

**THE FINANCIAL IMPACT ON THE NELSON
MANDELA UNIVERSITY AS A RESULT OF
EXCLUDING INTERNATIONAL STUDENTS FROM
THE UNIVERSITY FUNDING MODEL**

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**THE FINANCIAL IMPACT ON THE NELSON MANDELA UNIVERSITY
AS A RESULT OF EXCLUDING INTERNATIONAL STUDENTS FROM
THE UNIVERSITY FUNDING MODEL**

By

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DECLARATION

I, *Janine Ingrid Bezuidenhout 20400526*, hereby declare that the treatise, *The Financial impact on the Nelson Mandela University as a result of excluding the international students from the University Funding model*, for the *Master of Technology (Cost and Management Accounting)* is my own work and that it has not previously been submitted for assessment or completion of any postgraduate qualification to another University or for another qualification.



.....
JANINE INGRID BEZUIDENHOUT

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ABSTRACT

The higher education sector in South Africa (SA) is currently facing financial constraints due to the admission of an increasing number of students from financially disadvantaged backgrounds. In 2015, students started protesting, demanding free higher education (OECD, 2017). In addition, the unstable political situation and declining economic conditions prevailing in the country also contributes to increased financial pressure on the higher education sector. Despite these conditions, it is important for higher education institutions (HEIs) in SA to respond decisively and efficiently without sacrificing their obligation to the neighbouring countries and their international duty as set forth in the Southern African Development Community (SADC) protocol (Mello, 2013).

The South African government subsidies are an important source of income for universities. The SA government subsidises the international students at the same rate as the South African students (Cilliers, 2017). According to Cilliers (2017), no funding policy is currently available, which excludes the international students from the block grant. The research for this study was guided by the question whether the exclusion of international students' subsidies from the SA government university funding model could have an adverse financial impact on the Nelson Mandela University. This study was conducted by means of the collection and analysis of secondary quantitative data. The SA government subsidies for the international students enrolled at the Nelson Mandela University for the period 2009 to 2015 were calculated in order to answer the research question.

It was concluded that if the international students were excluded from the SA government subsidies, the financial impact on the Nelson Mandela University could be approximately R64,5 million in the 2017 academic year. The outcome of this study is to enable the policymakers, government officials and university administrators to realise the financial impact on the universities if the international students were excluded from the SA government subsidies. Although this study focused on the Nelson Mandela University, the impact of the exclusion of the international students from the SA government university funding model would be significant and negative for the universities, international offices, international students and the plans to internationalise teaching, learning and research at the South African universities.

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LIST OF ABBREVIATIONS

CHE	Council on Higher Education
CHET	Centre for Higher Education Trust
CESM	Classification of Educational Subject Matter
CPUT	Cape Peninsula University of Technology
CUT	Central University of Technology
DHET	Department of Higher Education and Training
DUT	Durban University of Technology
FH	University of Fort Hare
FS	University of Free State
FTE	Full time equivalent
GDP	Gross Domestic Product
HDI	Historically Disadvantaged Institution
HEI	Higher education institution
HEIs	Higher education institutions
HEMIS	Higher Education Management Information System
KZN	University of KwaZulu-Natal
MoE	Ministry of Education
MUT	Mangosuthu University of Technology
NMMU	Nelson Mandela Metropolitan University
NSFAS	National Student Financial Aid Scheme
NWU	North-West University
OECD	Organisation for Economic Cooperation and Development
OfIE	Office for International Education
RU	Rhodes University
SA	South Africa

SADC	Southern African Development Community
SAPSE	South African Post-Secondary Education
SU	University of Stellenbosch
TUT	Tshwane University of Technology
UCT	University of Cape Town
UJ	University of Johannesburg
UL	Univesrity of Limpopo
UNESCO	The United Nations Educational, Scientific and Cultural Organisation
UNISA	University of South Africa
UNIVEN	University of Venda
UP	University of Pretoria
UZ	University of Zululand
VUT	Vaal University of Technology
WITS	University of Witwatersrand

CHAPTER 1

BACKGROUND TO THE STUDY

1.1 INTRODUCTION

Higher education in South Africa (SA) is in great demand as it is presumed that a university degree will contribute to the social and economic well-being of both the individual and the country (Department of Higher Education and Training [DHET], 2013a). The National Development Plan 2030 acknowledges the importance of higher education as the key driver of the knowledge economy, connecting it with economic growth which is essential for good citizenship and it enriched and diversifies life (DHET, 2013a).

The higher education sector in SA is currently facing financial constraints due to the admission of an increasing number of students from financially disadvantaged backgrounds. In 2015, students started protesting, demanding free higher education (OECD, 2017). In addition, the unstable political situation and declining economic conditions prevailing in the country also contributes to increased financial pressure on the higher education sector. Despite these conditions, it is important for higher education institutions (HEIs) in SA to respond decisively and efficiently without sacrificing their obligation to the neighbouring countries and their international duty as set forth in the Southern African Development Community (SADC) protocol (Mello, 2013).

The SADC protocol on education and training, established in 1997, includes the international obligation of admission placements at HEIs in their countries for students from the SADC nations (Southern African Development Community [SADC], 1997). A suggested 5% foreign participation is recommended (SADC, 1997). SA reached the target of 5% in 2003 and maintained it over the years that followed (International Education Association of South Africa [IEASA], 2016). The number of international students grew from 12 600 international students, from an overall student total of 364 508 in 1994, to 72 999 international students from the overall student total of 969 155 in 2014, which is 7.4% of the total enrolment of students at public HEIs (IEASA, 2016). The inflow of international students brings a range of benefits to the host country

(Smith & Khawaja, 2011) and thus makes a valuable economic contribution towards the country and its economy (Aloyo & Wentzel, 2011). In addition, the chief executive of the Cape Town Tourism, asserted how international visitors, which mostly consist of international students, financially profited the tourism and non-tourism sectors in 2015 by contributing R108.8 billion to the SA economy (Hughes, 2017). The international students do not only boost the local economy by bringing foreign revenue (Aloyo & Wentzel, 2011), but they also provide financial benefits to the host HEIs, contribute diverse cultural perspectives, and drive research, teaching and innovation (Lee, Paulidor & Mpaga, 2017).

The universities in SA depend on government subsidies and student fees as their primary sources of revenue (Ntshoe & De Villiers, 2013). The universities receive government subsidies for both national and international students at the same rate (IEASA, 2015). However, for the last decade, the overall SA government subsidies have decreased as a component of total university income from 49% to 40% (Groundup, 2015). As a result, the universities have had to increase their tuition fees to make up for the shortfall in government funding (OECD, 2017).

In light of the above, it is expected that the SA government subsidies may continue to decline in the future. It was recommended in 1999 (Ramphela, 1999) that a subsidy policy, that differentiates South African and international students, is implemented, as the absence of a subsidy policy created tension between the international and South African students as well as between institutions. The tension is caused by the SA students claiming that the international students take their place in education, accommodation or public health services (Aloyo & Wentzel, 2011) and bursaries, in particular postgraduate bursaries. However, at present the current funding policy does not exclude the international students from the government subsidies paid to the universities (Cilliers, 2017).

In April 2017, the SA government drafted a policy framework aimed at the internationalisation of higher education in SA (DHET, 2017a). However, no subsidy or funding policy for international students was included in the framework. Therefore, if a new policy on the subsidy or funding is implemented, the SA government may decide not to subsidise the international students any longer, as it is one of the SA government's priorities to ensure that no national academically deserving students are

excluded from the admission to higher education (DHET, 2013b). The Fees Commission report (2017), released to the public on 13 November 2017, found that SA does not currently have the funds to provide free higher education. The DHET would need an additional R40 billion annually to provide free higher education (Nhlabatha & Stone, 2017). The findings and recommendations in the Fees Commission report (2017) did not include international students. Therefore, while possible cuts to the international students' subsidies are not included in the Fees Commission report (2017), this can still come up as the SA government tries to source additional funds for SA students.

It is important that the international students continue to be included in government subsidies as the assumption is that the exclusion of the international students from subsidies may have a significant impact on the universities. The fees for the international students will increase immensely which could result in the decline of international student enrolment growth as the international students might opt to apply at universities outside SA where the fees are affordable. For this reason, the financial impact on the Nelson Mandela University will be examined should the exclusion of international students from the SA government subsidies be implemented.

Previous research focused on the economic benefits contributed by the international students to SA (Aloyo, 2011; Aloyo & Wentzel, 2011; Snowball & Antrobus, 2006; Smith & Khawaja, 2011; Vickers & Bekhradnia, 2007). Previous research analyses the different subsidy frameworks in SA (Steyn, 2002; Akor & Roux, 2006; Mubangizi, 2005; Styger, Van Vuuren & Heymans, 2015) over the years for the higher education sector and includes the review and proposals (DHET, 2013a; Council on Higher Education [CHE], 2016) for funding the universities by increasing the government subsidies.

This study will provide the SA government and universities with insight on the financial impact on the Nelson Mandela University if the government subsidies for international students are discontinued. Based on the findings of the published research noted above, it is imperative that these parties are aware of the impact of drastic policy changes if international student subsidies are discontinued. This will aid the universities in their appeal to the SA government not to implement such a policy, as it could ultimately harm the economy.

1.2 LITERATURE OVERVIEW

Worldwide, governments face challenges in providing public resources to meet the demand for education beyond secondary level. Many governments and other bodies also seek innovative solutions for financing tertiary education (Salmi & Hauptman, 2006). Non-education needs, such as better health care, housing, transportation, livelihood improvements and basic education create pressure for governments to meet these demands; hence, tertiary education is often far from the highest priority for public funding around the world and especially in developing countries (Salmi & Hauptman, 2006).

In 1994, the SA government established a funding model that provides for 54% of funding for universities (Nelson Mandela Metropolitan University [NMMU], 2015). However, this has proved unsustainable, especially in the face of an economic downturn (NMMU, 2015). For the past 15 years, since 2000, government funding has declined to 40% of the universities' total income (OECD, 2017). In comparison with other countries, the level of government funding available for higher education in SA is relatively low (DHET, 2013a). According to the National Treasury, the SA government spent approximately 1.5% of gross domestic product (GDP) on higher education and training during the 2016/17 financial year (Fees Commission Report, 2017). However, government subsidies represent only 0.6% of the GDP spent on higher education and training (Fees Commission Report, 2017) which does not compare favourably with the Organisation for Economic Cooperation and Development (OECD) countries which contribute over 1% of the GDP in respect of university subsidies (Fees Commission Report, 2017).

The DHET allocates funds to the universities in the form of block grants and earmarked grants. Block grants are defined as lump sum payments (Jongbloed & Vossensteyn, 2016) to cover the operational expenses and teaching and learning activities of the universities which are controlled by the university council and university management (DHET, 2014). The block grant consists of an estimated 70% of the total SA government budget allocation of funds to universities (DHET, 2014). The block grants consist of the following:

- Teaching input grants

- Teaching output grants
- Research output grants
- Institutional factor grants

In contrast with the block grants, earmarked grants are not university council-controlled funds, as it must be used for a specific purpose (DHET, 2014). The earmarked grants include the following:

- Teaching and development
- Foundation provision grant
- Research development grant
- HDI development grant
- National student financial aid scheme grant
- Veterinary sciences grant
- Infrastructure and efficiency grant
- Merger multicampus grant
- New universities
- The national institute of human and social sciences
- The African institute for mathematical sciences

It is important to understand how the government subsidies in the South African higher education system operate in order to justify the research question (refer to Section 1.3) and the objectives (refer to Section 1.4). The literature review section in Chapter 2 provides detailed information about the SA university funding model.

In the context of the literature discussed in the foregoing sections, the next section outlines the research question of this research.

1.3 RESEARCH QUESTION

In view of the literature outlined in the foregoing sections, it is evident that the SA government subsidies are an important source of income for the universities. In this research, the Nelson Mandela University's financial stability will be examined to determine the potential financial impact if international students are excluded from the

university funding model of the SA government. Thus, the research question of this study is as follows:

Will the exclusion of international students from the SA government university funding model have an adverse financial impact on the Nelson Mandela University?

The following section provides detail on the objectives formulated in order to answer the research question (Section 1.3) of the research.

1.4 RESEARCH OBJECTIVES

1.4.1 Primary objective

As indicated in the introductory section, the primary objective of the study is to determine the financial impact on the Nelson Mandela University if the international students are excluded from the SA government subsidies.

1.4.2 Secondary objectives

In order to give effect to the primary objective, the following secondary objectives have been formulated:

- To provide a literature background of the SA government university funding model which includes the current funding model (Chapter 2).
- To provide an overview of the trends of the government subsidies distributed to South African universities over the years (Chapter 2).
- To provide an overview of the Nelson Mandela University in respect of internationalisation and financial sustainability (Chapter 3).
- To motivate and describe an appropriate research methodology for the study (Chapter 4).
- To analyse and interpret the data obtained and to report the results of the research (Chapter 5).
- To summarise and conclude the study with recommendations (Chapter 6).

In order to address the research question and associated research objectives (Sections 1.3 and 1.4), the following section briefly outlines the research methodology for this research.

1.5 RESEARCH METHODOLOGY

This section outlines the research methodology applied to answer the research question and meet the objectives of this study. The methodology of this study is based on analytical research which is concerned with information that is already available. The researcher analysed the information to make a critical evaluation and present the key results (Kothari, 2004). Secondary data analysis was applied as the research method of this study.

Secondary research is employed when researchers use the existing data to answer research questions that were not previously addressed (O'Leary, 2014). Wahyuni (2012: 73) states that secondary data include internal publications and data relevant to the topic that is being researched and that are publicly available to the researchers.

The literature review of this study includes secondary data in order to validate the aspects supporting this research study. Electronic research tools, such as Google searches, Google Scholar, Council on Higher Education (CHE), Centre of Higher Education Trust (CHET), Higher Education Management Information System (HEMIS) which publicises South African Higher Education open data, Nelson Mandela University online library services and dissertation abstracts, were used in order to assist with the literature review.

The secondary research attempted to build an understanding and background of the government subsidies in HEIs and the factors affecting the financial stability of the Nelson Mandela University is provided. The student enrolment information and government subsidies paid to universities were collected in the form of secondary data, which is available from the DHET and HEMIS. It includes the previous data collected by the researchers that will assist in answering the research question.

The data on the financial indicators of the Nelson Mandela University is open to the public in the annual reports published on the university's website. The student enrolment data and government subsidies generated by the international students for

the Nelson Mandela University were obtained and compiled by the Director of Management Information, Dr Charles Sheppard. Chapter 4 provides a more detailed discussion of the research methodology chosen for this research. The next section provides the definitions of key terms that are used throughout the treatise.

1.6 DEFINITION OF KEY TERMS

This research study includes several key concepts. These concepts are defined and considered below.

Earmarked grant is a grant allocated to an HEI that should be used for a specific purpose designated by the Minister of Higher Education and Training (DHET, 2013a).

Full-time equivalent (FTE) enrolments measure a student's actual course load (Centre for Higher Education Trust [CHET], 2017).

Government or state subsidies relate to monetary assistance granted by the government to enterprises or institutions based on their production activities (Statistics South Africa, 2015).

Higher education refers to all learning programmes leading to qualifications higher than Grade 12 or its equivalent in terms of the National Qualifications Framework, as defined in the South African Qualifications Authority Act, 1995 (Act No. 58 of 1995) and includes tertiary education, as defined in Schedule 4 of the Constitution, 1996 (Act No. 108 of 1996) (Republic of South Africa, 2003).

Internationalisation of higher education refers to the process driven to incorporate intercultural, international and global dimensions in higher education with the purpose to advance the goals, functions and delivery of higher education which result in the quality of education and research (DHETa, 2017).

International student is defined as a student who is not a South African national and thus not in possession of a South African identification book at the time of registration (DHET, 2017a).

National Student Financial Aid Scheme (NSFAS) provides financial aid to South African students, using the funds provided mainly by government departments and public entities (NSFAS, 2005).

Non-SADC students are international students from African countries that are not listed on the SADC country list or any other country.

Southern African Development Community (SADC) is an intergovernmental organisation with the goal to achieve development, peace and security and economic growth, to alleviate poverty and to enhance the standard and quality of life of the peoples of Southern Africa. The SADC includes the following member countries: South Africa, Angola, Botswana, Democratic Republic of the Congo, Lesotho, Madagascar, Mauritius, Malawi, Mozambique, Namibia, Seychelles, Swaziland, Tanzania, Zambia and Zimbabwe (SADC, 2012).

South African University Funding Model refers to the distribution of government grants to HEIs which is based on national planning and policy priorities, funds made available in the national higher education budget and approved enrolment plans of the HEI (DHET, 2013a).

The scope of the study is outlined in the following section.

1.7 SCOPE OF THE STUDY

This study was limited to determining the financial impact on the Nelson Mandela University if international students are excluded from the SA government university funding model. This was evaluated by analysing the SA government subsidies for the Nelson Mandela University and comparing the total university subsidy with the international students' subsidies for the period of 2011 to 2015. Secondary data, which include the student enrolments, non-research graduates and research master's and doctoral graduates, were obtained from the DHET and Dr Charles Sheppard of the Nelson Mandela University. The calculation of the international students' subsidies for the Nelson Mandela University for the period of 2011 to 2017 was performed by Dr Sheppard, Director of Management Information at the Nelson Mandela University. Dr Sheppard provides the DHET with the data for the Nelson Mandela University and were willing to perform the calculation of the government subsidies allocated to the

international students for the period of 2011 to 2017 for the purpose of this study. The data for the government subsidies for the international students at the Nelson Mandela University were accessible and the researcher could easily meet with Dr Sheppard to obtain the data, which is the reason for selecting this university as the case of research. The following section outlines the structure of the research.

1.8 STRUCTURE OF THE RESEARCH

In order to provide structure for the research, the following section outlines the layout of the various chapters of the treatise.

Chapter 1: Background to the study

This chapter gives an introduction to the study and explains the background and aim of the study. It defines the research question (Section 1.3) and the associated objectives (Section 1.4) of the study. The definitions of the key concepts are provided and the scope of the study and structure of the research are outlined.

Chapter 2: Literature review

This chapter provides an overview of the background of the SA government university funding model and the current university funding model. The funding mechanisms applied in other countries are provided and a detailed outline of the different government subsidies paid to the universities are explained in order to have an understanding of how the SA funding university model operates. The statistical sources obtained from the DHET, which used the data compiled by HEMIS, outlines the comparison of the universities' sources of income which illustrates the dependence on student fees and government subsidies.

Chapter 3: Nelson Mandela University

This chapter addresses the financial sustainability of the Nelson Mandela University, the internationalisation at the university and the student enrolment trends for both the national and international students. In addition, the factors affecting the financial stability of the Nelson Mandela University are provided

Chapter 4: Research methodology

This chapter covers the research methodology and the research methods applied in the study.

Chapter 5: Research results

This chapter presents the interpretation of the secondary data analysis construed through tables and graphs. The analysis was achieved by performing a detailed breakdown of the secondary data of the international students' subsidies for the period of 2011 to 2017, generated from teaching input, teaching output and research output at the Nelson Mandela University.

Chapter 6: Conclusions and recommendations

This chapter summarises the research results of the secondary data analysis presented in Chapter 5 and provides the limitations of the research and recommendations for future research.

1.9 CHAPTER SUMMARY

This chapter outlined the proposed study by explaining the background and aim of the study. This chapter provided a motivation and justification for the importance of the research question; thus, an overview of the importance of government subsidies in higher education was outlined. In addition, the chapter provided the scope of the study and defined the research question, the primary objective and secondary research objectives that guided the research for the study and the justification thereof. Furthermore, the chapter outlined the research methodology used for the research study.

The following chapter provides the literature review which includes an outline of the background of the SA government university funding model and the current university funding.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

The previous chapter outlines the proposed study with an overview of the importance of government subsidies in higher education. The objective of this chapter is to provide a literature background of the South African university funding model and the current funding framework. It is important to be familiar with the South African funding model for HEIs as it contributes to the justification of the research question (refer to Section 1.3). In addition, the trends of the government subsidies for the universities over the recent years are considered and a brief discussion of how the funding mechanisms operate in other countries is provided.

In recent years, the manner of allocating public resources to HEIs has shifted (Salmi & Hauptman, 2006) from the traditional negotiations of budgets, ad hoc budgets and categorical funds towards funding formulas that aim to insulate the allocation decisions from political pressures and promote positive institutional behaviour (DHET, 2013a).

The government allocations to HEIs include the following three main mechanisms that follow an international trend, according to the DHET (2013a:117):

- A block grant based on a formula used for instruction, research and operational expenses.
- Allocations to contribute to a national loan or grant scheme for financial assistance to students, such as the NSFAS.
- Ad hoc earmarked allocations used for infrastructure development and specific research projects of national importance.

This literature review provides insight into the following:

- A literature review of the South African university funding model
- The South African university funding model for international students
- Trends of state subsidies for South African universities
- The funding approach used in other countries

The next section provides a brief overview of the SA university funding model.

2.2 THE SOUTH AFRICAN HIGHER EDUCATION FUNDING MODEL

Internationally, the governments generally apply the following three approaches to allocate funding to HEIs (DHET, 2013a):

- Incremental funding – refers to line-item budgeting and involves making incremental or subtractive adjustments to the previous year's allocations.
- Formula-based funding – refers to funds that are allocated to different HEIs based on formulas that are determined by historical data, enrolment and graduation data, anticipated trends, research outputs and negotiated political agreements.
- Performance-based funding – refers to the assessment of the performance of the HEI whereby its outputs determine the funding. The aim of this type of funding is improved efficiency, accountability and quality. The types of performance-based funding include performance-based contracts or service-level agreements, performance measures and competitive funds (Salmi & Hauptman, 2006).

In SA, the formula-based funding approach is applied to HEI funding. Salmi and Hauptman (2006:10) conducted a study on the evaluation of the allocation mechanisms for tertiary education and stated that the formula-based funding approach varies based on the factors used in their development and the type of organisation that developed the formula. Funding formulas are influenced by the following factors (Salmi & Hauptman, 2006):

- Staff or student inputs - many governments, such as European governments, make use of the staff-based formula, where measures that are more refined are used, such as the number of professors or lecturers with a doctor's. The basis for allocating funds is the number of staff or staff salaries at each institution. Over time, the formula designers moved away from determining the allocation of funds on the number or qualifications of staff to using the numbers of students which can be calculated on a retrospective or prospective basis.

- Cost per student – most of the funding formulas are based on the number of enrolled students multiplied by the cost per student.
- Priority-based funding – refers to funding for relevance. This type of funding allocates higher levels of funds to the fields of study considered to be of great relevance.
- Performance-based formula components – this type of funding is based on the number of year-end degree recipients rather than the number of enrolled students.

In the most countries, political entities, which include chief executives, legislatures, or the bureaucracies that report to them, design and implement the funding formulae and are responsible for the negotiations between the government and HEIs (Salmi & Hauptman, 2006). In SA, non-elected administrators, who are not affiliated with any political entity, have independence in devising allocation processes and procedures (Salmi & Hauptman, 2006).

The DHET (2013a:118) noted that the formula-based funding approach is a way of allocating resources fairly and guards against political competition and lobbying, which is popular in the incremental funding approach. Steyn and De Villiers (2005:12) conducted a study on the public funding of higher education in SA by means of a formula and stated the following benefits which are also found in the report of the DHET (2013a:118):

- It ensures fairness and the objective allocation of funds.
- It is considered as a contract between the higher education and Ministry of Education (MoE).
- The autonomy of an institution is greatly recognised.
- The rules of the funding framework are known in advance, which encourages an institution to efficiently plan for medium term or long term.
- It is flexible – fluctuating factors are taken into consideration and can be accommodated.

Despite the advantages of the formula-based funding approach, Steyn and De Villiers (2005:11, 12) identified the following weaknesses:

- The data are only as accurate as the data on which they are based.
- The effectiveness of the formula can become eroded over time as loopholes can be discovered in the composition of the formula. Hence, the formula should be scrutinised at least every five years.
- Adjustments to the formula can be caused by external factors, such as changes in the economic environment.

This section provided an overview of the South African higher education funding model. The current state subsidy and a brief discussion of the history of the funding frameworks are considered in the next section.

2.3 CURRENT UNIVERSITY FUNDING MODEL IN SOUTH AFRICA

Limited research exists on the current university funding formula model used by the SA government (Styger et al., 2015). The proposals for the formula in the SA funding model has been slow over the years, hence the limited research available. The current funding framework was introduced in 2003 and came in effect in the 2004/2005 financial year, which was published in terms of the Higher Education Act, 1997 (Act No. 101 of 1997), in the Government Gazette (No.1791). The current funding framework includes the following features, as stated in the Report of the Ministerial Committee for the Review of the Funding of Universities (DHET, 2013a):

- Affordability – funds are allocated based on the government's affordability to spend on higher education and according to the needs and priorities of each institution.
- Distributive mechanism – funds are distributed to individual institutions in accordance with the government budget, government's policy priorities and approved national higher education plans.
- Cost sharing – government, students and their families share the costs of higher education, as it generates public and private benefits.

A study conducted by Styger, Van Vuuren and Heymans (Styger et al., 2015), regarding the government funding framework for South African HEIs, compared the current funding framework to the previous formula-based funding approaches which was applied since the 1950's. The study concluded that the core aspects that

determine the funding of higher education for the four, different formula-based approaches, implemented between 1953 and 2004, remained the same. The four funding formulas used since 1953 are as follows (Styger et al., 2015):

- The Holloway formula – implemented in 1953 until the early 1970s. The funding was determined by three main elements, namely basic teaching (exclude student numbers), standard teaching (partially include student numbers) and staff living expenses compensation (implemented from 1959).
- The Van Wyk de Vries formula – implemented in 1977. The important elements of the Holloway formula remained, however, the weighted number of students and standardised norms for the posts of academic staff were first expressed with the Van Wyk de Vries formula.
- The SAPSE formula was implemented in 1984 and revised in 1993. The funding formula was based on student input determined by full-time equivalent (FTE) enrolments and FTE credit students, which were then weighted according to the course level. The Classification of Educational Subject Matter (CESM) was introduced by the SAPSE formula. The SAPSE formula also made provision for equipment replacement, library expansion, and maintenance of residences and infrastructure. The universities could also generate subsidy from output parameters determined by the module credits completed by the students and research published which included approved or accredited articles, patents and books.

The revised SAPSE formula was applicable from 1993 to 2003 to determine the subsidies for HEIs. The earmarked funding was introduced in 1993 at the time of the revised SAPSE formula. The earmarked funding was used to fund any additional expenses of the HEI separately from what was included in the SAPSE formula. The following expenses were included in the earmarked funding (Styger et al., 2015):

- Land and buildings (fixed asset projects)
- Municipal rates – payable on receipts provided by the higher education institution
- NSFAS – assisting students with loans for higher education
- Redress – institutions that were impaired by historical inequalities benefited

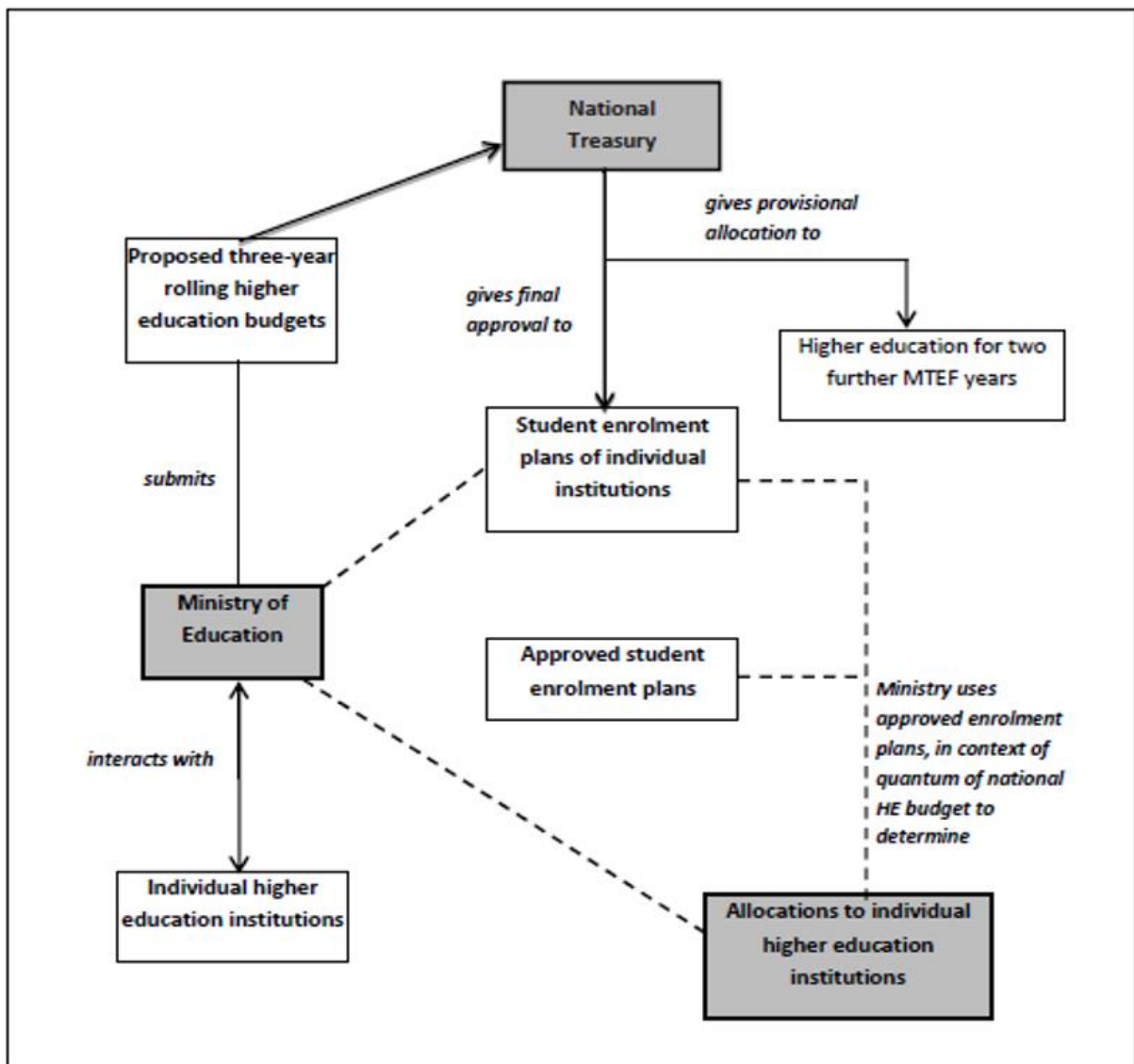
- Teacher training colleges – ad hoc funds were allocated for merging colleges and universities.
- Other earmarked funds included gratitude payments and inter alia funds which included the payments of vehicle schemes for medical specialists.

Styger et al. (2015:260) identify a change in some principles, such as weighted student numbers, which changed the calculation of the students. Funding, determined by student intake, student output and research output (Styger et al., 2015) remained the basis for funding.

Akor and Roux (2006:422) focused their study on the funding framework for HEIs, the planning process of the funding framework, funding problems and the effects thereof. The current funding framework requires that the Minister of Higher Education and Training, issue an annual statement which ensures the stability of the funding framework (Akor & Roux, 2006). The article of Akor and Roux (2006:425) agrees with the following main features which are found in the MoE report on the essential factors involved in the planning process of the new funding framework (Ministry of Education, 2004):

- The MoE analyses each institution's actual student enrolment data across four to five years and the student output performance. The MoE also reviews any recent plans submitted by the institutions that include their three-year rolling plans, equity and operational plans.
- The MoE gives each HEI an indication what its funded student enrolment size and shape is likely to be for the next cycle of funding years. An HEI has the opportunity to respond to the proposals and to submit amended proposals that are discussed with the institutions concerned.
- The MoE sets rolling student enrolment planning and rolling totals of funded FTE student places for each institution for a specified planning period. The approved plans per institution are consolidated into a system-wide total of FTE student places to be funded.
- The approved enrolment plans are subject to revision each year based on changing external circumstances or performances.

The following diagram from the DHET (2014:125) report illustrates how the planning process becomes integral to the government funding process.



Source: (DHET, 2014:125)

Diagram 1.1: Integration of Planning and Government Funding Process

The following are key steps of the integrated planning and funding process as outlined in Diagram 1.1 (DHET, 2014:125):

- Step 1 – after interacting with the HEIs, the MoE submits budget proposals to the National Treasury.
- Step 2 – the National Treasury provisionally approves three-year rolling budgets for the higher education system and finalises the budget for higher education for the next financial year.

- Step 3 – the allocation of grants to HEIs for the funding year is approved by MoE and is based on the total amounts allocated by National Treasury and the approved enrolment plans for each HEI.

The distribution of government funding to higher education is linked to the national and institutional planning which makes the current funding framework a goal-orientated mechanism for the government to allocate funds to the HEIs (DHET, 2014). Funding is linked to the national policy goals and to the performance of the universities (IEASA, 2015). The current funding framework includes two main elements, namely blocks grants and earmarked grants (Styger et al., 2015). Direct funding or block grant allocations to the universities are based on the graduates and publication outputs, teaching outputs weighted by qualification level, student numbers weighted by study fields and course levels (IEASA, 2015). The following section discusses these two main elements in detail.

2.3.1 Block Grants

Steyn and De Villiers (2005: 23) define block grants as undesignated amounts, which cover the operational costs of the universities that are linked to the provision of teaching, and research-related services. Block grants are generated by formulas, grids and weights within the funding framework. This type of funding is called 'block' grants as it is not earmarked or allocated for any specific purpose and can be used at the discretion of the council of each HEI (DHET, 2013a). The block grant consists of four components, namely:

- the teaching input grant
- the teaching output grant
- the research output grant
- the institutional factor grants

The following section includes a brief overview of each component of the block grant.

2.3.1.1 Teaching input grants

The universities receive teaching input funding from the SA government for delivering teaching services and for the supervision of postgraduate students, which includes

master's degrees and doctorates (DHET, 2014). The teaching input funding consists of the largest component of the total funding allocation, which plays an essential role in providing financial stability to the HEIs (DHET, 2014). A funding grid is used to calculate the teaching input grant for distribution to the universities which is based on student enrolments (CHE, 2016). Each year, the DHET allocates a certain number of FTE student places to each university and the grid assigns a funding weight which is based on the cost of teaching and research supervision in different areas of study (CHE, 2016). The HEIs are allowed to admit more students than the places allocated for the funding of the teaching grant, however, the DHET will not allocate funding for the excess of student enrolments (CHE, 2016).

The following steps are involved when calculating an institution's teaching input grant (Ministry of Education, 2004:6, 7):

- The total of FTE students for year n minus two is used as a substitution for its approved total of the FTE students for year n . Adjustments are made to rectify data errors and to make the year n minus two total consistent with student rolling plans to meet the requirements of approved plans and other ministerial conditions.
- After adjustments are made, the FTE total for year n minus two is passed through the funding grid and the MoE approves on the basis of a three-year rolling basis. The funding grid categorises the weighted FTE enrolments per course material, course level and instruction delivery mode.

As outlined in Table 2.1 and 2.2 (DHET, 2014), the input grant is allocated based on a funding grid containing different weights for the groups of subject matter, qualification levels and offering type.

Table 2.1: Weighting factors for teaching inputs 2015/16 and 2016/17

Fund Group	Undergraduate & equivalent		Honours & equivalent		Master's & equivalent		Doctoral & equivalent	
	Contact	Distance	Contact	Distance	Contact	Distance	Contact	Distance
1	1.00	0.50	2.00	1.00	3.00	3.00	4.00	4.00
2	1.50	0.75	3.00	1.50	4.50	4.50	6.00	6.00
3	2.50	1.25	5.00	2.50	7.50	7.50	10.00	10.00
4	3.50	1.75	7.00	3.50	10.50	10.50	14.00	14.00

Source: (DHET, 2014:6)

Table 2.2: Funding groups 2015/16 and 2016/17

Funding Group	Classification of Educational Subject Matter (CESM) categories
1	07 education, 12 law, 18 psychology, 19 public administration and services
2	04 business, economics & management studies, 05 communication & journalism, 06 computer & information sciences, 11 languages, linguistics & literature, 17 philosophy, religion & theology, 20 social sciences
3	02 architecture & built environment, 08 engineering, 10 family ecology & consumer sciences, 15 mathematics & statistics
4	01 agriculture & agricultural operations, 03 visual & performing arts, 09 health professions & related clinical sciences, 13 life sciences, 14 physical sciences

Source: (DHET, 2014:7)

The MoE report states the following important concept regarding the teaching input funding grid as it has a direct impact on the actual amounts allocated to the universities (Ministry of Education, 2004).

- The allocated grants, approved by the Minister to higher education for the specific year, should consider the total amounts allocated to higher education by the National Treasury.
- The enrolment plans that were approved for each HEI should also be considered.

The teaching output grant is outlined in the next section.

2.3.1.2 Teaching output grant

The teaching output grant is allocated to completed graduates, which motivates the success of increased output rates and which is generated by the universities ensuring that the students obtain their qualifications (DHET, 2014). The teaching output grants are based on historical data (CHE, 2016). The output units can be calculated for year n minus two by using the weighted number of graduates per qualification for year n minus two (Styger et al., 2015), in accordance with the grid in Table 2.3 which is approved by the MoE on a rolling three-year basis:

Table 2.3: Funding weightings per student graduate head for contact and distance programmes

Teaching output per programmes	Weightings
First certificates and diplomas of 2 years or less	0.5
First diploma and bachelor's degrees: 3 years	1.0
Professional 1st bachelor's degree: 4 years and more	1.5
Postgraduate and post-diploma diplomas	0.5
Postgraduate bachelor's degrees	1.0
Honours degrees/higher diplomas	0.5
Non-research master's degrees and diplomas	0.5

Source: (DHET, 2014:9)

The graduates include all the students up to coursework master's graduates. It should be noted that research master's and doctoral graduates are funded within the research output grant which are discussed in the following section.

2.3.1.3 Research output grant

The research output grant is calculated by means of a formula and is based on publications and graduated research students (CHE, 2016). Thus, this type of funding encourages research productivity which includes the publication of quality peer-reviewed articles and books, as well as master's and doctoral graduates (DHET, 2014).

The highest funding weight is allocated to the doctoral students category in order to encourage the need of graduates for research and innovation and future academic

staff (DHET, 2014). Table 2.4 includes the weightings applied in order to obtain funded research output units for a university.

Table 2.4: Funding weightings for research outputs

Categories of research output	Weightings
Publication units	1
Research master's graduate head count	1
Doctoral graduate head count	3

Source: (DHET, 2014:10)

The publication units include DHET-approved journals, books and conference procedures (Styger et al., 2015). The budget allocated by the state to the HEIs for the research output grant is not a fixed amount but is performance-driven. Annually, the ministerial statement on university funding includes, in the announcement, what the allocation of the research output to the HEIs will be for the year (CHE, 2016). The institutional factor grant is outlined in the next section.

2.3.1.4 Institutional factor grants

The institutional factor grant comprises of two components, namely the institutional factor for size and the institutional factor for disadvantage (DHET, 2013a).

Grants related to the size of the institution are allocated to the HEIs taking into account the economies of scale (Steyn & De Villiers, 2005). The grant applies to an FTE enrolment of less than 25 000, as it is more expensive to provide the full range of services at a small university compared to a larger university. Hence, smaller universities are compensated for the additional costs involved to provide a full range of services to the students, which is costlier for the smaller institutions (DHET, 2013a).

The institutional factor grant for the disadvantaged is determined, first, by the percentage of disadvantaged students enrolled (Styger et al., 2015). According to the MoE (Ministry of Education, 2004), the disadvantaged students are deemed to be South African citizens who are black and coloured enrolled for either contact education or distance learning. In order to qualify for the disadvantaged grant in year n , an institution should have more than 40% of their number of FTE contact enrolled students from the disadvantaged group for year $n-2$ (Styger et al., 2015). The four

components of the block grant were provided. The next section outlines the other element of the SA university funding model, namely earmarked grants.

2.3.2 Earmarked Grants

The government allocates earmarked grants or infrastructural funding for the institutions that have high numbers of poor students or small institutions (IEASA, 2015). Earmarked grants are funds designated by the Minister and must be spent for a specific purpose and include the following categories (Steyn & De Villiers, 2005:37):

- The National Student Financial Aid Scheme (NSFAS)
- Teaching, research and community development
- Interest on and payment of loans approved and guaranteed by the State before 1 April 1991
- Institutional restructuring, including mergers and the recapitalisation of institutions
- The higher education quality assurance framework
- Research development grant (from 2013/2014) (Styger et al., 2015:276).

The institutional restructuring grant assists the HEIs that merged during 2004 and 2005 and allocates the funds to the institutions after considering the academic and business plans of the merging institutions (Ministry of Education, 2004). The NSFAS receives the bulk of the allocation of the earmarked budget and a small portion is made available for the other earmarked funding, such as the interest and redemption payments on the approved government loans (Ministry of Education, 2004).

This section provided an overview of the South African funding model for the HEIs and a brief discussion of the historical funding frameworks implemented since the 1950s. The following section provides an overview of the funding framework for the international students in South African universities.

2.4 THE SOUTH AFRICAN FUNDING FRAMEWORK: INTERNATIONAL STUDENTS

The SA government subsidises the international students at the same rate as the South African students (IEASA, 2015). According to Cilliers (2017), no funding policy

is currently available, which excludes the international students from the block grant. The international students are, therefore, included in the following block grants:

- Teaching input grant (based on enrolments)
- Teaching output grant (based on graduations)
- Research output grant (based on approved publications and postgraduate research degree graduates)

The international students are excluded from the following grants:

- Institutional grant (based on historically disadvantaged student enrolments)
- Earmarked grant (NSFAS applies to South African citizens only).

Snowball and Antrobus (2006:168) conducted a study on whether the positive economic impact justifies the inclusion of the international students at local universities. The focus of the study was to compare the expenditure effects of the international students to the local students enrolled at Rhodes University for the 2005 academic year. Snowball and Antrobus (2006: 168) state that despite the fact that the international students pay a levy or premium over and above the tuition fees paid by local students, the real cost involved does not cover their education, hence, indirectly they are still using government subsidy that should be available to the South African students (Snowball & Antrobus, 2006).

The tuition charged by the HEIs to the international students differ between the institutions and depend on how the institution classifies the international students. All the institutions include a premium added to the tuition fees (Aloyo & Wentzel, 2011). The University of Cape Town, for example, charges the SADC students the same tuition fees as the South African students (Aloyo & Wentzel, 2011), whereas the Nelson Mandela University charges a modest foreign admin fee in addition to tuition fees for international students from the SADC region.

Aloyo and Wentzel (2011) conducted a study on the financial impact of the international students on the South African economy. Aloyo and Wentzel (2011:391) conducted the study at six universities with the highest admission of international students in SA (Aloyo & Wentzel, 2011). In the year 2011, when this study was

conducted, the quantifiable expenditure impact on the South African GDP was estimated at R3.1 billion per annum which includes tuition fees, personal spending and administrative processes for the international students (Aloyo & Wentzel, 2011). The benefits from the inflow of international students include the inflow of foreign currency and increased expenditure which impacts the demand for labour that can result in increased wages for local employees (Aloyo & Wentzel, 2011). Aloyo and Wentzel (2011) concluded that the financial benefits that the international students contribute to the South African economy are sufficient reason to encourage international student inflows to SA.

The DHET subsidy funding model applicable to the South African students, in particular, the teaching input, teaching output and research output block grants, are also applicable to the international students. Therefore, the universities generate the same income for both the South African students and the international students from the three block grants mentioned above. The following section highlights the trends of the state subsidies for the HEIs and their dependence on state funding.

2.5 TRENDS OF STATE SUBSIDIES FOR SA HIGHER EDUCATION INSTITUTIONS

The government subsidies are the most important sources of financial support for South African Universities in order to support their operating and capital expenses (Cloete & Wangenge-Ouma, 2008). The universities in SA have been forced to increase their tuition fees on the basis of government subsidies declining in the last decade (GroundUp Staff, 2015). However, the government subsidies paid to the universities for the financial year-end 2011/12 to 2015/16 indicate otherwise. According to the report on post-school education and training for 2015 (DHET, 2015), the subsidies paid to the universities were as follows:

Table 2.5: Government subsidies paid to universities

DHET Financial year	Total Subsidy Paid to public HEIs (R)	Student enrolments for public HEIs
2011/12	19 354 159 000	938 201
2012/13	20 902 779 000	953 373
2013/14	22 388 767 000	983 698
2014/15	24 155 093 000	969 155
2015/16	26 342 110 000	985 212

Source: (DHET, 2015:6, 61)

The amounts in Table 2.5 indicate an increase in subsidies paid to the HEIs. However, the total national student enrolment numbers indicate whether there was an increase or decrease in state subsidies, despite the increase in monetary value from the 2011/12 to 2015/16 financial year. Interestingly, a decrease in student enrolment numbers occurred from 2013 to 2014, when the South African public HEIs had 983 698 students, compared to 969 155 in 2014. Despite the decrease in student numbers from 2013 to 2014, the DHET subsidy increased from over R22,3 billion to just over R24,1 billion. The student enrolment data includes both contact and distance learning students.

The dependence on government subsidies differs in the separate universities. As outlined in Table 2.6, some universities receive less than 30% of their total income for subsidies from the SA government while other universities receive as much as 66%. The universities that received below 30% of their total income in the 2014 academic year is the University of Pretoria (UP) 30%, Stellenbosch University (SU) 25% and 26% for the University of the Witwatersrand (WITS). The universities that received above 50% of their total income in the 2014 academic year is the Central University of Technology (CUT) 54%, the Durban University of Technology (DUT) 50%, the University of the Free State (FS) 51%, the Mangosuthu University of Technology (MUT) 51%, the Tshwane University of Technology (TUT) 55%, the Vaal University of Technology (VUT) 53% and the Walter Sisulu University (WSU) received the highest percentage of 58% of their total income from government subsidies.

Table 2.6: Government subsidies as a percentage of total source of income for universities from 2010 to 2014

	2010	2011	2012	2013	2014
University	Government subsidies	Government subsidies	Government subsidies	Government subsidies	Government subsidies
CPUT	50%	51%	50%	44%	48%
UCT	35%	37%	33%	34%	32%
CUT	55%	55%	54%	59%	54%
DUT	53%	53%	53%	50%	50%
FH	34%	39%	36%	38%	39%
FS	46%	46%	48%	46%	51%
UJ	42%	44%	41%	41%	39%
KZN	44%	46%	42%	44%	44%
UL	53%	52%	49%	45%	49%
MUT	53%	56%	52%	52%	51%
NMMU	42%	43%	42%	42%	40%
NWU	45%	43%	41%	39%	40%
UP	33%	37%	34%	37%	30%
RU	39%	39%	38%	39%	39%
UNISA	31%	33%	35%	32%	35%
SU	36%	36%	36%	33%	25%
TUT	55%	57%	56%	54%	55%
VUT	55%	52%	52%	51%	53%
UNIVEN	49%	51%	50%	46%	45%
WSU	66%	60%	63%	61%	58%
UWC	49%	49%	49%	49%	47%
WITS	25%	27%	25%	26%	26%
UZ	49%	52%	44%	46%	45%

Source: (DHET, 2015)

Table 2.7 illustrates the universities' percentages of total income received from student fees for the period of 2010 to 2014.

Table 2.7: Student fees as a percentage of total source of income for universities from 2010 to 2014

	2010	2011	2012	2013	2014
University	Student fees	Student fees	Student fees	Student fees	Student fees
CPUT	30%	32%	33%	31%	34%
UCT	26%	27%	27%	29%	28%
CUT	33%	34%	32%	34%	39%
DUT	33%	35%	33%	39%	43%
FH	31%	38%	37%	42%	46%
FS	28%	29%	31%	31%	36%
UJ	36%	40%	39%	38%	40%
KZN	24%	23%	25%	29%	33%
UL	32%	35%	38%	44%	42%
MUT	41%	40%	27%	25%	25%
NMMU	29%	29%	29%	30%	30%
NWU	28%	29%	26%	28%	31%
UP	27%	28%	27%	32%	28%
RU	36%	36%	39%	40%	40%
UNISA	43%	47%	44%	46%	49%
SU	20%	21%	24%	24%	18%
TUT	31%	31%	31%	33%	36%
VUT	35%	37%	35%	30%	30%
UNIVEN	37%	38%	37%	40%	44%
WSU	31%	33%	25%	37%	40%
UWC	26%	25%	26%	28%	28%
WITS	23%	26%	27%	29%	29%
UZ	37%	35%	36%	38%	38%

Source: (DHET, 2015)

As illustrated in Table 2.7, the lowest proportion of income received from student fees is 18% for the Stellenbosch University for the 2014 academic year and the highest proportion of income received from tuition fees is 49% for the University of South Africa (UNISA) for the 2014 academic year. In light of the above information, it is clear that the universities in SA depend on government subsidies and student fees as their primary sources of revenue.

Badat (2011:2) wrote an article on whether free higher education in SA is possible and in his article he also asserts the importance of state subsidies for the HEIs and how the state subsidies do not cover the full operating costs of the universities. As a result, the universities rely on tuition and residence fees from students, donations, subsidies from research outputs and funds received from other activities, referred to as third-stream income.

At the time of the publication of Badat's (2011:2) article, the state subsidies to SA universities amounted to R17,5 billion and the SA government needed to pay an additional R30 billion to the universities in order to support the students with tuition fees, on-campus and off-campus residence fees and student subsistence. The funds needed to fund free higher education could come from the budget used for important matters in the country, such as poverty, health, job creation, housing and other major social needs (Badat, 2011). Badat (2011:2) states that if free higher education is implemented, the SA universities would collapse if the SA government is not able to provide the shortfall in funding.

Wangenge-ouma (2012: 831) conducted a study on the tuition fees and the challenge of making higher education a popular commodity in SA. Wangenge-ouma includes factors, such as the call for free higher education, which is also the current debate in higher education. In addition, the study examined the rationale for the students' demand for free higher education (Wangenge-ouma, 2012). One of the reasons identified in the study for this debate is the insufficient financial assistance provided by the student loan fund, NSFAS, for the poor, qualified, deserving students (Wangenge-ouma, 2012). The call for free higher education is on-going and the SA government is finding it difficult to secure the funds to meet the increasing cost of higher education (Wangenge-ouma, 2012). However, despite the decline in the state funding of the HEIs, it remains an important source of income for universities (Cloete & Wangenge-Ouma, 2008).

Governments around the world use different funding frameworks when it comes to the allocation of funding to the HEIs. The following section provides an overview of the different funding approaches used around the world.

2.6 FUNDING APPROACHES IN OTHER COUNTRIES

The funding models for higher education in different countries have vast differences. The allocation of state funds are also processed through different funding mechanisms (Frølich, Schmidt & Rosa, 2010). Worldwide, governments use different approaches to allocate funds, however, the most countries make use of a funding formula and a performance-based funding approach to allocate funds to the HEIs (Salmi & Hauptman, 2006).

Salmi and Hauptman (2006:61) identified the following two general types of funding mechanisms which are used in the world:

- Direct public funding of institutions, which includes funding for teaching by means of a negotiated formula, performance-based funding, earmarked funding, combined funding for teaching and research, block grant and project funding.
- Student funding through government grants and scholarships, tax benefits and student loan funding models.

Jongbloed and Vossensteyn (2016) conducted a research on the university funding and student funding which is based on international comparisons. Jongbloed and Vossensteyn (2016) compared the funding mechanisms for the HEIs across a number of the OECD countries. Many countries finance the HEIs according to their enrolled student numbers, however, an increasing number of countries finance higher education based on funding formulas, which include measures of performance (Jongbloed & Vossensteyn, 2016).

Globally, the HEIs receive financial resources from the governments, students and other entities (Jongbloed & Vossensteyn, 2016), which is similar to the universities in SA. The core funds or block grants constitute the largest share of the income for the universities' daily operational expenses. The tuition fees paid by the undergraduate students are in the most cases fixed by the state whereas the fees for postgraduate students are set by the HEI (Jongbloed & Vossensteyn, 2016).

UNESCO statistics (UNESCO, 2014) revealed the top twenty countries around the world with the highest number of international students at the HEIs for 2014. Table

2.8 below outlines only the top five countries during the 2014 academic year, as this section only considers the top five countries' funding approaches.

Table 2.8: Top five countries with the highest number of international students

Country		Total number of international students
1	United States of America	740 482
2	United Kingdom	427 686
3	France	271 399
4	Australia	249 588
5	Germany	206 986

Source: (UNESCO, 2014)

In support of the results shown in Table 2.8, the funding approaches of each of the countries are briefly outlined next:

- United States of America (USA):* Performance-based funding and performance-based budgeting approaches are popular in different states of the USA. The universities receive the bulk of its research funds from federal agencies like the National Institute of Health and Department of Defence (Jongbloed & Vossensteyn, 2001). The universities in the USA receive an allowance for research which is included in the funding rates applicable to the student numbers in the enrolment-based formulas (Jongbloed & Vossensteyn, 2001). The most states in the USA use the actual cost per student in their funding formula instead of prospective student numbers (Salmi & Hauptman, 2006). Some states in the USA make use of benchmarking by comparing the cost structures of the institutions in other states to assist with the cost per student in their funding formulas (Salmi & Hauptman, 2006).
- United Kingdom:* The teaching grant is based on an estimated number of full-time students, which are adjusted for subject-, student- and institution-related factors (Jongbloed & Vossensteyn, 2001). The university's standard resource is derived from the total FTE student numbers enrolled, which are multiplied by a base price. Each year a funding agreement is drawn up between the HEI and the funding council, which includes the weighted student numbers being funded and the maximum student numbers that are allowed to be admitted by the HEI

to avoid financial penalties (Jongbloed & Vossensteyn, 2001). The funding councils and research councils provide research funds that are distributed to the HEI based on the quality ratings of the different academic disciplines in the universities' departments (Jongbloed & Vossensteyn, 2001).

- *France*: The universities receive funding based on the number of student enrolments (Jongbloed & Vossensteyn, 2001). The standard cost per student is determined by a funding grid which includes all the courses grouped in the grid to calculate the weightings (Jongbloed & Vossensteyn, 2001). At the time when Jongbloed and Vossensteyn (2001) conducted their research about the different university funding models, there were eighteen cost categories which are known as the *Système Analytique de Répartition des Moyens (SANREMO)* model. The HEIs receive additional funding for specific projects which is not part of the funding model but specified in other contracts (Jongbloed & Vossensteyn, 2001).
- *Australia*: The funding formula determines the university's core funds, especially where funding for teaching is concerned (Jongbloed & Vossensteyn, 2001). The funding allocated to undergraduate teaching is based on the student places negotiated between the HEIs and the MoE (Jongbloed & Vossensteyn, 2001). Funds for research are partly allocated by means of a formula known as the 'composite index' or research quantum (Jongbloed & Vossensteyn, 2001) and are based on a weighting of input and output indicators relating to research performance (Jongbloed & Vossensteyn, 2001). Since 2002, the research quantum has been replaced by the Institutional Grants Scheme which distributes funds by means of a modified formula which accounts for 60% research income, 30% research student load and 10% publications (Jongbloed & Vossensteyn, 2001).
- *Germany*: The individual federal states known as the *Länder* are responsible for the higher education funding (Hartwig, 2006). The funds are allocated based on the formula funding approach. The contractual agreements exist between the Land and the HEI in terms of financial planning security and budget cuts agreements (Hartwig, 2006). The funds for teaching and research are negotiated between the government and the HEI and are based on historical consideration (Jongbloed & Vossensteyn, 2001). It should be noted that the

university staff are appointed by the government, hence, staff remuneration is not included in the HEIs financial records (Jongbloed & Vossensteyn, 2001). In some cases, funding formulas are used to allocate non-personnel resources which is based on the number of graduates, doctoral graduates and the volume of research grants from research foundations (Jongbloed & Vossensteyn, 2001).

Altbach (2013:2) stresses the importance of the inflow of international students, as they contribute significantly to the economies of Europe, North America and Australia. According to Altbach (2013:2), 764 000 international students studying in the USA annually contribute approximately US\$22 billion to the USA economy. Australia receives about US\$17 billion from international scholars and the United Kingdom (UK) approximately US\$21 billion, which resulted in the implementation of national policies to increase the income from international students (Altbach, 2013).

Altbach and Reisberg (2013:1) further comment on the pursuit of international students in a commercialised world and how the global student mobility creates business for the host countries. They assert that an amount of US\$75 billion is contributed towards the global economy by approximately three million students that study abroad in other countries (Altbach & Reisberg, 2013). The government policy in Australia has identified international higher education, which includes foreign study in the country, as a major income stream for higher education (Altbach & Reisberg, 2013). International students studying in the UK are charged higher fees and views international education as a source of income (Altbach & Reisberg, 2013). The article concludes that there is no doubt that global student mobility is significant for the host countries, the HEIs and even individual students (Altbach & Reisberg, 2013).

In his publication on international lessons for Africa's higher education and economy, Pillay (2011:1) asserts how the state plays an important role in the funding of higher education. Pillay (2011:3) compares the state's role in three countries, namely Finland, South Korea and North Carolina. Pillay (2011:1) explains that, for example, the State funding system in Finland demonstrates the country's needs which ensure the development of their higher education system (Pillay, 2011). In contrast, the State of South Korea plays a more dominant role in the development of the basic schooling system compared to the higher education system, which makes use of private funds

(Pillay, 2011:3). The State in North Carolina serves as a substantial funding source for higher education. Pillay (2011) concludes by stressing the importance of the relationship between higher education and economic development which cannot be ignored and that consideration should be given to committing to the development of an equitable higher education system in terms of gender, socioeconomic status and region (Pillay, 2011). These arguments support the research objectives of this study. Next, a summary of the findings from the literature discussed in Chapter 2 is provided.

2.7 SUMMARY

In light of the above literature, this chapter discussed the literature against the background of the SA government funding approach for the HEIs which provided an understanding of how the current funding framework operates for both the national and international students. In addition, the trends of the government subsidies paid to the HEIs in SA were provided in order to substantiate the dependence of the HEIs on the government subsidies and tuition fees.

Government subsidies are the largest sources of income of the HEIs and the dependence on government subsidies will continue. The fact that the international students are included in the block grant, namely teaching input, teaching output and research output, could have an impact on the income for the HEIs if the subsidies in respect of international students are discontinued. The following chapter discusses one HEI in SA, the Nelson Mandela University, as a beneficiary of the SA government subsidies. The factors that contribute to the financial sustainability are considered and an overview of the student enrolment trends of the national and international students for the past few years is provided.

CHAPTER 3

INTERNATIONALISATION AND FINANCIAL SUSTAINABILITY AT THE NELSON MANDELA UNIVERSITY

3.1 INTRODUCTION

In context of the previous chapter, a detailed literature review is provided in terms of the SA university funding model and the current funding framework for the HEIs. It is noted that the HEIs depend on government subsidies and tuition fees in order to operate, as these comprise the bulk of the university income. This chapter provides an overview of the Nelson Mandela University, its stance on internationalisation and the dependence on government subsidies. In addition, the chapter provides an overview of the student enrolment trends of both the national and international students at the Nelson Mandela University, subsidies received from the SA government and the factors that contribute to the financial sustainability of the university.

3.2 THE HISTORY OF THE NELSON MANDELA UNIVERSITY

The Nelson Mandela Metropolitan University came into existence on 1 January 2005 as a result of merging the University of Port Elizabeth (UPE), Vista University and Port Elizabeth Technikon (PET) (NMMU, 2008). The merger was as a result of the government restructuring higher education with the purpose to create an integrated and coordinated higher education system regarded as an institutional type that is more diverse and differentiated (Bailey, Cloete & Pillay, 2011). Following the ten years' existence of the University, it was officially renamed on 20 July 2017 as Nelson Mandela University (Nelson Mandela University, 2017a).

The Nelson Mandela University is a comprehensive university, providing a diverse range of academic programmes and consists of seven faculties located across six campuses. A comprehensive university is a public HEI established as a result of merging a traditional university with a technikon (DHET, 2017). The seventh campus includes the recently purchased Maritime and Marine Sciences Campus (Office for Institutional Planning, 2016). The Nelson Mandela University has maintained a sound

financial position in the past years. The following section provides an overview of the financial position and factors that influence the financial sustainability of the university.

3.3 THE FINANCIAL SUSTAINABILITY OF NELSON MANDELA UNIVERSITY

In the 2015 annual report to the Ministry of Higher Education and Training, the vice-chancellor of the Nelson Mandela University stated that the financial sustainability of all the public HEIs have become a crucial area for the HE sector (Office for Institutional Planning, 2015). The factors that influence the financial sustainability of the HEIs include the increased political tensions, unfavourable economic and fiscal conditions which slow the economic growth, the weakening Rand and the weak commodity prices (Office for Institutional Planning, 2015). In addition, the zero percent increase in tuition fees for the 2016 academic year, costs associated with debt relief and the recurrent cost of the reintegration of contract workers associated with outsourced services, are the variables that influence the financial sustainability of the university (Office for Institutional Planning, 2015).

The ministerial statement on university funding for the 2015/16 and 2016/17 financial years appealed to the universities to have effective measures in place that would generate additional funds, as the SA government's budget is under constraint (DHET, 2014). In addition, the Minister of Higher Education and Training, who was Dr Blade Nzimande in 2016, announced at the 2017 university fees media briefing in September 2016, that the increase in fees should not go above 8% (Nzimande, 2016). This announcement places a larger burden on the financial sustainability of the universities, as tuition fees comprise part of the bulk of the university income to cover operational expenses (refer to Section 2.5). In addition, it was also announced at the same university fees media briefing, that the fee increase will not apply to the students from poor, working and middle-class households with an income of up to R600 000 per annum (Nzimande, 2016). The gap will be covered by the subsidy funding between the 2015 fee and the adjusted 2017 fee at the HEI. This also adds to the frustration of the universities, as it creates more administrative work and the government subsidy payments are only paid out two years later, as the subsidy payments are calculated according to year n minus two (refer to Section 2.3.1.1).

Despite the above challenges that the HEIs face in an already tight economic environment, the Nelson Mandela University remains relatively financially sound according to the 2016 annual report submitted to the DHET (Office for Institutional Planning, 2017). Table 3.1 provides a summary of the financial sustainability indicators of the Nelson Mandela University.

Table 3.1: Nelson Mandela University financial sustainability indicators for 2013 to 2016

Important Indicators	2011	2012	2013	2014	2015	2016
Government Subsidy/Total income	43.2%	48.2%	47.7%	46.8%	44.7%	48.0%
Other Income/ Total Income	56.8%	51.8%	52.3%	53.2%	55.3%	52.0%
Staff cost of total expenses	56.4%	59.0%	59.0%	58.3%	58.6%	59.0%
Student debt ratio	7.0%	6.6%	7.0%	12.0%	12.0%	23.0%
Liquidity ratio (current assets/current liabilities)	12.6%	13.4%	8.2%	8.3%	8.7%	7.3%
Sustainability ratio (total reserves/annual recurrent expenditure)	not available	1.2	1.1	1.2	1.2	1.1

Source: (Office for Institutional Planning, 2014, 2015, 2016, 2017)

It is evident from Table 3.1 that the Nelson Mandela University has maintained a strong financial position from 2011 to 2016. As illustrated in Table 3.1, the government funding increased from 43.2% in 2011 to 48.2% in 2012 of the total university income. The government subsidy decreased to 47.7% in 2013 and continued to decline to 44.7% in 2015. The government subsidy increased again in 2016 to 48% of the total university income. The other income refers to the Nelson Mandela University's own funding generated from the student fees and from third-stream income. Other income was 56.8% in 2011 and decreased to 51.8% in 2012. Other income remained consistent between 2013 at 52.3% to 52% in 2016. As the other income remained above 50% of the total income of the Nelson Mandela University, it shows that the university improved its resource mobilisation functions.

The Nelson Mandela University managed its student debtors in 2014 and 2015, where the total outstanding student debt was at 12% of the current fees. However, for 2016 the student debt provision increased to 23%.

At the beginning of the 2017 academic year, the bulk of the SA universities started off with more than R2 billion in outstanding fees owed to the HEIs (Communication and Stakeholder Liaison, 2017). The Nelson Mandela University was no exception as its accumulated debt amounted to R122,5 million at the start of the 2017 academic year, of which R99,3 million accrued during the 2016 academic year (Communication and Stakeholder Liaison, 2017). The outstanding debt was caused by conceding to students registering with outstanding debt and this added to the financial constraints of the universities' cash flow.

The above factors, especially the events surrounding the #FeesMustFall student protests that started in 2015 and that gained intensity from September 2016, have changed the focus of the South African universities on the matters of their financial sustainability (Nelson Mandela University, 2017c). Despite the positive indications from the SA government in their attempt to address the financial challenges in higher education, the universities would still need to ensure their financial sustainability by being innovative and resourceful – generating additional income.

As a result, the Nelson Mandela University has medium-term and long-term strategies in place to be implemented within the next few years, which can assist with maintaining a sound financial position and be prepared for the unforeseen circumstances. The following aspects are the three main financial strategic pillars of the Nelson Mandela University (Nelson Mandela University, 2017c:9):

- To organise and utilise financial and other resources more efficiently, effectively and economically.
- To accomplish innovative resource mobilisation at the university.
- To maximise the funding from the government for operational and capital costs.

The following section provides an overview of the Nelson Mandela University's stance on internationalisation and the international student enrolments at the Nelson Mandela University.

3.4 INTERNATIONALISATION AT THE NELSON MANDELA UNIVERSITY

As observed by the White Paper for Post-School Education and Training, internationalisation in SA has grown over the past two decades which is an indication

of “globalisation and South Africa’s return to the international community” (DHET, 2013b:39). The Nelson Mandela University supports internationalisation through the enrolment of international students, exchange of students and staff, diversification of courses, promotion of collaborative research and cultural exchange. Internationalisation is also listed as one of the principles under the core values of the Nelson Mandela University, namely to respect diversity.

The Office for International Education (OfIE) is a self-funding unit and part of the funding generated by the office is used to manage internationalisation within the Nelson Mandela University. The OfIE is a self-funding unit in the sense that the office generates its own income and does not receive any funding from the Nelson Mandela University. The OfIE receives its income from three sources, namely application fees, foreign admin and foreign tuition fees (NMMU, 2014). The approach to which student information is captured has an impact on the way the fees are structured for the international students. The international students pay differentiated fees based on from where they are and according to what they are studying. Table 3.2 shows the different categories of international students studying at the Nelson Mandela University.

Table 3.2: International Student Categories at the Nelson Mandela University

	Student type	Enrolment fee (R)	Foreign admin Fee (R)	Foreign tuition fee (R)	Module/ research Fees
<i>Undergraduate & Honours</i>					
SADC students	Y2	1 100	4 800	0	yes
Non-SADC students	Y1	1 100	4 800	17 900	yes
Refugee students (all programmes)	R1	1 100	0	0	yes
<i>Postgraduate (Master's & Doctor's)</i>					
Master's Coursework and Research	Y8	1 100	5 200	0	yes
MBA international students	X1	1 100	4 800	17 900	yes
Doctor's/Doctoral	Y8	1 100	5 200	0	yes
Postdoctoral	Y9	270	0	0	0
<i>Non-degree students</i>					
Study Abroad	Y4/Y5	550	5 600	9 600	yes
Exchange student	Y7	550	5 600	0	yes
Interns	Y6	550	5 600	0	0
English Skills student	R3/R4	550	2 400	0	16 500
Graduate Scholars	X3	0	0	0	0
Short Learning Programme	X4	270	0	0	0

Source: (Nelson Mandela University, 2017b:1)

The information illustrated in Table 3.2 allows the Nelson Mandela University to identify the origin of the country and to distinguish the different fee categories for the international students registered at the Nelson Mandela University. The fees listed in Table 3.2 apply only to the 2017 academic year and could change for the following academic years. The enrolment fee, module or research fee and foreign admin fee are payable by all the full degree international students, except for international students with a refugee status who are exempt from paying any foreign admin fees. The foreign admin fee for undergraduate and honours students differs for the master's and doctoral students. The foreign admin fee of R4 800 applies to undergraduate and honours international students and R5 200 for master's and doctoral international students.

In addition to the foreign admin fee, the non-SADC undergraduate and honours students are charged a foreign tuition fee amounting to R17 900 for the 2017 academic year. The non-SADC students represent the international students from other African countries not listed on the SADC list and who are from the rest of the world.

The international students admitted to the Nelson Mandela University are required to pay their tuition fees in advance prior to registration for a particular academic year. However, since 2008, the OfIE implemented a payment arrangement scheme for international students to register and pay at the beginning of each semester. The bad debt incurred by the international students for tuition fees are written off to the OfIE's bad debt account, which means that the Nelson Mandela University does not carry the bad debt, but is settled by the OfIE. Table 3.3 summarises the bad debt of the international students for the period 2011 to 2016:

Table 3.3: Office for International Education bad debt from 2011 to 2016

Year	Provision for Bad debt (R)	Bad debt written off (student fees) (R)	Difference (R)
2011	230 000	156 210	73 791
2012	220 000	154 080	65 920
2013	95 000	70 756	24 244
2014	80 000	73 990	6 010
2015	90 000	174 173	- 84 173
2016	100 000	255 536	-155 536

Source: (OfiE, 2011; 2012; 2013; 2014; 2015; 2016)

The OfIE always maintained a low rate of student bad debts. As outlined in Table 3.3 above, the student bad debt remained constant for 2013 and 2014 at a rate of 0.5% of the total income respectively. However, the international student bad debts increased to 1.2% of the total income in 2015 and 1.9% in 2016. This was caused by the student protests #Feesmustfall that started in 2015 and the students were allowed to continue to the second semester with outstanding fees from the first semester.

In terms of the Nelson Mandela University's internationalisation policy implemented in 2002, the OfIE contributes 30% of its total income to the university. As mentioned

previously, the OfIE generates its income from application fees, foreign admin and foreign tuition fees. The 30% income paid to the University from 2011 to 2016 were as follows:

Table 3.4: Office for International Education income paid to Nelson Mandela University

Year	Total OfIE Income (R)	30% of OfIE Income (R)
2011	12 598 593	3 779 577
2012	12 828 592	3 848 578
2013	13 202 225	3 960 667
2014	13 521 872	4 056 562
2015	14 093 066	4 227 920
2016	13 314 152	3 994 245

Source: (OfIE, 2011, 2012, 2013, 2014, 2015, 2016)

As indicated in Table 3.4, the Nelson Mandela University received an average of R3,9 million from the OfIE between 2011 and 2016. The 30% income payable to the university from the OfIE will have an impact on the Nelson Mandela University's income if the international students' state subsidies are discontinued. The tuition fees will increase immensely for the international students if their government subsidies are discontinued, which will force the international students to apply at other universities around the world that offer affordable fees. In turn, this will affect the student enrolments of the international students and will have an impact on the OfIE at the Nelson Mandela University, which is a self-funding unit, as its primary source of income is generated from the international students' foreign admin fees and foreign tuition fees.

The number of students enrolling at a university is another important factor in respect of financial sustainability. The next section discusses the student enrollment trends of the Nelson Mandela University.

3.5 STUDENT ENROLMENT TRENDS

Since the merger in 2005, the student enrolment trends at the Nelson Mandela University increased, as the average annual growth rate was 0.4% in the enrolment numbers from 24 320 in 2005 to 26 305 in 2015 (Office for Institutional Planning, 2015). The international student enrolments ranged between 6.0% and 6.8% of the total student head count between 2011 and 2015. Table 3.5 includes the student enrolment trends from 2011 to 2015 at the Nelson Mandela University for both the national and international students.

Table 3.5: Student enrolments at the Nelson Mandela University from 2011 to 2015

Academic year	Enrolments		
	National	International	Total
2011	24 435	1 821	26 256
2012	24 802	1 795	26 597
2013	24 600	1 761	26 361
2014	24 885	1 625	26 510
2015	24 611	1 694	26 305

Source: (OfIE, 2011, 2012, 2013, 2014, 2015; Sheppard, 2015, 2017)

The national student enrolments increased from 24 435 in 2011 to 24 611 in 2015 whereas the international student enrolments decreased from 1 821 to 1 694 for the same period. In 2014, the international student enrolments were 1 625 and increased to 1 694 in the 2015 academic year. The international students constituted 6.4% of the total student enrolments in 2015, of which 20.2% were enrolled as master's and doctoral international students (Office for Institutional Planning, 2016). Some of the factors affecting the growth in numbers for the international students are the limited spaces available in professional degrees (Mello, 2013), difficulty in obtaining study visas from the embassies (Lee et al., 2017) and the increase in tuition fees over the years. Another factor that influences the growth in student numbers is the limited capacity of supervisors for research master's and doctor's at the Nelson Mandela University (Office for Institutional Planning, 2016).

During the 2016 academic year, approximately 27 800 students were enrolled at the Nelson Mandela University of which 6% were international students (Nelson Mandela

Metropolitan University, 2016). Table 3.6 shows the total student enrolments at the Nelson Mandela University compared with the FTE enrolment numbers that qualify for a government subsidy for the period 2011 to 2015.

Table 3.6: Student enrolments compared with approved full-time equivalent enrolments

Year	Head counts	Total FTE enrolments	International student FTE enrolments
2011	26 256	19 390	849
2012	26 597	19 445	1 244
2013	26 361	19 664	1 210
2014	26 510	19 803	1 121
2015	26 305	20 002	1 149

Source: (Sheppard, 2015, 2017)

It is evident from Table 3.6 that the head count student enrolment varied slightly from 2011 to 2015. Despite the increase in the FTE enrolments, the Nelson Mandela University can still improve on the FTE enrolments in order to increase the government subsidy income for block grants. The following section provides an overview of the government subsidy income received by the Nelson Mandela University.

3.6 GOVERNMENT SUBSIDIES RECEIVED BY THE NELSON MANDELA UNIVERSITY

Government subsidies are one of the main income sources of South African universities (refer to Section 2.5). As indicated in Table 3.1, the Nelson Mandela University received 48% of their total income from the government in 2016, which is almost half of the total income of this university. It is evident that the universities are dependent on the government subsidies to finance their mandates (Office for Institutional Planning, 2016).

According to the DHET annual report for the 2015/16 year, a subsidy amount of R954 377 000 was transferred to the Nelson Mandela University, which includes block and specific purpose (earmarked) grants (DHET, 2016). Table 3.7 provides a breakdown of the block grant subsidy received by the Nelson Mandela University for five years from 2011 to 2015. The block grant subsidies include income from teaching

inputs, teaching output, research output and institutional factor grants for the period 2011 to 2015.

Table 3.7: Total block grants from 2011 to 2015 for Nelson Mandela University

	Teaching Income (R)	Teaching output (R)	Research output (R)	Institutional Factor grant (R)	Total block grant (R)
2011	398 680 000	90 153 000	64 362 000	44 094 000	597 289 000
2012	423 607 000	91 416 000	78 338 000	46 938 000	640 299 000
2013	438 556 000	93 658 000	94 198 000	47 365 000	673 777 000
2014	455 679 000	115 724 000	97 774 000	49 639 000	718 816 000
2015	469 670 000	123 172 000	95 108 000	50 663 000	738 613 000

Source: (DHET, 2016)

3.7 CHAPTER SUMMARY

This chapter provided a brief overview of the financial sustainability and the internationalisation of the Nelson Mandela University, student enrolment trends for both local and international students and the total block grants received from the government for the period 2011 to 2015. The Nelson Mandela University has maintained a financially sound position despite the challenges faced by the HEIs. The Nelson Mandela University received 48% of its total income from government subsidies in 2016, which indicates that its primary source of income is from government subsidies.

The internationalisation of the Nelson Mandela University was outlined by providing information on the OfIE and how the international student fees operate at the university. It was concluded that if the international students are excluded from the government subsidies, the universities would be forced to increase the tuition fees for the international students. As a result, the international students would probably apply to universities outside SA where tuition fees are more affordable. Hence, the decreasing international student enrolment numbers would have a negative impact on the OfIE at the Nelson Mandela University, which is a self-funding unit. The OfIE pays 30% of its total income to the Nelson Mandela University which will have an impact on the Nelson Mandela University if the international subsidies are excluded from the SA government university funding model. The OfIE paid an average of R3, 9 million to the

Nelson Mandela University between 2011 to 2016. The impact will not only be a financial impact, but it will also affect the international diversity at the Nelson Mandela University because of the low presence of international students.

This chapter also provided the student enrolment trends that assisted with analysing the secondary data in Chapter 5. The following chapter provides an overview of the research methodology applied to this study to answer the research question.

CHAPTER 4

RESEARCH METHODOLOGY

4.1 INTRODUCTION

A comprehensive literature review in respect of the SA government university funding model was provided in Chapter 2. In addition, the current funding model for the universities was outlined. Chapter 3 provided a brief overview of the Nelson Mandela University's history, the factors that influence the universities' financial sustainability and its stance on internationalisation. The secondary research objectives (refer to Section 1.4.2) required a profound literature background and statistical analysis in respect of the research question.

The purpose of this chapter is to identify and motivate the research methodology used in this study to provide reliable results to answer the research question (refer to Section 1.3). In addition, this chapter outlines the design, methods, data types and reasons for using the appropriate methods to answer the research question of this study.

4.2 RESEARCH DESIGN

Jonker and Pennick (2010:9) describe research as the “deliberate and methodical search” to obtain and confirm new and reliable knowledge and insights to answer the formulated question. According to Kothari (2004:14) research contributes to the existing knowledge in search of the truth by means of study, observation, comparison and experiment. Research refers to a systematic method which consists of making the problem known, formulating a theory, collecting the data, analysing the data and reaching certain conclusions (Kothari, 2004).

The research paradigm affects the way the research is conducted, including the choice of a methodology (Wayuni, 2012). Jonker and Pennick (2010:36, 43, 111) describe the research paradigm as a fundamental assumption as to how the world is perceived, which structures the thinking and guides the behaviour of the researcher. Methodology and methods are different concepts (Wahyuni, 2012). Jonker and Pennick (2010:17) refer to methodology as the way research is conducted and how the researcher chooses to deal with the research question within the context of the

specific paradigm (Wahyuni, 2012). The methodology involves a specific action plan which entails what methods to use and to select an appropriate technique for collecting and analysing the data (Jonker & Penninck, 2010).

Methods consist of specific techniques and tools to collect and analyse the data which is independent of a methodology and paradigm (Wayuni, 2012). Therefore, a research method can be used in different methodologies (Wayuni, 2012). Kothari (2004:8) states that research methods can make a solution possible by grouping it into three groups:

- Methods are concerned with the collection of data that are already available but are not sufficient to provide the solution.
- Methods that consist of statistical techniques used to establish the relationship between the data and the unknown.
- Methods that are used to evaluate the accuracy of the results obtained (Kothari, 2004:8).

The following section briefly discusses the two research approaches.

4.2.1 Qualitative and Quantitative research

Creswell (2013:3) states that there are two basic research approaches, namely qualitative and quantitative research. The qualitative research methods are concerned with the processes of the social and behavioural nature based on the experiences or perspectives of the individuals that cannot be measured quantitatively (O'Leary, 2014). The aim of qualitative research is to discover or identify the underlying factors, such as attitudes and motivations, which creates a theoretical framework for further verification (Greenfield & Greener, 2016). The data of qualitative research can be obtained in the form of interviews, words, observation, pictures, symbols, videos or icons (O'Leary, 2014). Qualitative research can be time-consuming and expensive, therefore, the data are normally collected from a smaller sample.

Quantitative research is measured in terms of quantity based on the empirical observation and critical interpretation (Kothari, 2004). O'Leary (2014:355) defines quantitative research as an approach to understanding the truths, which rely on hypotheses, variables and statistics. The data of the quantitative form are subject to

“rigorous quantitative analysis in a formal and rigid fashion” (Kothari, 2004:5). The data are represented by numbers and analysed by using statistics.

Based on the above, qualitative research was not appropriate for this research, as the qualitative research approach of the opinions and perceptions of people would not assist with answering the research question. The quantitative research approach was the appropriate method to answer the research question by means of numbers and statistics. The next section outlines the design and research method.

4.3 RESEARCH DESIGN AND METHOD

The purpose of the research design becomes important to connect the methodology and appropriate research methods in order to address the research question (Wayuni, 2012). The research design refers to the plan for conducting the research project (O’Leary, 2013) and links the data to be collected. The conclusions are drawn to answer the research questions and to provide a conceptual framework and an action plan for finding an answer. It is a process that starts with the questions and ends with the conclusions (Rowley, 2002). It, therefore, provides an opportunity to consider the research carefully and to plan how to approach the research. The research purpose and research question form the fundamental basis to develop a research design (Wayuni, 2012).

The aim of this study is to determine the financial impact on the Nelson Mandela University if the international students’ subsidies are excluded from the SA government university funding model. The experiential component of this study was conducted by means of the collection and analysis of secondary quantitative data. The research question (refer to Section 1.3) and research objectives (refer to Section 1.4) were achieved by implementing the following approach:

- First, a comprehensive literature review was conducted. Chapter 2 outlines an in-depth background of the SA government university funding model and the current funding model. It also provides an overview of the SA government subsidies for the SA universities. Second, Chapter 3 outlines the financial sustainability and internationalisation of the Nelson Mandela University. The literature review addresses the secondary objectives (refer to Section 1.4.2).

- Chapter 2 includes the analysis of the statistical data obtained from the DHET, which includes the SA government subsidies paid to the HEIs. Chapter 3 includes the analysis of the statistical data, which encompass the SA government subsidies and financial indicators of the Nelson Mandela University. The analysis of the data also includes the different student categories and student enrolments for the international students which assists with the calculation of the subsidies generated from the teaching input, teaching output and research output. This information assists with the calculation of the income generated from the government subsidies for the international students.

In light of the above, for the purpose of this study, the secondary data analysis was the best method to answer the research question. O’Leary (2014:256) states that by using the secondary data analysis, the researcher skips the process of design, which includes working through decisions for the population, samples, questions and response categories. However, a brief description of this study’s population and the sample is outlined in the next section.

4.3.1 Population and Sample

Kothari (2004:148) defines sampling as the procedure of obtaining the data of an entire population by only examining a portion of the population. The reasons for using sampling include that it saves time and is less expensive than a census study. In addition, sampling provides speedy results (Kothari, 2004). From a statistical point of view, population refers to the total of the items about which information is required. The population can be finite or infinite. A finite or limited population consists of a fixed number of components which makes it possible to count or number it in its entirety (Kothari, 2004). An infinite or unlimited population is the opposite of a finite population, where it is theoretically impossible to observe all the components because the total number of the components are unknown and the population cannot be enumerated (Kothari, 2004).

In this research study, the SA government subsidies for the international students at all the SA universities represent the population. However, this study is limited to calculating the SA government subsidies of the international students enrolled at the Nelson Mandela University in the Eastern Cape for the period 2009 to 2015. The data

of the government subsidies for the international students at the Nelson Mandela University were accessible and the researcher could easily meet with Dr Charles Sheppard, the Director of Management Information at the Nelson Mandela University, to obtain the data, which is the reason for selecting this university as the case of research. In addition, the Nelson Mandela University is a good setting to conduct this study, as it represents one of the big comprehensive universities' in SA and is more reliant on government funding (refer to Section 3.3). The income generated by the OfIE makes the Nelson Mandela University unique from the other SA universities. The OfIE is a self-funding unit that depend on the enrolments of international students, contributing 30% of its income to the university.

In the context of the research question (refer to Section 1.3) and the associated research objectives (refer to Section 1.4), this research study used the secondary data analysis and this method is outlined in the following section.

4.3.2 Secondary data analysis

The secondary data analysis is defined as answering the questions not previously addressed by means of collecting, reviewing and analysing the existing data (O'Leary, 2014). The following steps are involved in the secondary analysis approach (O'Leary, 2014:256):

- The research questions should be determined, knowing exactly what information or data will be required.
- Data location – making sure what information is available and whether access is possible.
- The relevance of the data should be evaluated – it is important to consider the origin of the data, when it was collected, the population, the sampling strategy and the characteristics and the data collection protocols, among others.
- The credibility of the data should be assessed – the credentials of the original researchers should be established; the consistency of the data should be compared to the data from other sources and it should be determined whether the data have been used by other credible published research studies.
- Analysis – involves a range of statistical processes.

For the purpose of this study, the analysis was conducted on the existing data obtained from the DHET, HEMIS and the Nelson Mandela University. The secondary research analysis can be carried out on the quantitative or qualitative data (Saunders, Lewis & Thornhill, 2012) and is discussed in the following section.

4.3.3 Quantitative data

The quantitative data refer to the numerical or quantified data (Saunders et Al., 2012). The research projects performed by academics, government agencies, commercial groups, public authorities and other organisations provide data for the use of quantitative secondary analysis (Heaton, 2004). The following are examples of the kind of statistical data, derived from the previous research, that has been used as secondary research (Heaton, 2004:3):

- Census data
- Institutions' administrative data
- Public records
- Social surveys
- Longitudinal studies

For the purpose of this study, the secondary analysis of the official statistics published by the DHET, CHE and Nelson Mandela University were reviewed, analysed and interpreted in order to assist with the answer to the research question. Existing quantitative data include student enrolments, SA government subsidies paid to the universities, income generated by the universities, international student enrolments, and the block and earmarked grants paid to the universities. Qualitative data is briefly outlined in the next section.

4.3.4 Qualitative data

- Qualitative data refer to non-numerical data that is not quantified (Saunders et al, 2012). Different methodologies have been used in qualitative research for the analysis of non-naturalistic data requested by the researchers and the naturalistic data that were collected with minimal interference by the researchers (Heaton, 2004). The following are examples of the types of qualitative data used for secondary research analysis (Heaton, 2004:5):

- Non-naturalistic data – include field notes, observational records, interviews, focus groups, responses to open-ended questions in questionnaires, solicited diaries and life stories.
- Naturalistic data – include life stories, autobiographies, found diaries, letters, official documents, photographs, films and social interaction. This type of pre-existing qualitative data are normally used in the methodology of documentary analysis (Heaton, 2004; Saunders et. al, 2012).

In order to answer the research question of this study, the qualitative secondary data analysis was not appropriate and, therefore, not applied. There are benefits and pitfalls when selecting a research method. The following section provides an understanding of the advantages and disadvantages of using the secondary data analysis as a research method in research projects.

4.3.5 Advantages of using secondary data analysis

The primary advantage of using the secondary data is that it is cost-effective and it is convenient for the researcher as it minimises the time (Andrews, Higgins & Andrews, 2012). The data have already been collected by someone else which means that the researcher does not have to use financial resources to collect the data (Johnston, 2014).

Another benefit of using the secondary data analysis is the access to high-quality data (Smith, 2008). Andrews et al. (2012:13) state that using the secondary data analysis enhances quality control in the sense that it validates the original research and adds to the transparency, trustworthiness and credibility of the original findings. It also allows the researcher to gain a second perspective on the data by asking research questions differently or analysing the data in a different way (Smith, 2008).

The secondary data analysis makes longitudinal analysis feasible (Saunders et al., 2012). This type of analysis is rare due to the time and cost involved (Bryman, 2015). The secondary data analysis also creates the opportunity for subgroup and cross-cultural analysis (Bryman, 2015). Data collection is time-consuming, hence, the fact that the researcher does not have to collect fresh data means that there is more time to think about the approach to analyse the data (Bryman, 2015).

Smith (2008:328) adds to the potential benefits of using the secondary data analysis by stating that it allows the researchers to access the data to the extent that they would not be able to replicate it first-hand and it enables the researcher to analyse and replicate the data from different perspectives. The secondary data analysis provides the researchers with the opportunity to test new ideas, theories, frameworks and models of the research design (Johnston, 2014).

In light of the above benefits, this research study required fewer resources, in particular, time and money, as the data were readily available and collected by HEMIS on behalf of DHET. As a result, this saved the researcher time to collect the data and it was less expensive to use the secondary data. The data used for this study are permanent and available, which makes it easy for others to check on the DHET and Nelson Mandela University websites, which means that the data and the research results are open to public inspection. The data provide an unobtrusive measure as it is utilised and published by the DHET and CHE and this adds to the validity and reliability of the information that will be further discussed in Section 4.3.6. The disadvantages of the secondary data analysis are discussed next.

4.3.6 Disadvantages of secondary data analysis

The secondary data are only as good as its collection process; hence, the researcher has no control over this matter (O'Leary, 2014). The drawbacks of the secondary data analysis include a loss of control over the data collection and a lack of knowledge and information around the collection experience (Andrews et al., 2012).

Access to the data may be difficult and costly (Saunders et al., 2012), however, as stated in the previous section (Section 4.3.4), the data obtained for this research study were easily accessible and less expensive. Johnston (2014:624) adds that another limitation for using the secondary data analysis is that the data collected do not answer to the specific information that the researcher would like to have or may not have been collected in the geographic region of interest or in the years the researcher would have chosen or on a specific population. Another pitfall is that the researcher was not involved in the data collection process, hence, does not know exactly how it was conducted (Johnston, 2014). The data obtained for the purpose of this study were not

used before to answer this research question, however, the data that were available were sufficient and enabled the researcher to answer the research question.

The analysis of the data that have been collected is for a different purpose (Johnston, 2014) and the researcher might be unaware of the context in which the research took place, especially when it comes to interview-based surveys. However, the nature of this study was not based on qualitative research but is based on the quantitative approach using the statistical data analysis.

It is important to ensure a match between the research question and the existing data, following the basic steps of the secondary data analysis, reflecting and evaluating the data critically, as these steps can avoid the most limitations of the secondary data analysis (Johnston, 2014). The secondary data sources can be evaluated by checking the validity and reliability of the data and by ensuring the information is accurate and valid. The following section discusses how these limitations were overcome in this study.

4.3.7 Reliability and Validity

The reliability and validity of the data can be assessed by looking at the source of the data (Saunders, 2012). The data obtained from the government organisations are reliable and trustworthy. The measures should be consistent if the data are considered to be reliable (Wahyuni, 2012), whereas validity is concerned with whether one can draw meaningful and useful conclusions from the data (Creswell, 2013). In order to ascertain that the measuring instrument is valid, it should meet the following criteria (Kothari, 2004:74):

- Content validity provides sufficient coverage of the topic.
- Criterion-related validity refers to predictive and concurrent validity, the ability to predict some outcome, used in empirical estimating and is concerned with qualities, such as relevance, free from bias, reliability and availability.
- Construct validity compares the predicted correlations with the theoretical propositions.

Reliability is easier to assess compared to validity (Kothari, 2004). The stability and equivalence aspect is part of testing the reliability. In order to determine the stability

aspect, it is important to compare the results of repeated measurements. The equivalence aspect can be tested by comparing more than one observation of the same event (Kothari, 2004).

The secondary data that have been compiled in a report as statistics should be examined carefully to determine how the results of the data were reported, especially where percentages are used without the actual figures (Saunders, 2012).

The HEMIS is responsible for collecting the audited data on behalf of the DHET from the HEIs during and at the end of each academic year. This information is reliable as it is verified and checked by the CHET in consultation with the DHET prior to publication and where necessary, discrepancies resolved. For this reason, the audited figures for 2016 will only become available in the second half of 2017. Therefore, the study includes data only until 2015. In instances where the data for 2016 and 2017 were available, it was provided in the study.

The CHE and CHET publish open data on the HEIs and obtain information from HEMIS, which is another reason that makes the data from HEMIS reliable as it is published by other sources. The CHE obtains other relevant data pertaining to higher education data directly from DHET, NSFAS and Statistics SA.

Research that is based on the SA government university funding model for the HEIs and utilise student enrolment and subsidy data (Akor & Roux, 2006; Bailey et al., 2011; South Africa Council on Higher Education, 2016; Styger et al., 2015), published by the DHET, CHE and HEMIS, is another reason why the data sources are reliable and valid.

The financial statements of the Nelson Mandela University are audited by an independent audit firm, PricewaterhouseCoopers Inc., who has unrestricted access to the university's financial records and related information (Office for Institutional Planning, 2015). The breakdown of the government subsidies was obtained from Dr Charles Sheppard, the Director of Management Information at the Nelson Mandela University, who also provides reports to the DHET on behalf of the Nelson Mandela University. The report is sent to the Ministry of Higher Education and Training to be reviewed and published, which adds to the reliability and validity of the data.

4.3.8 Research Ethics

The fact that the information used by the researcher is publicly available cannot imply that the ethical regulations of the Nelson Mandela University should be ignored. It is imperative that the ethical regulations of the Nelson Mandela University should be followed, therefore, the form for ethical clearances was completed and duly complied with the requirements, as set forth in the document in Appendix 1.

4.3.9 Interpretation of the Data analysis

In the previous chapters, Chapter 2 and 3, the data of the SA government subsidies paid to the HEIs have been provided and the financial indicators, student enrolment data and the government subsidies paid to the Nelson Mandela University were outlined. Chapter 3 also included the different student categories and student enrolments which assisted with the calculation of the government subsidies generated from the teaching input, teaching output and research output for the international students enrolled at the Nelson Mandela University. The results of the calculation of the income generated from the subsidies for the international students are presented in Chapter 5.

It should be noted that the HEIs do not receive earmarked funding and institutional factor grants as subsidies for their international students. For this reason, the calculations of the teaching input, teaching output and research output were done in order to determine the income received from the subsidies for the international students only. It is essential to have an extensive analysis of the international student enrolment data according to the different student categories in order to calculate the total subsidies received from the DHET for the international students.

The calculation of the international students' subsidies for the Nelson Mandela University for the period 2011 to 2017 was performed by Dr Charles Sheppard, the Director of Management Information at the Nelson Mandela University. Dr Sheppard provides the DHET with the data for the Nelson Mandela University and was willing to perform the calculation of the government subsidies for the international students from 2011 to 2017 for the purpose of this study. It should be noted that that DHET subsidies are distributed to universities according to a two-year look back window. For example, the subsidy payout for 2017 is based on 2015 academic year. Therefore, the data from

2009 to 2015 were required to calculate the international students subsidies for 2011 to 2017. The subsidies of the international students are calculated by following the steps below:

- The international student enrolment numbers for the period 2009 to 2015 were obtained from Dr Charles Sheppard of the Nelson Mandela University. It should be noted that the international students have different student types, according to Table 3.2 (refer to Section 3.4), which include undergraduates, refugees, studies abroad, exchange and postgraduate students. A differentiation of these categories (refer to Section 3.4) is necessary in order to calculate the teaching input, output and research output grants.
- The teaching input grant for the international students was calculated according to the weighting and funding groups, as stipulated in Table 2.1 and Table 2.2 in Chapter 2.
- The international non-research student graduate numbers for the period 2009 to 2015 were obtained from Dr Charles Sheppard of the Nelson Mandela University in order to calculate the teaching output which is stipulated in Table 2.3 in Chapter 2.
- The research output grant was calculated, as stipulated in Table 2.4, illustrated in Chapter 2, which included the research master's and doctoral graduate students. The research master's and doctoral international graduate student numbers were obtained from Dr Charles Sheppard of the Nelson Mandela University.
- A differentiation should be made between the master's research and coursework students in order to calculate the accurate subsidies paid for the research output and teaching output. The master's coursework graduates were included in the teaching output subsidy and the master's research graduates were included in the research output grant.
- Once the calculations were performed for the teaching input, teaching output and research output grants, the amounts were compared to the block grants received by the Nelson Mandela University for all the students.
- The income of the Nelson Mandela University for the years 2011 to 2015 was reviewed and the total of the international student subsidies was compared to the total government subsidies received in order to see how it would have

affected the income of the university. It should be noted that the data obtained for the international students subsidies included income of 2016 and 2017. However, the comparison of the international students subsidies to the total government subsidies only includes the years 2011 to 2015 as the total government subsidies for year 2016 and 2017 received by the Nelson Mandela University was not available.

In the context of this study, the secondary data were analysed using a Microsoft Excel spreadsheet, construed by means of tables.

4.4 SUMMARY

This chapter outlined the research methodology used and presented the design for the study, the method applied and the benefits and pitfalls of the selected research method. In addition, the sample was provided and the reliability and validity of the research data were provided.

The experiential component of this study was conducted by means of the collection and analysis of the secondary quantitative data which included the international SA student enrolments and the SA government subsidies paid to the HEIs. The sample of this study is limited to calculating the SA government subsidies of the international students enrolled at the Nelson Mandela University in the Eastern Cape for the period 2009 to 2015. The calculation of the international students' government subsidies for the Nelson Mandela University for the period 2011 to 2017 was performed by Dr Charles Sheppard, the Director of Management Information at the Nelson Mandela University. Dr Charles Sheppard provides the DHET with the data for the Nelson Mandela University and was willing to perform the calculation of the government subsidies for the international students for the period 2011 to 2017 for the purpose of this study. Chapter 5 presents the results of the study in the form of tables followed by analysis.

CHAPTER 5

RESEARCH RESULTS

5.1 INTRODUCTION

The previous chapters provided detailed information on the SA funding model for the HEIs, the SA government subsidies distributed to the SA universities and the financial sustainability of the Nelson Mandela University. The in-depth coverage of these matters contributes to the validity of the research question of the study (refer to Section 1.3).

The primary objective of the study is to determine the financial impact on the Nelson Mandela University if the international students are excluded from the government subsidies. The aim of this chapter is to present the results of the secondary data analysis in respect of the government subsidies received by the Nelson Mandela University for the international students for the years 2011 to 2017. The subsidies for the international students at the Nelson Mandela University from 2009 to 2015 were used to calculate the subsidies for 2011 to 2017. However, the total government subsidies for the Nelson Mandela University for 2016 and 2017 were not available to compare the international student subsidy with the total student subsidy. As previously mentioned in Chapter 2 (refer to Section 2.4), the international students are subsidised at the same rate as the SA students for the teaching input, teaching output and research output grant (Cilliers, 2017). The international students are excluded from the institutional block grant and earmarked grants (refer to Section 2.4).

The subsidies generated by the Nelson Mandela University are calculated by the university's Management Information and Strategic Planning Office in accordance with the formulae presented by the DHET. The results reported in this study are based on the figures presented by Dr Charles Sheppard, the Director of Management Information and Strategic Planning Office at the Nelson Mandela University.

The following section provides the secondary data analysis in terms of the teaching input received by the Nelson Mandela University for the international students.

5.2 TEACHING INPUT

The teaching input block grant is calculated according to the funding grid which is based on the cost of offering teaching services and the supervision of master's research and doctor's (DHET, 2013a). In order to calculate the international students' teaching input grant for the Nelson Mandela University, the international student FTE enrolment numbers are required for the years from 2009 to 2013. It should be noted that in order to calculate the international students' subsidies for the period 2011 to 2015, the data from 2009 to 2013 is required as the government subsidies are calculated using the data from year n minus two. The funding grid in Table 2.1 (refer to Section 2.3.1.1) and the funding groups constructed by the CESM categories in Table 2.2 (refer to Section 2.3.1.1) are the basis for calculating the teaching input grant. Tables 5.1 and 5.2 follow the same method in calculating the teaching input grant for the international students enrolled at the Nelson Mandela University. Table 5.1 includes the international students' FTE enrolments at the Nelson Mandela University from 2009 to 2013 for the undergraduate, honours, master's and doctor's students.

Table 5.1: Sum of Enrolled full-time equivalent international students (units)

Fund Group	Fund Weight	2009	2010	2011	2012	2013	2014	2015
1	1	280.2	222.8	115.1	169.3	171.2	167.3	195.7
2	1.5	644.9	699.3	403.9	598.1	584.2	550.1	540.4
3	2.5	295.0	283.5	156.7	200.1	178.1	164.3	161.2
4	3.5	248.1	299.5	173.5	276.6	277.1	239.2	251.3
Total Units		1 468.2	1 505.1	849.2	1 244.1	1 210.6	1 120.9	1 148.6

Source: (Sheppard, 2017)

Table 5.2: Sum of teaching input units for international students

Fund Group	Fund Weight	2009	2010	2011	2012	2013	2014	2015
1	1.0	358.0	302.4	172.7	235.8	246.0	222.3	257.0
2	1.5	1 381.5	1 447.1	876.2	1 296.0	1 317.0	1 210.9	1 178.2
3	2.5	986.9	992.2	603.3	706.8	649.4	619.1	619.8
4	3.5	1 202.5	1 460.9	885.8	1 408.6	1 481.1	1 329.2	1 410.8
Total Units		3 928.9	4 202.6	2 538.0	3 647.2	3 693.5	3 381.5	3 465.8

Source: (Sheppard, 2017)

Table 5.3 outlines the teaching input subsidy received by the Nelson Mandela University for the international students for the period 2011 to 2017. The data from 2009 to 2015 (refer to Table 5.1 and 5.2) were used to calculate the teaching input subsidy income for the period 2011 to 2017.

Table 5.3: Subsidy income: Teaching input for international students

Year	Teaching input units	Monetary value per unit (R)	Teaching input grant (R)
2011	3 928.9	10 644	41 820 223
2012	4 202.6	10 361	43 544 035
2013	2 538.0	10 361	26 296 296
2014	3 647.2	10 474	38 200 951
2015	3 693.5	10 246	37 843 914
2016	3 381.5	10 550	35 675 463
2017	3 465.8	12 504	43 336 657

Source: (Sheppard, 2017)

The total number of teaching input units for the Nelson Mandela University is determined by the approved number of international FTE students per qualification type and the funding group for year n minus two. The teaching input units provided in Table 5.2 is calculated by multiplying the number of international FTE students with the qualification type weights in Table 5.1 (refer also to Table 2.1). The value of one teaching input unit for 2011 (FTE units in 2009) is R10 644 and the value of one teaching input unit for 2015 (FTE units in 2013) is R10 246. The total teaching input

grant is then calculated by multiplying the total teaching input units with the value of one teaching input unit.

In order to have a true reflection of the relationship between the international students' government subsidy and total government subsidy income, each of the block grants should be compared with each other. Table 5.4 outlines the comparison and percentage of the international students' teaching input subsidy to the total teaching input subsidy received by the Nelson Mandela University.

Table 5.4: International students teaching input versus total teaching input

Year	International student teaching input subsidy (R)	Total teaching input subsidy (R)	Percentage
2011	41 820 223	398 680 000	10.5%
2012	43 544 035	423 607 000	10.3%
2013	26 296 296	438 556 000	6.0%
2014	38 200 951	455 679 000	8.4%
2015	37 843 914	469 670 000	8.1%

Source: (DHET, 2016; Sheppard, 2017)

As illustrated in Table 5.4, the teaching input subsidy for the international students decreased significantly from 10.5% in 2011 of total teaching input subsidy to 6% in 2013. The teaching input subsidy increased again to 8.4% in 2014 and decreased to 8.1% in 2015 of the total teaching input subsidy. The reason for the 6% decrease in 2013 was caused by the decrease in the FTE international student enrolments for the 2011 academic year, which was 849 FTE enrolments (refer to Section 3.5). The FTE international student enrolments decreased from 1505 in 2010 to 849 in 2011 (refer to Section 3.5).

In light of the above, the FTE international student enrolments are significant as it impacts the subsidy income for the teaching input block grant. The following section outlines the teaching output subsidy received for the international students.

5.3 TEACHING OUTPUT

The teaching output block grant are funds payable to the universities for completed graduates, excluding research master's and doctorates (DHET, 2013). In order to calculate the teaching output of the international students at the Nelson Mandela University for the period 2011 to 2017, the weighted international student graduate numbers per qualification are required from 2009 to 2015. The teaching output grant can be calculated by using the number of weighted non-research graduates that is calculated according to the fund weightings in Table 2.3 (refer to Section 2.3.1.2). Table 5.5 follows the same method in calculating the teaching output grant for the international students enrolled at the Nelson Mandela University for the period 2011 to 2017.

Table 5.5: Weighted teaching output units for international student graduates

Qualification type name	Teaching output units						
	2009	2010	2011	2012	2013	2014	2015
Undergraduate Diploma or Certificate (3 yrs)	2.0	1.0	0.0	0.0	0.5	0.0	4.0
General Academic Bachelor's Degree	103.0	106.0	90.0	127.0	105.0	89.0	82.0
Professional First Bachelor's Degree (4 years or more)	88.5	93.0	51.0	87.0	132.0	58.5	70.5
PG Diploma or Certificate	1.0	1.5	1.0	4.5	5.5	9.0	12.5
Honours Degree	29.5	29.0	16.0	37.0	33.0	31.0	28.5
Master's Degree	7.8	12.5	18.4	11.0	19.9	18.2	13.1
National Diploma	45.0	42.0	42.0	35.0	32.5	20.0	22.0
BTech Degree	60.0	70.5	33.0	69.0	46.5	61.5	51.0
MTech Degree	1.0	0.3	0.0	1.0	0.5	0.0	1.0
Professional First Bachelor's Degree (3 years)	28.0	26.0	21.0	13.0	17.0	14.0	21.0
Total Units	365.8	381.8	272.4	384.5	392.4	301.2	305.6

Source: (Sheppard, 2017)

The weighted international graduate student numbers from 2009 to 2015 were required to calculate the government subsidy income of the teaching output units for the period 2011 to 2017. Table 5.6 outlines the teaching output grant received by the Nelson Mandela University for the international students for the period 2011 to 2017.

Table 5.6: Subsidy income: Teaching Output for international students

Year	Teaching output units	Monetary value per unit (R)	Teaching output grant (R)
2011	365.8	18 308.1	6 696 484
2012	381.8	18 895.0	7 214 017
2013	272.4	18 895.0	5 146 072
2014	384.5	19 944.3	7 668 611
2015	392.4	19 645.0	7 709 181
2016	301.2	20 804.0	6 266 186
2017	305.6	24 469.5	7 478 528

Source: (Sheppard, 2017)

The Nelson Mandela University's actual weighted teaching output units displayed in Table 5.5 for the international students is determined by applying the weightings in Table 2.3 (refer to Section 2.3.1.2) to the graduate totals. The total of the actual weighted teaching output units for 2009 is 365.8 (payable in 2011) and for 2013 it is 392.4 (payable in 2015). The teaching output grant is then calculated by multiplying the weighted graduate totals, referred to as teaching output units, by the monetary value per one teaching output unit displayed in Table 5.6. For example, the value of one output unit in 2011 is R18 308.1 and for 2015 the value is R19 645.

Table 5.7 outlines the comparison and percentage of the international students' teaching output subsidy to the total teaching output subsidy received by the Nelson Mandela University.

Table 5.7: International students teaching output versus total teaching output

Year	International student teaching output (R)	Total teaching output (R)	Percentage
2011	6 696 484	90 153 000	7.4%
2012	7 214 017	91 416 000	7.9%
2013	5 146 072	93 658 000	5.5%
2014	7 668 611	115 724 000	6.6%
2015	7 709 181	123 172 000	6.3%

Source: (DHET, 2016; Sheppard, 2017)

The teaching output for the international students reflects an increase of the total teaching output subsidy from 7.4% in 2011 to 7.9% in 2012. Interestingly, it declined significantly in 2013 to 5.5% and increased again to 6.6% in 2014 and 6.3% in 2015. The reason for the 5.5% in 2013 was as a result of the decrease in the weighted teaching output units of 272.4 in 2011 (refer to Table 5.6). The weighted teaching output units are calculated from the total non-research graduates per qualification, according to Table 5.5. The difference can be seen in Table 5.5, where it indicates the decrease in units per qualification per year. The major difference can be seen in the bachelor degree of four years, where the weighted graduate output number in 2010 was 93 and decreased in 2011 to 51 output units. The weighted graduate output units increased again for the same qualification in the year 2012 to 87 output units.

In light of the above, the number of international graduates impacts the weighted graduate output units which, in turn, impacts the teaching output government subsidy. Therefore, the non-research weighted graduate output units for the international graduates are significant as it impacts the government subsidy income for the teaching output block grant. The following section provides the international students' subsidy for the research output grant.

5.4 RESEARCH OUTPUT

The research output block grant includes funding for publication units and research master's and doctoral graduates (DHET, 2013a). The research output grant can be calculated based on the weightings in Table 2.4 in Chapter 2 (refer to Section 2.3.1.3).

In order to calculate the international students' research output for the Nelson Mandela University for the period 2011 to 2017, the master's research and doctoral graduate numbers are required for the period from 2009 to 2015. It should be noted that this calculation does not include the international students or staff publication units due to the data not being available at the time of this research study. The publication units included in the total research output subsidy includes the publication units for all the students and staff. It is for this reason that the total research output grant will be recalculated by excluding the publication units and taking into consideration only the research master's and doctoral graduates for both the international and the local students in order to do the comparison. Table 5.8 outlines the research output grant received in the years 2011 to 2017 for the international doctor's or doctoral and research master's students of the Nelson Mandela University that graduated from 2009 to 2015.

Table 5.8: Subsidy Income: Research output for international students

Year	Doctor's and Master's	Student number/ Research output unit	Weight	Weighted research output	Monetary value per unit (R)	(R) Research output grant (R)
2009	Doctor's	11.0	3	33.0	127 638.3	4 212 064
	Master's	36.5	1	36.5	127 638.3	4 654 714
2010	Doctor's	23.0	3	69.0	119 331.0	8 233 839
	Master's	45.4	1	45.4	119 331.0	5 418 821
2011	Doctor's	22.0	3	66.0	119 027.0	7 855 782
	Master's	55.9	1	55.9	119 027.0	6 653 371
2012	Doctor's	32.0	3	96.0	115 052.0	11 044 992
	Master's	34.0	1	34.0	115 052.0	3 911 653
2013	Doctor's	23.0	3	69.0	113 183.7	7 809 673
	Master's	50.6	1	50.6	113 183.7	5 724 264
2014	Doctor's	22.0	3	66.0	108 693.0	7 173 738
	Master's	50.8	1	50.8	108 693.0	5 521 496
2015	Doctor's	32.0	3	96.0	107 222.6	10 293 370
	Master's	31.9	1	31.9	107 222.6	3 417 613

Source: (Sheppard, 2017)

Table 5.8 includes the research outputs for the **doctor's** and research master's international students for the period 2009 to 2015. The SA government subsidy income generated by the research output for the period 2009 to 2015 was received in the period 2011 to 2017. As outlined in Table 5.9, the total subsidy income from the research output grant for the international students was received by the Nelson Mandela University during the period 2011 to 2017.

Table 5.9: Subsidy Income: Total research output for international students

Year	Total weighted research output	Monetary value per unit	Total research output grant (R)
2011	69.5	127 638.3	8 866 777
2012	114.4	119 331.0	13 652 660
2013	121.9	119 027.0	14 509 153
2014	130.0	115 052.0	14 956 645
2015	119.6	113 183.7	13 533 936
2016	116.8	108 693.0	12 695 234
2017	127.9	107 222.6	13 710 983

Source: (Sheppard, 2017)

It should be noted that the total research output subsidy received by the Nelson Mandela University for all the students in Table 3.7 (refer to section 3.5) includes all the research master's and doctor's and the publication units. As mentioned above, the international student research output only includes the research master's and doctor's graduates and excludes any publication units. In order to have a true reflection of the international students' research output versus the total research output, it is recommended to exclude the publication units from the total research output subsidy. In order to do this, the data from 2009 to 2013 are required to calculate the research master's and doctor's graduate weightings from 2011 to 2015. The following is a breakdown of the total research output that relates to the number of research master's, doctor's graduates and publications published at the Nelson Mandela University from 2009 to 2013 and were obtained from the DHET (2016).

Table 5.10: Total research output: Master's, Doctor's graduates and publications

		Master's research graduates	Doctor's graduates	Publication units	Total research output (R)
2009	Actual units	162.0	39.0	225.0	64 329 703
	Weightings	1.0	3.0	1.0	
	Weighted research output units	162.0	117.0	225.0	
	Monetary value	R127 638.3	R127 638.3	R127 638.3	
	Subsidy in 2011	R20 677 405	R14 933 681	R28 718 618	
2010	Actual units	209.0	64.0	256.0	78 400 467
	Weightings	1.0	3.0	1.0	
	Weighted research output units	209.0	192.0	256.0	
	Monetary value	R119 331.0	R119 331.0	R119 331.0	
	Subsidy in 2012	R24 940 179	R22 911 552	R30 548 736	
2011	Actual units	263.0	59.0	351.0	94 150 357
	Weightings	1.0	3.0	1.0	
	Weighted research output units	263.0	177.0	351.0	
	Monetary value	R119 027.0	R119 027.0	R119 027.0	
	Subsidy in 2013	R31 304 101	R21 067 779	R41 778 477	

		Master's research graduates	Doctor's graduates	Publication units	Total research output (R)
2012	Actual units	280.0	86.0	312.0	97 794 200
	Weightings	1.0	3.0	1.0	
	Weighted research output units	280.0	258.0	312.0	
	Monetary value	R115 052.0	R115 052.0	R115 052.0	
	Subsidy in 2014	R32 214 560	R29 683 416	R35 896 224	
2013	Actual units	276.0	74.0	342.0	95 074 274
	Weightings	1.0	3.0	1.0	
	Weighted research output units	276.0	222.0	342.0	
	Monetary value	R113 183.7	R113 183.7	R113 183.7	
	Subsidy in 2015	R31 238 690	R25 126 773	R38 708 812	

Source: (DHET, 2015; Sheppard, 2015)

In order to calculate each research output, the funding weightings from Table 2.4 (refer Section 2.3.1.3) were applied and multiplied by the monetary value per research output unit, according to Table 5.8. The total value of the publication units can be excluded from the total research output subsidy in order to calculate the research output for master's research and doctor's graduates only. Table 5.11 outlines the calculation for the research output subsidy for the period 2011 to 2015.

Table 5.11: Total research master's and doctor's output

Year	Total research output (R)	Less: Publication unit subsidy (R)	Total master's and doctor's research output (R)
2011	64 329 703	28 718 618	35 611 086
2012	78 400 467	30 548 736	47 851 731
2013	94 150 357	41 778 477	52 371 880
2014	97 794 200	35 896 224	61 89 7976
2015	95 074 274	38 708 812	56 365 463

Source: (DHET, 2016)

The international students' research output subsidy can now be compared with the total research output subsidy received by the Nelson Mandela University for the research master's and doctor's graduates only. The comparison is done only for the period 2011 to 2015, as the total subsidies received by the Nelson Mandela University for 2016 and 2017 were not available at the time of the study. Table 5.12 outlines the percentage of the international research output in comparison with the total research output.

Table 5.12: International research output versus total research output (excluding publication units)

Year	International student research output (R)	Total research output (R)	Percentage
2011	8 866 777	35 611 086	24.9%
2012	13 652 660	47 851 731	28.5%
2013	14 509 153	52 371 880	27.7%
2014	14 956 645	61 897 976	24.2%
2015	13 533 936	56 365 463	24.0%

Source: (DHET, 2016; Sheppard, 2017)

The international research output for the master's and doctor's graduates contains the highest percentage of the total research output subsidy received by the Nelson Mandela University compared with the other block grants applicable to the

international students. As illustrated in Table 5.12, the international student research output was 24.9% of the total research output subsidy in 2011 and increased to 28.5% in 2012. The subsidy decreased from 27.7% in 2013 to 24% in 2015. It is obvious that the decrease is a result of the number of graduates for the research master's degrees and doctor's in 2009, 2012 and 2013 of which the subsidy income was generated in the years 2011, 2014 and 2015 respectively. However, despite the decrease, the international output for the master's and doctor's graduates remain relatively stable against the total student graduates for the master's and doctor's degrees in comparison with the student enrolments of the international students that constitute only 6% of the total student body.

The research output grant is a major income for the universities and represents an essential benchmark for research excellence. The success output rate for research master's and doctor's degrees influences the research output grant. In order for the research subsidy income to increase for the international students, it is important to ensure an increase in the admission of research master's and doctor's student enrolments and to ensure that these students complete their studies in the required duration. This can be challenging, as a major factor that influences the admission of research master's and doctor's students are the availability of supervisors. Hence, the capacity of the supervisors plays an important role when it comes to the admission of research master's and doctor's students.

The following section outlines the total SA government subsidies received for the international students.

5.5 TOTAL SUBSIDY INCOME FOR INTERNATIONAL STUDENTS

The subsidy income for the international students, along with the other subsidy income received for all the students, are used in the operating budget of the Nelson Mandela University (Office for Institutional Planning, 2015). The total subsidy income for the international students can be calculated by adding the total teaching input, teaching output and research output. The following Table 5.13 includes the total teaching input (refer to Section 5.2), total teaching output (refer to Section 5.3) and total research output (refer to Section 5.4) as a summary outlining the total subsidy income for the

international students received by the Nelson Mandela University for the period 2011 to 2015:

Table 5.13: Subsidy Income: Total block grant for international students

Year	Teaching input (R)	Teaching output (R)	Research output (R)	Total subsidy income (R)
2011	41 820 223	6 696 484	8 866 777	57 383 484
2012	43 544 035	7 214 017	13 652 660	64 410 711
2013	26 296 296	5 146 072	14 509 153	45 951 521
2014	38 200 951	7 668 611	14 956 645	60 826 207
2015	37 843 914	7 709 181	13 533 936	59 087 031
2016	35 675 463	6 266 186	12 695 234	54 636 883
2017	43 336 657	7 478 528	13 710 983	64 526 167

Source: (Sheppard, 2017)

Table 5.13 includes the SA government subsidy income received by the Nelson Mandela University for the international students from 2011 to 2017. It should be noted that the subsidy income for 2016 and 2017 was available as the audited student enrolment data for 2014 and 2015 could be utilised to calculate the government subsidy income for this period. The Nelson Mandela University received a subsidy income of over R64,5 million in 2017 for international students only. If the international students' subsidies are discontinued, the Nelson Mandela University could fail to benefit from approximately R64,5 million per annum from the DHET subsidies alone in the future.¹

The total SA government subsidy income for the international students can be compared with the total subsidy income received for all the students by the Nelson Mandela University. It should be noted that the comparison will be done only with the block grants that apply to the international students, namely teaching input, teaching output and research output. Table 3.7 in Chapter 3 (refer to Section 3.5) contains the

¹ It needs to be remembered that this amount represents only the subsidies from the DHET. It does not include the tuition fees that the international students pay to the university. Therefore, the financial contribution of the international students, if the subsidies and tuition fees are combined, would be much more than R64,5 million in 2017 (as well as all the previous years).

breakdown of the total subsidy income received by the Nelson Mandela University. Table 5.14 outlines the comparison and percentage of the international students' subsidy income to the total subsidy income received by the Nelson Mandela University.

Table 5.14: Subsidy Income: International students' subsidy versus total subsidy income

Year	Total subsidy for international students (R)	Subsidy for all students (R)	Percentage of international student subsidy to total subsidy
2011	57 383 484	553 195 000	10.4%
2012	64 410 711	593 361 000	10.9%
2013	45 951 521	626 412 000	7.3%
2014	60 826 207	669 177 000	9.1%
2015	59 087 031	687 951 000	8.6%

Source: (Sheppard, 2017)

As indicated in Chapter 3 (refer to Section 3.4), the international student enrolments varied between 6.8% and decreased to 6% of the total student enrolments during the 2011 to 2015 academic years respectively. Table 5.14 indicates that the international student subsidy consisted of 10.4% in 2011 and decreased to 8.6% in 2015 of the total SA government subsidy received by the Nelson Mandela University. Therefore, it is reasonable to argue that the reason for the decline in government subsidy income is due to the decrease in student enrolments of the international students. The decrease in the international student enrolments effects the FTE enrolments, which impacts the teaching input block grant (refer to Section 5.2). Another reason for the decrease in subsidy could be the decline in the number of non-research graduates that affect the teaching output block grant (refer to Section 5.3).

Table 5.14 includes the total SA government subsidy received by the Nelson Mandela University which includes the output grant of the publication units in the research output block grant. The calculation performed in Table 5.10 (refer to Section 5.4), which displays the breakdown of the output grant of the research master's, doctor's graduates and publication units, can be used to recalculate the total subsidy income for the block grants that apply to the international students received by the Nelson

Mandela University. The comparison can be made between the international students' subsidy income versus the total subsidy income that only includes the teaching input, teaching output and research output which excludes the output grant of the publication units. Table 5.15 is a recalculation of Table 5.14 as the publication units' grant was deducted from the total research output grant as it represents a fairer presentation.

Table 5.15: International students' subsidy versus total subsidy income (excluding publication units)

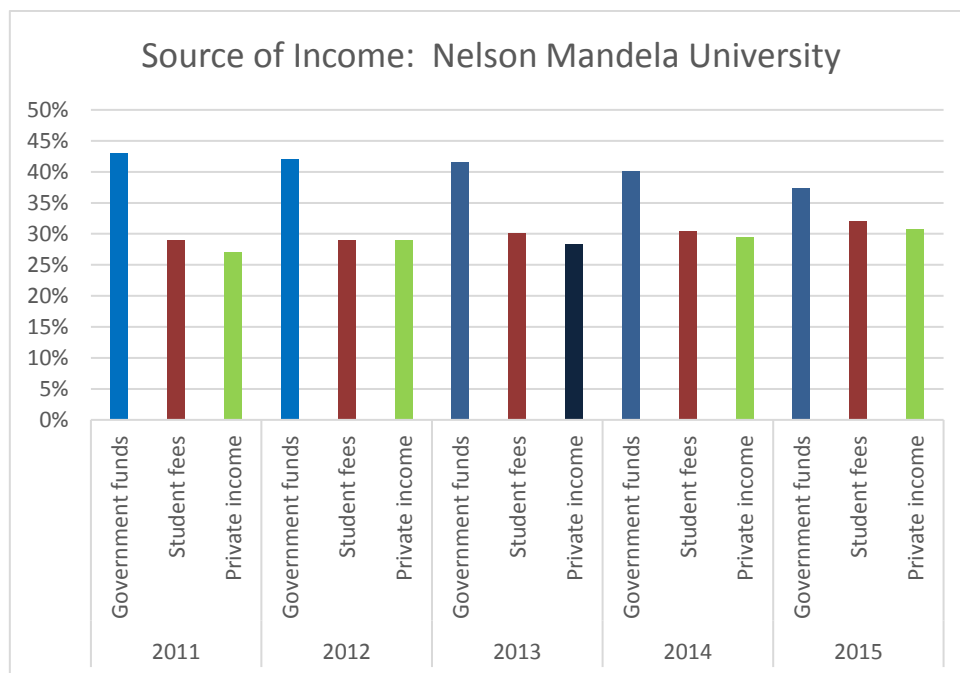
Year	Total subsidy for international students (R)	Subsidy for all students (R)	Percentage of international student subsidy to total subsidy
2011	57 383 484	524 476 383	10.9%
2012	64 410 711	562 812 264	11.4%
2013	45 951 521	584 633 523	7.9%
2014	60 826 207	633 280 776	9.6%
2015	59 087 031	649 242 188	9.1%

Source: (DHET, 2015; Sheppard, 2017)

The subsidy for all the students includes the teaching input, teaching output and research output excluding the subsidy generated from the publication units. In comparison with Table 5.14, there is definitely a difference in the percentage of the international student subsidy to the total subsidy income, which excludes the publication units. The international student subsidy comprised of 10.9% in 2011 and increased to 11.4% in 2012 of the total subsidy income. However, the international student subsidy decreased significantly to 7.9% in 2013 and increased again to 9.6% in 2014 and 9.1% in 2015. The reason for the decline in the subsidy income is the decrease in the international student enrolments and the decrease in graduate outputs. However, as depicted in Table 5.13, the international student subsidy increased in 2016 and 2017. Interestingly, the increase of the international student subsidy between 2016 and 2017 is approximately R10 million.

In order to determine the financial impact on the Nelson Mandela University, the total SA government subsidies in relation to the total income of the university should, first, be determined and compared in relation to the international student subsidy income. The annual financial statements of the Nelson Mandela University are prepared in

accordance with the International Financial Reporting Standards (IFRS), as required by the DHET (Office for Institutional Planning, 2016:81). It is for this reason that the income information in this study cannot be compared to the income outlined in the Nelson Mandela University’s annual financial statements, as it is based on the IFRS and the income in this study is not based on the IFRS but on government formulas. The following data regarding the sources of income of the Nelson Mandela University were obtained from the DHET.



Source: (DHET, 2015)

Graph 5.1: Source of Income of Nelson Mandela University for 2011 to 2015

Graph 5.1 depicts the sources of income of the Nelson Mandela University from 2011 to 2015. The three primary sources of income of the Nelson Mandela University are the SA government funding, student fees and private income. It is clear that the government funding makes up a large part of the Nelson Mandela University’s income as it is almost 50% of the total income. In 2011, the SA government funding was 43% of the total income and decreased to 42% in 2012 and 2013. The SA government subsidies decreased to 40% of the total income in 2014 and 37% in 2015. The following income figures received by the Nelson Mandela University from 2011 to 2015 are based on the reports submitted to DHET.

Table 5.16: Total income of the Nelson Mandela University

Year	Total income (R'000)	Government subsidies (R)	Student fees (R)	Private/Other income (R)
2011	1 442 450	43.0% 620 253 500	29.0% 418 310 500	28.0% 403 886 000
2012	1 607 565	42.0% 643 026 000	29.0% 466 193 850	29.0% 466 193 850
2013	1 748 547	42.0% 734 389 740	30.0% 524 564 100	28.0% 489 593 160
2014	1 953 489	40.0% 781 395 600	31.0% 605 581 590	29.0% 566 511 810
2015	2 051 946	37.0% 759 220 020	32.0% 656 622 720	31.0% 636 103 260

Source: (DHET, 2015)

The comparison between the total government funding received by the Nelson Mandela University for all the students with the government funding received for the international students is outlined in the following Table 5.17:

Table 5.17: Total government subsidies versus international student subsidy at Nelson Mandela University

Year	Total government subsidies (R)	International student subsidy (R)	Total percentage of international student subsidy to total government subsidy
2011	620 253 500	57 383 484	9.3%
2012	643 026 000	64 410 711	10.0%
2013	734 389 740	45 951 521	6.3%
2014	781 395 600	60 826 207	7.8%
2015	759 220 020	59 087 031	7.8%
Total for 5 years	3 538 284 860	287 658 954	8.1%
Average for 5 years	707 656 972	57 531 791	8.1%

Source: (DHET, 2015)

The total SA government funding includes all the block grants, earmarked grants and other funds related to the research and institutional factor grants. The international student subsidy includes only the subsidies received for the teaching input, teaching output and research output, which encompass the research master's and doctor's graduates, excluding the publication units. The international student subsidy consisted of 9.3% of the 43% SA government funding paid to the Nelson Mandela

University of the total university income for 2011. The university would be R57,3 million short of the R620 million in 2011 if the international student subsidies were discontinued. In 2012, the international student subsidy increased to 10%, which is R64,4 million of the 42% of the total income, which is R643 million of the SA government funding of the total university income for 2012. The international student subsidy declined in 2013 to 6.3%, which is R45,9 million of the total R743 million government funding which consist of 42% of the total income. The subsidy increased to 7.8% and remained consistent in 2015 at 7.8% of the 37% SA government funding of the total university income. In 2015, the University would be R59 million short if the international student subsidies were discontinued. On average, between 2011 to 2015, the Nelson Mandela University could have failed to benefit from approximately R57,5 million if the international students were excluded from the SA government subsidies.

In addition to the above, as outlined in Chapter 3, the OfIE pays the Nelson Mandela University 30% of its total income. Hence, the Nelson Mandela University's income would be additionally affected by the 30% of the OfIE income if the international student subsidies were discontinued. The average 30% income, which was paid to the Nelson Mandela University by the OfIE from 2011 to 2016, is R3,9 million which can be added to the R59 million (refer to Section 3.4). If the international students' subsidies were omitted in 2015, the Nelson Mandela University would be approximately R63 million short of their income. In 2017, as outlined in Table 5.13, the SA government subsidy income for the international students received by the Nelson Mandela University is R64,5 million and adding the average 30% income from the OfIE of R3,9 million, the Nelson Mandela University could be R68,4 million short of their income. Clearly, the omission of the international students' subsidies will definitely leave a dent in the Nelson Mandela University's income.

5.6 SUMMARY

This chapter presented the research results of the secondary data analysis in respect of the SA government subsidies received by the Nelson Mandela University for the international students for the years 2011 to 2017. The international students' subsidies were compared with the subsidies received by the Nelson Mandela University for all the students.

The international students' FTE enrolments are significant as it has an impact on the subsidy income for the teaching input grant. The Nelson Mandela University received an amount of R43,3 million (refer to Section 5.2) in 2017 for the international students' teaching input subsidy based on the 2015 teaching input units. The non-research international students' graduates are significant as it has an impact on the teaching output grant subsidy. The teaching output subsidy received by the Nelson Mandela University for 2017 amounted to R7,4 million (refer to Section 5.3) for the international students. The research output subsidy for the international students for 2017 amounted to R13,6 million (refer to Section 5.4). The research master's and doctor's international graduates have an impact on the research output grant.

A comparison between the international students' subsidies and the total SA government subsidies received by the Nelson Mandela University was calculated for 2011 to 2015 in order to determine the impact on the Nelson Mandela University's income. The results of the calculation determined that the international student subsidy comprised of 10.9% in 2011 and 9.1% in 2015 of the total SA government subsidy, which includes only the teaching input, teaching output and research output grants received by the Nelson Mandela University (refer to Section 5.5). The total international students' subsidy was also compared with the total SA government subsidies, which includes all the grants received by the Nelson Mandela University. The results show that the international students' subsidy comprises an average of 8.1% of the total SA government subsidy for five years between 2011 to 2015 (refer to Section 5.5).

In 2017, the SA government subsidy income for the international students received by the Nelson Mandela University is R64,5 million (refer to Section 5.5) and adding the average 30% income from the OfIE of R3,9 million (refer to Section 3.4), the Nelson Mandela University could be R68,4 million short of their income. Clearly, the research results indicate that the omission of the international students' subsidies will definitely leave a dent in the Nelson Mandela University's income as they could lose millions of Rands.

In addition, the omission of the international student subsidies would have a significant impact on the international student enrolment numbers and growth as the Nelson Mandela University would be forced to increase the student fees for the international

students drastically. In turn, SA would not be an attractive study destination for the international students, who are mostly from the African continent and who would likely go to other universities around the world that offer reasonable tuition fees. This would have a negative impact on the financial stability of the universities, their image as well as the image of SA in Africa and the rest of the world.

This section ends the analysis of the secondary data collected for the study. The next chapter summarises the results, concludes the study and makes recommendations for future studies.

CHAPTER 6

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

The aim of this study was to determine the financial impact on the Nelson Mandela University if the international students are excluded from the SA government university funding model. In Chapter 5 the results of the study were analysed and construed by means of tables. Chapter 6 summarises the results of the study and draws conclusions from the research results.

In addition, this chapter provides an overview of the research study, followed by the limitations and recommendations. Following the recommendations, the conclusions are made based on the research question (refer to Section 1.3) and the research study's primary and secondary objectives. An overview of the research study is provided next.

6.2 OVERVIEW OF THE RESEARCH STUDY

Chapter 1 provided a summary of the research study by explaining the background and aim of the study. It includes the objectives and subobjectives that guided the research for the study and the justification of the research question. This was followed by Chapter 2 that provided an overview of the background of the SA university funding model and the SA government subsidies for the SA universities. In addition, a brief overview of the funding mechanisms in other countries was also provided. Chapter 2 also provided a detailed outline of the different government subsidies paid to the universities in order to have a thorough understanding of how the SA government funding model for the universities operates. Based on the literature review results and the statistical sources obtained from the DHET, a comparison of the universities' different sources of income trends was outlined and the dependence on student fees and government subsidies was illustrated.

Chapter 3 addressed the financial sustainability of the Nelson Mandela University, the internationalisation of the university and the student enrolment trends for both the national and international students for the academic years 2011 to 2015. Chapter 3

concluded that the Nelson Mandela University maintained a sound financial position despite the challenges of the HEIs that could have a negative impact on the financial sustainability of the universities. The Nelson Mandela University received 48% of its total income from the SA government subsidies in 2016, which indicates that its primary source of income is from the SA government subsidies. The literature review and statistical sources provided in Chapters 2 and 3 laid the basis to calculate the subsidies for the international students of the Nelson Mandela University and answered the research question in Chapter 5.

Chapter 4 outlined the appropriate research methodology and the research methods applied to the study. Chapter 5 presented the interpretation of the secondary data analysis construed through tables. This analysis was achieved by obtaining the data for the period 2011 to 2017 from Dr Charles Sheppard, the Director of Management Information, and by performing a detailed breakdown to achieve the appropriate statistics to determine the SA government subsidies for the international students at the Nelson Mandela University. This chapter concludes the study. The next section explains how the research question was answered.

6.3 ADDRESSING THE RESEARCH QUESTION

The research question for this study was as follows: *Will the exclusion of international students from the SA government university funding model have an adverse financial impact on the Nelson Mandela University?* Through the research conducted in the study and the results identified in respect of the research question, it is resolved that the Nelson Mandela University depends on the SA government subsidies as its primary source of income. Hence, it is deduced that the Nelson Mandela University will be negatively affected by the exclusion of the international students from the SA government university funding model. The secondary objectives were formulated to assist with answering the research question and the secondary data were obtained to answer the research question. The following section outlines the achievement of the research objectives.

6.4 ACHIEVEMENT OF THE RESEARCH OBJECTIVES

The primary objective of this study was to determine the financial impact on the Nelson Mandela University if the international students are excluded from the SA government

funding model. Table 6.1 outlines the achievement of the secondary research objectives (refer to Section 1.4.2) in order to achieve the primary objective (refer to Section 1.4.1).

Table 6.1: Achievement of the secondary research objectives

Secondary Objectives (refer to Section 1.4)	Chapter Addressing the Objective
To provide a literature background of the SA higher education funding model which includes the current funding model.	Chapter 2
To provide an overview of the trends of the SA government subsidies distributed to the SA universities over the years.	Chapter 2
To provide an overview of the Nelson Mandela University in respect of internationalisation and financial sustainability.	Chapter 3
To motivate and describe an appropriate research methodology for the study.	Chapter 4
To analyse and interpret the data obtained and to report the results of the research.	Chapter 5
To summarise and conclude the study with recommendations.	Chapter 6

Table 6.1 reveals that the secondary research objectives (refer to Section 1.4.2) were achieved. The limitations of the study are presented in the next section.

6.5 LIMITATIONS OF THE STUDY

One of the limitations of the study is that no similar studies had been conducted previously that quantified the total international students' SA government subsidies for an HEI. No previous studies had been conducted on the universities' income that related to the SA government university funding model for the international students. For this reason, the researcher had to provide a detailed literature review in order to show how the SA university funding model operates for the HEIs and the literature review and statistical sources could assist with producing the answers to the research question.

Another limitation of the study was mentioned in Chapter 5 regarding the calculation of the total research output for the international students. The data of the publication units of the international students were not available at the time of the research study. Therefore, the researcher had to recalculate the research output for the international students and all the students at the Nelson Mandela University which excludes the

publication units and only include the research master's and doctor's graduates in the research output grant. This, however, does not undermine the results and conclusions of the study. The recommendations are made and outlined in the following section.

6.6 RECOMMENDATIONS

It is possible that this study may form the basis of future studies to calculate the international students' subsidies at other HEIs and the country as a whole in order to understand how the exclusion of the international students from the SA government subsidies would affect the universities financially. It is recommended to conduct the same study at the HEIs with higher international student enrolments and also include the tuition fee income received from the international students as the income from tuition fees is one of the primary sources of income of the universities. Generally, the universities charge the international students higher tuition fees than the local students. Therefore, it would be interesting to see what the outcome would be if the income generated from the international students' tuition fees is added to the amounts from the state subsidies received for the international students. It will be useful if all the HEIs have uniformity in reporting the international student statistics and the DHET presents the international student enrolment data separately from the local students.

The debate for free higher education continues and the SA government seeks solutions to develop a funding model that will fund free higher education (Munusamy et al., 2017). The following questions for future studies regarding the international students arise if free higher education is implemented:

- What will happen with the international students?
- How much will the international students be charged when it comes to tuition fees?
- What will happen with the SADC students' fees, especially considering the SADC protocol?
- Will the SADC students pay tuition fees or will they also have free higher education in terms of the SADC protocol which states that the SADC students should be treated the same as the local students?
- Will the international students continue to be included in the government subsidies of the block grant?

- How will the universities cope financially if they lose tens of millions of Rand that they currently get from the DHET in subsidies for the international students?
- What will be the impact on the South African universities and the internationalisation of higher education in the country if the state decides not to pay subsidies for the international students?
- What would happen to the country's research outputs if the universities become unattractive and too expensive for the international students?

The uncertainty regarding the subsidies for the international students studying in SA will continue in the future. The Fees Commission report (2017), released to the public on 13 November 2017, found that SA does not currently have the funds to provide free higher education. On the other hand, there are reports that the SA Government might still go ahead and announce free education for the poor SA students. For this, the DHET would need an additional R40 billion annually (Nhlabatha & Stone, 2017). As the SA government tries to find a long-term solution to the high costs, affordability and the demands for free higher education, the decisions will have to be made regarding cuts to various programmes in order to come up with more funding for the universities. The Fees Commission report (2017) did not include the international students and their subsidies in its findings and recommendations. While possible cuts to the international students' subsidies are not in the Fees Commission report, this can still surface as the government tries to find additional funds for the SA students.

The following section summarises and concludes the study.

6.7 SUMMARY AND CONCLUSIONS

The conclusions are based on the research question, primary and secondary objectives linked to the literature review. The literature review in Chapter 2 and 3 was conducted according to the research question and secondary objectives of the research study. The sections included the SA higher education funding model and the current funding framework used for the HEIs for both the local and international students. Currently, the international students are included in the teaching input, teaching output and research output block grant subsidy (Cillers, 2017). The conclusion that could be made is that it will be important for the universities and the

country to continue to have a funding subsidy policy, which articulates the inclusion of the international students in the SA government subsidy of block grants.

The literature review also included an overview of the SA government subsidies paid to the SA universities. Throughout the ministerial reports, issued by the Minister of Higher Education and Training, the universities were advised to have effective measures in place that generate private income as the government budget is under constraint (Nzimande, 2016). The government's priority is to ensure that no academically deserving national student is excluded from receiving higher education.

The literature review provided an overview of the Nelson Mandela University's financial sustainability, student enrolment trends for both the local and international students and how the omission of the international student subsidies will impact the university financially. It was concluded that if the international students were excluded from the SA government subsidies, the universities would be forced to increase the tuition fees for the international students. As a result, the international students would probably apply to the universities outside SA where the tuition fees are more affordable. Hence, the decreasing international student enrolment numbers would have a negative impact on the OfIE at the Nelson Mandela University, which is a self-funding unit, and as a result the loss of income will force the issue of downsizing. The OfIE income depends on the international student enrolments, as its primary source of income is derived from the international foreign admin and foreign tuition fees. The impact will not only be financially, but it will also affect the international diversity at the universities caused by the low international students' presence at the universities.

The primary objective of this research was to determine the financial impact on the Nelson Mandela University if the SA government subsidies for the international students are discontinued. It is important to highlight that it is not only the OfIE that would be negatively affected when it comes to the finances. The Nelson Mandela University's finances would be affected, losing millions of Rand that it currently receives from the SA government to subsidise the international students, as indicated in Chapter 5, and the loss of income derived from the tuition fees paid by international students, which was not calculated for the purpose of this study.

In conclusion, the primary objective of this study was to determine the financial impact on the Nelson Mandela University if the international students were excluded from the SA government university funding model. Table 6.2 outlines the total international student subsidies for the Nelson Mandela University from 2011 to 2017. Table 6.2 illustrates the income from which the Nelson Mandela University could fail to benefit if the international students were excluded from the SA government university funding model. It was concluded that if the international students were excluded from the SA government subsidies, the financial impact on the Nelson Mandela University could be approximately R64,5 million in the 2017 academic year. This excludes the 30% payable from the OfIE income generated from the international students' foreign admin and foreign tuition fees. It should also be noted that the Nelson Mandela University uses the SA government funding received for the international students, not to promote internationalisation, as this is the goal of the OfIE, but the funds are used in the daily general operational activities of the university.

Table 6.2: Total subsidy income for international students at the Nelson Mandela University for 2011 to 2017

Year	Teaching input (R)	Teaching output (R)	Research output (R)	Total subsidy income (R)
2011	41 820 223	6 696 484	8 866 777	57 383 484
2012	43 544 035	7 214 017	13 652 660	64 410 711
2013	26 296 296	5 146 072	14 509 153	45 951 521
2014	38 200 951	7 668 611	14 956 645	60 826 207
2015	37 843 914	7 709 181	13 533 936	59 087 031
2016	35 675 463	6 266 186	12 695 234	54 636 883
2017	43 336 657	7 478 528	13 710 983	64 526 167

Source: (Sheppard, 2017)

The outcome of this study is to enable the policymakers, government officials and university administrators to realise the financial impact on the HEIs if the international students were excluded from the SA government subsidies. Although this study focused on the Nelson Mandela University, the impact of the exclusion of the international students from the SA government university funding model would be significant and negative for the universities, international offices, international students and the plans to internationalise teaching, learning and research at the South African

universities. Therefore, it is highly recommended that the SA government continues to include the international students in the DHET subsidies.

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Annexure 1: Ethics form

FORM E

NELS N M NDELA
UNIVERSITY

ETHICS CLEARANCE FOR TREATISES/DISSERTATIONS/THESES

Please type or complete in black ink

FACULTY: Business and Economic Sciences

SCHOOL/DEPARTMENT: Applied Accounting

I, (surname and initials of supervisor) Ms M Chalmers

The supervisor for (surname and initials of candidate) Bezuidenhout, JI
(Student number) 20400526

A candidate for the degree of **MTech Cost and Management Accounting**

with a treatise/dissertation/thesis entitled (full title of treatise/dissertation/thesis):

The Financial Impact on the Nelson Mandela University as a result of excluding international students from the University Funding Model

considered the following ethics criteria (please tick the appropriate block):

	YES	NO
1. Is there any risk of harm, embarrassment or offence, however slight or temporary, to the participant, third parties or to the communities at large?		X
2. Is the study based on a research population defined as 'vulnerable' in terms of age, physical characteristics and/or disease status?		X
2.1 Are subjects/participants/respondents of your study:		
(a) Children under the age of 18?		X
(b) NMMU staff?		X
(c) NMMU students?		X
(d) The elderly/persons over the age of 60?		X
(e) A sample from an institution (e.g. hospital/school)?		X
(f) Handicapped (e.g. mentally or physically)?		X
3. Does the data that will be collected require consent of an institutional authority for this study? (An institutional authority refers to an organisation that is established by government to protect vulnerable people)		X
3.1 Are you intending to access participant data from an existing, stored repository (e.g. school, institutional or university records)?		X

4. Will the participant's privacy, anonymity or confidentiality be compromised?		x
4.1 Are you administering a questionnaire/survey that:		
(a) Collects sensitive/identifiable data from participants?		x
(b) Does not guarantee the anonymity of the participant?		x
(c) Does not guarantee the confidentiality of the participant and the data?		x
(d) Will offer an incentive to respondents to participate, i.e. a lucky draw or any other prize?		x
(e) Will create doubt whether sample control measures are in place?		x
(f) Will be distributed electronically via email (and requesting an email response)?		x
Note:		
• If your questionnaire DOES NOT request respondents' identification, is distributed electronically and you request respondents to return it <i>manually</i> (print out and deliver/mail); AND respondent anonymity can be guaranteed, your answer will be NO.		
• If your questionnaire DOES NOT request respondents' identification, is <i>distributed via an email link and works through a web response system (e.g. the university survey system)</i> ; AND respondent anonymity can be guaranteed, your answer will be NO.		

Please note that if **ANY** of the questions above have been answered in the affirmative (**YES**) the student will need to complete the full ethics clearance form (REC-H application) and submit it with the relevant documentation to the Faculty RECH (Ethics) representative.

and hereby certify that the student has given his/her research ethical consideration and full ethics approval is not required.

M.L. Chalmers
SUPERVISOR(S)

15/1/2018
DATE

HEAD OF DEPARTMENT

DATE

[Signature]
STUDENT(S)

22/08/17
DATE

Student(s) contact details (e.g. telephone number and email address):

Janine Bezuidenhout cell phone number 0832951630 and email address: s20400526@mandela.ac.za or janine.bezuidenhout@mandela.ac.za
Please ensure that the research methodology section from the proposal is attached to this form.

Annexure 2: Letter from language editor



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TO WHOM IT MAY CONCERN

I, Sonja Mac Lachan, declare that I have done the language editing for the dissertation of:

JANINE INGRID BEZUIDENHOUT (20400526)

entitled:

THE FINANCIAL IMPACT ON THE NELSON MANDELA UNIVERSITY AS A RESULT OF EXCLUDING INTERNATIONAL STUDENTS FROM THE UNIVERSITY FUNDING MODEL

Submitted in partial fulfilment of the requirements for the degree of Master of Technology: Cost and Management Accounting in the Faculty of Business and Economic Sciences at the Nelson Mandela University.

I cannot guarantee that the changes that I have suggested have been implemented nor do I take responsibility for any other changes or additions that may have been made subsequently.

Any other queries related to the language and technical editing of this treatise may be directed to me at 076 481 8341.

Signed at Port Elizabeth on 19 January 2018



SONJA MAC LACHLAN

Annexure 3: Turnitin Results

Janine Bezuidenhout

ORIGINALITY REPORT

