hereafter referred to as the "*Measuring Up 2008 report*"). The main objective of the National Center for Public Policy and Higher Education is to conduct research relating to policy issues faced in higher education in the United States of America. The *Measuring Up 2008*

report is considered to be the most extensive research initiative of its kind. The performances of all 50 states in the United States of America concerning higher education have been measured since 2000 in the *Measuring Up* series. International comparisons are also made where possible. (The National Center for Public Policy and Higher Education, 2008.)

Six key areas are used to evaluate and compare the performance of higher education in the 50 states in the United States of America (The National Center for Public Policy and Higher Education, 2008). These six key areas are:

- Preparation for college: the degree to which high school students are prepared for enrolment and success in higher education. This is calculated as the percentage of 18- to 24-year-old persons with a high school credential;
- Participation: whether young people have access to opportunities for higher education;
- Affordability: the costs of higher education;
- Completion: the persistence of students in completing their higher education certificates and degrees;
- Benefits: the link between graduates of higher education and the success and well-being of each of the 50 states; and
- Learning: the knowledge and skills obtained by higher education graduates.

The *Measuring Up 2008 report* does not specifically use the term accessibility. It does, however, measure certain accessibility indicators, assign weightings to indicators and perform subsequent rankings based on the results of the measurement of the indicators. The following are some of the indicators that show certain resemblances to the indicators as used in the *2005 Global Higher Education Rankings report* (The National Center for Public Policy and Higher Education, 2008):

1. The report measures the percentage of 25- to 49-year-olds that enrolled in any type of post-secondary education with no bachelor's or higher degree. This is measured as the total number of persons between the ages of 25 and 49 that are enrolled in post-secondary education as a percentage of the total number of persons aged 25 to 49 without a bachelor's degree or higher. A

weighting of 33.33% was assigned to this indicator which measures a form of participation rate.

2. This report measures completion rates which show resemblance to the measurement of educational attainment rates and assigns a weighting of 80% to these indicators. It measures the percentage of first-time, full-time students seeking a degree that are enrolled in a public or private four-year institution who obtained a bachelor's degree at that particular institution within six years of enrolling. Secondly, it measures the total number of certificates, diplomas, associate's degrees and bachelor's degrees awarded in a specific academic year as a percentage of full-time and part-time undergraduate enrolments in that particular academic year. Thirdly, it measures the total number of certificates, diplomas, associate's degrees and baccalaureate degrees awarded in a specific academic year as a percentage of the population aged between 18 and 49 with no college degree in that year. These measurements show resemblance to the educational attainment rate indicator although they are measured slightly differently.

Figure 2.1 (page 23) sets out four possible indicators that could be used to measure the accessibility of higher education in order to perform subsequent rankings as used in the *2005 Global Higher Education Rankings report* and the *2010 Global Higher Education Rankings report*. These four indicators were also used in the *2008 Latin American Ranking report* with similar weightings. The *Measuring Up 2008 report* measured certain indicators that closely resemble the participation rate indicator and the educational attainment rate indicator. Based on the above, it would seem that these four indicators are mainly used when subsequent rankings are performed based on the results of the measurements.

Other studies such as the *Education at a Glance* editions of the Organisation for Economic Co-operation and Development also measure accessibility indicators with the aim of providing rankings of countries based on the results (OECD, 2013). The relevant sections of the *Education at a Glance, 2013* edition are set out in section 2.3 (page 36).

The following sections examine the relevance and importance of each of these four indicators and the possible methods that could be used to measure them. A review of the literature of both local and international studies conducted on this topic was performed in order to obtain possible methods of measuring these indicators. This was done in order to address research question 1, where this study investigates possible methods that could be used in measuring accessibility indicators.

2.3 METHODS TO CALCULATE THE ACCESSIBILITY INDICATORS

This section provides an overview of the organisations, locally and internationally, that measure the four indicators of accessibility as set out in figure 2.1 (page 23). It also provides some of the main reasons why these organisations calculate these indicators to assist in obtaining an understanding of the importance and relevance of these indicators. A review of local and international studies that measured accessibility indicators was performed in order to identify possible methods that could be used to measure these indicators. As there are often a few possibilities to calculate each indicator, this section provides an analysis of each of these methods and their use. This analysis assists in selecting the most relevant method(s) that are used to measure each of the four accessibility indicators for the purposes of this study. The selection process is set out in Chapter 5 of this study.

In figure 2.1 (page 23), the first indicator that could be used to measure accessibility of higher education is the participation rate, which is examined in the following section.

2.3.1 Participation rate

Participation rate in higher education is defined in the *2005 Global Higher Education Rankings report* as “*the fraction of young people engaged in higher education studies*” (Usher and Cervenán, 2005). Participation rates relating to higher education are regularly calculated internationally, mainly to measure access to higher education for different groups in the population of a specific country as well as to assist in the improvement of higher education policy development. Many well-known and respected organisations across the world make use of participation rate calculations to measure countries’ socio-economic development (Steyn, no date).

These organisations include the European Union (EU), UNESCO, the Organisation for Economic Co-operation and Development (OECD), as well as the World Bank (Steyn, no date). These organisations in many instances include South Africa in their reports but due to the unavailability of data, limited findings are often made in terms of South Africa (OECD, 2013; United Nations Development Programme, 2013; Santiago, Tremblay, Basri & Arnal, 2008).

The World Economic Forum, in *The Global Competitiveness Report, 2010 – 2011*, classified certain countries internationally into different stages of development as follows (WEF, 2010; WEF, 2014b):

- First stage of development: Economy is factor-driven and competes based on the countries' factor endowments: primarily unskilled labour and natural resources;
- Second stage of development: Efficiency-driven economy where the economy has to develop more efficient production processes and product quality is increased. In this stage higher education and training is one of the key drivers of competitiveness;
- Third stage of development: Innovation-driven stage. Innovation is a key driver where new and a variety of goods are produced as a result of refined production processes, a highly skilled workforce, as well as research and high levels of innovation.

Based on the above stages of development, the World Economic Forum indicates that an average participation rate for the first stage of development is below 10%, whilst the average participation rate for the second stage of development is between 30% and 50%. The average participation rate for the third stage of development is 50% and above. The World Economic Forum classifies South Africa in the second stage of development. This would indicate that the average participation rate for South Africa should be between 30% and 50%. (WEF, 2010; WEF, 2014b.) In *The Global Competitiveness Report, 2010 – 2011*, the World Economic Forum ranked 139 countries internationally based on their Gross Enrolment Rate (a method that can be used to measure participation rate discussed below) scores. Out of 139 countries

internationally, South Africa ranked number 99, with a Gross Enrolment Rate score for higher education of 15.4% (in 2006). Figure 2.2 sets out the Gross Enrolment Rates for some of the top-ranked countries (reflected by the green bars) as well as other countries that also fall within the second stage with South Africa (reflected by the blue bars) (WEF, 2010).

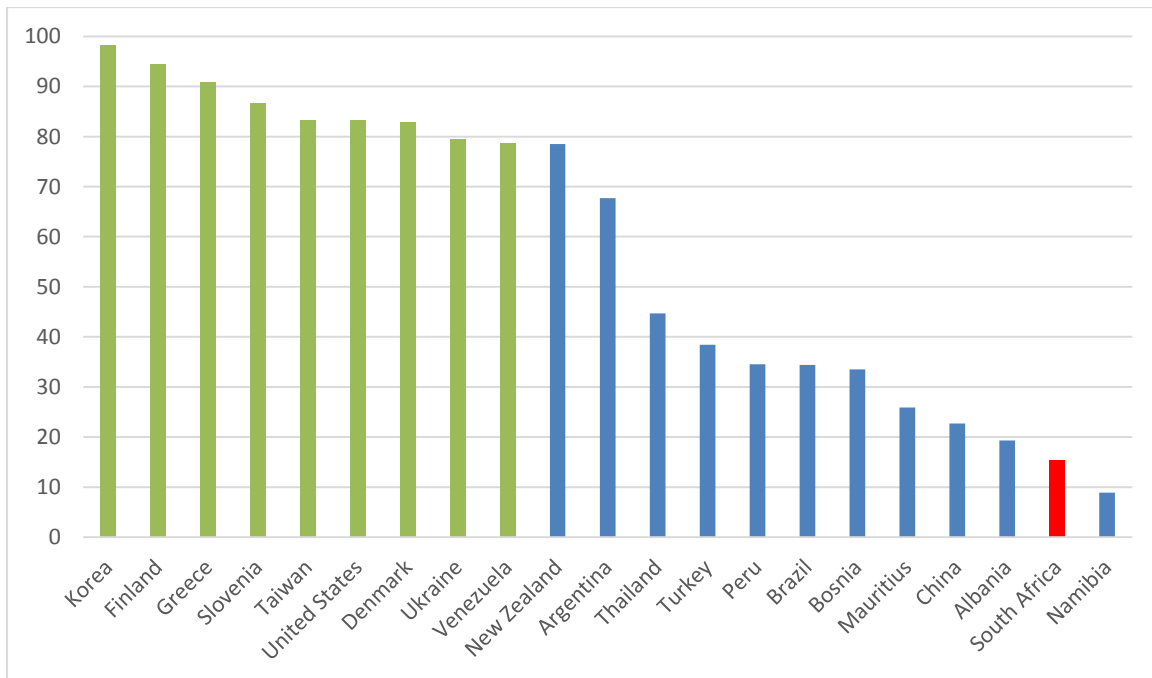


Figure 2.2: Gross Enrolment Rates in Global Competitiveness Report 2010-2011

It would thus seem that if South Africa wants to achieve the norms of the second stage of development, a minimum Gross Enrolment Rate target of 30% to 50%, which is the average for countries in the second stage of development, should be set.

In South Africa, participation rates are currently a highly debated topic (Ministry of Education, 2001; DHET, 2013a). Various organisations calculate participation rates and in particular those of higher education. Targets are continuously set regarding participation rates for higher education in South Africa. These targets include some of the following:

- The National Plan for Higher Education envisaged a participation rate of at least 20% in public higher education for the 20-24-year age group over a 10-15-year period (Ministry of Education, 2001). This target was based on the

Gross Enrolment Rate method as explained in the *Higher Education Monitor: The impact of changing funding sources on higher education institutions in South Africa*, released by the Council on Higher Education (CHE, 2006).

- The White Paper for Post-School Education and Training that was approved by Cabinet on the 20th of November 2013 states that the Department of Higher Education and Training envisages that participation in universities should increase to 25% by 2030 with a total enrolment of about 1,6 million students (DHET, 2013a).

The Gross Enrolment Rate method is also used by the Council on Higher Education in South Africa to calculate participation. During 2013, the Council on Higher Education released the *VitalStats: Public Higher Education, 2011* publication, which defines participation rate as the total headcount enrolments as a percentage of the national population of 20-24-year-olds (CHE, 2013a). This also coincides with the indicator used by the Department of Higher Education and Training, where participation rate is calculated on the same basis as that of the Council on Higher Education (Ministry of Education, 2001).

The *2005 Global Higher Education Rankings* and the *2010 Global Higher Education Rankings reports* derived their participation rate indicator from the Kaiser and O'Heron (2005) report: *Myths and methods on access and participation in higher education in international comparison* which measured participation as the four-year age group with the highest rate of participation as a percentage of the population of that particular age group. This is based on the Net Enrolment Rate method as described by Steyn (no date) below.

The highest rate of participation was taken in order to enable international comparisons, because the age group with the highest participation differs from institute to institute and from country to country, depending on the student body represented. The *2010 Global Higher Education Rankings report* explains that in certain Anglophone countries the average age of the student body is 18-21, whereas the average age of the student body in Scandinavia is normally 20-23. In these international reports, the same five-year age group was thus not used for all the

various countries and participation was calculated as the age group with the highest participation in a particular country (Usher and Medow, 2010).

Steyn (no date) performed a study in South Africa titled *Measuring student participation in the higher education sector in South Africa* where five methods were used to measure participation in South African higher education. The five methods used by Steyn (no date) in his study were also derived from the Kaiser and O’Heron (2005) report, which sets out the different methods for measuring participation in higher education in order to enable comparability between countries internationally. Steyn (no date) calculated participation rates by means of these five methods for South Africa as a whole as well as according to race and gender for 2001 and 2007:

- **The Enrolment Rates:**

Gross Enrolment Rate and Net Enrolment Rate are, according to Kaiser and O’Heron (2005), the most well-known methods for measuring participation.

- **Gross Enrolment Rate (GER)** is calculated mainly when student age profiles are either inaccurate or unavailable (Steyn, no date). For higher education it is calculated as all enrolled students in higher education as a percentage of the number of persons in the population in the five-year age group starting from the official secondary school graduation age. Steyn (no date) calculated it as follows for the purposes of his study, using the same method as UNESCO (UNESCO, 2014a):

$$\text{GER} = \frac{\text{Total number of enrolments in higher education}}{\text{Population size in 5-year age interval}} \times 100\%$$

The Gross Enrolment Rate is also the indicator used to calculate participation rates by the Council on Higher Education in South Africa (CHE, 2013a) and the Department of Higher Education and Training (Ministry of Education, 2001). Refer to the discussion on the specific age groups below.

- **Net Enrolment Rate (NER)** is calculated as the number of students in a particular age group enrolled for higher education as a percentage of the number of persons in the population in that same age group as explained by and calculated by Steyn (no date) as follows for the purposes of his study:

$$\text{NER} = \frac{\text{Total number of enrolments in Higher Education in 5-year age intervals}}{\text{Population size in 5-year age interval}} \times 100\%$$

The Net Enrolment Rate is the method used to measure participation in the *2005 Global Higher Education Rankings report*, in the *2010 Global Higher Education Rankings report*, the *2008 Latin American Ranking report*, as well as in the *Measuring Up 2008 report* (Usher and Cervenán, 2005; Usher and Medow, 2010; Murakami and Blom, 2008; The National Center for Public Policy and Higher Education, 2008). This method is also used by the Organisation for Economic Co-operation and Development in their annual *Education at a Glance* edition (OECD, 2013).

Notes applicable to both Gross Enrolment Rate and Net Enrolment Rate:

Steyn (no date) explains in his study that the five-year age group used for Gross Enrolment Rate as well as Net Enrolment Rate could be different for various countries and even different for various higher education institutions within a country as student bodies differ. The five-year age group is chosen in order to accommodate the years of study that lead to obtaining a degree at a higher education institution. Most students take longer than three or four years to complete a degree and therefore a five-year period is taken.

It would seem that the most commonly used five-year age groups are 18-22 and 20-24. The 18-22 age group is in line with the UNESCO five-year age group starting from the official secondary school graduation age, as explained above (UNESCO, 2014a). The Council on Higher Education defines participation rate as the total headcount enrolments as a percentage of the national population of 20-24-year-olds (CHE, 2013a). This also coincides with the indicator used by the Department of Higher Education and Training, where the participation rate is calculated in line with that of the Council on Higher Education (Ministry of Education, 2001).

Steyn (no date) made use of both the 18-22 and the 20-24-year age groups to calculate Gross Enrolment Rate and Net Enrolment Rate for his study. The ages

of students as at 1 January of the respective years analysed in the study were used.

- **Net entry rate:**

When students remain in the higher education system for a period longer than anticipated, the Gross Enrolment Rate and Net Enrolment Rate can be distorted. In South Africa, students often remain in the system for long periods of time without obtaining their qualifications. This could be a result of inefficiencies in the higher education system. (Steyn, no date.) Carrying out an age cohort (longitudinal) study would then render more accurate results but, according to Steyn (no date), would take numerous years. Steyn (no date) as well as Kaiser and O’Heron (2005) therefore rather made use of a synthetic cohort where a snapshot is taken in a particular year of the age distribution of higher education new entrants compared to the age distribution of the population.

Steyn (no date) explains that extensive data is needed for a synthetic cohort study and that numerous factors, such as students dropping out early after enrolment or students only registering for one or two subjects, could significantly influence the net entry rate.

The net entry rate is also calculated by the Organisation for Economic Co-operation and Development in their annual *Education at a Glance* editions on the same basis, where the number of first-time entrants of a specific age for a specific type of higher education is divided by the total population in that same age group. By then adding the rates for all the ages, the sum of net entry rates can be calculated (OECD, 2013).

- **Initial participation rate (IPR):**

This method only makes use of full-time undergraduate (FTUG) students. For his study, Steyn (no date) made use of contact undergraduate students as defined by the Higher Education Management Information System (HEMIS). The calculation used to measure initial participation rate is set out as follows:

$$\text{IPR} = \frac{\text{Sum of the number of FTUG students in the 4 largest age groups in enrolment}}{\text{Sum of total population in corresponding age groups}} \times 100\%$$

Steyn (no date) explains that this method poses a problem because it is often difficult to distinguish exactly which students are full-time and which students are part-time. In South Africa, for example, many students registered at Unisa as part-time students do study on a full-time basis. It is therefore difficult to calculate this method accurately without accurate data on full-time students that actually study on a full-time basis.

- ***Varying pathways participation rate (VPPR):***

This method does not only include the full-time undergraduate students as in the initial participation rate method above. In a South African context it would therefore include all undergraduate students, whether they are contact students, distance students or mixed-mode students. In other words, all the various pathways followed by students for a first qualification are taken into account. Steyn (no date) explains in his study that only Kaiser and O’Heron (2005) provide any form of international comparative information on this method, with limited data on only five countries for 2001 and 2003. This suggests therefore that it is not a widely used method for calculating participation rate. The calculation used to measure varying pathways participation rate is set out as follows:

$$\text{VPPR} = \frac{\text{Sum of the number of UG students in the 4 largest age groups in enrolment}}{\text{Sum of total population in corresponding age groups}} \times 100\%$$

- ***Extended participation rate (EPR):***

This method is similar to the varying pathways participation rate, but takes into account the seven largest age groups in enrolment as opposed to the four largest age groups in enrolment. As Steyn (no date) explains, this method is well suited for a South African environment as many students in South Africa take longer than four years to meet the requirements of their qualification. Steyn (no date) adds that only Kaiser and O’Heron (2005) provide any form of international comparative information on this method, with limited data on only six countries for 2001 and 2003. This suggests therefore that it is also not a widely used method for calculating participation rate. The calculation used to measure extended participation rate is set out as follows:

$$\text{EPR} = \frac{\text{Sum of the number of UG students in the 7 largest age groups in enrolment}}{\text{Sum of total population in corresponding age groups}} \times 100\%$$

Sum of total population in corresponding age groups

Based on the above review of both local and international studies and reports on the topic of participation rates, there are mainly five methods that could be used to measure participation rates. Figure 2.3 sets out the possible methods for measuring participation rate.

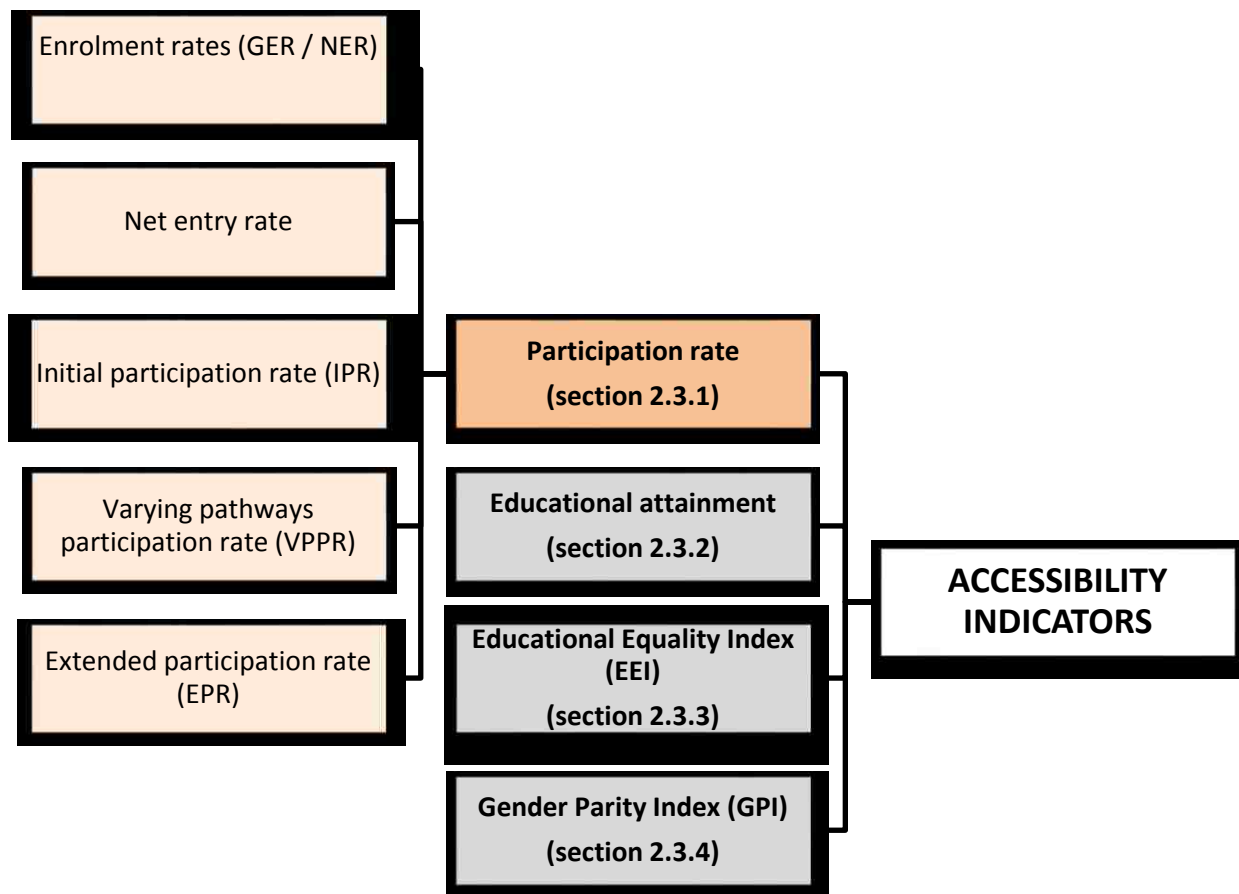


Figure 2.3: Methods for measuring participation rate

Chapter 5 provides detail on the method(s) that were used for the measurement of participation rate for the purposes of this study and the reasons for their selection. In figure 2.1 (page 23), the second indicator that could be used to measure accessibility of higher education is educational attainment. In the following section this indicator is examined.

2.3.2 Educational attainment

UNESCO defines educational attainment as the highest International Standard Classification of Education qualification that a person has completed successfully (UNESCO, 2014a).

The International Standard Classification of Education (ISCED) was developed by UNESCO in order to make international comparisons of educational statistics and indicators possible. This entails definitions which have been agreed upon internationally (UNESCO, 2014b). The International Standard Classification of Education of 1997 was used by Steyn (no date) and by the Organisation for Economic Co-operation and Development in the annual *Education at a Glance, 2013* edition (OECD, 2013). It was also used in the *2005 Global Higher Education Rankings report*, the *2010 Global Higher Education Rankings report*, and in the *2008 Latin American Ranking report* (Usher and Cervenán, 2005; Usher and Medow, 2010; Murakami and Blom, 2008). This is due to the fact that the International Standard Classification of Education was only revised in 2011 and formally accepted in November 2011 (OECD, 2013). The *Education at a Glance, 2013* edition explained that the revised International Standard Classification of Education would be used in future editions as from 2014 (OECD, 2013).

This study also utilised the International Standard Classification of Education 1997 levels as the revised levels were accepted only late in 2011 and comparative data was therefore not available. The tertiary/higher education qualification types are set out as follows:

- **International Standard Classification of Education 1997 type 5A qualification** is a tertiary qualification consisting mostly of theory-based programmes. It provides entry to advanced research programmes and professions which have high levels of skills requirements. The duration is at least three years full-time study although it is mostly four or more years (OECD, 2013). UNESCO performed a mapping between South African qualifications and the International Standard Classification of Education 1997 and concluded that some of the qualifications that fall within the **type 5A**

qualifications are a Bachelor's degree, an Honours degree and a Master's degree (UNESCO, 2014c).

- **International Standard Classification of Education 1997 type 5B qualifications** is generally shorter than type 5A qualifications and focuses on practical, technical or occupational skills. Although some theory might be covered, these qualifications generally offer direct entry into the labour market. These qualifications have a duration of a minimum of two years full-time study (OECD, 2013). Some of the qualifications within the **type 5B qualifications** in the mapping performed by UNESCO are a diploma, an advanced certificate in education, an advanced diploma and a postgraduate diploma (UNESCO, 2014c).
- **International Standard Classification of Education 1997 type 6 qualifications** are those programmes that lead to attainment of an advanced research qualification. They have a duration of three years full-time for theory and are generally at least seven years full-time in total (OECD, 2013). A type 6 qualification in the mapping performed by UNESCO is a Doctorate degree (UNESCO, 2014c).

In South Africa, improving access, success and graduation rates are seen as major challenges (Ministry of Education, 2001; DHET, 2013a). Benchmarks for graduation rates were proposed by the Ministry which were to be met by all higher education institutions within five years. The *National Plan for Higher Education* was released during 2001 and this would thus mean that these benchmarks had to have been met by at least 2006. These benchmarks for graduation rates (Ministry of Education, 2001) included the following:

- For up to three-year undergraduate qualifications, graduation rates of 25% were expected for contact mode of delivery and 15% for distance mode of delivery;
- For four-year or more undergraduate qualifications, graduation rates of 20% were expected for contact and 10% for distance mode of delivery; and

- For postgraduate up to honours qualifications, graduation rates of 60% were expected for contact and 30% for distance mode of delivery.
- For Master's degrees, graduation rates of 33% were expected for contact and 25% for distance mode of delivery.
- For Doctoral degrees, graduation rates of 20% were expected for contact and 20% for distance mode of delivery.

Table 2.4 presents adjusted benchmarks for the graduation rates as set out in the *Statement on higher education funding: 2004/05 to 2006/07* (Department of Education, 2004).

TABLE 2.4: ADJUSTED GRADUATION RATE BENCHMARKS FOR SOUTH AFRICAN HIGHER EDUCATION

Adjusted graduation benchmarks for contact and distance programmes						
	Contact			Distance		
	2004/05	2005/06	2006/07	2004/05	2005/06	2006/07
Undergraduate: up to 3 years	22.5%	22.5%	22.5%	13.5%	13.5%	13.5%
Undergraduate: 4 years or more	18%	18%	18%	9%	9%	9%
Postgraduate: up to honours	54%	54%	54%	27%	27%	27%
Postgraduate: up to masters	30%	30%	30%	22.5%	22.5%	22.5%

Source: Department of Education, 2004.

The Organisation for Economic Co-operation and Development's *Education at a Glance, 2013* edition noted an increase of almost 10% in higher education attainment amongst adults (aged 25-64 years) in Organisation for Economic Co-operation and Development member countries (OECD, 2013) from 2000 to 2011. South Africa is not considered to be an Organisation for Economic Co-operation and Development member country and forms part of the G20 countries. South Africa was nevertheless included in the *Education at a Glance, 2013* edition (OECD, 2013). The Organisation for Economic Co-operation and Development average percentage of the population that had attained higher education (***International Standard Classification of Education 1997 type 5A, 5B and 6 qualifications***) in 2011 was

39% for the 25-34-year age group and 32% for the 25-64-year age group. In 2011 the percentages for South Africa were 0.42% and 0.33% for these age groups respectively, but this only includes ***International Standard Classification of Education 1997 type 5A, 5B and 6 qualifications*** for the 23 public universities in South Africa. The Organisation for Economic Co-operation and Development sets out in this edition that the average graduation rate for ***International Standard Classification of Education type 5A qualifications*** in 2011 was 39% and remained constant at 39% from 2008 to 2011. The Organisation for Economic Co-operation and Development average graduation rate for ***International Standard Classification of Education type 5B qualifications*** was approximately 11% from 2008 – 2011 (OECD, 2013).

According to the Census 2011 data, 11.8% of the South African population aged 20 years and older had completed higher education. This includes certificates, diplomas above Grade 12, degrees, postgraduate qualifications and any other higher education qualification obtained from any of the higher education institutes in South Africa, not limited to the 23 public universities (Statistics South Africa, 2012). The World Economic Forum, in *The Global Competitiveness Report, 2010 – 2011* states that even though large investments are made in the South African education system, the system has not produced the levels of educational attainment that are expected of it (WEF, 2010).

Educational attainment is considered to be an indication of the level of skills that are available in the population and the labour force of a country. It is considered to be a measurement of human capital. The Organisation for Economic Co-operation and Development defines the level of educational attainment as the portion of the population that has attained a certain level of education. (OECD, 2013.) One of the most comprehensive studies conducted on the measurement of the level of education attained is the *Education at a Glance* edition of the Organisation for Economic Co-operation and Development. These editions make use of four methods to measure the level of education pertaining to individuals, certain groups of individuals and countries. For the purposes of this study the methods as set out in the *Education at a Glance, 2013* edition are investigated as they are considered to be the most comprehensive (OECD, 2013). Other organisations, studies or reports

that make use of these methods to measure educational attainment are also investigated.

- **Level of attainment:**

- The Organisation for Economic Co-operation and Development calculates the level of attainment as the percentage of a population that has completed a certain level of education successfully. For tertiary/higher education, this is calculated as the total number of persons aged 25-64 years with International Standard Classification of Education 1997 type 5A, 5B and 6 qualifications as a percentage of the population in the same age group. It is also calculated on a similar basis for the 25-34-year age group (OECD, 2013).
- UNESCO calculates educational attainment of the population aged 25 and older as the total number of people aged 25 and older with respect to the highest International Standard Classification of Education level of education obtained as a percentage of the total population in the 25 years and above age group (UNESCO, 2014a). This method is the same as that used by the Organisation for Economic Co-operation and Development as set out above.
- The calculation is also similar to the one used by Steyn (no date), although he only calculated educational attainment with reference to International Standard Classification of Education 1997 type 5A and 5B qualifications and not type 6 as calculated by the Organisation for Economic Co-operation and Development as set out above. Steyn (no date) also made use of the 25-64-year age group in his calculations for Organisation for Economic Co-operation and Development member countries. Steyn (no date) however used the age group 20 years and older for South Africa and calculated South African educational attainment by taking into account all post-secondary qualifications.
- The *2005 Global Higher Education Rankings report*, the *2010 Global Higher Education Rankings report* and the *2008 Latin American Ranking report* made use of a similar approach; however, they calculated the educational attainment as the total number of people in the 25-34-year age group who had completed a tertiary type A (higher education) and advanced research

programme qualification as a percentage of the total population in that same age group (Usher and Cervenán, 2005; Usher and Medow, 2010; Murakami and Blom, 2008). The type A qualification refers to the International Standard Classification of Education 1997 type 5A qualification and the advanced research programme refers to the International Standard Classification of Education 1997 type 6 qualification. The *2005 Global Higher Education Rankings report* based their calculations on the *Education at a Glance, 2004* edition released by the Organisation for Economic Co-operation and Development (Usher and Cervenán, 2005). The *2010 Global Higher Education Rankings report* calculations were based on the *Education at a Glance, 2008* edition released by the Organisation for Economic Co-operation and Development (Usher and Medow, 2010).

- **Graduation rates:**

- The Organisation for Economic Co-operation and Development calculates graduation rates as net graduation rates unless countries are unable to provide such detailed information, in which case gross graduation rates are used (OECD, 2013). The net graduation rate is defined by the Organisation for Economic Co-operation and Development as the percentage of persons within a virtual age cohort that obtained a tertiary qualification. It is calculated as the percentage of graduates of the population for each single year of age. The gross graduation rate is calculated as the total number of graduates (could be of any age) at a specific level of education as a percentage of the population at the theoretical age of graduation for that specific education level. (OECD, 2014.) The Organisation for Economic Co-operation and Development *Education at a Glance, 2013* edition could not provide data on the gross graduation rate or the net graduation rate for South Africa as detailed data was not available for South Africa in order to calculate these (OECD, 2013).
- The *Higher Education Monitor: the state of higher education in South Africa*, released by the Council on Higher Education (CHE, 2009), explains that graduation rates are calculated by dividing the total number of qualifications awarded at a specific institution by the total number of students enrolled in that same year, adding that graduation rates are not a particularly accurate

method in terms of measuring efficiency of higher education systems. It is, however, used in the absence of other methods.

- The White Paper for Post-School Education and Training states that the graduation rate is calculated as the proportion of graduates in a given academic year of the total headcount enrolments for that particular year (DHET, 2013a).
 - This calculation method for graduation rate as defined in the National Plan for Higher Education is similar to the calculation method as set out in the White Paper for Post-School Education and Training and described above (Ministry of Education, 2001).
- ***Estimated percentage of young adults expected to successfully graduate from a certain level of education in their lifetimes:***

The Organisation for Economic Co-operation and Development calculate this method as the estimated percentage of persons from a specific age cohort that will complete their tertiary education over their lifetimes. This is based on current patterns of graduation (OECD, 2013).

- ***An estimation of the percentage of students that enter a programme and successfully complete that programme in a given period of time:***

The Organisation for Economic Co-operation and Development calculate this method as the percentage of new entrants into a specific level of education who graduate with a minimum of a first degree at this level. Cohort methods are mainly used for this calculation (OECD, 2013).

Based on the above review of both local and international studies and reports on the topic of educational attainment, mainly four methods emerge that could be used to measure educational attainment. Figure 2.4 sets out the possible methods for measuring educational attainment.

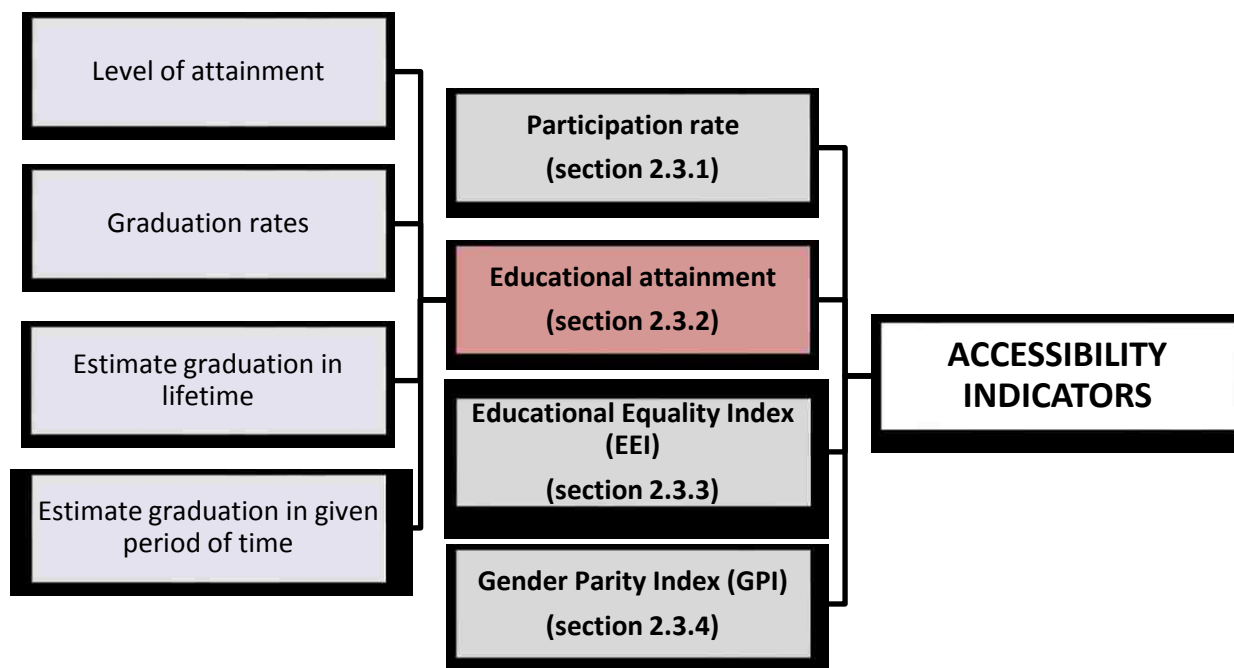


Figure 2.4: Methods for measuring educational attainment

Chapter 5 provides detail on the method(s) that were used for the measurement of educational attainment for the purposes of this study and the reasons for their selection. In figure 2.1 (page 23), the third possible indicator that could be used to measure the accessibility of higher education is the Educational Equality Index. This indicator is examined in the following section.

2.3.3 Educational Equality Index (EEI)

According to the Organisation for Economic Co-operation and Development, equity in education has two elements (OECD, 2008):

- Fairness: Any factors relating to personal and social circumstances, including gender, ethnic background, socio-economic status, etc., should not hinder a person from achieving educational success; and
- Inclusion: This relates to ensuring that there is a basic minimum standard of education that is applicable to everyone in a certain educational system.

The Organisation for Economic Co-operation and Development defines an equitable higher education system as one that allows an individual access to, the participation in, and the outcomes of higher education based solely on that individual's inherent

ability and the effort put into studying (OECD, 2013). An equitable higher education system ensures that access and participation are not influenced by factors such as socio-economic background (for example parental education level), culture, race, place of residence, age, disability, etc. An objective of equity in higher education is that the student body should as closely as possible reflect the composition of society (Santiago *et al.*, 2008).

Equity in education is, however, almost never without barriers. Mdepa and Tshiwula (2012) explain that this is even more so for persons from disadvantaged backgrounds in African countries where they are faced with numerous obstacles in terms of educational opportunities. Students from disadvantaged backgrounds are generally not well represented in higher education institutions. The *2010 Global Higher Education Rankings report* mentions that children from wealthy families are far more likely to enrol for higher education compared to those from poorer families (Usher and Medow, 2010). It is therefore clear that a student's socio-economic background most likely plays a major role in the access to higher education opportunities.

Studies have shown that, in the majority of the Organisation for Economic Co-operation and Development countries, children from disadvantaged families are almost three to four times more likely to score amongst the poorest scorers in the subject of mathematics by the age of 15 (OECD, 2008). This view is shared by the Human Resource Development Council (HRDC) of South Africa. Only a limited number of children completing school meet the strict admission requirements for professional qualifications. This is mainly due to insufficient and poor quality basic education in South Africa. With poor and inadequate mathematics and science pass marks, children and especially black African children often cannot enter higher education institutions to study for professional qualifications. (HRDC, 2012.)

South Africa's own history and legacy of apartheid is still posing obstacles in terms of equitable access and success in higher education (Mdepa and Tshiwula, 2012). The White Paper for Post-School Education and Training has set out a vision of social justice where past inequalities brought about by apartheid in South Africa as well as from any other origins, are overcome (DHET, 2013a). Students from poor families or

families living in townships or rural areas generally have limited access to high quality schooling. This unfortunately leads to many unprepared students entering universities, resulting in high drop-out rates. (DHET, 2013a.)

Mdepa and Tshiwula (2012) acknowledge in their paper *Student diversity in South African higher education* that even though progress has been made in South Africa to address past inequalities, educational inequality is still very much a reality. The country is currently faced with high levels of unemployment and serious skills shortages, and especially a major shortage of professionals (HRDC, 2012).

The *2005 Global Higher Education Rankings report*, the *2010 Global Higher Education Rankings report*, and the *2008 Latin American Ranking report* measured educational inequality by measuring the extent to which students from a higher socio-economic background are better represented in higher education than those from a lower socio-economic background (Usher and Cervenak, 2005; Usher and Medow, 2010; Murakami and Blom, 2008). This is measured by means of an Educational Equity Index (EEI) score and these reports all made use of parental education levels to measure educational inequality. In these reports, the Educational Equity Index is measured as follows:

$$EEI = \frac{\text{the percentage of all males 45-65 with a higher education degree}}{\text{the percentage of all students whose fathers have higher education degrees}} \times 100$$

The *2010 Global Higher Education Rankings report* states that measuring the Educational Equity Index by looking at parental education levels is only one metric that is used internationally. Several measures are mentioned in the Educational Policy Institute's report, *A new measuring stick: is access to higher education in Canada equitable?* Parental occupation, parental education level, social class, socio-economic status, race, average parental income, etc., are all metrics that could be used as proxies to measure educational inequality (Usher, 2004). The metrics used to measure educational inequality differ from country to country, depending on the specific country's own history of social inequalities. It is noted in the *2010 Global Higher Education Rankings report* that the United Kingdom makes use of class origin and postal codes whereas in New Zealand and in the United States race or ethnicity plays a vital role in the measurement of educational inequality (Usher and Medow,

2010). The *2010 Global Higher Education Rankings report* states that other proxies such as race, ethnicity, etc., as used in other countries for measuring educational inequality, are not used in their report based on the fact that they may only pertain to certain countries and not to all and that international comparisons would thus be difficult to make (Usher and Medow, 2010). The *2005 Global Higher Education Rankings report*, the *2010 Global Higher Education Rankings report*, and the *2008 Latin American Ranking report* therefore only measured the Educational Equity Index by looking at parental education levels (Usher and Cervenán, 2005; Usher and Medow, 2010; Murakami and Blom, 2008).

The report *A new measuring stick: is access to higher education in Canada equitable?* states that making use only of the father's highest level of education obtained as a proxy for socio-economic status could be subject to reasonable objections from critics (Usher, 2004). It was, however, the only proxy used in the *2005 Global Higher Education Rankings report*, the *2010 Global Higher Education Rankings report*, and the *2008 Latin American Ranking report*, based solely on the fact that international comparisons would have been almost impossible using any other proxies (Usher and Cervenán, 2005; Usher and Medow, 2010; Murakami and Blom, 2008).

Demographic profiles, gender and race were used as proxies in a study conducted by Govinder, Zondo & Makgoba (2013). In their study, *A new look at demographic transformation for universities in South Africa*, an Equity Index was used to rank the 23 public universities in South Africa's higher education system in terms of their demographic profiles. Using 2011 data from the Higher Education Management Information System, the Equity Index was calculated for these 23 universities in terms of demographic profiles for students (enrolments and graduations) as well as for staff members. The demographic profiles included race and gender. Govinder *et al.* (2013) made use of the following formula to calculate the Equity Index (EI):

$$\text{Equity Index} = \sqrt{\sum_{i=1}^n (\text{org}_i - \text{demdat}_i)^2}$$

org i refers to an institute's demographic percentage for the i^{th} category (for example Black African students) and *demdat i* refers to the national demographic percentage for the same category. Racial Equity Index, Gender Equity Index and an overall Equity Index are calculated on this basis (Govinder *et al.*, 2013). The researchers did not take parental educational levels into account. This Equity Index measured various proxies which included gender; however, this is not considered to be the Gender Parity Index as set out in section 2.3.4 (page 57) as it did not measure the distance from parity.

For South Africa, the proxy of parental educational level is important, although other proxies such as race and gender are also significant in view of South Africa's own history and past inequalities brought about by the apartheid era (Govinder *et al.*; 2013). For the purposes of this study however, only parental educational level, as used in the *2005 Global Higher Education Rankings report*, the *2010 Global Higher Education Rankings report*, and the *2008 Latin American Ranking report* was used as proxy to measure educational equity (Usher and Cervenán, 2005; Usher and Medow, 2010; Murakami and Blom, 2008).

Based on the above review of both local and international studies and reports on the topic of educational attainment, various possible methods or proxies emerge that could be used to measure the Educational Equality Index. Figure 2.5 presents some of the possible methods or proxies for measuring the Educational Equality Index. In summary, the methods or proxies that can be used for measuring educational equality include parental occupation, parental education level, social class, socio-economic status, race, average parental income and demographic profiles.

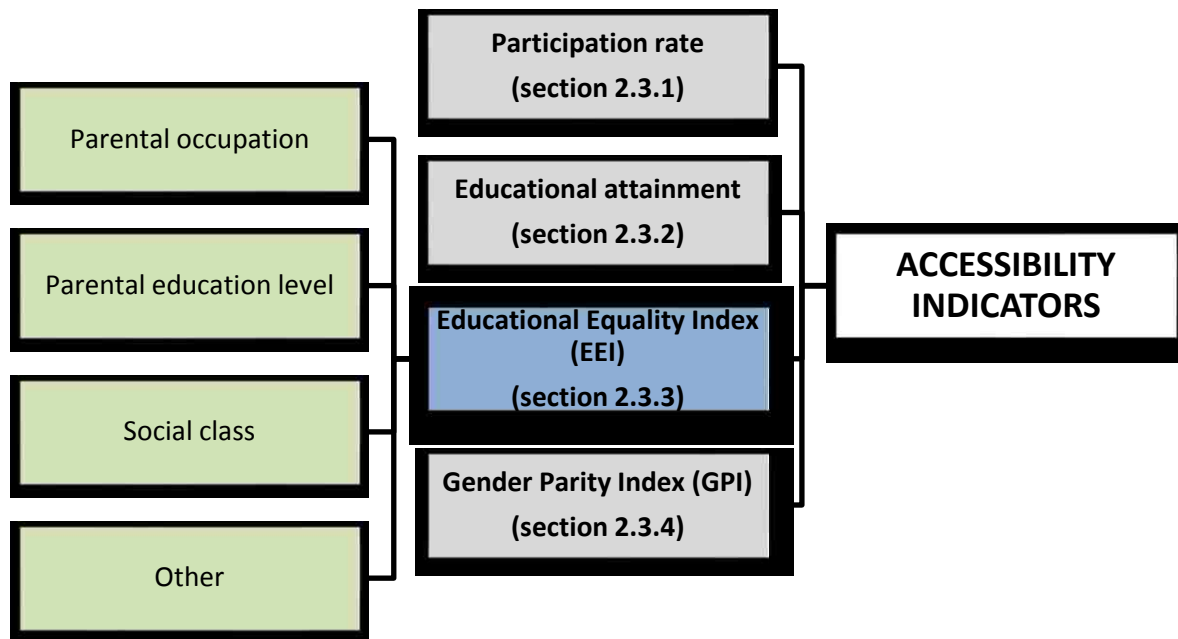


Figure 2.5: Methods or proxies for measuring Educational Equality Index

Chapter 5 provides detail on the method or proxy that was used for the measurement of the Educational Equality Index in this study and the reasons for its selection. In figure 2.1 (page 23), the fourth possible indicator which could be used to measure accessibility of higher education is the Gender Parity Index. In the following section this indicator is examined.

2.3.4 Gender Parity Index (GPI)

The investment in formal education for men and woman across the world is of paramount importance (OECD, 2011). Promoting gender equality decreases the chances of early marriages, improves health of women and children, and reduces infant mortality rates. It also increases employment opportunities as well as educational opportunities for women. Overall, future generations are benefited by investing in the education of woman. (OECD, 2011.)

Gender inequality is and has been a widely debated topic internationally as well as in South Africa (Ministry of Education, 2011; DHET, 2013a; The National Coordinating Committee, 2013). It is continuously measured by various organisations against set targets relating to various dimensions such as labour market participation, empowerment, reproductive health, entrepreneurship, education, etc. Some of the

most important recent international reports measuring gender inequality in various dimensions are:

- The United Nations Development Programme Gender Inequality Index that forms part of the Human Development Report. Gender inequality is measured through various methods relating to labour market participation, empowerment and reproductive health (United Nations Development Programme, 2013).
- Social Watch, a network consisting of national coalitions of civil society organisations, performs a Gender Equality Index on inequalities in the dimensions of education, the economy and political empowerment through various methods. In terms of education, this Index measures a gender gap in terms of enrolments at all levels of education (Social Watch, 2012).
- This approach is also used by the World Economic Forum in their framework document *The Global Gender Gap Report 2013*. The Global Gender Gap Index was first introduced in 2006 by the World Economic Forum and is aimed at measuring and tracking gender disparities based on certain economic, political, health and education criteria. It provides international comparisons and ranks countries in terms of the results obtained. Access to education for women versus men is measured at primary, secondary and higher education level. The Global Gender Gap for higher education is calculated by dividing the female value of Gross Enrolment Rate by the male value of Gross Enrolment Rate. The Gross Enrolment Rate used is also in line with that used by UNESCO calculated as the total enrolments in higher education for International Standard Classification of Education level 5 and 6 (not taking into account age), as a percentage of the total population of the five-year age group that has completed secondary school. (WEF, 2013a.)
- The Social Institutions and Gender Index developed by the Organisation for Economic Co-operation and Development's Development Centre are focused on social institutions that could possibly have an influence on gender roles. The aim is to provide more information on why gender inequality still persists in many instances. Methods of measuring gender inequality in higher

education include some of the following measurements (Social Institutions and Gender Index, 2012):

- Population who attained higher education by gender and in the age groups 25-34, 35-44, 45-54, 55-64 and 25-64;
- Graduation rates in higher education by gender; and
- Percentage of higher education qualifications awarded to women by field of education.

The above-mentioned international reports measuring gender inequality are large in-depth studies taking into account numerous methods, dimensions and various other factors. Gender inequality in education is mostly measured through the Gender Parity Index (UNESCO, 2014a; Usher and Cervenán, 2005; Usher and Medow, 2010; Murakami and Blom, 2008; The National Coordinating Committee, 2013). UNESCO defines the Gender Parity Index as a measurement of the progress made towards gender parity in educational opportunities and participation. It is calculated by dividing the female value by the male value of a certain indicator. The Gender Parity Index can be calculated by level of education, type of institution, geographical location, etc. A Gender Parity Index score of 1 is indicative of parity between females and males. Scores of less than 1 are indicative of a disparity in favour of males. Conversely scores of more than 1 are indicative of disparity in favour of females. (UNESCO, 2014a.)

The *2005 Global Higher Education Rankings report*, the *2010 Global Higher Education Rankings report*, and the *2008 Latin American Ranking report* included gender parity with the accessibility indicators as they viewed gender as a factor that could influence or hinder a student from achieving educational success and aimed to measure the effect thereof on higher education in an international context. In all three the above-mentioned reports, a Gender Parity Index was calculated by using the Gross Enrolment Rate obtained from UNESCO (Usher and Cervenán, 2005; Usher and Medow, 2010; Murakami and Blom, 2008). The Gender Parity Index was calculated on the same basis as used by UNESCO described above.

In South Africa, the Gender Parity Index is also a well-known concept. In the *Millennium Development Goals, Country Report 2013*, the Gender Parity in the

higher education system is also measured using the 20-24-year age group as a basis (The National Coordinating Committee, 2013) in order to measure the progress made towards the Millennium Development Goal number three. This is done on the same basis as described above using Gross Enrolment Rates. The United Nations set eight Millennium Development Goals in 2000, to be achieved by the year 2015 (United Nations Millennium Declaration, 2000). The leaders of 189 countries signed a declaration where they promised to aim to achieve these eight Millennium Development Goals (United Nations Millennium Declaration, 2000). South Africa was one of the signatories (The National Coordinating Committee, 2013). Goal number three of the Millennium Development Goals relates to gender equality and the empowerment of women. One of the targets set as part of this goal is to eliminate gender disparity on all levels of education, including higher education, by the latest 2015 (United Nations Department of Public Information, 2013).

Since the end of the apartheid era, the South African government has gone to great lengths to promote gender equality and has generally scored relatively well internationally in gender equality measures (The National Coordinating Committee, 2013). This achievement is mainly due to the strong foundation laid in respect of equality in the South African Constitution (The National Coordinating Committee, 2013). The progress made is evident when considering that South Africa was ranked 4th out of 86 countries in the Social Institutions and Gender Index of 2012 (Social Institutions and Gender Index, 2012).

It is evident that the Gender Parity Index is a well-known concept. The question is, however, whether it should be measured on enrolments and/or attainment. The Organisation for Economic Co-operation and Development document, *Report on the Gender Initiative: Gender equality in education, employment and entrepreneurship*, released after a meeting of the Organisation for Economic Co-operation and Development Council at Ministerial level held during 2011, notes that although Gross Enrolment Rates are considered to be a well-known measure for participation in education, they do not take into account the outcomes of education, as enrolment figures could be misstated with repeat students. Educational outcomes are therefore more accurately measured through educational attainment, where the proportion of

persons that have completed a particular level of education is measured (OECD, 2011).

This document by the Organisation for Economic Co-operation and Development thus measures gender inequality indicators not only based on gross enrolment figures, but on attainment levels as well. Countries are ranked in this document based on attainment levels for International Standard Classification of Education level 5 and 6 for males and females in the 25-34-year age group. The above document by the Organisation for Economic Co-operation and Development also notes that higher education attainment rates have improved considerably for women compared to those of men in Organisation for Economic Co-operation and Development countries. Unfortunately, there is still gender inequality in the choice of certain disciplines (OECD, 2011).

Overall, the Organisation for Economic Co-operation and Development has noted almost full gender equality in primary education enrolments, but gender inequality is more noticeable in secondary education enrolments. According to this document, higher education is the worst affected by gender inequality in Organisation for Economic Co-operation and Development countries. (OECD, 2011.)

Based on the above review of both local and international studies and reports on the topic of the Gender Parity Index, there are various possible methods by which the Gender Parity Index can be measured. Figure 2.6 sets out some of the possible indicators. In summary, the methods include labour market participation, social and political empowerment, reproductive health, access to education (through for example Gross Enrolment Rate), and level of educational attainment (through for example level of attainment), to name only a few.

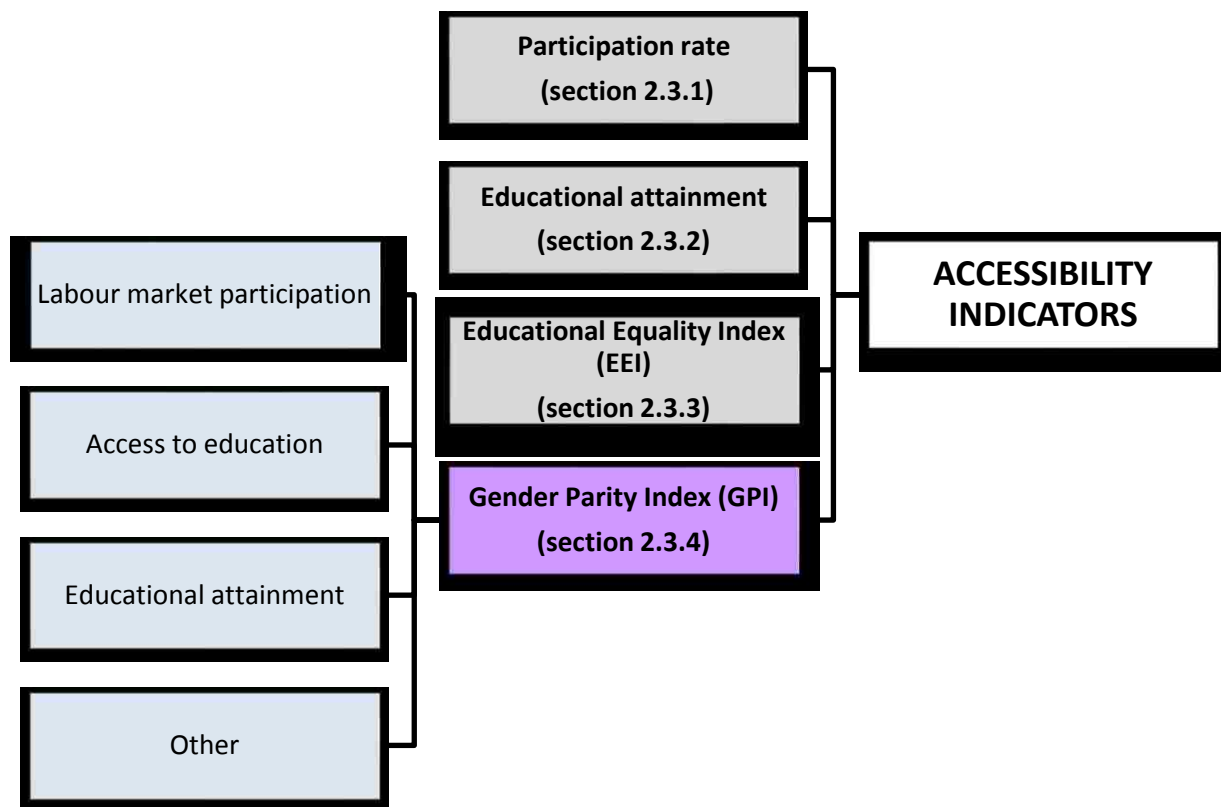


Figure 2.6: Methods for measuring Gender Parity Index

Chapter 5 provides detail on the method(s) by which the Gender Parity Index was measured for the purposes of this study and the reasons for their selection.

2.4 CONCLUSION

As can be seen from the literature review on the studies conducted on the accessibility of higher education with subsequent rankings based on the results, the accessibility of higher education is an internationally debated topic. These studies and reports provide data and rankings from a comparative international perspective.

From the literature review it emerges that mainly four possible indicators used for measuring accessibility of higher education and various methods or proxies are available for measuring these indicators. These four indicators are set out in figure 5.1 (page 135) with the various methods or proxies available per indicator set out in figure 5.2 (page 137), figure 5.3 (page 143), figure 5.4 (page 151) and figure 5.5 (page 155). The four indicators are:

- Participation rate (as set out in section 2.3.1, page 36);

- Educational attainment (as set out in section 2.3.2, page 45);
- Educational Equality Index (as set out in section 2.3.3, page 52); and
- Gender Parity Index (as set out in section 2.3.4, page 57).

Well-known international organisations such as the World Bank, the Organisation for Economic Co-operation and Development, UNESCO and the United Nations Development Programme all make use of the indicators as set out in these reports or make use of similar indicators. In South Africa, these indicators are also well known and used by organisations such as the Department of Higher Education and Training, the Council on Higher Education and the Ministry of Education.

Chapter 5 provides more information on how these indicators were measured for the purposes of this study by discussing the available methods and providing reasons why only some of these methods were used.

Chapter 3 looks at the possible effect on the accessibility of higher education in South Africa, taking into account the history of education in South Africa. It is also important to look at the possible influence of governing bodies and legislation on the accessibility of higher education in South Africa (discussed in Chapter 3) and on Chartered Accountancy programmes specifically (discussed in Chapter 4).

CHAPTER 3

AN OVERVIEW OF THE HIGHER EDUCATION SYSTEM IN SOUTH AFRICA

3.1 INTRODUCTION

Chapter 2 provided insights into particular studies measuring accessibility of higher education and providing subsequent rankings based on the results. The chapter also detailed various methods that could be used to measure accessibility indicators. The definitions, methods and indicators used in the *2005 Global Higher Education Rankings report* and the *2010 Global Higher Education Rankings report* were subsequently considered to be the most appropriate for the purposes of this study.

Section 1.4 (page 7) provided the research objectives of this study. The main aim of Chapter 3 is to address the following research questions:

Research question 2: What are the current challenges faced by South African students that could possibly have an influence on the accessibility of higher education?

Research question 3: Could the past injustices brought about by apartheid still have a possible influence on the accessibility of higher education in South Africa?

Research question 4: What is the influence of governing bodies, legislation and other higher education regulators on the accessibility of higher education in South Africa?

South African students face many challenges in their quest to attain a higher education qualification; challenges that are often also faced by students wanting to become accountants and specifically chartered accountants. To address research question 2 as stated above, this chapter provides an overview of some of the challenges faced by South African students that could possibly influence their access

to higher education in South Africa. This overview is provided in section 3.2 (page 65).

To find answers to research question 3, it is important to provide a brief outline of the history of the South African educational system, because the past injustices brought about by the apartheid era most likely had and possibly still have a major impact on the accessibility of higher education, including that of accountants and specifically chartered accountants, in South Africa. The brief historical overview is provided in section 3.2 (page 65).

Important aspects of the current higher educational system in South Africa are also discussed in this chapter in order to consider research question 4. It is crucial to obtain an understanding of the influence of the governing bodies, legislation and other higher education regulators on higher education in South Africa, because they set criteria for access to higher education. The criteria for minimum admission requirements have a direct bearing on the accessibility of higher education in South Africa and this chapter provides insight into the governing bodies responsible for higher education in South Africa.

The following section looks at research questions 2 and 3. It provides an overview of some of the most important challenges faced by South African students, some of which could be a result of past injustices. In addition, the history of education in South Africa is also briefly reviewed to obtain an understanding of the possible influence of past injustices on the accessibility of higher education in South Africa.

3.2 HISTORICAL OVERVIEW OF EDUCATION IN SOUTH AFRICA AND CURRENT CHALLENGES FACED BY SOUTH AFRICAN STUDENTS

This section provides an overview of challenges that many students in South Africa face, whether brought about by past injustices or not. It would be almost impossible, however, to fully understand these challenges or their impact on the accessibility of higher education in South Africa without reviewing the history of education in South Africa.

The *Green Paper for Post-School Education and Training*, a policy framework, was released for public consultation by the Department of Higher Education and Training during 2012. The Minister of Higher Education and Training, Dr B.E. Nzimande, stated clearly in this *Green Paper* that it was the priority of the South African Government to reduce unemployment in South Africa. He further explained that this included measures to address past injustices brought about by the apartheid regime as well as the introduction of a fee-free education for the poor (DHET, 2012a).

The *Green Paper for Post-School Education and Training* states that the historical burdens of the apartheid education system, despite the progress made since becoming a democratic country, are still haunting the South African education and training systems. It is these historical inequalities that unfortunately still have an effect on access to educational opportunities for many South Africans (Van der Berg, 2007; Van der Berg, 2008; DHET, 2012a; Blueshtein, 2013; Hurley, 2013). It is therefore crucial to obtain an understanding of education during and post-apartheid as well as the challenges faced by South African students brought about by these historical inequalities.

One of the most profound and offensive laws passed in South African history was the 1953 *Bantu Education Act*. The manifesto created by Afrikaner nationalists during 1939 gave the *Bantu Education Act* its origins. Through this act African education, which was up to then mostly run by missionaries, was brought under the control of government. Apartheid was promoted through education and black people were denied equal access to educational opportunities and resources available to white South Africans. In comparison to white schools, Bantu schools were ruthlessly neglected by government. Quality of education in Bantu schools was adversely affected by a lack of funding from government as well as unfavourable student-teacher ratios. (South Africa: Overcoming Apartheid, Building Democracy, no date.)

The unfairness of the education system based on race was not limited to the schooling system but also vested in the higher education system; all levels of education were established according to race. Smith (1996) states that the *University Act of 1950* provided for universities in South Africa to be developed based on race.

This act prohibited any further access to the Universities of Cape Town and Witwatersrand for people of colour. Smith (1996) further explains that throughout the apartheid era (1948 to 1994) severe inequalities in educational opportunities were experienced between races in South Africa. In terms of education, it was a vision of the apartheid regime to separate higher education institutions between races. This meant reserving certain higher education institutions specifically for white South African students and catering for non-white students at institutions that were tasked with providing only limited tertiary education (CHE, 2010). The 1994 elections marked the end of apartheid and saw the beginning of democracy in South Africa. Unfortunately, black colleges and universities were still struggling to provide the best education in unfavourable circumstances (Smith, 1996).

In the view of Kirlidog and Zeeman (2011), the *Education White Paper 3: A programme for the transformation of Higher Education*, released during 1997 by the then Department of Education, was one of the most comprehensive higher education reports at that stage. The paper proposed a single national higher education system to address past inequalities. It reported that access to higher education was inequitable, based not only on race but also on gender, social class and geography. The report set out crucial principles to guide higher education transformation in South Africa and formed the basis for the *Higher Education Act, no. 101 of 1997*. (Kirlidog and Zeeman, 2011.) Currently all universities in South Africa are governed under this act (CHE, 2014a).

Kirlidog and Zeeman (2011) state, however, that there is still a deep economic gap between races and that racial equity in higher education in South Africa is still far from being a reality. According to them it remains to be seen whether South Africa will become a country in which all persons have access to equal educational opportunities (Kirlidog and Zeeman, 2011).

The Department of Higher Education and Training released the *Green Paper for Post-School Education and Training* policy framework during 2012 and subsequently the *White Paper for Post-School Education and Training* in 2013. Cabinet's approval of the *White Paper* shows the South African government's commitment to making

the South African post-school education system a success. The vision of these two papers is to transform the post-school system of South Africa in order to improve social justice. The vision is also to overcome the apartheid legacies and historical inequalities by having a post-school system that contributes towards a fair democratic South Africa without discrimination. (DHET, 2013a.) It is thus the aim of the Department of Higher Education and Training and that of the South African government to address many of the current challenges faced by South African students, many of which were brought about by past inequalities and discrimination. The success of our country and the dreams of many a student rest on government's ability to make this vision a reality.

The above-mentioned past injustices brought about by the apartheid regime unfortunately had and still have a negative influence on many South African students and the accessibility of higher education in South Africa (Van der Berg, 2007; Van der Berg, 2008; Blueshtein, 2013; Hurley, 2013; DHET, 2012a). Almost twenty years have passed since the historic day in April 1994 when South Africa became a democratic country and apartheid was discarded. South Africans can be proud of what has been achieved since 1994, but it should not be forgotten that much still needs to be done in order to rid this country of the past injustices for ever (DHET, 2012a; The Presidency, Republic of South Africa, 2014).

It is also important to take cognisance of other challenges that many South African students currently face to gain access to higher education opportunities, some of which still as a result of past injustices. There are still large disparities relating not only to wealth, but also to educational accessibility and affordability, the attainment of education (Bhorat and Oosthuizen, 2009), health status, and the accessibility of opportunities (DHET, 2013a). These disparities are often still the result of discrimination based on race and gender (Lam, Ardington & Leibbrandt, 2011; Van der Berg, 2007). Socio-economic status (Hurley, 2013), disabilities and/or health status (HIV/AIDS playing a substantial role) are unfortunately often also causes for discrimination, even though South Africa has been a democracy for almost twenty years (DHET, 2013a).

Part of the post-apartheid success story is the fact that the black middle class in South Africa is continuing to grow and that these South Africans in many instances have lifted themselves from very poor economic circumstances and managed to transform their lives (DHET, 2013a; The Presidency, Republic of South Africa, 2014). Unfortunately, this success story is not shared by all. The majority of the South African population is still struggling to survive financially, with inferior quality public services and schools to add to their woes (DHET, 2013a; The Presidency, Republic of South Africa, 2014).

South Africa has some of the worst unemployment levels in the world, especially amongst its young people (WEF, 2014a). The official unemployment rate in the second quarter of 2014 was 25.5% and this rate continues to grow (Statistics South Africa, 2014). Approximately a third of young persons aged between 15 and 24 are unemployed and not enrolled for any form of education or training. If South Africa is to grow economically and be competitive in a global market, unemployment needs to be addressed aggressively (National Treasury, 2011). Taking into account that the unemployment rate among university graduates was only 5.2% in the second quarter of 2013, the true worth of an education can be seen (DHET, 2013a). This is confirmed in the *Quarterly Labour Force Survey* for Quarter 2 of 2014 released by Statistics South Africa, which states that the unemployment rate was the lowest among those individuals with a higher education qualification (Statistics South Africa, 2014).

Higher education is seen as a tool to enhance social and economic development (Kongolo and Imenda, 2012) and could be a means out of poverty and a way of providing equal access to opportunities (Taylor and Yu, 2009; DHET, 2013a; The Presidency, Republic of South Africa, 2014). The importance of higher education is therefore indisputable.

One of the major problems faced by many South African students from poor and working-class families is the fact that they simply cannot afford a higher education. In the following section the challenges caused by unaffordable higher education costs are discussed.

3.2.1 Affordability of higher education

As mentioned in Chapter 1, the *2005 Global Higher Education Rankings report* and the *2010 Global Higher Education Rankings report* are used as a basis for this study. Furthermore, the chapter explained that this study focused on the accessibility of higher education in South Africa, and particularly on that of accountancy programmes with an emphasis on chartered accountancy programmes. This study did not measure affordability indicators as was done in the two above-mentioned reports as this falls outside its scope. It is important, however, to provide a short overview of the challenges in South Africa that are caused by expensive higher education costs.

An education provided by a higher education institute is seen to be extremely expensive and student fees are becoming increasingly more expensive (Rees, 2012; Nkosi, 2014). Over the past two decades education costs in the form of student fees have risen considerably because higher education institutes do not receive enough funding from government to meet all their financial requirements (Nkosi, 2014). This in turn creates a major obstacle to accessibility for many students from poor or working-class families (Cele and Menon, 2006; DHET, 2013a).

In a study on tuition fees in South Africa and the challenges faced in making higher education a popular commodity, Wangenge-Ouma (2012) found that funding of higher education in South Africa has been widely debated, with students sometimes violently demanding fee-free tuition despite financial aid being provided to poor students by the National Student Financial Aid Scheme (Wangenge-Ouma, 2012; Nkosi, 2014). This, according to Wangenge-Ouma (2012) shows that many students in South Africa are still faced by financial barriers in terms of higher education opportunities (De Hart and Venter, 2013).

The study by Wangenge-Ouma (2012) also found that South African universities are forced to increase their tuition fees in order to compensate for inadequate state funding, and that this increase in tuition fees has a severe impact on access to higher education. The National Student Financial Aid Scheme does not have the

ability to fully support poor students financially (Cele and Menon, 2006; Wangenge-Ouma, 2012; Nkosi, 2014).

The National Student Financial Aid Scheme is currently the main provider of financial aid to poor students in South Africa (DHET, 2014c). This scheme was established by Parliament in 1999 with the purpose of granting loans and bursaries to eligible students at South African public higher education institutions. Students from lower income groups as well as previously disadvantaged groups that would otherwise not be able to attend higher education institutions are able to access these funds. (CHE, 2010.)

Despite the assistance available through the National Student Financial Aid Scheme, some students fall outside its thresholds as well as the thresholds to qualify for commercial loans (DHET, 2013a), thus requiring alternative funding mechanisms. It follows that financial aid therefore cannot rest on the shoulders of only a selected few institutes but has to be a collective effort between the South African government and all commercial stakeholders.

Dr Blade Nzimande, the Minister of Higher Education and Training, issued a statement on 30 January 2014 which reassured all higher education stakeholders of government's commitment to investigate and realise fee-free higher education for eligible poor students in South Africa (Nzimande, 2014). This can however only be achieved as and when resources become available.

Until fee-free higher education is a reality in South Africa, it is crucial to provide sufficient financial aid to all higher education students, not only for tuition fees, but also for other costs such as living expenses (DHET, 2013a; DHET, 2014c; Seymor, no date).

The question is, however, whether enough is being done to financially assist poor and working-class students in South Africa in the quest of making higher education more affordable. Wangenge-Ouma (2012) is of the opinion that funding plays a major role in determining the accessibility of higher education in South Africa. Funding provided by the South African government is declining and the National

Student Financial Aid funding seems to be inadequate to cover all tuition costs (Wangenge-Ouma, 2012; Nkosi, 2014). All this is exacerbated by the fact that tuition fees are being constantly increased by higher education institutions (Rees, 2012). Wangenge-Ouma (2012) states that this is severely detrimental to access to higher education in general and hinders the achievement of equitable access to higher education in South Africa.

Although affordability of higher education is a major challenge in South Africa, this is not the only challenge faced by South African students. The following section provides an outline of some socio-economic and geographical challenges many South African students have to contend with.

3.2.2 Socio-economic and geographical challenges

The majority of South Africans born and raised in rural areas, townships or informal settlements are unfortunately exposed to fewer opportunities compared to their counterparts from urban areas and often do not fare as well (Pennyfather, 2008; De Hart, Doussy, Swanepoel, van Dyk, de Clercq & Venter, 2011; The World Bank, 2013). Many young South Africans, with great potential, from rural areas are still being disadvantaged by being exposed to inferior quality infrastructure, educational facilities and poor staffing in schools (Pennyfather, 2008; De Hart and Venter, 2013). Many South African students still face inequality in and substandard schooling systems (De Hart and Venter, 2013); the poor and those from townships, informal settlements and rural areas being the most disadvantaged by poor quality schooling. These students are also faced with inadequate funding for educational costs and living conditions that are often not conducive for learning. Students from extremely poor families further face the challenge of competing with students from more privileged families in a higher education system that is often designed for students from a more privileged background. (DHET, 2013a.)

Poor students and students from rural areas, informal settlements and townships are also in many instances hindered by environments that are not conducive for learning. Many informal settlements and/or townships in South Africa face life without electricity, running water or sanitation (The World Bank, 2013).

To exacerbate matters, students who suffer financially, or students from rural areas, informal settlements and townships often do not have the money to buy food with good nutritional value. This could even further hamper their performance, compared to students from wealthier families with nutritional daily meals (Alderman, Behrman, Lavy & Menon, 2001; DHET, 2013a).

As a result of a severe shortage of student accommodation, many other students also experience poor living conditions. University residences do not have the capacity to deal with the vast numbers and can only cater for a small number of students. Many students are therefore forced to settle for cheaper sub-standard accommodation elsewhere, often with dismal living conditions. (DHET, 2013a.)

3.2.3 Language barriers

Another major constraint faced by many South Africans is the fact that English is not their first language but only their second or sometimes even their third language. If a student lacks proficiency in the language in which they are being taught, it creates severe difficulties in communication. Students from disadvantaged backgrounds are often faced with low levels of literacy and this often further hinders their performance (Seabi, Seedat, Khoza-Shangase & Sullivan, 2014). Studies have shown large variances in South African university students' success rates based on whether they could study in their home language as opposed to in a second language and that students studying in a second language have higher drop-out rates (Pretorius, Prinsloo & Uys, 2007; De Hart, *et al.* 2011; De Hart and Venter, 2013).

3.2.4 The impact of technology on accessibility of higher education

A lack of access to relevant information and communication technology resources and technologies is another challenge faced by many South African students (De Hart, *et al.* 2011). This has a negative influence on the accessibility of higher education in South Africa as students in rural areas or informal settlements in most instances do not have access to these facilities as yet, and might not have in the foreseeable future (Herselman, 2003).

Innovation in information and communication technology is revolutionising higher education and it is becoming increasingly difficult to make an exact distinction between contact education and distance education. The massification of higher education and major changes in how distance education is delivered are placing severe pressure on traditional methods of teaching at contact universities (Morrow, 2009). The perceptions surrounding distance education have always been that it is education for the disadvantaged or the poor and that it is inferior to face-to-face methods of teaching (Morrow, 2009). These perceptions are changing with the innovative learning technologies used by distance education. The expansion of access to higher education cannot rest on the shoulders of contact education only; therefore, distance education is becoming increasingly popular and relevant (Morrow, 2009).

Those educators who realise that teaching is no longer merely the transfer of content as information becomes freely available on the internet, but the facilitation of optimised learning through the use of information and communication technology, will flourish and succeed in the future (Prinsloo and van Rooyen, 2007). In South Africa in particular, diverse levels of students enrol at higher education institutes. Many of them have not been adequately prepared at school for higher education and hence teaching and learning methods and curricula for higher education would have to be amended in order to meet the diverse needs of all students. Unfortunately, the development of such improved teaching and learning methods and curricula entails high start-up and maintenance costs as well as high-quality e-learning infrastructure (Morrow, 2009). In addition, it requires South African students to have the appropriate devices and access to the relevant technologies (Prinsloo and van Rooyen, 2007). In South Africa these requirements are posing major problems (Morrow, 2009). This has a negative influence on accessibility of higher education in South Africa as students in rural areas or informal settlements in most instances do not have access to these facilities as yet, and might not have in the foreseeable future.

Information and communications technology is considered to be crucial in the provision of higher education. In order to realise its full potential however, it has to be

available not only to some, but to all higher education students on an equitable basis. Unfortunately, in South Africa this is not currently the case; Morrow (2009) states that access to learning technologies is not evenly spread (CHE, 2014c; Prinsloo and van Rooyen, 2007).

As early as 1998, Hanna expressed the opinion that learning environments would change rapidly with the developments in the worldwide web, simulated learning environments as well as digital satellite technology. In his paper *Higher Education in an era of digital competition: emerging organisational models* he explains that learning technologies are changing very quickly and that this has a major impact on the traditional residential-type higher education institutes. According to Hanna, universities that make use of the advantages offered by new learning technologies obtain the advantage of quicker responses to students, as well as improved convenience and reduced costs for students. (Hanna, 1998.)

Hanna asserts, in the paper mentioned above, that the future of education will be shaped by the following trends (Hanna, 1998):

- Access to educational opportunities will be expanded as the traditional barriers of distance are falling away with the improvements in learning technology.
- Expanded access will lead to a major increase in the number of education and training providers as well as the approaches they follow.
- The focus of universities will be on learner needs and what they wish to have.
- Universities will be forced to amend their current program quality and their responsiveness as well as to develop new methods in order to stay competitive in the global market.
- A digital economy will provide educational institutions with the ability to reach learners globally.

Students today attend face-to-face classes with their smart phones, laptops and iPods providing easy access to information. Unfortunately, this also brings with it a rise in student plagiarism and cheating during tests or examinations as well as distraction to themselves and others during classes. (Glenn and D'Agostino, 2008.) Glenn and D'Agostino (2008) state, in *The future of higher education: how technology will shape learning*, that the youth are most at ease with the most current digital technologies. They also point out that with mobile technologies such as social networking there will be a major expansion in the types of methods used to interact with students. This will increase accessibility of higher education significantly. (Glenn and D'Agostino, 2008.)

Higher Education in South Africa has seen similar developments. It is the aim of the Ministry of Higher Education and Training to ensure that South Africa does not fall behind in a global knowledge society. With the increased availability of bandwidth and digital devices becoming more affordable, there is increased pressure on the Department of Higher Education and Training to provide access to all higher education students to suitable learning technologies as well as access to broadband Internet. It is the commitment of the Ministry of Higher Education and Training to provide all higher education students access to affordable Internet connectivity and to provide suitable learning devices for these purposes. The commitment is to first provide these services and devices at the higher education institutes and at a later stage at the students' homes. (CHE, 2014c.) For students in rural areas and informal settlements, this could increase accessibility to educational opportunities, but the dream of the Ministry of Higher Education and Training is yet to become a reality.

Professional accountants and Chartered Accountants are also constantly faced with changes in information technology and the impact thereof on their professional competence. Skills related to spreadsheet software (Excel) is seen as the most important computer skills requirement of accounting graduates and these students are expected to be proficient in the use of certain information technology applications (Wessels, 2006; Barac, 2009).

3.2.5 Summary of challenges

The sections above provided a brief outline of current challenges faced by many South African students that could influence the accessibility of higher education. It is evident that many South African students, although they might have great potential, do not have access to higher education opportunities. Even those who do manage to gain access to a higher education institution are not guaranteed success, as such students often have to face these challenges continuously and consequently do not always complete their studies.

Higher education is expensive and tuition fees are increasing considerably to compensate for decreasing state funding in South Africa. Students are demanding fee-free education and although the South African government is committed to making this dream a reality, there are currently not enough funds available for this purpose. Unaffordable educational costs, insufficient financial aid, a poor schooling system in certain areas, language barriers, poor living conditions in student accommodation, a lack of access to relevant information and communication technology resources, and various other challenges are the reality for many individuals. Many students possibly also face past injustices brought about by the history of education in South Africa as set out in section 3.2 (page 65). For a learner who wants to become a chartered accountant, these and many more challenges could also be a reality and are even further complicated by stricter admission criteria to the programme. These challenges will be discussed in Chapter 4 of this study.

Although the South African government and others such as the Department of Higher Education and Training are showing commitment to addressing these challenges, much remains to be done to increase overall higher education accessibility in South Africa. Advances in learning technologies can be greatly beneficial to the accessibility of higher education in South Africa and it is up to the South African government, the Department of Higher Education and Training as well as other stakeholders to take full advantage of the benefits offered by these advances.

Section 1.8 (page 11) referred to the two new public universities that started operating in 2014 and that were mainly established in an attempt to address issues of accessibility of higher education in South Africa. The Sol Plaatje University in Kimberley and the University of Mpumalanga both opened their doors during 2014. These two universities will provide access to higher education opportunities in the Kimberley and surrounding areas as well as in Mpumalanga and will possibly increase accessibility to higher education for many students in these areas.

Despite numerous obstacles and challenges faced by many South African students, it is the unlikely success stories of some that motivate others to succeed. These obstacles and challenges are in many instances also faced by students studying towards becoming a chartered accountant. Mr Thlako, a Unisa graduate, is one such student. He grew up in an informal settlement in Thembisa, with both parents being unemployed. He successfully completed part one of the SAICA Qualifying Examination during 2012. He showed commitment and resilience even when the odds were clearly against him (Naicker, 2012).

Speaking as a motivational speaker at the Unisa College of Economic and Management Sciences auditing day, Mr Thlako inspired many with the following words: “As a student one will always encounter obstacles, be it emotional or financial, but one has to push to succeed in life regardless of one’s situation. Look at me, I took a giant step and enrolled at Unisa. That took courage. And yes, there were and always will be challenges, but it will be worth it forever” (Naicker, 2012).

The following sections address research question 4 relating to the influence that the higher education governing bodies, legislation and other regulators have on the accessibility of higher education in South Africa. When considering this research question, it is important to obtain an understanding of the impact these bodies and legislation have in terms of setting minimum admission requirements and other criteria that influence the accessibility of higher education in South Africa. An overview will be provided of where public higher education institutions fit into the current post-school education and training system.

3.3 THE CURRENT STRUCTURE OF POST-SCHOOL EDUCATION AND TRAINING INSTITUTIONS IN SOUTH AFRICA

The public higher education institutions in South Africa form part of the current post-school education and training system and fall under the jurisdiction of the Department of Higher Education and Training (DHET, 2013a). It is necessary to understand where higher education and training fits into the current system and which bodies influence its accessibility.

The *White Paper for Post-School Education and Training* describes the post-school education and training system in South Africa, for which the Department of Higher Education and Training is responsible. The system includes all education and training to learners that have either completed school, did not complete school or even those that never attended a school. The following post-school education and training institutions all fall under the jurisdiction of the Department of Higher Education and Training (DHET, 2013a):

- The 23 (25 since 2014) public higher education institutes (public universities) in South Africa (section 1.8, page 11);
- The 50 public technical and vocational education and training (TVET) colleges [previously known as the further education and training (FET) colleges];
- The public adult learning centres (which will be absorbed by the new community colleges);
- The private post-school institutions;
- The Sector Education and Training Authorities (SETAs) and the National Skills Fund (NSF); and

- The regulatory bodies responsible for qualifications and quality assurance in the South African post-school system. This includes the South African Qualifications Authority (SAQA) and the Quality Councils.

During the 2011 academic year nearly two million students enrolled at public and private post-school education and training institutions. Close to 50% of these enrolled students were enrolled at the 23 public universities with total headcount enrolments of 938 201 students in 2011. (DHET, 2013b.)

The *Higher Education Act, no. 101 of 1997*, established to regulate higher education in South Africa, states that higher education in South Africa encompasses all learning programmes that lead to qualifications that meet the Higher Education Qualifications Framework requirements (CHE, 2014a). The role of the Higher Education Qualifications Framework will be discussed further in section 3.5.5 (page 92).

This study provides a brief survey of the regulatory bodies responsible for regulating the public higher education institutions in South Africa. The following section provides an overview of the higher education institutions, including public universities, in South Africa.

3.4 HIGHER EDUCATION INSTITUTIONS IN SOUTH AFRICA

The *Higher Education Act, no. 101 of 1997*, defines a higher education institution as any institution that provides full-time, part-time or distance-based higher education as defined in the *Higher Education Act, no. 101 of 1997* (CHE, 2014a).

These higher education institutions can be public or private. Public higher education institutions are funded by the government of South Africa through the Department of Higher Education and Training. They include traditional universities, universities of technology and comprehensive universities. Private higher education institutions, on the other hand, are privately owned by either organisations or individuals and thus privately funded or sponsored. (CHE, 2014b.)

As mentioned in section 1.8 (page 11), this study focused on the 23 public universities (excluding the two new ones) in South Africa, with specific attention to four particular public universities. Private higher education institutions fall outside the scope of this study.

The following section discusses the public universities in South Africa as well as the public universities selected for purposes of this study.

3.4.1 Public higher education institutions (public universities) in South Africa

South Africa has seen various changes in the university setting since 1994 and even more changes are expected. After various mergers and incorporations, there were 23 public universities in South Africa up to 2013. Two new public universities were envisaged in the *White Paper and* during 2014 these two new public universities, the Sol Plaatje University and the University of Mpumalanga, were added to this list of public universities (DHET, 2013a). The Council on Higher Education in South Africa released the *VitalStats: Public Higher Education, 2011* publication during 2013. This document explains that the 23 public universities can be divided into three main categories (Bunting and Cloete, 2010; CHE, 2013a), namely:

- Traditional universities, in other words those higher education institutions that offer a wide-ranging spectrum of general formative and professional programmes at an undergraduate as well as a postgraduate level. These universities include (Bunting and Cloete, 2010; CHE, 2013a):
 - North-West University (NWU);
 - Rhodes University (RU);
 - University of Cape Town (UCT);
 - University of Fort Hare (UFH);
 - University of Free State (UFS);

- University of KwaZulu-Natal (UKZN);
 - University of Limpopo (UL);
 - University of Pretoria (UP);
 - University of Stellenbosch (SUN);
 - University of Western Cape (UWC);
 - University of Witwatersrand (WITS);
- Comprehensive universities, namely those higher education institutions that offer the full spectrum of programmes at undergraduate as well as postgraduate level. These universities include (Bunting and Cloete, 2010; CHE, 2013a):
 - Nelson Mandela Metropolitan University (NMMU);
 - University of Johannesburg (UJ);
 - Unisa;
 - University of Venda (UV);
 - University of Zululand (UZ);
 - Walter Sisulu University (WSU);
- Universities of Technology, namely those higher education institutions that offer an array of programmes focused on vocational and/or professional programmes mostly at an undergraduate level. The Universities of Technology were previously referred to as Technikons. They include (Bunting and Cloete, 2010; CHE, 2013a):

- Cape Peninsula University of Technology (CPUT);
- Central University of Technology (CUT);
- Durban University of Technology (DUT);
- Mangosuthu University of Technology (MUT);
- Tshwane University of Technology (TUT); and
- Vaal University of Technology (VUT).

Of the 23 public universities listed above, this study focused on four, based on the major contribution they make to the number of candidates that successfully complete part one of the SAICA Qualifying Examination (section 1.8, page 11), namely:

- The University of Cape Town – a traditional university;
- The University of Johannesburg – a comprehensive university;
- Unisa – a comprehensive university; and
- The University of the Witwatersrand – a traditional university.

More detail on these four universities and the chartered accountancy programmes that they offer will be provided in Chapter 4.

The public universities in South Africa are all governed by specific legislation and regulatory bodies. The following section provides more detail on the specific legislation and the regulatory bodies that govern higher education, including the public universities in South Africa. The aim of the overview provided in the following section is to establish what the influence is of these governing bodies, regulators and legislation on accessibility of higher education in South Africa as they set the criteria for admission requirements to higher education institutions.

3.5 REGULATORS AND LEGISLATION GOVERNING HIGHER EDUCATION IN SOUTH AFRICA

The South African post-school system, which includes higher education, is governed by various forms of legislation and statutory bodies. The purpose of this section is not to provide a comprehensive analysis of all regulators and legislation pertaining to higher education in South Africa; rather, it is aimed at providing a brief overview for an understanding of the higher education system in South Africa and the resulting criteria for accessibility to higher education set by these regulators.

3.5.1 The Department of Higher Education and Training

The Department of Higher Education and Training was established in May 2009 after a restructuring of the former Department of Education and the Department of Labour. The Department of Higher Education and Training is currently the government department that is responsible for all aspects of post-school education and training in South Africa (DHET, 2010).

The mandate of the Department of Higher Education and Training stems from the Constitution of the Republic of South Africa (1996) (South Africa, 1996; DHET, 2010). The Department of Higher Education and Training is headed by the Ministry of Higher Education and Training, which includes the Minister together with the Deputy Minister of Higher Education and Training (DHET, 2014d).

The legislation that the minister is responsible for, either entirely or through shared responsibility with others from which the objectives of the Department of Higher Education and Training are derived, is as follows (DHET, 2010):

- The Higher Education Act (HE Act) (Minister responsible for entire act);
- The National Student Financial Aid Scheme Act (NSFAS Act) (Minister responsible for entire act);
- The Adult Education Act (AET Act) (Minister responsible for entire act);

- The Further Education and Training Act (FET Act) (Minister responsible for entire act);
- The National Qualifications Framework Act (NQF Act) (Minister responsible for entire act);
- The Skills Development Levies Act (Minister responsible for entire act);
- The Skills Development Act (SDA) (Minister responsible for entire act except for a few sections);
- The South African Council of Educators Act (SACE Act) (Minister only responsible for a few relevant sections of the Act); and
- The General and Further Education and Training Act (GENFETQA - UMALUSI) (Minister only responsible for a few relevant sections of the Act).

The Department of Higher Education and Training provides Green Papers which are conceptual frameworks or so-called discussion documents open for public consultation. These Green Papers are then refined as White Papers which are considered to be a broad statement of government policy for post-school education and training in South Africa. (Parliamentary Monitoring Group, 2014.)

The vision of the Department of Higher Education and Training is (DHET, 2013a; DHET, 2014e) as follows:

- A post-school education system in South Africa that could contribute to a fair, impartial South Africa without discrimination;
- A post-school education and training system that is coordinated as one single system;
- Improved accessibility, better quality and improved diversity of post-school education provision;

- Improved relationships between the institutions that provide post-school education and training and the workplace; and
- A post-school education and training system that provides for the needs of the individual, the employer and South African society as a whole.

The Ministry of Education is advised by the Matriculation Board of Higher Education South Africa (a body representing the public higher education institutions of South Africa established in 2005) of the minimum admission requirements to first degree studies (Higher Education South Africa, 2014). Each public university then has the prerogative to set stricter admission criteria than the minimum admission requirements (Higher Education South Africa, 2014).

It is the vision of improved access to post-school education, which includes the access to the public universities in South Africa that is most important for the purposes of this study. The Department of Higher Education and Training states in its strategic plan for the period 2010/2011 – 2014/2015 that it envisages at least 50% of young people in the 18-24-year age group to be studying through universities and colleges in South Africa by 2030. Major capacity building will definitely be needed in the next few years (DHET, 2010). The Department of Higher Education and Training, under the leadership of the Ministry of Higher Education and Training, will thus be key players in the provision of increased accessibility of higher education in South Africa now and in the future.

3.5.2 The Council on Higher Education

Another key player in the South African higher education and training system is the Council on Higher Education, an independent statutory body established by the *Higher Education Act, no. 101 of 1997* (CHE, 2014b).

The *Higher Education Act, no. 101 of 1997*, gave the Council on Higher Education two major tasks: first, advising the Minister of Higher Education and Training regarding all higher education matters; and second, the overall responsibility for quality assurance and the promotion of quality of higher education in South Africa.

For this purpose, the Council on Higher Education has established a permanent committee, the Higher Education Quality Committee (CHE, 2014b).

The *National Qualifications Framework Act, no. 67 of 2008*, determined that the Council on Higher Education would serve as the Quality Council for Higher Education in South Africa (CHE, 2014b) and it was assigned the responsibility for ensuring that all higher education qualifications meet the South African Qualifications Authorities' criteria for registration on the National Qualifications Framework in terms of the *Higher Education Act, no. 101 of 1997* (Department of Education, 2007).

One of the major responsibilities of the Council on Higher Education is the accreditation of the learning programmes of public and private higher education institutions. These accredited learning programmes should ultimately lead to a qualification that is registered both on the National Qualifications Framework and with the Department of Higher Education and Training. As mentioned above, this task has been delegated to the Council on Higher Education's permanent committee, the Higher Education Quality Committee (CHE, 2014b).

All higher education programmes therefore have to be accredited by the Higher Education Quality Council before they can be offered by public or private higher education institutions. A programme is considered to be a structured and purposeful set of learning experiences and outcomes that will lead to a qualification registered on the National Qualifications Framework. To obtain accreditation through the Higher Education Quality Committee, the programme must comply with requirements set by the South African Qualifications Authority (CHE, 2013b). The following section discusses the role and responsibilities of the South African Qualifications Authority.

3.5.3 The South African Qualifications Authority

The *South African Qualifications Authority Act, no. 58 of 1995*, provided for the development and implementation of the National Qualifications Framework. The South African Qualifications Authority, a juristic body established by this act, was given the specific mandate of ensuring the development and implementation of the National Qualifications Framework in South Africa (SAQA, 1995).

The *South African Qualifications Authority Act, no. 58 of 1995*, was replaced by the *National Qualifications Framework Act, no. 67 of 2008* of South Africa, after a review process that ended in 2008 (SAQA, 2013a). The *National Qualifications Framework Act, no. 67 of 2008*, defines the purpose of the National Qualifications Framework as the classification, registration, articulation and publication of national qualifications that are quality assured (South Africa, 2009). In terms of this new act, the South African Qualifications Authority would continue to exist as a juristic person with the aim of advancing the objectives of the National Qualifications Framework and the coordination of the National Qualifications Framework's three sub-frameworks as mentioned below (South Africa, 2009).

Apart from overseeing the implementation of the National Qualifications Framework and ensuring that this framework achieves its objectives in terms of the *National Qualifications Framework Act, no. 67 of 2008*, the South African Qualifications Authority is further responsible for developing and implementing the criteria for the establishment, registration and publication of all qualifications and part-qualifications in South Africa (including, but not limited to, higher education qualifications). This body is also responsible for registering qualifications and part-qualifications that meet the set criteria. (SAQA, 2013b.) The following section provides a brief overview of the National Qualifications Framework.

3.5.4 The National Qualifications Framework

As discussed in section 3.5.3 (page 87), the South African Qualifications Authority is responsible for the National Qualifications Framework, an integrated system that comprises three sub-frameworks, namely General and Further Education and Training, Higher Education, and Trades and Occupations (South Africa, 2009). The framework is structured as a series of learning achievements that are set out in framework levels ascending in order from one to ten (refer to table 3.1, page 90). For each of these framework levels, a level descriptor is provided. Level descriptors developed by the South African Qualifications Authority provide indicate the broad learning achievements or outcomes for qualifications at each of the ten framework levels. (SAQA, 2012.)

The objectives of the National Qualifications Framework are as follows (South Africa, 2009):

- The creation of an integrated national framework for learning achievements;
- The facilitation of access to as well as the mobility and progression within education, training and career paths;
- The enhancement of the quality of education and training; and
- The speeding up of the redress of past unfair discrimination in opportunities for education, training and employment.

For the purposes of this study, it is crucial to refer to the differences between the National Qualifications Framework levels with reference to the *South African Qualifications Authority Act, no. 58 of 1995*, and the National Qualifications Framework levels in relation to the *National Qualifications Framework Act, no. 67 of 2008*. The research conducted in this study spanned across the 2009 to 2012 academic years. During this period the *National Qualifications Framework Act, no. 67 of 2008*, came into effect. Existing qualifications based on National Qualifications Framework levels in terms of the *South African Qualifications Authority Act, no. 58 of 1995*, had to be re-registered under the *National Qualifications Framework Act, no. 67 of 2008*, taking into account the new National Qualifications Framework levels and level descriptors.

The main difference between the *South African Qualifications Authority Act, no. 58 of 1995*, and the *National Qualifications Framework Act, no. 67 of 2008*, is that there were eight National Qualification Framework levels in the *South African Qualifications Authority Act, no. 58 of 1995* (SAQA, 2001), whereas there are ten levels in the *National Qualifications Framework Act, no. 67 of 2008* (South Africa, 2009).

Table 3.1 provides a layout of the National Qualifications Framework levels in terms of the *National Qualifications Framework Act, no. 67 of 2008* (South Africa, 2012).

TABLE 3.1: NATIONAL QUALIFICATIONS FRAMEWORK LEVELS IN TERMS OF NATIONAL QUALIFICATIONS FRAMEWORK ACT, NO. 67 OF 2008

Band	School Grade	NQF levels in terms of NQF act of 2008	
		act of 2008	Qualifications and certificates
Higher Education and Training	Not Applicable	10	Doctoral Degree Doctoral Degree (professional)
		9	Master's Degree Master's Degree (professional)
		8	Bachelor Honours Degree Postgraduate Diploma Bachelor's Degree
		7	Bachelor's Degree Advanced Diploma
		6	Advanced Certificate Diploma
		5	Higher Certificate
Further Education and Training	12	4	National Certificate
	11	3	Intermediate Certificate
	10	2	Elementary Certificate
General Education and Training	9	1	General Certificate

Source: South Africa, 2012 – adapted.

Table 3.2 below provides the National Qualifications Framework levels in terms of the *South African Qualifications Authority Act, no. 58 of 1995 (SAQA, 2001)*.

TABLE 3.2: NATIONAL QUALIFICATIONS FRAMEWORK LEVELS IN TERMS OF THE SOUTH AFRICAN QUALIFICATIONS AUTHORITY ACT, NO. 58 OF 1995

Band	School Grade	NQF levels in terms of SAQA act of 1995	Qualifications and certificates
Higher Education and Training	Not applicable	8	<u>Postgraduate level 4:</u> Doctor of Philosophy Professional Doctorate <u>Postgraduate level 3:</u> Research Master's Degree Structured Master's Degree <u>Postgraduate level 2:</u> Master's Degree Master's Diploma <u>Postgraduate level 1:</u> Bachelor Honours Degree Postgraduate Diploma
		7	Bachelor's Degree National Certificate (level 7)
		6	National Diploma National Certificate (level 6)
		5	National Certificate (level 5)
Further Education and Training	12	4	Further Education and Training Certificate (level 4) National Certificate (level 4)
	11	3	National Certificate (level 3)
	10	2	National Certificate (level 2)
General Education and Training	9	1	General Education and Training Certificate (level 1) / Adult Basic Education and Training level 4 certificate

Source: SAQA, 2001 – adapted.

As can be seen from tables 3.1 and 3.2, it is evident that the *National Qualifications Framework Act 67, no. of 2008*, brought about several changes to National Qualifications Framework levels and level descriptors. This study focused on the 2009 to 2012 academic years, during which the National Qualifications Framework levels for chartered accountancy qualifications were changed. In Chapter 4 the impact of the changes in the National Qualifications Framework levels from the

South African Qualifications Authority Act, no. 58 of 1995, to the *National Qualifications Framework Act 67, no. of 2008*, in terms of chartered accountancy programmes in South Africa is explained.

The Higher Education Qualifications Framework forms the basis for the integration of all higher education qualifications into the National Qualifications Framework. The Higher Education Qualifications Framework is considered to be an integral part of the National Qualifications Framework (Department of Education, 2007). The next section therefore discusses the important role of the Higher Education Qualifications Framework.

3.5.5 The Higher Education Qualifications Framework

As mentioned in section 3.3 (page 79), the *Higher Education Act, no. 101 of 1997*, established to regulate higher education in South Africa, states that higher education in South Africa encompasses all learning programmes leading to qualifications that meet the Higher Education Qualifications Framework requirements (CHE, 2014a).

The Higher Education Qualifications Framework, published on 5 October 2007 by the Minister of Education, is specifically designed to meet the ever-increasing demands on and challenges to higher education in the 21st century. It strives to address the challenges that the previous separate qualifications structures for universities and technikons brought about by articulating programmes in a consistent manner to allow smooth and consistent transfer of students between programmes and higher education institutions. The Higher Education Qualifications Framework is applicable to all higher education programmes and qualifications that are offered by public and private higher education institutions in South Africa. (Department of Education, 2007.)

As of 1 January 2009, any new higher education programmes submitted for accreditation to the Higher Education Quality Committee and the South African Qualifications Authority have to comply with the National Qualifications Framework and therefore also the Higher Education Qualifications Framework. A transition

period was allowed for institutions to phase out existing qualifications and align new qualifications with these frameworks (Department of Education, 2007).

In terms of the Higher Education Qualifications Framework, the following section provides a summary of the major responsibilities of the regulatory bodies mentioned in the sections above (SAQA, 2014):

- The Ministry of Higher Education and Training has the over-arching responsibility for the norms and standards that are set for higher education.
- The role of the South African Qualifications Authority remains the registration of standards and qualifications as set out in the *South African Qualifications Authority Act, no. 58 of 1995*.
- The responsibility for quality assurance in higher education as set out in the *Higher Education Act, no. 101 of 1997*, rests on the Higher Education Quality Committee of the Council on Higher Education.
- The responsibility for generating and setting standards for higher education qualifications and ensuring that these qualifications meet the South African Qualifications' criteria for registration on the National Qualifications Framework rests with the Council on Higher Education.

Higher education and training in South Africa is governed by the regulatory bodies as set out above. The public universities in South Africa are therefore also governed by this structure as well as the legislation mentioned in the previous sections. The criteria for registration on the National Qualifications Framework are set by the South African Qualifications Authority and it is the responsibility of the Council on Higher Education to ensure that qualifications meet these criteria before they are registered. Qualifications that do not meet the set criteria cannot be registered by the South African Qualifications Authority and can thus not be offered by the public universities. The public universities in South Africa can set stricter admission requirements than the general minimum admission requirements for qualifications registered by the

South African Qualifications Authority. It is thus clear that stricter criteria and admission requirements set by these bodies would lead to fewer students meeting these requirements and this could possibly have a negative impact on the overall accessibility of higher education in South Africa.

3.6 CONCLUSION

Chapter 3 has shown that South African students probably still face challenges brought about by past injustices and inequalities and that this could potentially still have an impact on the accessibility of higher education in South Africa.

With all the challenges faced by many South African students as discussed in Chapter 3, higher education opportunities are currently not available to all deserving students and much needs to be done to rectify this situation if South Africa wants to be competitive in a global market and address the current skills shortage.

The South African higher education system has changed considerably since the apartheid regime and vast improvements have been made in addressing the injustices brought about by that era. This does not mean, however, that since the abolishment of apartheid, higher education has now become accessible to all deserving students. Various other challenges are currently hindering access to higher education opportunities, such as high tuition fees, insufficient student financial aid, limited spaces available at most public universities, to name but a few.

Chapter 3 also provided an overview of the various regulatory bodies such as the Department of Higher Education and Training, the Council on Higher Education and the South African Qualifications Authority that govern higher education in South Africa. This chapter also provided an overview of the relevant legislation such as the Higher Education Act, the National Qualifications Framework Act, as well as the the South African Qualifications Authority Act that play a pivotal role in the provision of higher education in South Africa. These regulatory bodies and the legislation referred to in chapter 3, provide the minimum admission criteria and other criteria (e.g. on quality assurance) for higher education in South Africa and thus have a significant

influence on the overall accessibility thereof as the number of students that meet the minimum admission requirements are influenced.

As mentioned above, strict admission requirements also pose a problem in terms of increased accessibility. Minimum admission requirements are good in the sense that they set the bar high for difficult qualifications and thus aim to ensure high graduation rates. They do, however, affect higher education accessibility. Admission requirements specific to the four universities selected for this study are discussed in chapter 4. This is also applicable to chartered accountancy programmes offered by accredited universities. The SAICA accredited universities can set their own stricter admission criteria, making some universities less accessible than others in terms of chartered accountancy programmes. Chapter 4 provides more detail on the structure of chartered accountancy programmes in South Africa and the possible influence the varying stricter admission requirements of the four public universities selected for this study have on the accessibility of chartered accountancy programmes in South Africa.

CHAPTER 4

AN OVERVIEW OF CHARTERED ACCOUNTANCY PROGRAMMES IN SOUTH AFRICA

4.1 INTRODUCTION

Chapter 3 laid the foundation for Chapter 4 by providing an overview of the higher education system in South Africa and its history during and after apartheid.

As accounting students are part of the greater cohort, many of the challenges mentioned in Chapter 3 are also faced by these students in South Africa.. Many of these students are also affected by the past injustices and inequalities brought about by apartheid, high tuition fees, financial difficulties, poor economic circumstances, poor living conditions and various other challenges as discussed in the previous chapters.

Chapter 3 also detailed some of the regulatory bodies responsible for regulating the South African post-school education and training system. These include the public universities as well as the legislation governing higher education in South Africa. This also set the tone for Chapter 4, as the public universities that offer chartered accountancy programmes in South Africa are not only governed by these regulatory bodies and legislation but also by additional professional bodies and regulators that govern specifically chartered accountants and chartered accountancy programmes in South Africa. These professional bodies and regulators will be discussed in Chapter 4.

The research objectives of this study were outlined in section 1.4 (page 7). The main aim of Chapter 4 is to address the following research question:

Research question 5: What influence could the different admission criteria to chartered accountancy programmes set by the four universities selected for this study have on the accessibility of chartered accountancy programmes in South Africa?

This chapter provides an in-depth look at chartered accountancy programmes in South Africa and their structure. More detail is provided on the selected four public universities, with specific focus on the chartered accountancy programmes they offer and the minimum admission requirements that each of these four universities set for their chartered accountancy programmes. This is done in order to obtain an understanding of the career path of a prospective chartered accountant and some of the challenges that these students face in terms of higher education accessibility for chartered accountants in South Africa. The aim of stricter admission requirements in many instances is to increase graduation rates, but stricter admission requirements could also lead to challenges in terms of the accessibility of chartered accountancy programmes. This chapter therefore addresses research question 5 as stated above.

4.2 HOW TO BECOME A CHARTERED ACCOUNTANT IN SOUTH AFRICA

To become a chartered accountant in South Africa is undoubtedly one of the most challenging but most rewarding journeys a student can undertake (Müller, 2011; Neophytou, 2014). Only those who have successfully completed this journey or those who are in the midst of it would fully appreciate the sacrifices that need to be made, the frustrations felt, the tears of disappointment or the long nights behind endless piles of books. Also, only those fortunate enough to use the renowned “CA (SA)” designation would appreciate that becoming a chartered accountant in South Africa is one of the highest and most rewarding accomplishments any professional can achieve (Neophytou, 2014).

As shown in Chapter 1, chartered accountants are in constant demand, not only in South Africa, but internationally as well; the qualification opens up numerous doors to further career opportunities in almost all sectors of business (Neophytou, 2014). Mr Ewald Müller, senior executive of standards at SAICA, shares this view. He explains that some of South Africa’s top students aim to become chartered accountants due to the exceptional career opportunities in almost any industry (Müller, 2011).

Research performed by SAICA during 2011 revealed that 32% of chief executive officers (CEOs) at the top 194 JSE listed companies in South Africa were chartered

accountants. At these same companies, 75% of chief financial officers (CFOs) were also chartered accountants. Mr Müller further notes that in 2011, 32% of all directorships of these companies were held by chartered accountants. (Müller, 2011.) South African chartered accountants have an excellent reputation and the designation is sought after by many. It is, however, only those who can persevere with the utmost dedication that will be successful.

Chartered accountancy programmes are offered only by certain higher education institutions that are accredited by the professional body SAICA. Professional bodies set their own criteria and requirements for the approval of programmes and qualifications that lead to the registration and membership of students who meet these requirements. The criteria and requirements of professional bodies such as SAICA should ideally be aligned with the standards implemented by the Council on Higher Education and therefore the Higher Education Qualifications Framework, which forms an integral part of the National Qualifications Framework (section 3.5, page 84). Section 4.3 (page 111) provides more information on the role of SAICA as a professional body governing chartered accountants and chartered accountancy studies in South Africa.

Firstly an overview of the process a prospective student has to follow in order to become a chartered accountant in South Africa is provided. This process already starts at high school where a student aspiring to become a chartered accountant has to obtain the best possible high school results and select the correct subjects in order to meet university admission requirements (CHE, 2014a).

4.2.1 Minimum university entrance requirements for a bachelor's degree

Section 3.5.1 (page 84) pointed out that the Ministry of Education is advised by the matriculation board of Higher Education South Africa (a body representing the public higher education institutions of South Africa established in 2005) of the minimum admission requirements to first degree studies (Higher Education South Africa, 2014). Each public university then has the prerogative to set stricter admission criteria than the minimum admission requirements.

To determine its admission policy, the council of a public university has to consult with its senate; thereafter, subject to any requirements in the *Higher Education Act, no. 101 of 1997*, it can determine the admission requirements specific to that university. The council of a public university, with the required approval from the senate of that university, may determine specific admission requirements for specific higher education programmes offered and may also determine the number of students that can be enrolled for a specific programme as well as the manner in which these students are selected (CHE, 2014a). This is why public universities in South Africa play a vital role in the overall accessibility of higher education as well as the accessibility of chartered accountancy programmes offered in South Africa.

Higher education institutions have to ensure that their admission requirements are aligned with the objectives of the *Higher Education Act, no. 101 of 1997*, as well as those of the National Qualifications Framework (South Africa. Department of Education, 2008).

A learner who wishes to become a chartered accountant has to enrol for a Bachelor of Commerce degree at National Qualifications Framework level 7 (or equivalent chartered accountancy qualification) at a SAICA accredited university. Whilst not undermining the importance of improved access to higher education and equality of access, it is crucial for higher education institutions to set the bar relatively high for entrance to a Bachelor's degree. As the intellectual demands of a Bachelor's degree are fairly high, the minimum admission requirements for a Bachelor's degree are also fairly stringent (South Africa. Department of Education, 2008).

The minimum admission requirements for a Bachelor's degree in South Africa, as approved and gazetted by the then Minister of Education, are (South Africa. Department of Education, 2008; Independent Examinations Board, 2014) as follows:

- a A National Senior Certificate (NSC) with:
 - i at least 40% in one of the official languages at home language level;
 - ii at least a level 4 (equivalent to 50-59%) in four subjects from the designated subject list (see below); and

iii at least 30% in two subjects.

b As a minimum requirement for entry to a higher education institution, the learner has to obtain at least 30% for English or Afrikaans.

The designated list of subjects from which the learner has to choose includes the following (South Africa. Department of Education, 2008; Independent Examinations Board, 2014):

- Accounting;
- Agricultural Studies;
- Business Studies;
- Dramatic Arts;
- Economics;
- Engineering Graphics and Design;
- Geography;
- History;
- Consumer Studies;
- Information Technology;
- Languages;
- Life Sciences;
- Mathematics;
- Mathematical Literacy;
- Music;
- Physical Sciences;
- Religion Studies; and
- Visual Arts.

Each of the higher education institutions in South Africa is entitled to specify additional entry requirements apart from the minimum requirements as set out above (South Africa. Department of Education, 2008). Successfully obtaining the minimum entrance requirements for a Bachelor's degree as set out above therefore does not guarantee access to a chartered accountancy programme at any of the accredited SAICA universities as these universities in most cases prescribe additional entrance

requirements specific to the chartered accountancy programmes. The additional minimum entry requirements of each of the four public universities selected for this study are discussed further in sections 4.4.1 (page 114) to 4.4.4 (page 124).

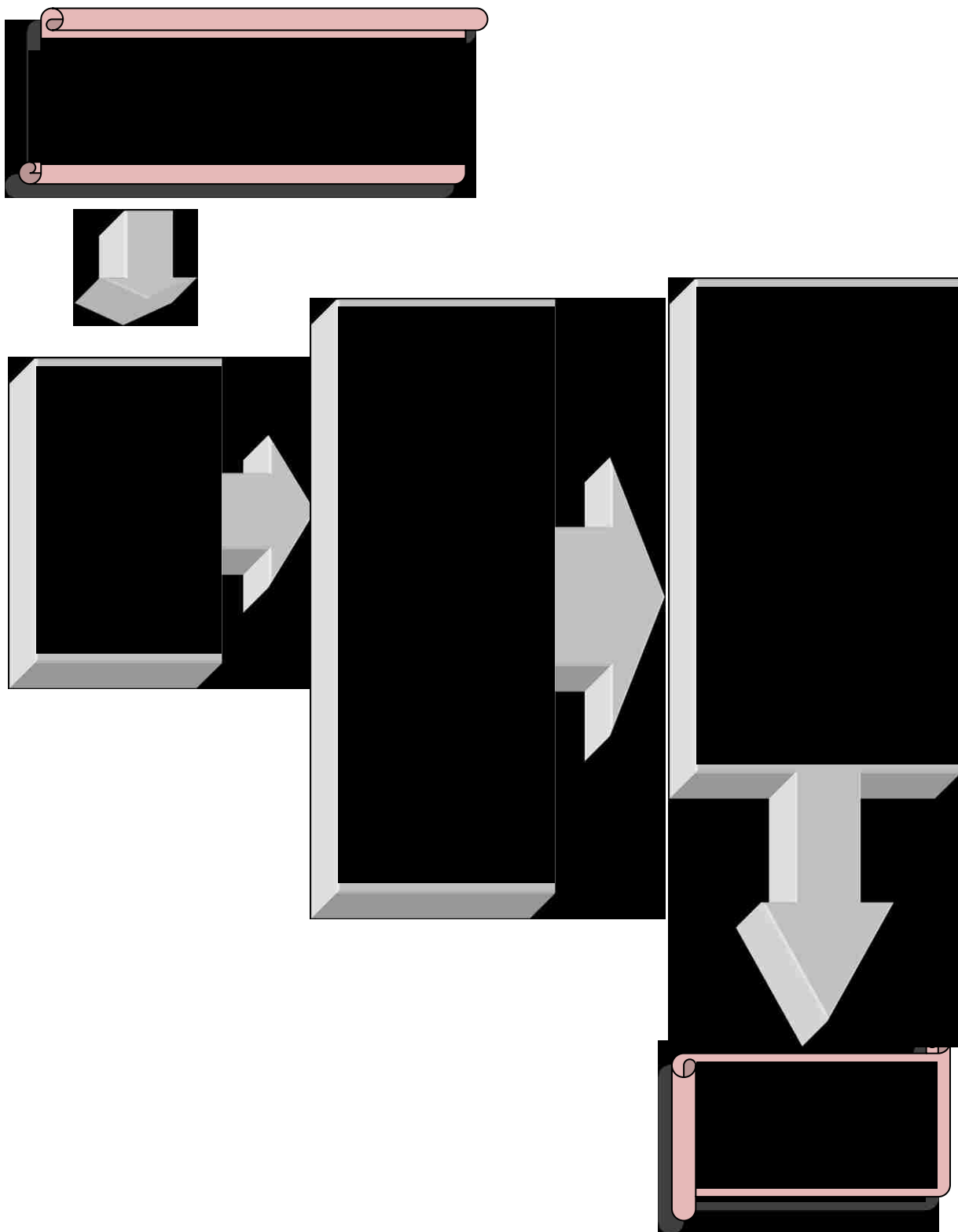
Students aspiring to become chartered accountants in South Africa have a choice of studying full-time through a residential (contact) university or part-time/full-time through a distance learning university. As Unisa is the largest dedicated distance learning university in Africa (Unisa, 2014a) the majority of students who choose the part-time studies route would study through Unisa (Unisa, 2014a). When a student chooses to study full-time, however, he/she can select any of the SAICA accredited contact universities. The other three universities selected for this study (the University of Cape Town, the University of Johannesburg and the University of the Witwatersrand) are all mainly contact universities that offer the chartered accountancy programme on a full-time basis.

Part-time and full-time chartered accountancy programmes differ quite substantially as explained in section 4.2.2 (page 101) and 4.2.3 (page 104). It is therefore necessary to provide a brief overview of the different paths a student can take when studying to become a chartered accountant. The most striking difference is the fact that a student studying part-time is allowed the opportunity to register with a training officer and complete the required training programme whilst completing their studies through a distance learning university. The following section provides an overview of the general path a student studying on a full-time basis will follow in order to become a chartered accountant.

4.2.2 Full-Time chartered accountancy studies

Diagram 4.1 provides an overview of the general path of a student who chooses to study full-time through a residential university in order to become a chartered accountant.

DIAGRAM 4.1: GENERAL PATH FOR A FULL-TIME STUDENT STUDYING TO BECOME A CHARTERED ACCOUNTANT



Source: SAICA, 2013b – adapted.

Diagram 4.1 provides an overview of the path of a prospective full-time chartered accountant student. Full-time students studying at a SAICA accredited university (refer to section 4.3, page 111 and section 4.4, page 112 for the accreditation process) first have to complete a Bachelor of Commerce or equivalent degree successfully at this university at an undergraduate level and then successfully complete the Honours Bachelor of Commerce or equivalent degree before registering for a three-year training contract at a Registered Training Office or Approved Training Organisation. Refer to section 4.2.4 (page 109), for more detail regarding the training requirements.

It is only after successfully completing the specific Honours Bachelor of Commerce or equivalent degree for the chartered accountancy programme offered by the SAICA accredited university that the student qualifies to write part one of the Qualifying Examination of SAICA (SAICA, 2013b). When the candidate has completed 18 months of the training contract, the candidate is eligible to sit either for the second part of the Qualifying Examination of SAICA for the Financial Management route or the Professional Practice Examination of the Independent Regulatory Board for Auditors for the Auditing route (SAICA, 2013b). Refer to section 4.2.5 (page 110) for a discussion on the changes in part one of the Qualifying Examination of SAICA from 2013 as well as the changes in the second examination.

From diagram 4.1 it is evident that a student studying full-time will only register with a Registered Training Office or approved training organisation after successfully completing the academic portion of the chartered accountancy qualification at the chosen SAICA accredited university (SAICA, 2013b).

A student opting for full-time chartered accountancy studies at a residential university has to attend classes at the chosen university with face-to-face contact with the lecturers involved as well as the other students enrolled for the course (UCT, 2013; UJ, 2013b; WITS, 2013a). This has many benefits: students have the opportunity to engage with lecturers and fellow students which often assists them in grasping difficult concepts more quickly and easily. It does, however, come with some disadvantages as well. Students who decide to study full-time have limited flexibility

and do not have the opportunity of working and studying simultaneously. For poor students or students from a disadvantaged background this has tremendous financial implications and makes it difficult if not impossible to pay for their studies. For this, and many other reasons, many students opt for part-time studies as described in the following section. (CHE, 2014c.)

4.2.3 Part-Time chartered accountancy studies

The Ministry of Higher Education and Training views distance higher education in South Africa as a means of providing access to higher education to students to whom access to residential higher education institutions is not appropriate or possible (CHE, 2014c). These students often choose part-time studies due to work commitments, poor economic circumstances, large geographical distances between universities and the student, poor quality schooling, financial constraints and various other reasons (Dreyer, 2010; CHE, 2014c).

Part-time studies through distance education are more flexible and provide students the opportunity to work whilst completing their studies. This gives the student the opportunity to earn a salary to pay tuition and other fees (CHE, 2014c). This also adds additional responsibilities, however; the student now has work commitments, study commitments and in many instances family commitments as well. With no or minimal face-to-face contact with lecturers and fellow students, part-time students should be dedicated and prepared to work extremely hard in order to be successful (CHE, 2014c).

Distance education has played a pivotal role in the considerable growth of higher education enrolments. By 2009, distance education accounted for approximately 40% of all enrolments. The largest contributor to this figure is Unisa, which is considered to be one of the most important providers of open and distance education in South Africa. (CHE, 2014c.)

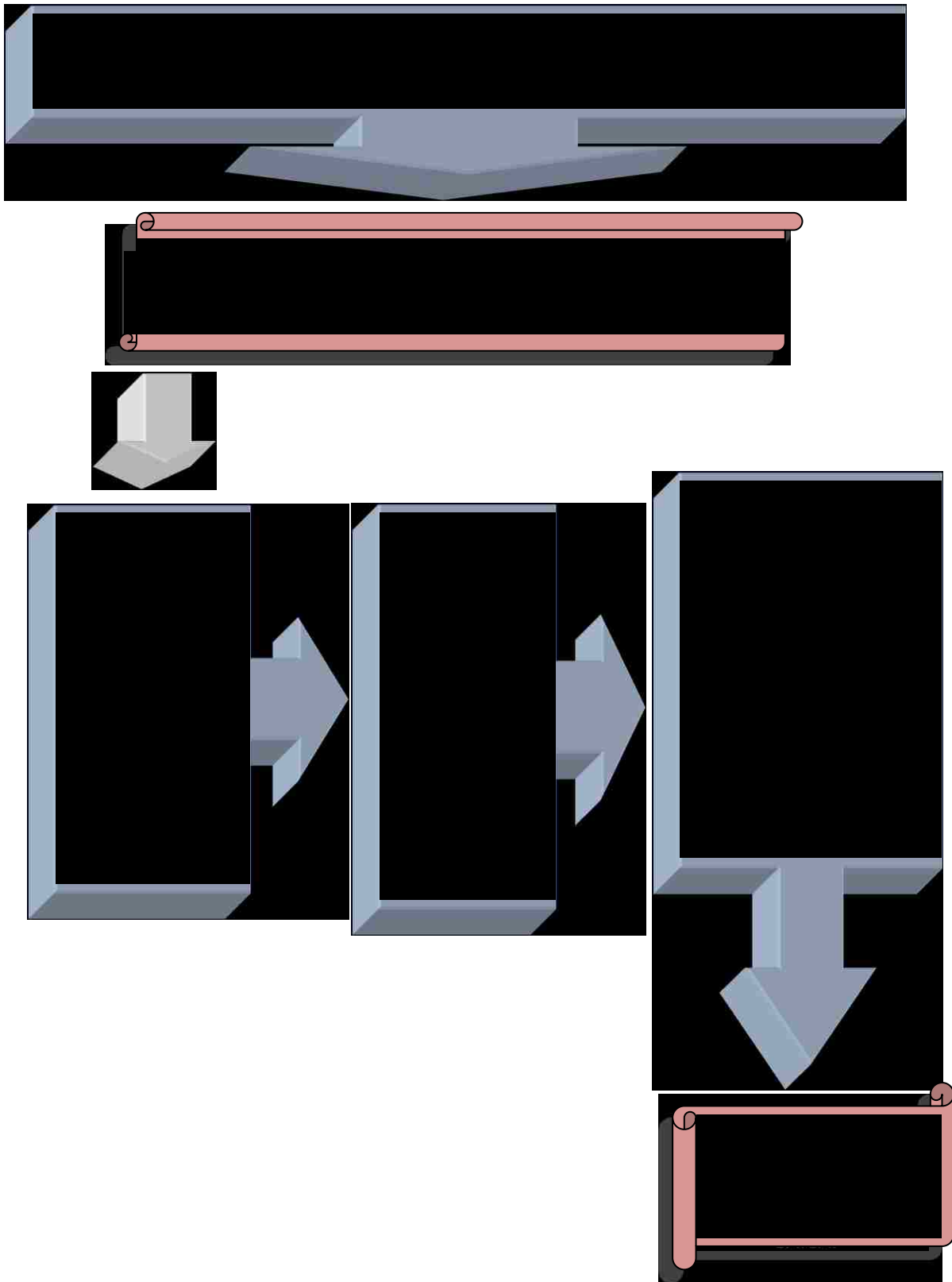
Enrolment figures in higher education continue to grow each year. Residential universities are forced to limit their enrolments since they have restricted places for students in their classrooms. In most cases this means that students who are

refused admission to residential universities rely on Unisa for access to higher education. Stemming from the belief that a student can learn without being in the same place as the educator, distance learning appeals to many South African students. Distance education, by its very nature, is not bound to limited classroom sizes and therefore allows for almost unrestricted access. Admission requirements are often less strict than at residential universities and tuition fees are usually lower. As a result, there is increased pressure on Unisa to cater for growing numbers of school-leavers wanting to register at this university whether it is based on financial decisions or being refused access at residential universities. (CHE, 2014c.)

This study focused on Unisa as the largest dedicated distance learning higher education institution in Africa and South Africa through which part-time studies towards becoming a chartered accountant can be undertaken.

A student selecting to study part-time has a choice between two general paths. Diagram 4.2 sets out the **first path** of a student who chooses to study on a part-time basis to become a chartered accountant (SAICA, 2013b).

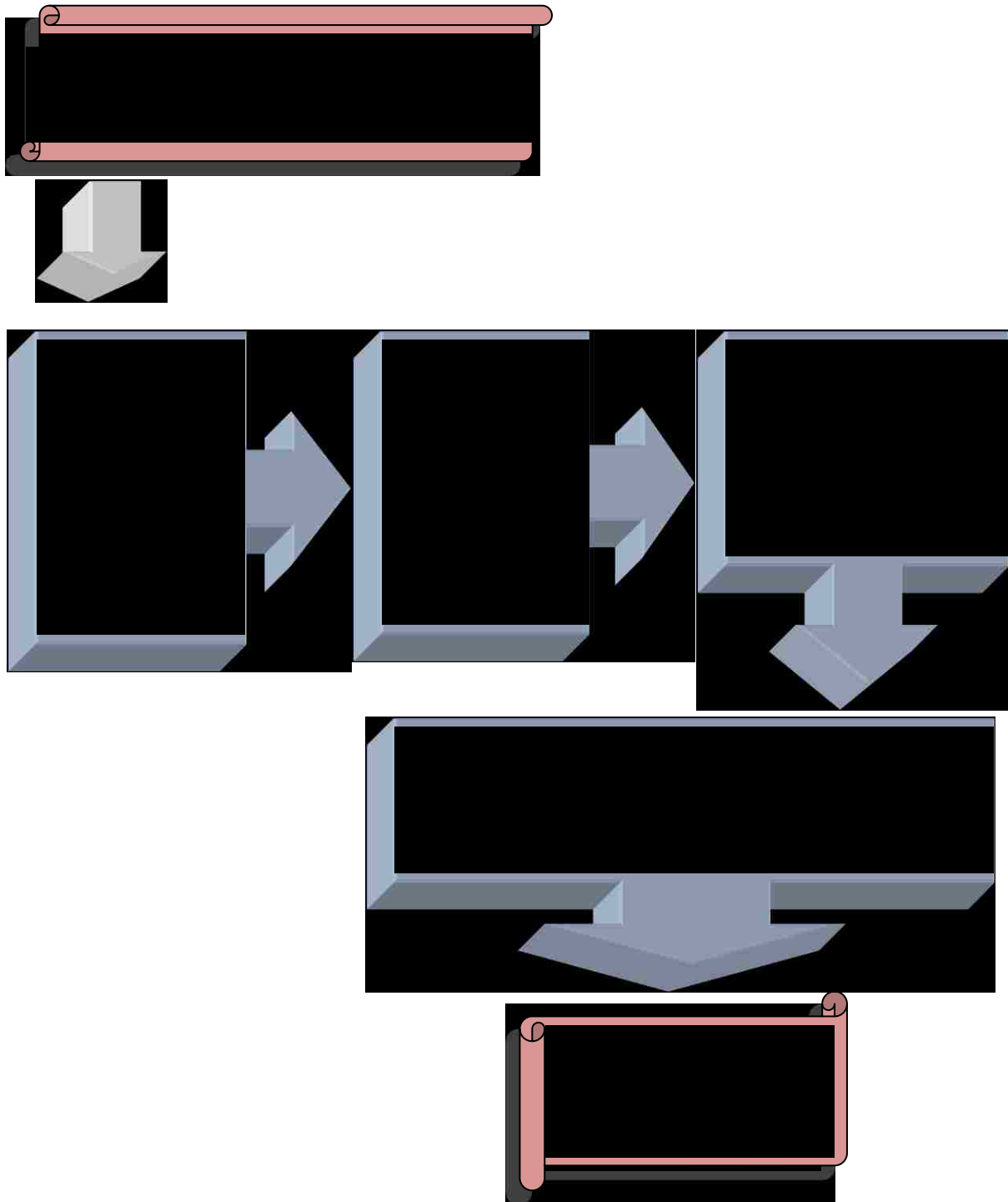
DIAGRAM 4.2: FIRST PATH FOR A PART-TIME STUDENT STUDYING TO BECOME A CHARTERED ACCOUNTANT



Source: SAICA, 2013b – adapted. Refer to section 4.2.5 for new developments

Diagram 4.3 sets out the ***second path*** available to a student who chooses to study on a part-time basis to become a chartered accountant (SAICA, 2013b).

DIAGRAM 4.3: SECOND PATH FOR A PART-TIME STUDENT STUDYING TO BECOME A CHARTERED ACCOUNTANT



Source: SAICA, 2013b – adapted. Refer to section 4.2.5 for new developments

From diagram 4.2 it is evident that students choosing to study towards becoming a chartered accountant on a part-time basis are allowed to enter into a five-year training contract with a registered training office to specialise in auditing or an approved training organisation to specialise in financial management immediately. Refer to section 4.2.4 (page 109) for more detail regarding the training requirements. The part-time student in diagram 4.2 must complete the Bachelor of Commerce Accounting degree or equivalent CA(SA) undergraduate qualification as well as the Certificate in the Theory of Accounting or equivalent qualification whilst working at the registered training office (SAICA, 2013b).

As with a full-time chartered accountancy student, the part-time student is eligible to sit for part one of the Qualifying Examination of SAICA after successfully completing the specific Honours Bachelor of Commerce or equivalent degree for the chartered accountancy programme offered by the SAICA accredited university. The part-time student can however progress more quickly; in most cases having by this time successfully completed the 18 months of the training contract required to sit for the second part of the Qualifying Examination of SAICA for the Financial Management route or the Professional Practice Examination of the Independent Regulatory Board for Auditors for the Auditing route (SAICA, 2013b). Refer to section 4.2.5 (page 110) for a discussion on the changes in the part one of the Qualifying Examination of SAICA from 2013 as well as the changes in the second examination.

From diagram 4.3 it can be seen that a student could also successfully complete the Bachelor of Commerce Accounting undergraduate degree or equivalent CA(SA) undergraduate qualification first and only then register at the registered training office or an approved training organisation for a three-year training contract (SAICA, 2013b). The following section provides an overview of the training requirements of full-time as well as part-time chartered accountancy students in South Africa.

4.2.4 Training requirements

As described in sections 4.2.2 (page 101) and 4.2.3 (page 104), both full-time and part-time students have to complete SAICA training requirements; only the timing of the training differs. A part-time student is allowed to immediately commence the

training at the registered training office or an approved training organisation. For a part-time student, this would entail possibly long hours at the registered training office or approved training organisation, along with family responsibilities and the tremendous work-load associated with this qualification (Neophytou, 2014). In addition, students completing their training contract often receive smaller salaries, with additional financial constraints on these students (Neophytou, 2014). All of these obstacles and challenges have to be considered before a student chooses part-time studies.

Part-time trainee accountants (completing their training contracts at a registered training office or approved training organisation) have a responsibility to achieve academic progress. SAICA describes academic progress as the satisfactory completion of the relevant modules and/or subjects required to progress towards the completion of the Certificate in the Theory of Accounting (CTA) or equivalent. It is required of the trainee to progress academically at least one year during any two calendar years (SAICA, 2013b).

It is the responsibility of the training officer (registered training office or approved training organisation) to discuss the requirement of academic progress with the trainee accountant at the commencement of the training contract as well as to monitor all academic progress made by the trainee accountant (SAICA, 2013b).

The duties of the training officer include giving the trainee accountant reasonable opportunities to gain adequate exposure to competencies as prescribed by SAICA to allow the trainee accountant the opportunity to apply his/her knowledge in various situations. Chartered accountants are required to adhere to certain standards of professionalism and ethics and it is the responsibility of the training officer to ensure that the trainee accountant is trained in this area as well (SAICA, 2013b).

4.2.5 Qualifying examinations

During or after completing the above training contract, the student has to successfully complete two examinations. The first is part one of the Qualifying Examination and is written after the successful completion of an Honours Bachelor of

Commerce in Accountancy or equivalent degree at a SAICA accredited university. The second is either part two of the Qualifying Examination for candidates who want to follow the Financial Management route or the Professional Practice Examination for candidates following the Auditing route. The second examination can only be written after completing a minimum of 18 months of the training contract (SAICA, 2013b).

To register with SAICA as a chartered accountant, the student has to successfully complete the training contract and pass both examinations described above (SAICA, 2013b).

As from 2013, the SAICA Initial Test of Competence (ITC) replaced part one of the Qualifying Examination of SAICA as part of a process of aligning the examination with the recently adopted competence framework for chartered accountants. As from 2014, the Assessment of Professional Competence (APC) will be introduced as a replacement of the second examination for either part two of the Qualifying Examination for candidates who want to follow the Financial Management route or the Professional Practice Exam for candidates following the Auditing route. The Assessment of Professional Competence examination will be administered by SAICA (Accountancy SA, 2014). This study therefore does not make reference to these new examinations since the examination that was written during the period 2009 to 2012 was still part one of the SAICA Qualifying Examination and the changes were only effective as from 2013.

The qualification and training route has been described in section 4.2 (page 97) with reference to the accredited universities. This accreditation may only be granted by professional bodies, of which more detail is provided in the following section.

4.3 PROFESSIONAL BODY GOVERNING CHARTERED ACCOUNTANCY STUDIES IN SOUTH AFRICA

Professional bodies often set criteria and requirements that go beyond those of the Higher Education Qualifications Framework and the National Qualifications

Framework that include requirements relating specifically to the occupation for which they are intended (CHE, 2011).

The South African Qualifications Authority has the responsibility of developing and implementing policies and criteria for the recognition of a professional body as well as the actual registration of professional bodies (SAQA, 2013b). For this purpose the South African Qualifications Authority has accredited the Education and Training Quality Assurance Body (ETQA) which is responsible for monitoring and auditing certain standards at accredited Education and Training Quality Assurers such as SAICA (SAQA, 2013b). In the following section, the role of SAICA as an Education and Training Quality Assurer accredited by the South African Qualifications Authority will be explained.

4.3.1 The South African Institute of Chartered Accountants (SAICA)

SAICA is the only professional body accredited by the South African Qualifications Authority that is allowed to accredit programmes designed to lead to a chartered accountant [CA(SA)] qualification. SAICA is an Education and Training Quality Assurer recognised by the South African Qualifications Authority. SAICA also complies with the Higher Education Quality Committee programme accreditation criteria (SAICA, 2014a) and is accredited by the Independent Regulatory Board for Auditors in terms of the *Auditing Professions Act, no. 26 of 2005* (IRBA, 2013).

The responsibility for monitoring and accrediting programmes for chartered accountancy studies in South Africa thus belongs to SAICA (SAICA, 2014a) as an Education and Training Quality Assurer.

4.4 HIGHER EDUCATION INSTITUTIONS THAT OFFER CHARTERED ACCOUNTANCY PROGRAMMES IN SOUTH AFRICA

Chapter 3 listed the post-school education and training institutions in South Africa. Only certain public and private higher education institutions are accredited by SAICA. The following higher education institutions are accredited by SAICA to offer

programmes that are designed to lead to a chartered accountancy qualification (SAICA, 2014b):

- Nelson Mandela Metropolitan University (NMMU) (public higher education institution);
- Monash South Africa (private higher education institution);
- North-West University (NWU) (public higher education institution);
- Rhodes University (RU) (public higher education institution);
- University of Cape Town (UCT) (public higher education institution);
- University of Fort Hare (UFH) (public higher education institution);
- University of Free State (UFS) (public higher education institution);
- University of KwaZulu-Natal (UKZN) (public higher education institution);
- University of Johannesburg (UJ) (public higher education institution);
- University of Pretoria (UP) (public higher education institution);
- Unisa (public higher education institution);
- University of Stellenbosch (SUN) (public higher education institution);
- University of the Western Cape (UWC) (public higher education institution);
- University of the Witwatersrand (WITS) (public higher education institution);
and
- University of Limpopo (UL) (public higher education institution).

Because they have the most significant impact on the total number of chartered accountants delivered in South Africa, four of these universities were selected for the purposes of this study as set out in section 1.8 (page 11).

A brief survey of the chartered accountancy programmes offered at each of these four universities is provided in the following sections as well as an overview of the admission requirements for the chartered accountancy programmes at each of these universities. This information addresses research question 5, dealing with the possible influence of the different admission requirements of these four universities on the accessibility of chartered accountancy programmes in South Africa.

4.4.1 The University of Cape Town

The University of Cape Town is the oldest university in South Africa and was founded in 1829 as a high school for boys named the South African College. In the early stages the college only had a very small higher education facility which only grew into a fully-fledged university during the period 1880 to 1900 (UCT, 2014a).

During the 1920s, the first small group of black students was admitted to the University of Cape Town and by 2004 almost 50% of the University of Cape Town's students were black. Today, the University of Cape Town has a diverse campus with a wide variety of students (UCT, 2014a). In 2012 a total of approximately 25 500 students enrolled at the University of Cape Town (UCT, 2014b).

The University of Cape Town offers the Bachelor of Commerce (chartered accountancy) programme through the College of Accounting that forms part of the Commerce Faculty. A student intending to study towards becoming a chartered accountant has to first enrol specifically for a Bachelor of Commerce degree specialising in Financial Accounting: chartered accountant stream. Entry into the Bachelor of Commerce degree is limited and prospective students who meet the minimum admission requirements are selected based on academic merit (UCT, 2013).

To meet the minimum admission requirements for a Bachelor of Commerce degree offered at the University of Cape Town, a prospective student has to meet the minimum requirements for a Bachelor's degree as set out in section 4.2.1 (page 98) (UCT, 2014c). Over and above these requirements, the admission requirements for the Bachelor of Commerce (chartered accountancy) degree are (UCT, 2014d):

- An Admission Point Score of at least 390;
- A minimum of 60% in Mathematics; and
- At least 50% in English on the National Senior Certificate.

In terms of the University of Cape Town's Admission Point Score, a student is awarded points equal to the percentage obtained for school subjects in preliminary and final examinations. These points are added for the six subjects (excluding Life Orientation but including English and specific subjects required for a particular programme) (UCT, 2014d).

After successfully completing the Bachelor of Commerce degree, specialising in Financial Accounting chartered accountant stream, a student can register for the Postgraduate Diploma in Accounting, which is offered at a National Qualifications Framework level 8. The programme involves full-time study for a period of one year. Students that successfully complete this Diploma in one year (passing all required subjects in the same academic year) will be allowed to write part one of the Qualifying Examination of SAICA (UCT, 2013).

The minimum admission requirements for the Postgraduate Diploma in Accounting are as follows (UCT, 2013):

- Completed courses at another accredited SAICA university deemed equivalent to the courses prescribed for the Bachelor of Commerce degree;
- Excellent academic performance demonstrated by the prospective student as deemed appropriate by the Senate;

- Completed Bachelor of Commerce degree (chartered accountant stream) or other degrees as prescribed by the University of Cape Town with:
 - A minimum mark of 60% in the Business Analysis and Governance subject or equivalent subject as prescribed;
 - At least 55% in Financial Reporting III or equivalent subject as prescribed; and
 - An average mark of at least 55% for Auditing I, Financial Reporting III, Taxation II and Management Accounting II (or equivalent subjects as prescribed).

A student who has failed any of the Postgraduate Diploma in Accounting subjects twice will not be allowed to re-register for this Diploma. After mid-year tests of the Postgraduate Diploma in Accounting, a student who does not have an aggregate of 45% year mark for all the subjects for this Diploma and a 75% attendance of tutorials (classes) may not be considered for further continuance of the Diploma. Adequate performance will thus be imperative and strict attendance registers are kept for tutorials (classes) (UCT, 2013).

Due to a restructuring of National Qualifications Framework requirements, the University of Cape Town have amended their programme from an Honours Bachelor of Commerce degree to a Postgraduate Diploma. Section 4.4.3 (page 119) sets out these changes and the reasons for the restructuring.

4.4.2 The University of Johannesburg

Situated in the financial business centre of South Africa, the University of Johannesburg is in a prime position to make a major contribution to the economy of not only the Gauteng province but also of South Africa as a whole (UJ, 2013a).

The Department of Accountancy, which forms part of the Faculty of Economic and Financial Sciences, is focused on the training of prospective chartered accountants.

A student intending to study towards becoming a chartered accountant enrolls for a Bachelor of Accounting degree offered through the Department of Accountancy. This degree is only offered on a full-time basis. (UJ, 2013b.)

In order to meet the minimum admission requirements for a Bachelor of Commerce degree offered at the University of Johannesburg, a prospective student should have obtained a National Senior Certificate which states that the student has met the minimum requirements for a Bachelor's degree (section 4.2.1, page 98). Over and above these requirements, the admission requirements for the Bachelor of Accounting degree are an Admission Point Score of 35 as well as a minimum score of 5 (at least 60%) for Mathematics (UJ, 2013b). In terms of the University of Johannesburg's Admission Point Score, a student is awarded certain points for the percentages obtained for school subjects completed in grade 11 or grade 12. Table 4.1 below is given as a guideline for students who obtained a National Senior Certificate (UJ, 2013c):

TABLE 4.1: UNIVERSITY OF JOHANNESBURG'S ADMISSION POINT SCORE

Admission Point Score	National Senior Certificate Percentage
7	80% - 100%
6	70% - 79%
5	60% - 69%
4	50% - 59%
3	40% - 49%
2	30% - 39%
1	0% - 29%

Source: UJ, 2013c – adapted.

The curriculum of the Bachelor of Accounting degree and the successful completion thereof allows for admission to the Bachelor of Commerce Honours (Accounting with specialisation in chartered accountancy) degree (UJ, 2013b).

The entry requirements to the Bachelor of Commerce Honours (Accounting with specialisation in chartered accountancy) is subject to capacity of the facilities as the degree is only offered on a full-time basis and limited places are available. As part of the minimum admission requirements, the student should have successfully completed the Bachelor of Accounting degree (as offered by the University of Johannesburg) or courses at another accredited SAICA university that are deemed equivalent to the courses prescribed for the Bachelor of Accounting degree (UJ, 2013d).

Apart from obtaining a sub-minimum of 55% for Financial Accounting in the final year of studies, the student should have obtained the following average for the four major subjects in the final year of the Bachelor of Accounting (or equivalent) degree (UJ, 2013d):

- For Unisa students and students from Natal Distance an average of 75%;
- For students from any other SAICA accredited university an average of 60%;
and

- For students from the University of Johannesburg an average of 55%.

All four the subjects of the Bachelor of Commerce Honours (Accounting with specialisation in chartered accountancy) must be passed in the same year (UJ, 2013d).

4.4.3 The University of South Africa (Unisa)

Unisa was founded in 1873. At inception it was known as the University of the Cape of Good Hope. In 1946, this university became the first public university internationally that taught exclusively through distance education. This university was possibly the only university in South Africa that throughout the years, and even the apartheid era, continued to provide persons from all races, colour and social standing with access to higher education (Unisa, 2014a). Unisa is currently the largest and longest standing open distance learning institution on the continent of Africa. Almost one third of all enrolments in South Africa are students enrolling at this university. (Unisa, 2014a.)

Professor Makhanya, the Vice-Chancellor of Unisa, explains that students who enrol at Unisa for the first time in many instances are transferring from a residential university. He states that these students are often used to face-to-face contact with teachers, fellow students and lecturers. He further explains that studying through Unisa requires a student to study independently with minimal face-to-face contact with lecturers and fellow students. (Unisa, 2011a.)

In 2010, part-time students enrolled at Unisa represented the majority of the student body (86.8%). This corresponds with the 86.7% of graduates at Unisa in 2010 that were part-time students. Black African students represented 66.6% of Unisa students in 2010. In the 2010 academic year the majority of enrolled students of Unisa (55.7%) fell in the 25-39-year age category whilst only 26.3% fell in the age category 24 and younger. (Department of Institutional Statistics and Analysis, 2012.)

In general, Unisa students often face many challenges. As can be seen above, the majority of the student body is made up of part-time students. These students often

work long hours and are then faced with tremendous workloads in terms of studies after hours and over weekends. Apart from hard work, making many sacrifices and having a lot of discipline and determination, a Unisa student should be able to self-motivate and be an independent self-starter (Unisa, 2012). As the majority of Unisa students are over the age of 25, many of them have spouses and children to consider as well, putting even more pressure on them. For a Unisa student who wants to follow a career in chartered accountancy on a part-time basis, the obstacles are often even greater. When a student selects Unisa as the public higher education institution of choice, admission to Unisa is dependent on meeting the minimum admission requirements for a chosen qualification as well as any additional requirements such as general, college-specific and/or qualification-specific requirements (Unisa, 2013a).

Diagram 4.4 below sets out the qualifications a student has to enrol for at Unisa in order to become a chartered accountant. As there were some changes in the qualification names, codes and National Qualifications Framework exit levels, it is best explained through Diagram 4.4:

DIAGRAM 4.4: QUALIFICATIONS A UNISA STUDENT HAS TO ENROL FOR TO BECOME A CHARTERED ACCOUNTANT

Prior to the 2012 (i.e. up to 2011) academic year:



As from the 2012 academic year:



Source: Unisa, 2011b – adapted.

The reasons for the changes made in these qualifications are as follows:

- Unisa had to revise all its qualifications in the light of the Higher Education Qualifications Framework that was implemented in 2007, leading to changes in certain qualifications, the phasing out of others and the introduction of certain new qualifications (Unisa, 2011b). Refer to Chapter 3 for an overview of the Higher Education Qualifications Framework.
- The *National Qualifications Framework Act 67, no. of 2008* (South Africa, 2009), brought about several changes to National Qualifications Framework levels. In terms of this new Act, honours degree qualifications at a National Qualifications Framework level 8 require an extensive research component (Unisa, 2011c). According to the Higher Education Qualifications Framework, an Honours Bachelor Degree programme has to include at least 30 credits relating to conducting and reporting research under supervision (Department

of Education, 2007). Due to the vast volume of work a postgraduate student has to cover in terms of the SAICA syllabus, the qualification did not have room for an extensive research component (Unisa, 2011c). The School of Accounting Sciences therefore took the decision to change the Honours Bachelor Degree to a Postgraduate Diploma as the *National Qualifications Framework Act, no. 67 of 2008*, provides for a postgraduate diploma at a level 8 where a student can obtain advanced knowledge in their field without the requirement of extensive research (Department of Education, 2007). It also allows for similar progression in the National Qualifications Framework to the honours degree (Unisa, 2011c). Chapter 3 discusses the National Qualifications Framework level changes.

A student studying towards becoming a chartered accountant firstly has to enrol specifically for a Bachelor of Accounting Sciences in Financial Accounting degree (replacing the Bachelor of Accounting Sciences degree as from 2012). To meet the minimum admission requirements for a Bachelor of Commerce degree offered at Unisa, a prospective student should have obtained a National Senior Certificate which states that the student has met the minimum requirements for a Bachelor's degree (section 4.2.1, page 98). Over and above these requirements, the minimum requirements set by Unisa for the Bachelor of Accounting Sciences in Financial Accounting are (Unisa, 2013b; Unisa, 2014b):

- A National Senior Certificate with at least 60% in the language of teaching and learning with at least 60% in Mathematics or 80% in Mathematical Literacy; or
- A Senior Certificate with matriculation exemption with at least 60% in the language of teaching and learning and at least 60% in Mathematics or 80% in Mathematical Literacy; or
- A National Certificate (Vocational) level 4 with at least 70% in the language of teaching and learning and at least 60% in Mathematics or 80% in Mathematical Literacy; or
- A Higher Certificate in Accounting Sciences or Economic and Management Sciences; or

- A Diploma in Accounting Sciences or equivalent.

The Bachelor of Accounting Sciences in Financial Accounting degree requires 360 credits. This is equivalent to 3,600 notional hours (time it is conceived it would take an average student to meet the broad learning achievements and outcomes of this qualification). At Unisa, a student is allowed a maximum of 8 years to complete a 360 credit degree (3-year degree) (Unisa, 2013a). The National Qualifications Framework exit level for this qualification is level 7. (Unisa, 2013c.)

Prior to the 2012 academic year, the Unisa Honours Bachelor of Accounting Sciences degree had to be obtained by students after successfully completing the Bachelor of Accounting Sciences in Financial Accounting degree. To obtain the Certificate in the Theory of Accounting, the student had to successfully complete (obtain a pass rate of at least 50%) all the related subjects of the Honours Bachelor of Accounting Sciences degree in the same academic year (which includes the supplementary examination).

As from 2012, students that successfully completed their Bachelor of Accounting Sciences in Financial Accounting degree have to enrol firstly for a Postgraduate Diploma in Accounting Sciences. This is considered the CTA level 1 qualification. The admission requirement for this Postgraduate Diploma is a SAICA accredited Bachelor's degree which is not older than three years. (Unisa, 2013d.) This Postgraduate Diploma in Accounting Sciences requires 120 credits (5-year modules of 24 credits each), which is the equivalent of 1200 notional hours and the National Qualifications Framework exit level is 8 (Unisa, 2011c).

After successfully passing all 5-year modules of the Postgraduate Diploma in Accounting Sciences (CTA level 1) in the same academic year (including the supplementary examination), the student can enrol for the Postgraduate Diploma in Applied Accounting Sciences. This qualification is also referred to as CTA level 2. To obtain this qualification (and successfully obtaining the CTA required by SAICA), the student has to pass (obtain at least 50%) all the year modules in the same academic year (including the supplementary examination). The admission requirements for the

Postgraduate Diploma in Applied Accounting Sciences (CTA level 2) are the Postgraduate Diploma in Accounting Sciences which is based on the SAICA-accredited syllabus of CTA level 1. This qualification should not be older than 3 years and all the modules related to the Postgraduate Diploma in Accounting Sciences (CTA level 1) should have been passed in the same academic year (including the supplementary) (Unisa, 2013d).

The main purpose of the Postgraduate Diploma in Applied Accounting Sciences is to certify a student as being competent in the theory of Accountancy, which allows the student to qualify to write part one of the qualifying examination of SAICA. The Postgraduate Diploma in Applied Accounting Sciences requires 120 credits, consisting of 5-year modules of 24 credits each, and the National Qualifications Framework exit level is 8 (Unisa, 2011c).

4.4.4 The University of the Witwatersrand

The University of the Witwatersrand finds its origins in the South African School of Mines, established in 1896. The South African School of Mines transferred from Kimberley to Johannesburg in 1904 as the Transvaal Technical Institute. In 1906 it became the Transvaal University College and in 1910 it was renamed the South African School of Mines and Technology. It was granted full university status in 1922 as the University of the Witwatersrand (WITS, 2014a).

The School of Accountancy forms part of the Faculty of Commerce, Law and Management of the University of the Witwatersrand. The school takes pride in the fact that the University of the Witwatersrand is one of the universities in South Africa that produces many of the top performers in both the SAICA Qualifying Examinations as well as the Independent Regulatory Board of Auditors' examination (WITS, 2013a).

Students studying through the School of Accountancy study on a full-time basis with frequent contact between students and lecturers. In addition, students are also exposed to tutorials in the form of interactive small groups where students can apply

the theory as discussed in the lectures in practical question scenarios. (WITS, 2013a.)

For students aspiring to become a registered chartered accountant, the Bachelor of Accounting Science (BAccSci) degree should be enrolled for when the student chooses to study through the University of the Witwatersrand. This is a three-year degree with limited enrolments (WITS, 2013b). This qualification meets the requirements of SAICA, the Independent Regulatory Board for Auditors and the International Federation of Accountants (WITS, 2014b).

In order to meet the minimum admission requirements for a Bachelor of Commerce degree offered at the University of the Witwatersrand, a prospective student should have obtained a National Senior Certificate which states that the student has met the minimum requirements for a Bachelor's degree (section 4.2.1, page 98). Over and above these requirements, the admission requirements for the Bachelor of Accounting Science degree are an Admission Point Score of 42 as well as a minimum score of 5 (at least 60%) for Mathematics and English (or other first language) (WITS, 2014c). In terms of the University of Witwatersrand's Admission Point Score, a student is awarded certain points for the percentages obtained for school subjects completed in grade 11 or grade 12. Table 4.2 below is given as a guideline for students who obtained a National Senior Certificate (WITS, 2012):

TABLE 4.2: UNIVERSITY OF THE WITWATERSRAND'S ADMISSION POINT SCORE

Admission Point Score	National Senior Certificate Percentage
7	80% - 99%
6	70% - 79%
5	60% - 69%
4	50% - 59%
3	40% - 49%
0	30% - 39%
0	0% - 29%

Source: WITS, 2012 – adapted.

Upon successful completion of the undergraduate Bachelor of Accounting Science degree, the student can either enrol for the Higher Diploma in Accountancy (HDipAcc) or for the Bachelor of Commerce (Honours) in Accounting which are both one-year postgraduate programmes (WITS, 2014b).

The minimum admission requirements for the Higher Diploma in Accountancy are as follows (WITS, 2013c):

- The student has to successfully pass Financial Accounting III, Auditing III, Management Accounting III and Taxation III of the final year of the Bachelor of Accounting Science in the same academic year through the University of the Witwatersrand if he/she intends to enrol for the Higher Diploma in Accountancy in the following academic year.
- Students who successfully completed the Bachelor of Commerce in Accounting through the University of the Witwatersrand and have passed Accounting III, Auditing III, Management Accounting III, Finance III and Taxation III in the same academic year can enrol for the Higher Diploma in Accountancy in the following year as well. These students will however be required to write and successfully pass an admission examination in the subject Financial Accounting III. Only the

students who pass this admission examination will be allowed to apply for the Higher Diploma in Accountancy.

- Students who have studied through the University of the Witwatersrand and have not met the admission requirements and have not passed Financial Accounting III, Auditing III, Management Accounting III, Finance III and Taxation III in the same academic year will be required to write the admission examination in the subjects that they have not completed before being allowed to apply for the Higher Diploma in Accountancy in the following year.
- All other students from the SAICA accredited universities other than the University of the Witwatersrand will have to successfully complete the admission examination in Financial Accounting III, Auditing III, Management Accounting III, Finance III and Taxation III. Only after passing the admission examination in these subjects will the student be allowed to apply for the Higher Diploma in Accountancy.

The Bachelor of Commerce (Honours) in Accounting, offered from the 2012 academic year, will allow students to pursue a Masters qualification. The minimum admission requirements for the Bachelor of Commerce (Honours) in Accounting are as follows (WITS, 2013d):

- The student needs an average of 60% in the Bachelor of Commerce degree with at least 65% for the subject in which he/she plans to conduct research.

4.4.5 A summary of the admission requirements of the four universities in terms of chartered accountancy programmes offered

Table 4.3 sets out a summary of the minimum admission requirements of the four universities selected for the purposes of this study in terms of their Bachelor's degree (or equivalent) qualifications for chartered accountancy programmes offered. This table sets out the requirements over and above the minimum admission requirements for a Bachelor's degree as provided in section 4.2.1 (page 98). This summary is based on the detailed admission requirements of these four universities

as set out in section 4.4.1 (page 114), section 4.4.2 (page 116), section 4.4.3 (page 119) and section 4.4.4 (page 124).

TABLE 4.3: SUMMARY OF MINIMUM ADMISSION REQUIREMENTS TO UNDERGRADUATE CHARTERED ACCOUNTANCY STUDIES

	University of Cape Town	University of Johannesburg	Unisa	University of Witwatersrand
Minimum additional requirements for a Bachelor of Commerce in Accounting or equivalent degree (chartered accountancy route)	Admission Point Score of at least 390 (equivalent to 39 when compared to the other universities); a minimum of 60% in Mathematics and at least 50% in English or other home language on the National Senior Certificate.	Admission Point Score of 35 and Mathematics at minimum of 60%.	English or other home language of at least 60%; Mathematics with at least 60% or Mathematical Literacy with at least 80%.	Admission Point Score of at least 42; a minimum of 60% in Mathematics and at least 60% in English or other home language on the National Senior Certificate.

Source: UCT, 2014c; UCT, 2014d; Unisa, 2014b; WITS, 2014c.

From table 4.3 it would seem that the minimum requirement for Mathematics is that of the University of Cape Town with 50% minimum required whereas the other three universities all require at least 60%. Unisa however also allows for 80% in Mathematical Literacy, which the other three universities do not specifically refer to. It would seem that Unisa does not require an additional Admission Point Score and on this basis it would seem that Unisa has the least strict admission requirements of the four universities.

From table 4.3 it would seem that the University of the Witwatersrand has the strictest minimum admission requirements based on the fact that they require an Admission Point Score of at least 42 as well as a minimum of 60% for English (or other first language) and Mathematics.

From table 4.3 it is evident that the minimum admission requirements set by the four universities selected for this study are much stricter than the minimum admission

requirements for a Bachelor's degree in South Africa in general (refer to section 4.2.1, page 98). As mentioned in section 4.2.1 (page 98), the intellectual demands of a Bachelor's degree are fairly high and this is even more so for chartered accountancy programmes. The minimum admission requirements for a Bachelor's degree are therefore fairly stringent (South Africa. Department of Education, 2008) and as can be seen from table 4.3, the minimum admission requirements for chartered accountancy programmes at the four universities are even more stringent. This keeps the quality of chartered accountancy programmes offered in South Africa at a very high level but also has an impact on the overall accessibility of these programmes to students in South Africa.

4.5 CONCLUSION

South African students face numerous challenges; even more so, students wanting to become chartered accountants in South Africa. These students have to be dedicated and hard-working as well as able to adapt to the changes in the South African higher education landscape.

Chapter 4 has provided background information on higher education in South Africa specific to chartered accountancy programmes. The four universities selected for this study were introduced in terms of the chartered accountancy programmes that they offer as well as their varying admission requirements specific to this programme. From Chapter 4 it is evident that Unisa has the least strict admission requirements in terms of Bachelor degree qualifications for chartered accountancy programmes. Furthermore, it is clear that this university has a vital role to play in the overall accessibility of higher education as well as the accessibility of chartered accountancy programmes in South Africa. As is evident from table 4.3 (page 128), the access to chartered accountancy programmes is quite steep compared to a general Bachelor's degree, with mathematics being a crucial subject in order to meet admission requirements.

However, in *the Global Information Technology Report 2013*, released by the World Economic Forum, South Africa is ranked second last in the world in terms of Mathematics and Science education, with the quality of the South African education

system being ranked 140 out of 144 countries reviewed (WEF, 2013b). This is worrying, taking into account that Mathematics is crucial in terms of access to chartered accountancy programmes in South Africa. Urgent interventions will be necessary in order to ensure that students with the potential of becoming chartered accountants are not failed by a poor education system.

In Chapter 5, an overview is provided of the research philosophy and the approach taken in this study. The chapter will also provide information on the research design and the methodology that was used in measuring the accessibility of higher education in South Africa as well as the measurement thereof specifically relating to chartered accountancy programmes in South Africa.

CHAPTER 5

RESEARCH PHILOSOPHY, APPROACH, DESIGN AND METHODOLOGY

5.1 INTRODUCTION

Through an overview of how accessibility of higher education is defined and measured in certain studies, Chapter 2 identified possible indicators that could be used to measure the accessibility of higher education and perform subsequent rankings based on the results. Through a review of these and other studies, Chapter 2 also identified and described various possible methods that could be used to measure each of the possible accessibility indicators.

Chapter 3 described the current higher education system in South Africa, and considered the influence of past injustices brought about by apartheid, and of the governing bodies and legislation on the accessibility of higher education in South Africa. Chapter 4 built on Chapter 3 by investigating the possible influence of minimum admission criteria set by public universities and governing bodies on the accessibility of chartered accountancy programmes in South Africa. Both these chapters provided valuable information on the challenges affecting the accessibility of higher education in South Africa.

It is necessary at this juncture to discuss how this study measured the accessibility of higher education in South Africa and of South African accountancy programmes with special emphasis on chartered accountancy programmes and how these indicators and methods were used and/or adjusted for the purposes of this study, taking into account the challenges faced by South African students in particular.

This chapter provides an overview of the research philosophy and the approach taken in this study. It also presents information on the research design and the methodology used in measuring the accessibility of higher education in South Africa generally and of accountancy programmes with special emphasis on chartered accountancy programmes in South Africa.

5.2 RESEARCH PHILOSOPHY AND APPROACH

The proposed research philosophy and the approach that was taken in this study are explained further in this section.

5.2.1 Research philosophy

Saunders, *et al.* (2007) explain that the term research philosophy is used to define the assumptions relating to the way in which the world is viewed by the researcher. The assumptions adopted in the research philosophy lay the foundation for the research methodology. The natural scientist, as the authors explain, is most comfortable when facts and figures are obtained and analysed as they exist independently from the researcher. The natural scientist therefore views these facts and figures as objective and free from bias.

In this study, facts and figures obtained to support the measurement of accessibility indicators of higher education are considered to be objective and independent from the researcher. Consequently, the philosophical stance of the natural scientist is adopted and the positivist research philosophy is reflected in this study (Saunders, *et al.*, 2007). The positivist prefers law-like generalisations and facts as opposed to impressions. The positivist is likely to make use of methodology that is highly structured and that can be replicated by others (Saunders, *et al.*, 2007). The highly structured methodology relating to the accessibility of higher education as discussed in Chapter 2 facilitates replication. This is also applicable in relation to the methodology used in this study, allowing other researchers to replicate the study or use the methodology for similar studies.

The principles of positivism, as adopted in this study, therefore form the overarching philosophy for the research approach, design and methodology. With this theoretical stance in mind, the following section provides a brief overview of the research approach followed in this study.

5.2.2 Research approach

According to Saunders, *et al.* (2007), the positivist is most likely to follow a deductive research approach. The following are some of the main characteristics of deductive research these authors identify:

- The researcher is likely to make use of a very structured research methodology to enable others to replicate the research.
 - In this study, a structured methodology based on the literature review was used to lay the foundation for measuring accessibility of higher education in South Africa and specifically relating to accountancy programmes at the four universities selected for this study with special emphasis on chartered accountancy studies.
- The researcher should be seen as independent from the research.
 - The methodology implemented facilitates the collection of facts, figures and other forms of data to be analysed independently from the researcher and can therefore be seen as objective and free from bias. Specific indicators and methods of measuring these indicators in terms of accessibility of higher education, as set out in Chapter 2, were used extensively as guidance in this study. Facts, figures and other forms of data were collected in order to populate the indicators for accessibility and were then analysed in a systematic manner to draw certain conclusions. The researcher can therefore be seen as independent from the research as the facts, figures and data obtained exist independently from the researcher.
- Concepts should be operationalised to allow facts, figures and data collected to be measured quantitatively.
 - In this study, the concept of accessibility of higher education as understood by other researchers was explained in Chapter 2 and the measurement thereof for South Africa and specifically for accountancy programmes with special emphasis on chartered accountancy programmes in South Africa was done quantitatively. The principle of reductionism was followed, where the concepts of accessibility were

broken down into smaller elements as the various indicators used to measure these concepts.

- Conclusions reached should be generalisable.
 - To select samples of satisfactory sizes, this study focused on four SAICA accredited universities. These four universities were selected on the basis of examination statistics relating to part one of the SAICA Qualifying Examination (section 1.8, page 11). The four chosen universities have the most significant impact on the total number of chartered accountants in South Africa as they represent the highest percentage of total passes in part one of the SAICA Qualifying Examination for the period 2009 to 2012. Due to the major role these four SAICA accredited universities play in the chartered accountancy profession in South Africa, the conclusions drawn on the accessibility at these four universities are considered to be generalisable.

The research approach followed in this study therefore essentially bears evidence of characteristics of the deductive approach as explained above.

The following section provides an outline of the research design that was followed in this study. It details the accessibility of higher education indicators as well as the method(s) by means of which each of these indicators was measured.

5.3 RESEARCH DESIGN

In section 1.3 (page 6) the problem statement was clearly defined, stating that accessibility indicators are regularly measured on a high level in South Africa and internationally, but that these indicators are not measured for a specific profession such as the accountancy profession or the chartered accountancy profession. The measurement of accessibility indicators and the subsequent rankings based on the results could enable the institutions that offer accountancy and chartered accountancy programmes to evaluate their accessibility to these programmes and could allow improvements to be made where problems exist. This could also possibly assist in contending with the severe shortage of accountants and specifically chartered accountants in South Africa.

In order to address this problem statement, this study attempted to measure accessibility of higher education for South Africa as a whole as well as specifically relating to accountancy programmes with special emphasis on chartered accountancy studies in South Africa. Subsequent rankings of the four public universities selected for this study were performed based on the results of the measurements where possible in order to draw conclusions on their overall accessibility in terms of the accountancy and chartered accountancy programmes that they offer.

To determine the accessibility of higher education in South Africa and in particular for accountancy and chartered accountancy studies at the four selected South African public universities, quantitative facts, figures and data were obtained to populate certain indicators of accessibility. Chapter 2 concluded that in order to measure the accessibility of higher education, there are mainly four possible indicators. These indicators are set out in figure 5.1 below.

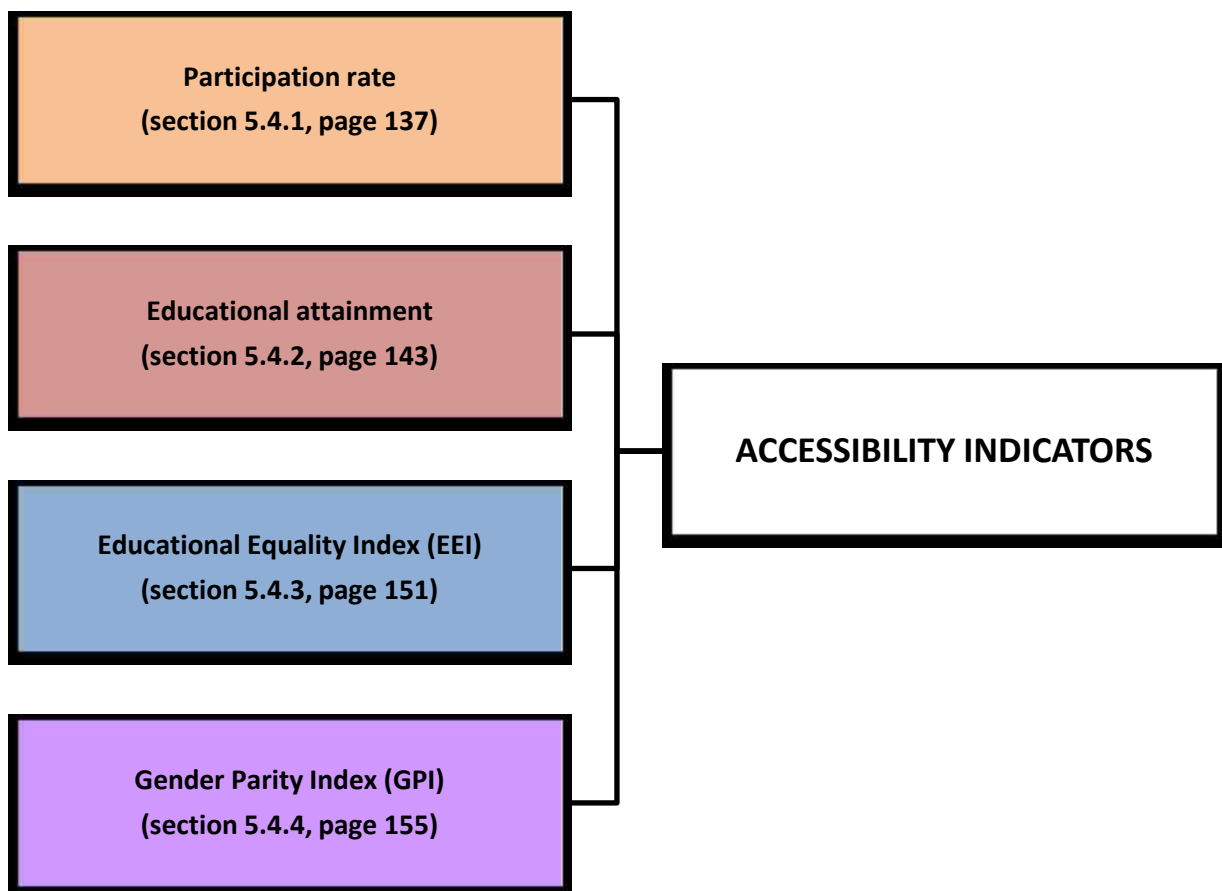


Figure 5.1: Indicators for measuring accessibility of higher education

In order to measure the indicators as set out in figure 5.1, the researcher made use of secondary data. According to Hofstee (2006), secondary data is based on primary data that was created by another person but that is relevant to the study that you are performing. Saunders, *et al.* (2007) further explain that secondary data can consist of raw data as well as any published summaries. For the purposes of this study, the facts, figures and data were collected from a variety of secondary resources such as enrolment and graduation figures obtained from the Department of Higher Education and Training and population statistics from Statistics South Africa.

5.4 METHODOLOGY FOR MEASURING THE ACCESSIBILITY INDICATORS

In order to measure the accessibility of higher education indicators as set out in figure 5.1 (page 135), a similar approach was followed for each of the indicators. The measurement of the four above-mentioned accessibility indicators were all performed on the following **three levels**:

- **Level one:** for public higher education in South Africa (based on the 23 public universities in South Africa combined).
- **Level two:** for each of the four public universities (selected for this study) on an overall basis. These universities include (based on the selection criteria as set out in section 1.8, page 11):
 - The University of Cape Town;
 - The University of Johannesburg;
 - Unisa;
 - The University of the Witwatersrand.
- **Level three:** for accountancy programmes offered at each of the four public universities selected for purposes of this study and mentioned for **level two** above, with special emphasis on chartered accountancy programmes.

The academic years 2009 to 2012 were selected to establish possible improvements in accessibility indicators or worsening trends over this period. Only measuring the accessibility indicators for one academic year merely provides a snapshot and does not establish trends or facilitate comparisons.

Chapter 2 concluded that there are various possible methods of measuring each of the accessibility indicators set out in figure 5.1 (page 135). The following sections discuss the method(s) that were used in this study for measuring each of the accessibility of higher education indicators as well as the sources from which the facts, figures and data were derived. The methods that were used to measure these indicators are explained for each of the three levels as described above.

In section 5.4.1 the first indicator, participation rate, is discussed.

5.4.1 Participation rate

Chapter 2 provided a literature review of the concept of participation rate and provided the various possible methods that could be used in order to measure participation rate. Figure 5.2 below (as obtained from figure 2.3, page 44) sets out the possible methods which can be used to measure participation rate as described in detail in Chapter 2.

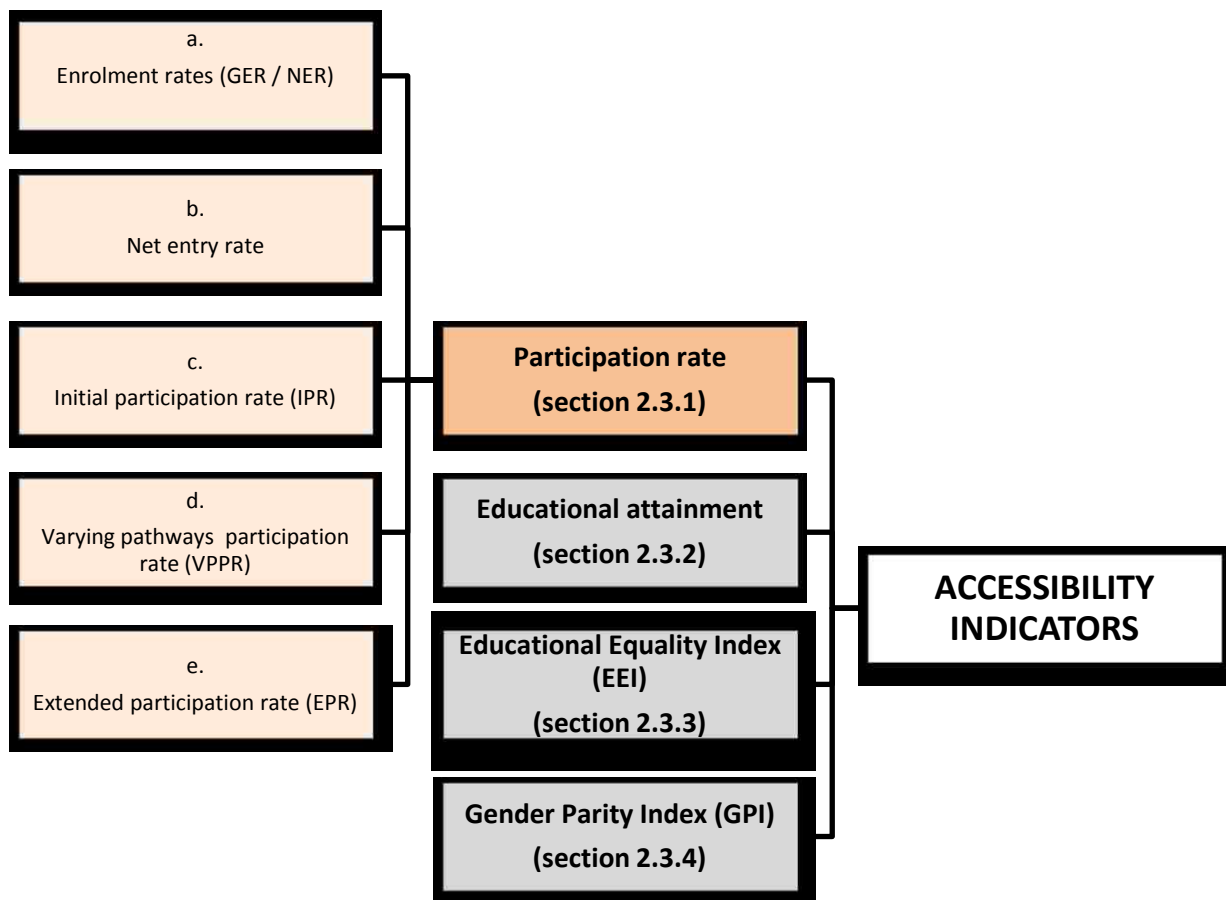


Figure 5.2: Methods for measuring participation rate

Steyn (no date) used five methods (presented in figure 5.2, page 137) to measure participation rate. The following factors were considered in the selection of the methods used for measuring participation rate in this study:

a *Enrolment rates:*

The Gross Enrolment Rate and the Net Enrolment Rate are considered to be the best-known (Steyn, no date) and most widely used in South Africa and by international organisations. Steyn (no date) explains that in South Africa, the Gross Enrolment Rate indicator was, up to the point of his study, the only indicator used to measure participation in higher education. The Gross Enrolment Rate was used to set targets by the National Plan for Higher Education (Ministry of Education, 2001) and the White Paper for Post-School Education and Training (DHET, 2013a). This study thus measured the participation rate for ***levels one, two and three*** by making use of the Gross Enrolment Rate and the Net Enrolment Rate.

b *Net entry rate:*

This method requires extensive data for a synthetic cohort study and numerous factors such as students dropping out early after enrolment or students only registering for one or two subjects could significantly influence the net entry rate (Steyn, no date). This method is not as widely used as the Gross Enrolment Rate or Net Enrolment Rate and due to the unavailability of extensive cohort data this study did not measure the net entry rate.

c *Initial participation rate:*

This method requires detailed information on the number of full-time undergraduate students. Steyn (no date) explains that this method poses a problem: it is often difficult to distinguish exactly which students are full-time and which students are part-time. Due to the unavailability of detailed information on the exact number of full-time versus part-time students this method was not used in this study.

d *Varying pathways participation rate:*

Steyn (no date) explains in his study that this is not a widely-used method for calculating participation rate; it was therefore not calculated for the purposes of this study.

e Extended participation rate:

This method is also not widely used (Steyn, no date) and was therefore not used for the purposes of this study.

It follows from the above that only the enrolment rates (Gross Enrolment Rate and Net Enrolment Rate) were used to measure participation rate in this study as they are considered to be the most widely used.

The Gross Enrolment Rate and Net Enrolment Rate have been defined in Chapter 2 with a specific method of calculation. The method of calculation for the purposes of **level one** of this study, where the Gross Enrolment Rate and the Net Enrolment Rate were measured for the 23 public universities in South Africa combined, was done on the same basis.

The definitions and calculation methods for Gross Enrolment Rate and Net Enrolment Rate were however adjusted slightly for **levels two and three**. This is due to the fact that the Gross Enrolment Rate and Net Enrolment Rate were calculated on a more detailed level in order to draw comparisons between the four universities selected for the purposes of this study as a whole as well as for programmes leading to an accountancy qualification or a chartered accountancy qualification at these four public universities. These four universities were thus ranked in terms of their Gross Enrolment Rate and Net Enrolment Rate scores in order to draw conclusions on which university has the highest rate of participation as a whole and in terms of accountancy studies with special emphasis on chartered accountancy studies.

For the calculation of the Gross Enrolment Rate the 5-year age group selected is the 20-24-year age group as it is used by the Council on Higher Education in South Africa (CHE, 2013a) as well as the Department of Higher Education and Training (Ministry of Education, 2001).

For the calculation of the Net Enrolment Rate the 5-year age group was based on the age group with the highest rate of participation. The average age of the student body in South African universities differs between institutions. In the 2010 academic year the majority of Unisa students (55.7%) enrolled, fell in the 25-39-year age category whilst only 26.3% fell in the age category 24 and younger (Department of

Institutional Statistics and Analysis, 2012). It is for this reason that Net Enrolment Rate was calculated using the age group with the highest rate of participation. The statistics available in South Africa is for five-year age groups and therefore the five-year age group with the highest rate of participation was used in this study.

For **levels two and three**, the four universities were ranked for each level in terms of their scores for Gross Enrolment Rates and their Net Enrolment Rates.

Table 5.1 indicates how the measurement of Gross Enrolment Rate was done for **levels one, two and three** whilst table 5.2 sets out the measurement of the Net Enrolment Rate. These tables also provide the data sources from which the facts, figures and date would be derived.

TABLE 5.1: MEASUREMENT OF GROSS ENROLMENT RATE FOR LEVELS ONE, TWO AND THREE

INDICATOR: <i>PARTICIPATION RATE</i>	Level one Calculated for public higher education in South Africa (based on the 23 public universities in South Africa combined)	Level two Calculated for each of the four selected public universities in total	Level three Calculated for each of the four selected public universities based on accountancy programmes with special emphasis on chartered accountancy programmes at these universities
Gross Enrolment Rate (GER)	$\text{GER} = \frac{\text{Total number of headcount enrolments}^1 \text{ at the 23 public universities in SA}}{\text{Population size}^2 \text{ in the 20-24-year age interval in SA}} \times 100$	$\text{GER} = \frac{\text{Total number of headcount enrolments}^3 \text{ at the 4 public universities in SA}}{\text{Population size}^2 \text{ in the 20-24-year age interval in SA}} \times 100$	$\text{GER} = \frac{\text{Total number of enrolments at the 4 public universities in SA in terms of accountancy programmes}^4 \text{ (CA programmes)}}{\text{Population size}^2 \text{ in the 20-24-year age interval in SA}} \times 100$

¹ The headcount enrolment figures were obtained from the Department of Higher Education and Training as extracted from the Higher Education Management Information System. These headcount enrolments include the following students: (1) Undergraduate, being first-time entering undergraduate and transfer undergraduate; (2) Post-graduate, being (i) postgraduate certificate/diploma; (ii) postgraduate bachelor's degree; (iii) Honours; (iv) Master's degree; and (v) Doctoral degree and (3) Occasional students.

² The population size was obtained from Statistics South Africa.

³ These headcount enrolments include the same students as set out under Gross Enrolment Rate above for level one.

⁴ The Accounting (0401) Classification of Educational Subject Matter figures were obtained from the Department of Higher Education and Training as specific data relating to chartered accountancy programmes was not available. These figures however include students studying towards becoming chartered accountants.

TABLE 5.2: MEASUREMENT OF NET ENROLMENT RATE FOR LEVELS ONE, TWO AND THREE

INDICATOR: PARTICIPATION RATE	Level one Calculated for public higher education in South Africa (based on the 23 public universities in South Africa combined)	Level two Calculated for each of the four selected public universities in total	Level three Calculated for each of the four selected public universities based on accountancy programmes with special emphasis on chartered accountancy programmes at these universities
Net Enrolment Rate (NER)	$\text{NER}^5 = \frac{\text{Total number of enrolments}^6 \text{ at the 23 universities in SA in 5-year age intervals}}{\text{Population size}^7 \text{ in 5-year age interval}} \times 100$	$\text{NER}^5 = \frac{\text{Total number of enrolments}^6 \text{ at the 23 universities in SA in 5-year age intervals}}{\text{Population size}^7 \text{ in 5-year age interval}} \times 100$	$\text{NER}^5 = \frac{\text{Total number of enrolments at the 4 public universities in SA in terms of accountancy programmes (CA programmes)}^8 \text{ in 5-year age intervals}}{\text{Population size}^7 \text{ in 5-year age interval}} \times 100$

⁵ The Net Enrolment Rate (NER) was calculated in 5-year age groups to determine the 5-year age group with the highest rate of participation.

⁶ The headcount enrolment figures were obtained from the Department of Higher Education and Training as extracted from the Higher Education Management Information System. These headcount enrolments include the same students as set out under gross enrolment rate as per level one.

⁷ The population size was obtained from Statistics South Africa.

⁸ The Accounting (0401) Classification of Educational Subject Matter figures were obtained from the Department of Higher Education and Training as specific data relating to chartered accountancy programmes was not available. These figures however include students studying towards becoming chartered accountants.

Chapter 6 provides the results of the measurement of participation rate for **levels one, two and three**.

5.4.2 Educational attainment

Chapter 2 provided a literature review on educational attainment and discussed the various possible methods that could be used to measure educational attainment. Figure 5.3 below (as obtained from figure 2.4, page 52) presents the possible methods that could be used to measure educational attainment as discussed in detail in Chapter 2.

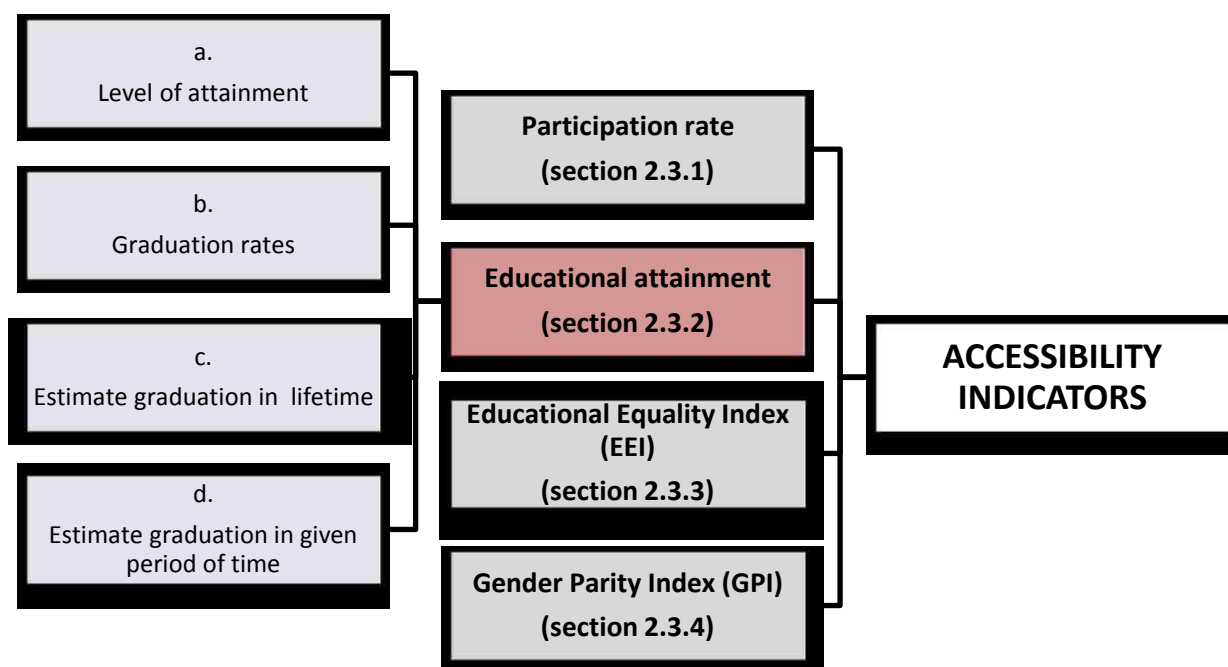


Figure 5.3: Methods for measuring educational attainment

The following factors were considered in the selection of the methods used in this study for measuring educational attainment:

a Level of attainment:

The method is used internationally by various large organisations such as the Organisation for Economic Co-operation and Development (OECD, 2013) and UNESCO (UNESCO, 2014a). This method is also used in many of the international studies (Usher and Cervenán, 2005; Usher and Medow, 2010;

Murakami and Blom, 2008) as well as local studies (Steyn, no date) as described in Chapter 2. It is considered to be a widely used method and was therefore used in this study for measuring educational attainment.

b Graduation rate:

This method is widely used locally and internationally by organisations such as the Organisation for Economic Co-operation and Development (OECD, 2013), the Council on Higher Education (CHE, 2009), and the Department of Higher Education and Training (DHET, 2013a), to name only a few. It is therefore considered to be a widely used method for measuring educational attainment. Gross graduation rate calculations do not require detailed cohort data whereas net graduation rates do. Detailed cohort data is not widely available and therefore gross graduation rates and not net graduation rates were measured for the purposes of this study.

c Estimate graduation in lifetime:

The measurement of the estimated percentage of young adults expected to successfully graduate from a certain level of education in their lifetimes requires specific cohort data which is not widely available. This method was therefore not used for purposes of this study.

d Estimate graduation in given period of time:

The measurement of the estimated percentage of students that enter a programme and successfully complete that programme in a given period of time also requires specific cohort data which was not widely available. This method was therefore not used for purposes of this study.

Based on the above, only the level of attainment and the graduation rate (gross) were measured for **levels one, two and three** to measure educational attainment as they are considered to be the most widely used methods.

Although the level of attainment and graduation rate have been defined in Chapter 2 with a specific method of calculation, the definitions and calculation methods for level of attainment and graduation rate were adjusted slightly for **levels two and three** of this study. This is due to the fact that the level of attainment and graduation rate were calculated at an even more detailed level in order to draw comparisons between the four universities selected for purposes of this study as a whole as well

as for programmes leading to a chartered accountancy qualification at these four universities in particular. These four universities were thus ranked in terms of the level of attainment and the graduation rate scores in order to draw conclusions on which university has the highest educational attainment as a whole and in terms of chartered accountancy studies in particular.

For **levels two and three**, the four universities were ranked in terms of their level of attainment and their graduation rates for each level.

Table 5.3 shows how the level of attainment was measured for **levels one, two and three** whilst table 5.4 sets out how the measurement of graduation rate was performed. These tables also provide the data sources from which the facts, figures and data would be derived.

TABLE 5.3: MEASUREMENT OF LEVEL OF ATTAINMENT FOR LEVELS ONE, TWO AND THREE

INDICATOR: <i>EDUCATIONAL ATTAINMENT</i>	Level one Calculated for public higher education in South Africa (based on the 23 public universities in South Africa combined)	Level two Calculated for each of the four selected public universities in total	Level three Calculated for each of the four selected public universities based on accountancy programmes with special emphasis on chartered accountancy programmes at these universities
Level of attainment	$\frac{\text{Total number of graduates in 5-year age groups at the 23 public universities in SA}}{\text{Population size}^9 \text{ in 5-year age interval}} \times 100$	$\frac{\text{Total number of graduates in 5-year age groups at the 4 public universities in SA}}{\text{Population size}^9 \text{ in 5-year age interval}} \times 100$	$\frac{\text{Total number of graduates into accountancy programmes (CA related programmes) in 5-year age groups at the 4 public universities in SA}^{10}}{\text{Population size}^9 \text{ in 5-year age interval}} \times 100$
	$\frac{\text{Total number of graduates in 25-34-year age group at the 23 public universities in SA}}{\text{Population size}^9 \text{ in the 25-34-year age interval}} \times 100$	$\frac{\text{Total number of graduates in 25-34-year age group at the 4 public universities in SA}}{\text{Population size}^9 \text{ in the 25-34-year age interval}} \times 100$	$\frac{\text{Total number of graduates into accountancy programmes (CA related programmes) in 25-34-year age group at the 4 public universities in SA}^{10}}{\text{Population size}^9 \text{ in the 25-34-year age interval}} \times 100$
	$\frac{\text{Total number of graduates in 5-year age groups at the 23 public universities in SA}}{\text{Population size}^9 \text{ in the 25-34-year age interval}} \times 100$	$\frac{\text{Total number of graduates in 5-year age groups at the 4 public universities in SA}}{\text{Population size}^9 \text{ in the 25-34-year age interval}} \times 100$	$\frac{\text{Total number of graduates into accountancy programmes (CA related programmes) in 5-year age groups at the 4 public universities in SA}^{10}}{\text{Population size}^9 \text{ in the 25-34-year age interval}} \times 100$
	$\frac{\text{Total number of graduates in 25-34-year age group at the 23 public universities in SA}}{\text{Population size}^9 \text{ in 5-year age interval}} \times 100$	$\frac{\text{Total number of graduates in 25-34-year age group at the 4 public universities in SA}}{\text{Population size}^9 \text{ in 5-year age interval}} \times 100$	$\frac{\text{Total number of graduates into accountancy programmes (CA related programmes) in 25-34-year age group at the 4 public universities in SA}^{10}}{\text{Population size}^9 \text{ in 5-year age interval}} \times 100$

⁹ The population size was obtained from Statistics South Africa.

¹⁰ The Accounting (0401) Classification of Educational Subject Matter figures were obtained from the Department of Higher Education and Training as specific data relating to chartered accountancy programmes was not available. These figures however include students studying towards becoming chartered accountants.

INDICATOR: EDUCATIONAL ATTAINMENT	Level one Calculated for public higher education in South Africa (based on the 23 public universities in South Africa combined)	Level two Calculated for each of the four selected public universities in total	Level three Calculated for each of the four selected public universities based on accountancy programmes with special emphasis on chartered accountancy programmes at these universities
	$\frac{\text{Total number of graduates in 25-64-year age group at the 23 public universities in SA}}{\text{Population size}^9 \text{ in the 25-64-year age interval}} \times 100$	$\frac{\text{Total number of graduates in 25-64-year age group at the 4 public universities in SA}}{\text{Population size}^9 \text{ in the 25-64-year age interval}} \times 100$	$\frac{\text{Total number of graduates in accountancy programmes (CA related programmes) in 25-64-year age group at the 4 public universities in SA}}{\text{Population size}^9 \text{ in the 25-34-year age interval}} \times 100$
	<p>Note 1:</p> <p>The graduate figures were obtained from the Department of Higher Education and Training as extracted from the Higher Education Management Information System. The total graduate figures include the following qualification types which are considered International Standard Classification of Education 1997 type 5A, 5B and 6 qualifications:</p> <ul style="list-style-type: none"> • Undergraduate diploma or certificate: A diploma or certificate which does not have a Bachelor's degree as 	<p>Note 1:</p> <p>The graduate figures were obtained from the Department of Higher Education and Training as extracted from the Higher Education Management Information System. The graduates include the same qualification types as set out under level of attainment above for level one.</p>	<p>Note 1:</p> <p>The graduate figures were obtained from the Department of Higher Education and Training as extracted from the Higher Education Management Information System. The graduates include students that have successfully completed Accounting related qualifications (due to unavailability of chartered accountancy specific data).</p>

INDICATOR: EDUCATIONAL ATTAINMENT	Level one Calculated for public higher education in South Africa (based on the 23 public universities in South Africa combined)	Level two Calculated for each of the four selected public universities in total	Level three Calculated for each of the four selected public universities based on accountancy programmes with special emphasis on chartered accountancy programmes at these universities
	prerequisite for admission to the programme; <ul style="list-style-type: none"> • General Academic First Bachelor's degree: A first Bachelor's degree with a duration of three years; • Professional First Bachelor's degree: A first Bachelor's degree with a duration of four or more years; • Postgraduate diploma or certificate: A diploma or certificate with a Bachelor's degree as prerequisite for admission to the programme; • Postgraduate Bachelor's degree: A bachelor's degree with a first Bachelor's degree as prerequisite for admission to the programme; • Honours degree; • Master's degree; and • Doctoral degree. 		

TABLE 5.4: MEASUREMENT OF GRADUATION RATE FOR LEVELS ONE, TWO AND THREE

INDICATOR: <i>EDUCATIONAL ATTAINMENT</i>	Level one Calculated for public higher education in South Africa (based on the 23 public universities in South Africa combined)	Level two Calculated for each of the four selected public universities in total	Level three Calculated for each of the four selected public universities based on accountancy programmes with special emphasis chartered accountancy programmes at these universities
Graduation rate	$\frac{\text{Total number of graduates}^{10} \text{ at the 23 public universities in SA}}{\text{Total number of all headcount enrolments at the 23 public universities in SA}} \times 100$	$\frac{\text{Total number of graduates at the 4 public universities in SA}}{\text{Total number of all headcount enrolments at the 4 public universities in SA}} \times 100$	$\frac{\text{Total number of graduates into accountancy programmes (CA related programmes) at each of the 4 public universities in SA}}{\text{Total number of all headcount enrolments at the 4 public universities in SA}} \times 100$ $\frac{\text{Total number of passes into SAICA QE 1 examination for each of the 4 public universities in SA}}{\text{Total number of candidates who wrote the SAICA QE 1 examination from each of the 4 public universities in SA}} \times 100$

¹⁰ The graduate figures and headcount enrolment figures were obtained from the Department of Higher Education and Training as extracted from the Higher Education Management Information System. The headcount enrolments include the same students as set out under gross enrolment rate above for level one. The graduates include the same qualification types as set out under level of attainment above for level one.

INDICATOR: EDUCATIONAL ATTAINMENT	Level one Calculated for public higher education in South Africa (based on the 23 public universities in South Africa combined)	Level two Calculated for each of the four selected public universities in total	Level three Calculated for each of the four selected public universities based on chartered accountancy programmes at these universities
			<p>Note 1: The graduate figures and headcount enrolment figures were obtained from the Department of Higher Education and Training as extracted from the Higher Education Management Information System. The headcount enrolments include students that enrolled for Accounting related qualifications. The graduates include students that have successfully completed Accounting related qualifications. The calculation was done for undergraduate as well as postgraduate accounting-related qualifications. Due to unavailability of chartered accountancy specific data, Accounting related qualification types were examined.</p> <p>Note 2: The total number of passes and number of students that wrote the SAICA qualifying examination 1 (QE 1), were obtained from SAICA.</p>

Chapter 6 provides the results of the measurement of educational attainment for **levels one, two and three**. The following section explains how the Educational Equality Index indicator was measured for the purposes of this study as well as the sources from which the facts, figures and data to measure this indicator were derived.

5.4.3 Educational Equality Index

Chapter 2 provided a literature review on the Educational Equality Index and discussed some of the possible proxies that could be used in order to measure the Educational Equality Index. Figure 5.4 below (as obtained from figure 2.5, page 57) shows where the Educational Equality Index fits into the accessibility indicators that were measured for the purposes of this study.

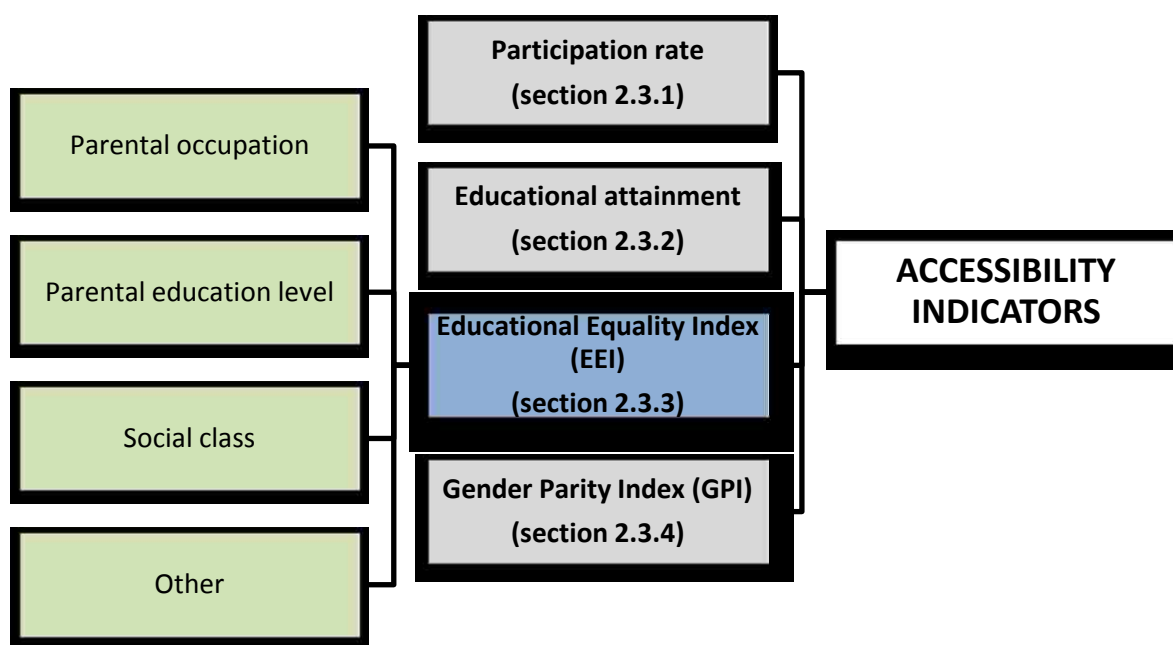


Figure 5.4: Methods or proxies for measuring the Educational Equality Index

Chapter 2 described possible methods or proxies that could be used to measure the Educational Equality Index. These include parental occupation, parental education level, social class, socio-economic status, race, average parental income, etc., which are all considered to be metrics that could be used as proxies to measure educational inequality. These methods or proxies differ from country to country

depending on the specific country's own history of social inequalities (Usher, 2004). Each country has its own history of inequalities, hence each country might make use of its own proxy or proxies. In order to make international comparisons between countries, a single proxy, namely the parental educational level, was selected by many international studies discussed in Chapter 2, and enabled international comparisons (Usher and Cervenán, 2005; Usher and Medow, 2010; Murakami and Blom, 2008).

This study aimed to make comparisons where possible. Parental educational level was used as proxy to measure the Educational Equality Index in order to enable comparisons internationally as well as between the four universities.

The parental education level measurement was defined in Chapter 2 with a specific method of calculation. The method of calculation for **level one** of this study where the parental education level would be measured for the 23 public universities in South Africa combined, and would be based on these specific methods of calculation.

Although the parental education level measurement was set out in Chapter 2, the calculation method would be adjusted slightly for **levels two and three** of this study. This is due to the fact that the parental education levels would be calculated in even more detail in order to draw comparisons between the four selected universities as a whole as well as for accountancy programmes with special emphasis on programmes leading to a chartered accountancy qualification at these four universities. The four universities would be ranked in terms of the parental education levels in order to draw conclusions on which university has the highest Educational Equity Index score as a whole and in terms of accountancy programmes with special emphasis on chartered accountancy studies.

For **levels two and three**, the four universities would be ranked in terms of their parental education levels.

Table 5.5 below shows how the measurement of parental education level, as a proxy for the measurement of Educational Equality Index, would be performed for **levels**

one, two and three for this study. Table 5.5 also provides the data sources from which the facts, figures and data would be derived.

TABLE 5.5: MEASUREMENT OF EDUCATIONAL EQUALITY INDEX FOR LEVELS ONE, TWO AND THREE

INDICATOR: EDUCATIONAL EQUALITY INDEX	Level one Calculated for public higher education in South Africa (based on the 23 public universities in South Africa combined)	Level two Calculated for each of the four selected public universities in total	Level three Calculated for each of the four selected public universities based on accountancy programmes with special emphasis on chartered accountancy programmes at these universities
Parental education levels	$\frac{\text{\% of all males 45-65 with a higher education degree}^{11}}{\text{\% of all students whose fathers have higher education degrees}} \times 100$	$\frac{\text{\% of all males 45-65 with a higher education degree at the 4 universities}}{\text{\% of students whose fathers have higher education degrees at the 4 universities}} \times 100$	$\frac{\text{\% of all males 45-65 with a higher education degree at the 4 universities into accountancy programmes (CA related programmes)}}{\text{\% of students whose fathers have higher education degrees at the 4 universities into accountancy (CA related) programmes}} \times 100$

¹¹ This dissertation aimed to obtain the above numbers from the Department of Higher Education and Training. These numbers were not available.

Chapter 6 provides the results of the measurement of parental education levels as a proxy for Educational Equality Index for *levels one, two and three*. The following section explains how the last accessibility of higher education indicator, the Gender Parity Index, was measured for the purposes of this study as well as the sources from which the facts, figures and data to measure this indicator would be derived.

5.4.4 Gender Parity Index

Chapter 2 provided a literature review on the Gender Parity Index and offered some of the possible methods that could be used to measure this indicator. Figure 5.5 below (as obtained from figure 2.6, page 62) indicates where the Gender Parity Index fits into the accessibility indicators that were measured for the purposes of this study.

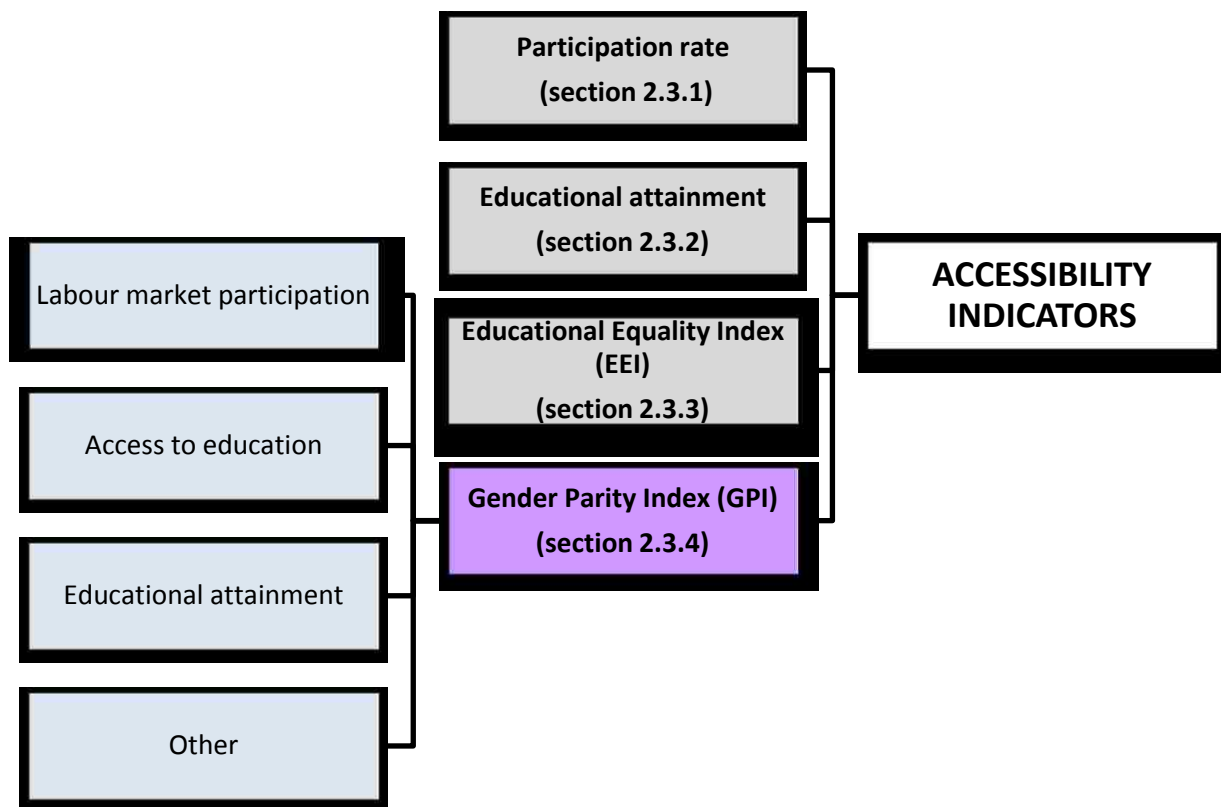


Figure 5.5: Methods for measuring Gender Parity Index

Chapter 2 described various methods that could be used to measure gender inequality, such as methods related to labour market participation, empowerment and reproductive health (United Nations Development Programme, 2013), the economy, political empowerment, enrolments at all levels of education (Social Watch, 2012), and the Gender Parity Index (UNESCO, 2014a), to name but a few. The international reports discussed in Chapter 2 measured gender inequality through in-depth studies taking into account numerous methods, dimensions and various other factors.

Gender inequality in education is mostly measured through the Gender Parity Index (UNESCO, 2014a), by using Gross Enrolment Rates (The National Coordinating Committee, 2013; WEF, 2013a) and level of attainment (OECD, 2011). This study therefore only made use of the Gender Parity Index to measure gender inequality in higher education. Based on the argument presented by the Organisation for Economic Co-operation and Development that gender parity should not only be measured on Gross Enrolment figures but on attainment levels as well (OECD, 2011), this study calculated the Gender Parity Index on the Gross Enrolment Rate as well as the level of attainment.

The method of this Index as set out by UNESCO allows for the calculation of the Gender Parity Index by level of education, type of institution, geographical location, etc. (UNESCO, 2014a). The Gender Parity Index was therefore adjusted for **levels two and three** of this study and made use of type of institution (public universities) and type of qualification (programmes leading to a chartered accountancy qualification). This was done in order to draw comparisons between the four selected universities as a whole as well as for programmes leading to a chartered accountancy qualification at these four institutions in terms of gender inequality.

For **levels two and three**, the four universities were ranked in terms of their Gender Parity Index scores for both Gross Enrolment Rates and level of attainment scores. Ranking was done based on the distance from a parity score of one (in other words 1:1 is considered the ideal score).

Table 5.6 below sets out how the measurement of the Gender Parity Index based on Gross Enrolment Rate was performed for **levels one, two and three**, whereas table

5.7 shows how the measurement of Gender Parity Index based on level of attainment was performed. Both tables also provide the data sources from which the facts, figures and data would be derived.

TABLE 5.6: MEASUREMENT OF GENDER PARITY INDEX BASED ON GROSS ENROLMENT RATE FOR LEVELS ONE, TWO AND THREE

INDICATOR: GENDER PARITY INDEX BASED ON GROSS ENROLMENT RATE	Level one Calculated for public higher education in South Africa (based on the 23 public universities in South Africa combined)	Level two Calculated for each of the four selected public universities in total	Level three Calculated for each of the four selected public universities based on accountancy programmes with special emphasis on chartered accountancy programmes at these universities
	$\frac{\text{Gross Enrolment Rate (GER) of females (note 1)}}{\text{Gross Enrolment Rate (GER) of males (note 2)}} \times 100$	$\frac{\text{Gross Enrolment Rate (GER) of females (note 1)}}{\text{Gross Enrolment Rate (GER) of males (note 2)}} \times 100$	$\frac{\text{Gross Enrolment Rate (GER) of females (note 1)}}{\text{Gross Enrolment Rate (GER) of males (note 2)}} \times 100$
Gender Parity Index (GPI) based on Gross Enrolment Rate (GER)	<p>Note 1: The Gross Enrolment Rate (GER) used for females was based on the following calculation:</p> $\text{GER} = \frac{\text{Total number of female enrolments in the 23 public universities in SA}}{\text{Population size}^{12} \text{ for females in the 20-24-year age interval in SA}} \times 100$	<p>Note 1: The Gross Enrolment Rate (GER) used for females was based on the following calculation:</p> $\text{GER} = \frac{\text{Total number of female enrolments in the 4 public universities in SA}}{\text{Population size}^{13} \text{ for females in the 20-24-year age interval in SA}} \times 100$	<p>Note 1: The Gross Enrolment Rate (GER) used for females was based on the following calculation:</p> $\text{GER} = \frac{\text{Total number of female enrolments in the 4 public universities in SA ito accountancy programmes (CA programmes)}}{\text{Population size}^{13} \text{ for females in the 20-24-year age interval in SA}} \times 100$

¹² The population size was obtained from Statistics South Africa.

	<p>Note 2: The Gross Enrolment Rate used for males was based on the following calculation:</p> $\text{GER} = \frac{\text{Total number of male enrolments in the 23 public universities in SA}}{\text{Population size}^{13} \text{ for males in the 20-24-year age interval in SA}} \times 100$	<p>Note 2: The Gross Enrolment Rate used for males was based on the following calculation:</p> $\text{GER} = \frac{\text{Total number of male enrolments at the 4 public universities in SA}}{\text{Population size}^{13} \text{ for males in the 20-24-year age interval in SA}} \times 100$	<p>Note 2: The Gross Enrolment Rate used for males was based on the following calculation:</p> $\text{GER} = \frac{\text{Total number of male enrolments in the 4 public universities in SA ito accountancy programmes (CA programmes)}}{\text{Population size}^{13} \text{ for males in the 20-24-year age interval in SA}} \times 100$
<p>Note 3:</p> <p>The headcount enrolment figures were obtained from the Department of Higher Education and Training as extracted from the Higher Education Management Information System. These headcount enrolments include the same students as set out under Gross Enrolment Rate above for level one.</p>			

TABLE 5.7: MEASUREMENT OF GENDER PARITY INDEX BASED ON LEVEL OF ATTAINMENT FOR LEVELS ONE, TWO AND THREE

INDICATOR:	Level one	Level two	Level three
GENDER PARITY INDEX BASED ON LEVEL OF ATTAINMENT	Calculated for public higher education in South Africa (based on the 23 public universities in South Africa combined)	Calculated for each of the four selected public universities in total	Calculated for each of the four selected public universities based on accountancy programmes with special emphasis on chartered accountancy programmes at these universities
	$\frac{\text{Level of attainment of females (note 1)}}{\text{Level of attainment of males (note 2)}} \times 100$	$\frac{\text{Level of attainment of females (note 1)}}{\text{Level of attainment of males (note 2)}} \times 100$	$\frac{\text{Level of attainment of females (note 1)}}{\text{Level of attainment of males (note 2)}} \times 100$
Gender Parity Index (GPI) based on level of attainment	<p>Note 1: The level of attainment used for females was based on the following calculation:</p> $\text{Level of attainment} = \frac{\text{Total number of female graduates in 5-year age groups at the 23 public universities in SA}}{\text{Population size}^{13} \text{ for females in 5-year age intervals in SA}} \times 100$	<p>Note 1: The level of attainment used for females will be based on the following calculation:</p> $\text{Level of attainment} = \frac{\text{Total number of female graduates in 5-year age groups at the 4 public universities in SA}}{\text{Population size}^{14} \text{ for females in 5-year age intervals in SA}} \times 100$	<p>Note 1: The level of attainment used for females will be based on the following calculation: Level of attainment = $\frac{\text{Total number of female graduates aged 25-34 at the 4 public universities in SA into accountancy programmes (CA programmes)}}{\text{Population size}^{14} \text{ for females in 25-year age intervals in SA}} \times 100$</p> <p>AND</p>

¹³ The population size was obtained from Statistics South Africa.

	$\begin{array}{l} \text{Level of attainment} \\ = \\ \frac{\text{Total number of female graduates aged 25-34 at the 23 public universities in SA} \quad \times 100}{\text{Population size}^{14} \text{ for females in the 25-34-year age intervals in SA}} \end{array}$ $\begin{array}{l} \text{Level of attainment} \\ = \\ \frac{\text{Total number of female graduates aged 25-64 at the 23 public universities in SA} \quad \times 100}{\text{Population size}^{14} \text{ for females in 25-64-year age intervals in SA}} \end{array}$		$\begin{array}{l} \text{Level of attainment} \\ = \\ \frac{\text{Total number of female graduates aged 25-64 at the 4 public universities in SA ito accountancy programmes (CA programmes)} \quad \times 100}{\text{Population size}^{14} \text{ for females in the 25-64-year age intervals in SA}} \end{array}$
	<p>Note 2: The level of attainment used for males was based on the following calculation:</p> $\begin{array}{l} \text{Level of attainment} \\ = \\ \frac{\text{Total number of male graduates in 5-year age groups at the 23 public universities in SA} \quad \times 100}{\text{Population size}^{14} \text{ for males in 5-year age intervals in SA}} \end{array}$	<p>Note 2: The Gross Enrolment Rate used for males was based on the following calculation:</p> $\begin{array}{l} \text{Level of attainment} \\ = \\ \frac{\text{Total number of male graduates in 5-year age groups at the 4 public universities in SA} \quad \times 100}{\text{Population size}^{14} \text{ for males in 5-year age intervals in SA}} \end{array}$	<p>Note 2: The Gross Enrolment Rate used for males was based on the following calculation:</p> $\begin{array}{l} \text{Level of attainment} \\ = \\ \frac{\text{Total number of male graduates aged 25-34 at the 4 public universities in SA ito accountancy programmes (CA programmes)} \quad \times 100}{\text{Population size}^{14} \text{ for males in 25-year age intervals in SA}} \end{array}$ <p style="text-align: center;">AND</p>

	$\begin{aligned} & \text{Level of attainment} \\ & = \frac{\text{Total number of male graduates aged 25-34 at the 23 public universities in SA} \times 100}{\text{Population size}^{14} \text{ for males in 25-34-year age intervals in SA}} \\ \\ & \text{Level of attainment} \\ & = \frac{\text{Total number of male graduates in 25-64 at the 23 public universities in SA} \times 100}{\text{Population size}^{14} \text{ for males in 25-64-year age intervals in SA}} \end{aligned}$		$\begin{aligned} & \text{Level of attainment} \\ & = \frac{\text{Total number of male graduates aged 25-64 at the 4 public universities in SA into accountancy programmes (CA programmes)} \times 100}{\text{Population size}^{14} \text{ for males in the 25-64-year age intervals in SA}} \end{aligned}$
<p>Note 3:</p> <p>The graduate figures were obtained from the Department of Higher Education and Training as extracted from the Higher Education Management Information System. The graduates include the same qualification types as set out under level of attainment above for level one.</p>			

Chapter 6 provides the results of the measurement of the Gender Parity Index for **levels one, two and three**.

5.5 WEIGHTING OF THE ACCESSIBILITY INDICATORS

Chapter 2 presented the weightings of the accessibility indicators as used in certain international studies. Weightings are given to the accessibility indicators in order to facilitate an overall assessment in terms of accessibility of higher education.

The weightings assigned to accessibility indicators are subjective (Usher and Cervenán, 2005; Usher and Medow, 2010; Murakami and Blom, 2008) and hence this study did not assign weightings to the indicators. For **level two and level three**, the four universities were ranked for each individual accessibility indicator and not for overall accessibility.

5.6 CONCLUSION

Chapter 5 has provided the methodology that was followed in order to measure accessibility of higher education for **levels one, two and three** of this study.

In Chapter 6, the facts, figures and data collected to populate each of the above accessibility of higher education indicators are set out and discussed.

CHAPTER 6

FINDINGS ON ACCESSIBILITY INDICATORS

6.1 INTRODUCTION

Through a review of related literature, Chapter 2 provided insight into the possible indicators that could be used to measure the accessibility of higher education as well as methods that could be used to measure each of these indicators. Based on this review, figure 6.1 below (refer to figure 2.1, page 23) sets out four indicators that could be used to measure accessibility of higher education.

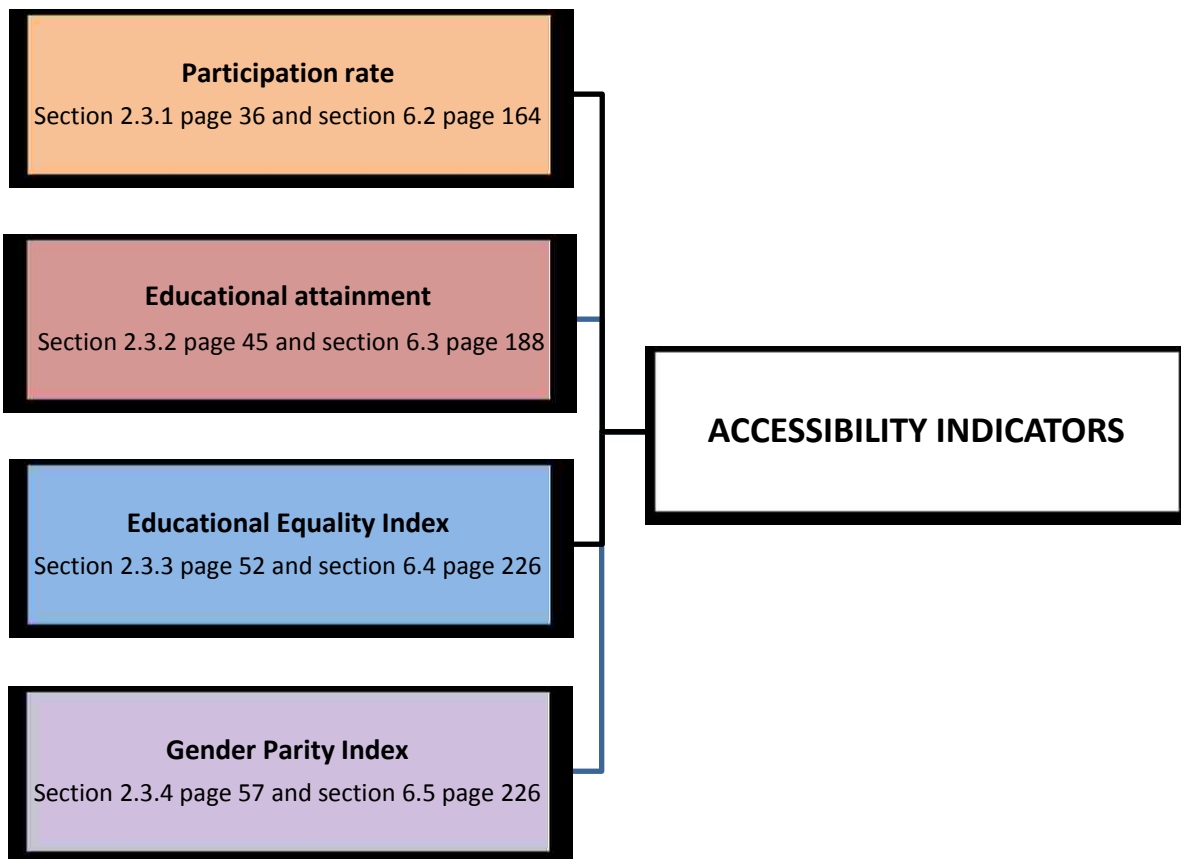


Figure 6.1: Indicators for measuring accessibility of higher education

Section 1.4 (page 7) stated the research objectives. The main aim of Chapter 6 is to address the following research question:

Research question 6: Through the application of certain accessibility indicators, could the overall accessibility of South African public higher education as well as accountancy programmes

with special emphasis on chartered accountancy programmes be measured?

Chapter 5 described the methods that would be used in this study to measure the four indicators, as set out in figure 6.1, as well as the sources from which the data would be derived. The tables provided in Chapter 5 with the methodology followed to obtain the facts, figures and data to populate each of the accessibility of higher education indicators laid the foundation for Chapter 6.

In order to address research question 6, Chapter 6 measures each of the four indicators for *levels one, two and three* as described in section 5.4 (page 136). The results provide some insight into the overall accessibility of public higher education in South Africa and specifically that of accountancy programmes with special emphasis on chartered accountancy programmes in South Africa.

Section 6.2 provides the findings on the first indicator, which is the participation rate.

6.2 FINDINGS ON PARTICIPATION RATE

Chapter 2 provided background information on various methods that could be used to measure participation rate. Although five possible indicators were identified through a review of the relevant literature, it was concluded in Chapter 5 that only the enrolment rates, namely the Gross Enrolment Rate and the Net Enrolment Rate, would be used for this study since these are widely applied in South Africa as well as internationally.

Chapter 5 further explained that this study would make use of the 20-24-year age group to calculate the Gross Enrolment Rate. The 20-24-year age group is in line with that used by the Council on Higher Education in South Africa (CHE, 2013a) as well as with that used by the Department of Higher Education and Training (Ministry of Education, 2001). Chapter 5 also stated that the Net Enrolment Rate would be calculated on the five-year age group with the highest rate of participation, since there is a difference in the average age of the student bodies at the four public universities selected for this study.

The next section presents the findings on the Gross Enrolment Rate for **levels one, two and three**.

6.2.1 Gross Enrolment Rate

Table 5.1 (page 141) showed how the Gross Enrolment Rate would be measured for the **three levels**. This table is repeated here in table 6.1 for performing the various calculations.

TABLE 6.1: MEASUREMENT OF GROSS ENROLMENT RATE FOR LEVELS ONE, TWO AND THREE

INDICATOR: <i>PARTICIPATION RATE</i>	Level one Calculated for public higher education in South Africa (based on the 23 public universities in South Africa combined)	Level two Calculated for each of the four selected public universities in total	Level three Calculated for each of the four selected public universities on accountancy programmes with special emphasis on chartered accountancy programmes at these universities
Gross Enrolment Rate (GER)	$\text{GER} = \frac{\text{Total number of headcount enrolments at the 23 public universities in SA}}{\text{Population size in the 20-24-year age interval in SA}} \times 100$	$\text{GER} = \frac{\text{Total number of headcount enrolments at the 4 public universities in SA}}{\text{Population size in the 20-24-year age interval in SA}} \times 100$	$\text{GER} = \frac{\text{Total number of enrolments at the 4 public universities in SA in terms of accountancy programmes (CA programmes)}}{\text{Population size in the 20-24-year age interval in SA}} \times 100$

The Gross Enrolment Rate was calculated in this section for the **three levels** as set out in table 6.1 above. In terms of **level one** and **level two** respectively, the total headcount enrolment numbers (for the 23 public universities combined for **level one** and for each of the four public universities for **level two**) were obtained from the Department of Higher Education and Training as extracted from the Higher Education Management Information System (DHET, 2012b), while the population numbers in the 20-24-year age group were obtained from Statistics South Africa (Statistics South Africa, 2013b). The students included in the total headcount enrolment numbers for **level one** and **level two** are set out in note 1 in table 5.1 (page 141).

In terms of **level three**, the detailed data on headcount enrolments specifically for chartered accountancy programmes was not available. The Higher Education Information System is, however, able to provide data per Classification of Educational Subject Matter, which is used as a coherent system for the classification of subject matter. The Business, Commerce and Management Sciences are considered to be a first-order Classification of Educational Subject Matter and are coded 04. Under this code, Accounting is considered a second-order Classification of Educational Subject Matter and is coded 0401. The Accounting (0401) Classification of Educational Subject Matter includes various third-orders Classification of Educational Subject Matter (for example accounting principles, accounting systems, auditing, cost accounting, general accounting, etc.) (Department of Education, 2008). As a result of the unavailability of more detailed information on chartered accountancy programmes specifically, this study made use of the Accounting (0401) Classification of Educational Subject Matter information as obtained from the Department of Higher Education and Training, extracted from the Higher Education Management Information System (DHET, 2014a), since the programmes leading to a chartered accountancy qualification are included in the Accounting (0401) Classification of Educational Subject Matter. As discussed in Chapter 4, the four selected universities all offer Bachelor's degrees (mostly of three-year duration) for those undergraduate students wanting to become chartered accountants. The Gross Enrolment Rate for **level three** was therefore calculated on

undergraduate headcount enrolments at the selected four universities for the following qualification types:

- General Academic First Bachelor’s degree: A first Bachelor’s degree with a duration of three years; and
- Professional First Bachelor’s degree: A first Bachelor’s degree with a duration of four or more years.

Based on the formulas provided in table 6.1, the Gross Enrolment Rate for **level one** was calculated and is reported in table 6.2.

TABLE 6.2: CALCULATION OF GROSS ENROLMENT RATE FOR LEVEL ONE

GROSS ENROLMENT RATES (GER)			2009	2010	2011	2012
Level 1: Public higher education in South Africa	23 Universities combined	Headcount student enrolments	837,776	892,936	938,201	953,373
		Population size 20-24-year age group	4,770,069	4,827,824	4,896,792	4,966,691
		GER =	17.56%	18.50%	19.16%	19.20%

Source: Author’s own calculations; DHET, 2012b; Statistics South Africa, 2013b.

Figure 6.2 illustrates the **level one** Gross Enrolment Rate for the period 2009 to 2012 based on the combined headcount enrolments at the 23 public universities in South Africa as calculated in table 6.2.

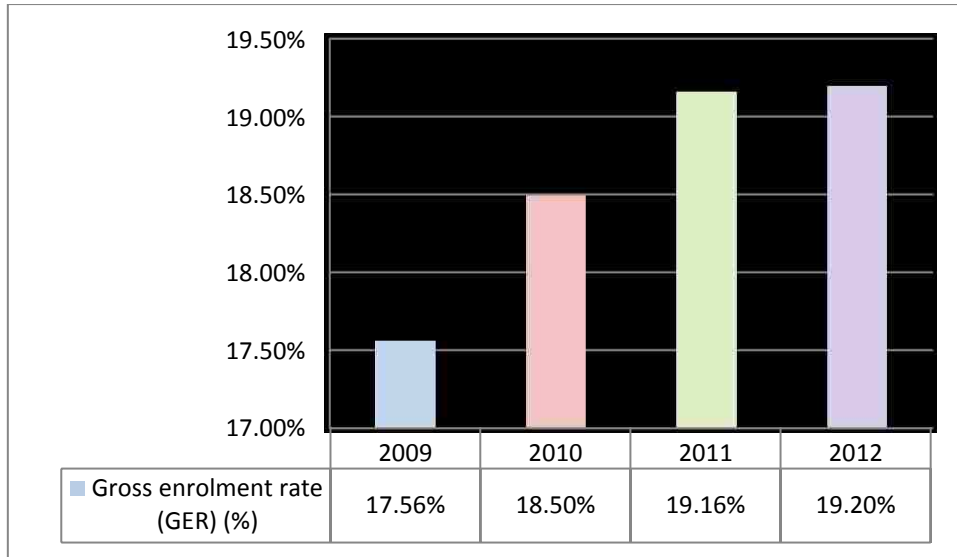


Figure 6.2: Gross Enrolment Rate for level one

From figure 6.2 it is evident that the Gross Enrolment Rate, based on the combined headcount enrolments at the 23 public universities in South Africa (**level one**), increased substantially from 2009 to 2012 (17.56% to 19.20%). From table 6.2 it is clear that the total student headcount enrolments at the 23 public universities grew by 13.8% from 2009 (headcount enrolments of 837 776) to 2012 (headcount enrolments of 953 373) whilst the population in the 20-24-year age group in South Africa only grew by 4.12% (from 4 770 069 in 2009 to 4 966 691 in 2012) in the same period. The Gross Enrolment Rate for the 23 public universities, however, remained relatively constant from 2011 (at 19.16%) to 2012 (at 19.20%).

In Chapter 2 it was noted that the National Plan for Higher Education envisaged a participation rate of at least 20% in public higher education for the 20-24-year age group over a 10-15-year period (Ministry of Education, 2001) and that this target is based on the Gross Enrolment Rate (CHE, 2006). This target should thus be reached by the latest in 2015, according to the National Plan for Higher Education. By 2012 the Gross Enrolment Rate for higher education, based on the 23 public universities, was 19.20%, which is well in reach of the 20% target and therefore it would seem that the 23 public universities in the South African higher education system are making good progress towards meeting participation rate targets.

The calculations conducted for **level two** were based on the total headcount student enrolments at the four selected universities and the population size in the 20-24-year

age group in South Africa. Based on the formulas as provided in table 6.1, the Gross Enrolment Rate for **level two** was calculated and is reported in table 6.3.

TABLE 6.3: CALCULATION OF GROSS ENROLMENT RATE FOR LEVEL TWO

GROSS ENROLMENT RATES (GER)			2009	2010	2011	2012
Level 2: Overall for 4 universities	University of Cape Town	Headcount student enrolments	23,787	24,772	25,301	25,805
		Population size 20-24-year age group	4,770,069	4,827,824	4,896,792	4,966,691
		GER =	0.50%	0.51%	0.52%	0.52%
	University of Johannesburg	Headcount student enrolments	49,315	48,315	50,528	48,769
		Population size 20-24-year age group	4,770,069	4,827,824	4,896,792	4,966,691
		GER =	1.03%	1.00%	1.03%	0.98%
	University of Witwatersrand	Headcount student enrolments	29,234	29,498	29,004	30,436
		Population size 20-24-year age group	4,770,069	4,827,824	4,896,792	4,966,691
		GER =	0.61%	0.61%	0.59%	0.61%
	Unisa	Headcount student enrolments	263,559	293,437	328,864	336,286
		Population size 20-24-year age group	4,770,069	4,827,824	4,896,792	4,966,691
		GER =	5.53%	6.08%	6.72%	6.77%

Source: Author's own calculations; DHET, 2012b; Statistics South Africa, 2013b.

Figure 6.3 illustrates the *level two* Gross Enrolment Rate for the period 2009 to 2012 based on the total headcount enrolments at each of the four universities as calculated in table 6.3.

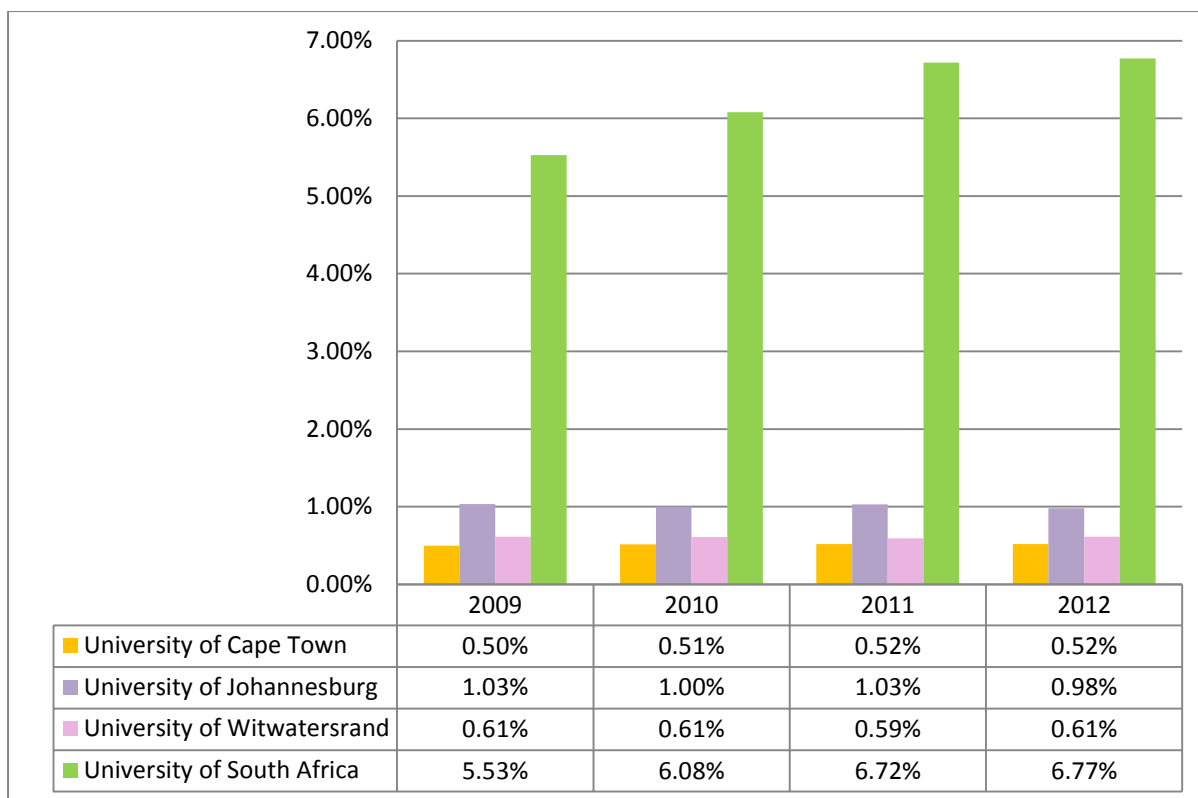


Figure 6.3: Gross Enrolment Rate for level two

From table 6.3 and figure 6.3 it can clearly be seen that the Gross Enrolment Rate for the period 2009 to 2012 is by far the highest for Unisa. With headcount enrolments far in excess of the other three universities, this is to be expected.

As mentioned in Chapter 2, the Department of Higher Education and Training wishes to increase the participation rate to 25% by 2030 as set out in the *White Paper for Post-School Education and Training* (DHET, 2013a). The four universities selected for this study will play a major role in this vision, while special attention would have to be given by the Department of Higher Education and Training to increase the participation rates at these four universities in particular, especially in relation to scarce skills qualifications. From 2009 to 2012, the Gross Enrolment Rates at these four universities increased/decreased as follows:

- The University of Cape Town: 0.50% to 0.52%, which is a 4% **increase** in Gross Enrolment Rate;
- The University of Johannesburg: 1.03% to 0.98%, which is a 4.85% **decrease** in Gross Enrolment Rate;

- The University of the Witwatersrand: 0.61% to 0.61%, which shows no change in Gross Enrolment Rate; and
- Unisa: 5.53% to 6.77%, which is a 22.42% **increase** in Gross Enrolment Rate.

The above is a clear indication that Unisa increased its Gross Enrolment Rate substantially from 2009 to 2012 and that Unisa will most likely play a critical role in the envisaged total participation rate of 25% for higher education in South Africa by 2030.

As mentioned above, the calculations conducted for **level three** were based on the total headcount student enrolments in the Accounting (0401) Classification of Educational Subject Matter for First Bachelor's degrees and population size in the 20-24-year age group in South Africa. Based on the formulas as provided in table 6.1, the Gross Enrolment Rate for **level three** was calculated and is reported in table 6.4.

TABLE 6.4: CALCULATION OF GROSS ENROLMENT RATE FOR LEVEL THREE

GROSS ENROLMENT RATES (GER)			2009	2010	2011	2012
Level 3: Accounting Qualifications	University of Cape Town	Headcount student enrolments	2,710	2,166	1,158	1,245
		Population size 20-24-year age group	4,770,069	4,827,824	4,896,792	4,966,691
		GER =	0.06%	0.04%	0.02%	0.03%
	University of Johannesburg	Headcount student enrolments	4,931	5,186	5,493	4,881
		Population size 20-24-year age group	4,770,069	4,827,824	4,896,792	4,966,691
		GER =	0.10%	0.11%	0.11%	0.10%
	University of Witwatersrand	Headcount student enrolments	1,894	2,241	1,432	1,161
		Population size 20-24-year age group	4,770,069	4,827,824	4,896,792	4,966,691
		GER =	0.04%	0.05%	0.03%	0.02%
	Unisa	Headcount student enrolments	29,202	27,467	28,643	29,174
		Population size 20-24-year age group	4,770,069	4,827,824	4,896,792	4,966,691
		GER =	0.61%	0.57%	0.58%	0.59%

Source: Author's own calculations; DHET, 2014a; Statistics South Africa, 2013b.

Figure 6.4 below provides an illustration of the *level three* Gross Enrolment Rate for the period 2009 to 2012 based on First Bachelor's Accounting (0401) related degrees.

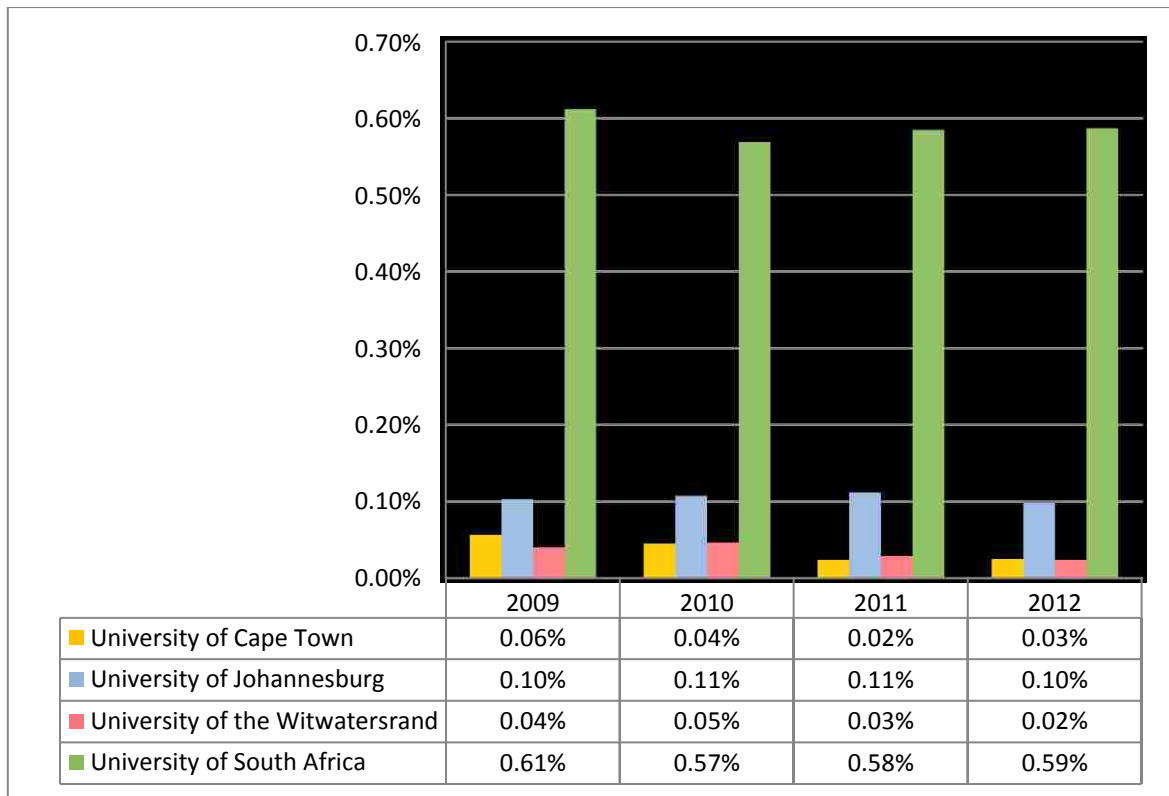


Figure 6.4: Gross Enrolment Rate for level three

Table 6.4 as well as figure 6.4 provide a clear indication that Unisa also has the highest Gross Enrolment Rate in terms of Accounting (0401) related First Bachelor's degrees. It is worrying, however, that there seems to be a downward trend in the Gross Enrolment Rate scores from 2009 to 2012 for Accounting (0401) related First Bachelor's degrees as:

- The University of Cape Town's Gross Enrolment Rate for **level three** decreased from 0.06% in 2009 to 0.03% in 2012, which is a 50% **decrease**.
- The University of Johannesburg's Gross Enrolment Rate for **level three** remained **unchanged** from 0.10% in 2009 to 0.10% in 2012.
- Unisa's Gross Enrolment Rate for **level three** decreased from 0.61% in 2009 to 0.59% in 2012, which is a 3.3% **decrease**.
- The University of the Witwatersrand's Gross Enrolment Rate for **level three** decreased from 0.04% in 2009 to 0.02% in 2012, which is a 50% **decrease**.

Table 6.5 provides the overall rankings of the four universities in terms of their Gross Enrolment Rates for *level two*. The ranking for each year is provided based on the calculation of Gross Enrolment Rates in table 6.3.

TABLE 6.5: RANKINGS IN TERMS OF GROSS ENROLMENT RATES FOR LEVEL TWO

GROSS ENROLMENT RATE RANKING FOR LEVEL TWO	2009 ranking	2010 ranking	2011 ranking	2012 ranking
Unisa	1 (5.53%)	1 (6.08%)	1 (6.72%)	1 (6.77%)
University of Johannesburg	2 (1.03%)	2 (1.00%)	2 (1.03%)	2 (0.98%)
University of Witwatersrand	3 (0.61%)	3 (0.61%)	3 (0.59%)	3 (0.61%)
University of Cape Town	4 (0.50%)	4 (0.51%)	4 (0.52%)	4 (0.52%)

Source: Author's own calculation.

Unisa far outranks the other three universities in terms of *level two* Gross Enrolment Rate scores for each of the individual years. This is also evident when the total headcount enrolments at each of these four universities are calculated as a percentage of the total headcount enrolments at the 23 public universities in South Africa as set out in table 1 of the appendix. Unisa contributed by far the most to higher education enrolments at public universities in South Africa, having enrolled an average of 35.16% of all headcount enrolments in South Africa in 2011 and 2012. The University of Johannesburg, which ranked in second place in terms of Gross Enrolment Rates, enrolled approximately 5.25% of all headcount enrolments in 2011 and 2012.

Although Unisa showed a 22.42% increase in overall Gross Enrolment Rates from 2009 to 2012, the Gross Enrolment Rates for the Accounting (0401) First Bachelor's degrees decreased by 3.3% in the same period. It would seem that this decrease is mainly attributable to the fact that the total headcount enrolments for Accounting (0401) related First Bachelor's degrees at the 23 public universities decreased every year from 2009 (57,245 enrolments) to 2012 (54,800 enrolments), as is evident from

table 2 in the appendix. This is perhaps the most worrying factor and the reasons for this overall decrease in accounting enrolments should urgently be investigated by the relevant universities and other stakeholders, given the scarcity of these skills.

Table 6.6 provides the overall rankings of the four universities in terms of their Gross Enrolment Rates for **level three**. The ranking for each year is provided based on the calculation of Gross Enrolment Rates in table 6.4.

TABLE 6.6: RANKINGS IN TERMS OF GROSS ENROLMENT RATES FOR LEVEL THREE

GROSS ENROLMENT RATE RANKING FOR LEVEL THREE	2009 ranking	2010 ranking	2011 ranking	2012 ranking
Unisa	1 (0.61%)	1 (0.57%)	1 (0.58%)	1 (0.59%)
University of Johannesburg	2 (0.10%)	2 (0.11%)	2 (0.11%)	2 (0.10%)
University of Cape Town	3 (0.06%)	4 (0.04%)	4 (0.02%)	3 (0.03%)
University of Witwatersrand	4 (0.04%)	3 (0.05%)	3 (0.03%)	4 (0.02%)

Source: Author's own calculation.

Unisa far outranks the other three universities in terms of **level three** Gross Enrolment Rate scores for each of the individual years in terms of Accounting (0401) First Bachelor's degree enrolments. This is also evident when the total headcount enrolments at each of these four universities for Accounting (0401) First Bachelor's degrees are calculated as a percentage of the total headcount enrolments at the 23 public universities in South Africa for Accounting (0401) First Bachelor's degrees as set out in table 2 of the appendix. Unisa contributed by far the most to these accounting enrolments at public universities in South Africa, having enrolled an average of 52.76% of all accounting (0401) First Bachelor's degree headcount enrolments in South Africa in 2011 and 2012. The University of Johannesburg, ranking in second place in terms of Gross Enrolment Rates for **level three**, enrolled approximately 9.47% of all Accounting (0401) First Bachelor's degree enrolments in 2011 and 2012.

Sharing third and fourth place are the University of the Witwatersrand and the University of Cape Town, both with much lower Gross Enrolment Rates than Unisa and the University of Johannesburg.

The following section sets out the findings of the Net Enrolment Rate for *levels one, two and three*.

6.2.2 Net Enrolment Rate

Table 5.2 (page 142) stated how the Net Enrolment Rate would be measured for the *three levels*. This table is repeated here in table 6.7 for performing the various calculations.

TABLE 6.7: MEASUREMENT OF NET ENROLMENT RATE FOR LEVELS ONE, TWO AND THREE

INDICATOR: <i>PARTICIPATION RATE</i>	Level one Calculated for public higher education in South Africa (based on the 23 public universities in South Africa combined)	Level two Calculated for each of the four selected public universities in total	Level three Calculated for each of the four selected public universities for accountancy programmes with special emphasis on chartered accountancy programmes at these universities
Net Enrolment Rate (NER)	$\text{NER} = \frac{\text{Total number of enrolments at the 23 universities in SA in 5-year age intervals}}{\text{Population size in 5-year age interval}} \times 100$	$\text{NER} = \frac{\text{Total number of enrolments at the 23 universities in SA in 5-year age intervals}}{\text{Population size in 5-year age interval}} \times 100$	$\text{NER} = \frac{\text{Total number of enrolments at the 4 public universities in SA in terms of accountancy programmes (CA programmes) in 5-year age intervals}}{\text{Population size in 5-year age interval}} \times 100$

The Net Enrolment Rate was calculated in this section for the **three levels** as set out in table 6.7. In terms of **level one** and **level two**, the headcount enrolment numbers and population numbers were obtained from the same sources as for the Gross Enrolment Rate as shown in section 6.2.1 (page 166), and include the same students as set out in note 1 in table 5.1 (page 141).

As mentioned under Gross Enrolment Rate for **level three** in section 6.2.1 (page 166), detailed data on headcount enrolments specifically for chartered accountancy programmes was not available. Although the Higher Education Information System is able to provide data on the Accounting (0401) Classification of Educational Subject Matter headcount enrolments, this data is not available in specific age groups. As a result of the unavailability of the data as mentioned above, the Net Enrolment Rate for **level three** could not be calculated.

Based on the formulas as provided in table 6.7, the Net Enrolment Rate for **level one** was calculated and is reported in table 6.8, which sets out the Net Enrolment Rate for 2009 to 2012 in five-year age groups as extracted from table 3 in the appendix.

TABLE 6.8: SUMMARY OF NET ENROLMENT RATE FOR LEVEL ONE

NET ENROLMENT RATES (NER)		2009	2010	2011	2012	
Level 1: Public higher education in South Africa	23 Universities combined	NER for 15 – 19-year age group =	3.4%	3.5%	3.5%	3.3%
		NER for 20 – 24-year age group =	6.3%	6.6%	6.9%	7.1%
		NER for 25 – 29-year age group =	2.4%	2.8%	3.1%	3.2%
		NER for 30 – 34-year age group =	1.9%	2.0%	2.1%	2.1%
		NER for 35 – 39-year age group =	1.9%	2.0%	2.0%	1.9%
		NER for 40 – 44-year age group =	1.9%	1.9%	1.9%	1.7%
		NER for 45 – 49-year age group =	1.3%	1.3%	1.4%	1.3%
		NER for 50 – 54-year age group =	0.7%	0.7%	0.8%	0.7%
		NER for 55 – 59-year age group =	0.3%	0.3%	0.3%	0.3%
		NER for 60 – 64-year age group =	0.1%	0.1%	0.1%	0.1%
		NER for 65 – 69-year age group =	0.0%	0.0%	0.0%	0.0%

Source: Summary of table 3 in appendix, author's own calculations; DHET, 2012b; Statistics South Africa, 2013b.

Figure 6.5 illustrates the *level one* Net Enrolment Rates in five-year age groups for the period 2009 to 2012 based on the combined headcount enrolments at the 23 public universities in South Africa as calculated in table 3 in the appendix and summarised in table 6.8.

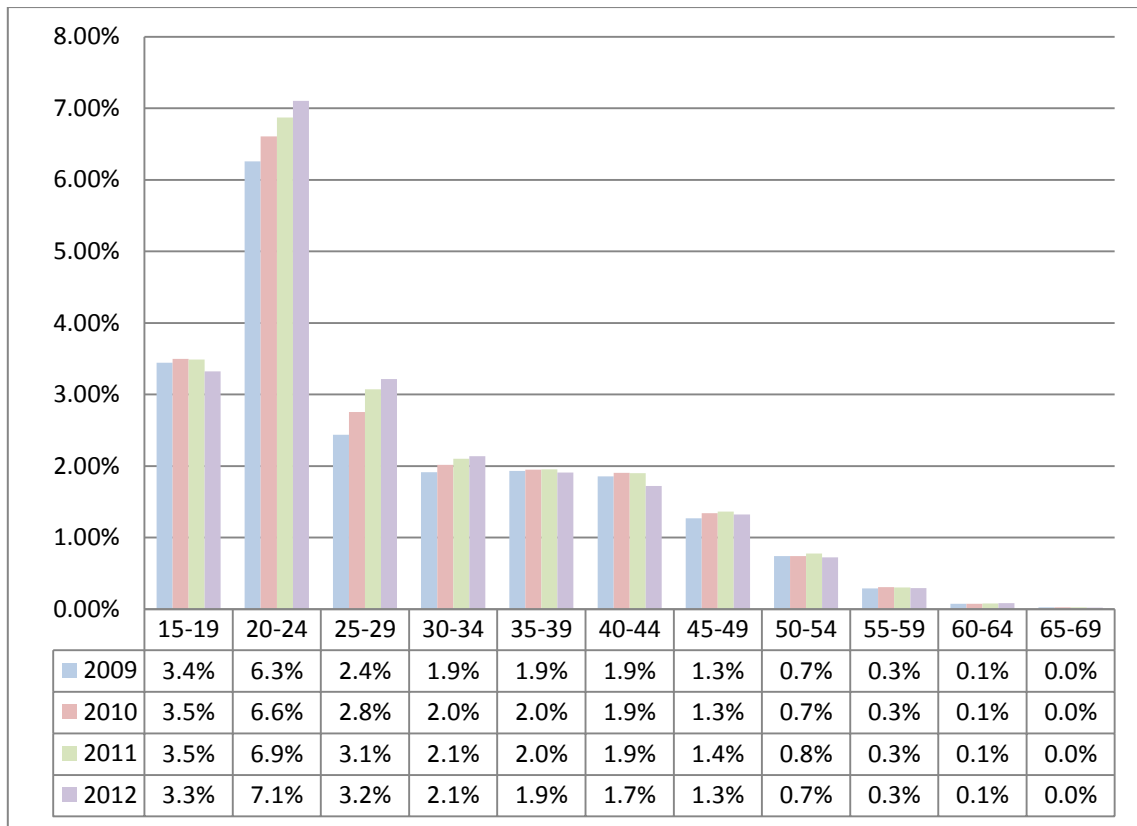


Figure 6.5: Net Enrolment Rate for level one in five-year age groups

As can clearly be seen from table 6.8 and figure 6.5, the five-year age group with the highest rate of participation is the 20-24-year age group for the period 2009 to 2012 for the 23 public universities combined (**level one**). The Net Enrolment Rates, based thus on the 20-24-year age group, the group with the highest scores, range between 6.3% (2009), 6.6% (2010), 6.9% (2011) and 7.1% (2012). This shows a steady increase in Net Enrolment Rates for the period 2009 to 2012, which is consistent with an increase in Gross Enrolment Rates for **level one** as reported in section 6.2.1 (page 166).

The Net Enrolment Rate for higher education in South Africa, based on the total headcount enrolments at the 23 public universities in South Africa for the period 2009 to 2012, is however much lower than the Gross Enrolment Rate also calculated based on the total enrolments at the 23 public universities in South Africa for the period 2009 to 2012. This is due to the fact that approximately 63% - 64% of all student enrolments at the 23 public universities for the period 2009 to 2012 fell outside the 20-24-year age group. However, no other individual five-year age group has a Net Enrolment Rate as high as the 20-24-year age group.

No specific targets have been set in the National Plan for Higher Education in terms of Net Enrolment Rate for higher education. The Net Enrolment Rate is mainly used to measure participation at primary and secondary school levels (Steyn, no date). The Net Enrolment Rate does, however, provide information on the age group with the highest rate of participation, and is therefore useful when public higher education institutions are compared or international comparisons are made, since the age group with the highest rate of participation not only differs between higher education institutions but also between countries.

Based on the formulas provided in table 6.7, the Net Enrolment Rate for **level two** was calculated. Table 6.9 sets out the five-year age group with the highest Net Enrolment Rate for 2009 to 2012 as extracted from tables 4 to 7 in the appendix.

TABLE 6.9: CALCULATION OF NET ENROLMENT RATE FOR AGE GROUP WITH HIGHEST RATE FOR LEVEL TWO

NET ENROLMENT RATES (NER)			2009	2010	2011	2012
Level 2: Overall for 4 universities	University of Cape town	Headcount student enrolments in 20-24-year age group	10,462	11,215	11,616	11,671
		Population size 20-24-year age group	4,770,069	4,827,824	4,896,792	4,966,691
		NER for 20 – 24-year age group =	0.22%	0.23%	0.24%	0.23%
	University of Johannesburg	Headcount student enrolments in 20-24-year age group	20,527	21,408	23,597	25,611
		Population size 20-24-year age group	4,770,069	4,827,824	4,896,792	4,966,691
		NER for 20 – 24-year age group =	0.43%	0.44%	0.48%	0.52%
	University of Witwatersrand	Headcount student enrolments in 20-24-year age group	9,915	10,282	10,741	11,858
		Population size 20-24-year age group	4,770,069	4,827,824	4,896,792	4,966,691
		NER for 20 – 24-year age group =	0.21%	0.21%	0.22%	0.24%
	Unisa	Headcount student enrolments in 20-24 (2009-2011) and 25-29 (2012)-year age group	69,130	76,444	83,119	82,442
		Population size 20-24 (2009-2011) and 25-29 (2012)-year age group	4,770,069	4,827,824	4,896,792	4,707,803
		NER for 20 – 24-year age group for 2009 – 2011 and the 25 – 29-year age group for 2012 =	1.45%	1.58%	1.70%	1.75%

Source: Summary of tables 4 - 7 in appendix, author's own calculations; DHET, 2012b; Statistics South Africa, 2013b.

Figure 6.6 below sets out the *level two* Net Enrolment Rate for the four universities for the five-year age group with the highest rate of participation for the period 2009 to 2012 as summarised in table 6.9.

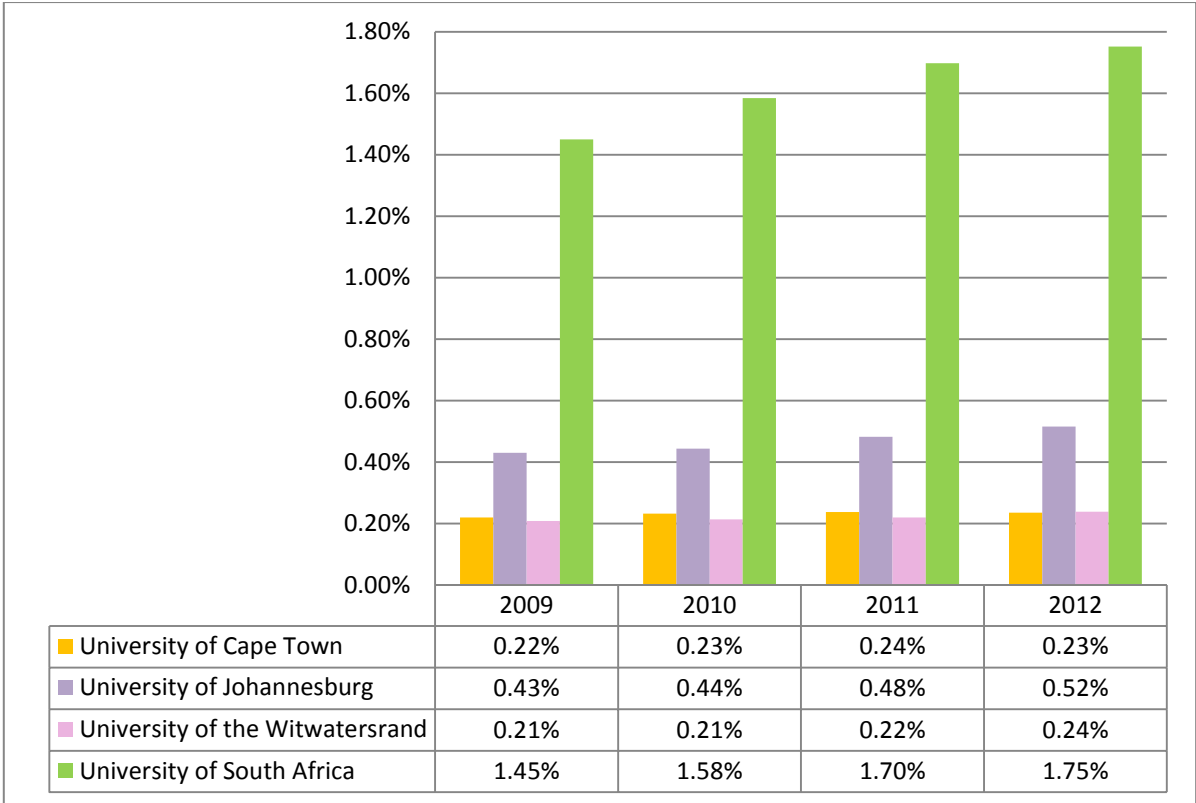


Figure 6.6: Net Enrolment Rate for level two based on five-year age group with highest score

From table 6.9 and figure 6.6, it is evident that the Net Enrolment Rate is by far the highest for Unisa for the period 2009 to 2012, based on the five-year age group with the highest Net Enrolment Rate scores.

Figures 6.7 to 6.10 below illustrate the **level two** Net Enrolment Rate for the period 2009 to 2012 for each of the four selected universities in order to compare the Net Enrolment Rates in the five-year age groups as calculated in tables 4 to 7 in the appendix.

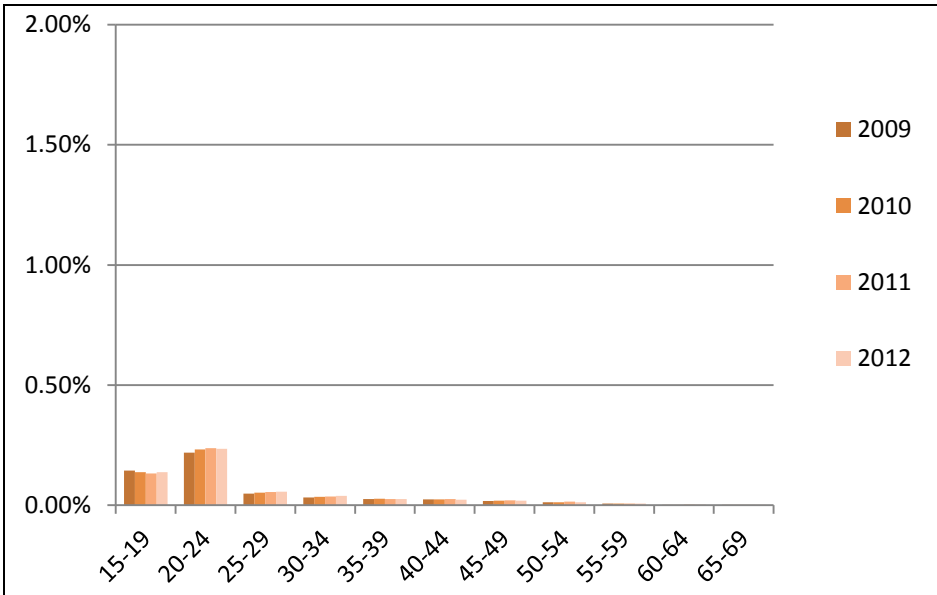


Figure 6.7: Net Enrolment Rate for level two for the University of Cape Town

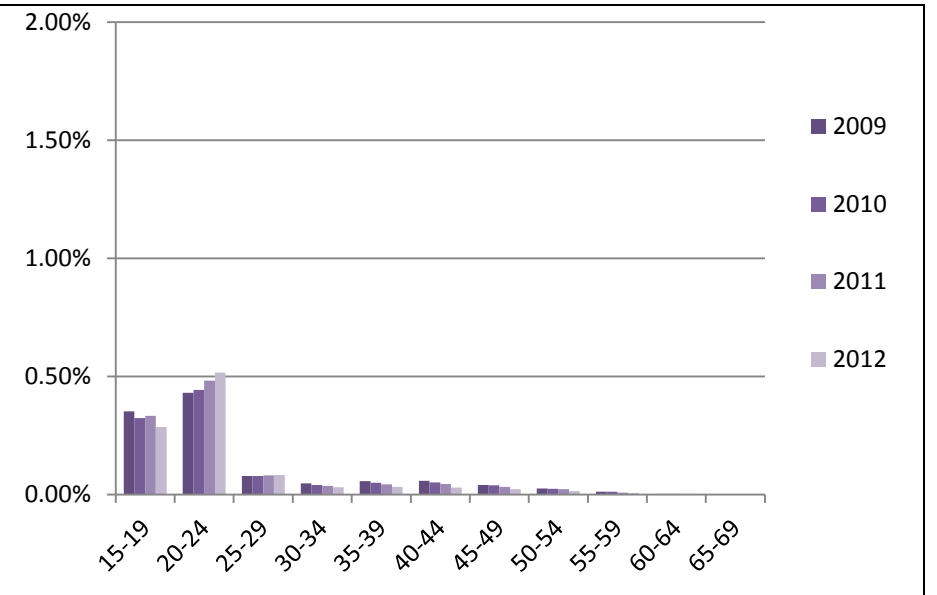


Figure 6.8: Net Enrolment Rate for level two for the University of Johannesburg

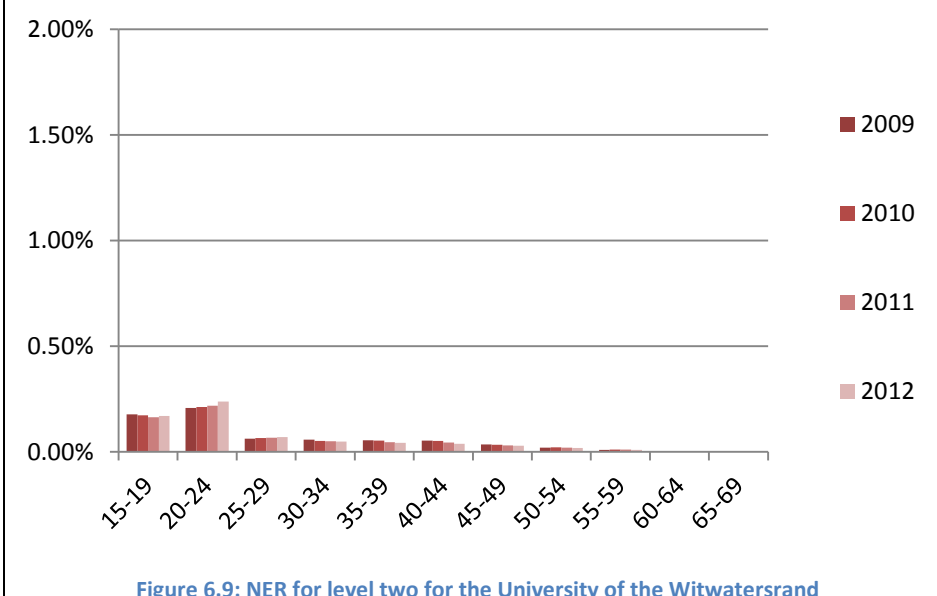


Figure 6.9: NER for level two for the University of the Witwatersrand

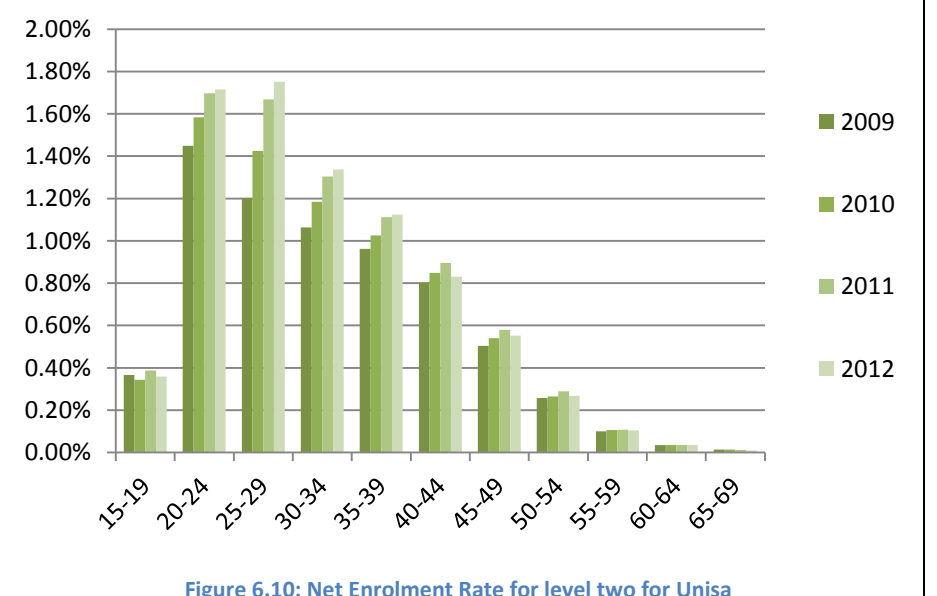


Figure 6.10: Net Enrolment Rate for level two for Unisa

From figures 6.7 to 6.10 it is clear that the five-year age group with the highest rate of participation is mainly the 20-24-year age group for the period 2009 to 2012. The only exception to this is for Unisa in 2012, where the five-year age group with the highest rate of participation is the 25-29-year age group.

Table 6.10 provides the overall rankings of the four universities in terms of their Net Enrolment Rates for *level two*. These rankings are based on the five-year age group with the highest Net Enrolment Rate scores.

TABLE 6.10: RANKINGS IN TERMS OF NET ENROLMENT RATES FOR LEVEL TWO

NET ENROLMENT RATE RANKING FOR LEVEL TWO	2009 ranking	2010 ranking	2011 ranking	2012 ranking
Unisa	1 (1.45%)	1 (1.58%)	1 (1.70%)	1 (1.75%)
University of Johannesburg	2 (0.43%)	2 (0.44%)	2 (0.48%)	2 (0.52%)
University of Cape Town	3 (0.22%)	3 (0.23%)	3 (0.24%)	4 (0.23%)
University of Witwatersrand	4 (0.21%)	4 (0.21%)	4 (0.22%)	3 (0.24%)

Source: Author's own calculation.

Unisa consistently ranked in first place for each individual year. The University of Johannesburg also consistently ranked in second place. This is in keeping with the Gross Enrolment Rate rankings for *level two* as set out in section 6.2.1 (page 166). The rankings do look different for the University of Cape Town however, which now ranked in third place as opposed to a fourth place in terms of Gross Enrolment Rate for *level two*. The University of the Witwatersrand therefore dropped a spot, compared to the Gross Enrolment Rate for *level two*.

As mentioned in section 4.2.3 (page 104), many students choose to study on a part-time basis through Unisa due to poor economic circumstances, geographical distance from residential universities, financial constraints and various other reasons. For these students, part-time studies offer the opportunity to study whilst earning a

salary in order to pay for expensive tuition fees. From tables 4 to 6 in the appendix it is clear that for the three residential universities, the 20-24-year age group has by far the highest Net Enrolment Rates. This picture is very different when looking at Unisa, where there are large student enrolment numbers in all age groups from 20-24 up to 45-49. In 2012 the 25-29-year age group had the highest Net Enrolment Rate at this university, with high Net Enrolment Rates in the 20-24 and 30-34-year age groups as well. With part-time studies being the last resort for so many students in South Africa (Unisa, 2014a), Unisa plays a crucial role in the vision of increasing participation rates in South African higher education as can be clearly seen from the rankings as set out in table 6.10 (page 188). With by far the highest Gross Enrolment Rates and Net Enrolment rates of the four universities from 2009 to 2012, the critical role that this university plays in making higher education more accessible to South African students is evident.

No rankings could be done in terms of the Net Enrolment Rate for **level three** as explained above.

Section 6.3 provides the findings on the second indicator, educational attainment.

6.3 FINDINGS ON EDUCATIONAL ATTAINMENT

Chapter 2 provided background information on various methods that could be used to measure educational attainment. Although various possible methods can be used, it was concluded in Chapter 5 that only the level of attainment and the graduation rate were used for this study as they are the most relevant and widely applied in South Africa as well as internationally.

The following section sets out the findings on the level of attainment for **levels one, two and three**.

6.3.1 Level of attainment

Table 5.3 (page 149) indicated how the level of attainment would be measured for the **three levels**. This table is repeated here in table 6.11 to perform the various calculations.

TABLE 6.11: MEASUREMENT OF LEVEL OF ATTAINMENT FOR LEVELS ONE, TWO AND THREE

INDICATOR: EDUCATIONAL ATTAINMENT	Level one Calculated for public higher education in South Africa (based on the 23 public universities in South Africa combined)	Level two Calculated for each of the four selected public universities in total	Level three Calculated for each of the four selected public universities on accountancy programmes with special emphasis on chartered accountancy programmes at these universities
Level of attainment	$\frac{\text{Total number of graduates in 5-year age groups at the 23 public universities in SA}}{\text{Population size in 5-year age interval}} \times 100$	$\frac{\text{Total number of graduates in 5-year age groups at the 4 public universities in SA}}{\text{Population size in 5-year age interval}} \times 100$	$\frac{\text{Total number of graduates in 5-year age groups at the 4 public universities in SA}}{\text{Population size in 5-year age interval}} \times 100$
	$\frac{\text{Total number of graduates in 25-34-year age group at the 23 public universities in SA}}{\text{Population size in the 25-34-year age interval}} \times 100$	$\frac{\text{Total number of graduates in 25-34-year age group at the 4 public universities in SA}}{\text{Population size in the 25-34-year age interval}} \times 100$	$\frac{\text{Total number of graduates in 25-34-year age group at the 4 public universities in SA}}{\text{Population size in the 25-34-year age interval}} \times 100$
	$\frac{\text{Total number of graduates in 25-64-year age group at the 23 public universities in SA}}{\text{Population size in the 25-64-year age interval}} \times 100$	$\frac{\text{Total number of graduates in 25-64-year age group at the 4 public universities in SA}}{\text{Population size in the 25-64-year age interval}} \times 100$	$\frac{\text{Total number of graduates in 25-64-year age group at the 4 public universities in SA}}{\text{Population size in the 25-64-year age interval}} \times 100$

The level of attainment was calculated in this section for the **three levels** as set out in table 6.11. In terms of **level one** and **level two**, the total number of graduates and population numbers in five-year age groups were obtained from the same sources as for the Gross Enrolment Rate as set out in section 6.2.1 (page 166) and include students as set out in table 5.3 (page 146).

For the same reason as stated under Net Enrolment Rate for **level three** in section 6.2.2 (page 179), the level of attainment for **level three** could also not be calculated.

Based on the formulas as provided in table 6.11, the level of attainment for **level one** was calculated and is reported in table 6.12 (as summarised from table 8 in the appendix), which sets out the level of attainment for:

1. The 20-24-year age group with the highest level of attainment for the period 2009 to 2012 (as calculated in table 8 in the appendix and illustrated in figure 6.11);
2. The 25-34-year age group; and
3. The 25-64-year age group.

TABLE 6.12: CALCULATION OF LEVEL OF ATTAINMENT FOR LEVEL ONE

Level of attainment		2009	2010	2011	2012		
Level 1: Public higher education in South Africa		Graduates in 20-24-year age group	71,150	73,654	77,875	84,984	
		Population in 20-24-year age group	4,770,069	4,827,824	4,896,792	4,966,691	
	23 Universities Combined		Level of attainment for 20 – 24-year age group =	1.49%	1.53%	1.59%	1.71%
			Graduates in 25-34-year age group	32,379	34,921	37,444	39,814
			Population in 24-34-year age group	8,640,948	8,746,469	8,868,567	9,009,713
			Level of attainment for 25 – 34-year age group =	0.37%	0.40%	0.42%	0.44%
			Graduates in 25-64-year age group	70,356	75,773	78,744	76,607
			Population in 25-64-year age group	22,522,295	23,018,970	23,524,106	24,045,261
	Level of attainment for 25 – 64-year age group =	0.31%	0.33%	0.33%	0.32%		

Source: Summary of table 8 in appendix, author's own calculations; DHET, 2012b; Statistics South Africa, 2013b.

Figure 6.11 illustrates the **level one** level of attainment for the period 2009 to 2012 based on graduations in five-year age groups for the 23 public universities combined as set out in table 8 in the appendix.

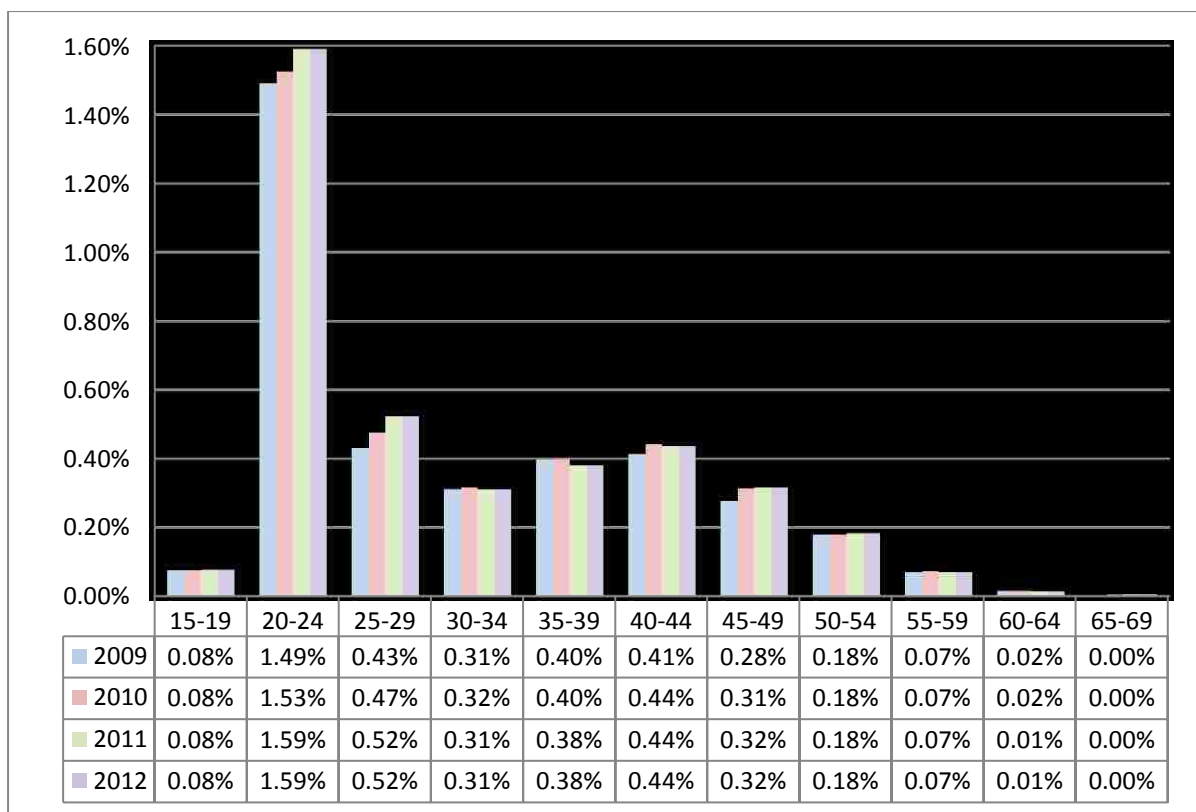


Figure 6.11: Level of attainment for level one in five-year age groups

As can be seen from figure 6.11, the 20-24-year age group has by far the highest level of attainment for the 23 public universities combined (**level one**), followed by the 25-29, the 40-44, and the 35-39-year age groups.

The level of attainment is mainly calculated on the age groups 25-34 and/or 25-64 (UNESCO, 2014a; OECD, 2013; Usher and Medow, 2010; Usher and Cervenán, 2005; Murakami and Blom, 2008; Steyn, no date). Figure 6.12 below, however, compares the **level one** level of attainment for the 20-24, 25-34 and 25-64-year age groups for the period 2009 to 2012 as summarised in table 6.12. As is evident from table 6.12 and figure 6.12 below, the level of attainment for the 23 public universities combined is by far the highest for the 20-24-year age group and is much higher than that of the 25-34 or 25-64-year age groups.

Should the level of attainment for South Africa however be calculated on the 25 and older age group only, a much lower level of attainment is reported, as can be seen from figure 6.12 below.

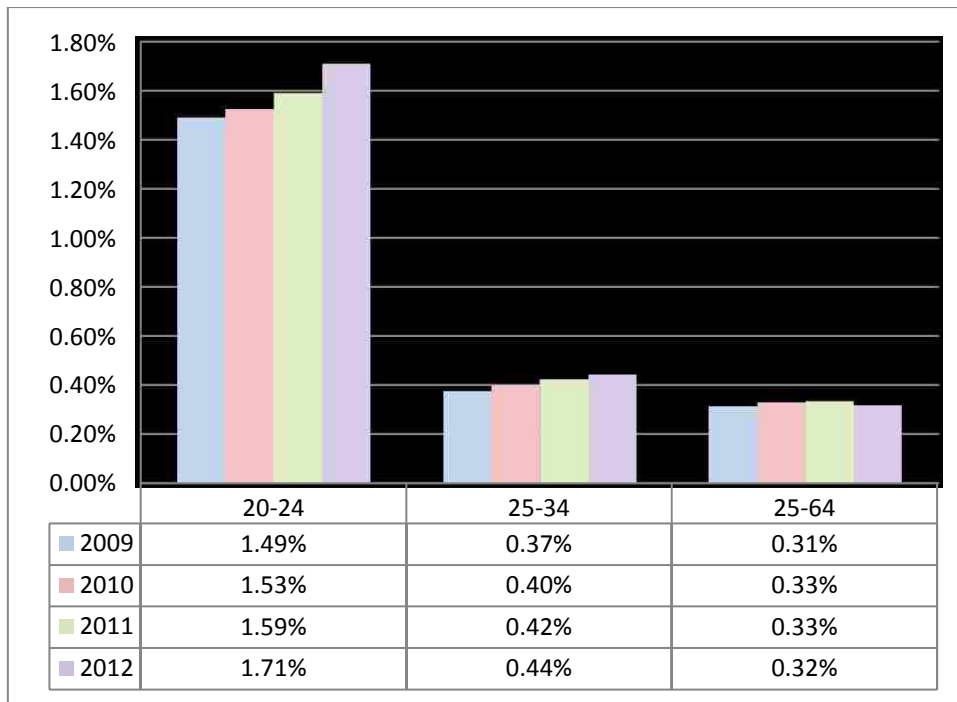


Figure 6.12: Level of attainment for the 20-24, 25-34 and 25-64-year age groups

The Organisation for Economic Co-operation and Development reported an average percentage of the population that has attained higher education (International Standard Classification of Education 1997 type 5A, 5B and 6 qualifications) in 2011 of 39% for the 25-34-year age group and 32% for the 25-64-year age group (OECD, 2013). In 2011 the percentages for South Africa were 0.42% and 0.33% for these age groups respectively (only taking the 23 public universities into account) and are considered very low in comparison.

Based on the formulas provided in table 6.11, the level of attainment for **level two** was calculated and are reported in table 6.13 (as summarised from tables 9 to 16 in the appendix), which sets out the level of attainment for:

1. The five-year age group with the highest level of attainment for the period 2009 to 2012 (as indicated in tables 9 - 12 in the appendix and illustrated in figures 6.13 – 6.16);
2. The 25-34-year age group (as calculated in tables 13 – 16 in appendix which were derived from tables 9 -12 in the appendix); and
3. The 25-64-year age group (as calculated in tables 13 – 16 in appendix which were derived from tables 9 -12 in the appendix).

TABLE 6.13: SUMMARY OF LEVEL OF ATTAINMENT FOR AGE GROUP WITH HIGHEST RATE, 25-34 AND 25-64 YEAR AGE GROUPS FOR LEVEL TWO

LEVEL OF ATTAINMENT			2009	2010	2011	2012
Level 2: Overall for 4 universities	University of Cape town	Five-year age group with highest level of attainment (20-24-year age group)	0.08%	0.08%	0.09%	0.09%
		25-34-year age group	0.01%	0.01%	0.01%	0.01%
		25-64-year age group	0.01%	0.01%	0.01%	0.01%
	University of Johannesburg	Five-year age group with highest level of attainment (20-24-year age group)	0.13%	0.13%	0.14%	0.16%
		25-34-year age group	0.02%	0.02%	0.02%	0.02%
		25-64-year age group	0.02%	0.01%	0.02%	0.01%
	University of Witwatersrand	Five-year age group with highest level of attainment (20-24-year age group)	0.07%	0.08%	0.08%	0.08%
		25-34-year age group	0.01%	0.01%	0.02%	0.02%
		25-64-year age group	0.01%	0.01%	0.01%	0.01%
	Unisa	Five-year age group with highest level of attainment (different age groups in each year)	0.13%	0.14%	0.14%	0.12%
		25-34-year age group	0.09%	0.10%	0.10%	0.11%
		25-64-year age group	0.08%	0.09%	0.09%	0.09%

Source: Summary of tables 9 - 16 in appendix, author's own calculations; DHET, 2012b; Statistics South Africa, 2013b.

Tables 9 to 12 in the appendix set out the level of attainment for the selected four universities in five-year age groups. Based on these calculations, figures 6.13 to 6.16 illustrate the five-year age groups with the highest level of attainment for the period 2009 to 2012.

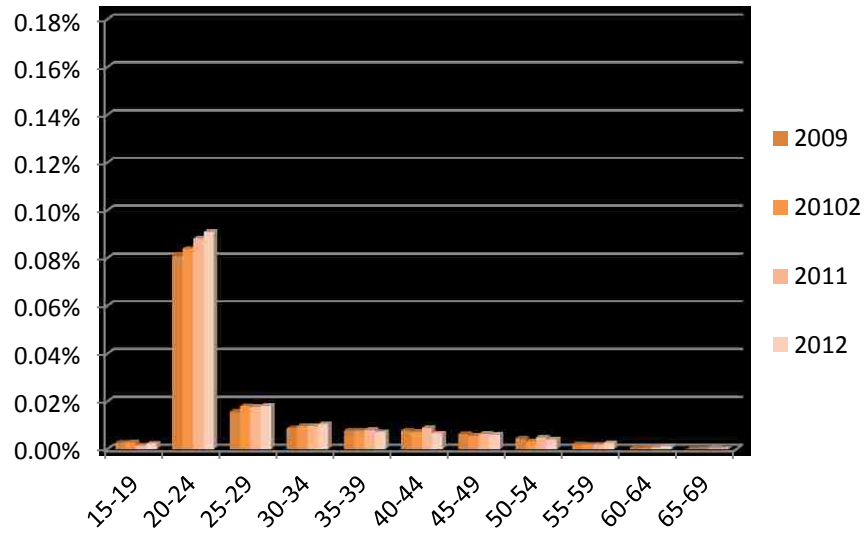


Figure 6.13: Level of attainment for level two for the University of Cape Town

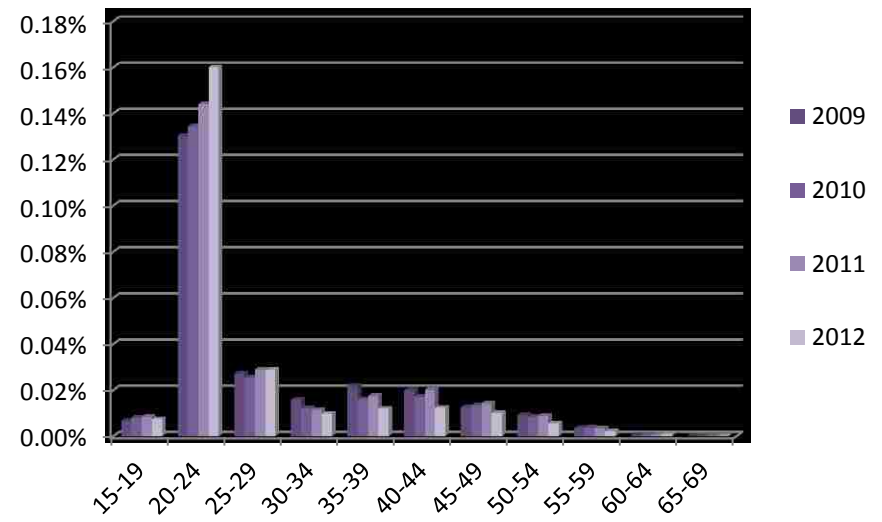


Figure 6.14: Level of attainment for level two for the University of Johannesburg

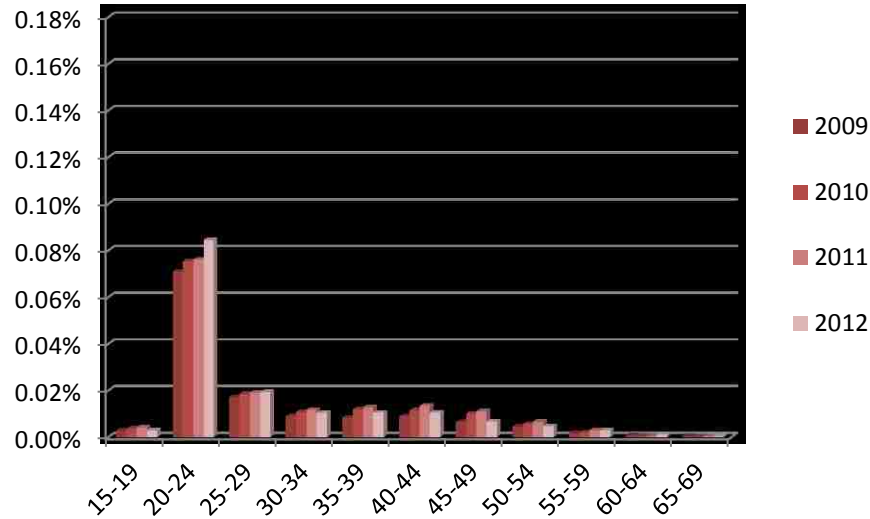


Figure 6.15: Level of attainment for level two for the University of the Witwatersrand

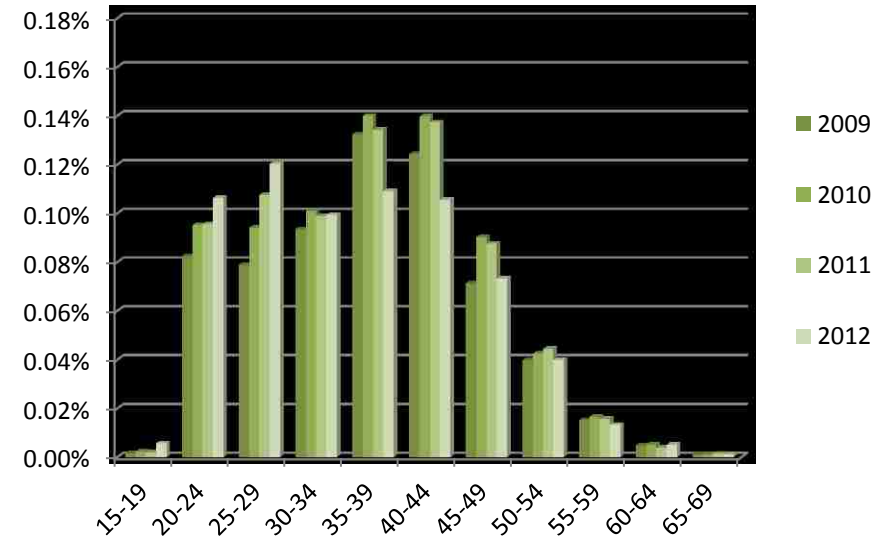


Figure 6.16: Level of attainment for level two for Unisa

From figures 6.13 to 6.16 it is clear that the level of attainment is the highest for the 20-24-year age group for the Universities of Cape Town, Johannesburg and the Witwatersrand. This is, however, not the case for Unisa. The level of attainment is the highest for the 35-39 age group in 2009 and 2010 (with 0.13% and 0.14% respectively), and the 40-44-year age group in 2011 (with 0.14%), while in 2012 the age group 25-29 is the highest (with 0.12%). Although the level of attainment is usually calculated on the 25 and older age group, as mentioned above, the 20-24-year age group has the highest level of attainment for three of the universities measured for **level two** and is thus of crucial importance.

For comparison with international age categories, tables 13 to 16 in the appendix set out the level of attainment for the selected four universities for the 20-24, the 25-34 and the 25-64-year age groups. Based on these calculations, figures 6.17 to 6.20 illustrate the level of attainment for these respective age groups for each of the four universities.

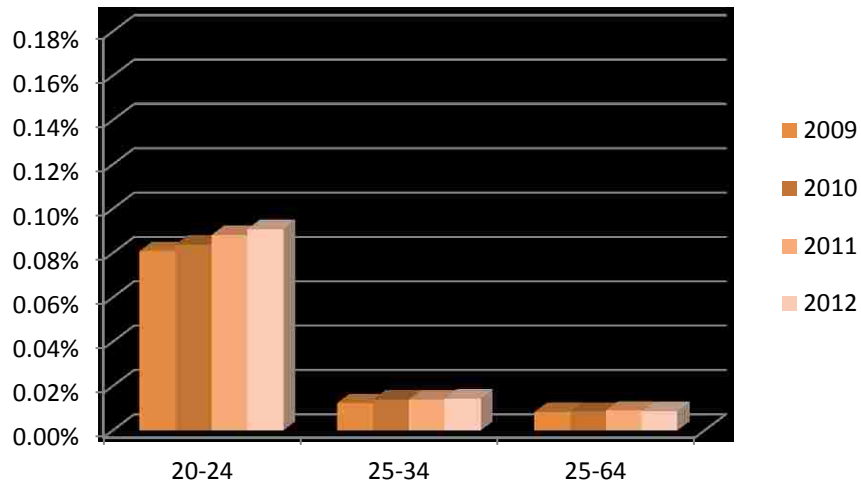


Figure 6.17: Level of attainment for 20-24, 25-34 and 25-64-year age groups for the University of Cape Town

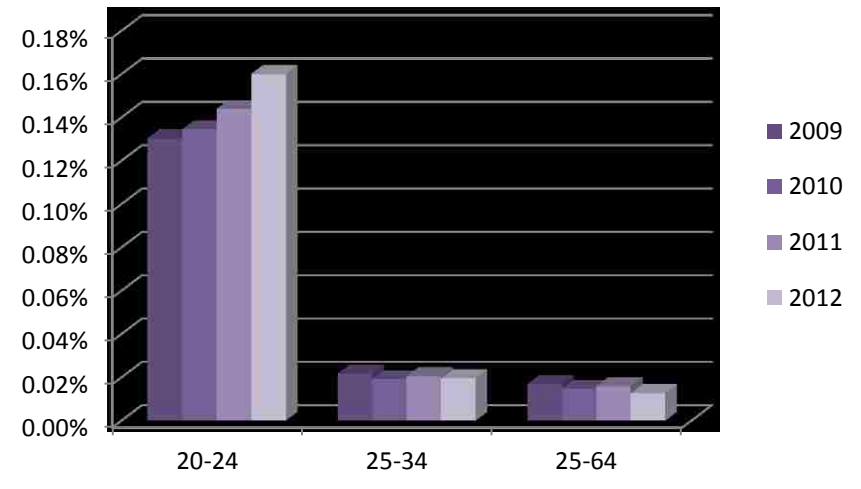


Figure 6.18: Level of attainment for 20-24, 25-34 and 25-64-year age groups for the University of Johannesburg

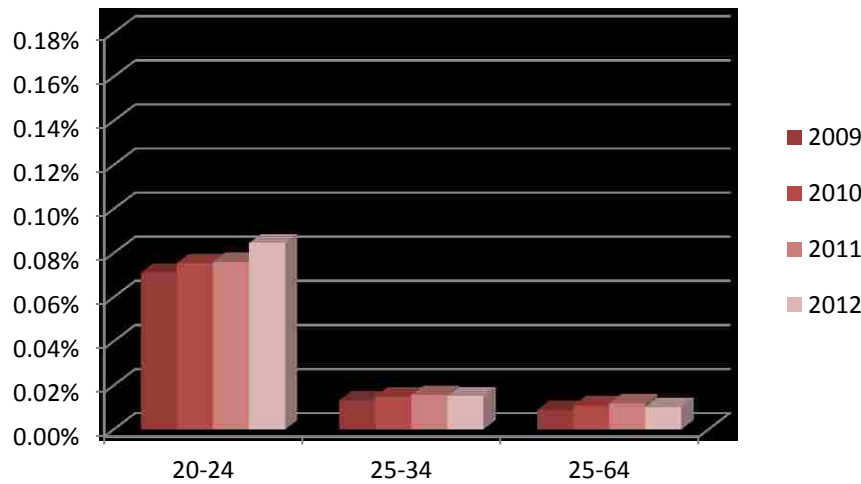


Figure 6.19: Level of attainment for 20-24, 25-34 and 25-64-year age groups for the University of the Witwatersrand

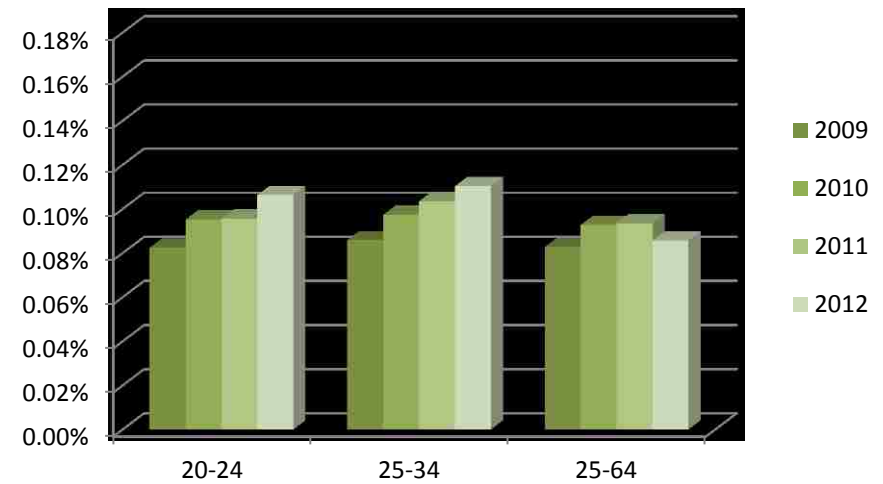


Figure 6.20: Level of attainment for 20-24, 25-34 and 25-64-year age groups for Unisa

Apart from Unisa, the levels of attainment for the 25-34 and 25-64-year age groups are excessively lower when compared to those of the 20-24-year age group, as illustrated in figures 6.17 to 6.20. For Unisa, this picture is very different. The level of attainment is very similar for each of the three age groups.

Table 6.14 provides the overall rankings of the four universities in terms of their level of attainment scores for **level two**. The ranking for each year is provided based on the results in table 6.13. These rankings are based on the age group with the highest level of attainment scores.

TABLE 6.14: RANKINGS IN TERMS OF LEVEL OF ATTAINMENT FOR LEVEL TWO

LEVEL OF ATTAINMENT FOR LEVEL TWO	2009 ranking	2010 ranking	2011 ranking	2012 ranking
University of Johannesburg	1 (0.13% in 20-24-year age group)	2 (0.13% in 20-24-year age group)	1 (0.14% in 20-24-year age group)	1 (0.16% in 20-24-year age group)
Unisa	1 (0.13% in 35-39-year age group)	1 (0.14% in 35-39-year age group)	1 (0.14% in 40-44-year age group)	2 (0.12% in 25-29-year age group)
University of Cape Town	2 (0.08% in 20-24-year age group)	3 (0.08% in 20-24-year age group)	2 (0.09% in 20-24-year age group)	3 (0.09% in 20-24-year age group)
University of Witwatersrand	3 (0.07% in 20-24-year age group)	3 (0.08% in 20-24-year age group)	3 (0.08% in 20-24-year age group)	4 (0.08% in 20-24-year age group)

Source: Author's own calculation.

The University of Johannesburg and Unisa far outranked the other two universities in terms of level of attainment scores and performed relatively equally when comparing the five-year age groups with the highest level of attainment. This picture differed significantly for the Net Enrolment Rates, where Unisa (ranked in first place for Net

Enrolment Rates) far outranked the University of Johannesburg (ranked in second place for Net Enrolment Rates). It would thus seem that even though Unisa still managed to fare relatively well in terms of the level of attainment compared to the other universities, it did not outperform them in the Net Enrolment Rates or Gross Enrolment Rate rankings.

If the level of attainment is based on the 25 and older age groups, however, Unisa far outranks the other three universities in the level of attainment for the 25-34 and the 25-64-year age groups. For this study however, the five-year age group with the highest level of attainment was taken for ranking purposes as explained above.

No rankings could be done in terms of the level of attainment for **level three** as explained above.

The level of attainment only measures graduates in a certain age group as a percentage of the population in that age group, however, and does not take enrolment numbers into account. The level of attainment rankings could thus provide a false sense of performance and it is therefore important not to measure only this one method but also to measure educational attainment by taking enrolment numbers into account. The graduation rate as calculated in the following section takes into account all graduates in a particular year as a percentage of all enrolments for that year. The following section thus sets out the findings of the graduation rate for **levels one, two and three**.

6.3.2 Graduation rate

Table 5.4 (page 149) indicated how the graduation rate would be measured for the **three levels**. This table is repeated here in table 6.15 for performing the various calculations.

TABLE 6.15: MEASUREMENT OF GRADUATION RATE FOR LEVELS ONE, TWO AND THREE

INDICATOR: EDUCATIONAL ATTAINMENT	Level one Calculated for public higher education in South Africa (based on the 23 public universities in South Africa combined)	-Level two Calculated for each of the four selected public universities in total	Level three Calculated for each of the four selected public universities based on accountancy programmes with special emphasis on chartered accountancy programmes at these universities
Graduation rate	$\frac{\text{Total number of graduates at the 23 public universities in SA}}{\text{Total number of all headcount enrolments at the 23 public universities in SA}} \times 100$	$\frac{\text{Total number of graduates at the 4 public universities in SA}}{\text{Total number of all headcount enrolments at the 4 public universities in SA}} \times 100$	$\frac{\text{Total number of graduates into accounting (CA related) programmes at each of the 4 public universities in SA}}{\text{Total number of all headcount enrolments at the 4 public universities in SA}} \times 100$ $\frac{\text{Total number of passes into SAICA QE 1 examination for each of the 4 public universities in SA}}{\text{Total number of candidates who wrote the SAICA QE 1 examination from each of the 4 public universities in SA}} \times 100$

Chapter 2 explained that graduation rates are mainly calculated by dividing the total number of qualifications awarded at a specific institution (graduates) by the total number of students enrolled in that same year (CHE, 2009; DHET, 2013a; Ministry of Education, 2001). Graduate numbers include all students who successfully completed an International Standard Classification of Education 1997 type 5A, 5B and 6 qualification as set out in table 5.3 (page 146). In terms of **level one** and **level two**, the total number of enrolment and graduate numbers were obtained from the same sources as set out in section 6.2.1 (page 166).

Detailed data on headcount enrolments and graduates specifically for chartered accountancy programmes was not available at the time of this study. For the same reasons as described for **level three** for Gross Enrolment Rate (section 6.2.1, page 166), the graduation numbers for the Accounting (0401) Classification of Educational Subject Matter were used for this study. In terms of **undergraduate** headcount enrolments and graduates for programmes that could possibly lead to a chartered accounting qualification, this study took the following qualification types into account:

- General Academic First Bachelor's degree: A first bachelor's degree with a duration of three years for the Accounting (0401) Classification of Educational Subject Matter; and
- Professional First Bachelor's degree: A first bachelor's degree with a duration of four or more years for the Accounting (0401) Classification of Educational Subject Matter.

In terms of **postgraduate** headcount enrolments and graduates for programmes that could possibly lead to a chartered accounting qualification, this study took the following qualification types into account:

- Postgraduate diploma or certificate: A diploma or certificate with a bachelor's degree as prerequisite for admission to the programme for the Accounting (0401) Classification of Educational Subject Matter;
- Postgraduate Bachelor's degree: A bachelor's degree with a first bachelor's degree as prerequisite for admission to the programme for the Accounting (0401) Classification of Educational Subject Matter; and

- Honours degree for the Accounting (0401) Classification of Educational Subject Matter.

Based on the formulas provided in table 6.15, the graduation rate for **level one** was calculated and is reported in table 6.16. This table sets out the total number of graduates from the combined 23 public universities in South Africa for the period 2009 to 2012 as a percentage of the total headcount enrolments at the combined 23 public universities in South Africa for those particular years.

TABLE 6.16: CALCULATION OF GRADUATION RATE FOR LEVEL ONE

Graduation rate		2009	2010	2011	2012	
Level 1: Public higher education in South Africa	23 Universities combined	Total number of graduates	145,426	153,327	160,630	165,995
		Headcount student enrolments	837,776	892,936	938,201	953,373
		Graduation rate =	17.36%	17.17%	17.12%	17.41%

Source: Author's own calculations; DHET, 2012b.

Figure 6.21 illustrates the **level one** graduation rate for the period 2009 to 2012 based on the combined graduates at the 23 public universities in South Africa as calculated in table 6.16.

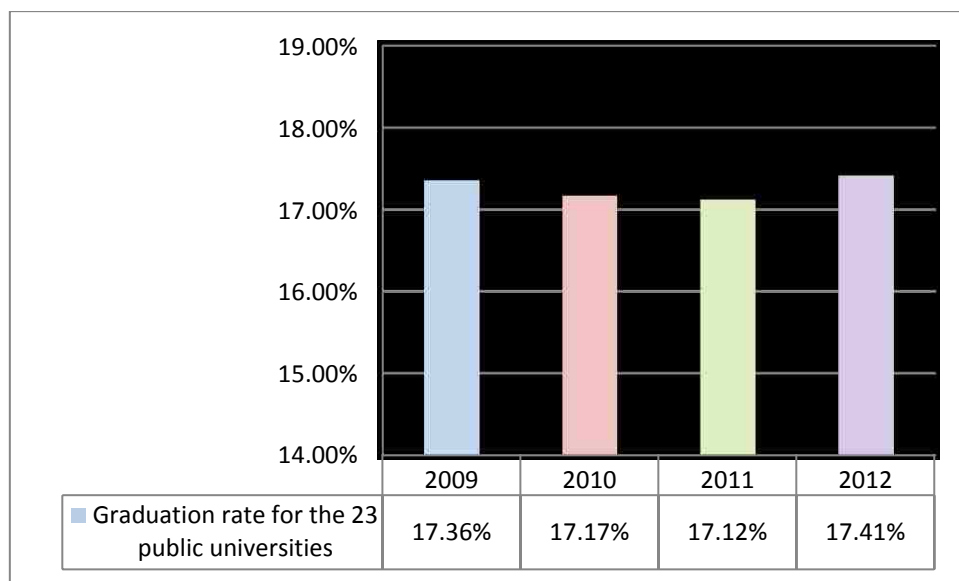


Figure 6.21: Graduation rate for level one

The Organisation for Economic Co-operation and Development annual *Education at a Glance*, 2013 edition (OECD, 2013) shows that the average graduation rate for **International Standard Classification of Education type 5A qualifications** in 2011 was 39% and remained constant at 39% from 2008 to 2011. The Organisation for Economic Co-operation and Development average graduation rate for **International Standard Classification of Education type 5B qualifications** was approximately 11% from 2008 to 2011. The graduation rate for South Africa was 17.12% in 2011 (including all International Standard Classification of Education type 5A, 5B and 6 qualifications). This is not directly comparable to the 39% (only for type 5A qualifications) or the 11% (only for type 5B qualifications), but is indeed an indication that the graduation rates are relatively low for the 23 public universities in South Africa as the 17.12% includes 5A, 5B and type 6 qualifications.

From table 6.16 and figure 6.21 it is evident that the average graduation rate for the combined 23 public universities in South Africa has remained relatively consistent, apart from a slight drop in 2010 and 2011, and a slight increase from 2009 to 2012 can be seen. The average graduation rate over the period 2009 to 2012 was 17.27% and was mainly due to the higher rate in 2012.

As stated in Chapter 2, the Ministry of Education set certain specific benchmarks for graduation rates which were to be met by all higher education institutions within 5 years. The National Plan for Higher Education was released during 2001 and this would thus mean that these benchmarks had to have been met by at least 2006. The benchmarks for graduation rates set in the National Plan for Higher Education are shown in table 6.17 below (Ministry of Education, 2001).

TABLE 6.17: NATIONAL PLAN FOR HIGHER EDUCATION GRADUATION BENCHMARKS

Qualification type	Graduation rate benchmark for	Graduation rate benchmark for
	contact institution	distance institution
Undergraduate: up to 3 years	25%	15%
Undergraduate: 4 years or more	20%	10%
Postgraduate: up to honours	60%	30%

Source: Ministry of Education, 2001.

Table 6.18 however indicates adjusted benchmarks for the graduation rates as set out in the *Statement on higher education funding: 2004/05 to 2006/07* (Department of Education, 2004) as referred to in section 2.3.2 (page 45).

TABLE 6.18: ADJUSTED GRADUATION RATE BENCHMARKS FOR SOUTH AFRICAN HIGHER EDUCATION

	Adjusted graduation benchmarks for contact and distance programmes					
	Contact			Distance		
	2004/05	2005/06	2006/07	2004/05	2005/06	2006/07
Undergraduate: up to 3 years	22.5%	22.5%	22.5%	13.5%	13.5%	13.5%
Undergraduate: 4 years or more	18%	18%	18%	9%	9%	9%
Postgraduate: up to honours	54%	54%	54%	27%	27%	27%
Postgraduate: up to masters	30%	30%	30%	22.5%	22.5%	22.5%

Source: Department of Education, 2004.

Table 6.17 and table 6.18 indicate distinct benchmarks for graduation rates for both contact and distance modes of delivery. The exact number of contact versus distance mode students at each of the 23 public universities could not be obtained; hence Unisa as the largest distance university was, for purposes of this study, the only university taken into account when comparisons were made against distance mode of delivery benchmarks as set out in the National Plan for Higher Education.

Due to the unavailability of information as described above, the other 22 public universities were used in this study to make comparisons in terms of contact mode of

delivery benchmarks even though certain of these universities do offer limited distance-mode programmes and qualifications. In order to measure graduation rates for the various qualification types set out above for the combined 23 public universities in South Africa, table 17 in the appendix was drawn up. Table 17 indicates the graduation rates for the combined 23 public universities in South Africa for the period 2009 to 2012. These figures exclude occasional students as there is no separate information available for these students in terms of graduation numbers. Refer to table 18 in the appendix for the graduation rates for Unisa for the period 2009 to 2012 for the qualification types as set out above. Refer to table 19 in the appendix which sets out graduation rates for the 22 public universities, excluding Unisa, for the period 2009 to 2012 for the various qualification types as indicated above. Again, occasional students were not taken into account.

Table 6.19 was compiled as a summary of tables 17 to 19 in the appendix. This table indicates the graduation rates for the combined 23 public universities, namely those for Unisa as well as those for the 22 public universities (excluding Unisa) for the 2012 academic year. The graduation rates for the 22 public universities were then compared to the benchmark graduation rates for **contact mode** of delivery stipulated in the National Plan for Higher Education (Ministry of Education, 2001) as well as the adjusted benchmark (Department of Education, 2004). The graduation rates for Unisa were compared to the benchmark graduation rates for **distance mode** of delivery as stipulated in the National Plan for Higher Education (Ministry of Education, 2001) as well as the adjusted benchmark (Department of Education, 2004).

TABLE 6.19: COMPARISONS WITH NATIONAL PLAN FOR HIGHER EDUCATION GRADUATION BENCHMARKS, 2012

Graduation rate benchmark per qualification type	Undergraduate: up to 3 years	Undergraduate: 4 years or more	Postgraduate up to honours
Graduation rate for 23 universities in 2012	16%	15%	39%
Graduation rate for 22 universities (excluding UNISA) in 2012	21%	21%	48%
Benchmark graduation rate for contact mode	Original 25% Adjusted 22.5%	Original 20% Adjusted 18%	Original 60% Adjusted 54%
Difference from: original benchmarks	-4%	1%	-12%
adjusted benchmarks	-1.5%	3%	-6%
Graduation rate for UNISA in 2012	7%	5%	24%
Benchmark graduation rate for distance mode	Original 15% Adjusted 13.5%	Original 10% Adjusted 9%	Original 30% Adjusted 27%
Difference from: original benchmarks	-8%	-5%	-6%
adjusted benchmarks	-6.5%	-4%	-3%

Source: Summary of table 17 - 19 in appendix, author's own calculations.

Note: A positive difference indicates that the benchmark has been met whilst a negative difference indicates that the benchmark has not been met.

From table 6.19 it is evident that in terms of the contact mode of delivery comparisons, the 22 public universities have met the benchmark for the four-year or more undergraduate qualification types but are well below the other benchmarks in 2012, although these benchmarks were set to have been met by at least 2006 (Ministry of Education, 2001). Even when the lower adjusted contact mode of delivery graduation rate benchmarks (DHET, 2004) are compared to the actual graduation rates for the 22 public universities for 2012, the situation does not change much, apart from the fact that the differences are slightly smaller. These adjusted benchmarks were set to be met by 2006/2007 and yet in 2012 these benchmarks are for most of the qualification types far from being met.

For the majority of qualification types the graduation rates are far higher when Unisa is taken out of the calculation. The graduation rates for the 22 other public universities reflect higher percentages when compared to the graduation rates of the 23 public universities and it could be concluded that the graduation rates of Unisa are very low. This is evident when the graduation rates for Unisa are compared to the graduation rate benchmarks for distance mode of delivery stipulated in the National Plan for Higher Education (Ministry of Education, 2001) and the adjusted graduation rate benchmarks for distance mode of delivery (DHET, 2004). Even with the lower adjusted benchmarks, Unisa achieved none of the benchmarks even by 2012 and these benchmarks still seem far from being met. This situation is extremely worrying; even though the benchmarks were lowered, they still have not been met.

The calculations conducted for **level two** were based on the total graduates and the total headcount enrolments at the four selected universities. Based on the formulas as provided in table 6.15, the graduation rate for **level two** was calculated and is reported in table 6.20.

TABLE 6.20: CALCULATION OF GRADUATION RATE FOR LEVEL TWO

GRADUATION RATE			2009	2010	2011	2012
Level 2: Overall for 4 universities	University of Cape Town	Total number of graduates	5,875	6,172	6,530	6,739
		Headcount student enrolments	23,787	24,772	25,301	25,805
		Graduation rate =	24.70%	24.92%	25.81%	26.12%
	University of Johannesburg	Total number of graduates	10,367	10,284	11,229	11,410
		Headcount student enrolments	49,315	48,315	50,528	48,769
		Graduation rate =	21.02%	21.29%	22.22%	23.40%
	University of Witwatersrand	Total number of graduates	5,544	6,344	6,716	6,809
		Headcount student enrolments	29,234	29,498	29,004	30,436
		Graduation rate =	18.96%	21.51%	23.16%	22.37%
	Unisa	Total number of graduates	22,675	26,073	26,808	26,210
		Headcount student enrolments	263,559	293,437	328,864	336,286
		Graduation rate =	8.60%	8.89%	8.15%	7.79%

Source: Author's own calculations; DHET, 2012b.

Figure 6.22 illustrates the *level two* graduation rate for the period 2009 to 2012 based on the total graduate numbers and the total headcount enrolments at each of the four universities as calculated in table 6.20.

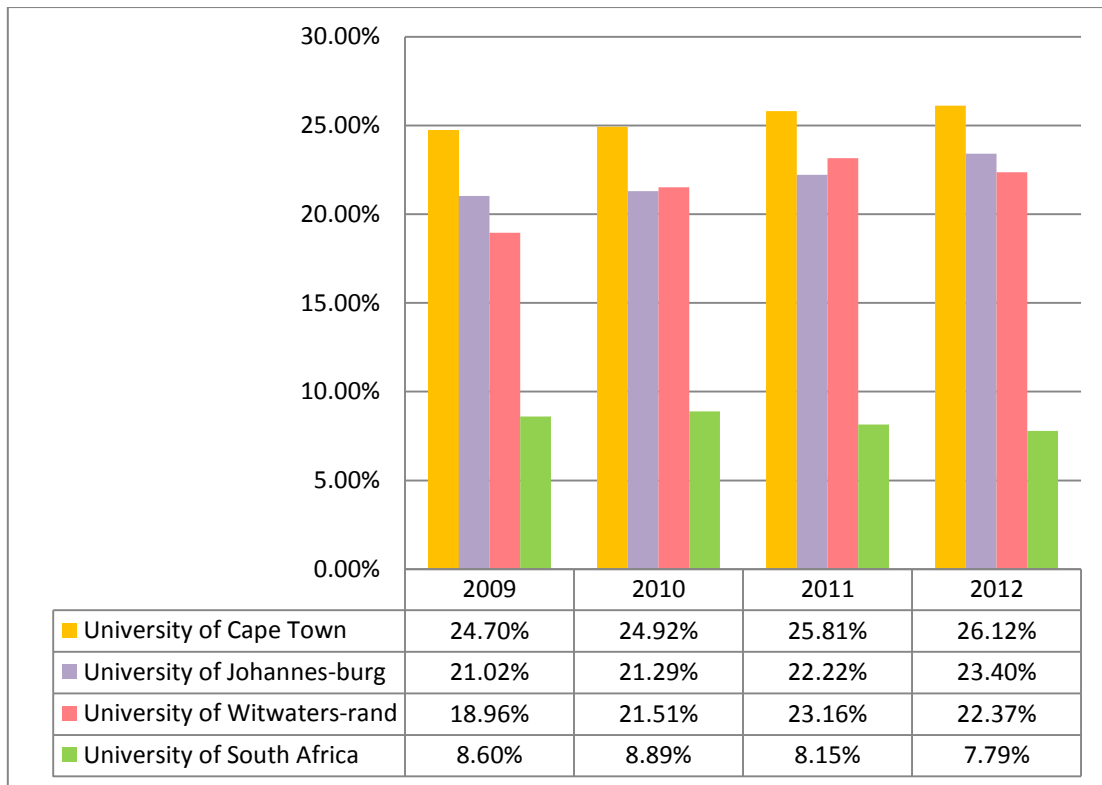


Figure 6.22: Graduation rate for level two

From figure 6.22 it is evident that the University of Cape Town outperformed the other four universities in terms of graduation rates for each of the years. Although Unisa had by far the highest Gross Enrolment Rates and Net Enrolment Rates, this university had by far the lowest graduation rates compared to the other universities. When the graduation rates for Unisa are compared to the level of attainment for this university, the picture indeed looks much worse.

From 2009 to 2012, the graduation rates at the selected four universities increased/decreased as follows:

- The University of Cape Town: 24.7% to 26.12%, which is a 5.75% **increase** in graduation rate;
- The University of Johannesburg: 21.02% to 23.40%, which is an 11.32% **increase** in graduation rate;
- The University of the Witwatersrand: 18.96% to 22.37%, which is a 17.99% **increase** in graduation rate; and
- Unisa: 8.60% to 7.79%, which is a 9.42% **decrease** in graduation rate.

Three of the four universities experienced an increase in graduation rates over the period 2009 to 2012. Only Unisa experienced a decrease, which is worrying, taking into account that Unisa experienced a 22.42% increase in Gross Enrolment Rates over the same period.

Tables 20 to 22 and table 18 in the appendix set out the total number of graduates from the four selected universities in a given academic year (per qualification type) as a percentage of the total headcount enrolments at these respective four universities for that particular year (per qualification type). These graduation rates will also (as for **level one**) be compared with the benchmarks for graduation rates set in the National Plan for Higher Education as set out in table 6.17 (Ministry of Education, 2001) as well as the adjusted benchmarks set out in table 6.18 (Department of Education, 2004).

The following assumptions are made for this comparison:

- The graduation rates for the Universities of Cape Town, Johannesburg and the Witwatersrand were compared to the **contact mode** benchmarks. Although not all qualifications offered by these three universities are contact programmes, the majority are; therefore the contact benchmarks were used for this study; and
- The graduation rates for Unisa were compared with the **distance mode** benchmarks. Although not all qualifications offered by Unisa are distance programmes, the majority are; therefore, the distance benchmarks were used for this study.

Tables 6.21 to 6.24 below indicate the graduation rates obtained from tables 20 to 22 and table 18 in the appendix compared to the benchmarks set for graduation rates by the National Plan for Higher Education (Ministry of Education, 2001) as well as the adjusted benchmarks (Department of Education, 2004).

TABLE 6.21: GRADUATION RATES FOR THE **UNIVERSITY OF CAPE TOWN** FOR THE PERIOD 2009 to 2012 PER QUALIFICATION TYPE COMPARED TO GRADUATION RATE BENCHMARKS FOR **CONTACT MODE** OF DELIVERY

University of Cape Town (UCT) Graduation rate per qualification type	Undergraduate: up to 3 years	Undergraduate: 4 years or more	Postgraduate up to honours
Graduation rate for 2009 per qualification type	22.91%	16.63%	68.00%
Original benchmark	25.00%	20.00%	60.00%
Adjusted benchmark	22.50%	18.00%	54.00%
Difference	-2.09% 0.41%	-3.37% -1.37%	8.00% 14.00%
Graduation rate for 2010 per qualification type	23.64%	16.89%	64.75%
Original benchmark	25.00%	20.00%	60.00%
Adjusted benchmark	22.50%	18.00%	54.00%
Difference	-1.36% 1.14%	-3.11% -1.11%	4.75% 10.75%
Graduation rate for 2011 per qualification type	24.36%	17.45%	65.34%
Original benchmark	25.00%	20.00%	60.00%
Adjusted benchmark	22.50%	18.00%	54.00%
Difference	-0.64% 1.86%	-2.55% -0.55%	5.34% 11.34%
Graduation rate for 2012 per qualification type	25.52%	17.75%	67.00%
Original benchmark	25.00%	20.00%	60.00%
Adjusted benchmark	22.50%	18.00%	54.00%
Difference	0.52% 3.02%	-2.25% -0.25%	7.00% 13.00%

Source: Author's own calculation.

Note: A positive difference indicates that the benchmark has been met, whilst a negative difference indicates that the benchmark has not been met.

From the results in table 6.21 it would seem that the University of Cape Town met the postgraduate below Master's degree benchmark throughout 2009 to 2012 based on the original and adjusted benchmarks. Taking the adjusted benchmarks into account, the up to three-year undergraduate qualification benchmark was also met in 2009 to 2011 and in 2012 both benchmarks were met. The University of Cape Town

did not meet the original or adjusted lower graduation rate benchmarks set for the four-year or more undergraduate qualification types in any of the years.

TABLE 6.22: GRADUATION RATES FOR THE **UNIVERSITY OF JOHANNESBURG** FOR THE PERIOD 2009 to 2012 PER QUALIFICATION TYPE COMPARED TO GRADUATION RATE BENCHMARKS FOR **CONTACT MODE OF DELIVERY**

University of Johannesburg (UJ) Graduation rate per qualification type	Undergraduate: up to 3 years	Undergraduate: 4 years or more	Postgraduate up to honours
Graduation rate for 2009 per qualification type	17.91%	23.83%	46.78%
Original benchmark	25.00%	20.00%	60.00%
Adjusted benchmark	22.50%	18.00%	54.00%
Difference	-7.09% -4.59%	3.83% 5.83%	-13.22% -7.22%
Graduation rate for 2010 per qualification type	18.18%	24.18%	48.77%
Original benchmark	25.00%	20.00%	60.00%
Adjusted benchmark	22.50%	18.00%	54.00%
Difference	-6.82% -4.32%	4.18% 6.18%	-11.23% -5.23%
Graduation rate for 2011 per qualification type	19.55%	22.12%	52.39%
Original benchmark	25.00%	20.00%	60.00%
Adjusted benchmark	22.50%	18.00%	54.00%
Difference	-5.45% -2.95%	2.12% 4.12%	-7.61% -1.61%
Graduation rate for 2012 per qualification type	20.53%	23.72%	51.92%
Original benchmark	25.00%	20.00%	60.00%
Adjusted benchmark	22.50%	18.00%	54.00%
Difference	-4.47% -1.97%	3.72% 5.72%	-8.08% -2.08%

Source: Author's own calculation.

Note: A positive difference indicates that the benchmark has been met, whilst a negative difference indicates that the benchmark has not been met.

From the results in table 6.22 it would seem that by 2012 the University of Johannesburg had only met the benchmark for the four-year or more undergraduate qualifications. The graduation rates for postgraduate degrees below Master's degrees were well below the benchmark even in 2012. It is evident that graduation rates at the University of Johannesburg are not meeting the required benchmarks and that much needs to be done to improve the graduation rates for almost all the qualification types.

TABLE 6.23: GRADUATION RATES FOR THE **UNIVERSITY OF THE WITWATERSRAND** FOR THE PERIOD 2009 to 2012 PER QUALIFICATION TYPE COMPARED TO GRADUATION RATE BENCHMARKS FOR **CONTACT MODE OF DELIVERY**

University of Witwatersrand (WITS) Graduation rate per qualification type	Undergraduate: up to 3 years	Undergraduate: 4 years or more	Postgraduate up to honours
Graduation rate for 2009 per qualification type	16.25%	14.20%	57.61%
Original benchmark	25.00%	20.00%	60.00%
Adjusted benchmark	22.50%	18.00%	54.00%
Difference	-8.75% -6.25%	-5.80% -3.80%	-2.39% 3.61%
Graduation rate for 2010 per qualification type	21.23%	14.88%	63.41%
Original benchmark	25.00%	20.00%	60.00%
Adjusted benchmark	22.50%	18.00%	54.00%
Difference	-3.77% -1.27%	-5.12% -3.12%	3.41% 9.41%
Graduation rate for 2011 per qualification type	23.25%	15.39%	66.46%
Original benchmark	25.00%	20.00%	60.00%
Adjusted benchmark	22.50%	18.00%	54.00%
Difference	-1.75% 0.75%	-4.61% -2.61%	6.46% 12.46%
Graduation rate for 2012 per qualification type	22.71%	15.14%	64.29%
Original benchmark	25.00%	20.00%	60.00%
Adjusted benchmark	22.50%	18.00%	54.00%
Difference	-2.29% 0.21%	-4.86% -2.86%	4.29% 10.29%

Source: Author's own calculation.

Note: A positive difference indicates that the benchmark has been met whilst a negative difference indicates that the benchmark has not been met.

From the results in table 6.23 it would seem that by 2012 the University of the Witwatersrand had met the benchmark for the postgraduate below Master's degree qualification types and the up to three-year undergraduate qualification types (on the

adjusted benchmark only). Although the graduation rate for up to three-year undergraduate and four-year or more undergraduate qualification types had improved from 2009, it was still well below the benchmark.

TABLE 6.24: GRADUATION RATES FOR **UNISA** FOR THE PERIOD 2009 to 2012 PER QUALIFICATION TYPE COMPARED TO GRADUATION RATE BENCHMARKS FOR **DISTANCE MODE** OF DELIVERY

Unisa Graduation rate per qualification type	Undergraduate: up to 3 years	Undergraduate: 4 years or more	Postgraduate up to honours
Graduation rate for 2009 per qualification type	8.42%	5.90%	20.07%
Original benchmark	15.00%	10.00%	30.00%
Adjusted benchmark	13.50%	9.00%	27.00%
Difference	-6.58%	-4.10%	-9.93%
	-5.08%	-3.10%	-6.93%
Graduation rate for 2010 per qualification type	8.66%	5.52%	22.35%
Original benchmark	15.00%	10.00%	30.00%
Adjusted benchmark	13.50%	9.00%	27.00%
Difference	-6.34%	-4.48%	-7.65%
	-4.84%	-3.48%	-4.65%
Graduation rate for 2011 per qualification type	7.69%	4.98%	21.46%
Original benchmark	15.00%	10.00%	30.00%
Adjusted benchmark	13.50%	9.00%	27.00%
Difference	-7.31%	-5.02%	-8.54%
	-5.81%	-4.02%	-5.54%
Graduation rate for 2012 per qualification type	6.76%	4.98%	23.63%
Original benchmark	15.00%	10.00%	30.00%
Adjusted benchmark	13.50%	9.00%	27.00%
Difference	-8.24%	-5.02%	-6.37%
	-6.74%	-4.02%	-3.37%

Source: Author's own calculation.

Note: A positive difference indicates that the benchmark has been met, whilst a negative difference indicates that the benchmark has not been met.

The results in table 6.24 indicate that Unisa had not met any of the benchmarks set by the National Plan for Higher Education for the period 2009 to 2012 or even the adjusted lower graduation rates for distance mode of delivery. In 2012 the graduation rate for undergraduate diplomas and certificates up to three years and undergraduate degrees of four or more years were actually looking even worse, compared to 2009. The graduation rates for postgraduate degrees had improved from 2009 to 2012, but were all still well below the benchmarks that should have been met. It is evident that graduation rates at Unisa are not meeting the required standards and that much needs to be done to improve them.

As mentioned above, the calculations for **undergraduate** graduation rates for **level three** were based on the total graduates and headcount student enrolments in the Accounting (0401) Classification of Educational Subject Matter for First Bachelor's degrees (General and Professional first Bachelor's degrees). Based on the formulas as provided in table 6.15, the **undergraduate** graduation rate for **level three** was calculated and is reported in table 6.25.

TABLE 6.25: CALCULATION OF **UNDERGRADUATE** GRADUATION RATE FOR LEVEL THREE

UNDERGRADUATE GRADUATION RATE			2009	2010	2011	2012
Level 3: Accounting Qualifications	University of Cape Town	Total number of graduates	555	457	188	252
		Headcount student enrolments	2,710	2,166	1,158	1,245
		Graduation rate =	20.48%	21.10%	16.23%	20.24%
	University of Johannesburg	Total number of graduates	715	727	930	1,062
		Headcount student enrolments	4,931	5,186	5,493	4,881
		Graduation rate =	14.50%	14.02%	16.93%	21.76%
	University of Witwatersrand	Total number of graduates	323	360	321	331
		Headcount student enrolments	1,894	2,241	1,432	1,161
		Graduation rate =	17.05%	16.06%	22.42%	28.51%
	Unisa	Total number of graduates	1,280	1,460	1,502	1,246
		Headcount student enrolments	29,202	27,467	28,643	29,174
		Graduation rate =	4.38%	5.32%	5.24%	4.27%

Source: Author's own calculations; DHET, 2014a; DHET, 2014b.

Figure 6.23 below provides an illustration of the graduation rates for the period 2009 to 2012 based on first Bachelor's (General and Professional) Accounting (0401) related degrees. This represents the graduation rate for **undergraduate** accounting-related studies for the four selected universities.

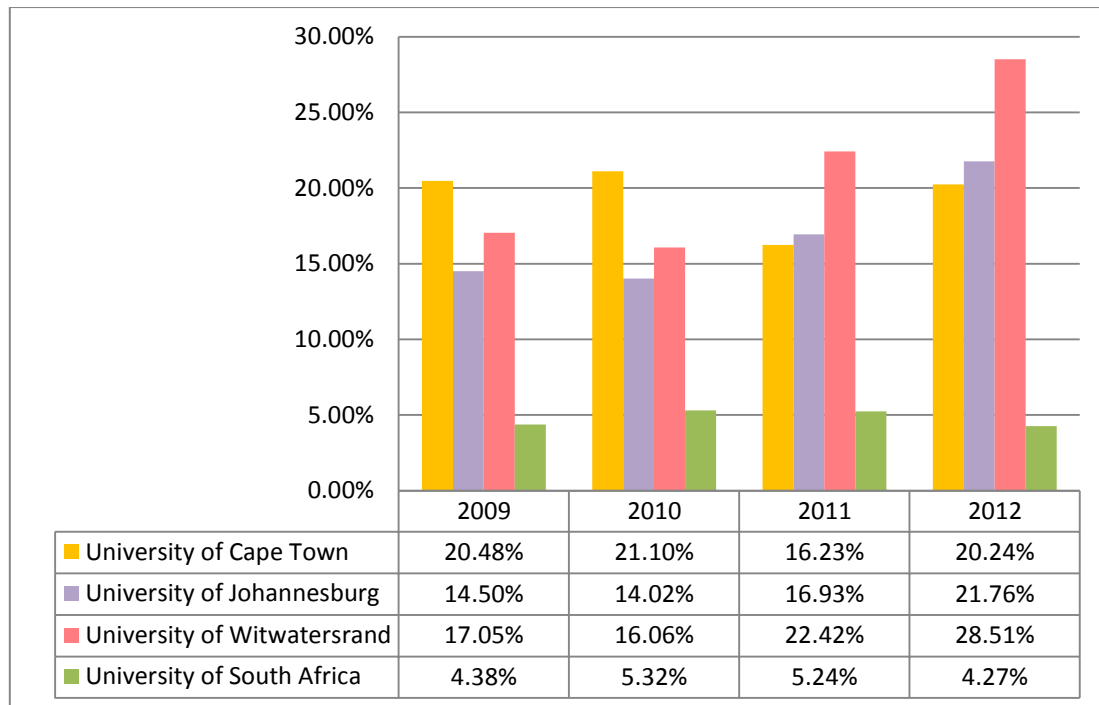


Figure 6.23: Graduation rate for level three for undergraduate accounting-related studies

From table 25 and figure 6.23 it is evident that Unisa had much lower graduation rates for **undergraduate** accounting-related first Bachelor's degrees. In actual fact, the **undergraduate** accounting-related graduation rate was at its lowest in 2012 at 4.27% for Unisa. This is by far the lowest graduation rate of all four universities over the period 2009 to 2012. Unisa had by far the highest Gross Enrolment Rates for first Bachelor's degrees of the four universities (section 6.2.1 page 166). The graduate rates for the first Bachelor's accounting-related degrees were however extremely low, compared to the other three universities. It is also evident that the University of the Witwatersrand had managed to increase its graduation rate for **undergraduate** accounting-related degrees from 17.05% in 2009 to 28.51% in 2012, which is a 67% increase. This increase is mainly due to the fact that the graduates only increased by 2.45% from 2009 to 2012, whilst the headcount enrolments dropped by 38.70% in this same period.

The calculations for **postgraduate** graduation rates for **level three** were based on the total graduates and headcount student enrolments in the Accounting (0401) Classification of Educational Subject Matter postgraduate diplomas, postgraduate certificates, postgraduate Bachelor's degrees and Honours degrees. Based on the

formulas as provided in table 6.15, the *postgraduate* graduation rate for *level three* was calculated and is reported in table 6.26.

TABLE 6.26: CALCULATION OF *POSTGRADUATE* GRADUATION RATE FOR LEVEL THREE

POSTGRADUATE GRADUATION RATE			2009	2010	2011	2012
Level 3: Accounting Qualifications	University of Cape Town	Total number of graduates	321	276	279	266
		Headcount student enrolments	482	332	400	351
		Graduation rate =	66.60%	83.13%	69.75%	75.78%
	University of Johannesburg	Total number of graduates	360	264	438	498
		Headcount student enrolments	764	516	722	834
		Graduation rate =	47.12%	51.16%	60.66%	59.71%
	University of Witwatersrand	Total number of graduates	187	226	236	194
		Headcount student enrolments	352	356	353	285
		Graduation rate =	53.13%	63.48%	66.86%	68.07%
	Unisa	Total number of graduates	686	1,520	1,368	1,452
		Headcount student enrolments	6,559	7,346	7,390	7,115
		Graduation rate =	10.46%	20.69%	18.51%	20.41%

Source: Author's own calculations; DHET, 2014a; DHET, 2014b.

Figure 6.24 below provides an illustration of the graduation rates for the period 2009 to 2012 based on postgraduate diplomas, postgraduate certificates, postgraduate degrees and Honours degrees which are accounting (0401) related degrees. This represents the graduation rate for *postgraduate* accounting-related studies for the four selected universities.

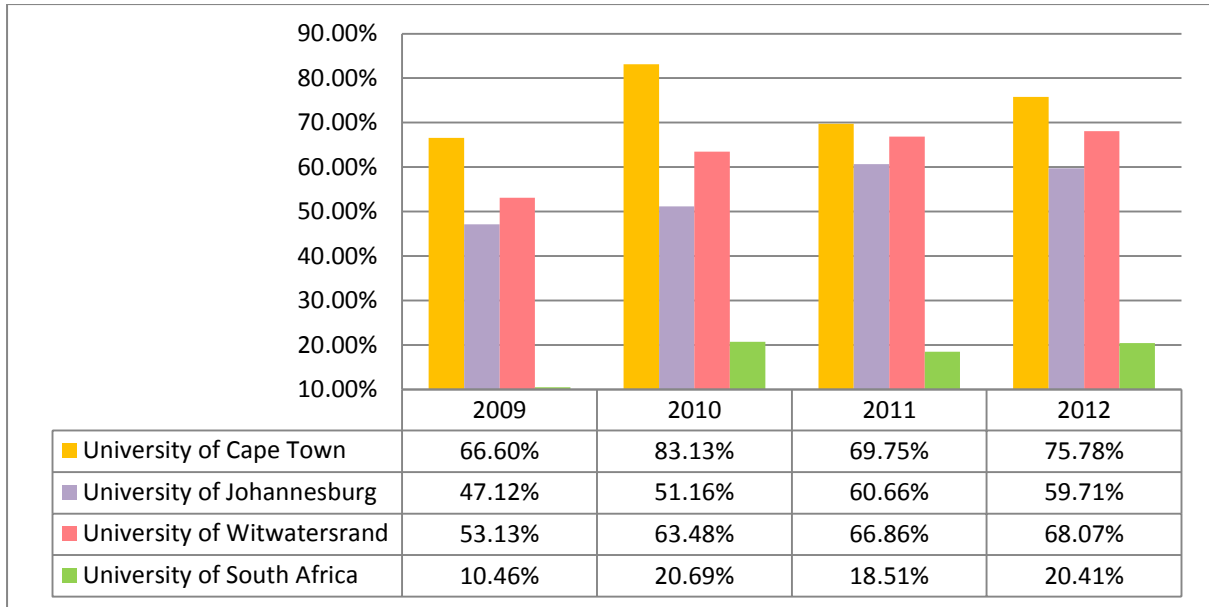


Figure 6.24: Graduation rate for level three for postgraduate accounting-related studies

From table 26 and figure 6.24 it is evident that Unisa also had by far the lowest graduation rates for **postgraduate** accounting-related qualifications. The University of Cape Town had the highest graduation rates for these **postgraduate** qualifications of the four universities.

The graduation rate was also calculated as the total number of candidates, from the respective four universities, that successfully passed part one of the Qualifying Examination of SAICA in a given academic year as a percentage of the total number of students from the respective four public universities that wrote part one of the qualifying examination for that particular year. Based on the formulas provided in table 6.15, the **part one of the SAICA Qualifying Examination** graduation rate for **level three** was calculated and is reported in table 6.27.

TABLE 6.27: CALCULATION OF **PART ONE OF SAICA QUALIFYING EXAMINATION** GRADUATION RATE FOR LEVEL THREE

SAICA QE1 GRADUATION RATE			2009	2010	2011	2012
Level 3: SAICA part one Qualifying Examination	University of Cape Town	Total number of students that passed	214	249	287	259
		Total number of students that wrote	225	287	304	293
		Graduation rate =	95.11%	86.76%	94.41%	88.40%
	University of Johannesburg	Total number of students that passed	241	254	232	256
		Total number of students that wrote	305	314	303	338
		Graduation rate =	79.02%	80.89%	76.57%	75.74%
	University of Witwatersrand	Total number of students that passed	145	146	191	181
		Total number of students that wrote	165	181	239	218
		Graduation rate =	87.88%	80.66%	79.92%	83.03%
	Unisa	Total number of students that passed	654	291	585	586
		Total number of students that wrote	1496	1196	1313	1324
		Graduation rate =	43.72%	24.33%	44.55%	44.26%

Source: Author's own calculations; SAICA, 2011; SAICA, 2013a.

Figure 6.25 illustrates the **level three** graduation rates of the four selected universities for the period 2009 to 2012 in terms of **part one of the Qualifying Examination of SAICA**.

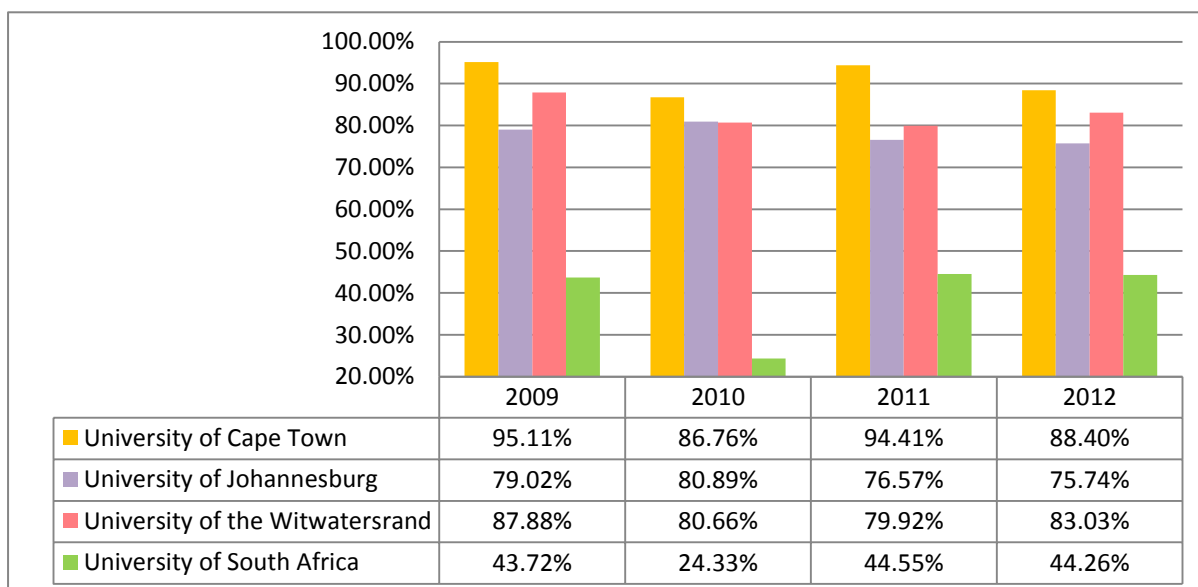


Figure 6.25: Graduation rate for level three for SAICA qualifying examination (QE1)

From table 6.27 and figure 6.25 it is clear that the University of Cape Town had the highest graduation rates of the four universities for each year (2009 to 2012). Unisa had the lowest graduation rates in this regard for each year. Over the period 2009 to 2012 the University of Cape Town contributed an average of almost 9% of all students that wrote part one of the Qualifying Examination, the University of Johannesburg 10.01%, Unisa 45.53%, and the University of the Witwatersrand 6.45%. Apart from 2010, Unisa had a graduation rate of approximately 44% for 2009, 2011 and 2012. Although the graduation rate of Unisa is much lower than that of the other three universities, this university still contributes the most in terms of successful passes in this examination.

Table 6.28 provides the overall rankings of the four universities in terms of graduation rates for **level two**. The ranking for each year is provided based on the results in table 6.20.

TABLE 6.28: RANKINGS IN TERMS OF GRADUATION RATE FOR LEVEL TWO

GRADUATION RATE FOR LEVEL TWO	2009 ranking	2010 ranking	2011 ranking	2012 ranking
University of Cape Town	1 (24.70%)	1 (24.92%)	1 (25.81%)	1 (26.12%)
University of Johannesburg	2 (21.02%)	3 (21.29%)	3 (22.22%)	2 (23.40%)
University of Witwatersrand	3 (18.96%)	2 (21.51%)	2 (23.16%)	3 (22.37%)
Unisa	4 (8.60%)	4 (8.89%)	4 (8.15%)	4 (7.79%)

Source: Author's own calculation.

The University of Cape Town ranked number one consistently over the four years. This university not only had the highest graduation rates for **level two**, but also managed to meet the most targets of the four universities in terms of those set in the National Plan for Higher Education (Ministry of Education, 2001) and the adjusted targets (DHET, 2004). The University of Johannesburg and the University of the Witwatersrand shared the second and third places. Unisa had by far the lowest graduation rates and ranked in fourth position for each of the respective years. Unisa had also not met any of the targets set in the National Plan for Higher Education (Ministry of Education, 2001) or the adjusted targets (DHET, 2004) for distance mode delivery.

Based on the **level three** graduation rates for **undergraduate** and **postgraduate** accounting-related studies, as indicated in table 6.25 and table 6.26, the four universities were ranked as shown in table 6.29. The universities were ranked on a similar basis in terms of the graduation rate for part one of the SAICA Qualifying Examination as set out in table 6.30 (derived from table 6.27).

TABLE 6.29: RANKINGS IN TERMS OF *UNDERGRADUATE* AND *POSTGRADUATE* GRADUATION RATE FOR LEVEL THREE

UNDERGRADUATE GRADUATION RATE FOR LEVEL THREE	2009 ranking	2010 ranking	2011 ranking	2012 ranking	POSTGRADUATE GRADUATION RATE FOR LEVEL THREE	2009 ranking	2010 ranking	2011 ranking	2012 ranking
University of Witwatersrand	2 (17.05%)	2 (16.06%)	1 (22.42%)	1 (28.51%)	University of Cape Town	1 (66.60%)	1 (83.13%)	1 (69.75%)	1 (75.78%)
University of Cape Town	1 (20.48%)	1 (21.10%)	3 (16.23%)	3 (20.24%)	University of Witwatersrand	2 (53.13%)	2 (63.48%)	2 (66.86%)	2 (68.07%)
University of Johannesburg	3 (14.50%)	3 (14.02%)	2 (16.93%)	2 (21.76%)	University of Johannesburg	3 (47.12%)	3 (51.16%)	3 (60.66%)	3 (59.71%)
Unisa	4 (4.38%)	4 (5.32%)	4 (5.24%)	4 (4.27%)	Unisa	4 (10.46%)	4 (20.69%)	4 (18.51%)	4 (20.41%)

Source: Author's own calculation.

TABLE 6.30: RANKINGS IN TERMS OF *PART ONE OF SAICA QUALIFYING EXAMINATION* GRADUATION RATE FOR LEVEL THREE

QE 1 RANKING FOR LEVEL THREE	2009 ranking	2010 ranking	2011 ranking	2012 ranking
University of Cape Town	1 (95.11%)	1 (86.76%)	1 (94.41%)	1 (88.40%)
University of Witwatersrand	2 (87.88%)	3 (80.66%)	2 (79.92%)	2 (83.03%)
University of Johannesburg	3 (79.02%)	2 (80.89%)	3 (76.57%)	3 (75.74%)
Unisa	4 (43.72%)	4 (24.33%)	4 (44.55%)	4 (44.26%)

Source: Author's own calculation.

Based on the rankings in tables 6.29, Unisa consistently ranked in fourth place for both **undergraduate** and **postgraduate** accounting qualifications and the University of Johannesburg in third. Although the University of the Witwatersrand ranked first for **undergraduate** accounting-related qualifications, it could not outperform the University of Cape Town for **postgraduate** accounting-related qualifications. The rankings in terms of graduation rates for **part one of the Qualifying Examination of SAICA** as indicated in table 6.30 look similar to the rankings in terms of graduation rates for **postgraduate** accounting-related qualifications as set out in table 6.29. Although Unisa contributed the most in terms of the number of candidates who wrote this examination, the graduation rate for this university was much lower compared to the other universities. Even though the graduation rate percentages were relatively low for this examination for Unisa, this university still contributed by far the most in terms of the total number of successful candidates in this examination and hence plays a pivotal role in the supply of the number of chartered accountants in South Africa.

The next section will present the findings on the Educational Equality Index, which is the third indicator that was measured in this study.

6.4 FINDINGS ON THE EDUCATIONAL EQUALITY INDEX

Chapter 2 provided background information on various proxies that could be used to measure the Educational Equality Index. Although various possible proxies could be used, it was concluded in Chapter 5 that only the parental education level would be used for this study. The information needed to calculate the parental education levels for higher education in South Africa, the four universities selected, and for chartered accountancy studies in South Africa could not be obtained. Due to the unavailability of data, the parental education levels for **levels one to three** could not be measured and therefore the Educational Equity Index could not be measured for this study.

Section 6.5 discusses the findings on the fourth and last accessibility indicator, the Gender Parity Index.

6.5 FINDINGS ON THE GENDER PARITY INDEX

Chapter 2 provided background information on indicators that could be used to measure gender inequality. Chapter 5 concluded that the Gross Enrolment Rates (The National Coordinating Committee, 2013; WEF, 2013a) and level of attainment (OECD, 2011) are mostly used to measure the Gender Parity Index. This study therefore used the Gross Enrolment Rates and level of attainment to measure the Gender Parity Index for all **three levels**.

The sections below present the findings on the Gender Parity Index based on Gross Enrolment Rate for **levels one, two and three**.

6.5.1 Gender Parity based on Gross Enrolment Rate

Table 5.6 (page 158) stated how the Gender Parity Index based on Gross Enrolment Rate would be measured for the **three levels**. This table is repeated here in table 6.31 for performing the various calculations.

TABLE 6.31: MEASUREMENT OF GENDER PARITY INDEX BASED ON GROSS ENROLMENT RATE FOR LEVELS ONE, TWO AND THREE

INDICATOR: GENDER PARITY INDEX BASED ON GROSS ENROLMENT RATE	Level one Calculated for public higher education in South Africa (based on the 23 public universities in South Africa combined)	Level two Calculated for each of the four selected public universities in total	Level three Calculated for each of the four selected public universities on accountancy programmes with special emphasis on chartered accountancy programmes
Gender Parity Index (GPI) based on Gross Enrolment Rate (GER)	$\frac{\text{Gross Enrolment Rate (GER) of females}}{\text{Gross Enrolment Rate (GER) of males}} \times 100$	$\frac{\text{Gross Enrolment Rate (GER) of females}}{\text{Gross Enrolment Rate (GER) of males}} \times 100$	$\frac{\text{Gross Enrolment Rate (GER) of females}}{\text{Gross Enrolment Rate (GER) of males}} \times 100$

The Gender Parity Index was calculated in this section for the **three levels** as indicated in table 6.31. In terms of **level one** and **level two**, the headcount enrolment numbers and population numbers were obtained from the same sources as for the Gross Enrolment Rate in section 6.2.1 (page 166) and include the same students as in note 1 in table 5.1 (page 141).

As indicated in Chapter 2, the Gender Parity Index scores are interpreted as follows:

- A Gender Parity Index score of 1 is indicative of parity between females and males;
- Scores of less than 1 are indicative of a disparity in favour of males; and
- Scores of more than 1 are indicative of disparity in favour of females.

As explained under the Gross Enrolment Rate for **level three** (section 6.2.1, page 166), detailed data on headcount enrolments specifically for chartered accountancy programmes was not available at the time of this study and therefore the Accounting (0401) Classification of Educational Subject Matter information as obtained from the Department of Higher Education and Training was used in this study. The data on General and Professional first Bachelor's degrees were also used for calculating Gross Enrolment Rates for males and females based on the Accounting (0401) Classification of Educational Subject Matter information.

Based on the formulas as provided in table 6.31, table 23 in the appendix shows the Gross Enrolment Rate for females as well as the Gross Enrolment Rate for males for the 23 public universities combined. It also provides the Gender Parity Index score calculated as the Gross Enrolment Rate of the females divided by the Gross Enrolment Rate of the males and then provides the distance from parity (which is calculated as the Gender Parity Index score calculated less 1). Table 6.32 is a summary of table 23 in the appendix and provides the **level one** Gender Parity Index scores and distance from parity for the period 2009 to 2012.

TABLE 6.32: CALCULATION OF GENDER PARITY INDEX BASED ON GROSS ENROLMENT RATE FOR LEVEL ONE

GPI based on GER		2009	2010	2011	2012	
Level 1: Public higher education in South Africa	23 Universities combined	Gross Enrolment Rate of females	20.10%	21.47%	22.41%	22.56%
		Gross Enrolment Rate of males	15.04%	15.59%	15.97%	15.89%
		Gender Parity Index	1.34	1.38	1.40	1.42
		Distance from parity	0.34	0.38	0.40	0.42

Source: Author's own calculations

Figure 6.26 illustrates the **level one** Gender Parity Index based on Gross Enrolment Rates for the 23 public universities combined.

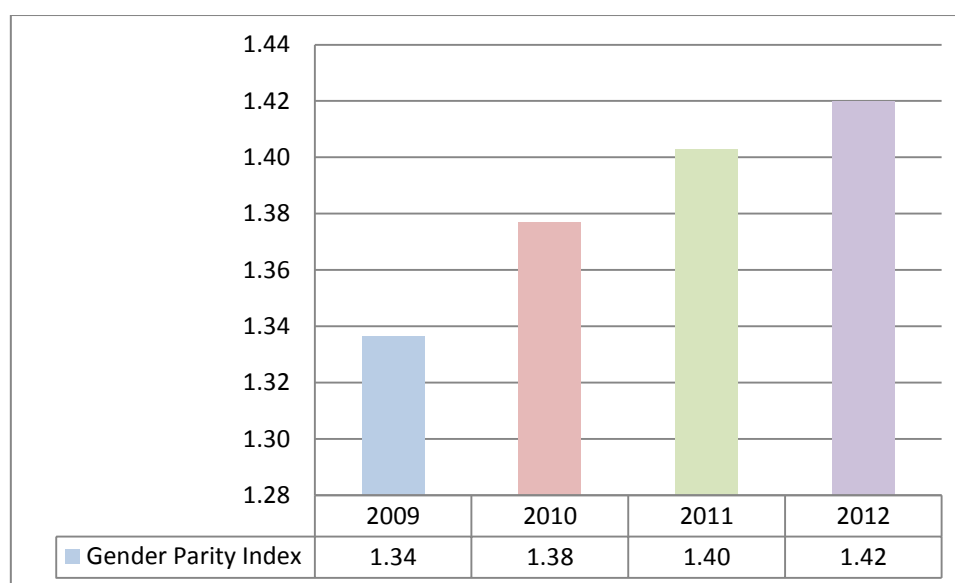


Figure 6.26: Gender Parity Index based on Gross Enrolment Rate for level one

Based on the results in table 6.32 and figure 6.26, it is evident that a Gender Parity Index score of more than 1 was achieved for the period 2009 to 2012 for the 23 public universities combined, which indicates disparity in favour of females. The disparity in favour of females in actual fact worsened from 2009 (Gender Parity Index of 1.34) to 2012 (Gender Parity Index of 1.42).

Tables 24 - 27 in the appendix provide the Gross Enrolment Rate for females as well as the Gross Enrolment Rate for males for the four universities based on the total

headcount enrolments at these universities for the period 2009 to 2012. These tables also set out the **level two** Gender Parity Index score calculated as the Gross Enrolment Rate of the females divided by the Gross Enrolment Rate of the males and then provides the distance from parity. Table 6.33 provides a summary of tables 24 - 27 in the appendix and indicates the Gender Parity Index score and distance from parity for the four universities for **level two**.

TABLE 6.33: CALCULATION OF GENDER PARITY INDEX BASED ON GROSS ENROLMENT RATES FOR LEVEL TWO

GPI based on GER		2009	2010	2011	2012	
Level 2: Overall for 4 universities	University of Cape Town	Gross Enrolment Rate of females	0.50%	0.54%	0.54%	0.55%
		Gross Enrolment Rate of males	00.49%	0.49%	0.49%	0.49%
		Gender Parity Index	1.02	1.09	1.10	1.11
		Distance from parity	0.02	0.09	0.10	0.11
	University of Johannesburg	Gross Enrolment Rate of females	1.14%	1.12%	1.15%	1.07%
		Gross Enrolment Rate of males	0.93%	0.88%	0.91%	0.89%
		Gender Parity Index	1.22	1.28	1.26	1.21
		Distance from parity	0.22	0.28	0.26	0.21
	University of Witwatersrand	Gross Enrolment Rate of females	0.65%	0.66%	0.65%	0.67%
		Gross Enrolment Rate of males	0.57%	0.56%	0.54%	0.55%
		Gender Parity Index	1.14	1.18	1.20	1.21
		Distance from parity	0.14	0.18	0.20	0.21
	Unisa	Gross Enrolment Rate of females	6.67%	7.43%	8.34%	8.55%
		Gross Enrolment Rate of males	4.39%	4.75%	5.13%	5.02%
		Gender Parity Index	1.52	1.56	1.63	1.70
		Distance from parity	0.52	0.56	0.63	0.70

Source: Author's own calculations

Figure 6.27 below illustrates the **level two** Gender Parity Index scores for the four universities over the period 2009 to 2012 based on the calculations in table 6.33.

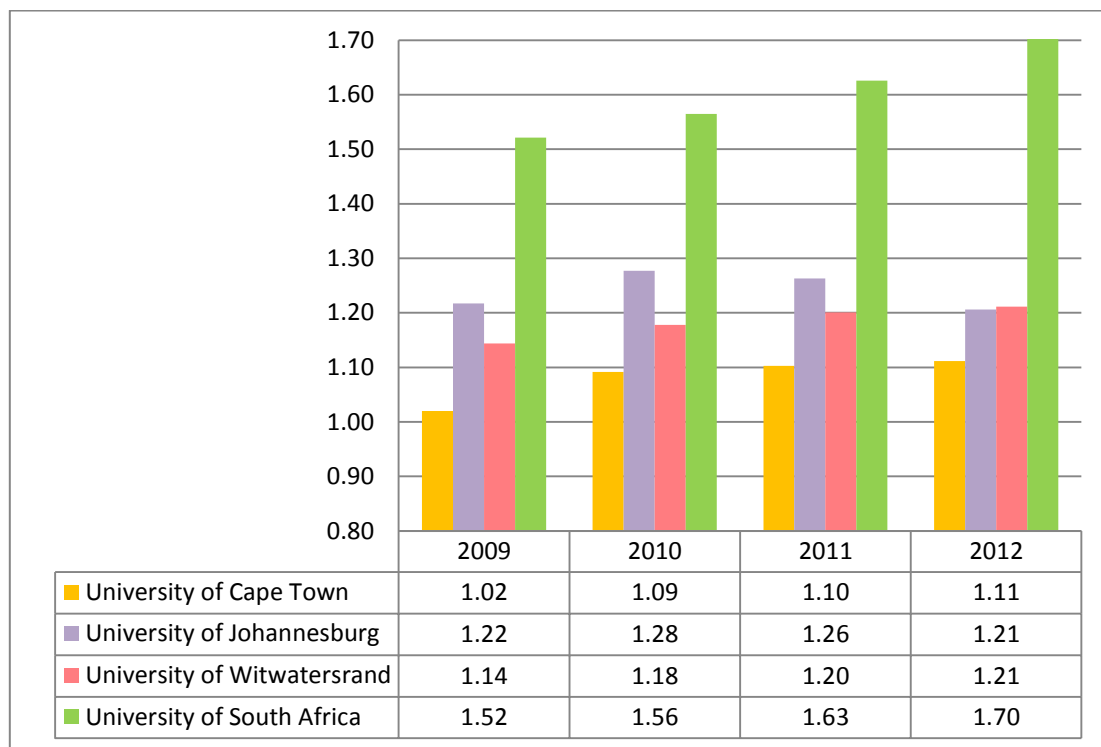


Figure 6.27: Gender Parity Index based on Gross Enrolment Rate for level two

The same disparity in favour of females as seen in **level one** is also evident from table 6.33 and figure 6.27, which indicate that all four universities achieved a Gender Parity Index score of more than 1 for the period 2009 to 2012. It would therefore indicate that females had slightly higher enrolment numbers than males at these four universities from 2009 to 2012.

Tables 28 - 31 in the appendix set out the Gross Enrolment Rate for females as well as the Gross Enrolment Rate for males for the four universities based on the total headcount enrolments for Accounting (code 0401) qualifications at these universities for the period 2009 to 2012. These tables then set out the **level three** Gender Parity Index score calculated as the Gross Enrolment Rate of the females divided by the Gross Enrolment Rate of the males. These tables also provide the distance from a parity score of 1.

Table 6.34 provides a summary of tables 28 - 31 in the appendix and indicates the Gender Parity Index score and the distance from parity for the four universities for ***level three***.

TABLE 6.34: CALCULATION OF GENDER PARITY INDEX BASED ON GROSS ENROLMENT RATES FOR LEVEL THREE

GPI based on GER		2009	2010	2011	2012	
Level 3: Accounting Qualifications	University of Cape Town	Gross Enrolment Rate of females	0.05%	0.04%	0.03%	0.03%
		Gross Enrolment Rate of males	0.06%	0.05%	0.02%	0.02%
		Gender Parity Index	0.84	0.98	1.16	1.34
		Distance from parity	-0.16	-0.02	0.16	0.34
	University of Johannesburg	Gross Enrolment Rate of females	0.11%	0.12%	0.12%	0.03%
		Gross Enrolment Rate of males	0.09%	0.10%	0.10%	0.02%
		Gender Parity Index	1.18	1.21	1.21	1.20
		Distance from parity	0.18	0.21	0.21	0.20
	University of Witwatersrand	Gross Enrolment Rate of females	0.04%	0.05%	0.12%	0.11%
		Gross Enrolment Rate of males	0.04%	0.05%	0.10%	0.09%
		Gender Parity Index	0.95	1.06	1.04	1.14
		Distance from parity	-0.05	0.06	0.04	0.14
	Unisa	Gross Enrolment Rate of females	0.70%	0.67%	0.69%	0.70%
		Gross Enrolment Rate of males	0.52%	0.47%	0.48%	0.47%
		Gender Parity Index	1.33	1.40	1.44	1.49
		Distance from parity	0.33	0.40	0.44	0.49

Source: Author's own calculations

Figure 6.28 below illustrates the **level three** Gender Parity Index scores for the four universities over the period 2009 to 2012 based on the calculations in table 6.34.

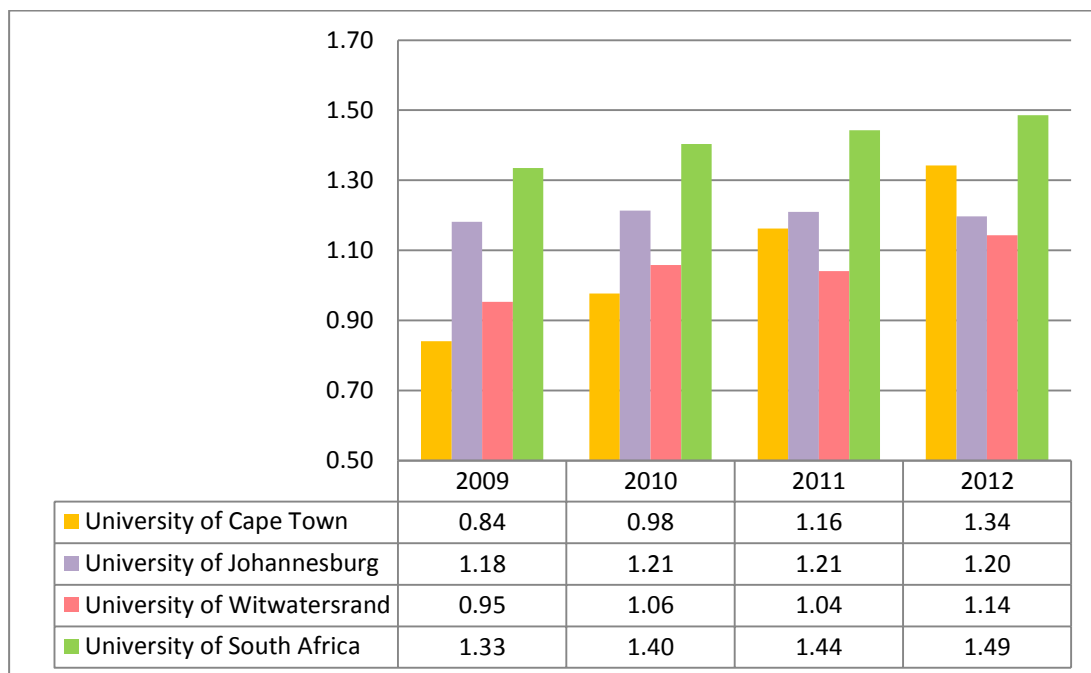


Figure 6.28: Gender Parity Index based on Gross Enrolment Rate for level three

From figure 6.28 it is evident that there is considerable disparity in favour of females at the four universities selected for this study, based on headcount enrolments. This situation is the worst at Unisa, where the Gross Enrolment Rate for females is much higher than that of males. From figure 6.28 it can be seen that the four universities selected for this study achieved a Gender Parity Index score of more than 1 in some years and in others a Gender Parity Index score of less than 1. Unisa and the University of Johannesburg consistently achieved Gender Parity Index scores of more than 1, indicating disparity in favour of females for each of the respective years.

Table 6.35 provides the overall rankings of the four universities in terms of Gender Parity Index based on Gross Enrolment Rates for **level two**. The ranking for each year is provided based on the results in table 6.33.

A distance from parity of 0 is ideal; it indicates a Gender Parity Index score of 1, which is an indication of perfect parity. Universities were ranked based on their distance from parity.

TABLE 6.35: RANKINGS IN TERMS OF GENDER PARITY INDEX BASED ON GROSS ENROLMENT RATES FOR LEVEL TWO

GPI BASED ON GER FOR LEVEL TWO	2009 ranking	2010 ranking	2011 ranking	2012 ranking
University of Cape Town	1 (0.02)	1 (0.09)	1 (0.10)	1 (0.11)
University of Witwatersrand	2 (0.14)	2 (0.18)	2 (0.20)	2 (0.21)
University of Johannesburg	3 (0.22)	3 (0.28)	3 (0.26)	2 (0.21)
Unisa	4 (0.52)	4 (0.56)	4 (0.63)	3 (0.70)

Source: Author's own calculation.

The University of Cape Town consistently ranked number one during the period 2009 to 2012, with only a slight disparity between female and male Gross Enrolment Rates for the same period. Unisa, however, consistently ranked in fourth place for the period 2009 to 2012, with a disparity in favour of females based on headcount enrolments.

Table 6.36 provides the overall rankings of the four universities in terms of Gender Parity Index based on Gross Enrolment Rates for **level three**. The ranking for each year is provided based on the results in table 6.34. The four universities were again ranked based on their distance from parity.

TABLE 6.36: RANKINGS IN TERMS OF GENDER PARITY INDEX BASED ON GROSS ENROLMENT RATES FOR LEVEL THREE

GPI BASED ON GER FOR LEVEL THREE	2009 ranking	2010 ranking	2011 ranking	2012 ranking
University of Witwatersrand	1 (-0.05)	2 (0.06)	1 (0.04)	1 (0.14)
University of Cape Town	2 (-0.16)	1 (-0.02)	2 (0.16)	3 (0.34)
University of Johannesburg	3 (0.18)	3 (0.21)	3 (0.21)	2 (0.20)
Unisa	4 (0.33)	4 (0.40)	4 (0.44)	4 (0.49)

Source: Author's own calculation.

In terms of Gender Parity Index scores based on Gross Enrolment Rate *for level three*, Unisa performed the worst (in fourth position for each of the respective years). The Universities of the Witwatersrand and Cape Town performed the best of the four universities. Based on the above, it is evident that there is considerable disparity in favour of females at Unisa and the University of Johannesburg based on headcount enrolments for accounting qualifications. In 2012 the University of Johannesburg did however rank in second place and seemed to have improved on their overall Gender Parity Index score based on Gross Enrolment Rate.

The next section presents the findings of the Gender Parity Index based on level of attainment for *levels one, two and three*.

6.5.2 Gender Parity based on level of attainment

Table 5.7 (page 160) set out how the Gender Parity Index based on level of attainment would be measured for the *three levels*. This table is repeated here in table 6.37 for performing the various calculations.

TABLE 6.37: MEASUREMENT OF GENDER PARITY INDEX BASED ON LEVEL OF ATTAINMENT FOR LEVELS ONE, TWO AND THREE

INDICATOR: <i>GENDER PARITY INDEX BASED ON LEVEL OF ATTAINMENT</i>	Level one Calculated for public higher education in South Africa (based on the 23 public universities in South Africa combined)	Level two Calculated for each of the four selected public universities in total	Level three Calculated for each of the four selected public universities based on accountancy programmes with special emphasis on chartered accountancy programmes
Gender Parity Index (GPI) based on level of attainment	$\frac{\text{Level of attainment of females}}{\text{Level of attainment of males}} \times 100$	$\frac{\text{Level of attainment of females}}{\text{Level of attainment of males}} \times 100$	$\frac{\text{Level of attainment of females}}{\text{Level of attainment of males}} \times 100$

The Gender Parity Index was calculated in this section for the **three levels** as set out in table 6.37 and the notes in table 5.7 (page 160). In terms of **level one** and **level two**, the total number of graduates and population numbers in five-year age groups were obtained from the same sources as for the Gross Enrolment Rate in section 6.2.1 (page 166) and include students as set out in table 5.3 (page 146). The Gender Parity Index scores are interpreted as in section 6.5.1 (page 227).

For the same reason as set out under Net Enrolment Rate for **level three** in section 6.2.2 (page 179), the Gender Parity Index based on level of attainment for **level three** could also not be calculated.

Tables 32 - 35 in the appendix (each year in a separate table) provide the level of attainment for both females and males in 5-year age groups for the period 2009 to 2012. They then also indicate the Gender Parity Index score, calculated as in table 6.39. Tables 36 - 39 in the appendix (each year in a separate table) indicate the level of attainment for both females and males in the 25-34 and the 25-64-year age groups at the 23 public universities combined for the period 2009 to 2012. These tables are extracts from tables 32 – 35 in the appendix. The tables also provide the **level one** Gender Parity Index score for these age groups, calculated as in table 6.37 and the notes in table 5.7 (page 160).

Table 6.38 is a summary of tables 32 – 35 and 36 – 39 in the appendix and provides the **level one** Gender Parity Index scores based on level of attainment for the period 2009 to 2012.

TABLE 6.38: CALCULATION OF GENDER PARITY INDEX BASED ON LEVEL OF ATTAINMENT FOR LEVEL ONE

GPI on level of attainment		2009	2010	2011	2012	
Level 1: Public higher education in South Africa	23 Universities combined	GPI for 15 – 19-year age group =	2.32	2.52	2.41	2.54
		GPI for 20 – 24-year age group =	1.42	1.45	1.45	1.49
		GPI for 25 – 29-year age group =	1.12	1.14	1.16	1.23
		GPI for 30 – 34-year age group =	1.53	1.52	1.54	1.46
		GPI for 35 – 39-year age group =	1.83	1.77	1.76	1.67
		GPI for 40 – 44-year age group =	1.89	1.88	1.80	1.74
		GPI for 45 – 49-year age group =	2.05	2.02	1.97	1.72
		GPI for 50 – 54-year age group =	2.23	2.25	1.98	1.94
		GPI for 55 – 59-year age group =	2.00	1.80	1.68	1.74
		GPI for 60 – 64-year age group =	0.92	1.15	0.94	0.94
		GPI for 65 – 69-year age group =	0.45	0.47	0.67	0.30
		GPI for 25-34-year age group=	1.27	1.27	1.28	1.30
		GPI for 25-64-year age group	1.54	1.53	1.50	1.44

Source: Author's own calculations

Figure 6.29 below illustrates the **level one** Gender Parity Index scores based on level of attainment for the 23 public universities combined for the period 2009 to 2012.

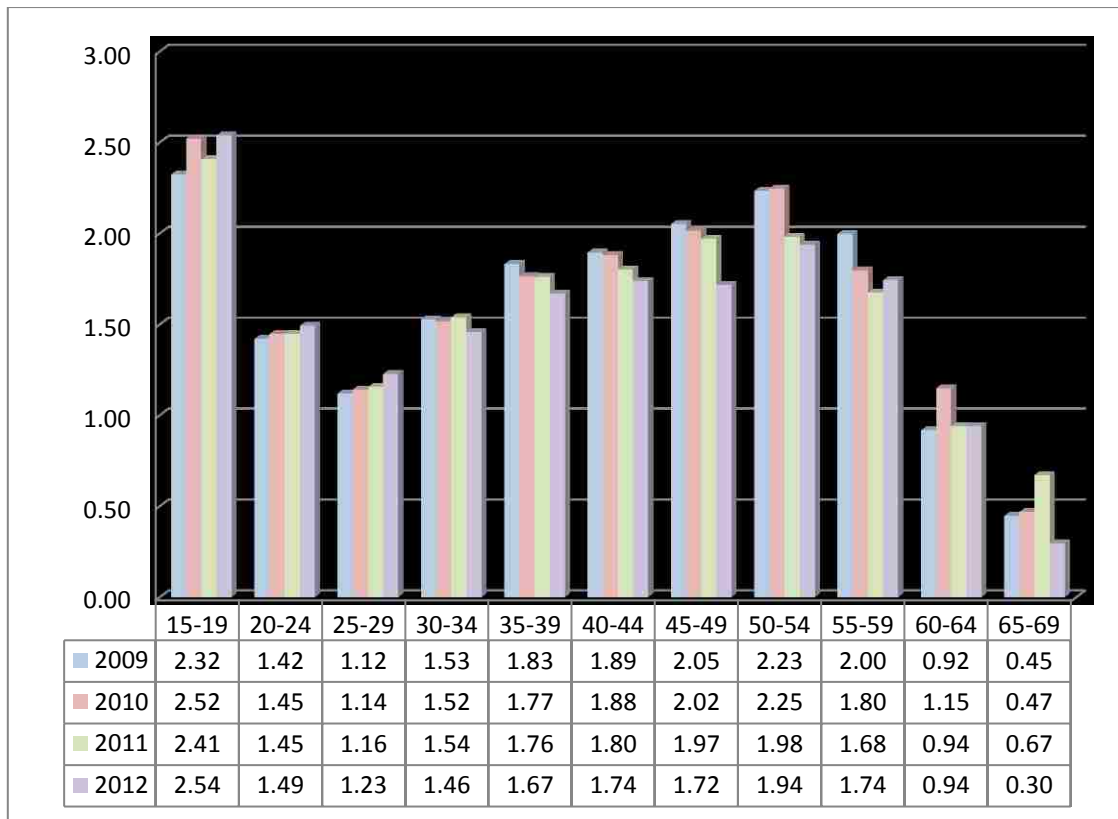


Figure 6.29 Gender Parity Index based on level of attainment for level one

Based on the results provided in table 6.38 and figure 6.29, it is evident that a Gender Parity Index score of more than 1 was achieved for almost all five-year age categories for the period 2009 to 2012 (apart from 60-64 and 65-69). This indicates disparity in favour of females for most of the five-year age groups for the period 2009 to 2012. Interestingly, the 15-19 and the 50-54-year age groups had the highest disparity in favour of females, whereas the 65-69-year age group had the lowest disparity of the age groups. From tables 32 – 35 in the appendix it is evident that female graduate numbers were well in excess of male graduate numbers at the 23 public universities in South Africa for the period 2009 to 2012 for almost all the age groups set out in figure 6.29. This situation is reflected in the Gender Parity Index scores where a clear disparity in favour of females is evident.

Figure 6.30 below illustrates the **level one** Gender Parity Index scores for the 25-34 and 25-64-year age groups based on the level of attainment at the 23 public universities combined for the period 2009 to 2012 as summarised in table 6.38.

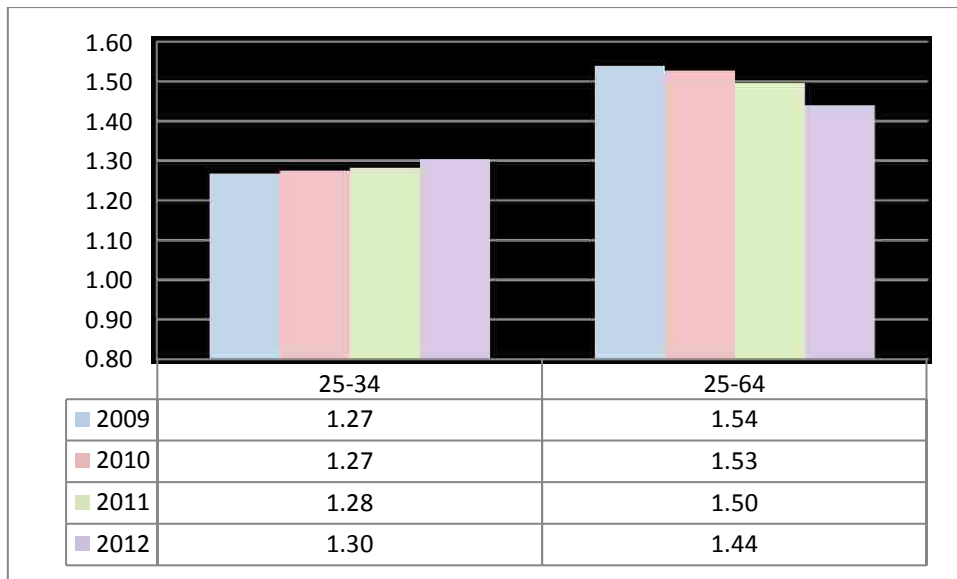


Figure 6.30: Gender Parity Index based on level of attainment for level one for 25-34 and 25-64-year age groups

As can be seen in figure 6.30, the 25-34 and the 25-64-year age groups all achieved a Gender Parity Index score of more than 1, indicating a disparity in favour of females in terms of qualifications attained (graduates). This situation is worse for the 25-64-year age group than the 25-34-year age group. Taking into account that student headcount enrolments at the 23 public universities in South Africa consisted of approximately 58% females and 42% males during the period 2009 to 2012, it was to be expected that the level of attainment would also show a disparity in favour of females.

The following tables in the appendix show the level of attainment for both females and males in five-year age groups at the four public universities in South Africa, for the period 2009 to 2012. These tables also indicate the Gender Parity Index score, calculated as the level of attainment for females divided by the level of attainment for males and then the distance from parity of one (each year in a separate table):

- Tables 40 – 43: The University of Cape Town for the period 2009 to 2012;
- Tables 44 – 47: The University of Johannesburg for the period 2009 to 2012;
- Tables 48 – 51: Unisa for the period 2009 to 2012; and
- Tables 52 – 55: The University of the Witwatersrand for the period 2009 to 2012.

Figures 6.31 to 6.34 below illustrate the Gender Parity Index scores based on the level of attainment at the four public universities for the period 2009 to 2012.

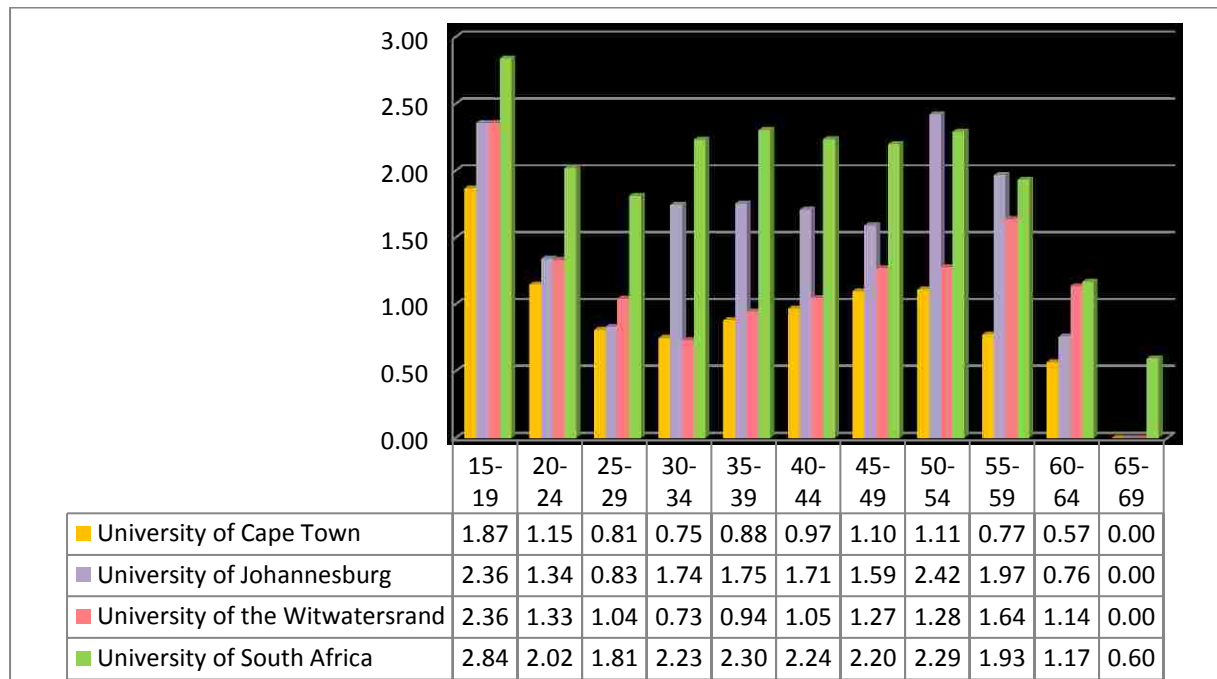


Figure 6.31: Gender Parity Index for level two for 2009

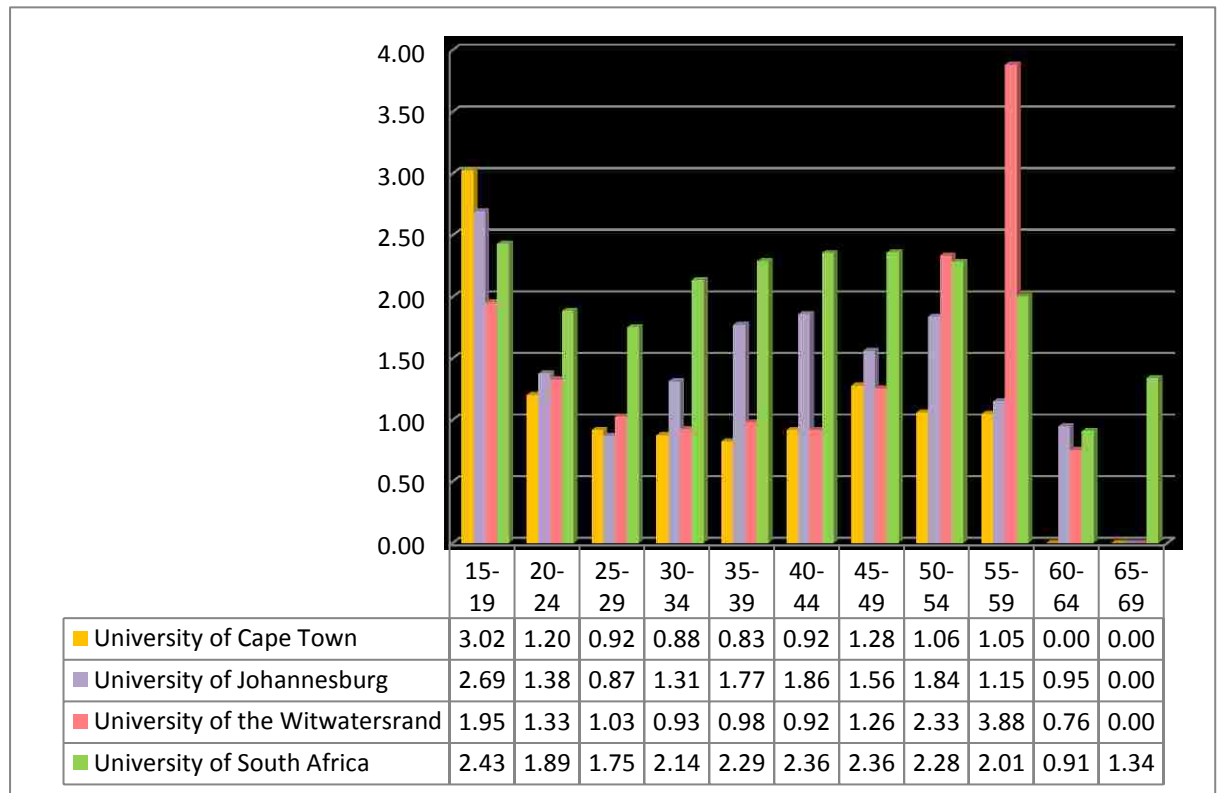


Figure 6.32: Gender Parity Index for level two for 2010

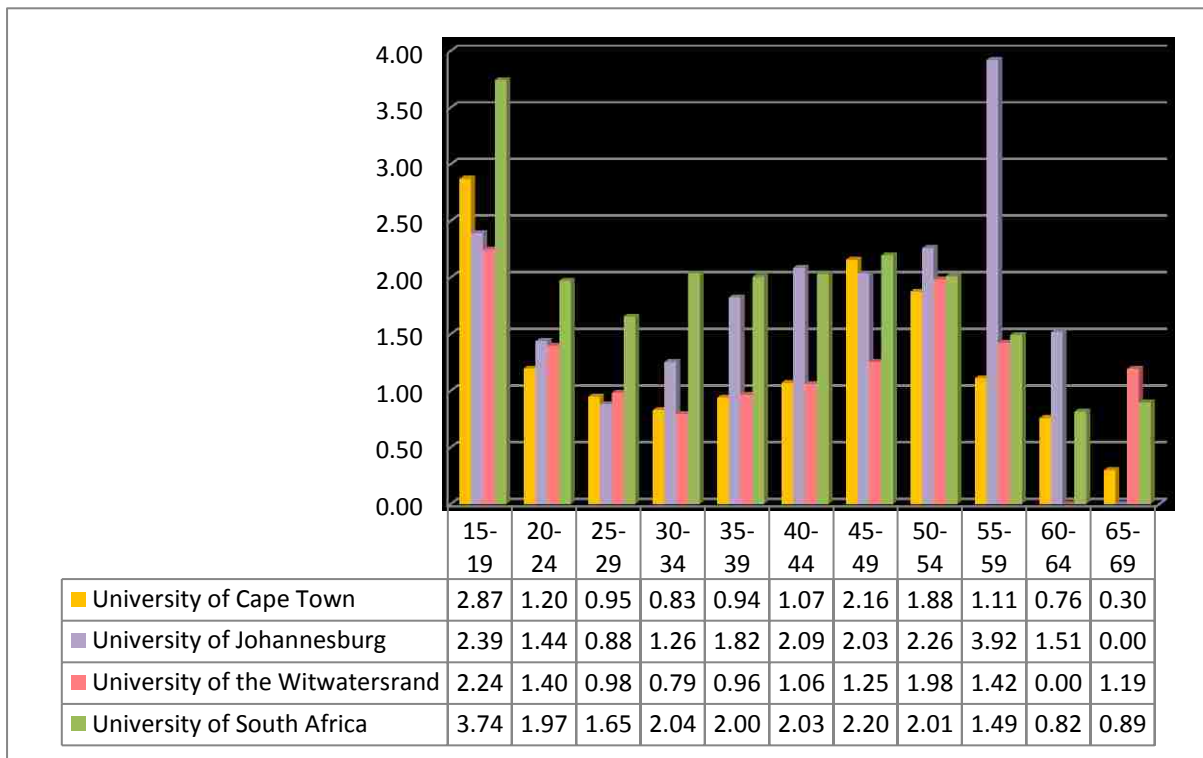


Figure 6.33: Gender Parity Index for level two for 2011

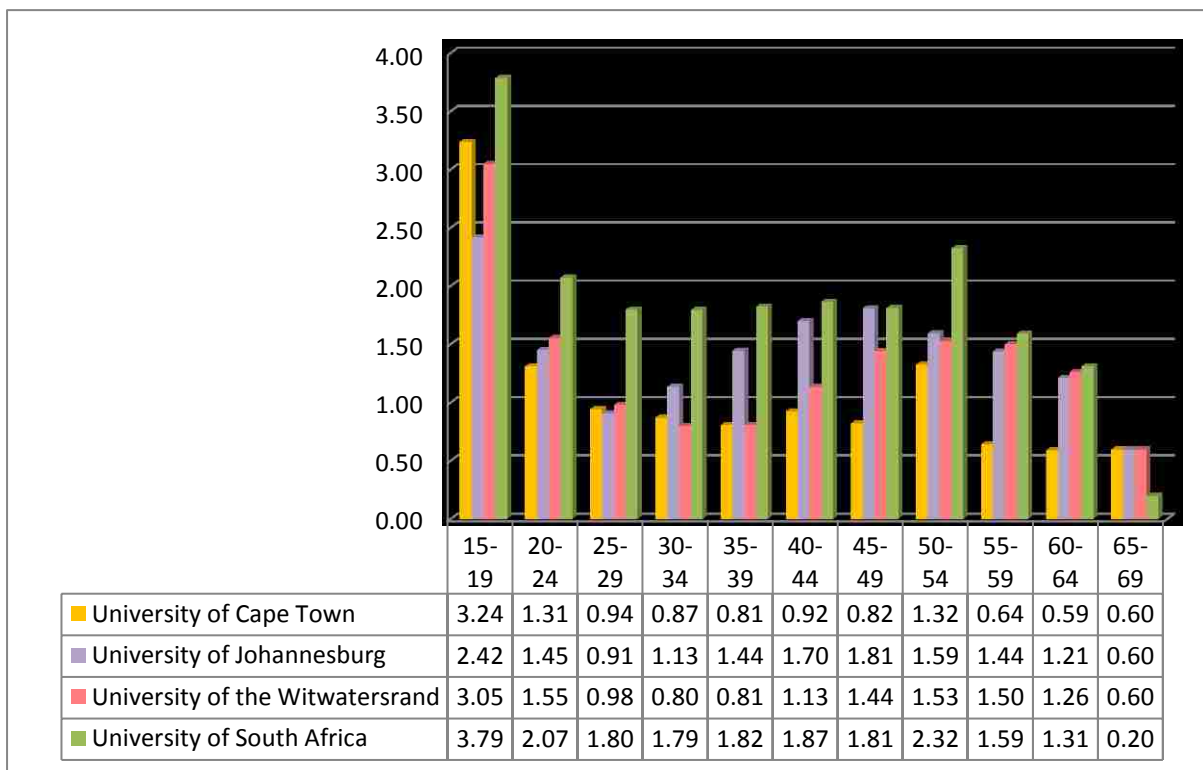


Figure 6.34: Gender Parity Index for level two for 2012

From figures 6.31 to 6.34 it can clearly be seen that for the University of Johannesburg and Unisa there is a disparity in favour of females for almost all the age groups shown in these figures. For the Universities of Cape Town and the Witwatersrand, the disparity is not as evident.

Based on the level of attainment indicated in tables 40 to 55 in the appendix, the four universities were ranked for **level two** in table 6.39 below. The distance from parity score in the five-year age groups with the highest level of attainment for both females and males was derived from tables 40 to 55 in the appendix. As explained above, the ideal would be a score of 0 and based on this the four universities were ranked for Gender Parity Index based on level of attainment for **level two**.

TABLE 6.39: RANKING IN TERMS OF DISTANCE FROM PARITY BASED ON LEVEL OF ATTAINMENT IN HIGHEST FIVE-YEAR AGE GROUP FOR 2009 to 2012

Year	Distance from parity for UCT (note 1)	Ranking for UCT	Distance from parity for the UJ (note 1)	Ranking for UJ	Distance from parity for WITS (note 1)	Ranking for WITS	Distance from parity for Unisa (note 2)	Ranking for Unisa
2009	0.15	1	0.34	3	0.33	2	1.30	4
2010	0.20	1	0.38	3	0.33	2	1.29	4
2011	0.20	1	0.44	3	0.40	2	1.03	4
2012	0.31	1	0.45	2	0.55	3	0.80	4

Source: Author's own calculations

Note 1: Based on highest level of attainment in 20-24-year age groups for both males and females.

Note 2: Based on highest level of attainment in 35-39-year age group for 2009, 2010.

The 40-44-year age group in 2011.

The 25-29-year age group in 2012.

The University of Cape Town outperformed the other three universities with the Gender Parity Index scores closest to a parity score of 1. This indicates that female graduate numbers in relation to male graduate numbers (seen as a percentage of the female and male numbers in the respective five-year age groups in the population in South Africa) are almost equal. The situation is unfortunately not as favourable at Unisa, where the Gender Parity Index scores based on the five-year

age group with the highest level of attainment for both females and males is the furthest from a parity score of 1.

As explained above, the Gender Parity Index based on level of attainment for level **three** could not be calculated and therefore no rankings could be provided for **level three**.

6.6 CONCLUSION

Chapter 6 has provided the facts, figures and data collected to populate each of the four accessibility indicators for **levels one, two and three** as set out in Chapter 5. In addition, comparisons were have been made and conclusions drawn, where possible.

In terms of **level one**, table 6.40 below summarises the main findings for the accessibility indicators measured in this chapter. Where possible, the findings on these indicators were compared to international standards and/or national benchmarks.

TABLE 6.40: SUMMARY OF LEVEL ONE ACCESSIBILITY INDICATORS

LEVEL ONE FINDINGS		2009	2010	2011	2012	
Level 1: Public higher education in South Africa	23 Universities combined	GROSS ENROLMENT RATE				
			17.56%	18.50%	19.16%	19.20%
		NET ENROLMENT RATE				
		15 – 19-year age group	3.4%	3.5%	3.5%	3.3%
		20 – 24-year age group	6.3%	6.6%	6.9%	7.1%
		25 – 29-year age group	2.4%	2.8%	3.1%	3.2%
		30 – 34-year age group	1.9%	2.0%	2.1%	2.1%
		35 – 39-year age group	1.9%	2.0%	2.0%	1.9%
		40 – 44-year age group	1.9%	1.9%	1.9%	1.7%
		45 – 49-year age group	1.3%	1.3%	1.4%	1.3%
		50 – 54-year age group	0.7%	0.7%	0.8%	0.7%
		55 – 59-year age group	0.3%	0.3%	0.3%	0.3%
		60 – 64-year age group	0.1%	0.1%	0.1%	0.1%
		65 – 69-year age group	0.0%	0.0%	0.0%	0.0%
		LEVEL OF ATTAINMENT				
		20 – 24-year age group	1.49%	1.53%	1.59%	1.71%
		25 – 34-year age group	0.37%	0.40%	0.42%	0.44%
		25 – 64-year age group	0.31%	0.33%	0.33%	0.32%
		GRADUATION RATE				
			17.36%	17.17%	17.12%	17.41%
		GENDER PARITY BASED ON GROSS ENROLMENT RATE				
		Gender Parity Index	1.34	1.38	1.40	1.42
		GENDER PARITY BASED ON LEVEL OF ATTAINMENT				
		15 – 19-year age group	2.32	2.52	2.41	2.54
		20 – 24-year age group	1.42	1.45	1.45	1.49
		25 – 29-year age group	1.12	1.14	1.16	1.23
		30 – 34-year age group	1.53	1.52	1.54	1.46
		35 – 39-year age group	1.83	1.77	1.76	1.67
		40 – 44-year age group	1.89	1.88	1.80	1.74
45 – 49-year age group	2.05	2.02	1.97	1.72		
50 – 54-year age group	2.23	2.25	1.98	1.94		
55 – 59-year age group	2.00	1.80	1.68	1.74		
60 – 64-year age group	0.92	1.15	0.94	0.94		
65 – 69-year age group	0.45	0.47	0.67	0.30		
25-34-year age group	1.27	1.27	1.28	1.30		
25-64-year age group	1.54	1.53	1.50	1.44		

Source: Author's own calculations

Although Gross Enrolment Rates seem to be close to reaching set national benchmarks, the graduation rates and level of attainment are of concern when compared to international standards. There is also a clear disparity in favour of females at the 23 public universities in South Africa in most age groups, which is not ideal.

In terms of **level two**, table 6.41 below summarises the overall rankings for the accessibility indicators measured in this chapter for the four public universities.

TABLE 6.41: SUMMARY OF LEVEL TWO ACCESSIBILITY INDICATORS

LEVEL TWO RANKINGS	2009 RANKING	2010 RANKING	2011 RANKING	2012 RANKING	
Level 2: Overall for 4 universities	GROSS ENROLMENT RATE				
	Unisa	1	1	1	1
	University of Johannesburg	2	2	2	2
	University of Witwatersrand	3	3	3	3
	University of Cape Town	4	4	4	4
	NET ENROLMENT RATE				
	Unisa	1	1	1	1
	University of Johannesburg	2	2	2	2
	University of Cape Town	3	3	3	4
	University of Witwatersrand	4	4	4	3
	LEVEL OF ATTAINMENT				
	University of Johannesburg	1	2	1	1
	Unisa	1	1	1	2
	University of Cape Town	2	3	2	3
	University of Witwatersrand	3	3	3	4
	GRADUATION RATE				
	University of Cape Town	1	1	1	1
	University of Johannesburg	2	3	3	2
	University of Witwatersrand	3	2	2	3
	Unisa	4	4	4	4
	GENDER PARITY BASED ON GROSS ENROLMENT RATE				
	University of Cape Town	1	1	1	1
	University of Witwatersrand	2	2	2	2
	University of Johannesburg	3	3	3	2
	Unisa	4	4	4	3
	GENDER PARITY BASED ON LEVEL OF ATTAINMENT				
	University of Cape Town	1	1	1	1
	University of Witwatersrand	2	2	2	3
	University of Johannesburg	3	3	3	2
	Unisa	4	4	4	4

Source: Author's own calculation.

Section 2.2.1 (page 20) stated that accessibility indicators can be divided into Type I and Type II indicators as described in *Accessibility to postsecondary education in Canada: a review of the literature* (Anisef, 1985). Type I access provides insight into the number of places that are available in higher education and in this study was represented by the participation rate and the educational attainment. Type II access

provides insight into the social composition of the student body and in this study was represented by the Educational Equality Index and the Gender Parity Index.

Based on the rankings presented in table 6.41, it is clear that Unisa performed the best in the Type I access indicators relating to participation (Gross Enrolment Rate and Net Enrolment Rate), yet did not perform well in the educational attainment (graduation rate) and Type II access indicator (Gender Parity Index). The opposite is true for the University of Cape Town, which did not perform as well in the Type I access indicator relating to participation (Gross Enrolment Rate and Net Enrolment Rate), but performed exceptionally well in the educational attainment and Type II access indicator (Gender Parity Index).

Section 5.5 (page 163) explained that due to the subjectivity of assigning weightings to the accessibility indicators, no weightings were assigned in this study. An overall accessibility ranking could therefore not be performed.

In terms of **level three**, table 6.42 below summarises the rankings for the accessibility indicators measured in this chapter for the four public universities in terms of accounting-related qualifications.

TABLE 6.42: SUMMARY OF LEVEL THREE ACCESSIBILITY INDICATORS

LEVEL THREE RANKINGS		2009 RANKING	2010 RANKING	2011 RANKING	2012 RANKING
Level 3: Accounting Qualifications	GROSS ENROLMENT RATE				
	Unisa	1	1	1	1
	University of Johannesburg	2	2	2	2
	University of Cape Town	3	4	4	3
	University of Witwatersrand	4	3	3	4
	GRADUATION RATE				
	UNDERGRADUATE GRADUATION RATE				
	University of Witwatersrand	2	2	1	1
	University of Cape Town	1	1	3	3
	University of Johannesburg	3	3	2	2
	Unisa	4	4	4	4
	POSTGRADUATE GRADUATION RATE				
	University of Cape Town	1	1	1	1
	University of Witwatersrand	2	2	2	2
	University of Johannesburg	3	3	3	3
	Unisa	4	4	4	4
	SAICA QUALIFYING EXAMINATION				
	University of Cape Town	1	1	1	1
	University of Witwatersrand	2	3	2	2
	University of Johannesburg	3	2	3	3
	Unisa	4	4	4	4
	GENDER PARITY BASED ON GROSS ENROLMENT RATE				
	University of Witwatersrand	1	2	1	1
	University of Cape Town	2	1	2	3
	University of Johannesburg	3	3	3	2
	Unisa	4	4	4	4

Source: Author's own calculation.

From the rankings provided in table 6.42, Unisa again outperformed the other universities in terms of participation rate scores (Gross Enrolment Rate), but did not perform well in the graduation rate rankings or the Gender Parity Index. The Universities of Cape Town and the Witwatersrand performed relatively poorly in the participation rate rankings, but performed exceptionally well in both the graduation rate rankings and the Gender Parity Index rankings. It would therefore seem that in terms of accounting-related qualification types, the University of Cape Town and the University of Witwatersrand might not enrol the most students but have high graduation numbers with close to equal male and female numbers.

Chapter 7 will provide the overall conclusions on the four accessibility indicators as well as a conclusion on the research questions addressed in this study.

CHAPTER 7

FINAL CONCLUSIONS AND RECOMMENDATIONS

7.1 INTRODUCTION

Based on the results of the accessibility indicators measured for **level one**, chapter 6 provided international comparisons and/or comparisons with targets set for the South African higher education system. This allowed comparisons of the results of these indicators with those of other countries in order to determine whether South Africa is making sufficient progress in terms of the accessibility of higher education. The comparisons with targets set for the South African higher education system, such as those set in the National Plan for Higher Education, provided an indication of whether South Africa is meeting those targets, whether the targets are within reach, or whether possible problems exist that should be addressed.

Chapter 6 provided the rankings of the four universities based on the results of the accessibility indicators measured for **level two**. This allowed comparisons to be made between the four universities on an overall level in terms of accessibility of public higher education. Chapter 6 provided the rankings of the four universities per indicator for **level two**, where possible. It is again worth noting that the indicators used to measure accessibility of higher education are mostly only used to measure higher education at a very high level. Measurement of these indicators were performed in this study for **level two** in order to provide reasonably fair rankings of the four universities selected for this study in terms of higher education accessibility.

Based on the results of the accessibility indicators measured for **level three**, Chapter 6 provided the rankings of the four universities selected for this study in terms of accounting qualifications they offer. Due to the unavailability of data on the chartered accountancy qualifications specifically, the measurement at this level was performed on accounting qualifications in general, as explained in Chapter 6. This enabled comparisons between the four universities in terms of accessibility of accounting qualifications, which include those that lead to chartered accountancy qualifications. Chapter 6 again provided the rankings of the four universities per indicator for **level three**. As mentioned for **level two**, measurement of these indicators was performed

in this study for **level three** in order to provide reasonably fair rankings of the four selected universities in terms of accessibility of higher education of accounting qualifications.

Due to the subjective nature of assigning specific weightings to each accessibility indicator, no weightings were assigned to these indicators. It was therefore not possible to provide an overall final ranking in terms of combined accessibility of higher education rankings as each of these individual rankings should be seen in isolation. Although an overall ranking was not provided, the individual rankings do however provide the opportunity for comparisons to be made between the four universities per individual method of measuring an accessibility indicator.

Apart from providing the overall final conclusions relating to the measurement of the accessibility indicators as measured in this study, Chapter 7 also presents final conclusions on the research questions and makes certain recommendations for future studies that could be conducted on this topic.

7.2 CONCLUSIONS ON RESEARCH QUESTIONS

The aim of this study, as set out in section 1.4 (page 7), was to measure possible accessibility indicators by using selected indicators. In order to achieve the above, this study set out to address certain research questions. This section will provide a short summary of the conclusions reached for each of these research questions.

Research question 1:

What are the possible indicators and methods used to measure accessibility of higher education in South Africa as well as internationally?

Through a comprehensive review of local as well as international studies on the accessibility of higher education and subsequent rankings based on the results, Chapter 2 concluded that there are four possible accessibility indicators. In Chapter 2 a further detailed review of local and international studies was also performed in order to identify possible methods that could be used to measure each of these accessibility indicators. Various possible methods and/or proxies were discussed and Chapter 5 concluded on which of these methods and/or proxies this study would

base its measurements of the accessibility indicators. The accessibility indicators and the method(s) and/or proxies used to measure each of them were as follows:

1. Participation rate: Enrolment Rates (Gross Enrolment Rate and Net Enrolment Rate);
2. Educational attainment: Level of attainment and graduation rate
3. Educational Equality Index: Parental educational level; and
4. Gender Parity Index: Based on Gross Enrolment Rates and level of attainment.

These indicators are set out in figure 7.1 below.

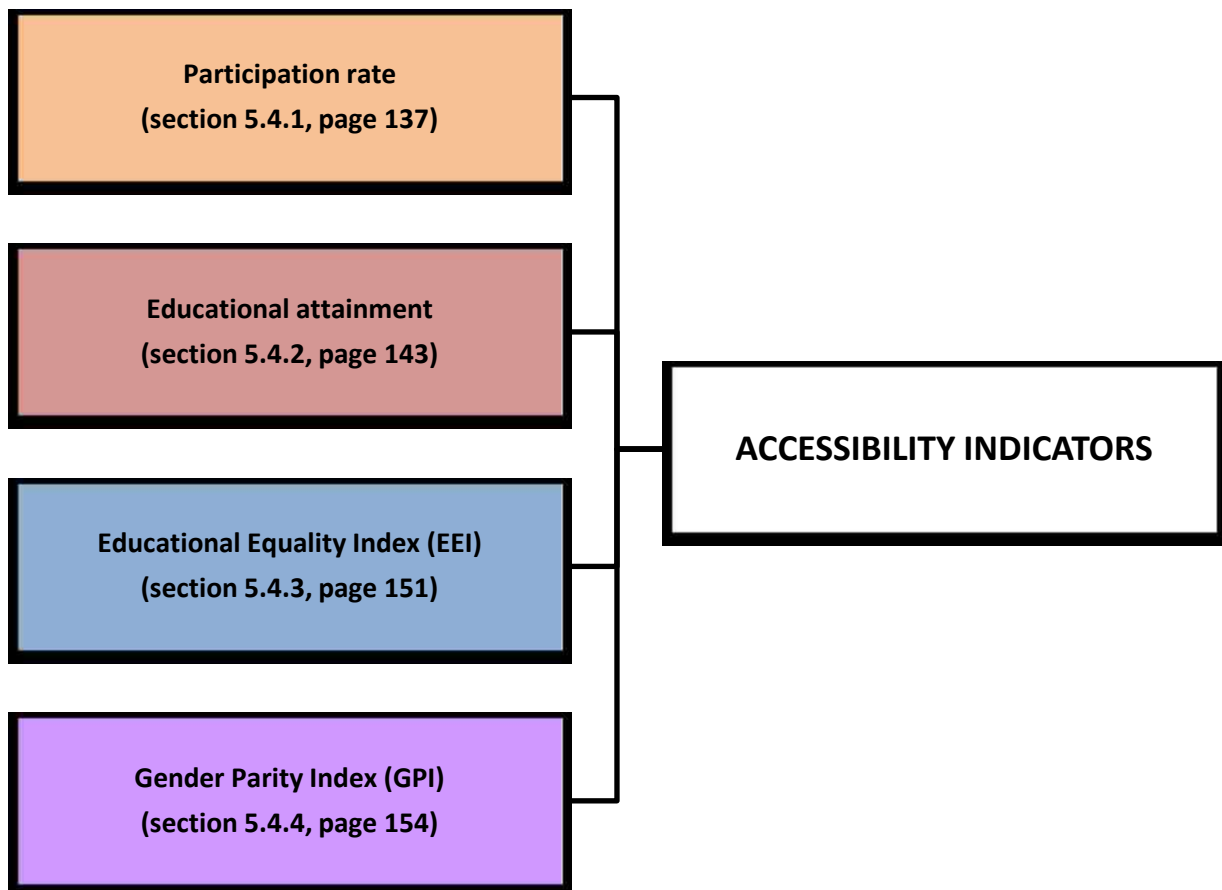


Figure 7.1: Indicators for measuring accessibility of higher education

Research question 2:

What are the current challenges faced by South African students that could possibly have an influence on the accessibility of higher education?

Chapter 3 provided an overview of various challenges that are faced by numerous South African students. Many students wanting to become accountants or chartered accountants in South Africa are also faced with these and other challenges, which include unaffordable educational costs, insufficient financial aid, a poor schooling system in certain areas, language barriers, poor living conditions in student accommodation, a lack of access to relevant Information and Communication Technology resources, and high unemployment rates. Students have been demanding fee-free tuition because the National Student Financial Aid Scheme is not able to fully support poor students. With ever increasing higher education tuition fees, in part due to inadequate government funding, many deserving students from poor and working-class families are still faced with financial constraints as a major obstacle that makes access to higher education almost impossible (Wangenge-Ouma, 2012; Nkosi, 2014). State funding of higher education institutions and the National Student Financial Aid Scheme seem to be inadequate (Wangenge-Ouma, 2012; Nkosi, 2014) and should be reassessed by the South African Government as a matter of urgency if the skills shortages in South Africa are to be addressed. The effect of the shortfall in the National Student Financial Aid Scheme could clearly be seen in the large scale of student protests at the Tshwane University of Technology which resulted in a temporary shut-down of six campuses of this university in 2014 (IOL news, 2014). This is a clear indication of the devastating effect of insufficient financial aid to students.

Almost all the challenges highlighted above most likely have a negatively impact on the accessibility of higher education in South Africa. Furthermore, even those lucky enough to gain access to a higher education institution are not guaranteed of success. Many of the challenges as discussed in Chapter 3 hinder student performance and result in low graduation rates, as can be seen in Chapter 6.

The introduction to this study (section 1.2, page 1) explained that South Africa is currently experiencing a financial skills shortage, with a severe shortage of not only chartered accountants, but accountants in general. The financial skills shortage could hinder economic growth in South Africa and the severity of this problem should not be underestimated. As many of the current challenges faced by students in South Africa stem from poor economic circumstances, high unemployment rates,

sub-standard schooling systems in some areas and various other socio-economic challenges, the onus of addressing the financial skills crisis cannot rest with only the post-school education and training institutions, which include the higher education institutions, but should be a holistic approach with the commitment of all relevant stakeholders in concert with the South African government.

Research question 3:

Could the past injustices brought about by apartheid still have a possible influence on accessibility of higher education in South Africa?

Chapter 3 concluded that South African students are most probably still faced with challenges brought about by past injustices and inequalities and that this could potentially still have an impact on the accessibility of higher education in South Africa. Even though the South African higher education system has changed considerably since the apartheid regime and vast improvements have been made in addressing past injustices brought about by this era, it does not mean that since the abolishment of apartheid, higher education is now accessible to all deserving students.

With the release of the *Green Paper for Post-School Education and Training policy* framework during 2012 and subsequently the *White Paper for Post-School Education and Training* in 2013, the commitment of the South African government in addressing and overcoming the past inequalities of apartheid is clear. These papers are aimed at transforming the post-school education system by making it more equitable and accessible (DHET, 2012a; DHET, 2013a). Twenty years have passed since the abolishment of apartheid and it is evident that the transformation of the post-school education system is unfortunately a slow process which requires the buy-in of many stakeholders.

Research question 4:

What is the influence of governing bodies, legislation and other higher education regulators on the accessibility of higher education in South Africa?

The Department of Higher Education and Training, the government department that is responsible for all aspects of post-school education and training in South Africa

(DHET, 2010), envisages that by 2030 at least 50% of those persons in the 18-24-year age group will be studying through a university or college in South Africa (DHET, 2010). From the results of the Net Enrolment Rate measurement in Chapter 6, it is clear that only a small percentage of persons in this age group are actually studying through the public universities. In 2012 the Net Enrolment Rate in the 15-19 year age group was only 3.3% and the 20-24-year age group was only 7.1%. It would seem that the vision of the Department of Higher Education and Training of reaching the 50% goal as stated above would require the buy-in of all relevant post-school education and training institutions, with continuous monitoring of the process. Most of all, it would require much needed additional funding from government to these institutions as well as the National Student Financial Aid Scheme in order to make post-school education more affordable.

Another problem that the Department of Higher Education and Training faces in meeting this target is capacity constraints. The majority of public universities in South Africa are residential universities offering mainly full-time qualifications. These universities are bound by limited capacity. This highlights the crucial role of Unisa as the largest open distance education institution in South Africa. Not bound as much by capacity constraints, this university can provide part-time studies to students with the opportunity to work and earn a salary whilst studying. It follows that this university can be seen as a key role player in increasing the number of persons in the 18-24-year age group that are enrolled in higher education. Chapter 1 alluded to the two new public universities that were established recently. This is a step in the right direction, but these universities are similarly bound by capacity constraints.

One way of increasing accessibility to public universities in South Africa is to possibly lower strict admission requirements of first degree studies as set by the matriculation board of Higher Education South Africa (Higher Education South Africa, 2014). On the other hand, this poses the problem of negatively affecting graduation numbers and ultimately of higher education standards in South Africa, and should be seen as a last resort. Priority should rather be given to increasing government funding, and addressing poor schooling systems and various other socioeconomic challenges. It is therefore the responsibility of not only the South African government and the Department of Higher Education and Training, but of all relevant stakeholders to

ensure that the quality of higher education is upheld whilst addressing capacity constraints, funding issues and increased accessibility. The Department of Higher Education and Training has made the decision that contact universities may now also offer distance programmes in an attempt to increase enrolments subject to good quality control measures (DHET, 2013a).

Research question 5:

What influence could the different admission criteria to chartered accountancy programmes set by the four universities selected for this study have on the accessibility of chartered accountancy programmes in South Africa?

Chapter 4 indicated that South Africa was ranked second last in the world in terms of Mathematics and Science education, with the quality of the South African education system being ranked 140 out of 144 countries reviewed (WEF, 2013b). As part of the minimum admission requirements to programmes offered by the public universities leading to a chartered accountancy qualification, Mathematics is required with a certain score. A poor quality schooling system can be detrimental to deserving students in meeting these requirements. To ensure that deserving students obtain the required Mathematics scores at school, urgent interventions are necessary to address the quality of the schooling system. If this is not made a priority by the South African government, access to chartered accountancy programmes is negatively affected, which in turn could increase the already severe scarcity of chartered accountants in South Africa.

Chapter 4 concluded that Unisa has the least strict admission requirements in terms of Bachelor degree qualifications for chartered accountancy programmes; hence it is clear that this university has a vital role to play in the overall accessibility of higher education in South Africa as well as the accessibility of South African chartered accountancy programmes. Section 6.6 concluded that Unisa by far outranked the other three universities in terms of participation rate scores for **level two** and **level three**. Even though this university did not perform as well in the educational attainment rate scores (especially the graduation rate), Unisa plays a crucial role in the provision of accountants and chartered accountants in South Africa. In order to remain a SAICA accredited university in the provision of chartered accountancy

programmes, this university does have work to do, but the pivotal role it plays in the accessibility of these programmes is undeniable.

In addition, as noted under research question 4 above, the last resort in the aim of increasing accessibility of chartered accountancy programmes should be to lower strict admission requirements. The quality of the profession should be upheld at all costs. Priority should rather be given to interventions for increasing the quality of schooling systems in South Africa, with the explicit aim of increasing the quality of Mathematics in schools.

Research question 6:

Through the application of certain accessibility indicators, could the overall accessibility of South African public higher education as well as accountancy programmes with special emphasis on chartered accountancy programmes be measured?

The measurement of the accessibility indicators as set out in Chapter 6 and the overall conclusions drawn from these measurements and subsequent rankings provided valuable information regarding the accessibility of higher education in South Africa as well as for accounting-related qualifications at four public universities.

Discussion of measurement indicators:

1. Participation rate

According to the Council on Higher Education the rate of participation for the public higher education system in South Africa is higher than that of many developing countries. It is, however, still well below that of developed countries (CHE, 2004). This view is also shared by Badsha and Cloete (2011) in their paper *Higher Education contribution for the NPC's National Development Plan*. Badsha and Cloete (2011) state that the participation rate for higher education in South Africa (based on total enrolment as a proportion of the 20-24-year age group cohort) is much lower compared to middle-income countries but that it is also much higher when compared to an average participation rate of 6% for other sub-Saharan African countries. Chapter 6

concluded that the 23 public universities in the South African higher education system are making good progress towards meeting the 20% participation rate target (based on Gross Enrolment Rate) set in the National Plan for Higher Education to be met by at least 2015. By 2012 the Gross Enrolment Rate for higher education, based on the 23 public universities, was 19.20% and showed a steady increase from 2009 to 2012.

On the other hand, Chapter 2 stated that South Africa is considered to be in the second stage of development, as defined in the World Economic Forum's *Global Competitiveness Report, 2010 – 2011* (WEF, 2010). This report indicates that an average participation rate for countries in the second stage of development is between 30% and 50%. The World Economic Forum classifies South Africa in the second stage of development. This would indicate that the average participation rate for South Africa should be between 30% and 50%, which is not currently the case. Although the public higher education system thus seems to be within reach of the 20% target as set in the National Plan for Higher Education and even the 25% target set for 2030 in the *White Paper for Post-School Education and Training* (DHET, 2013a), it would seem that these targets are too low for a country in the second stage of development. If South Africa wants to compete internationally, the benchmark should rather be set at around 30% to 50%, which is the average for countries in the second stage of development.

Overall, it would seem that South Africa may have set targets and benchmarks in terms of accessibility indicators (such as Gross Enrolment Rates) too low when compared to international standards. This could be to compensate for the legacy left after the apartheid regime, but 20 years have passed since the end of this era. South Africa is faced with a severe shortage of certain scarce skills, including accountants and specifically chartered accountants. It is no longer sufficient to keep lowering benchmarks as this will not allow South Africa to produce the number of students qualified for these scarce-skills positions. Problems relating to the accessibility of higher education or the scarce skills shortage cannot be ignored. Structured plans and overview processes are desperately needed whereby the 23 public

universities in South Africa can be regularly measured and ranked. Benchmarks for accessibility indicators should be set for these scarce-skills occupations, including accountants and specifically chartered accountants, so that the 23 public universities can be regularly ranked based on the results and be held accountable for benchmarks not met.

2. Educational attainment

Internationally, it would seem that educational attainment is mainly measured on the 25-year and older age group (either the 25-34 or 25-64-year age groups) (UNESCO, 2014a; OECD, 2013; Usher and Medow, 2010; Usher and Cervenán, 2005; Murakami and Blom, 2008). From the level of attainment measurement for **level one** detailed in Chapter 6 however, it can clearly be seen that the five-year age group with the highest level of attainment in South African higher education (based only on the 23 public universities), is the 20-24-year age group.

Based on the results of the level of attainment measurements for **level one**, the following averages for level of attainment were reported over the period 2009 – 2012 for the age groups with the highest level of attainment averages:

- 20-24-year age group with average level of attainment of 1.58%
- 25-29-year age group with average level of attainment of 0.49%
- 40-44-year age group with average level of attainment of 0.43%
- 25-34-year age group with average level of attainment of 0.41%
- 25-64-year age group with average level of attainment of 0.32%

It is thus clear that for the calculation of highest level of attainment in South Africa, the 20-24-year age group is of crucial importance. This is the five-year age group with the highest Net Enrolment Rate as well as level of attainment. If this group is not taken into account when international comparisons are made, the highest level of attainment figures for South Africa might be distorted. In terms of **level two**, the 20-24-year age group also outperformed the other age groups by far for the University of Cape Town, the University of Johannesburg and the University of the Witwatersrand. Overall, the 25-year and above age groups had much lower rates for all three levels. It could be

argued that the level of attainment should rather be calculated on the five-year age group with the highest level of attainment. If not, the level of attainment for South Africa seems even worse, compared to other international countries.

Considering the graduation rate benchmarks for the various qualification types (Ministry of Education, 2001; Department of Education, 2004), South African public universities and specifically distance learning mode of delivery are performing dismally in terms of graduations rates. Taking into account that the original benchmarks were substantially lowered, almost none of these targets had been met even by 2012 for either contact or distance mode of delivery. This is indeed extremely worrying. This situation is even worse for the distance mode of delivery (in this study only Unisa was taken into account in this regard), where none of the benchmarks had been met even by 2012. The original and revised benchmarks for distance mode of delivery are much lower than for the contact mode of delivery and even taking this into account, none of the benchmarks have been met and are far from being met. The situation is not much better for contact mode of delivery (in this study the other 22 public universities were taken into account) as only the four-year or more undergraduate qualification type benchmark was met.

The South African public higher education level of attainment and graduation rates paint a very bleak picture indeed and much would need to be done to increase the number of graduates from the public universities. This is also true for accounting-related qualifications. Again, as mentioned under participation rates above, it is not ideal to lower graduation rate benchmarks in South Africa. A more favourable picture might be achieved in the short term, but the long-term effects might be devastating, as the severe shortage of accountants and chartered accountants in South Africa might not be alleviated.

3. Educational Equality Index

The information needed to calculate the parental education levels for higher education in South Africa, the four universities selected for this study and for chartered accountancy studies in South Africa could not be obtained.

4. Gender Parity Index

The results of the measurement of the Gender Parity Index based on Gross Enrolment Rates and level of attainment (as set out in Chapter 6) indicated a disparity in favour of females for the period 2009 to 2012 for the 23 public universities in South Africa. It would therefore seem that more females participated in and graduated from public higher education institutions in South Africa from 2009 to 2012. In fact, the situation worsened from 2009 to 2012 as the disparity in favour of females was even larger in 2012 than it was in 2009 in terms of Gross Enrolment Rates. The student body in terms of enrolments at the 23 universities in South Africa consisted of 32.98%, 34.76%, 37.43% and 39.28% more females than males in the period 2009 – 2012 respectively. The disparity in favour of females is evident from these calculations.

If the female population in the 20-24-year age group is divided by the male population in this same age group, the ratio is almost 1:1 over the period 2009 – 2012 (0.99:1 in 2009, 0.98:1 in 2010, 2011 and 2012). This would indicate that there are approximately equal numbers of females and males in the 20-24-year age group. The disparities in favour of females experienced over the period 2009 – 2012 are therefore not as a result of more females in the population in this age group. In fact, there is almost perfect parity between the genders in the 20-24-year age group over the period 2009 – 2012. Gender disparity, whether in favour of males or females, is not ideal. Considering that the population in the 20-24-year age group has almost perfect parity, it would be expected that the student body enrolled at the 23 public universities would also be near a parity of 1:1. This is however not the case.

The same disparity in favour of females is also evident from the Gender Parity Index based on Gross Enrolment Rates for the four universities. The University of Cape Town is considered to be the success story of this study in terms of Gender Parity Index based on Gross Enrolment Rates and level of attainment, with only a slight disparity between female and male enrolments and graduates. The enrolments at the University of Cape Town consisted of

only 1.49%, 6.85%, 8.02% and 9.05% more females than males in the period 2009 – 2012. When this is compared to Unisa, which consistently ranked in fourth place for the period 2009 – 2012, it is worrying to see that the enrolments at Unisa consisted of 51.34%, 53.11%, 59.23% and 66.95% more females than males in the years 2009 to 2012 respectively. The total female graduate numbers in all the five-year age groups was almost double, compared to the male graduate numbers at Unisa, which indicates a tremendous disparity in favour of females in terms of graduations.

This disparity in favour of females is also evident at Unisa based on headcount enrolments for general and professional first Bachelor's degrees accounting qualifications. The student body at Unisa for accounting qualifications consisted of 32.81%, 37.36%, 41.37% and 45.70% more females than males in the years 2009 to 2012 respectively, making the disparity in favour of females even more evident. In terms of headcount enrolments for general and professional first Bachelor's degrees accounting qualifications the University of the Witwatersrand almost consistently ranked in first place. The student body at the University of the Witwatersrand for accounting qualifications consisted of approximately equal females and males during the period 2009 – 2012 and therefore showed only limited disparity.

Disparity in favour of females or males is considered not to be ideal for the public higher education institutions in South Africa and this disparity in favour of females should be addressed by the 23 public universities, the Department of Higher Education and Training as well as all other relevant stakeholders.

7.3 BRINGING IT ALL TOGETHER

Section 1.2 (page 1) concluded that increased accessibility to higher education is of paramount importance in the process of addressing the financial skills shortage and in particular the shortage of accountants and chartered accountants in South Africa. It is therefore crucial not only to be able to measure accessibility indicators, but to do this regularly in order to measure the progress that has been made in this regard. Accessibility indicators should not only be measured on an overall basis for the

public universities in South Africa, but should be measured specifically for scarce skill professions such as that of accountants and chartered accountants.

The problem statement, as set out in section 1.3 (page 6) points out that although accessibility indicators are measured regularly on a high level, internationally as well as in South Africa, these indicators are not measured regularly for specific professions. These measurements with subsequent rankings based on the results could assist public universities and all other relevant stakeholders in addressing the financial skills shortages by providing an insight into their performance in this regard.

Chapter 2 provided possible accessibility indicators with methods and/or proxies that could be used to measure these indicators. Chapter 5 concluded on the indicators and methods/proxies that would be used in this study and Chapter 6 set out the results of these measurements. In terms of **level two** and **level three**, subsequent rankings were provided (where possible) based on the results. As mentioned earlier in this chapter, no overall rankings in terms of accessibility of higher education could be performed as no weightings were assigned to indicators due to their subjective nature. Where possible, rankings were however assigned to the respective individual methods/proxies used to measure the accessibility indicators.

Overall, the conclusion in Chapter 6 was that Unisa performed the best of the four universities for **level two** and **level three** in terms of participation rates. In many instances this university is a last resort for students who cannot afford to study through a residential university, who do not meet the admission requirements of other universities, who do not stay in close proximity of a residential university or who are influenced by numerous other factors. Unfortunately, these students are often faced by on-going challenges such as financial constraints, poor living conditions, unemployment, and language barriers, to name only a few. This results in high drop-out rates which are evident in the low ranking that Unisa achieved in the educational attainment (especially graduation rate) rankings for both **level two** and **level three**. In terms of **levels two and three**, a clear disparity in favour of females is also evident at Unisa. With much larger numbers of females enrolling and graduating in general and also in terms of accounting-related qualifications, this disparity should be addressed. As Unisa enrolls by far the highest number of

students each year, especially in terms of those studying towards becoming accountants and chartered accountants, the crucial role of this university in increasing the accessibility of higher education in general and specifically relating to chartered accountancy programmes in South Africa cannot be overemphasized.

The University of Cape Town did not perform as well in the participation rate indicators for either **level two** or **level three**, but almost consistently performed the best in terms of graduation rates and the Gender Parity Index for both these levels.

Although the University of Cape Town and Unisa seem to have performed very well in certain indicators, they also performed poorly in others. The aim of this study was not to reach a conclusion on the university that performed the best overall, but rather to identify areas of concern for each of these universities through the process of comparison with other universities.

Even though Unisa showed tremendous growth in the overall Gross Enrolment Rates from 2009 to 2012, it showed a decline in the Gross Enrolment Rates over this same period for Accounting First Bachelor's degrees. This decrease is even worse for the University of Cape Town and the University of the Witwatersrand. Overall, the 23 public universities in South Africa had approximately 2,445 fewer headcount enrolments for Accounting First Bachelor's degrees in 2012 compared to 2009. The Gross Enrolment Rates for Accounting First Bachelor's degrees in fact showed a decrease every year from 2009 to 2012. With accountants in general being in high demand and chartered accountants even more so, this declining trend in enrolments for accounting-related qualifications is of great concern.

As mentioned in section 1.2 (page 1), SAICA reported a shortfall of 22 000 persons in financial occupations across all levels. Included in this figure was a shortfall of 5 000 chartered accountants (SAICA, 2010). It was predicted in this report by SAICA that the shortfalls would most likely increase in the years ahead (SAICA, 2008a). Chapter 6 provided the results of the graduation rates for undergraduate as well as post-graduate accounting-related qualifications over the period 2009 to 2012. Table 7.1 presents a short summary of the results for the four universities combined.

TABLE 7.1: UNDERGRADUATE AND POST-GRADUATE GRADUATION RATES FOR THE **FOUR UNIVERSITIES COMBINED** IN TERMS OF ACCOUNTING-RELATED QUALIFICATIONS

GRADUATION RATE FOR LEVEL THREE	2009	2010	2011	2012
UNDERGRADUATE ACCOUNTING QUALIFICATIONS				
Graduates	2,873	3,004	2,941	2,891
Enrolments	38,737	37,060	36,726	36,461
Graduation rate	7.42%	8.11%	8.01%	7.93%
POSTGRADUATE ACCOUNTING QUALIFICATIONS				
Graduates	1,554	2,286	2,321	2,410
Enrolments	8,157	8,550	8,865	8,585
Graduation rate	19.05%	26.74%	26.18%	28.07%

Source: Author's own calculation.

From table 7.1 it can be seen that in terms of undergraduate accounting-related qualifications the enrolments for the four universities (level three) combined are well in excess of the current shortfall of approximately 22 000 accountants in general, as reported on by SAICA. However, the problem becomes evident in the graduate figures, because these figures are not close to meeting the 22 000 shortfall. The extremely low graduation rates for these four universities combined in terms of undergraduate accounting-related degrees are of concern. Students that would qualify to write part one of the SAICA Qualifying Examination are included in the post-graduate accounting qualifications as set out in table 7.1. Taking into account that not all the students included in these categories aim to become chartered accountants, the shortfall of 5 000 chartered accountants (as reported in 2007) will clearly not be met if graduation rates at the public universities in South Africa remain low. Undergraduate accounting qualifications also saw a drop in enrolments of 2,276 from 2009 to 2012, which is of equal concern. The shortage of Chartered Accountants is still a concern even today (Marshall, 2014; Molefi, 2014).

If South Africa is to confront the current shortfall and demand of accountants and specifically chartered accountants, much would have to be done. It is not sufficient merely to set general accessibility indicator benchmarks for public higher education. These benchmarks should also be set for scarce skills occupations such as for accountants and specifically chartered accountants. Public universities in South Africa should regularly report on the participation rates for programmes and qualifications linked to these qualifications. By providing annual rankings of public universities in terms of accessibility indicators such as participation rate and comparing their enrolment rates to set benchmarks, the public universities will be forced to address issues regarding accessibility. If the accessibility of chartered accountancy programmes in South Africa is to be increased, these annual rankings will assist stakeholders such as SAICA, the Department of Higher Education and Training and various other stakeholders in making informed decisions based on relevant information and measurements.

Research question 6 examined the measurement of accessibility indicators for South African higher education as a whole as well as for accountancy programmes with special emphasis on chartered accountancy programmes provide insight into the overall accessibility thereof. The answer to this is indeed affirmative; the measurement of the accessibility indicators has clearly illustrated where there are areas of concern not only for higher education as a whole but also for accounting-related qualifications. It would seem that enrolments for accounting-related qualifications are relatively high, but that a major drawback for successfully addressing the financial skills shortage in South Africa lies in the extremely low graduation rates. It would also seem that in general there is a slight disparity in favour of females in accounting qualifications which is worst for Unisa. This study set out to provide measurements of possible accessibility indicators with subsequent rankings of four universities based on the results. Although a clear “winner” could not be identified, all public universities in South Africa can benefit from this exercise in determining their own strengths and shortfalls in addressing the accessibility of accountancy and chartered accountancy programmes in South Africa.

7.4 RECOMMENDATIONS FOR FUTURE STUDIES ON THE MEASUREMENT OF ACCESSIBILITY OF CHARTERED ACCOUNTANCY PROGRAMMES IN SOUTH AFRICA

From the results of this study certain recommendations can be made for future studies on the topic of accessibility of higher education in South Africa and specifically relating to South African accountancy and chartered accountancy programmes.

Apart from measuring accessibility of higher education, the *2005 Global Higher Education Rankings report*, the *2010 Global Higher Education Rankings report* and the *2008 Latin American Rankings report* also measured the affordability of higher education. This indicator fell outside the scope of this study, but future studies could measure affordability of higher education in South Africa, particularly relating to accountancy and chartered accountancy studies in South Africa. Subsequent rankings could also be provided based on the results. Chapter 2 mentioned that an education provided by a higher education institute is seen to be extremely expensive and student fees are becoming increasingly more costly. Over the past two decades education costs in the form of student fees have risen considerably due to the fact that higher education institutes do not receive enough funding from government to meet all their financial requirements. This in turn creates a major obstacle to accessibility for many students from poor or working class families (DHET, 2013a). The link between accessibility and affordability of higher education in South Africa, and specifically relating to accountancy and chartered accountancy studies, could productively be investigated by other researchers.

The fact that two new public universities opened their doors in 2014 is a step in the right direction in terms of increasing the accessibility of higher education in South Africa. The Sol Plaatje University in Kimberley and the University of Mpumalanga were both operational from 2014. These two universities did not form part of the measurement of accessibility indicators in this study as they were only operational from 2014 whilst this study focused on the 2009 to 2012 academic years. It follows that when future measurements of accessibility indicators are conducted with subsequent rankings based on the results, these two new public universities should

be included. It would be interesting to see whether these two additions to the higher education system will make a positive impact on the overall accessibility of higher education in South Africa. At the time of this study, these two new universities were not accredited by SAICA in terms of providing the chartered accountancy programme and could therefore not contribute to the accessibility of the chartered accountancy programme.

This study made use of only selected methods to measure each of the accessibility indicators. It did not attempt to provide a full analysis of all possible methods that could be used to measure these indicators. Future studies could however include a wider variety of methods with subsequent rankings based on the results. This study also did not provide weightings to the methods and indicators as explained in Chapter 5. Due to the subjective nature of these weightings it is often difficult to assign reliable and relevant weightings. On the other hand, future researchers could view this as an opportunity to conduct detailed studies on the various weightings that the public universities, the Department of Higher Education and Training and various other stakeholders would assign to the methods and indicators that are used to measure the accessibility of higher education in South Africa.

Due to the unavailability of detailed data specifically on chartered accountancy students (for example enrolments and graduates), this study had to limit the measurements to the Accounting (0401) Classification of Educational Subject Matter information. Although the programmes leading to a chartered accountancy qualification were included in the Accounting (0401) Classification of Educational Subject Matter, future studies could be conducted on the measurement of the chartered accountancy programme in isolation, depending on the availability of detailed information.

Unfortunately the information needed to calculate the parental education levels for higher education in South Africa, the four universities selected for this study and for accountancy as well as chartered accountancy studies in South Africa could not be obtained, and therefore the Educational Equality Index could not be measured. The public universities in South Africa should be advised to include a section on their registration forms where the students have to provide information on their parents'

education level. This would assist tremendously in obtaining information in this regard. Future studies could also be conducted where the information needed to measure the parental education level is obtained and measured. Other possible proxies such as race, parental occupation level and various others could also be included in future studies on this topic.

Finally, the alignment of policies affecting South African students and the youth of South Africa should be further investigated. The Employment Tax Incentive Act (known as the youth wage subsidy) became effective on 1 January 2014 and aims to promote employment by providing employers in South Africa with tax incentives for employing young workers for a maximum of two years (bearing in mind certain conditions having to be met). Young persons in the 18-29-year age group qualify for employment under this act (South African Revenue Services, 2014). This act is indeed a step in the right direction for combating unemployment in South Africa, but needs to take into account that many students that enrol for higher education studies fall in this age group. From Chapter 6 it is clear that in the 15-29-year age group a total of 675,706 students enrolled at the 23 public universities out of a total of 953,373 headcount (70.88%). Considering that higher education studies generally take a few years to complete, many of these students will not qualify for the youth wage subsidy when they complete their studies and start searching for employment. It is thus crucial that this act should be amended to take this into account.

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APPENDIX

TABLE 1: TOTAL HEADCOUNT ENROLMENTS FOR THE FOUR UNIVERSITIES FOR THE PERIOD 2009 TO 2012

Year	Headcount student enrolments for University of Cape Town	Percentage of total enrolments for University of Cape Town	Headcount student enrolments for University of Johannesburg	Percentage of total enrolments for University of Johannesburg	Headcount student enrolments for University of South Africa	Percentage of total enrolments for Unisa	Headcount student enrolments for University of Witwatersrand	Percentage of total enrolments for University of the Witwatersrand	Total headcount student enrolments at all 23 public universities
2009	23,787	2.84%	49,315	5.89%	263,559	31.46%	29,234	3.49%	837,776
2010	24,772	2.77%	48,315	5.41%	293,437	32.86%	29,498	3.30%	892,936
2011	25,301	2.70%	50,528	5.39%	328,864	35.05%	29,004	3.09%	938,201
2012	25,805	2.71%	48,769	5.12%	336,286	35.27%	30,436	3.19%	953,373

Source: Author's own calculation; DHET, 2012b.

TABLE 2: TOTAL HEADCOUNT ENROLMENTS FOR ACCOUNTING (0401) QUALIFICATIONS FOR THE FOUR UNIVERSITIES FOR THE PERIOD 2009 TO 2012

Year	Headcount student enrolments for Accounting (0401) at University of Cape Town	Percentage of total enrolments for Accounting (0401) for University of Cape Town	Headcount student enrolments for Accounting (0401) at University of Johannesburg	Percentage of total enrolments for Accounting (0401) for University of Johannesburg	Headcount student enrolments for Accounting (0401) at Unisa	Percentage of total enrolments for Accounting (0401) for Unisa	Headcount student enrolments for Accounting (0401) at University of the Witwatersrand	Percentage of total enrolments for Accounting (0401) for University of the Witwatersrand	Total headcount student enrolments for Accounting (0401) at all 23 public universities
2009	2,710	4.73%	4,931	8.61%	29,202	51.01%	1,894	3.31%	57,245
2010	2,166	3.94%	5,186	9.44%	27,467	50.02%	2,241	4.08%	54,908
2011	1,158	2.11%	5,493	10.02%	28,643	52.27%	1,432	2.61%	54,797
2012	1,245	2.27%	4,881	8.91%	29,174	53.24%	1,161	2.12%	54,800

Source: Author's own calculation; DHET, 2014a.

TABLE 3: NET ENROLMENT RATE FOR HIGHER EDUCATION IN SOUTH AFRICA FOR THE PERIOD 2009 TO 2012

Age Group	Population size for 2009	Headcount enrolment in public higher education institutions for 2009	Net enrolment rate (NER) for 2009	Population size for 2010	Headcount enrolment in public higher education institutions for 2010	Net enrolment rate (NER) for 2010	Population size for 2011	Headcount enrolment in public higher education institutions for 2011	Net enrolment rate (NER) for 2011	Population size for 2012	Headcount enrolment in public higher education institutions for 2012	Net enrolment rate (NER) for 2012
15-19	5,067,909	174,539	3.4%	5,110,508	178,853	3.5%	5,142,347	179,285	3.5%	5,163,969	171,648	3.3%
20-24	4,770,069	298,531	6.3%	4,827,824	318,892	6.6%	4,896,792	336,387	6.9%	4,966,691	352,686	7.1%
25-29	4,542,123	110,737	2.4%	4,602,718	126,886	2.8%	4,654,589	143,019	3.1%	4,707,803	151,372	3.2%
30-34	4,098,825	78,530	1.9%	4,143,751	83,521	2.0%	4,213,978	88,638	2.1%	4,301,910	91,916	2.1%
35-39	3,647,529	70,414	1.9%	3,764,864	73,477	2.0%	3,840,500	75,114	2.0%	3,883,982	74,098	1.9%
40-44	2,798,142	51,918	1.9%	2,880,903	54,940	1.9%	3,002,901	57,133	1.9%	3,157,042	54,380	1.7%
45-49	2,494,269	31,659	1.3%	2,529,843	33,934	1.3%	2,557,949	34,873	1.4%	2,581,482	34,170	1.3%
50-54	2,075,288	15,395	0.7%	2,141,372	15,922	0.7%	2,202,656	17,086	0.8%	2,259,238	16,334	0.7%
55-59	1,616,764	4,704	0.3%	1,663,069	5,124	0.3%	1,718,172	5,180	0.3%	1,782,052	5,251	0.3%
60-64	1,249,355	959	0.1%	1,292,450	978	0.1%	1,333,361	1,053	0.1%	1,371,752	1,146	0.1%
65-69	987,954	260	0.0%	1,016,093	260	0.0%	1,049,255	271	0.0%	1,087,365	250	0.0%

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 4: NET ENROLMENT RATE FOR THE *UNIVERSITY OF CAPE TOWN* FOR THE PERIOD 2009 TO 2012

Age Group	Population size for 2009	Headcount enrolment at the University of Cape Town for 2009	Net enrolment rate (NER) for 2009 for the University of Cape Town	Population size for 2010	Headcount enrolment at the University of Cape Town for 2010	Net enrolment rate (NER) for 2010 for the University of Cape Town	Population size for 2011	Headcount enrolment at the University of Cape Town for 2011	Net enrolment rate (NER) for 2011 for the University of Cape Town	Population size for 2012	Headcount enrolment at the University of Cape Town for 2012	Net enrolment rate (NER) for 2012 for the University of Cape Town
15-19	5,067,909	7,317	0.14%	5,110,508	7,052	0.14%	5,142,347	6,782	0.13%	5,163,969	7,103	0.14%
20-24	4,770,069	10,462	0.22%	4,827,824	11,215	0.23%	4,896,792	11,616	0.24%	4,966,691	11,671	0.23%
25-29	4,542,123	2,171	0.05%	4,602,718	2,435	0.05%	4,654,589	2,571	0.06%	4,707,803	2,659	0.06%
30-34	4,098,825	1,346	0.03%	4,143,751	1,431	0.03%	4,213,978	1,508	0.04%	4,301,910	1,669	0.04%
35-39	3,647,529	945	0.03%	3,764,864	997	0.03%	3,840,500	969	0.03%	3,883,982	1,011	0.03%
40-44	2,798,142	695	0.02%	2,880,903	709	0.02%	3,002,901	790	0.03%	3,157,042	722	0.02%
45-49	2,494,269	440	0.02%	2,529,843	485	0.02%	2,557,949	538	0.02%	2,581,482	506	0.02%
50-54	2,075,288	266	0.01%	2,141,372	270	0.01%	2,202,656	333	0.02%	2,259,238	289	0.01%
55-59	1,616,764	106	0.01%	1,663,069	123	0.01%	1,718,172	119	0.01%	1,782,052	123	0.01%
60-64	1,249,355	23	0.00%	1,292,450	25	0.00%	1,333,361	41	0.00%	1,371,752	41	0.00%
65-69	987,954	10	0.00%	1,016,093	11	0.00%	1,049,255	9	0.00%	1,087,365	7	0.00%

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 5: NET ENROLMENT RATE FOR THE *UNIVERSITY OF JOHANNESBURG* FOR THE PERIOD 2009 TO 2012

Age Group	Population size for 2009	Headcount enrolment at the University of Johannesburg for 2009	Net enrolment rate (NER) for 2009 for the University of Johannesburg	Population size for 2010	Headcount enrolment at the University of Johannesburg for 2010	Net enrolment rate (NER) for 2010 for the University of Johannesburg	Population size for 2011	Headcount enrolment at the University of Johannesburg for 2011	Net enrolment rate (NER) for 2011 for the University of Johannesburg	Population size for 2012	Headcount enrolment at the University of Johannesburg for 2012	Net enrolment rate (NER) for 2012 for the University of Johannesburg
15-19	5,067,909	17,819	0.35%	5,110,508	16,542	0.32%	5,142,347	17,107	0.33%	5,163,969	14,718	0.29%
20-24	4,770,069	20,527	0.43%	4,827,824	21,408	0.44%	4,896,792	23,597	0.48%	4,966,691	25,611	0.52%
25-29	4,542,123	3,571	0.08%	4,602,718	3,576	0.08%	4,654,589	3,790	0.08%	4,707,803	3,849	0.08%
30-34	4,098,825	1,930	0.05%	4,143,751	1,656	0.04%	4,213,978	1,542	0.04%	4,301,910	1,347	0.03%
35-39	3,647,529	2,081	0.06%	3,764,864	1,892	0.05%	3,840,500	1,658	0.04%	3,883,982	1,232	0.03%
40-44	2,798,142	1,618	0.06%	2,880,903	1,490	0.05%	3,002,901	1,334	0.04%	3,157,042	923	0.03%
45-49	2,494,269	1,020	0.04%	2,529,843	993	0.04%	2,557,949	820	0.03%	2,581,482	604	0.02%
50-54	2,075,288	529	0.03%	2,141,372	523	0.02%	2,202,656	494	0.02%	2,259,238	320	0.01%
55-59	1,616,764	183	0.01%	1,663,069	190	0.01%	1,718,172	142	0.01%	1,782,052	122	0.01%
60-64	1,249,355	28	0.00%	1,292,450	34	0.00%	1,333,361	33	0.00%	1,371,752	33	0.00%
65-69	987,954	4	0.00%	1,016,093	5	0.00%	1,049,255	8	0.00%	1,087,365	7	0.00%

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 6: NET ENROLMENT RATE FOR THE *UNIVERSITY OF THE WITWATERSRAND* FOR THE PERIOD 2009 TO 2012

Age Group	Population size for 2009	Headcount enrolment at the University of the Witwatersrand for 2009	Net enrolment rate (NER) for 2009 for the University of the Witwatersrand	Population size for 2010	Headcount enrolment at the University of the Witwatersrand for 2010	Net enrolment rate (NER) for 2010 for the University of the Witwatersrand	Population size for 2011	Headcount enrolment at the University of the Witwatersrand for 2011	Net enrolment rate (NER) for 2011 for the University of the Witwatersrand	Population size for 2012	Headcount enrolment at the University of the Witwatersrand for 2012	Net enrolment rate (NER) for 2012 for the University of the Witwatersrand
15-19	5,067,909	8,990	0.18%	5,110,508	8,859	0.17%	5,142,347	8,455	0.16%	5,163,969	8,765	0.17%
20-24	4,770,069	9,915	0.21%	4,827,824	10,282	0.21%	4,896,792	10,741	0.22%	4,966,691	11,858	0.24%
25-29	4,542,123	2,884	0.06%	4,602,718	3,064	0.07%	4,654,589	3,122	0.07%	4,707,803	3,326	0.07%
30-34	4,098,825	2,368	0.06%	4,143,751	2,152	0.05%	4,213,978	2,143	0.05%	4,301,910	2,140	0.05%
35-39	3,647,529	2,025	0.06%	3,764,864	2,049	0.05%	3,840,500	1,746	0.05%	3,883,982	1,701	0.04%
40-44	2,798,142	1,495	0.05%	2,880,903	1,512	0.05%	3,002,901	1,325	0.04%	3,157,042	1,199	0.04%
45-49	2,494,269	901	0.04%	2,529,843	875	0.03%	2,557,949	782	0.03%	2,581,482	775	0.03%
50-54	2,075,288	434	0.02%	2,141,372	465	0.02%	2,202,656	446	0.02%	2,259,238	426	0.02%
55-59	1,616,764	169	0.01%	1,663,069	187	0.01%	1,718,172	183	0.01%	1,782,052	176	0.01%
60-64	1,249,355	39	0.00%	1,292,450	40	0.00%	1,333,361	48	0.00%	1,371,752	60	0.00%
65-69	987,954	8	0.00%	1,016,093	6	0.00%	1,049,255	8	0.00%	1,087,365	6	0.00%

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 7: NET ENROLMENT RATE FOR *UNISA* FOR THE PERIOD 2009 TO 2012

Age Group	Population size for 2009	Headcount enrolment at Unisa for 2009	Net enrolment rate (NER) for 2009 for Unisa	Population size for 2010	Headcount enrolment at Unisa for 2010	Net enrolment rate (NER) for 2010 for Unisa	Population size for 2011	Headcount enrolment at Unisa for 2011	Net enrolment rate (NER) for 2011 for Unisa	Population size for 2012	Headcount enrolment at Unisa for 2012	Net enrolment rate (NER) for 2012 for Unisa
15-19	5,067,909	18,547	0.37%	5,110,508	17,562	0.34%	5,142,347	19,957	0.39%	5,163,969	18,493	0.36%
20-24	4,770,069	69,130	1.45%	4,827,824	76,444	1.58%	4,896,792	83,119	1.70%	4,966,691	85,176	1.71%
25-29	4,542,123	54,592	1.20%	4,602,718	65,587	1.42%	4,654,589	77,610	1.67%	4,707,803	82,442	1.75%
30-34	4,098,825	43,592	1.06%	4,143,751	49,076	1.18%	4,213,978	54,907	1.30%	4,301,910	57,520	1.34%
35-39	3,647,529	35,082	0.96%	3,764,864	38,582	1.02%	3,840,500	42,683	1.11%	3,883,982	43,630	1.12%
40-44	2,798,142	22,437	0.80%	2,880,903	24,427	0.85%	3,002,901	26,874	0.89%	3,157,042	26,217	0.83%
45-49	2,494,269	12,568	0.50%	2,529,843	13,670	0.54%	2,557,949	14,834	0.58%	2,581,482	14,245	0.55%
50-54	2,075,288	5,339	0.26%	2,141,372	5,684	0.27%	2,202,656	6,360	0.29%	2,259,238	6,054	0.27%
55-59	1,616,764	1,622	0.10%	1,663,069	1,753	0.11%	1,718,172	1,859	0.11%	1,782,052	1,865	0.10%
60-64	1,249,355	447	0.04%	1,292,450	455	0.04%	1,333,361	463	0.03%	1,371,752	485	0.04%
65-69	987,954	139	0.01%	1,016,093	136	0.01%	1,049,255	130	0.01%	1,087,365	103	0.01%

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 8: LEVEL OF ATTAINMENT FOR HIGHER EDUCATION IN SOUTH AFRICA FOR THE PERIOD 2009 TO 2012
IN FIVE-YEAR AGE GROUPS

Age Group	Total population per age group 2009	Graduates in public higher education institutions, by age, 2009	Level of attainment per age group, 2009	Total population per age group 2010	Graduates in public higher education institutions, by age, 2010	Level of attainment per age group, 2010	Total population per age group 2011	Graduates in public higher education institutions, by age, 2011	Level of attainment per age group, 2011	Total population per age group 2012	Graduates in public higher education institutions, by age, 2012	Level of attainment per age group, 2012
15-19	5,067,909	3,866	0.08%	5,110,508	3,833	0.08%	5,142,347	3,946	0.08%	5,163,969	4,334	0.08%
20-24	4,770,069	71,150	1.49%	4,827,824	73,654	1.53%	4,896,792	77,875	1.59%	4,966,691	84,984	1.59%
25-29	4,542,123	19,600	0.43%	4,602,718	21,856	0.47%	4,654,589	24,337	0.52%	4,707,803	26,448	0.52%
30-34	4,098,825	12,779	0.31%	4,143,751	13,065	0.32%	4,213,978	13,107	0.31%	4,301,910	13,366	0.31%
35-39	3,647,529	14,502	0.40%	3,764,864	15,016	0.40%	3,840,500	14,639	0.38%	3,883,982	12,651	0.38%
40-44	2,798,142	11,560	0.41%	2,880,903	12,713	0.44%	3,002,901	13,125	0.44%	3,157,042	11,340	0.44%
45-49	2,494,269	6,899	0.28%	2,529,843	7,906	0.31%	2,557,949	8,094	0.32%	2,581,482	7,533	0.32%
50-54	2,075,288	3,714	0.18%	2,141,372	3,812	0.18%	2,202,656	4,036	0.18%	2,259,238	3,805	0.18%
55-59	1,616,764	1,114	0.07%	1,663,069	1,208	0.07%	1,718,172	1,212	0.07%	1,782,052	1,219	0.07%
60-64	1,249,355	188	0.02%	1,292,450	197	0.02%	1,333,361	194	0.01%	1,371,752	245	0.01%
65-69	987,954	35	0.00%	1,016,093	43	0.00%	1,049,255	47	0.00%	1,087,365	48	0.00%

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 9: LEVEL OF ATTAINMENT FOR THE *UNIVERSITY OF CAPE TOWN* FOR THE PERIOD 2009 TO 2012 IN FIVE YEAR AGE GROUPS

Age Group	Total population per age group 2009	Graduates at University of Cape Town, by age, 2009	Level of attainment per age group, 2009	Total population per age group 2010	Graduates at University of Cape Town, by age, 2010	Level of attainment per age group, 2010	Total population per age group 2011	Graduates at University of Cape Town, by age, 2011	Level of attainment per age group, 2011	Total population per age group 2012	Graduates at University of Cape Town, by age, 2012	Level of attainment per age group, 2012
15-19	5,067,909	137	0.00%	5,110,508	144	0.00%	5,142,347	77	0.00%	5,163,969	118	0.00%
20-24	4,770,069	3,863	0.08%	4,827,824	4,053	0.08%	4,896,792	4,317	0.09%	4,966,691	4,515	0.09%
25-29	4,542,123	712	0.02%	4,602,718	828	0.02%	4,654,589	830	0.02%	4,707,803	855	0.02%
30-34	4,098,825	359	0.01%	4,143,751	400	0.01%	4,213,978	409	0.01%	4,301,910	447	0.01%
35-39	3,647,529	285	0.01%	3,764,864	286	0.01%	3,840,500	310	0.01%	3,883,982	277	0.01%
40-44	2,798,142	219	0.01%	2,880,903	207	0.01%	3,002,901	268	0.01%	3,157,042	210	0.01%
45-49	2,494,269	158	0.01%	2,529,843	143	0.01%	2,557,949	163	0.01%	2,581,482	159	0.01%
50-54	2,075,288	94	0.00%	2,141,372	73	0.00%	2,202,656	110	0.00%	2,259,238	93	0.00%
55-59	1,616,764	36	0.00%	1,663,069	31	0.00%	1,718,172	32	0.00%	1,782,052	47	0.00%
60-64	1,249,355	7	0.00%	1,292,450	4	0.00%	1,333,361	10	0.00%	1,371,752	16	0.00%
65-69	987,954	2	0.00%	1,016,093	1	0.00%	1,049,255	3	0.00%	1,087,365	2	0.00%

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 10: LEVEL OF ATTAINMENT FOR THE *UNIVERSITY OF JOHANNESBURG* FOR THE PERIOD 2009 TO 2012
IN FIVE-YEAR AGE GROUPS

Age Group	Total population per age group 2009	Graduates at University of Johannesburg, by age, 2009	Level of attainment per age group, 2009	Total population per age group 2010	Graduates at University of Johannesburg, by age, 2010	Level of attainment per age group, 2010	Total population per age group 2011	Graduates at University of Johannesburg, by age, 2011	Level of attainment per age group, 2011	Total population per age group 2012	Graduates at University of Johannesburg, by age, 2012	Level of attainment per age group, 2012
15-19	5,067,909	334	0.01%	5,110,508	415	0.01%	5,142,347	432	0.01%	5,163,969	381	0.01%
20-24	4,770,069	6,219	0.13%	4,827,824	6,493	0.13%	4,896,792	7,049	0.14%	4,966,691	7,951	0.16%
25-29	4,542,123	1,237	0.03%	4,602,718	1,173	0.03%	4,654,589	1,349	0.03%	4,707,803	1,354	0.03%
30-34	4,098,825	647	0.02%	4,143,751	502	0.01%	4,213,978	485	0.01%	4,301,910	423	0.01%
35-39	3,647,529	798	0.02%	3,764,864	607	0.02%	3,840,500	674	0.02%	3,883,982	465	0.01%
40-44	2,798,142	559	0.02%	2,880,903	497	0.02%	3,002,901	607	0.02%	3,157,042	391	0.01%
45-49	2,494,269	313	0.01%	2,529,843	340	0.01%	2,557,949	366	0.01%	2,581,482	261	0.01%
50-54	2,075,288	192	0.01%	2,141,372	183	0.01%	2,202,656	197	0.01%	2,259,238	127	0.01%
55-59	1,616,764	59	0.00%	1,663,069	63	0.00%	1,718,172	61	0.00%	1,782,052	40	0.00%
60-64	1,249,355	6	0.00%	1,292,450	9	0.00%	1,333,361	9	0.00%	1,371,752	13	0.00%
65-69	987,954	1	0.00%	1,016,093	1	0.00%	1,049,255	-	0.00%	1,087,365	2	0.00%

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 11: LEVEL OF ATTAINMENT FOR THE *UNIVERSITY OF THE WITWATERSRAND* FOR THE PERIOD 2009 TO 2012 IN FIVE-YEAR AGE GROUPS

Age Group	Total population per age group 2009	Graduates at University of Witwatersrand, by age, 2009	Level of attainment per age group, 2009	Total population per age group 2010	Graduates at University of Witwatersrand, by age, 2010	Level of attainment per age group, 2010	Total population per age group 2011	Graduates at University of Witwatersrand, by age, 2011	Level of attainment per age group, 2011	Total population per age group 2012	Graduates at University of Witwatersrand, by age, 2012	Level of attainment per age group, 2012
15-19	5,067,909	147	0.00%	5,110,508	191	0.00%	5,142,347	213	0.00%	5,163,969	149	0.00%
20-24	4,770,069	3,389	0.07%	4,827,824	3,642	0.08%	4,896,792	3,724	0.08%	4,966,691	4,198	0.08%
25-29	4,542,123	779	0.02%	4,602,718	856	0.02%	4,654,589	891	0.02%	4,707,803	912	0.02%
30-34	4,098,825	368	0.01%	4,143,751	451	0.01%	4,213,978	495	0.01%	4,301,910	452	0.01%
35-39	3,647,529	309	0.01%	3,764,864	452	0.01%	3,840,500	493	0.01%	3,883,982	409	0.01%
40-44	2,798,142	250	0.01%	2,880,903	332	0.01%	3,002,901	405	0.01%	3,157,042	333	0.01%
45-49	2,494,269	162	0.01%	2,529,843	256	0.01%	2,557,949	285	0.01%	2,581,482	175	0.01%
50-54	2,075,288	96	0.00%	2,141,372	121	0.01%	2,202,656	147	0.01%	2,259,238	107	0.00%
55-59	1,616,764	29	0.00%	1,663,069	33	0.00%	1,718,172	53	0.00%	1,782,052	52	0.00%
60-64	1,249,355	10	0.00%	1,292,450	8	0.00%	1,333,361	7	0.00%	1,371,752	16	0.00%
65-69	987,954	5	0.00%	1,016,093	1	0.00%	1,049,255	3	0.00%	1,087,365	4	0.00%

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 12: LEVEL OF ATTAINMENT FOR *UNISA* FOR THE PERIOD 2009 TO 2012 IN FIVE-YEAR AGE GROUPS

Age Group	Total population per age group 2009	Graduates at Unisa, by age, 2009	Level of attainment per age group, 2009	Total population per age group 2010	Graduates at Unisa, by age, 2010	Level of attainment per age group, 2010	Total population per age group 2011	Graduates at Unisa, by age, 2011	Level of attainment per age group, 2011	Total population per age group 2012	Graduates at Unisa, by age, 2012	Level of attainment per age group, 2012
15-19	5,067,909	84	0.00%	5,110,508	116	0.00%	5,142,347	99	0.00%	5,163,969	295	0.01%
20-24	4,770,069	3,933	0.08%	4,827,824	4,595	0.10%	4,896,792	4,680	0.10%	4,966,691	5,281	0.11%
25-29	4,542,123	3,584	0.08%	4,602,718	4,330	0.09%	4,654,589	5,008	0.11%	4,707,803	5,664	0.12%
30-34	4,098,825	3,833	0.09%	4,143,751	4,185	0.10%	4,213,978	4,171	0.10%	4,301,910	4,276	0.10%
35-39	3,647,529	4,831	0.13%	3,764,864	5,270	0.14%	3,840,500	5,158	0.13%	3,883,982	4,237	0.11%
40-44	2,798,142	3,479	0.12%	2,880,903	4,025	0.14%	3,002,901	4,122	0.14%	3,157,042	3,335	0.11%
45-49	2,494,269	1,781	0.07%	2,529,843	2,283	0.09%	2,557,949	2,241	0.09%	2,581,482	1,893	0.07%
50-54	2,075,288	825	0.04%	2,141,372	909	0.04%	2,202,656	979	0.04%	2,259,238	903	0.04%
55-59	1,616,764	246	0.02%	1,663,069	276	0.02%	1,718,172	273	0.02%	1,782,052	236	0.01%
60-64	1,249,355	61	0.00%	1,292,450	66	0.01%	1,333,361	54	0.00%	1,371,752	71	0.01%
65-69	987,954	12	0.00%	1,016,093	13	0.00%	1,049,255	15	0.00%	1,087,365	12	0.00%

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 13: LEVEL OF ATTAINMENT FOR THE *UNIVERSITY OF CAPE TOWN* FOR THE PERIOD 2009 TO 2012 FOR THE 20-24, 25-34 AND 25-64 YEAR AGE GROUPS

Age Group	Total population per age group 2009	Graduates at University of Cape Town, by age, 2009	Level of attainment per age group, 2009	Total population per age group 2010	Graduates at University of Cape Town, by age, 2010	Level of attainment per age group, 2010	Total population per age group 2011	Graduates at University of Cape Town, by age, 2011	Level of attainment per age group, 2011	Total population per age group 2012	Graduates at University of Cape Town, by age, 2012	Level of attainment per age group, 2012
20-24	4,770,069	3,863	0.08%	4,827,824	4,053	0.08%	4,896,792	4,317	0.09%	4,966,691	4,515	0.09%
25-34	8,640,948	1,071	0.01%	8,746,469	1,228	0.01%	8,868,567	1,239	0.01%	9,009,713	1,302	0.01%
25-64	22,522,295	1,870	0.01%	23,018,970	1,972	0.01%	23,524,106	2,132	0.01%	24,045,261	2,104	0.01%

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 14: LEVEL OF ATTAINMENT FOR THE *UNIVERSITY OF JOHANNESBURG* FOR THE PERIOD 2009 TO 2012 FOR THE 20-24, 25-34 AND 25-64 YEAR AGE GROUPS

Age Group	Total population per age group 2009	Graduates at University of Johannesburg, by age, 2009	Level of attainment per age group, 2009	Total population per age group 2010	Graduates at University of Johannesburg, by age, 2010	Level of attainment per age group, 2010	Total population per age group 2011	Graduates at University of Johannesburg, by age, 2011	Level of attainment per age group, 2011	Total population per age group 2012	Graduates at University of Johannesburg, by age, 2012	Level of attainment per group, 2012
20-24	4,770,069	6,219	0.13%	4,827,824	6,493	0.13%	4,896,792	7,049	0.14%	4,966,691	7,951	0.16%
25-34	8,640,948	1,884	0.02%	8,746,469	1,675	0.02%	8,868,567	1,834	0.02%	9,009,713	1,777	0.02%
25-64	22,522,295	3,811	0.02%	23,018,970	3,374	0.01%	23,524,106	3,748	0.02%	24,045,261	3,074	0.01%

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 15: LEVEL OF ATTAINMENT FOR THE **UNIVERSITY OF THE WITWATERSRAND** FOR THE PERIOD 2009 TO 2012 FOR THE 20-24, 25-34 AND 25-64 YEAR AGE GROUPS

Age Group	Total population per age group 2009	Graduates at University of Witwatersrand, by age, 2009	Level of attainment per age group, 2009	Total population per age group 2010	Graduates at University of Witwatersrand, by age, 2010	Level of attainment per age group, 2010	Total population per age group 2011	Graduates at University of Witwatersrand, by age, 2011	Level of attainment per age group, 2011	Total population per age group 2012	Graduates at University of Witwatersrand, by age, 2012	Level of attainment per age group, 2012
20-24	4,770,069	3,389	0.07%	4,827,824	3,642	0.08%	4,896,792	3,724	0.08%	4,966,691	4,198	0.08%
25-34	8,640,948	1,147	0.01%	8,746,469	1,307	0.01%	8,868,567	1,386	0.02%	9,009,713	1,364	0.02%
25-64	22,522,295	2,003	0.01%	23,018,970	2,509	0.01%	23,524,106	2,776	0.01%	24,045,261	2,456	0.01%

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 16: LEVEL OF ATTAINMENT FOR **UNISA** FOR THE PERIOD 2009 TO 2012 FOR THE 20-24, 25-34 AND 25-64 YEAR AGE GROUPS

Age Group	Total population per age group 2009	Graduates at Unisa, by age, 2009	Level of attainment per age group, 2009	Total population per age group 2010	Graduates at Unisa, by age, 2010	Level of attainment per age group, 2010	Total population per age group 2011	Graduates at Unisa, by age, 2011	Level of attainment per age group, 2011	Total population per age group 2012	Graduates at Unisa, by age, 2012	Level of attainment per age group, 2012
20-24	4,770,069	3,933	0.08%	4,827,824	4,595	0.10%	4,896,792	4,680	0.10%	4,966,691	5,281	0.11%
25-34	8,640,948	7,417	0.09%	8,746,469	8,515	0.10%	8,868,567	9,179	0.10%	9,009,713	9,940	0.11%
25-64	22,522,295	18,640	0.08%	23,018,970	21,344	0.09%	23,524,106	22,006	0.09%	24,045,261	20,615	0.09%

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 17: GRADUATION RATES FOR THE **23 PUBLIC UNIVERSITIES** IN SOUTH AFRICA FOR THE PERIOD 2009 TO 2012

Graduation rate per qualification type	Undergraduate: up to 3 years	Undergraduate: 4 years or more	Postgraduate up to honours
2009			
Total graduates from 23 universities	81,365	27,404	26,592
Total headcount enrolments at 23 universities	515,592	168,827	74,495
Graduation rate for 2009 per qualification type	15.78%	16.23%	35.70%
2010			
Total graduates from 23 universities	83,335	29,848	30,088
Total headcount enrolments at 23 universities	537,213	189,669	80,321
Graduation rate for 2010 per qualification type	15.51%	15.74%	37.46%
2011			
Total graduates from 23 universities	85,667	31,892	31,800
Total headcount enrolments at 23 universities	552,038	214,733	86,188
Graduation rate for 2011 per qualification type	15.52%	14.85%	36.90%
2012			
Total graduates from 23 universities	85,269	35,127	33,385
Total headcount enrolments at 23 universities	546,388	235,322	85,501
Graduation rate for 2012 per qualification type	15.61%	14.93%	39.05%

Source: Author's own calculations; DHET, 2014a; DHET, 2014b.

TABLE 18: GRADUATION RATES FOR *UNISA* FOR THE PERIOD 2009 TO 2012

Unisa Graduation rate per qualification type	Undergraduate: up to 3 years	Undergraduate: 4 years or more	Postgraduate up to honours
2009			
Total graduates from UNISA	15,039	2,464	4,728
Total headcount enrolments at UNISA	178,573	41,774	23,562
Graduation rate for 2009 per qualification type	8.42%	5.90%	20.07%
2010			
Total graduates from UNISA	16,408	3,052	6,084
Total headcount enrolments at UNISA	189,504	55,260	27,224
Graduation rate for 2010 per qualification type	8.66%	5.52%	22.35%
2011			
Total graduates from UNISA	15,451	3,659	6,928
Total headcount enrolments at UNISA	200,883	73,506	32,290
Graduation rate for 2011 per qualification type	7.69%	4.98%	21.46%
2012			
Total graduates from UNISA	13,308	4,306	7,613
Total headcount enrolments at UNISA	196,907	86,428	32,217
Graduation rate for 2012 per qualification type	6.76%	4.98%	23.63%

Source: Author's own calculations; DHET, 2014a; DHET, 2014b.

TABLE 19: GRADUATION RATES FOR THE **22 PUBLIC UNIVERSITIES**, EXCLUDING UNISA, FOR THE PERIOD 2009 TO 2012

Graduation rate per qualification type	Undergraduate: up to 3 years	Undergraduate: 4 years or more	Postgraduate up to honours
2009			
Total graduates from universities excluding UNISA	66,326	24,940	21,864
Total headcount enrolments at universities excluding UNISA	337,019	127,053	50,933
Graduation rate for 2009 per qualification type	19.68%	19.63%	42.93%
2010			
Total graduates from universities excluding UNISA	66,927	26,796	24,004
Total headcount enrolments at universities excluding UNISA	347,709	134,409	53,097
Graduation rate for 2010 per qualification type	19.25%	19.94%	45.21%
2011			
Total graduates from universities excluding UNISA	70,216	28,233	24,872
Total headcount enrolments at universities excluding UNISA	351,155	141,227	53,898
Graduation rate for 2011 per qualification type	20.00%	19.99%	46.15%
2012			
Total graduates from universities excluding UNISA	71,961	30,821	25,772
Total headcount enrolments at universities excluding UNISA	349,481	148,894	53,284
Graduation rate for 2012 per qualification type	20.59%	20.70%	48.37%

Source: Author's own calculations; DHET, 2014a; DHET, 2014b.

TABLE 20: GRADUATION RATES FOR THE *UNIVERSITY OF CAPE TOWN* FOR THE PERIOD 2009 TO 2012

University of Cape Town (UCT) Graduation rate per qualification type	Undergraduate: up to 3 years	Undergraduate: 4 years or more	Postgraduate up to honours
2009			
Total graduates from UCT	1,859	1,267	1,704
Total headcount enrolments at UCT	8,114	7,619	2,506
Graduation rate for 2009 per qualification type	22.91%	16.63%	68.00%
2010			
Total graduates from UCT	1,974	1,295	1,734
Total headcount enrolments at UCT	8,350	7,666	2,678
Graduation rate for 2010 per qualification type	23.64%	16.89%	64.75%
2011			
Total graduates from UCT	2,069	1,339	1,874
Total headcount enrolments at UCT	8,492	7,672	2,868
Graduation rate for 2011 per qualification type	24.36%	17.45%	65.34%
2012			
Total graduates from UCT	2,149	1,389	1,921
Total headcount enrolments at UCT	8,420	7,827	2,867
Graduation rate for 2012 per qualification type	25.52%	17.75%	67.00%

Source: Author's own calculations; DHET, 2014a; DHET, 2014b.

TABLE 21: GRADUATION RATES FOR THE *UNIVERSITY OF JOHANNESBURG* FOR THE PERIOD 2009 TO 2012

University of Johannesburg (UJ) Graduation rate per qualification type	Undergraduate: up to 3 years	Undergraduate: 4 years or more	Postgraduate up to honours
2009			
Total graduates from UJ	6,456	1,595	1,926
Total headcount enrolments at UJ	36,043	6,693	4,117
Graduation rate for 2009 per qualification type	17.91%	23.83%	46.78%
2010			
Total graduates from UJ	6,412	1,622	1,830
Total headcount enrolments at UJ	35,266	6,708	3,752
Graduation rate for 2010 per qualification type	18.18%	24.18%	48.77%
2011			
Total graduates from UJ	7,054	1,730	1,983
Total headcount enrolments at UJ	36,073	7,821	3,785
Graduation rate for 2011 per qualification type	19.55%	22.12%	52.39%
2012			
Total graduates from UJ	6,951	1,934	1,986
Total headcount enrolments at UJ	33,853	8,153	3,825
Graduation rate for 2012 per qualification type	20.53%	23.72%	51.92%

Source: Author's own calculations; DHET, 2014a; DHET, 2014b.

TABLE 22: GRADUATION RATES FOR THE *UNIVERSITY OF THE WITWATERSRAND* FOR THE PERIOD 2009 TO 2012

University of Witwatersrand (WITS) Graduation rate per qualification type	Undergraduate: up to 3 years	Undergraduate: 4 years or more	Postgraduate up to honours
2009			
Total graduates from WITS	1,761	1,291	1,442
Total headcount enrolments at WITS	10,836	9,093	2,503
Graduation rate for 2009 per qualification type	16.25%	14.20%	57.61%
2010			
Total graduates from WITS	2,268	1,415	1,631
Total headcount enrolments at WITS	10,682	9,512	2,572
Graduation rate for 2010 per qualification type	21.23%	14.88%	63.41%
2011			
Total graduates from WITS	2,371	1,448	1,605
Total headcount enrolments at WITS	10,197	9,410	2,415
Graduation rate for 2011 per qualification type	23.25%	15.39%	66.46%
2012			
Total graduates from WITS	2,324	1,550	1,651
Total headcount enrolments at WITS	10,235	10,235	2,568
Graduation rate for 2012 per qualification type	22.71%	15.14%	64.29%

Source: Author's own calculations; DHET, 2014a; DHET, 2014b.

TABLE 23: GENDER PARITY INDEX FOR HIGHER EDUCATION IN SOUTH AFRICA FOR THE PERIOD 2009 TO 2012 BASED ON GROSS ENROLMENT RATES

Year	Female headcount enrolment in higher education	Male headcount enrolment in higher education	Unknown headcount enrolment in higher education	Total headcount student enrolment in higher education	Female population in 20-24 year age group	Male population in 20-24 year age group	Total population size in 20-24 year age group	Gross enrolment rate (GER) (%) for females	Gross enrolment rate (GER) (%) for males	Gender Parity Index	Distance from parity
2009	478,174	359,578	24	837,776	2,378,985	2,391,084	4,770,069	20.10%	15.04%	1.34	0.34
2010	512,573	380,350	13	892,936	2,387,832	2,439,992	4,827,824	21.47%	15.59%	1.38	0.38
2011	542,997	395,117	87	938,201	2,423,079	2,473,713	4,896,792	22.41%	15.97%	1.40	0.40
2012	554,840	398,367	166	953,373	2,459,252	2,507,439	4,966,691	22.56%	15.89%	1.42	0.42

Source: Author's own calculations; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 24: GENDER PARITY INDEX FOR THE *UNIVERSITY OF CAPE TOWN* BASED ON GROSS ENROLMENT RATES FOR THE PERIOD 2009-2012

Year	Female headcount student enrolments for University of Cape Town	Male headcount student enrolments for University of Cape Town	Unknown headcount student enrolments	Female population in 20-24 year age group	Male population in 20-24 year age group	Gross enrolment rate (GER) (%) for females at the University of Cape Town	Gross enrolment rate (GER) (%) for males at the University of Cape Town	Gender Parity Index of the University of Cape Town	Distance from parity
2009	11,970	11,794	23	2,378,985	2,391,084	0.50%	0.49%	1.02	0.02
2010	12,790	11,970	12	2,387,832	2,439,992	0.54%	0.49%	1.09	0.09
2011	13,127	12,152	22	2,423,079	2,473,713	0.54%	0.49%	1.10	0.10
2012	13,452	12,336	17	2,459,252	2,507,439	0.55%	0.49%	1.11	0.11

Source: Author's own calculations; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 25: GENDER PARITY INDEX FOR THE *UNIVERSITY OF JOHANNESBURG* BASED ON GROSS ENROLMENT RATES FOR THE PERIOD 2009 TO 2012

Year	Female headcount student enrolments for University of Johannesburg	Male headcount student enrolments for University of Johannesburg	Unknown headcount student enrolments	Female population in 20-24 year age group	Male population in 20-24 year age group	Gross enrolment rate (GER) (%) for females at the University of Johannesburg	Gross enrolment rate (GER) (%) for males at the University of Johannesburg	Gender Parity Index of the University of Johannesburg	Distance from parity
2009	27,013	22,302	0	2,378,985	2,391,084	1.14%	0.93%	1.22	0.22
2010	26,841	21,474	0	2,387,832	2,439,992	1.12%	0.88%	1.28	0.28
2011	27,942	22,586	0	2,423,079	2,473,713	1.15%	0.91%	1.26	0.26
2012	26,427	22,342	0	2,459,252	2,507,439	1.07%	0.89%	1.21	0.21

Source: Author's own calculations; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 26: GENDER PARITY INDEX (GPI) FOR THE *UNIVERSITY OF THE WITWATERSRAND* BASED ON GROSS ENROLMENT RATES (GER) FOR THE PERIOD 2009 TO 2012

Year	Female headcount student enrolments for University of Witwatersrand	Male headcount student enrolments for University of Witwatersrand	Unknown headcount student enrolments	Female population in 20-24 year age group	Male population in 20-24 year age group	Gross enrolment rate (GER) (%) for females at the University of Witwatersrand	Gross enrolment rate (GER) (%) for males at the University of Witwatersrand	Gender Parity Index of the University of Witwatersrand	Distance from parity
2009	15,562	13,672	0	2,378,985	2,391,084	0.65%	0.57%	1.14	0.14
2010	15,795	13,703	0	2,387,832	2,439,992	0.66%	0.56%	1.18	0.18
2011	15,675	13,329	0	2,423,079	2,473,713	0.65%	0.54%	1.20	0.20
2012	16,526	13,910	0	2,459,252	2,507,439	0.67%	0.55%	1.21	0.21

Source: Author's own calculations; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 27: GENDER PARITY INDEX FOR **UNISA** BASED ON GROSS ENROLMENT RATES FOR THE PERIOD 2009-2012

Year	Female headcount student enrolments for Unisa	Male headcount student enrolments for Unisa	Unknown headcount student enrolments	Female population in 20-24 year age group	Male population in 20-24 year age group	Gross enrolment rate (GER) (%) for females at Unisa	Gross enrolment rate (GER) (%) for males at Unisa	Gender Parity Index of Unisa	Distance from parity
2009	158,699	104,860	0	2,378,985	2,391,084	6.67%	4.39%	1.52	0.52
2010	177,503	115,934	0	2,387,832	2,439,992	7.43%	4.75%	1.56	0.56
2011	202,002	126,861	1	2,423,079	2,473,713	8.34%	5.13%	1.63	0.63
2012	210,313	125,972	1	2,459,252	2,507,439	8.55%	5.02%	1.70	0.70

Source: Author's own calculations; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 28: GENDER PARITY INDEX FOR THE *UNIVERSITY OF CAPE TOWN* BASED ON GROSS ENROLMENT RATES FOR LEVEL THREE

Year	Female headcount student enrolments for Accounting (0401) at University of Cape Town	Male headcount student enrolments for Accounting (0401) at University of Cape Town	Female population in 20-24 year age group	Male population in 20-24 year age group	Gross enrolment rate (GER) (%) for females in Accounting (0401) at the University of Cape Town	Gross enrolment rate (GER) (%) for males in Accounting (0401) at the University of Cape Town	Gender Parity Index for Accounting (0401) of the University of Cape Town	Distance from parity
2009	1,233	1,474	2,378,985	2,391,084	0.05%	0.06%	0.84	-0.16
2010	1,058	1,107	2,387,832	2,439,992	0.04%	0.05%	0.98	-0.02
2011	616	541	2,423,079	2,473,713	0.03%	0.02%	1.16	0.16
2012	708	538	2,459,252	2,507,439	0.03%	0.02%	1.34	0.34

Source: Author's own calculation; DHET, 2014a; Statistics South Africa, 2013b.

TABLE 29: GENDER PARITY INDEX FOR THE *UNIVERSITY OF JOHANNESBURG* BASED ON GROSS ENROLMENT RATES FOR LEVEL THREE

Year	Female headcount student enrolments for Accounting (0401) at University of Johannesburg	Male headcount student enrolments for Accounting (0401) at University of Johannesburg	Female population in 20-24 year age group	Male population in 20-24 year age group	Gross enrolment rate (GER) (%) for females in Accounting (0401) at the University of Johannesburg	Gross enrolment rate (GER) (%) for males in Accounting (0401) at the University of Johannesburg	Gender Parity Index for Accounting (0401) of the University of Johannesburg	Distance from parity
2009	2,664	2,267	2,378,985	2,391,084	0.11%	0.09%	1.18	0.18
2010	2,816	2,371	2,387,832	2,439,992	0.12%	0.10%	1.21	0.21
2011	2,979	2,514	2,423,079	2,473,713	0.12%	0.10%	1.21	0.21
2012	2,636	2,245	2,459,252	2,507,439	0.11%	0.09%	1.20	0.20

Source: Author's own calculation; DHET, 2014a; Statistics South Africa, 2013b.

TABLE 30: GENDER PARITY INDEX FOR THE *UNIVERSITY OF THE WITWATERSRAND* BASED ON GROSS ENROLMENT RATES FOR LEVEL THREE

Year	Female headcount student enrolments for Accounting (0401) at University of Witwatersrand	Male headcount student enrolments for Accounting (0401) at University of Witwatersrand	Female population in 20-24 year age group	Male population in 20-24 year age group	Gross enrolment rate (GER) (%) for females in Accounting (0401) at the University of Witwatersrand	Gross enrolment rate (GER) (%) for males in Accounting (0401) at the University of Witwatersrand	Gender Parity Index for Accounting (0401) of the University of Witwatersrand	Distance from parity
2009	922	972	2,378,985	2,391,084	0.04%	0.04%	0.95	-0.05
2010	1,140	1,101	2,387,832	2,439,992	0.05%	0.05%	1.06	0.06
2011	723	709	2,423,079	2,473,713	0.03%	0.03%	1.04	0.04
2012	614	547	2,459,252	2,507,439	0.02%	0.02%	1.14	0.14

Source: Author's own calculation; DHET, 2014a; Statistics South Africa, 2013b.

TABLE 31: GENDER PARITY INDEX FOR **UNISA** BASED ON GROSS ENROLMENT RATES FOR LEVEL THREE

Year	Female headcount student enrolments for Accounting (0401) at Unisa	Male headcount student enrolments for Accounting (0401) at Unisa	Female population in 20-24 year age group	Male population in 20-24 year age group	Gross enrolment rate (GER) (%) for females in Accounting (0401) at Unisa	Gross enrolment rate (GER) (%) for males in Accounting (0401) at Unisa	Gender Parity Index for Accounting (0401) of Unisa	Distance from parity
2009	16,659	12,543	2,378,985	2,391,084	0.70%	0.52%	1.33	0.33
2010	15,895	11,572	2,387,832	2,439,992	0.67%	0.47%	1.40	0.40
2011	16,776	11,867	2,423,079	2,473,713	0.69%	0.48%	1.44	0.44
2012	17,300	11,874	2,459,252	2,507,439	0.70%	0.47%	1.49	0.49

Source: Author's own calculation; DHET, 2014a; Statistics South Africa, 2013b.

TABLE 32: GENDER PARITY INDEX FOR HIGHER EDUCATION IN SOUTH AFRICA FOR **2009** BASED ON LEVEL OF ATTAINMENT

Age Group	Female graduates in public higher education institutions by age, 2009	Male graduates in public higher education institutions by age, 2009	Total graduates in public higher education institutions, by age, 2009	Female population per age group 2009	Male population per age group 2009	Total population per age group 2009	Level of attainment of females, 2009	Level of attainment of males, 2009	Gender Parity Index (GPI), 2009
15-19	2,697	1,169	3,866	2,524,756	2,543,153	5,067,909	0.11%	0.05%	2.32
20-24	41,659	29,491	71,150	2,378,984	2,391,084	4,770,069	1.75%	1.23%	1.42
25-29	10,439	9,161	19,600	2,290,055	2,252,068	4,542,123	0.46%	0.41%	1.12
30-34	7,700	5,079	12,779	2,041,503	2,057,322	4,098,825	0.38%	0.25%	1.53
35-39	9,591	4,911	14,502	1,882,413	1,765,116	3,647,529	0.51%	0.28%	1.83
40-44	7,818	3,742	11,560	1,467,306	1,330,837	2,798,142	0.53%	0.28%	1.89
45-49	4,839	2,060	6,899	1,331,225	1,163,044	2,494,269	0.36%	0.18%	2.05
50-54	2,668	1,045	3,714	1,106,815	968,474	2,075,288	0.24%	0.11%	2.23
55-59	778	336	1,114	867,947	748,817	1,616,764	0.09%	0.04%	2.00
60-64	103	85	188	711,001	538,354	1,249,355	0.01%	0.02%	0.92
65-69	15	20	35	619,005	368,949	987,954	0.00%	0.01%	0.45

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 33: GENDER PARITY INDEX FOR HIGHER EDUCATION IN SOUTH AFRICA FOR **2010** BASED ON LEVEL OF ATTAINMENT

Age Group	Female graduates in public higher education institutions by age, 2010	Male graduates in public higher education institutions by age, 2010	Total graduates in public higher education institutions, by age, 2010	Female population per age group 2010	Male population per age group 2010	Total population per age group 2010	Level of attainment of females, 2010	Level of attainment of males, 2010	Gender Parity Index (GPI), 2010
15-19	2,740	1,093	3,833	2,547,397	2,563,112	5,110,508	0.11%	0.04%	2.52
20-24	43,177	30,477	73,654	2,387,832	2,439,992	4,827,824	1.81%	1.25%	1.45
25-29	11,773	10,080	21,853	2,326,897	2,275,821	4,602,718	0.51%	0.44%	1.14
30-34	7,809	5,256	13,065	2,050,862	2,092,889	4,143,751	0.38%	0.25%	1.52
35-39	9,769	5,247	15,016	1,931,934	1,832,930	3,764,864	0.51%	0.29%	1.77
40-44	8,569	4,144	12,713	1,507,803	1,373,101	2,880,903	0.57%	0.30%	1.88
45-49	5,511	2,395	7,906	1,348,649	1,181,194	2,529,843	0.41%	0.20%	2.02
50-54	2,751	1,061	3,812	1,147,036	994,336	2,141,372	0.24%	0.11%	2.25
55-59	816	392	1,208	892,267	770,801	1,663,069	0.09%	0.05%	1.80
60-64	118	79	197	730,560	561,890	1,292,450	0.02%	0.01%	1.15
65-69	19	24	43	638,049	378,044	1,016,093	0.00%	0.01%	0.47

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 34: GENDER PARITY INDEX FOR HIGHER EDUCATION IN SOUTH AFRICA FOR **2011** BASED ON LEVEL OF ATTAINMENT

Age Group	Female graduates in public higher education institutions by age, 2011	Male graduates in public higher education institutions by age, 2011	Total graduates in public higher education institutions, by age, 2011	Female population per age group 2011	Male population per age group 2011	Total population per age group 2011	Level of attainment of females, 2011	Level of attainment of males, 2011	Gender Parity Index (GPI), 2011
15-19	2,784	1,162	3,946	2,564,803	2,577,543	5,142,347	0.11%	0.05%	2.41
20-24	45,688	32,186	77,874	2,423,079	2,473,713	4,896,792	1.89%	1.30%	1.45
25-29	13,099	11,238	24,337	2,336,810	2,317,780	4,654,589	0.56%	0.48%	1.16
30-34	7,862	5,244	13,106	2,078,984	2,134,994	4,213,978	0.38%	0.25%	1.54
35-39	9,461	5,178	14,639	1,955,303	1,885,197	3,840,500	0.48%	0.27%	1.76
40-44	8,710	4,415	13,125	1,569,221	1,433,680	3,002,901	0.56%	0.31%	1.80
45-49	5,596	2,498	8,094	1,360,941	1,197,008	2,557,949	0.41%	0.21%	1.97
50-54	2,814	1,222	4,036	1,183,655	1,019,001	2,202,656	0.24%	0.12%	1.98
55-59	800	411	1,211	923,403	794,768	1,718,172	0.09%	0.05%	1.68
60-64	106	88	194	748,417	584,944	1,333,361	0.01%	0.02%	0.94
65-69	25	22	47	659,163	390,092	1,049,255	0.00%	0.01%	0.67

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 35: GENDER PARITY INDEX FOR HIGHER EDUCATION IN SOUTH AFRICA FOR **2012** BASED ON LEVEL OF ATTAINMENT

Age Group	Female graduates in public higher education institutions by age, 2012	Male graduates in public higher education institutions by age, 2012	Total graduates in public higher education institutions, by age, 2012	Female population per age group 2012	Male population per age group 2012	Total population per age group 2012	Level of attainment of females, 2012	Level of attainment of males, 2012	Gender Parity Index (GPI), 2012
15-19	3,106	1,228	4,334	2,577,001	2,586,968	5,163,969	0.12%	0.05%	2.54
20-24	50,496	34,488	84,984	2,459,252	2,507,439	4,966,691	2.05%	1.38%	1.49
25-29	14,537	11,910	26,447	2,346,895	2,360,908	4,707,803	0.62%	0.50%	1.23
30-34	7,840	5,525	13,365	2,121,526	2,180,384	4,301,910	0.37%	0.25%	1.46
35-39	7,961	4,689	12,650	1,958,632	1,925,350	3,883,982	0.41%	0.24%	1.67
40-44	7,419	3,917	11,336	1,646,942	1,510,100	3,157,042	0.45%	0.26%	1.74
45-49	4,970	2,562	7,532	1,369,819	1,211,663	2,581,482	0.36%	0.21%	1.72
50-54	2,639	1,166	3,805	1,216,334	1,042,903	2,259,238	0.22%	0.11%	1.94
55-59	818	401	1,219	960,941	821,111	1,782,052	0.09%	0.05%	1.74
60-64	133	112	245	764,963	606,789	1,371,752	0.02%	0.02%	0.94
65-69	16	32	48	681,867	405,497	1,087,365	0.00%	0.01%	0.30

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 36: GENDER PARITY INDEX FOR HIGHER EDUCATION IN SOUTH AFRICA FOR **2009** BASED ON LEVEL OF ATTAINMENT FOR 25-34 AND 25-64 YEAR AGE GROUPS

Age Group	Female graduates in public higher education institutions by age, 2009	Male graduates in public higher education institutions by age, 2009	Total graduates in public higher education institutions, by age, 2009	Female population per age group 2009	Male population per age group 2009	Total population per age group 2009	Level of attainment of females, 2009	Level of attainment of males, 2009	Gender Parity Index (GPI), 2009
25-34	18,139	14,240	32,379	4,331,558	4,309,390	8,640,948	0.42%	0.33%	1.27
25-64	43,936	26,419	70,355	11,698,263	10,824,031	22,522,295	0.38%	0.24%	1.54

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 37: GENDER PARITY INDEX FOR HIGHER EDUCATION IN SOUTH AFRICA FOR **2010** BASED ON LEVEL OF ATTAINMENT FOR 25-34 AND 25-64 YEAR AGE GROUPS

Age Group	Female graduates in public higher education institutions by age, 2010	Male graduates in public higher education institutions by age, 2010	Total graduates in public higher education institutions, by age, 2010	Female population per age group 2010	Male population per age group 2010	Total population per age group 2010	Level of attainment of females, 2010	Level of attainment of males, 2010	Gender Parity Index (GPI), 2010
25-34	19,582	15,336	34,918	4,377,759	4,368,710	8,746,469	0.45%	0.35%	1.27
25-64	47,116	28,654	75,770	11,936,007	11,082,963	23,018,970	0.39%	0.26%	1.53

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 38: GENDER PARITY INDEX FOR HIGHER EDUCATION IN SOUTH AFRICA FOR **2011** BASED ON LEVEL OF ATTAINMENT FOR 25-34 AND 25-64 YEAR AGE GROUPS

Age Group	Female graduates in public higher education institutions by age, 2011	Male graduates in public higher education institutions by age, 2011	Total graduates in public higher education institutions, by age, 2011	Female population per age group 2011	Male population per age group 2011	Total population per age group 2011	Level of attainment of females, 2011	Level of attainment of males, 2011	Gender Parity Index (GPI), 2011
25-34	20,961	16,482	37,443	4,415,794	4,452,773	8,868,567	0.47%	0.37%	1.28
25-64	48,448	30,294	78,742	12,156,735	11,367,371	23,524,107	0.40%	0.27%	1.50

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 39: GENDER PARITY INDEX FOR HIGHER EDUCATION IN SOUTH AFRICA FOR **2012** BASED ON LEVEL OF ATTAINMENT FOR 25-34 AND 25-64 YEAR AGE GROUPS

Age Group	Female graduates in public higher education institutions by age, 2012	Male graduates in public higher education institutions by age, 2012	Total graduates in public higher education institutions, by age, 2012	Female population per age group 2012	Male population per age group 2012	Total population per age group 2012	Level of attainment of females, 2012	Level of attainment of males, 2012	Gender Parity Index (GPI), 2012
25-34	22,377	17,435	39,812	4,468,421	4,541,293	9,009,713	0.50%	0.38%	1.30
25-64	46,317	30,282	76,599	12,386,052	11,659,208	24,045,260	0.37%	0.26%	1.44

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 40: GENDER PARITY INDEX FOR THE *UNIVERSITY OF CAPE TOWN* BASED ON LEVEL OF ATTAINMENT FOR THE PERIOD *2009*

Age Group	Female graduates at the University of Cape Town by age, 2009	Male graduates at the University of Cape Town by age, 2009	Total graduates at the University of Cape Town, by age, 2009	Female population per age group 2009	Male population per age group 2009	Total population per age group 2009	Level of attainment of females for the University of Cape Town, 2009	Level of attainment of males for the University of Cape Town, 2009	Gender Parity Index (GPI) for the University of Cape Town, 2009	Distance from parity for the University of Cape Town, 2009
15-19	89	48	137	2,524,756	2,543,153	5,067,909	0.00%	0.00%	1.87	0.87
20-24	2,059	1,804	3,863	2,378,984	2,391,084	4,770,069	0.09%	0.08%	1.15	0.15
25-29	321	391	712	2,290,055	2,252,068	4,542,123	0.01%	0.02%	0.81	-0.19
30-34	153	206	359	2,041,503	2,057,322	4,098,825	0.01%	0.01%	0.75	-0.25
35-39	138	147	285	1,882,413	1,765,116	3,647,529	0.01%	0.01%	0.88	-0.12
40-44	113	106	219	1,467,306	1,330,837	2,798,142	0.01%	0.01%	0.97	-0.03
45-49	88	70	158	1,331,225	1,163,044	2,494,269	0.01%	0.01%	1.10	0.10
50-54	52	41	94	1,106,815	968,474	2,075,288	0.00%	0.00%	1.11	0.11
55-59	17	19	36	867,947	748,817	1,616,764	0.00%	0.00%	0.77	-0.23
60-64	3	4	7	711,001	538,354	1,249,355	0.00%	0.00%	0.57	-0.43
65-69	2	-	2	619,005	368,949	987,954	0.00%	0.00%	n/a	n/a

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 41: GENDER PARITY INDEX FOR THE *UNIVERSITY OF CAPE TOWN* BASED ON LEVEL OF ATTAINMENT FOR THE PERIOD *2010*

Age Group	Female graduates at the University of Cape Town by age, 2010	Male graduates at the University of Cape Town by age, 2010	Total graduates at the University of Cape Town, by age, 2010	Female population per age group 2010	Male population per age group 2010	Total population per age group 2010	Level of attainment of females for the University of Cape Town, 2010	Level of attainment of males for the University of Cape Town, 2010	Gender Parity Index (GPI) for the University of Cape Town, 2010	Distance from parity for the University of Cape Town, 2010
15-19	108	36	144	2,524,756	2,543,153	5,067,909	0.00%	0.00%	3.02	2.02
20-24	2,208	1,845	4,053	2,378,984	2,391,084	4,770,069	0.09%	0.08%	1.20	0.20
25-29	398	427	825	2,290,055	2,252,068	4,542,123	0.02%	0.02%	0.92	-0.08
30-34	186	214	400	2,041,503	2,057,322	4,098,825	0.01%	0.01%	0.88	-0.12
35-39	134	152	286	1,882,413	1,765,116	3,647,529	0.01%	0.01%	0.83	-0.17
40-44	104	103	207	1,467,306	1,330,837	2,798,142	0.01%	0.01%	0.92	-0.08
45-49	85	58	143	1,331,225	1,163,044	2,494,269	0.01%	0.00%	1.28	0.28
50-54	40	33	74	1,106,815	968,474	2,075,288	0.00%	0.00%	1.06	0.06
55-59	17	14	31	867,947	748,817	1,616,764	0.00%	0.00%	1.05	0.05
60-64	4	-	4	711,001	538,354	1,249,355	0.00%	0.00%	n/a	n/a
65-69	1	-	1	619,005	368,949	987,954	0.00%	0.00%	n/a	n/a

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 42: GENDER PARITY INDEX FOR THE *UNIVERSITY OF CAPE TOWN* BASED ON LEVEL OF ATTAINMENT FOR THE PERIOD 2011

Age Group	Female graduates at the University of Cape Town by age, 2011	Male graduates at the University of Cape Town by age, 2011	Total graduates at the University of Cape Town, by age, 2011	Female population per age group 2011	Male population per age group 2011	Total population per age group 2011	Level of attainment of females for the University of Cape Town, 2011	Level of attainment of males for the University of Cape Town, 2011	Gender Parity Index (GPI) for the University of Cape Town, 2011	Distance from parity for the University of Cape Town, 2011
15-19	57	20	77	2,524,756	2,543,153	5,067,909	0.00%	0.00%	2.87	1.87
20-24	2,345	1,971	4,316	2,378,984	2,391,084	4,770,069	0.10%	0.08%	1.20	0.20
25-29	407	423	830	2,290,055	2,252,068	4,542,123	0.02%	0.02%	0.95	-0.05
30-34	184	224	408	2,041,503	2,057,322	4,098,825	0.01%	0.01%	0.83	-0.17
35-39	155	155	310	1,882,413	1,765,116	3,647,529	0.01%	0.01%	0.94	-0.06
40-44	145	123	268	1,467,306	1,330,837	2,798,142	0.01%	0.01%	1.07	0.07
45-49	116	47	163	1,331,225	1,163,044	2,494,269	0.01%	0.00%	2.16	1.16
50-54	75	35	111	1,106,815	968,474	2,075,288	0.01%	0.00%	1.88	0.88
55-59	18	14	32	867,947	748,817	1,616,764	0.00%	0.00%	1.11	0.11
60-64	5	5	10	711,001	538,354	1,249,355	0.00%	0.00%	0.76	-0.24
65-69	1	2	3	619,005	368,949	987,954	0.00%	0.00%	0.30	-0.70

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 43: GENDER PARITY INDEX FOR THE *UNIVERSITY OF CAPE TOWN* BASED ON LEVEL OF ATTAINMENT FOR THE PERIOD *2012*

Age Group	Female graduates at the University of Cape Town by age, 2012	Male graduates at the University of Cape Town by age, 2012	Total graduates at the University of Cape Town, by age, 2012	Female population per age group 2012	Male population per age group 2012	Total population per age group 2012	Level of attainment of females for the University of Cape Town, 2012	Level of attainment of males for the University of Cape Town, 2012	Gender Parity Index (GPI) for the University of Cape Town, 2012	Distance from parity for the University of Cape Town, 2012
15-19	90	28	118	2,524,756	2,543,153	5,067,909	0.00%	0.00%	3.24	2.24
20-24	2,554	1,961	4,515	2,378,984	2,391,084	4,770,069	0.11%	0.08%	1.31	0.31
25-29	418	436	854	2,290,055	2,252,068	4,542,123	0.02%	0.02%	0.94	-0.06
30-34	207	240	447	2,041,503	2,057,322	4,098,825	0.01%	0.01%	0.87	-0.13
35-39	128	149	277	1,882,413	1,765,116	3,647,529	0.01%	0.01%	0.81	-0.19
40-44	106	104	210	1,467,306	1,330,837	2,798,142	0.01%	0.01%	0.92	-0.08
45-49	77	82	159	1,331,225	1,163,044	2,494,269	0.01%	0.01%	0.82	-0.18
50-54	56	37	94	1,106,815	968,474	2,075,288	0.01%	0.00%	1.32	0.32
55-59	20	27	47	867,947	748,817	1,616,764	0.00%	0.00%	0.64	-0.36
60-64	7	9	16	711,001	538,354	1,249,355	0.00%	0.00%	0.59	-0.41
65-69	1	1	2	619,005	368,949	987,954	0.00%	0.00%	0.60	-0.40

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 44: GENDER PARITY INDEX FOR THE *UNIVERSITY OF JOHANNESBURG* BASED ON LEVEL OF ATTAINMENT FOR THE PERIOD 2009

Age Group	Female graduates at the University of Johannesburg by age, 2009	Male graduates at the University of Johannesburg by age, 2009	Total graduates at the University of Johannesburg by age, 2009	Female population per age group 2009	Male population per age group 2009	Total population per age group 2009	Level of attainment of females for the University of Johannesburg, 2009	Level of attainment of males for the University of Johannesburg, 2009	Gender Parity Index (GPI) for the University of Johannesburg, 2009	Distance from parity for the University of Johannesburg, 2009
15-19	234	100	334	2,524,756	2,543,153	5,067,909	0.01%	0.00%	2.36	1.36
20-24	3,553	2,666	6,219	2,378,984	2,391,084	4,770,069	0.15%	0.11%	1.34	0.34
25-29	567	670	1,237	2,290,055	2,252,068	4,542,123	0.02%	0.03%	0.83	-0.17
30-34	410	237	647	2,041,503	2,057,322	4,098,825	0.02%	0.01%	1.74	0.74
35-39	520	278	798	1,882,413	1,765,116	3,647,529	0.03%	0.02%	1.75	0.75
40-44	365	194	559	1,467,306	1,330,837	2,798,142	0.02%	0.01%	1.71	0.71
45-49	202	111	313	1,331,225	1,163,044	2,494,269	0.02%	0.01%	1.59	0.59
50-54	141	51	193	1,106,815	968,474	2,075,288	0.01%	0.01%	2.42	1.42
55-59	41	18	59	867,947	748,817	1,616,764	0.00%	0.00%	1.97	0.97
60-64	3	3	6	711,001	538,354	1,249,355	0.00%	0.00%	0.76	-0.24
65-69	-	1	1	619,005	368,949	987,954	0.00%	0.00%	0.00	-1.00

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 45: GENDER PARITY INDEX FOR THE *UNIVERSITY OF JOHANNESBURG* BASED ON LEVEL OF ATTAINMENT FOR THE PERIOD *2010*

Age Group	Female graduates at the University of Johannesburg by age, 2010	Male graduates at the University of Johannesburg by age, 2010	Total graduates at the University of Johannesburg by age, 2010	Female population per age group 2010	Male population per age group 2010	Total population per age group 2010	Level of attainment of females for the University of Johannesburg, 2010	Level of attainment of males for the University of Johannesburg, 2010	Gender Parity Index (GPI) for the University of Johannesburg, 2010	Distance from parity for the University of Johannesburg, 2010
15-19	302	113	415	2,524,756	2,543,153	5,067,909	0.01%	0.00%	2.69	1.69
20-24	3,753	2,740	6,493	2,378,984	2,391,084	4,770,069	0.16%	0.11%	1.38	0.38
25-29	551	622	1,173	2,290,055	2,252,068	4,542,123	0.02%	0.03%	0.87	-0.13
30-34	284	218	502	2,041,503	2,057,322	4,098,825	0.01%	0.01%	1.31	0.31
35-39	397	210	607	1,882,413	1,765,116	3,647,529	0.02%	0.01%	1.77	0.77
40-44	334	163	497	1,467,306	1,330,837	2,798,142	0.02%	0.01%	1.86	0.86
45-49	218	122	340	1,331,225	1,163,044	2,494,269	0.02%	0.01%	1.56	0.56
50-54	124	59	184	1,106,815	968,474	2,075,288	0.01%	0.01%	1.84	0.84
55-59	36	27	63	867,947	748,817	1,616,764	0.00%	0.00%	1.15	0.15
60-64	5	4	9	711,001	538,354	1,249,355	0.00%	0.00%	0.95	-0.05
65-69	-	1	1	619,005	368,949	987,954	0.00%	0.00%	0.00	-1.00

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 46: GENDER PARITY INDEX (GPI) FOR THE **UNIVERSITY OF JOHANNESBURG** BASED ON LEVEL OF ATTAINMENT FOR THE PERIOD **2011**

Age Group	Female graduates at the University of Johannesburg by age, 2011	Male graduates at the University of Johannesburg by age, 2011	Total graduates at the University of Johannesburg by age, 2011	Female population per age group 2011	Male population per age group 2011	Total population per age group 2011	Level of attainment of females for the University of Johannesburg, 2011	Level of attainment of males for the University of Johannesburg, 2011	Gender Parity Index (GPI) for the University of Johannesburg, 2011	Distance from parity for the University of Johannesburg, 2011
15-19	304	128	432	2,524,756	2,543,153	5,067,909	0.01%	0.01%	2.39	1.39
20-24	4,149	2,900	7,049	2,378,984	2,391,084	4,770,069	0.17%	0.12%	1.44	0.44
25-29	636	713	1,349	2,290,055	2,252,068	4,542,123	0.03%	0.03%	0.88	-0.12
30-34	269	216	485	2,041,503	2,057,322	4,098,825	0.01%	0.01%	1.26	0.26
35-39	445	229	674	1,882,413	1,765,116	3,647,529	0.02%	0.01%	1.82	0.82
40-44	423	184	607	1,467,306	1,330,837	2,798,142	0.03%	0.01%	2.09	1.09
45-49	256	110	366	1,331,225	1,163,044	2,494,269	0.02%	0.01%	2.03	1.03
50-54	142	55	198	1,106,815	968,474	2,075,288	0.01%	0.01%	2.26	1.26
55-59	50	11	61	867,947	748,817	1,616,764	0.01%	0.00%	3.92	2.92
60-64	6	3	9	711,001	538,354	1,249,355	0.00%	0.00%	1.51	0.51
65-69	-	-	-	619,005	368,949	987,954	0.00%	0.00%	n/a	n/a

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 47: GENDER PARITY INDEX FOR THE *UNIVERSITY OF JOHANNESBURG* BASED ON LEVEL OF ATTAINMENT FOR THE PERIOD *2012*

Age Group	Female graduates at the University of Johannesburg by age, 2012	Male graduates at the University of Johannesburg by age, 2012	Total graduates at the University of Johannesburg by age, 2012	Female population per age group 2012	Male population per age group 2012	Total population per age group 2012	Level of attainment of females for the University of Johannesburg, 2012	Level of attainment of males for the University of Johannesburg, 2012	Gender Parity Index (GPI) for the University of Johannesburg, 2012	Distance from parity for the University of Johannesburg, 2012
15-19	269	112	381	2,524,756	2,543,153	5,067,909	0.01%	0.00%	2.42	1.42
20-24	4,694	3,257	7,951	2,378,984	2,391,084	4,770,069	0.20%	0.14%	1.45	0.45
25-29	650	704	1,354	2,290,055	2,252,068	4,542,123	0.03%	0.03%	0.91	-0.09
30-34	224	199	423	2,041,503	2,057,322	4,098,825	0.01%	0.01%	1.13	0.13
35-39	282	183	465	1,882,413	1,765,116	3,647,529	0.01%	0.01%	1.44	0.44
40-44	255	136	391	1,467,306	1,330,837	2,798,142	0.02%	0.01%	1.70	0.70
45-49	176	85	261	1,331,225	1,163,044	2,494,269	0.01%	0.01%	1.81	0.81
50-54	82	45	128	1,106,815	968,474	2,075,288	0.01%	0.00%	1.59	0.59
55-59	25	15	40	867,947	748,817	1,616,764	0.00%	0.00%	1.44	0.44
60-64	8	5	13	711,001	538,354	1,249,355	0.00%	0.00%	1.21	0.21
65-69	1	1	2	619,005	368,949	987,954	0.00%	0.00%	0.60	-0.40

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 48: GENDER PARITY INDEX FOR THE *UNIVERSITY OF THE WITWATERSRAND* BASED ON LEVEL OF ATTAINMENT FOR THE PERIOD 2009

Age Group	Female graduates at the University of the Witwatersrand by age, 2009	Male graduates at the University of the Witwatersrand by age, 2009	Total graduates at the University of the Witwatersrand by age, 2009	Female population per age group 2009	Male population per age group 2009	Total population per age group 2009	Level of attainment of females for the University of the Witwatersrand, 2009	Level of attainment of males for the University of the Witwatersrand, 2009	Gender Parity Index (GPI) for the University of the Witwatersrand, 2009	Distance from parity for the University of the Witwatersrand, 2009
15-19	103	44	147	2,524,756	2,543,153	5,067,909	0.00%	0.00%	2.36	1.36
20-24	1,931	1,458	3,389	2,378,984	2,391,084	4,770,069	0.08%	0.06%	1.33	0.33
25-29	401	378	779	2,290,055	2,252,068	4,542,123	0.02%	0.02%	1.04	0.04
30-34	155	213	368	2,041,503	2,057,322	4,098,825	0.01%	0.01%	0.73	-0.27
35-39	155	154	309	1,882,413	1,765,116	3,647,529	0.01%	0.01%	0.94	-0.06
40-44	134	116	250	1,467,306	1,330,837	2,798,142	0.01%	0.01%	1.05	0.05
45-49	96	66	162	1,331,225	1,163,044	2,494,269	0.01%	0.01%	1.27	0.27
50-54	57	39	97	1,106,815	968,474	2,075,288	0.01%	0.00%	1.28	0.28
55-59	19	10	29	867,947	748,817	1,616,764	0.00%	0.00%	1.64	0.64
60-64	6	4	10	711,001	538,354	1,249,355	0.00%	0.00%	1.14	0.14
65-69	5		5	619,005	368,949	987,954	0.00%	0.00%	n/a	n/a

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 49: GENDER PARITY INDEX FOR THE *UNIVERSITY OF THE WITWATERSRAND* BASED ON LEVEL OF ATTAINMENT FOR THE PERIOD 2010

Age Group	Female graduates at the University of the Witwatersrand by age, 2010	Male graduates at the University of the Witwatersrand by age, 2010	Total graduates at the University of the Witwatersrand by age, 2010	Female population per age group 2010	Male population per age group 2010	Total population per age group 2010	Level of attainment of females for the University of the Witwatersrand, 2010	Level of attainment of males for the University of the Witwatersrand, 2010	Gender Parity Index (GPI) for the University of the Witwatersrand, 2010	Distance from parity for the University of the Witwatersrand, 2010
15-19	126	65	191	2,524,756	2,543,153	5,067,909	0.00%	0.00%	1.95	0.95
20-24	2,073	1,569	3,642	2,378,984	2,391,084	4,770,069	0.09%	0.07%	1.33	0.33
25-29	437	419	856	2,290,055	2,252,068	4,542,123	0.02%	0.02%	1.03	0.03
30-34	216	235	451	2,041,503	2,057,322	4,098,825	0.01%	0.01%	0.93	-0.07
35-39	231	221	452	1,882,413	1,765,116	3,647,529	0.01%	0.01%	0.98	-0.02
40-44	167	165	332	1,467,306	1,330,837	2,798,142	0.01%	0.01%	0.92	-0.08
45-49	151	105	256	1,331,225	1,163,044	2,494,269	0.01%	0.01%	1.26	0.26
50-54	88	33	122	1,106,815	968,474	2,075,288	0.01%	0.00%	2.33	1.33
55-59	27	6	33	867,947	748,817	1,616,764	0.00%	0.00%	3.88	2.88
60-64	4	4	8	711,001	538,354	1,249,355	0.00%	0.00%	0.76	-0.24
65-69	-	1	1	619,005	368,949	987,954	0.00%	0.00%	0.00	-1.00

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 50: GENDER PARITY INDEX FOR THE *UNIVERSITY OF THE WITWATERSRAND* BASED ON LEVEL OF ATTAINMENT FOR THE PERIOD 2011

Age Group	Female graduates at the University of the Witwatersrand by age, 2011	Male graduates at the University of the Witwatersrand by age, 2011	Total graduates at the University of the Witwatersrand by age, 2011	Female population per age group 2011	Male population per age group 2011	Total population per age group 2011	Level of attainment of females for the University of the Witwatersrand, 2011	Level of attainment of males for the University of the Witwatersrand, 2011	Gender Parity Index (GPI) for the University of the Witwatersrand, 2011	Distance from parity for the University of the Witwatersrand, 2011
15-19	147	66	213	2,524,756	2,543,153	5,067,909	0.01%	0.00%	2.24	1.24
20-24	2,166	1,558	3,724	2,378,984	2,391,084	4,770,069	0.09%	0.07%	1.40	0.40
25-29	445	446	891	2,290,055	2,252,068	4,542,123	0.02%	0.02%	0.98	-0.02
30-34	218	277	495	2,041,503	2,057,322	4,098,825	0.01%	0.01%	0.79	-0.21
35-39	250	243	493	1,882,413	1,765,116	3,647,529	0.01%	0.01%	0.96	-0.04
40-44	218	187	405	1,467,306	1,330,837	2,798,142	0.01%	0.01%	1.06	0.06
45-49	168	117	285	1,331,225	1,163,044	2,494,269	0.01%	0.01%	1.25	0.25
50-54	102	45	148	1,106,815	968,474	2,075,288	0.01%	0.00%	1.98	0.98
55-59	33	20	53	867,947	748,817	1,616,764	0.00%	0.00%	1.42	0.42
60-64	7	-	7	711,001	538,354	1,249,355	0.00%	0.00%	n/a	n/a
65-69	2	1	3	619,005	368,949	987,954	0.00%	0.00%	1.19	0.19

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 51: GENDER PARITY INDEX (GPI) FOR THE *UNIVERSITY OF THE WITWATERSRAND* BASED ON LEVEL OF ATTAINMENT FOR THE PERIOD **2012**

Age Group	Female graduates at the University of the Witwatersrand by age, 2012	Male graduates at the University of the Witwatersrand by age, 2012	Total graduates at the University of the Witwatersrand by age, 2012	Female population per age group 2012	Male population per age group 2012	Total population per age group 2012	Level of attainment of females for the University of the Witwatersrand, 2012	Level of attainment of males for the University of the Witwatersrand, 2012	Gender Parity Index (GPI) for the University of the Witwatersrand, 2012	Distance from parity for the University of the Witwatersrand, 2012
15-19	112	37	149	2,524,756	2,543,153	5,067,909	0.00%	0.00%	3.05	2.05
20-24	2,549	1,649	4,198	2,378,984	2,391,084	4,770,069	0.11%	0.07%	1.55	0.55
25-29	455	457	912	2,290,055	2,252,068	4,542,123	0.02%	0.02%	0.98	-0.02
30-34	200	252	452	2,041,503	2,057,322	4,098,825	0.01%	0.01%	0.80	-0.20
35-39	189	220	409	1,882,413	1,765,116	3,647,529	0.01%	0.01%	0.81	-0.19
40-44	185	148	333	1,467,306	1,330,837	2,798,142	0.01%	0.01%	1.13	0.13
45-49	109	66	175	1,331,225	1,163,044	2,494,269	0.01%	0.01%	1.44	0.44
50-54	68	39	108	1,106,815	968,474	2,075,288	0.01%	0.00%	1.53	0.53
55-59	33	19	52	867,947	748,817	1,616,764	0.00%	0.00%	1.50	0.50
60-64	10	6	16	711,001	538,354	1,249,355	0.00%	0.00%	1.26	0.26
65-69	2	2	4	619,005	368,949	987,954	0.00%	0.00%	0.60	-0.40

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 52: GENDER PARITY INDEX FOR **UNISA** BASED ON LEVEL OF ATTAINMENT FOR THE PERIOD 2009

Age Group	Female graduates at Unisa by age, 2009	Male graduates at Unisa by age, 2009	Total graduates at Unisa by age, 2009	Female population per age group 2009	Male population per age group 2009	Total population per age group 2009	Level of attainment of females for Unisa, 2009	Level of attainment of males for Unisa, 2009	Gender Parity Index (GPI) for Unisa, 2009	Distance from parity for Unisa, 2009
15-19	62	22	84	2,524,756	2,543,153	5,067,909	0.00%	0.00%	2.84	1.84
20-24	2,626	1,307	3,933	2,378,984	2,391,084	4,770,069	0.11%	0.05%	2.02	1.02
25-29	2,323	1,261	3,584	2,290,055	2,252,068	4,542,123	0.10%	0.06%	1.81	0.81
30-34	2,640	1,193	3,833	2,041,503	2,057,322	4,098,825	0.13%	0.06%	2.23	1.23
35-39	3,433	1,398	4,831	1,882,413	1,765,116	3,647,529	0.18%	0.08%	2.30	1.30
40-44	2,475	1,004	3,479	1,467,306	1,330,837	2,798,142	0.17%	0.08%	2.24	1.24
45-49	1,274	507	1,781	1,331,225	1,163,044	2,494,269	0.10%	0.04%	2.20	1.20
50-54	597	228	826	1,106,815	968,474	2,075,288	0.05%	0.02%	2.29	1.29
55-59	170	76	246	867,947	748,817	1,616,764	0.02%	0.01%	1.93	0.93
60-64	37	24	61	711,001	538,354	1,249,355	0.01%	0.00%	1.17	0.17
65-69	6	6	12	619,005	368,949	987,954	0.00%	0.00%	0.60	-0.40

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 53: GENDER PARITY INDEX FOR **UNISA** BASED ON LEVEL OF ATTAINMENT FOR THE PERIOD **2010**

Age Group	Female graduates at Unisa by age, 2010	Male graduates at Unisa by age, 2010	Total graduates at Unisa by age, 2010	Female population per age group 2010	Male population per age group 2010	Total population per age group 2010	Level of attainment of females for Unisa, 2010	Level of attainment of males for Unisa, 2010	Gender Parity Index (GPI) for Unisa, 2010	Distance from parity for Unisa, 2010
15-19	82	34	116	2,524,756	2,543,153	5,067,909	0.00%	0.00%	2.43	1.43
20-24	2,997	1,598	4,595	2,378,984	2,391,084	4,770,069	0.13%	0.07%	1.89	0.89
25-29	2,773	1,557	4,330	2,290,055	2,252,068	4,542,123	0.12%	0.07%	1.75	0.75
30-34	2,844	1,341	4,185	2,041,503	2,057,322	4,098,825	0.14%	0.07%	2.14	1.14
35-39	3,738	1,532	5,270	1,882,413	1,765,116	3,647,529	0.20%	0.09%	2.29	1.29
40-44	2,906	1,119	4,025	1,467,306	1,330,837	2,798,142	0.20%	0.08%	2.36	1.36
45-49	1,666	617	2,283	1,331,225	1,163,044	2,494,269	0.13%	0.05%	2.36	1.36
50-54	657	252	910	1,106,815	968,474	2,075,288	0.06%	0.03%	2.28	1.28
55-59	193	83	276	867,947	748,817	1,616,764	0.02%	0.01%	2.01	1.01
60-64	36	30	66	711,001	538,354	1,249,355	0.01%	0.01%	0.91	-0.09
65-69	9	4	13	619,005	368,949	987,954	0.00%	0.00%	1.34	0.34

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 54: GENDER PARITY INDEX FOR **UNISA** BASED ON LEVEL OF ATTAINMENT FOR THE PERIOD **2011**

Age Group	Female graduates at Unisa by age, 2011	Male graduates at Unisa by age, 2011	Total graduates at Unisa by age, 2011	Female population per age group 2011	Male population per age group 2011	Total population per age group 2011	Level of attainment of females for Unisa, 2011	Level of attainment of males for Unisa, 2011	Gender Parity Index (GPI) for Unisa, 2011	Distance from parity for Unisa, 2011
15-19	78	21	99	2,524,756	2,543,153	5,067,909	0.00%	0.00%	3.74	2.74
20-24	3,099	1,581	4,680	2,378,984	2,391,084	4,770,069	0.13%	0.07%	1.97	0.97
25-29	3,141	1,867	5,008	2,290,055	2,252,068	4,542,123	0.14%	0.08%	1.65	0.65
30-34	2,790	1,381	4,171	2,041,503	2,057,322	4,098,825	0.14%	0.07%	2.04	1.04
35-39	3,514	1,644	5,158	1,882,413	1,765,116	3,647,529	0.19%	0.09%	2.00	1.00
40-44	2,849	1,273	4,122	1,467,306	1,330,837	2,798,142	0.19%	0.10%	2.03	1.03
45-49	1,603	638	2,241	1,331,225	1,163,044	2,494,269	0.12%	0.05%	2.20	1.20
50-54	682	297	980	1,106,815	968,474	2,075,288	0.06%	0.03%	2.01	1.01
55-59	173	100	273	867,947	748,817	1,616,764	0.02%	0.01%	1.49	0.49
60-64	28	26	54	711,001	538,354	1,249,355	0.00%	0.00%	0.82	-0.18
65-69	9	6	15	619,005	368,949	987,954	0.00%	0.00%	0.89	-0.11

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.

TABLE 55: GENDER PARITY INDEX FOR **UNISA** BASED ON LEVEL OF ATTAINMENT FOR THE PERIOD **2012**

Age Group	Female graduates at Unisa by age, 2012	Male graduates at Unisa by age, 2012	Total graduates at Unisa by age, 2012	Female population per age group 2012	Male population per age group 2012	Total population per age group 2012	Level of attainment of females for Unisa, 2012	Level of attainment of males for Unisa, 2012	Gender Parity Index (GPI) for Unisa, 2012	Distance from parity for Unisa, 2012
15-19	233	62	295	2,524,756	2,543,153	5,067,909	0.01%	0.00%	3.79	2.79
20-24	3,557	1,724	5,281	2,378,984	2,391,084	4,770,069	0.15%	0.07%	2.07	1.07
25-29	3,661	2,003	5,664	2,290,055	2,252,068	4,542,123	0.16%	0.09%	1.80	0.80
30-34	2,738	1,538	4,276	2,041,503	2,057,322	4,098,825	0.13%	0.07%	1.79	0.79
35-39	2,798	1,439	4,237	1,882,413	1,765,116	3,647,529	0.15%	0.08%	1.82	0.82
40-44	2,244	1,091	3,335	1,467,306	1,330,837	2,798,142	0.15%	0.08%	1.87	0.87
45-49	1,277	616	1,893	1,331,225	1,163,044	2,494,269	0.10%	0.05%	1.81	0.81
50-54	656	247	904	1,106,815	968,474	2,075,288	0.06%	0.03%	2.32	1.32
55-59	153	83	236	867,947	748,817	1,616,764	0.02%	0.01%	1.59	0.59
60-64	45	26	71	711,001	538,354	1,249,355	0.01%	0.00%	1.31	0.31
65-69	3	9	12	619,005	368,949	987,954	0.00%	0.00%	0.20	-0.80

Source: Author's own calculation; DHET, 2012b; Statistics South Africa, 2013b.