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Title

BUDGETARY PLANNING AND EXPENDITURE CONTROL PROCESSES AT PUBLIC UNIVERSITIES IN GAUTENG, SOUTH AFRICA

Thesis submitted in fulfilment of the requirements for the degree

Masters

In the Faculty of Management Sciences

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(B-Tech: Cost and Management accounting)

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(April 2022)



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I Magaretha Marx, declare that this dissertation is my original work and that it has not been presented to any other university or institution for similar or any other degree award.

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To whom it may concern

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Budgetary planning and expenditure control processes at public universities in Gauteng, South Africa

The responsibility of implementing the recommended language changes rests with the author of the document.

Yours truly,

A handwritten signature in black ink, appearing to read 'Linda Scott', is written over a light blue horizontal line.

Linda Scott

ACKNOWLEDGEMENTS

Thank you to my dear husband Rudolf Marx for sitting with me nights on end to support me, my dear son and lovely daughter to allow me to be absent as a mother to work on my studies. I also want to thank my line manager, supervisor, and co-supervisor for their leadership in this endeavour.

Then I am thanking God because his blessings and grace is never-ending.

ABSTRACT

Efficient planning and effective budget and cost control are key to the financial survival of universities in South Africa. Given the #FeesMustFall, students and their parents, starting in 2018, no longer contribute to the development of new infrastructure, payroll expenditure, maintenance and other daily operational expenses of public universities in South Africa.

A new funding model for higher education calls for even stricter planning and allocation of budgets to departments within an institution of higher education. Evenly important, stricter control over the actual spending of these allocated funds needs improved planning and implementation of more effective policies and procedures to answer to the needs of the post #FeesMustFall funding model. Public universities will then be even more greatly funded by taxpayer's money via government grants.

There is this constant factor of the current situation of the South African economy, which will always bring the need for best possible use of scarce resources of funds. To eliminate the abuse of funds and elements of corruption, internal control strategies and systematic automation of controls need to be employed and even more rigorously enforced. The current phenomenon of different political parties' that interfere with autonomous public universities to use #FeesMustFall and free education as a political "play-ball" is in full swing. These political structures and unions will in all probability have a huge impact, largely on the principals and methods used to plan an annual budget and the procurement policies and procedures of operational needs and on the expenditure control in public universities in South Africa.

This study investigates the budgetary planning processes and expenditure control in universities in Gauteng, South Africa. This research is done by means of a detailed empirical study of the budgeting processes, cost and expenditure control processes, procedures followed and the internal control mechanisms at some universities in Gauteng.

The empirical study was conducted with public universities in Gauteng and applicable research online questionnaire were used to analyse. The primary objective of this empirical study was to investigate what budget model and budgetary processes and principles regarding decision making to allocate budgets to specific allocations in the budget. Furthermore, the research study investigated how cost management and expenditure are controlled and how internal control mechanisms are applied in higher education institutions that formed part of this study.

This study investigated the manner in which the budgets for annual expenditure are planned and how the internal controls are employed to ensure effective control over expenditure at public universities in Gauteng, South Africa. This research is supported by a literature study into the role of higher education in South Africa, the different controlling bodies in South African Higher

Education, funding of South African public universities, budgetary planning and earmarked spending, procurement and expenditure control and reporting by universities in South Africa.

Key words: effective budgeting, Department of Higher Education, #FeesMustFall, expenditure control, budgeting, budgetary planning, virement, budget models.

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LIST OF ABBREVIATIONS

CFO	Chief Financial Officer
CHE	Council for Higher Education
CHET	Centre for Higher Education Trust
DHET	Department of Higher Education and Training
DVC	Deputy Vice Chancellor
GDP	Gross domestic product
HEFCE	Higher Education Funding Council for England
HEMIS	Higher Education Management Information System
HET	Higher Education and Training
HEQC	Higher Education Quality Committee
HOD	Head of the department
IAS	International Accounting Standard
IFRS	International Financial Reporting Framework
IHE	Institutions of higher education
MIS	Management Information System
MTEF	Medium-Term Expenditure Framework
NDP	National Development Plan
NSFAS	National Student Financial Aid
OECD	Organisation for Economic Co-operation and Development
UK	United Kingdom

CHAPTER 1

BACKGROUND AND SCOPE OF THE STUDY

1.1 INTRODUCTION

Higher education has arrived at a crossroads between socio-cultural, economic and geopolitical variables (Choudaha, 2013). It is becoming obvious that higher education is a fundamental component for Africa to reach its full potential (University of Twente The Netherlands, 2010). This is particularly true, as Walker and McLean (2013:47) describe it as the aims of the political systems and social structures in South Africa who want to influence higher education for their own benefit to show what political parties are capable of. Because of the instability that political, socio and economic pressures bring, institutions of higher education (IHEs) need to ensure stability in their financial structures to stay viable. (Langa, Wangenge-Ouma, & Jungblut, 2016)

Since the #FeesMustFall student protests towards the end of 2016 (KPMG, 2016) through to the announcement of the former President, Jacob Zuma, at the end of 2017 (Masondo, Fengu, Cele & Makinana, 2017) and beyond, there are huge financial implications for both the state and public universities. #FeesMustFall could also influence how the public universities will manage their finances. If the government fund public universities and not parents or students' loans, it may result in universities not being self-governing, because they will no longer be self-sufficient (CHE, 2006). According to Harle (2015), free education that will be implemented over a period of the next few years is starting with first year students of the 2018 enrolments. There are three models for university governance: bureaucratic, collegial and political (Baldrige 1971).

Budgeting processes ensure that there are financial plans that serve the principle of quantifying the objectives of an IHE to provide a foundation for the management and performance assessment (Vigario, 2007:286). Policies and procedures are administrative tools that prescribe how decisions and actions of all staff should be made and entail principals to be followed, coordinated and enforced consistently across organisational units to standardise routine decisions (Ehlers & Lazenby, 2010; Neluheni, Pretorius & Ukpere, 2014). Operational procedures will ensure effective budgetary and expenditure control.

South African universities can be grouped into three levels, which include traditional universities offering theoretical knowledge with different types of degrees, universities of technology, which offer vocational or technical diplomas and degrees and currently offer up to D-Tech degrees and a small number of comprehensive universities, which give a combination of both types of qualifications (Businesstech, 2015). For the purpose of this study, a registered public university, a university of technology and a comprehensive university will be referred to as IHEs.

According to Joshi, Al-Mudhaki & Bremser (2003), the purpose of different types of budgets is the same but the degree of importance differs significantly. The effective and efficient budgeting process of IHEs is critical as it creates a formal framework for the planning stage, which must be submitted at a certain date, which is approved, defended or changed, before final approval can take place. Then the next phase of the planning process and eventually the implementation and control stages will begin (Joshi *et al.* 2003). A budget committee would examine and quantify the objectives in collaboration with each department, which will provide opportunities for the exchange of ideas among the various departments and individuals (Lyne, 1992). Senior management of IHEs are expected to understand the benefits of quantifying costs, cash outflow and revenue. Departmental budgets assist finance officers, heads of departments (HODs) and deans to focus on appropriate expenditure control mechanisms for the specific department within university rules and policies (Naidoo, 2002:70).

In keeping with the view of Kaplan (2009), this dissertation is based on a philosophy that budgeting induces managers to become cost aware and creates a sense of caution, responsibility and focus on goal orientation and institutional characteristics for the organisation as a whole (Goldstein, 2012). Each department's goals should be on par with the university's overall budget plan and focus on accountability to ensure quality higher education (Kaplan, 2009). This accountability may include evidence of student academic achievement versus the cost of the qualification (Heller, 2001:155). The budgeting system has two affections: First, it is a means by which reallocation of resources is affected and, secondly, it provides expenditure control for each department and for the entire institution (Ezzamel, 1994).

The South African government are funding different university grants, university infrastructure and the National Student Financial Aid Scheme (NSFAS). With reference to an article of PWC (2015), South Africa is spending only 0.75 percent of its gross domestic product (GDP) on IHE (PWC, 2015; Wangenge-Ouma & Cloete, 2008). The US and the UK spend 0.9 percent of their country's GDP on higher education, while Germany spends a full 1.1 percent on higher education. The South African 2016 budget review show that universities received R93 billion and NSFAS received R41 billion (Nene, 2015). In calculation of 1 percent of South African GDP government would spend on higher education, this would amount to R134 billion (PWC, 2015). This shortfall is a result of President Jacob Zuma's zero percent increase promise during 2016 for the 2017 academic year. The Director of the Centre for Higher Education Trust (CHET) indicated that the South African government grant to IHEs is low when compared to international standards (Cloete, 2015).

Therefore, the following factors should be considered when planning the next financial year's budget:

- Influence on university budget processes and policies

- Influence on university cost control processes
- The implication of percentage contribution per student
- The effect on government grants as a percentage per student of the total funding accessible for higher education
- Effects on salaries of academic and support staff at universities
- Effects on maintenance, running costs and daily activities (i.e. electricity, water, basic services, cleaning)
- Influence on students' attitude to pay outstanding fees to universities
- The role of NSFAS.

Both Vigario (2007:287) and Lokko (1988:56) define budgeting as the strategic plan (long term) and the operational budget (short term) annual plans articulated in quantitative terms, including physical plans and financially controlled plans. During the #FeesMustFall protests at universities in South Africa, some universities were forced to close for some weeks during the 2016 academic year whilst the long- and short-term plans and budgets and the planned strategic use of resources are now off track (Allais, 2018:152); Motala, Vally & Maharajh, 2018: 168). Expenditure that had already been incurred would now be spent again in the next financial and academic year in order to allow students to re-do their subjects they might have not passed or completed because of the influence these protests may have had on their exams.

According to the ministerial committee (Department of Higher Education and Training, 2014b), this reviews university funding, recommending that there should not be a cap on student fees. The Minister of Higher Education and Training (Department of Higher Education and Training, 2014a) expressed the view that, placing a ceiling on student fees needs to be investigated further, as indicated by Minister Blade Nzimande in his university funding review (Department of Higher Education and Training, 2014b). The growth in NSFAS loans to students was substantial, according to the review of university funding (Department of Higher Education and Training, 2018a). Student fee increases have been more than the increased budget of NSFAS (Department of Higher Education and Training, 2014b). During October 2015, the UCCF and USAF proposed a 0 percent fee increment for the 2016. USAF also proposed that the President appoint a commission to investigate a plan for funding higher education (Presidential Commission on Higher Education and Training, 2016).

The National Development Plan (NDP) for South Africa requires IHEs to raise higher education enrolment from under one million in 2010 to above 1.5 million by 2030 (National Planning Commission, 2011). The researcher argues that government is expected to cut unnecessary spending costs of offering higher education and create an alternative flow of income, failure to do so could result in government funding increasing enrolments rather than the effective utilisation of government grants.

PWC (2016) argues that universities that report under full International Framework for Reporting Standards (IFRS), under International Accounting Standard (IAS) 18, the fair value of the receivable, will not be the same if the possibility of a free higher education realises and students do not pay their outstanding accounts. This is due to the fair value of the outstanding fees being less in the next year. The influence on the fair value of possible free education and outstanding fees will differ from institution to institution. This probability could result in a strain on the approved budgets and acquisition of the necessary goods and critical expenditure of different universities and possible impact on the ability of a university to continue is a going concern.

The chapter layout of the introduction first discusses the background to the study where after the matters will be discussed in a layout of discussing the institutional theory because factors of institutional theory may also influence on what basis the funding framework or budget model may be chosen. Then a look at the budgetary theory and the models will be discussed together with the expenditure theory to keep the theories together. The role of public universities and the role of NSFAS will be discussed before moving onto the actual funding models and the budget concepts and methods. The last part of the literature includes information on the budget process and closes off with management information systems as the management information systems bring the budget process and expenditure control together in an electronic control system.

1.2 BACKGROUND TO THE STUDY

Based on the Higher Education Act (101 of 1997), income, (except for study fees), is derived from grants from the Council for Higher Education (CHE). Block grants comprise of different government grants such as a teaching input sub-block grant, the institutional factor sub-block grant, the teaching output sub-block grant, the research output sub-block grant and currently the phasing out of former earmarked gap grant (DHET, 2018). There are also some earmarked grants for infrastructure and efficiency, grants for new universities, the university capacity development (UCD) grant, the foundation provision grant and the clinical training grant. The institutional grants are the National Student Financial Aid Scheme (NSFAS) that will be explained in the next chapter, The National Institute of Human and Social Science grant, the grant for African Institutes for Mathematical Sciences and the Grant of the Council on Higher Education (DHET, 2018). IHEs that received such funds are required to submit their projected income and budgeted expenditure for the next financial year to be approved by the Minister of Higher Education (DHET, 2018).

1.3 PROBLEM STATEMENT

Budgets may tend to develop from precedence as was already believed by Lokko (1988). The fact that specific expenditure was made in the prior financial year becomes an indication of its reasonableness to be important in the next financial year. To put this in perspective, a department could have spent a given amount on travelling during the previous year; this amount will probably

become the norm amount in the following year's budget forecast (Lokko, 1988). During the budget planning and approval process by the financial budgeting committee, requests are likely to be linked to the rise in inflation, kept equal to previous budget or even be reduced, especially when economic pressure, loss of income and phenomena such as #FeesMustFall arise.

One of the primary problems of budgeting is that plans for expenditures must be made and budgets thereby created months and sometimes two or three years ahead of actual expenditures so that the appropriations may be presented to and approved by the chief financial officer (CFO), finance committee and the DHE. As Lokko (1988) argues, it is not easy for the Vice Chancellor of a university or a manager of a department to foresee exactly the needs of a department and it is not easy to express the needs in monetary values for the next financial year or even six months ahead.

For this study, the Higher Education Act (101 of 1997) applies: An Annual Performance Plan, consistent with the Medium-Term Expenditure Framework (MTEF) must be submitted annually to the DHE as provided for in these regulations. The new regulations, as documented in the Government Gazette and the Minister of Higher Education's approval of each university's enrolment plan (DHET, 2014c) are required to contain performance targets and be aligned to the strategic plan of the university. This plan is intended to identify a core set of markers, such as monitoring the performance of an IHE. Institutions are required to submit a biannual report and an annual performance report as further provided for in these regulations (Higher Education Act, 101 of 1997) and ensure that the IHE adheres to their strategic plan, Annual Performance Plan and budget submitted to DHE.

The basis of the funding is to be tied to educational outputs and performance, or educational inputs. The difference is from a needs-based budgeting with specific values for specific pre-defined objectives. A theoretical subsidy formula (Makoni, 2016:2) warrants that the regulations for funding are known in advance, reflecting on planned budgeting process and the internal controls in that budget expenditure. Universities have to reprioritise to ensure efficiencies in the university's system as additional funding in the following MTEF (Department of Higher Education and Training, 2018). A subsidy formula is designed to make room for unforeseen factors such as cost escalation and new technology transfers to be incorporated (Jongbloed, 2004:4). Nevertheless, it could assist to choose a funding model for a specific institution. Thus, it falls into two categories, the first is the basis of funding and the other is the degree of market orientation.

Another important factor is the phenomenon in that only 40 to 50 percent of students complete their degrees or diplomas at IHEs countrywide (Van Zyl & Blaauw, 2012). Gratification of the problem is that logically, the university needs to pay for this expense of additional students in classes and on campus while there may not be income for the drop out student. The students who do not pass their subjects and register for a second- or third time result in overfilled classes

that may result in additional lecturers having to be paid extra salaries and the salary budget for such a department could be depleted before the end of the financial year. Even though there are students that annually drop out of university, the overhead costs are not negated and factors such as lecturers, cleaners and security salaries, together with use of infrastructure, water and electricity have to be accounted for. The extend of factors that influence the operational budget and institutional expenditure against the cost of first-time enrolments, remains to be elucidated.

This study attempts to bring more clarity to budgeting and expenditure control processes at universities in South Africa.

1.4 GOALS AND OBJECTIVES OF THE STUDY

1.4.1 Primary objective

The primary objective of this study is to investigate the different budgeting models that public universities use and to investigate the budgetary planning and expenditure control processes at public universities in Gauteng, South Africa.

1.4.2 Sub-objectives

Further goals of this study are to investigate the different ways that universities in South Africa plan and manage their operational budgets and expenditure control processes.

Items in the sub-objectives of this study are:

- To find out what are the Institutional background of the university to show their diversity in size;
- To investigate if cost analysis is done, if it is done, how often it is done;
- To ascertain how the total budget for different IHEs is decided on, what were the ideas and reasoning behind their decisions, measurements and attributes for calculations. To investigate the attitude and knowledge of the HODs in different departments that have to set up and manage their departments' budgets for the next financial year;
- To investigate the attitude and knowledge of budgeteers in different departments who must setup and manage their departments budget;
- To ascertain how the budgeted expenses regarding research expenditure are reported;
- To investigate the relationship between the technology and innovation department's budget and the university's main budget; and
- To determine how Student Hostels if student accommodation income covers the total cost of operating the student accommodation or residences.

1.5 THEORETICAL FRAMEWORK

To achieve the primary objective of this research, the theoretical framework is laid out as follows:

- Access the existing literature found in journals, articles, policies and budget planning documents from universities in South Africa.
- Review the existing literature on all income and internal budget control and expenditure procedures that are followed.
- Investigate how earmarked income, grants and third-stream income may be spent.
- Investigate how Gauteng public universities plan their budgets, manage their available budgets, and control their expenditure.

1.6 RESEARCH METHODOLOGY

1.6.1 Literature review

A literature review was conducted on primary and secondary sources such as written articles and journals of universities in South Africa. The objective of the review was to gain an understanding of what different universities in South Africa may consider as the best method of budgeting and more effective expenditure control.

This review included the applicable South African Higher Education Act, legislations, and the approaches to budgeting. Primary sources were journals, news articles and books. Secondary data sources were articles from specific Internet sites of different HECs and authorities, which included relevant data sources, textbooks, journals and newspaper and internet articles. In addition, the *university world news* blog for sub-Sahara Africa and the *university world news* blog for countries worldwide were used for this study. These sources were used to search for budgeting principles used and to formulate a list of best practice methods. This literature study and the answers to the research questions were used in establishing guidelines for the policies and procedures on budgeting in IHEs.

1.6.2 Empirical study and data collection

In this research project, a mixed method of qualitative and quantitative methods was used to collect the necessary data for the analysis. A questionnaire was sent to the Chief Financial Officers, the deans of faculties and the heads of departments of each of the chosen universities, the directors and senior accountants and accountants of finance departments, to the research department and to the projects and service departments and lastly, to the technology station managers of the chosen Gauteng public universities.

Questionnaires were designed to address the following:

Table 1.1: Questionnaire design

Section 1	Institutional student background
Section 2	Cost analysis
Section 3	Budget income
Section 4	Budget expenditure
Section 5	Technology station
Section 6	Hostels

The draft questionnaire was given to academic and management accountants at the Vaal University of Technology, who provided their expert opinions on this questionnaire.

A pilot questionnaire was sent via e-mail and returned via e-mail, where the CFO of VUT, director of finance, head of accountancy department and senior accountant were requested to answer each question by choosing the most applicable answer. The answers (expanded explanations where requested) of respondents were analysed to explore and understand the philosophies of departmental budgeting and expenditure controls.

The questionnaire was finalised and sent to the statistician for editing.

1.6.3 Sampling frame

Convenience sampling is a process of selecting subjects or units for examination and analysis based on accessibility, ease, speed and low cost (Mc Millan & Schumacher, 2001). For this study, a convenience sample of universities in Gauteng was used. All seven public universities in Gauteng were chosen, which include all three types of universities, namely traditional university, comprehensive university and university of technology.

1.6.4 Sampling method

Gauteng province has the most universities in SA and Gauteng is the closest to the researcher, for this reason this study is about Gauteng public universities. The study also used a judgmental sampling method because the researcher aimed to include all the three types of public universities in Gauteng, namely traditional, conventional and university of technology. The researcher applied to each of the seven public universities for ethical approval and permission letters to contact the relevant staff at the universities in the sample. The intended staff was chosen by applying a purposive sample to take part in the online questionnaire. The questionnaire was

sent out to the universities intended staff. These permission letters are attached in annexure A. Two of the universities denied approval for the research at their university and was therefore excluded from this study whereas five universities approved and gave the researcher permission to conduct the research at their universities.

1.6.5 Statistical analysis

This empirical study included five of the seven Gauteng public universities which increase the validity of the analysis and the same questions were asked to all participants. The data collected from the answers to the questionnaire were analysed using the IBM SPSS statistics 23 software as this software is well-known and accepted by research authorities. A frequency analysis was done as a descriptive statistical analysis method that showed central tendency of the answers to the research questions to assess the reliability of the data.

1.7 ETHICAL CONSIDERATIONS

Ethical considerations can be specified as one of the most important parts of a research project (Bryman & Bell, 2011). The ethical principles followed were:

- Special care was taken throughout the study not to be bias.
- Data will be preserved for an adequate period (5 years) within the university offices.
- All possible participants were informed of the purpose of the study with the use of a participant information letter that states the purpose, risks, and benefits of participating in the study. This participant information letter was approved by the University of the Witwatersrand from whom the ethical clearance certificate was applied for and obtained.
- Permission from all respondents and relevant authorities of participating universities was requested. Participation was voluntary and the participants choose to accept or rejects the email link that was sent, giving participants the right to not participate without fear of bias or discrimination. Neither respondent, nor the university where they work can identified, were maintained through the use of an online questionnaire where no participant or the university can be identified.
- Participants' consent was obtained, as per participant information letter that if a participant uses the online questionnaire and submit it online their automatic consent applies.
- All personal information of any participant is protected via the online survey software used.
- The participants' right to anonymity was preserved.
- Participants were not misled in any way before, during or after the data collection, analysis or reporting.

- Professional competence in data collection and analysis was maintained at all times.
- Questions were phrased not to cause any emotional distress or infringe on any dignity.

1.8 CHAPTER LAYOUT

Chapter 1: Background to the study.

Chapter 2: Literature review.

Chapter 3: Research design and methodology.

Chapter 4: Analyses and interpretation of data.

Chapter 5: Summary and conclusion of the study and recommendation for further studies.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

Creswell (2014:25) indicates that a literature review is important to assist in understanding the scope of the study. The chapter engages with topical matters and starts with the institutional theory and its importance because universities are institutions that may be influenced as explained in this theory. Background will be given of the role and governance of public universities is explained with the related funding models, grants, and income. The theory of budgeting and the budgeting models and the expenditure theory will be discussed before the principals of cost centres, management accounting and information management systems are discussed. Lastly, this chapter will discuss the key literature to the study, namely budgeting and expenditure control processes and procedures.

2.2 INSTITUTIONAL THEORY

Philip Selznick is considered to be a founder of the institutional theory (Meyer & Rowan, 1977:341). Institutional theory describes the influence that society in and around an organisation has on the organisation and its practices (Meyer & Rowan, 1977:342). Zucker (1987:444) indicated that institutions and management became the product of social rather than economic pressures. According to Maseko (2018:27), a perspective on institutional theory assists to explain the organisational behaviour on innovations adopted; or disperses transversely through organisations despite the failure of the society to develop economic efficiency and effectiveness in an organisation.

Suddaby (2013:330) agrees with Zucker (1987:443) that Selznick's study brings understanding that forms the foundation of institutional theory. Selznick's key concepts of institutional theory are broken down as follows: values, diffusion, myths, loose coupling, and legitimacy (Suddaby, 2013).

- **Infusion of value**

Selznick's social structures, namely family, the community and the church are likely to attain important impact that extends beyond the cultural and social rationale (Selznick 2011:5-22). The core idea is that the organisation's continued existence became infused with significance (meaning and value) that extends beyond their naked functional utility (Selznick 1997; 2011:5-22). As a result of this infusion of meaning and value, there are often unintended consequences to purposive actions (Meyer & Rowan 1977:340-363). The process by which institutionalisation

happens over a period of years, changes organisational structures or functional positions and acquires additional meaning or value beyond their intended function (Xavier 2014: 263-276).

- **Diffusion**

Diffusion is the socially mediated spread of some practices within a population (De Jonge 2015). Economics and communication studies, sociology, anthropology, and geography have rich traditions of diffusion (Greve & Argote 2015:1).

- **Rational myths**

The rational myths in institutions and in higher education are unconfirmed ideas about the institution or department and their impact on students or staff. These myths may seem to be obvious while still logical to academics and other staff, students and the broader public assume them to be true (Pascarella & Terenzini 1995:2; Zucker 1987:444).

- **Loose coupling**

Related to the idea of rational myths is the observation by Selznick (1997:445) that organisations often only ceremonially agree to some practices. Organisations must often separate and defend their core functions but also conform to social pressures (Selznick 1997).

- **Legitimacy**

Organisations stick to rational myths by approving isomorphic cultures out of a desire to be seen as a legitimate organisation (Suddaby, Bitektine & Haack 2017:451-478; Zucker 1987:446). The idea of legitimacy is that organisations improve their probability of survival by conforming to commonly held prospects of what a successful organisation appears to be.

- **Conformity**

According to Zucker (1987:445), conformity in an institutional environment speaks about the adoption of structures, allowing different practices and activities similar to top institutions. Organisations that share a common social field were probably forced by similar forces and may become more similar over a period of time (Oliver 1991:145).

2.3 IMPORTANCE OF INSTITUTIONAL THEORY

This institutional theory has shown notable resilience through the transformation to its core principles but still managed to keep a powerful internal coherence (Meyer & Rowan 1977).

The principal suggestion of this theory is that organisations can function concurrently in technical and institutional environments while still contained by dependability in coherence to this

conceptual view of the organisations. Institutional theory continuously has a powerful impact on organisational theory (Suddaby & Greenwood 2005; Greve & Argote 2015).

2.4 THE ROLE OF PUBLIC UNIVERSITIES IN SOUTH AFRICA

2.4.1 The governance of higher education

Government departments, the Higher Education Act (101 of 1997) higher education organisations and university institutions are the principal authorities that guide higher education institutions in SA. Naidoo (2014:1) has linked regulators and role players to the functioning of universities. These roles will now be discussed.

2.4.2 The role of higher education

Higher education provides for development in social improvement, economic, technological, and scientific improvement in a country (Naidoo 2002:15-31). The program for transformation and the White Paper on education (Department of Higher Education and Training 2014a) stipulated that higher education is required to add value and support transformation. The reconstruction and development program (RDP) are developed so that South African institutions of higher education should:

- Meet up with the learning needs of the individual through opportunities offered to develop their intellectual abilities.
- Deal with the developmental needs of society, including professional institutions and technical development of artisans. The RDP is designed to create a knowledge-driven society.
- Contribute to socialisation of citizens and encourage developing meditative competencies and motivation to renew and review general existing and new ideas and propose new policies and practices for the common good.
- Add to creating, sharing and evaluation of new and existing knowledge

The role of the White Paper is to focus on building the capacity of the post schooling system and provides for the establishment of PSET and CAS (Department of Higher Education and Training 2014a). The White Paper on education and the DHET (DHET 2014a) govern structures and operational rules that will enable successful and sustained service to the applicable community. The 2030 NDP requires more funding to higher education (National Planning Commission 2012).

South African IHEs operate under a Higher Education Quality Assurance and Accreditation (SAQAA) programme under the European Union (EU) and African Union (AU) strategic partnerships. The objective of the SAQAA is to support the development of a higher education quality assurance and accreditation system in institutions over Africa. Phase one of the

programme is intended to strengthen collaboration on higher education programmes and a competitive African higher education system (Naidoo 2002: 33-47).

2.4.3 The role of public universities in the national development plan

The NDP indicates that by 2030, South Africa is expecting to have an efficient education system that further expand the higher education and training that widen universities to science and technology; research and development and innovation (National Planning Commission 2012).

Higher education institutions (HEIs) are supported by advisory institutions and effective regulatory organisations. The vision of the DHET is to construct institutions for science, technology, and innovation to ensure the development of intellectual capital and stimulate economic growth and development (Ministry of Education, 2001). SA public universities must identify their position and niche education in supporting the national objectives and provide a multiplicity of programme offerings (Naidoo 2002: 30).

2.4.4 The pass rate and dropout rate of university students

According to Statistics South Africa (2019), South Africa has inherent significant and major demographic changes in student population and student residence patterns (Castex 2017:91-95). As the report of Statistics South Africa (2019) suggests, at the time of publication, the graduate numbers from public higher education had doubled from around 92 000 in the year 2000 to over 200 000 graduates in 2016. However, the South African higher education system is still undergoing major challenges in terms of success rate, dropout rate and the poor completion rate. According to Universities South Africa (USA 2014), just 35 percent of the first-year student intake and only 48 percent of fulltime-contact students, graduated within a five-year period (USA 2014). Similar reporting (Stats SA 2019) shows that a large percentage of first-, second- and third-year students drop out of university before completing diplomas and degrees (Castex 2017:97-102). A statement on the daily blog: South Africa's Education Statistics (South African Market Insights 2019) revealed that many students take an average of six years to finally complete a three-year qualification (STATS SA 2019). The number of students that enrolled between 2012 and 2016 increased by 2.4 percent, yet the graduate figure increased with 22.3 percent. This percentage clearly indicates that the increase in graduates is not just because there was an increase in enrolments (South African Market Insights 2019).

The throughput rate, as described by Van Broekhuizen and Van der Berg (2013), may also be seen as the completion rate. The throughput rate is calculated by counting the number of students who enrol in a specific year compared to how many of those same students actually graduate. The dropout rate is the difference between how many students for first time enrolls for diplomas and degrees in a specific year compared to how many of those students drop out of university

without graduating. The National Plan on Higher Education (Ministry of Education 2001) articulated apprehension that SA higher education throughput rates are less than 22 percent during a three-year diploma or degree. This throughput rate is amongst the lowest in the world (Chetty & Pather 2015:1-6). The report from CHE gives a similar figure that only 35 percent of learners that enrol for the first time during 2006 completed their studies in a five-year period and 55 percent of this 2006 class may have never completed their studies. It is the view of the researcher that this result may be seen as wasted expenditure for universities such as water and electricity used, lecturers paid to teach the dropping out students or repeating students. Also, the administrative cost of having these repeating or dropping out students is now wasted.

2.5 NATIONAL STUDENT FINANCIAL AID SCHEME (NSFAS)

Before NSFAS, there was the Tertiary Education Fund of South Africa (TEFSA), registered in 1991, funded through private and largely international funding as a Non-Profit Organisation (NGO). TEFSA used to give loans and bursaries to university students. During 1999, TEFSA was replaced by the South African Government under the sovereignty of NSFAS (NSFAS Act 56 of 1999). NSFAS scheme is established to be managed by the DHET as a public entity under section 3 of the NSFAS Act (56 of 1999). Government budgeted more than R80 billion for grants for poor and disadvantaged or working-class low-income students (Nzimande 2019).

NSFAS is a loan and bursary scheme that is now a type of grant that covers NSFAS-qualifying students. NSFAS grants are for first undergraduate university fees, university accommodation as per the actual costs charged by the university, transportation, a living allowance, and a book allowance. It may also allow for a personal care allowance for resident (hostel) students. NSFAS funded nearly 45 percent of the undergraduate student population at public universities during 2019 (Nzimande 2019). It is the view of the researcher that although this NSFAS funding does not influence the budget and expenditure processes at public universities per say, it still forms part of the total operations in the finances while it may or may not form part of the total income and expenditure budget of a university and are therefore mentioned in this dissertation.

2.6 Funding models

Government is the biggest funder of education in SA. In an attempt to provide funding for higher education to be sustainable, government has called for proposals through the Presidential Commission of Enquiry to higher education, on how to structure and regulate the streams of income of higher education. Different proposed funding models will now be discussed.

The Funding Framework (FF) of 1983 regarded students as agents that could respond rationally to the demands of the labour market. Students should choose between higher education institutions, qualifications, and their field of study. This model presumes that higher education

funding should support the establishment of actual costs of reasonably efficient universities and then a decision must be made about which of these costs should be covered by government grants or subsidies. The idea is that government and the students (or their families) must share the costs of higher education (Stander & Herman 2017:206).

Various unit costs per humanities and natural sciences subsidy were calculated per student based on actual institutional costs and the assumptions of cost efficiencies. This unit costing covered the staffing of the institution, the use of libraries and the operational cost of the whole institution, educational equipment or capital expenditure (CAPEX) and maintenance of existing buildings. A cost valuation was done for the various units named above (inflation adjusted each year) to calculate the proposed government funding (DHET 2014b; Badsha & Cloete 2011). The DHET and the universities would plan the fee increases together. USAF proposed that there be a fee capping rule to guard against university fee increases through a national fee regulatory framework.

Universities South Africa (USAF) proposed possible models towards free education. The first model entails that grants are given to poor students and loans to students deemed to be in the 'missing middle'. Disadvantaged students are seen to have a domestic income for the household of between R0 and R350 000 per annum. The missing middle are students whose family's households earn between R350 000 and R600 000 annually. Students from wealthy families will be paying study fees themselves or take out a loan (Bursaries Portal). According to the Association of Private Providers of Education, Training and Development (APPETD), this proposed model may lead to high student debt (Presidential Commission on Higher Education and Training 2016).

The alternative model that was proposed by USAF is a graduate tax fee free regime (GTFF) model. In this GTFF model, it proposes that no student would be excluded because of their financial position, nor pay student fees upfront. A calculated percentage (which was not yet announced at the time when this was written) would be added to their tax as soon as the students are employed. The idea is that SARS would then collect this GTFF tax via the pay-as-you-earn (PAYE) system and pay it over towards this GTFF student funding model. This funding is proposed to be ring-fenced for higher education (APPETD).

Another proposal was made by The HEHER Commission, which recommended that debt-owing students who had since graduated, presented an income-contingent loan (ICL) (Presidential Commission on Higher Education and Training 2016). This ICL loan proposes that all tertiary students in South Africa make use of a state guarantee bank loan at a no or low interest rate, which students only start to pay back once the students start earning a certain salary. This recommendation of the ICL came with conditions that the repayment will start when the student earns a certain threshold and continues to pay until the loan is paid off or to a maximum period.

These loans will be recovered by SARS through its normal processes. Students may settle their debt early while emigrating students are required to settle the loan before emigrating (Presidential Commission on Higher Education and Training 2016).

Included in the HEHER commission's proposal that government introduce a university fee capping mechanism (UFCM).

In brief, the submission of all the public universities mentioned that this sector is under enormous financial pressure. The universities explained that a decline in funding per capita has an impact on the sustainability of universities. The universities believe that higher education benefits private and public, which justifies the private contribution through class fees. All the universities demand autonomy and quality education.

USAF indicated the important principal of accountability, institutional autonomy and that the objectives of the funding framework must include:

- a planning tool for higher education in SA.
- improving impact predictability, equity, and efficiency in the funding model.
- enforcing budget submissions with systematic assessments.
- monitoring of the utilisation of resources; and
- Public sector funding, research funding and bursaries.

The latest funding framework for 2020/2021 universities entail the following:

- Sub-block grants: A Teaching input -; the institutional factor -; the teaching output Sub-block grant. It includes the phasing out of the former gap grant.
- Earmarked grants have a general policy on payments and include infrastructure and efficiency grants, grants for new universities, the university capacity development grant, foundation provision grant, clinical training grant, institutional development grant and the veterinary science grant (DHET 2018).

The DHET intends to fund research according to its own financial resources and will include the research approved through what is called "calls for proposals" and commissioned research.

There are several different bursary funding opportunities available, while each province has its own. Each bursary has its own conditions of acceptance (Bursaries SA 2015; Alexander & Jang 2019:151-157)

2.7 Block grants: The current subsidy formula

Block grants are university funding generated by the funding principle calculations included in the 1983 framework. Block grants are not earmarked for any specific purpose while other types of

grant funding are ring-fenced. Block grants may be used as seen fit by the university's council (DHET 2018)

According to the Financial and fiscal commission, during 2003 - 2011, university funding is divided into three phases. The first period 2000 - 2003, funds were to be paid in terms of the 1983 framework. For the period 2004 - 2006, a resettlement plan was applied to warrant the 2003 framework. This was done so that the funding of individual universities is not destabilised (2015 Funding Framework released by the (NCHE).

Block grants make up 87 percent of universities income and are divided as follows:

- Teaching input grants made up of four funding groups and 32 weighting factors (56 percent).
- Teaching output grants for non-research graduates and diplomas and have specific weighting factors (14 percent).
- Research output grants for research masters, doctorates and publications and have specific weighted factors (12 percent),
- Institutional factor grants, generated by enrolment size plus a percentage of disadvantaged students and influenced by African and Coloured students (6 percent) (DHET, 2004 - 2010).

2.7.1 Free higher education and #FeesMustFall

The #FeesMustFall phenomenon caused a decision forcing government to implement a zero percent fee increase during 2016 (Presidential Commission on Higher Education and Training 2016). This #FeesMustFall fall movement has placed universities under enormous financial pressure (KPMG 2016). The Minister of Higher Education then approved the use of R361 million of the Historically Disadvantaged Institutions Development Grant (HDI-DG) that was initially supposed to facilitate institutions to develop themselves to their full potential. The HDI-DG fund was used during 2015/16 to enable eight public universities to fund the #FeesMustFall shortfall because of the 2016 announcement on a no fee (0 percent) increase on tuition fees and the additional costs of breakage and fire damages of the #FeesMustFall protest campaigns (DHET 2018).

Therefore, the five-year period for the HDI-DG for 2015/16 - 2019/20 had to be moved to 2016/17 - 2020/21, which will hopefully be implemented as planned (Ministerial Statement on University Funding 2019/2020 and 2020/2021) (DHET 2018).

2.7.2 Ring-fenced funding

Ring-fenced funding (11percent) includes institutional restructuring (3 percent) and specific earmarked grants (8 percent). These earmarked grants are linked to NSFAS at 6 percent interest for the redemption of loans and foundation programmes (2 percent) (DHET).

2.7.3 Third-stream income

Third-stream income to universities comes from a wide scope of partnerships, donations and other private or business funders of research projects.

2.8 BUDGETARY THEORY

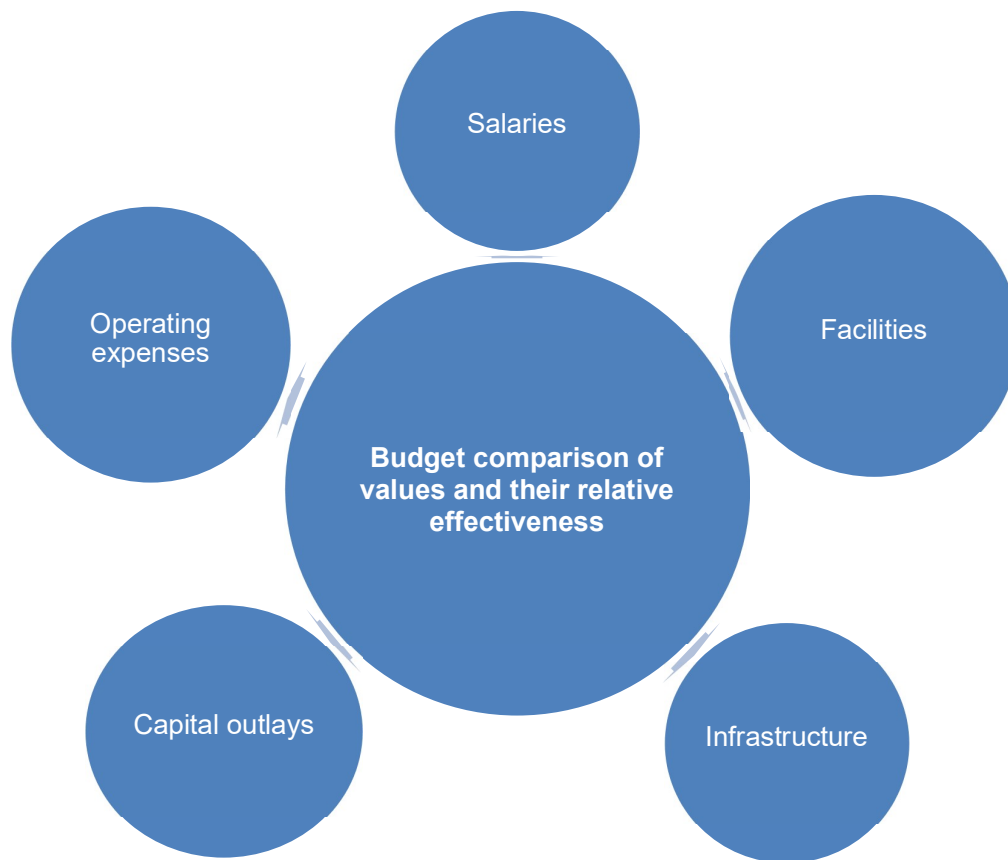
Schick (2008) views budgetary theory as a process consisting of a series of conducts relating to expenditure as a set of plans. Specific factors must be considered to decide how much money must be allocated to a specific activity instead of another.

According to Key (1940), resources will always be scarce in relation to demands; science in human behaviour is the basic economic principle (relationship between ends and scarce means). A test should be applied to see if the return from every expenditure is worth of sacrificed alternatives.

An analysis of incremental expenditure is needed to analyse the possible occurrence of a declining utility. An analysis of occurred expenditure increments is useful to establish where the point of balance is because additional expenditure may translate to additional income. The analyses of additional expenditure of any purpose may even reflect the same return. A comparison of the relative merits in terms of the relative effectiveness can be made to establish whether a common objective was achieved (Schick 2008).

Budgeting may be an evaluation in terms of the specific purpose according to a relative economic value in line with a utility theory and some programmes may be sacrificed. The returns from the chosen activity must be more desirable than any other alternative use of funds in budget allocations for education. The results of the calculated regression may showcase that performance-based budgeting accomplished its purpose by concentrating on input versus output. The theory on budgeting is a matter of managerial philosophy (Sangiumvibool & Chonglertham 2017:59). Figure 2.1 below shows the relationship of budgetary items.

Figure 2.1: The relationship of budgetary items



Source: Wildavsky (2017) stated that theoretical principle and the capacity to budget, may include the following influences:

- **A positive government**

This is committed to actively formulate programmes in fulfilment of societal balance necessary for a good life (Wildavsky 2017:384).

- **Scientific policies**

Scientific policies explain the terms and requisites for the good life, the delimitations of the public interest and the nature of the societal balances for which it is organised (Wildavsky 2017:277).

- **An abundant economy**

An abundant economy assures everybody the optional level of welfare consistent with resource availability, techno progress, population policy and ultimate human creativity (Wildavsky 2017:309).

- **Responsive society**

A responsive society is directed towards the propagation of the common good, keen awareness of rights and entitlements amidst the possibilities of organised life (Wildavsky 2017:341)

2.9 BUDGETING CONCEPTS

Moving from the income of an institution to how the income is spent, it is necessary to highlight the rationale to budget how the income will be spent.

Budgets are accounting plans that serve the purpose of quantifying the purpose of the institution and provide a basis for the control of funding and performance evaluation (Vigario 2007:285). The motive for budgeting is to ensure periodical planning processes create a formal planned framework that provide for exact dates for each phase of the planning process to create opportunity to exchange ideas and assist executive administration to quantify the cost and benefit of diverse alternatives (Rubin 2019). The cost and income of all departments are to be compared to plan the course of action (Vigario 2007: 286). Budgets are plans of future events; therefore, form the foundation for different performance evaluations. Managers tend to ignore cost and related benefits; therefore, budget planning and evaluation construct a mindful cost awareness in managers. Budgets ought to reflect institutional goals and must include volumes of activity, not only departmental goals, but it is also therefore necessary to define the department's objectives and the budgetary methods to avoid disagreement between department managers (Vigario 2007:286; Scott 2018). Fiscal budgeting is based on the principal that every financial year is started with the new budget and no unused funds may be carried over to the next financial year. Funding models attempt to find the best distributive model that can be used in institutions of higher education (Naidoo 2014). In the next section some different budgeting models will be discussed

2.10 EXPENDITURE CONTROL THEORY

Budgetary control is when the budget items are compared with the actual expenditure incurred that brings control. This element of control enables an institution to monitor progress, identify possible problems and take corrective action and guide future activity (Birchall 1991:89).

Effective budgeting is only useful if expenditure is legit, controlled and managed during the procurement process and execution of expenditure. Effective expenditure controls assist in the integrity of public financial management systems or ineffective expenditure controls may undermine trust in the custodians of public resources (Pattanayak 2016:2). Key features of expenditure control start at the budgeting cycle and the specific control objectives of the internal control procedure. Management and control staff have the responsibility to enforce these controls.

Expenditure controls include the objective of budgeted funds are restricted to its intention, contained by the authorised limits and with the approval of the custodian of the departmental budget. Sound financial management principals with the correct procedures must be followed. The role of control systems is to ensure that the level and allocation of expenditure is efficient, what is needed at the right price and that obligations are paid timely. Expenditure controls should stop the abuse or misappropriation of funds and assist actors on levelling the playfield for getting government contracts.

Authorisation for expenditure may limit excessive amounts of expenditure, the nature of expenses and pre-defined purpose of the expenses. Controls for budget classification, which may be organised by specific programmes, projects, operational budgets may include time limits and some flexibility allowed through virements and contingency reserve mechanisms (Pattanayak 2016).

2.10.1 The importance of expenditure control

Purchasing and supply management (PSM), public procurement and the procurement process embrace the active involvement of the multiple stakeholders, in particular the close interactions among officials (Bolton, 2016). As Sharmaa, Senguptab, Panja, (2019) explain, the procurement process analysis and modelling are an intricate exercise. Public procurement is a significant trade operation of government, which encompasses acquisition of the required goods and services or contracts to a department and organisation at appropriate cost and optimum quality at the time needed, from outside sources (Sharma *et al.* 2019).

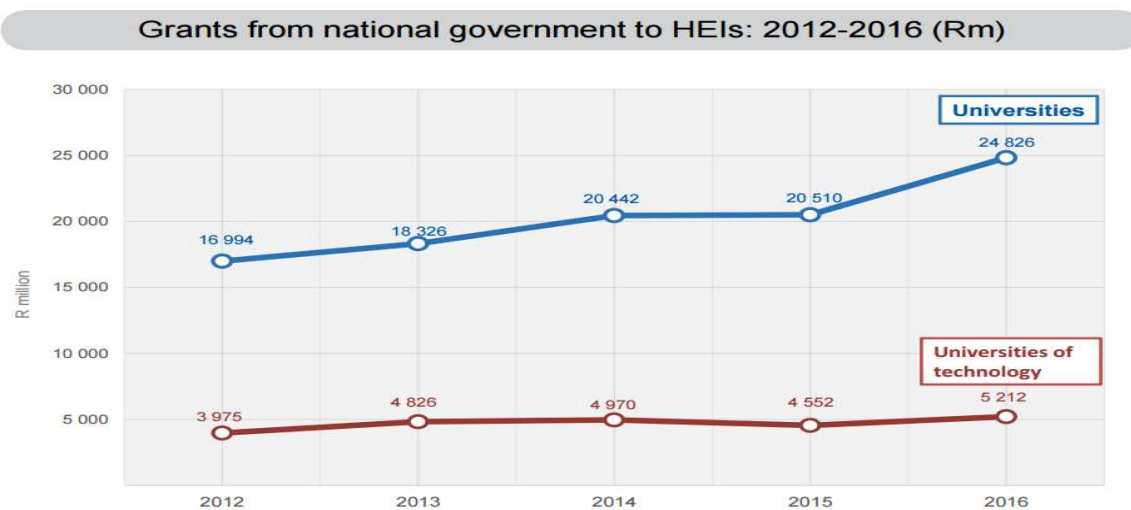
PSM usually includes professional knowledge requirements for specific procurement skills and generic management skills. Electronic procurement (E-procurement) requires to be cost-effective and efficient while bring better expenditure control, competency in digitisation, innovative sourcing, and sustainable suppliers to the PMS in increasing overall organisational competitiveness.

Supplier management and budgetary control integrated software systems are significant process-efficient and cost-saving elements, specifically in the operation of the procurement processes as part of the day-to-day tasks (Srai & Lorentz 2019). Cloud computing secures fundamental change in the control of budgets and expenditure controls (Ali *et al.* 2014). Corruption in procurement occurs because there are weaknesses in the internal control and the procurement structure and need a risk-based approach (Rendon & Rendon 2015). The organisational behaviour standpoint can include regulative aspects such as organisational controls (Sharma *et al.* 2019).

2.10.2 Financing of South African public universities

Financing of universities and fee-free higher education has received substantial consideration. There was the proposal of the NCHE during 1996 and the publication and implementation of the new funding formula during 2004 (DHET 2014b). There was also the 2016 zero percent increase coming from the #FeesMustFall protests. University income comes from government grants (the types of grants will be discussed later in Section 2.10.1), student fees and outside funding also referred to as third-stream income, such as entrepreneurial activity funding, donor funding and research funding (Wangenge-Ouma & Cloete 2008; Maseko 2018). Figure 2.2 below shows the grand rand values to HEIs. As can be seen, the values increased after the 2015 and 2016 #FeesMustFall campaign. Universities may take these grants into consideration when planning the total available funds to spent in their budgets because the expenditure budget should not exceed the income.

Figure 2.2: Grants from national government



(Source: Adopted from: South Africa's education statistics 2017)

2.11 BUDGETING METHODS

2.11.1 Incremental budgeting / Traditional budgeting

Traditional budgeting may also refer to the incremental budget. This model is a method of using the budgeted or actual spending of the previous year as the base for the next year's budget (Bragg 2017: 262). This method of budgeting is attractive to educational institutions because of its simplicity. Incremental budgeting may provide stability in expenditure and allow planning multiple years forward because it is very predictable if only inflation is added (Bragg 2017: 263).

This model may foster a mind-set of “use it; or loose it” because a decline in expenditure may indicate unnecessary extra funding in the budget analysis (Bragg 2017: 263).

2.11.2 Zero based budgeting (ZBB)

La Faive (2003) highlights that a prerequisite for zero-based budgeting (ZBB) requires that programmes must be justified or approved for the fiscal year of the budget. ZBB, in contrast with incremental budgeting does not allow to simply base budgeting on a prior year’s budget or actual spending (Bragg 2017: 180; 263). The department will get a new amount allocated to them and whatever was not utilised, will be forfeited. The benefit of ZBB is the effectiveness of controlling unnecessary expenditure. Each budgeted item allocated to a unit is purposeful, so that wasteful or fruitless expenditure is controlled. ZBB may take longer to prepare as it is a mindful exercise (La Faive 2003).

2.11.3 Activity based budgeting (ABB)

ABB allows monetary fund’s to departmental functions and activities that yield the best return and develop activity grouping to design the budget process for each department in the institution through allocation of resources to the department or faculty’s objectives (Szatmary 2011).

The ABB concentrates on basic services, for example, tuition, floor space for building, rent, cleaning, water and electricity consumption and all other activities, including computer and IT costs. The indirect expense activities are calculated using the activity-based costing (ABC) model. This model relates to planning, development and deliverables. ABB comprises the capability to connect activities with calculated costs, giving the executive management a holistic view of each possible expense (Vigario 2007:171-191). Indirect administrative expenses related to student registration, library services, teaching and financial administration must also be included to be calculated and allocated to activities in a department. Assuming that work increases in university vicinity or departments according to the number of students in the vicinity or department (Szatmary 2011). The department may then calculate each activity’s cost, add all costs together and divide it by the headcount to arrive at unit cost per student. The cost-driver “unit-cost” can then be multiplied by the new expected student count to arrive at the expected budget planning.

Each department that uses ABC can calculate the cost of each course or subject, different projects and clinical work. Lecturers’ costs can be calculated using workload and compensation per hour to be included in subject or course cost. According to Szatmary (2011), the ABC and ABB are the most accurate analysis models aligning costs to revenues (Szatmary 2011). Interim Provost, Mary Lidstrom of the University of Washington suggested that the implementation of an ABB model necessitate substantial time commitment that makes it an expensive exercise; therefore, the calculations for this model may be done periodically.

2.11.4 Responsibility centre management

Responsibility centre management (RCM) may be seen as a management philosophy rather than a budgeting tool. Robert A. Brown, Boston University President, argues that RCM is a robust tool to cost the academic priority. The RCM model refers to revenue-generating departments as responsibility centres. By allowing the heads of such department to control the revenues that they generate may assist the decision makers to understand the financial impacts of their decisions while resource decisions are more transparent throughout the institution (Schneider 2015). Jarvie (2002) argues that the RCM may drive managers to pursuing new sources of revenue.

2.11.5 Performance-based budgeting

PBB is a complex model that demonstrates the expected result for the aligned monetary input (Schick 2008). The PBB model is used for producing and exchanging information as it is necessary to enter information about content and structure by capturing information on results and linking that information to expenditures. PBB is linked to the performance management system (PMS) and it has proven to be quite challenging for government's public educational systems striving to budget for results. PBB may provide greater accountability (Schick 2008). The budget process may be a time-consuming exercise, including the review of performance measures against expectations. The complexity of PBB and PMS are to be understood as it may raise conflict between existing organisational practices and mechanisms and the organisational internal control system (Rubino & Vitolla 2014).

2.12 THE BUDGETING PROCESS AND FINAL APPROVAL

The budgeting process as a whole must be seen in context of the managerial, strategic planning and the available resources of the university (Schneider 2015). A budget committee will evaluate the budget process, including existing and new budget proposals. During the annual budget planning process, each head of department gets a budget cost code that is linked to that department. The person that is planning the budget is often called a budgeteer. Budgeteers are expected to present their constituency and recommendations. The members with voting powers may normally consist of the Faculty Deans, Senate Treasurer or the Chief Financial Officer, one classified staff member and one representative from professional staff. Naidoo (2002:92) referred appropriately to Hansen and Mowen (2015:278) that the function of the budget committee is to review department's planned budget expenditure and resolve the prepared budget issues and approve final university budgets.

Factors that will enhance the budgetary effects include the awareness of management and how a budgetary system works, the inclusion of as many as possible individuals in the organisation

that can bring possible expertise and make commitments by participating in the development of budgetary processes (Noor, Haryanti & Othman 2012).

South African universities, as in Thailand (Sangiumvibool & Chonglertham 2017) start the budget process with the deans and heads of departments and other budgeters identify each of the expenditures based the approved budget model. The purpose of each department planned budget contributes to the total of the universities budget (Schneider 2015; Naidoo 2002: 119-154).

The institution's planning and budgeting are done by management that classify departments and faculties into programmes, cost centres and profit centres, depending on the type of activity of each 'workstation', such as technology and innovation, sport centres, cafeteria and academic faculties and their departments, called centres (Schick 2008; Kosten 2016).

Calendar-planning and budgeting are the use of a periodical fixed budget approach for the academic year as a financial year (Schneider 2015). An alternative that Naidoo (2002:96) refers to is that a new continuous budget for the next 12 months is compiled every semester or quarter but still within the annual budget. This continuous budgeting may assist in lesser budget wiring, but it will also create room for uncertainty whether budget is available for the new plans for the rest of the academic year (Naidoo 2002:119; Sangiumvibool & Chonglertham 2017).

The budgeteers will plan their expenditure and capital needs according to the role that the department plays in the institution (Naidoo 2002:119). HOD's and managers as budgeteers will get better in their budgeting skills year on year because they will learn and build on their experience from previous years and where and what might have gone wrong during the previous budget year (Drtina, Hoeger & Schaub 1996:24). Factors that will influence their needs may include, but are not limited to:

- Current available stock resources
- Stationery and communication needs
- Current available equipment or assets such as furniture, equipment and computers
- Current human resources and staff appointed
- Additional staffing needs
- Enrolled number of students for different subject and/or courses that the department offers
- Physical equipment that the courses offered need to fulfil teaching and learning in a department
- Software required for students and the department
- The budget process will include possible percentage increases of current spending to allow for program improvements.

According to Naidoo (2002:92), in universities, normally a budget review committee is responsible for the institution's budget. Naidoo (2002:92) insightfully gives some factors that must be considered during the budget process:

- All management levels should familiarise themselves and understand the budget process and procedures.
- The budgetary process should not only involve the HODs and management; allowing staff to participate in the budget development may contribute to their commitment to cost saving.
- Budgets must be realistic to objectives.
- Budgets should also include real lifespans of existing assets such as computers and vehicles and available funds for replacement of such assets.

Specific budget parameters may be applied according to the total budgeted income of the university (Naidoo 2002:119-122). The functions of the committees could include:

- Provide policy and guidelines
- Resolve and review differences
- Agree to individual budgets
- Approve the final university budget
- Monitor the actual budget performance

2.13 COST CENTRES IN INFORMATION MANAGEMENT SYSTEMS

A very important statement that Naidoo (2002:4) makes is that costs management is pivotal to the survival of universities. When using electronic management information system software, cost-effective strategies can optimise the use of limited funds. Budget reports per cost centre are possible because all income for a specific cost code (each department is allocated a code in the system, called a cost code) and the expenses and accruals for salaries, operating expenses and capital expenditure for each department are electronically linked to the department's costs. The preferences of two departments may vary depending upon the model parameters (Hansen 2011). Similar to each department having its own cost code, different projects will also have their own centre's cost codes where income and expenditure for that specific approved project will be allocated. Overhead costs to a department or service that cannot be directly linked to a specific department may be allocated to the faculty so that the faculty can manage a group of departments (Naidoo 2002:70-74). There may be cost codes for income of the different government grants, national research funding and donations. These funds can be apportioned to the purpose of these income funds and allocated to the cost codes that will use the funds as intended.

2.14 BUDGET DEFICITS AND BUDGET VIREMENT

A priority of responsible budget management is to prevent cost centres from developing deficit balances; however, it is not always operationally possible to do so (Naidoo 2002: 114-115). A budget transfer policy provides procedures to control deficit balances within cost centres by allowing individuals with cost centre signature authority the flexibility and process necessary to maintain positive balances by using budget virements.

Budget virements may be done by passing a budget transfer of available funds within similar budget allocations. A budget journal is processed by the department through budget control and accounting software for approval and approved by the budget department. The journal provides the appropriate cost centre information, increase/decrease amounts, a short justification and back-up documentation (Pattanayak 2016). To reduce budget deficits and virement, the department must improve efficiency of budgetary planning and reduce costs that are not necessary (Naidoo 2002: 114).

2.15 COSTING OF RECOVERY FEES FROM RESEARCH FUNDING

According to Holbrook and Sanberg (2013), a presentation of research funding income should be kept at the university administration department to support the administration of the research department's expenditure. The faculty of a department and the university's support departments need to recover the indirect cost of the research funding income (Langa *et al.* 2016).

The Strategic University Research Partnership (SURP) programme provides support to enable partnerships between universities and outside investors, providing resources to foster strong collaborative relationships and engage knowledge to new talent. SURP aims to accelerate the commercialisation of new technological developments. Research development may result in new job opportunities because new or existing businesses make use of new technologies through interaction between universities and business incubators and university technology stations (Robson *et al.* 2009).

For competitive research, the cost must be low and strategies good to promote a competitive advantage for research success (Holbrook & Sanberg 2013). Encouraging and supporting a healthy research enterprise expands an annual university budget well beyond the direct and indirect funding received for sponsored projects and requires upward adjustment every year. The level of investment in research by a university has to be a conscious decision and one that is reaffirmed continuously, as the cost most probably outweighs the revenue that is brought into the university in support of research (Wangenge-Ouma & Cloete. 2008).

Research funding may be a form of third-stream income to research active universities. This may include the following:

- Sponsored grants and contracts from government and private sources
- Special government support or stimulus funds
- Equity ownership in start-up and small and medium enterprises (SMMEs) at universities in business incubator programmes
- Work for hire
- Reimbursable services and equipment facilities available to non-university research personnel
- Clinical trials
- Interest on invested funds
- Gifts designated for research (private donations)
- Income from auxiliaries
- License and royalty income
- Indirect cost revenue for facilities and administrative (F&A) costs
- Cross-subsidy from other institutional resources.

With the above as a background, one needs to ask how a university can afford success in research. The answer to this question requires an understanding of the institution and a determination of how much investment in the research activity can occur without sacrificing other elements of the university's mission and overall maintenance and operations. In order to succeed, a strategy should be designed to have funding policies and prioritise investments for research success.

Beyond the cost of the research itself, the maintenance of a university's research enterprise is significant and includes everything from personnel, buildings, incubators and seed funding, technology, equipment, laboratories and infrastructure to the costs related to compliance, safety, audits, reporting, legal expenses, partnerships, memberships, clinical trials, consultants, marketing and lobbying, in addition to the funding required for grant matching, cost sharing, unfunded or underfunded indirect costs. Direct costs charged to a grant are those that are tied to a specific project and established in a budget managed by the principal investigator (Holbrook & Sanberg, 2013). Appropriate charges are salaries, wages and fringe benefits, materials and supplies, participant costs, meeting costs, services, travel, equipment, alterations and renovation, patient care, space leasing, utilities, scholarships, fellowships, stipends, tuition and subcontracts.

Examples of cost recovery can be found in the guideline of the University of Pretoria (UP): The costing of cost recovery fees for externally funded research projects for 2015 (University of Pretoria 2015; 4.11 and 4.12). Policy Category: Academic Cost recovery on research grants for basic and development research: Where the contract allows for cost recovery on research grants and UP benefits and owns the Intellectual Property: The total of Direct and Indirect Costs must

be included in the Project Budget at the stage of submission of the proposal Thus: The Total Project Budget calculation should include:

- Direct costs, including (but not limited to) bursaries, capital equipment, salary supplement payments to staff, consumables, operating costs and use of infrastructure and analytical facilities.
- Indirect costs (which include overheads) generally calculated as a cost recovery fee of 15 percent on the direct costs, excluding the amounts for student bursaries and capital equipment.
- Full cost model for externally funded contract research: For contract research where the university may not own or share IP (as defined in Clause 4.11 and 4.12 of the Policy).
- A full cost fee comprising direct and indirect costs plus a margin must be included in the contract budget.
- The full cost margin, which is generally set (for 2015) to be an addition of at least 15 percent of the direct costs to be updated annually (University of Pretoria 2015).

The UFS has a policy on research projects (University of the Free State 2012) on regulating consultancy and research and income. This policy ensures consistency and fairness, and it ensures transparency in the spending of research income. The UFS manages consultancy and resources income (third-stream income) efficiently and responsibly, to conform to legitimacy striving to escalate research and development income. This policy contributes to structured funding incentives that encourage research and entrepreneurial initiatives.

Research projects must be costed properly to ensure sustainable research. The policy further provides equitable and fair distribution of research profits. No salary subventions may be paid from this income. A levy of 21 percent is charged on project costs for the recovery of indirect cost, unless otherwise agreed. This mentioned 21 percent is made up of 5 percent to the central budget of the UFS; 8 percent goes to innovation and business development, 5 percent goes to the department that is involved and 3 percent stays in the department's faculty.

Deviations of the 21 percent policy may be applied if the prescribed indirect cost is less than 21 percent of the project income. A service levy agreement (SLA) on all sub-contracts and a fixed fee levy on the first R50 000 will be applied, equivalent to the institutional levy.

UFS staff may only sub-contract if it is a fully cost project. The UFS may choose to be the sub-contractor or the principal contractor if a subcontract is more than 50 percent of the total value of the project.

A profit-sharing principle of 70/30 applies to all projects between the principal investigator and the university. 30 percent profit-share goes to the university for strategic fund innovation and business development and no secondary appointments or bonuses are allowed to permanent staff (University of the Free State 2012).

In the next section, the focus moves to information technology systems.

2.16 HIGHER EDUCATION AND INFORMATION TECHNOLOGY

Universities make use of Higher Education Management Information Systems (HEMIS). HEMIS is used to report information for strategic planning in the development of and the effective regulation of the higher education system in South Africa, therefore, it needs to be properly maintained with the required data from universities. HEMIS also assist with development across the sector by the establishment of an MIS to enhance research capacity and development through research output subsidy and research development grants (Department of Higher Education 2014).

2.17 MANAGEMENT ACCOUNTING AND EXPENDITURE CONTROL SYSTEMS

The Public Financial Management Act (PFMA) 38 of 1999, requires an effective and efficient enterprise resource planning (ERP) system (Dechow, N., Granlund, M. & Mouritsen, J. 2007). An ERP system is the integrated management information system for main business processes. An ERP system allows for real time or a 'live' system that updates transactions and data as they occur. ERP systems ensure transparency and address risk management and internal control and is supervised by risk and audit professionals (Suhaimi, N.S.A., Nawawi, A. & Salin, A. 2016).

A supply chain management system (SCM) may be part of the ERP system. The SCM is required to be cost-effective, ensure competitive supply and be transparent (Dechow *et al.* 2007; Ramadhana *et al.* 2016). This finance and supply chain management should ensure compliance to the PFMA.

ERP supports positively to atomisation of monitoring operations and business processes (Swanson, 2015). Information systems are the basis of internal and operational control.

Operational management is the lowest level of control, while strategic direction is the highest planning tool in an organisation (Morris 2012; Morris & Geraldi 2011). As the strategic plan provides context for managerial control, it similarly provides management control context for the management information system where the controls are activated for pre-defined systematic or system controls. Operational control requires pre-determined information from the transaction processing system of the organisation. Management control Systems are the Intermediate level of planning and control. This said Management Control systems and its internal control processes

assist in the alignment of resources through electronic budget allocations and expenditure controls (Naidoo 2002:131). Management information systems and Supply Chain Management policy are imperative to control as the DHET suggested for universities in the overview of the elements of an SCM system stipulates in the policy for universities to adapt the following:

- the organisational needs must be linked to the budget.
- understand the commodities procured by the university.
- have a clear picture of expenditure patterns.

According to this suggested policy, resources need to be budgeted for. It is of vital importance to know the estimated costs of the required resources, including the estimated costs of the required goods, works or services. Procurement planning needs to take place at the start of a financial year following the approval of the university's strategic plan and budget. The SCM unit, following budget approval, needs to issue a procurement plan template to be completed by all departments within the university for the procurement of general goods and services.

Procurement plans should not be developed in isolation. They need to form part of the university's Annual Performance Plan and other functional strategies. The SCM unit performs this function hand-in-hand with each user/ business unit during the formulation of procurement plans. The SCM unit then consolidates all procurement plans received into a single integrated procurement plan of the university according to various applicable procurement thresholds.

The completion of the aforementioned activities should result in the compilation of the procurement plan to be implemented by the SCM unit. This plan should indicate a description of goods or services, the end user, the contact person representing the end user, estimated value, date of submission of specifications, date of advertisement of the quotations/ tenders, closing date of the advertised quotations/ tenders, estimated evaluation time, envisaged date of the adjudication of submission, envisaged date of award and issuance of a purchase order, etcetera.

This policy suggests that the SCM unit, together with the end-user department should apply strategic sourcing principles to determine the most advantageous approach in which to acquire the required goods or services. This includes:

- conducting an industry or market analysis of the goods or services to be obtained, including a determination of a reasonable price for such goods or services
- confirmation that sufficient funds have been allocated for the procurement of required goods or services
- considering the optimum selection method to satisfy the need (see Part B of this SCM policy)
- establishing the frequency of requirement(s) in order to determine whether it would be cost-effective to arrange a framework contract for the goods or services as and when the need arises (see Part B of this SCM policy)

- establishing the lead time required by the potential suppliers to deliver the required goods or services after receipt of a purchase order.

This proposed policy further suggests that the client delivery manager shall ascertain an annual control budget for each and every project responsible for delivering in a financial year as well as for each individual infrastructure project. Such a budget shall include all costs associated with the delivery of a work package, including professional fees and make provision for contingencies and price adjustment for inflation as part of the budget. The control budgets for buildings shall be based on the cost and space norms issued from time to time by the Department of Higher Education and Training.

Further, the policy points out that the costs of products and services or a project shall be proactively managed through the setting and proactive monitoring of control budgets for projects through the project planning, detailed design and site processes.

- a planned procurement and commitment register to record each project's contract value for all the contracts or orders issued in terms of a framework agreement and the estimated value of a planned procurement so that at any point in time the total value of work that is committed for a project can be compared with the authorised expenditure;
- a contract registered to provide particulars of all contracts and orders issued in terms of a framework agreement, including information relating to the starting price, details relating to the time for completion and any changes to the completion time;
- a payment registered to record all the payments that have been certified for payment against each contract or order;
- a purchase order register, which links contracts and orders and payments relating thereto to the authorised amounts within the financial management system.

According to Hansen and Mowen (2015), management control is the "intermediate" level of planning and control and is the process of assuring that resources are obtained and allocated effectively and efficiently in accomplishing organisational objectives. The information required is seen here to be of two basic types. First, knowledge relative to the strategies adopted by the organisation is necessary. That is, management control takes place within the context established by strategic planning and knowledge of this context is obviously needed for effective control. Secondly, information relative to the working-level operations of the organisation is needed, especially information related to the actual and potential productivities associated with the generation of products and services (Hansen & Mowen 2015:32).

2.18 SUMMARY

Governance and strategic planning are the highest level of management planning done by government with acts and ministerial governance and the department of higher education and

other controlling bodies of university governance, as discussed in the first part of this chapter. Special importance in recent years is knowledge of social constraints placed upon the organisation, by means of legislation, regulatory edicts and legal rulings. For universities to adhere to ministerial governance, legislation and controlling bodies, universities need their own strategies, budgetary planning and internal organisational control.

For budgetary planning, the universities need to apply appropriate budget models for academic faculties and service departments or for technology and research departments. Hostels or student accommodation may need different budget models than the rest of the university and administrative departments.

The internal and expenditure control in a university is as important as the budget planning, budgeting process and the budget/expenditure analysis, therefore, it is important to employ reliable industry-specific management information systems.

As the finance of higher education was discussed in this chapter, the different theories were discussed to set the theoretical grounding for this study. An overview of NSFAS and the influence of the #FeesMustFall phenomena, together with the different government grants, was given to obtain a holistic understanding of where the funding for approved budgets will come from.

Conclusions drawn from the literature are:

- Social rather than economic pressures play a role.
- Acts and the NDP are important.
- Funds are limited and expenditure control is essential.
- Research expenditure is more than research income.

In the chapter that follows, the research methodology for this study will be discussed.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION AND OVERVIEW

An overview of the first two chapters was given before looking at this chapter. The first chapter described the purpose and background of the study while the second chapter presented a literature study on matters that form the basis of public universities. The second chapter included the different theories of importance for the study. Chapter 2 concluded with the literature on budgetary processes and expenditure control mechanisms.

This chapter will discuss the research design of the study and the research methodology that was followed by briefly discussing the paradigm of the research. This chapter concludes by explaining the research population, sample, the coding structure, and analysis of the raw data.

3.2 RESEARCH DESIGN

A research design is a plan outlying how a particular research study will be conducted (Bloomberg & Volpe 2016:143). The research design guides the researcher sequentially to achieve the goals of the study following the framework and paradigm of the study (Tight 2016). Depending on the study, a research project can be approached using different methods as a set of procedures to follow in order to collect and analyse data to answer a research question. A mixed design of descriptive and exploratory research in qualitative and quantitative research methods can be used (Creswell *et al.* 2016:315). For this study, an exploratory design with a constructive aim of the questionnaire was used, using closed-ended questions.

A paradigm is a way to create a sense of important, legitimate, and reasonable complexities (Patton 2014:89). Bloomberg and Volpe (2016:39), Creswell *et al.* (2016:142) and Patton (2014:89) agree that the paradigm of the study will lay the basis to the research design of the study. Paradigms correspond to our ideas of the world around us, even though it cannot be proved, we still act on it as researchers (Creswell *et al.* 2016:52). According to Braun and Clarke (2013), quantitative paradigms assist in understanding and interpreting phenomena in a postulated context.

Quantitative research makes use of raw data from only selected subgroups that are numerically coded and classified after which mathematical analyses are done to draw charts and patterns to understand and interpret a phenomenon. Yilmaz (2013) and Choy (2014) agree that quantitative research is a process that systematically and objectively uses numerical data of the population to generalise the findings of the study.

A qualitative research allows the study to enable the researcher to better apprehend and conceptualise the subject of the research project (Wright *et al.* 2016; Bloomberg and Volpe 2016:41).

The layout of the research design for this study is laid in the visual presentation below.

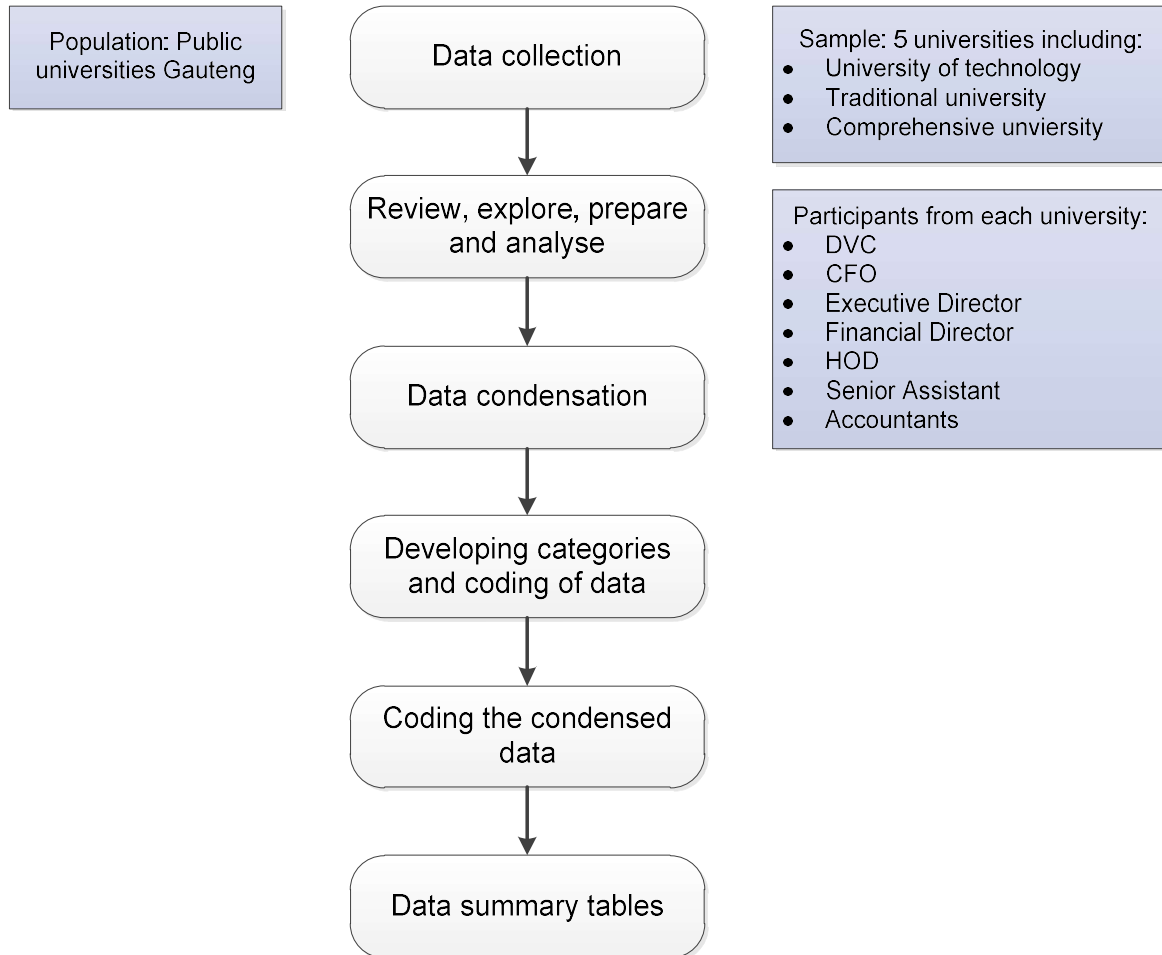


Figure 3.1: Visual presentation of the research design

To get an understanding of how the budgetary planning and expenditure processes at public universities in Gauteng functions was broken down as follows:

- Cost analyses
- Expense control
- Budget income
- Budget expenditure
- Technology station
- Hostels

In the following section, the dimension of the population of the study will be explained.

3.3 RESEARCH POPULATION

A population is the intended participants in a collection of the object with common characteristics from whom a generalised assumption can be drawn (Salkind 2013:185). The population is: 27 SA public universities, which are categorised into three types of universities and located in nine provinces. Gauteng is the province with the most (7) government universities in South Africa. Even though Gauteng has the most public universities out of all provinces, Gauteng is the province closest to the researcher, thus for convenience, the Gauteng provinces' public universities were chosen for this study. Permission was applied for from all the public universities in Gauteng, namely University of the Witwatersrand (WITS), University of Johannesburg (UJ), University of Pretoria (UP), Sefako Makgato Medical University (SMU), University of South Africa (UNISA), Tswane University of Technology (TUT), and the Vaal University of Technology (VUT). Two of these universities denied permission to conduct the research while five of the universities approved the application and was then included in this research study. The permission letters are attached in Annexure A. Table 3.1 shows SA public universities per province and by type.

Table 3.1: The number and type of universities per province in alphabetic order.

Province	Traditional universities	Comprehensive universities	Universities of technology	Total
Eastern Cape	RHODES UFH NMU 3	NMMU 1	WSU 1	5
Free State	UFS 1		CUT MUT 2	2
Gauteng	UP WITS SMU 3	UNISA UJ 2	VUT TUT 2	7
KwaZulu-Natal	UZN UKZN 2	UNIZULU 1	DUT 1	4
Limpopo	UL 1	UV 1		2
Mpumalanga	UM 1			1
Northern Cape	SPU 1			1
North West	NWU 1			1
Western Cape	UCT UWC SU 3		CPUT 1	4
Total	15	5	7	27

(Source: Department of higher education).

The following paragraph discusses the research sample in depth.

3.4 THE RESEARCH SAMPLE

To achieve the objectives of the study, the relevant sources for collecting data must be chosen (Maree 2015:172). Important constraints like cost, time and the size of the population may influence the practicality of the study, therefore, a convenience sample of the relevant population must be drawn, the size of the sample must be valid to generalise and represent the whole population (Salkind 2013:93). It may be impossible to include the entire population in a study due to factors such as time, cost and large populations; consequently, the researcher will make use of convenience sampling choosing the public universities in the Gauteng province. The sample may be chosen in such a way that these named factors do not hinder the study to be executed (Gentles *et al.* 2015). Gentles and Vilches (2017) and Creswell *et al.* (2016:198) highlight that purposive sampling is used for a specific purpose. Gentles and Vilches (2017) further state that purposive sampling is about the nature and substance of the participants and assists in gaining insight about the subject being investigated (Bloomberg and Volpe 2016:148). Purposive sampling may include expert sampling, which needs to include people that are experts in a particular field of knowledge of the subject being investigated. Expert sampling calls for experts in a particular field to be the subjects of the purposive sampling. This sort of sampling is useful when the research is expected to take a long time before it provides conclusive results or where there is currently a lack of observational evidence (Creswell *et al.* 2016:198).

The research sample for this study was purposively selected in each of the chosen universities due to their qualities and ensured that all subgroups within the population were considered with no regard to the number of participants selected. To ensure that only the experts in this field of study are participating in the study, the researcher made use of purposive sampling and included only the employees that are working with the departments' or the university's budget in the research sample.

Convenience sampling is a non-random, non-probability sampling technique to choose a sample on the grounds of practical inclusion and being easily available (Creswell *et al.* 2016: 197). For this study, a convenience sample of universities in Gauteng was used because it will be easy and less expensive to drive out to Gauteng than to other provinces. All the public universities in Gauteng were contacted to apply for permission to conduct the study. Permission was particularly asked to contact the personnel at the universities. The University of Pretoria and Tswane University of Technology did not give their permission for this study to be conducted and was therefore not included in this study.

The first specific department that was included in the sample of each university was the research department. The second department that was included in the study was the technology station of each university. The third department that are included in the sample was the finance department to find out how they are planning the next year's budget and how they control expenditure. The fourth were the Deans of academic faculties and their HOD'S of departments under each faculty. The fifth and last was the hostel or residences for students. The first two departments and the hostels department provided information on their specific purpose at each university especially as these departments commonly spend high levels of the total expenditure.

The questionnaire was given to different academics outside the sample to be tested for understandability and clearness of the question and adjustments were made before being given to participants to ensure that all questions were clear. Structured and semi-structured questions was asked and sent to the applicable person of each of the sample universities to understand processes and procedures at their university and enable them to provide inputs and suggestions to improve the budgeting processes and expenditure control and procedure policies.

Gauteng is the province with the highest population of universities; therefore, Gauteng was chosen for this study using a judgmental sampling method. The study consisted of several of Gauteng's public universities which include all the public universities of Gauteng from which permission were obtained. The universities that gave gatekeepers permission to conduct the research is: The University of the Witwatersrand (WITS), Sefako Makgato University (SMU), University of South Africa (UNISA), University of Johannesburg (UJ) and the Vaal University of Technology (VUT).

3.5 DATA COLLECTION METHOD

Creswell *et al.* (2016:175) explains several of different methods can be chosen for data collection. Different methods can be used for different circumstances. As Creswell *et al.*, (2016) mention, advantages of a questionnaire are that it can be completed by many respondents in a short time at a relatively low cost at a time that is convenient for the participant. There can be disadvantages that will be dealt with in Chapter 5. Salkind (2013:224) concludes that after the data collection method is chosen the next step is to construct the questionnaire, test and modify it and then send to the chosen participants.

The questionnaire was planned according to the sub-objectives of the research study. SurveyMonkey is an online survey tool, according to the pre-requisite of the participating universities (UNISA and WITS requested the researcher to use it), that was used to send a link to the study supervisor and co-supervisor for approval. After the co-supervisor (who is also the HOD of the Faculty of Accountancy, Dr Maseko) gave his approval, the link was sent to finance directors for comments. Theses said comments were taking into consideration where after the

changes was made to the online questionnaire, the link was sent to the VUT research director for approval before VUT gave ethical clearance to continue. The online survey was sent to the experts chosen to participants at each university by sending an email with a link to SurveyMonkey. The names and e-mail addresses were obtained from each participating university website, per faculty and department. Only universities that gave official permission letters were chosen using the expert sampling method. The link was then sent via SurveyMonkey to the 500 participants of whom 56 participants responded. After the participants responded, the raw data were collected from the SurveyMonkey website and electronically downloaded (see Annexure C) for data compression, grouping and analysis, which will be discussed in the next section.

3.6 DATA ANALYSIS PROCEDURES

Creswell *et al.* (2016: 207) suggests that data analysis of quantitative variables is very complex compared to qualitative data. In quantitative data, there is a list of numerical values, which are made up of a value for each respondent. These values are distributed across a certain range of values. The distribution of these values can be evaluated in terms of central tendency, spread of variation and the shape.

Creswell *et al.* (2016:214) advocates that in quantitative data, the data can be grouped in the form of a frequency distribution in a situation where the question and the response options are provided. The calculation of numerical descriptive statistics for this data in this format is based on the principle of assigning the mean, the mode and the median. The mean is the most commonly used measure of location and it is calculated as the arithmetic average of the data values. The mode is the value that occurs most frequently. The median is the middle value of a distribution, splitting the distribution into two halves. In the analysis of the data in this study, the numerical measures were employed to do the statistical analysis of the data. This study, therefore, adopted the analysis stages suggested by Creswell *et al.* (2016:208) and Zhang & Wildermuth (2009). Starting with the identification of data segments, followed by diagramming and final reflection. Data frequencies were analysed in the frequency table (see Annexure C), the statistics were calculated using SPSS (See Annexure C) for each question. Cross-tabulations were done as follows:

3.6.1 Frequencies and measures of central tendency

Measures of central density are used to determine the typical or average score of a group of integers (Wallgren, Wallgren, Person, Jorner & Haaland, 2006:81). Measures of central tendency provide a convenient way of describing a set of data with single numbers.

Frequencies: The frequency distribution construction starts with in the descriptive analysis. This construction includes a table that shows the count of how many times the different values of the variable are encountered in the sample and then presented as a percentage. Frequency distributions portray the different values of the units in the analysis (Welman, Kruger, & Mitchell, 2005:230).

Means: The Mean provide information about the average participant's score in the measurement of the scores to get the arithmetic mean in the sample data by calculating the frequencies and dividing the total by the total number of scores (Johnson & Vanderstoep 2009:92).

Median: Values are arranged in rank order from small to large, where the exact middle is the value of the median. When the total number of values is an odd number, the median is that middle value having exactly equal values above and below (Zikmund, Babin, Carr, & Griffin, 2013:107). The median does not take into account each and every score but rather focuses on the middle scores.

Mode: The mode is not established through calculation but rather determined by looking at a set of scores to determine which score occurs the most frequent (Hair, Black, Babin, Anderson & Tatham, 2006:113).

Standard deviation: Standard deviation is used when data are interval or ratio and is by far the most frequently used index of variability. It is the square root of the variance of the data, where the variance is the average squared distance of the recorded values from the calculated mean. It is the most stable measure of variability and includes every score in calculation (Goddard & Melville, 2001:54).

Correlations: Two sets of data will have a correlation with each other and will differ in direction and magnitude (Johnson & Vanderstoep, 2009:95). The two sets of data may vary together, when the value of one variable increases, then the values of the other variable also increase (a positive correlation). Whereas a negative correlation happens when the values of one variable increase and the other variable decreases. Correlation techniques are used to obtain a numerical value for the strength of such correlation called and expressed as the correlation coefficient to show the relationship of the data sets (Fox & Bayat, 2007:69). The correlation coefficient represents the strength of variation between two variables by means of a number that can range from -1 to 1 (Khan & Adil, 2013:3). High correlation coefficients reflect strong levels of association between variables, regardless of the direction.

Detailed steps that propose the process should start from preparing the data then explore and condense the data; to come up with meaningful units by a coding scheme and a categorising process as suggested by Zhang & Wildermuth (2009). Bloomberg and Volpe (2016:203) propose

a data summary table that can be drawn up and supported by Creswell *et al.* (2016: 212-214) that data can be graphically represented to easily draw conclusions from discussing and interpreting the data, developing descriptors for each category and, finally, presenting and reporting findings. This study included the formation of summary tables as one of its final stages before reporting the findings. Erlingsson and Brysiewicz (2017) agree with Zhang and Wildermuth (2016) on all suggested stages. Figure 3.2 illustrates the data collection and analysis stages.

The raw data were collected from the online questionnaires sent to the selected universities via SurveyMonkey. The participants only needed to choose the option they felt was most appropriate for the specific department. The questionnaires that were sent are attached as Annexure B, which contains the questionnaire with the extracted data. The next step taken was the data condensation process.

The extracted data were condensed to meaningful and easy-to-handle data segments. After data condensation, categories and a coding scheme were developed. The categories were developed in such a way that they were clearly linked to the research-specific objectives as they form the pillar on which the study is built and a guide towards the presentation of the research findings. The most appropriate method is determined by the purpose of the study, whereby descriptors were derived from the secondary objectives, which were used as focus areas from which categories were formulated and coded.

The coded data were placed into data summary tables for identification of patterns from which to draw the findings of the study.

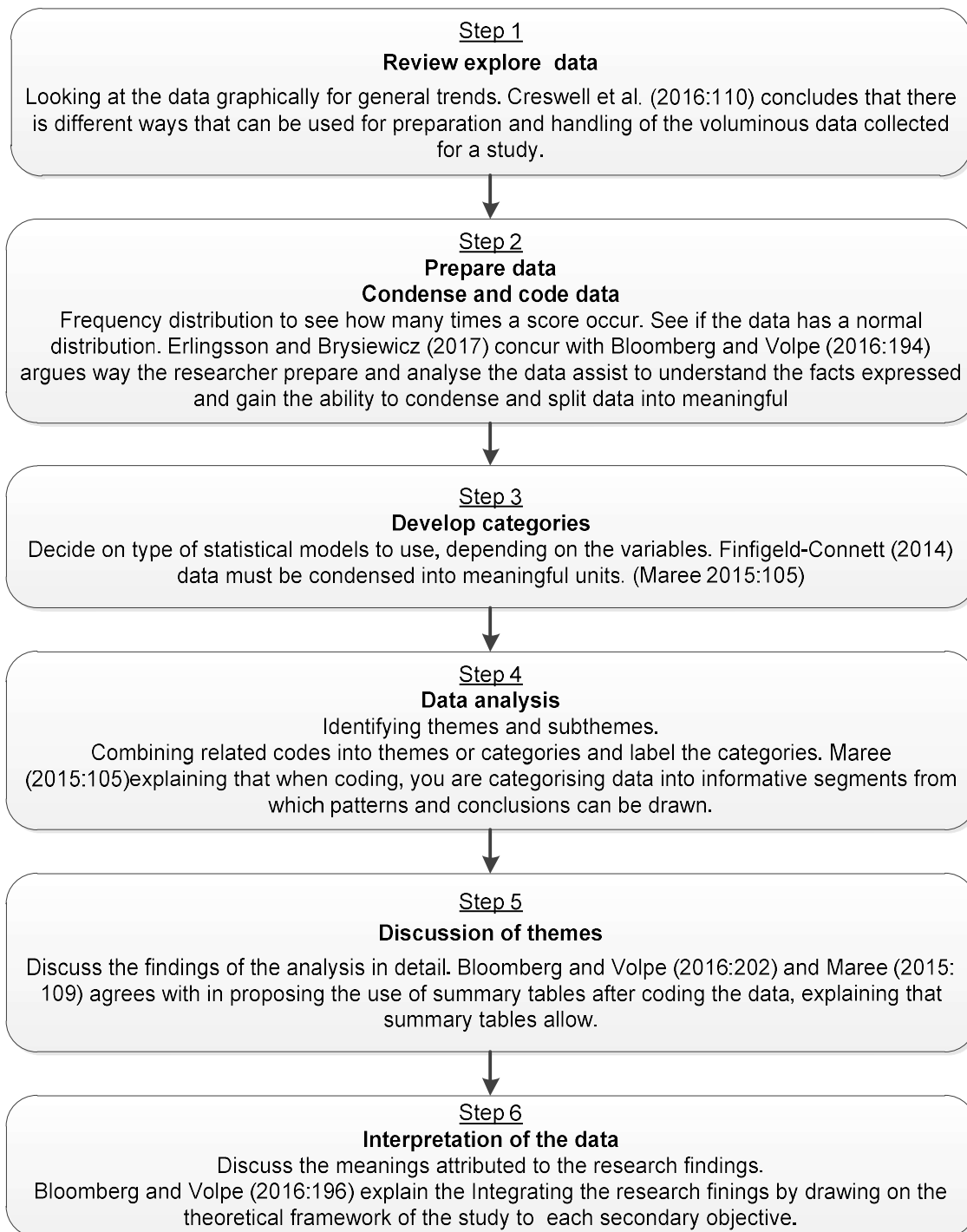


Figure 3.2: Data analysis process

(Source: Adapted from Creswell *et al.* 2016)

The discussion, interpretation and reporting of the research findings followed and findings were drawn from the summary data table for each secondary objective. The data collection and analysis stages identified data to be manageable and meaningful, which leads to credible coding, analysis and presentation.

3.7 RELIABILITY AND VALIDITY

Non-probability sampling may have limitations where it may not be a good representation of the whole population, however, it is useful if randomisation is not possible, and the researcher has to make use of expert sampling (Etikan *et al.* 2015). Reliability depends on the stability of the measurement procedure. Sarantakos (2005:85) also added that reliability is characterised by precision and objectivity. The purpose of reliability testing is to ensure that the questionnaire is robust and not sensitive to changes of the researcher, the respondent or the research condition. A questionnaire that is carefully planned is adequately important for the quality of data collection (Neuman and Kruger (2003:179-180).

Assarroudi, Heshmati, Armat, Ebadi, & Vaismoradi, (2018) make it clear that in quantitative research, reliability and validity measure the effectiveness of the measuring instrument. Validity is defined as the degree to which the study has measured what it set out to measure (Burns & Grove 2009:71). Assarroudi *et al.* agree with Creswell *et al.* (2016:238-240) that the measuring instrument must be repeatable and consistent. These established stages in Section 3.6 were followed to ensure trustworthiness and credibility of data collection and analysis.

3.8 CONCLUSION

This chapter presented the research design and methodology followed to achieve the objectives of the study. Different research paradigms and the quantitative research design were discussed and the rationale for following research qualitative design was explained and justified.

The chapter then explained the population of the study and the sample that was purposively selected to explore the primary objective of the study regarding the budgeting models that public universities use and to investigate the budgetary planning and expenditure control processes, and the secondary objectives find Institutional backgrounds of the university to show their diversity in size. Further to the secondary objectives to investigate if cost analysis is done if it is done, how often it is done, how the total budget for different IHEs is decided degrading the for decisions, measurements and attributes for calculations. How HODs in different departments that have to set up and manage their departments' budgets and determine how budgeted income are treated. To ascertain how the budgeted expenditures are reported and the relationship between the technology and innovation department's budget and the university's main budget as explained in chapter 1. The rationale for using a purposive sampling strategy was also discussed and the sample discussed and illustrated. The chapter further explains that the study used documentary literature for the theory behind the study. Finally, data analysis procedures were outlined, where definitions and explanations of different documentary analysis strategies were given.

The chapter explained that data were coded and analysed. Focus areas were identified as details on the main categories, the codes and the coding descriptions. The primary coding of data was

concept-driven; therefore, deductive reasoning was applied, guided by the focus areas. The identification of the focus area was guided by the secondary objectives presented in Chapter 1 and categories were deduced from the literature review presented in Chapter 2. Under the focus areas, categories were presented with the coding applied and code descriptions. Detailed data analysis and interpretation of the questionnaire are provided in Chapter 4.

CHAPTER 4

ANALYSIS AND INTERPRETATION OF DATA

4.1 INTRODUCTION

Chapter 1 gave a broad background to this study, while chapter 2 gave an in-depth literature review as a basis for the research questions. Chapter 3 explained the research design and how the data were collected and analysed. In this chapter, the data collected will be presented visually and the presented results will be analysed and discussed.

The data analysis is discussed according to the following classifications as per the secondary objectives:

- General demographics
- Cost analysis
- Expense control
- Budget income
- Budget expenditure
- Technology station
- Hostels.

4.2 DATA ANALYSIS METHODS

The online software, SurveyMonkey (Copyright © 1999-2020 SurveyMonkey), was used to send the questionnaire to selected participants and collect responses. The questionnaire, that can be seen in Annexure B, was sent to the participants via an email link. Five separate groups of email addresses were used, a list for each university. The software SurveyMonkey allow for filter so that those participants that responded are not receiving a second reminder to take part in the study. SurveyMonkey also allow the researcher to send out more reminders to take part in the study without sending reminders to participants that already took part in the study. These reminders were sent out four times. A total of 56 responses were received when the responses was finally collected for analysis on the cut-off date on 30 August 2019. Four more responses were received on 2 September 2019 which was too late to be included in the data analysis for this study. 400 participants were selected and about 50 could not be reached, giving a response rate of 16%. Data collected from SurveyMonkey were converted to the codebook for the statistical analysis that was performed using SPSS software. Before information could be imported into the

SPSS system for analysis, a codebook had to be prepared to convert the data into a format with which the SPSS system was able to interface (Pallant 2016:11-31). See Annexure C

The statistics for each question were analysed to determine valid and missing data in the active dataset (Annexure 2). The results of the data analysed by SPSS are discussed in the following paragraphs.

4.3 DATA ANALYSIS OF THE QUESTIONNAIRE

This section provides an overview of the descriptive statistics that were used in the preliminary data analysis. The tables in Annexure D show the Frequency analysis. For analysing the demographic data (Section A) that demonstrate how many faculties there are in some universities and the student count per university, a descriptive analysis was undertaken. In the section below the questions were grouped together according to their purpose to analysis the data.

4.3.1 Demographics

The first section of the analysis, the demographics, describes the characteristics of the sample for the first secondary objective to find out what are the institutional background of the participating universities and show their diversity in size. The demographics data describes the size of the universities by the number of faculties and the number of students in the university. Descriptive statistical analysis was used to identify frequencies and percentages.

Questions 1 and 2 enquired about the demographics of the participating universities. In Question 1, the number of academic faculties was determined. 44.4 percent (n=24) of the institutions have one to four academic faculties and 42.6 percent (n=23) of the institutions have five to ten academic faculties. Only 4 percent (n=2) had between 11 to 15 faculties and 9 percent had more than 15 academic faculties.

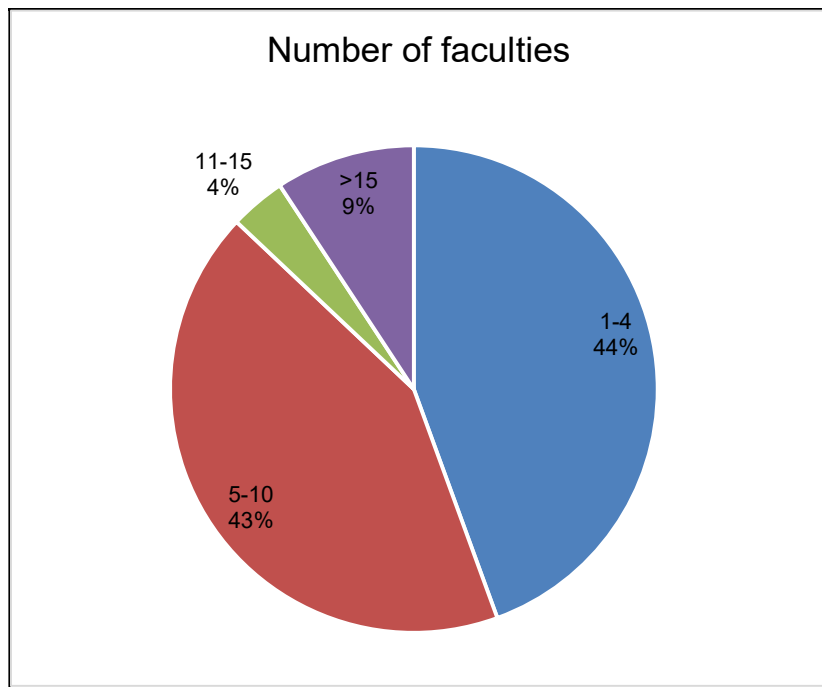


Figure 4.1: Number of academic faculties

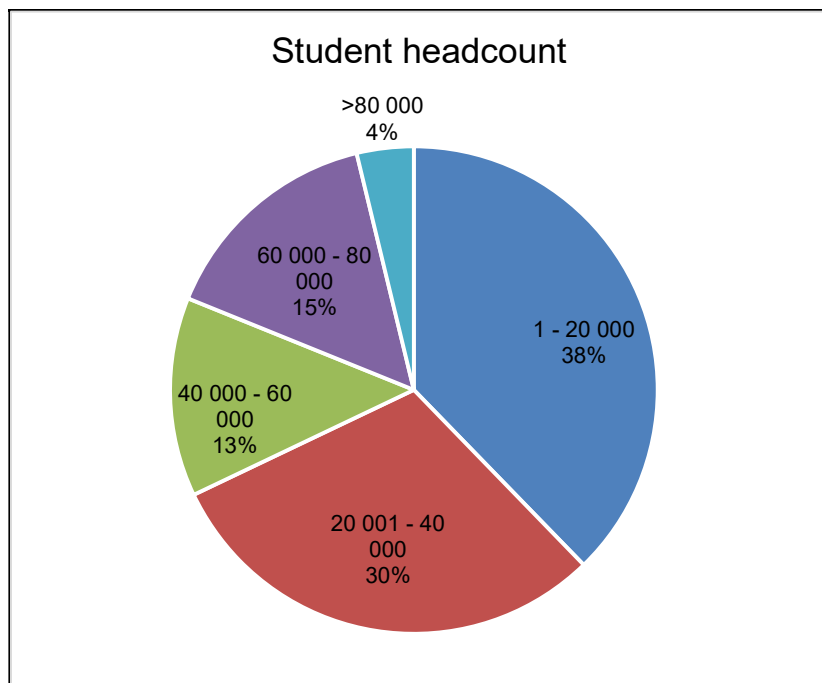


Figure 4.2: Total student headcount

In Question 2, the total student headcount enrolment was determined. 38 percent (n=20) percent of the universities had between one and 20 000 enrolments, while 30 percent (n=16) had between 20 001 to 40 000 students. 13 percent (n=7) of the universities have 40 000 to 60 000 students;

15 percent (n=8) had between 60 000 and 80 000 students while only 4 percent (n=2) had more than 80 000 students.

From Questions 1 and 2 it can be concluded that the sample included small and large size universities because some universities had only one to four faculties and some had more than 15 academic faculties. Some universities have less than 20 000 students, while others have more than 20 000 students showing that this study included diverse universities.

4.3.2 Cost analysis

The following section describes whether departments analyse cost and if so, to what extent does the departments analyse cost to answer to the 2nd secondary objective of this study regarding the investigation if cost analysis is done and how often it is done. This section also investigates whether institutions have a separate cost management department, the tracing of costs and the methods of cost allocation used. Descriptive statistical analysis was used to identify frequencies and percentages.

Questions 3 to 5 and 8 to 9 analysed cost.

From questions 3 and 4 it can be concluded that most institutions 64 percent (n=36) analyse cost. It is evident that 21 percent (n=12) were not sure whether the institution or their department analyse costs, which may be because, for example, a departments' finance administrator answered the question and may not be involved in the cost analysis. From the answers in question four it can be seen that 49 percent (n=26) analyse their cost on a monthly basis. Question 5 showed that only 40 percent (n=21) of institutions have a separate cost management department. Almost 9 percent (n=5) showed that they are unlikely to analyse costs. 5 percent (may have other means of analyse costs, therefore, it may be that they do not officially analyse costs).

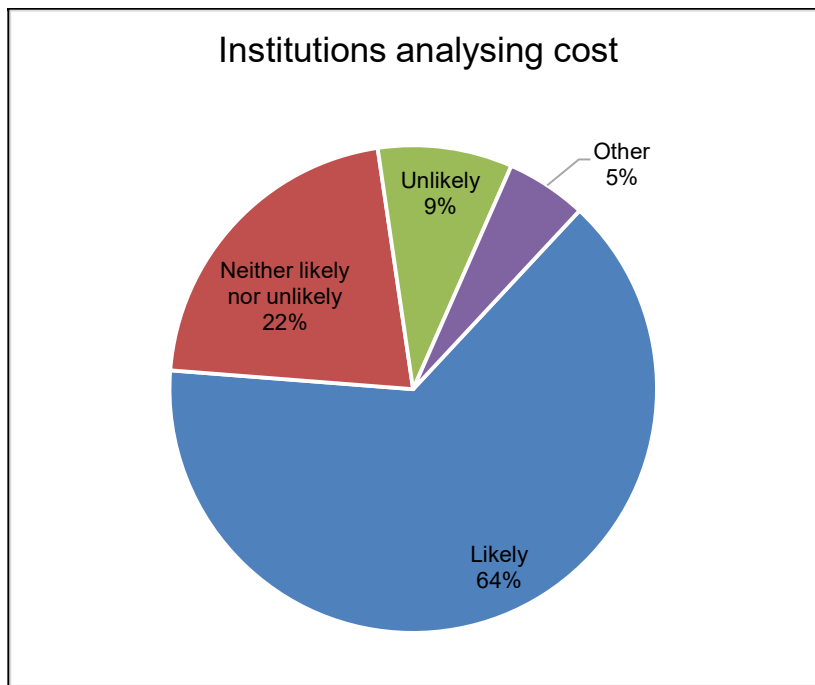


Figure 4.3: Institutions analysing cost

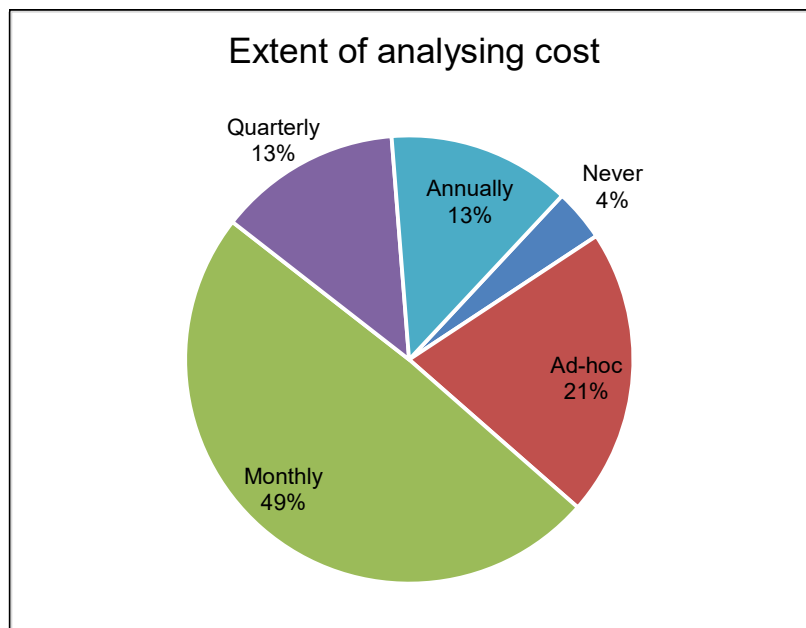


Figure 4.4: Extent to which departments analyse cost

Almost half of participants indicated that they analyse costs on a monthly basis (49.1% n=26) and 20.8 percent (n=11) on an ad-hoc basis. 13.2 percent (n=7) analyse costs on a quarterly basis, probably for their quarterly report, while another 13.2 percent (n=7) indicated that they analyse costs on an annual basis. 3.8 percent (n=2) indicate that they never analyse costs.

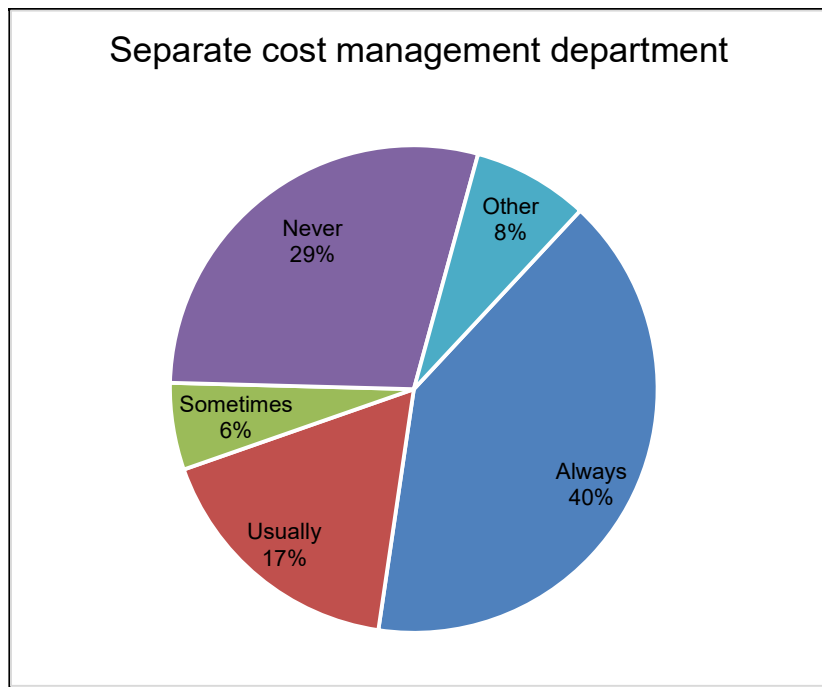


Figure 4.5: Separate cost management department

The tracing of costs of services, support, and faculties as in Question 8 was done according to direct costs. The statistics for this question were 56 percent valid data and 44 percent missing data, for this reason this question can be discarded.

The low number of valid responses could be that the question was not clear. It may also be that the high number of participants who did not answer this question may be departments' finance administrators who may not know how management trace costs.

Question 8: Tracing of cost of services, support and faculties for the purpose of cost allocation

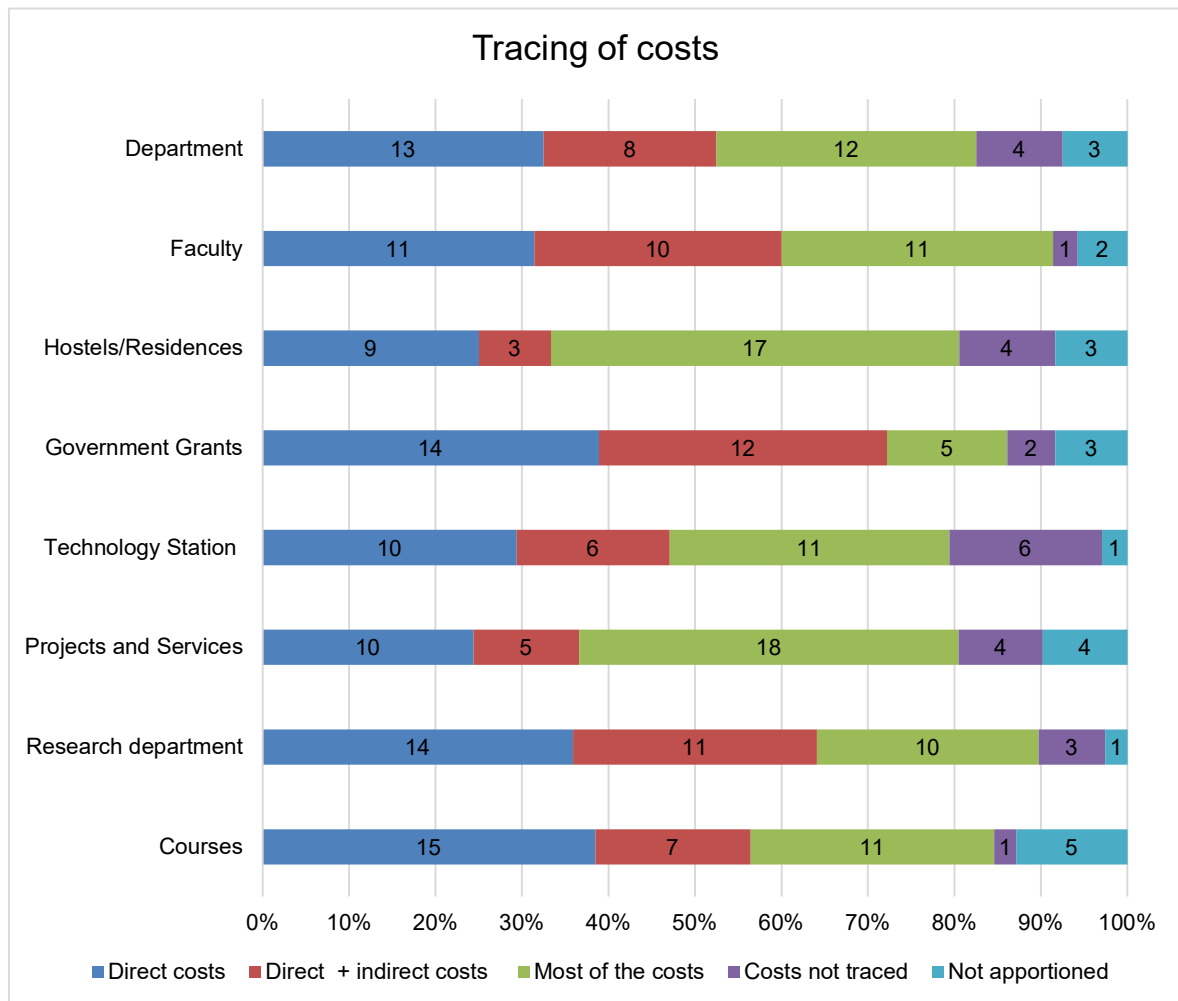


Figure 4.6: Tracing of costs

The assigning of service costs by using the specified allocation basis, as in Question 9, showed no uniformity in the data. The statistics for this question were 71 percent valid data and 29 percent missing data, therefore this question is discarded.

Question 9 investigated the extend of allocations for indirect costs assigned from service departments to academic departments and other service departments.

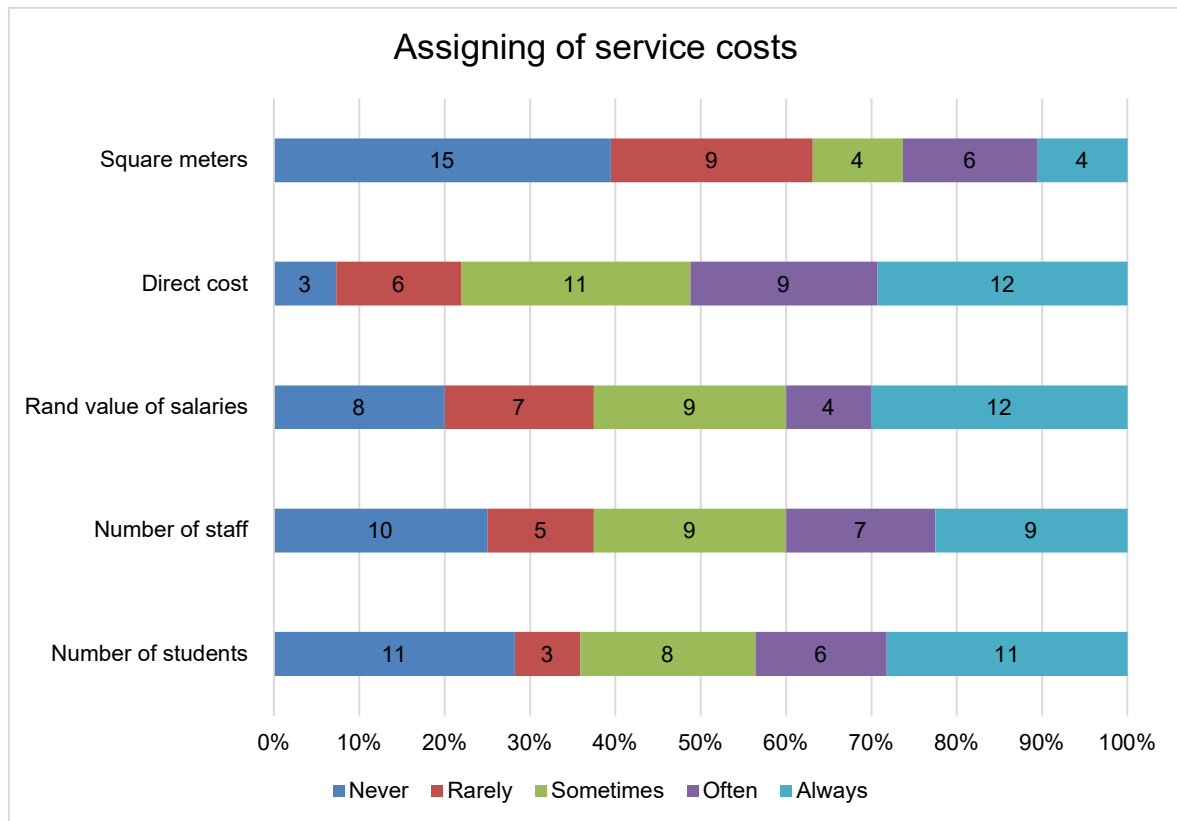


Figure 4.7: Assigning of service costs

4.3.3 Expense control

The following section describe expenditure control in the institutions and investigate the 3rd secondary objective of this study partly by ascertaining whether budget reporting software are used for budgeted versus actual spending. Descriptive statistical analysis was used to identify frequencies and percentages.

Question 6 and 7 analysed expenditure control.

According to responses for questions 6 and 7, 57.4 percent (n=31) of the institutions always use budget reporting software, 18.5 percent (n=10) usually, 5.6 percent (n=3) sometimes, 3.7 percent (n=2) rarely and 9.3 percent (n=5) never uses reporting software and 5.6 percent (n=3) indicated that they use other means to report budget vs actual spending. According to question 7, 7.7 percent (n=4) uses SAP, 78.8 percent (n=41) uses ITS, 9.6 percent (n=5) uses Oracle while 1.9 percent (n=1) uses other software. 1.9 percent (n=1) did not know what software are used. ITS is by far the most used as official accounting package in use by institutions.

As indicated in Chapter 1, policies and procedures are administrative tools that prescribe how decisions and actions of all staff should be made and entail principals to be followed, coordinated and enforced consistently across organisational units to standardise routine decisions. Reporting software and tailor-made software packages such as ITS will ensure effective budgetary and expenditure control.

Question 6: Does institution use budget reporting software for budget vs actual?

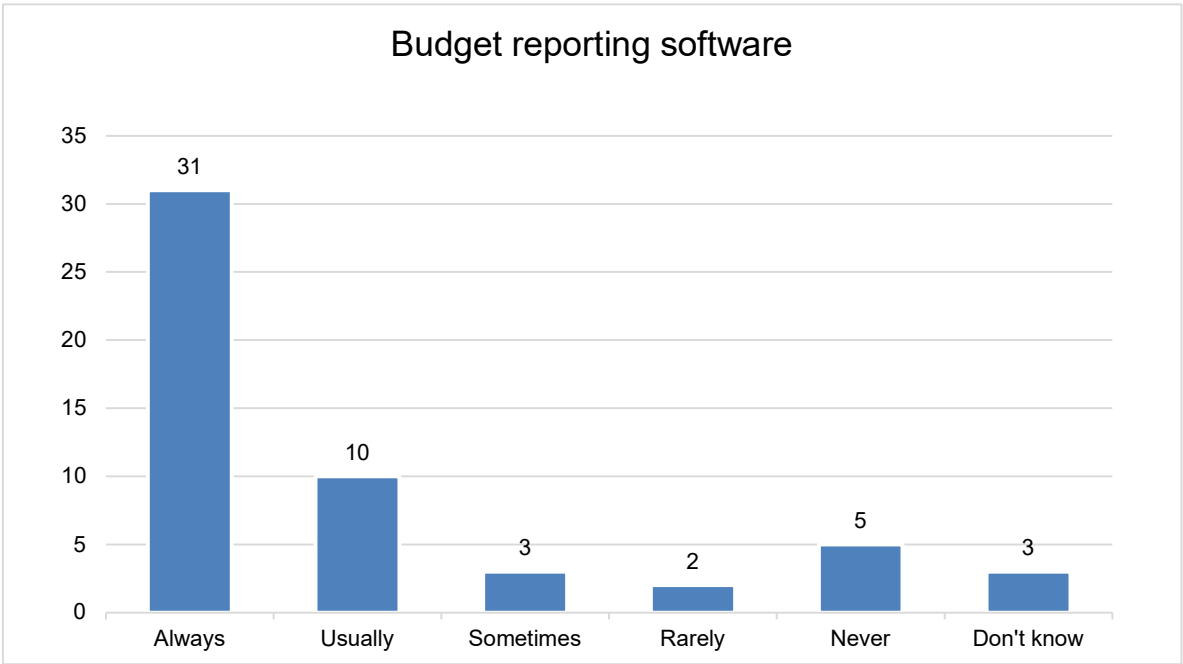


Figure 4.8: Budget reporting software

Question 7: The name of official accounting software

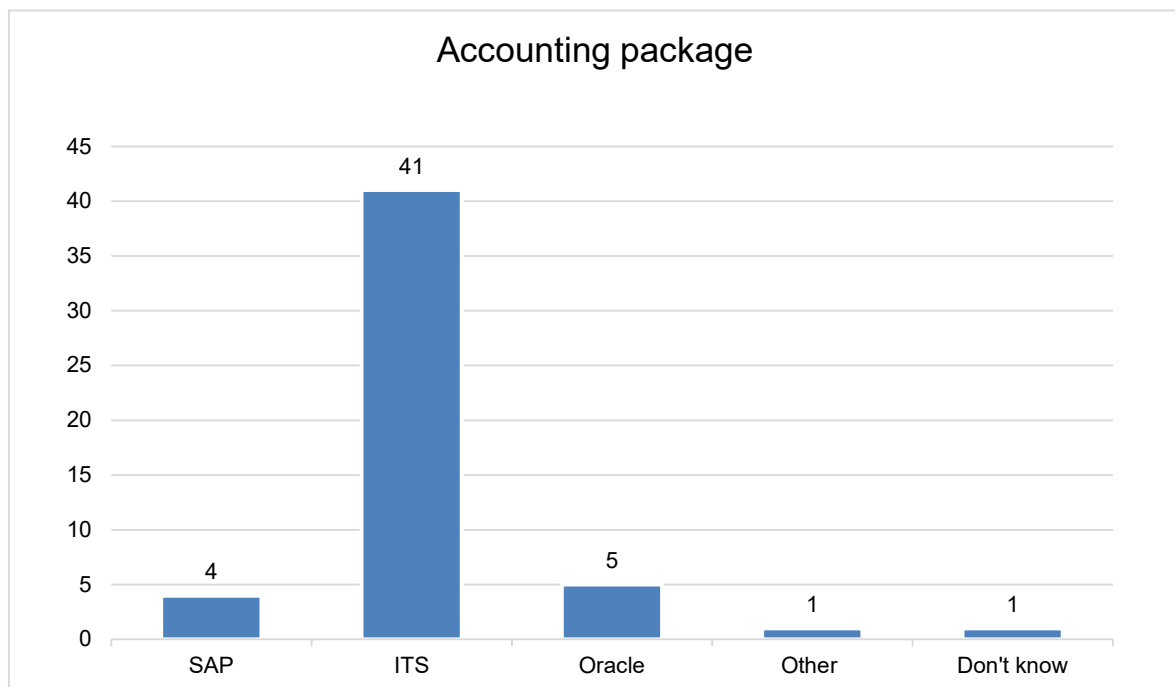


Figure 4.9: Accounting package

A conclusion can be drawn accordingly as indicated In Question 6, 57.4 percent of participants indicated that they use budget reporting software for budget vs. actual spending and in Question 3, 64 percent indicated they do analyse cost. Question 4 indicated that analysis is done monthly (49%), quarterly (13%) and annually (13%). In Question 7, most indicated they use ITS software, thus an indication that universities do use information management accounting software systems and have good procedures to analyse costs in a relatively timely manner.

Questions 30 to 32 analysed expense control procedures.

Question 30: Budget depleted; what does your department do?

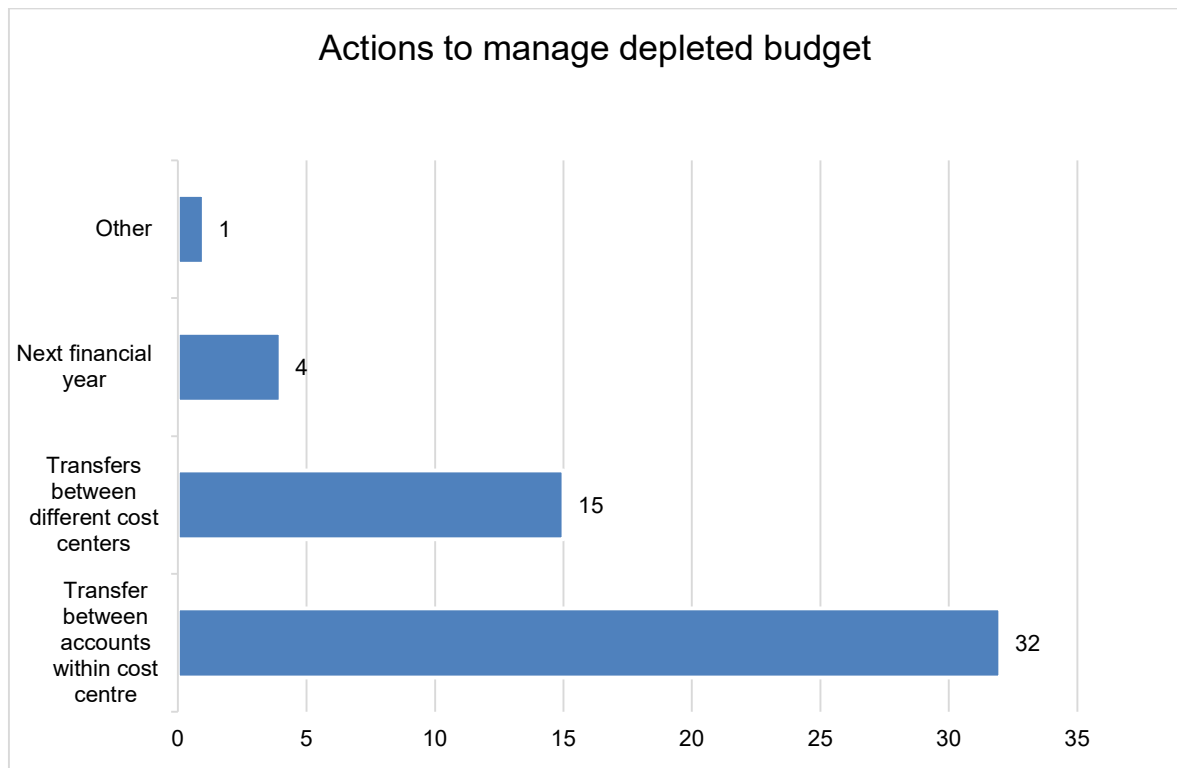


Figure 4.10: Actions to manage depleted budget

Question 31: How often are budget transfers done?

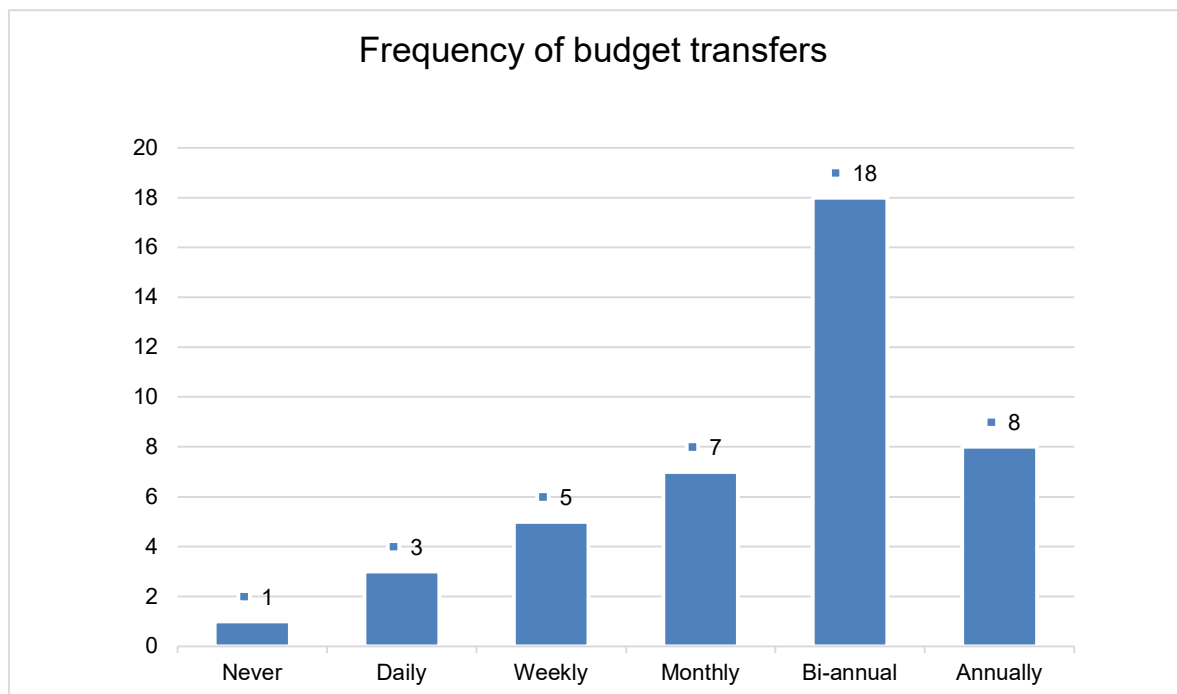


Figure 4.11: Frequency of budget transfers

Depleted budgets were addressed by questions 30 and 31. Question 30 demonstrate what happen when a budget is depleted; transfers are done between expenditure accounts within a cost centre/department 61.5 percent (n=32). The 26.9 percent (n=15) that are transferred between different cost centres. 9.6 percent (n=4) indicated that the requisition is rejected and ask the applicant to wait for the next financial year to make the purchase or payment.

Question 31 investigated how often budget transfers or budget virements are done. It was indicated that 36 percent (n=18) have bi-annual budget transfers, while 28 percent (n=7) did monthly transfers. 12 percent (n=5) indicated that it is done weekly. 6 percent (n=3) done daily budget transfers. Only 2 percent (n=1) never do budget transfer during the year. The above is alarming in the sense as to on what and how was the budget calculated for the annual budget planned if so many budgets need to be wired.

Question 32: Ad-hoc payments procedures

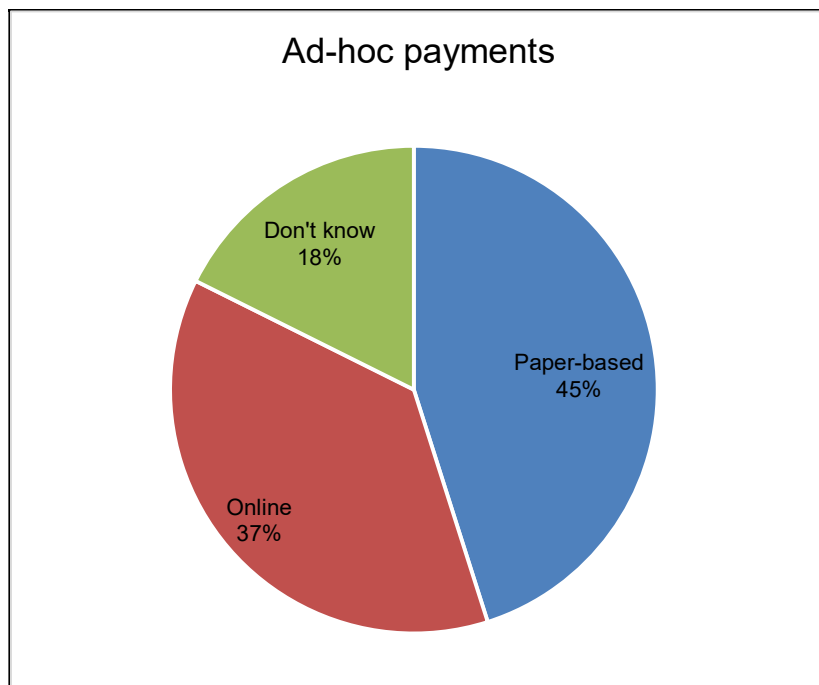


Figure 4.12: Ad-hoc payments

Question 32's statistics showed that as much as 45.1 percent (n=23) of Ad-hoc payments are initiated by manual paper-based requisitions and only 37.3 percent (n=19) are initiated online.

This may be an indication that the procedures lack of internal control because 'finger errors may occur and leave room for errors when entries are repeated and the risks that unauthorised signatories may sign paper-based requisitions. If it were done online, the system setup would reduce such risks.

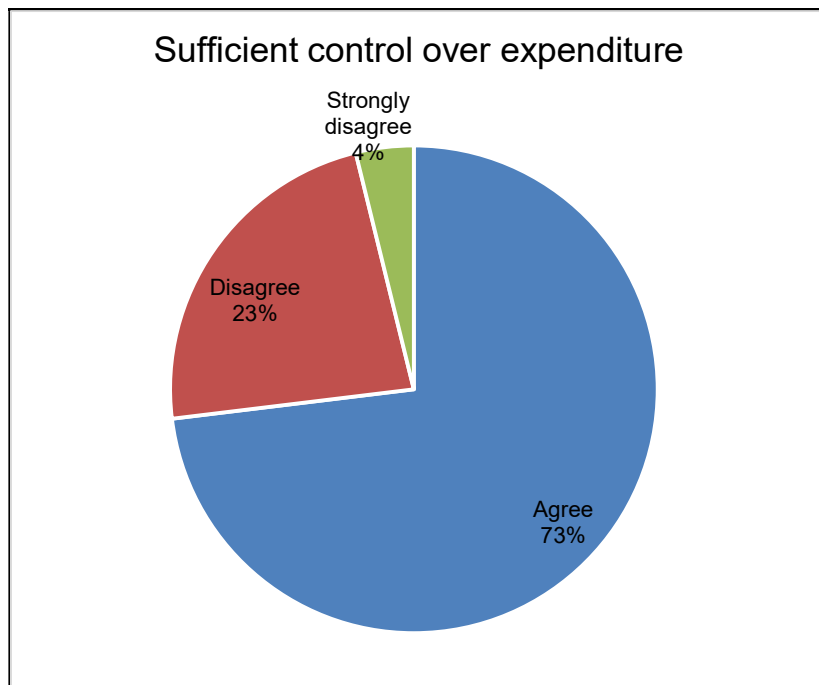


Figure 4.13: Sufficient control over expenditure

Question 33 asked whether participants felt there is sufficient control over their departments' budget. Most of the respondents indicated that there is sufficient control over the expenditure on a department/ cost centre budget as indicated by 73.1 percent (n=38) of respondents agreed. For the sake of simplicity, strongly disagree and disagree was added together that indicated that 26.9 percent (n=14) do not agree that there is sufficient control over departmental expenditure. Thus, it is an indication that more research should be done as to why more than a quarter of participants feel this way.

Question 34: Online requisitions for internal department's purchases

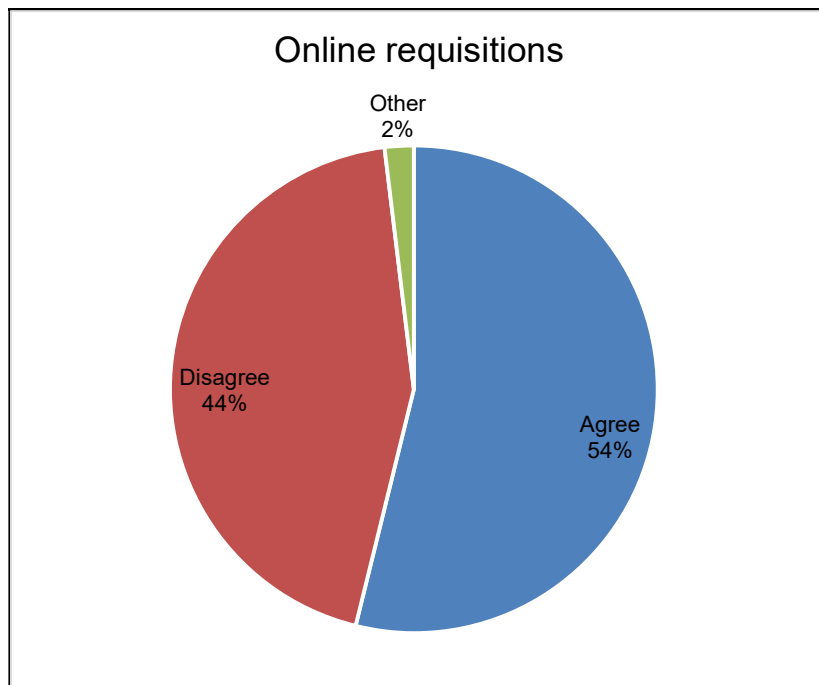


Figure 4.14: Online requisitions

Question 34 investigated the procedures for internal department requisitions and respondents had to indicate whether they agree that it is done online. 53.8 percent (n=28) agreed, and 44.2 percent (n=23) percent indicated that they do requisitions paper based. The risk is that the repetition of paperwork into the accounting system leaves room for typing errors as well as cost codes and more specifically for unauthorised transactions. Another risk is that the paperwork may be misplaced or the budget checks and balances for available funding are bypassed because of the lack of computerised internal control.

Question 35: Research expenditure (air tickets, travelling, allowances, etc.) booked as research expenses

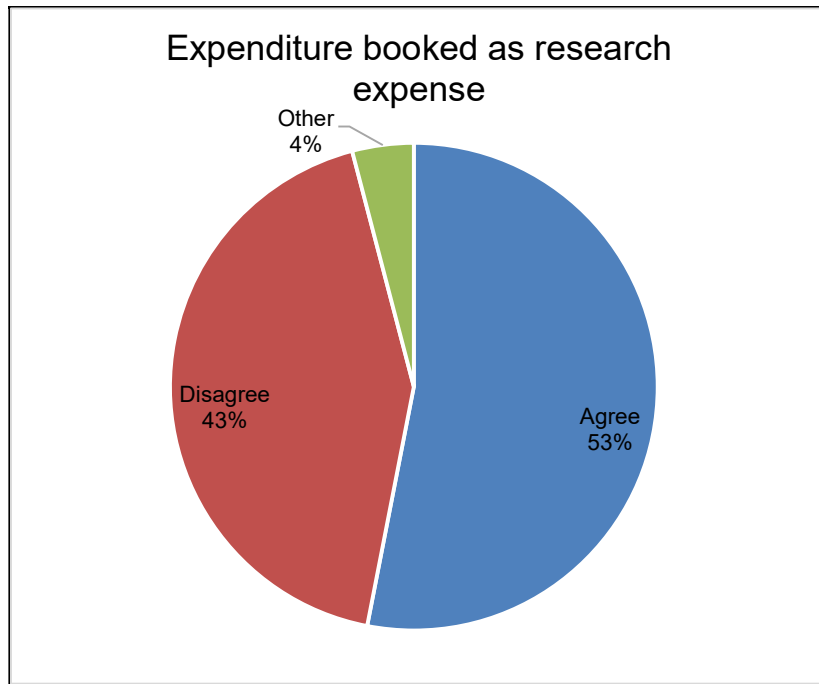


Figure 4.15: Expenditure booked as research expenses

Question 36: Are air travel tickets, travelling costs, subsistence allowances and other expenditure to enable research, booked to the actual expense type such as travel expenses in the general ledger account line-items?

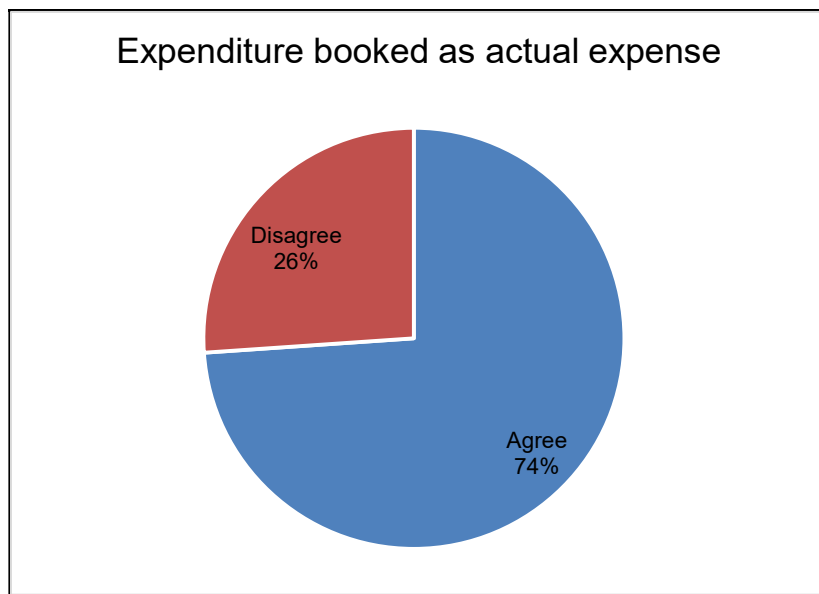


Figure 4.16: Expenditure booked as actual expense

Questions 35 and 36 were about the allocation of research expenses. Question 35 determined if all relevant research expenses were booked against research expenses. 46 percent (n=29) agreed, and 38 percent (n=21) disagreed. Question 36 determined if research expense is further broken down to the actual expense type such as overseas travel or accommodation. Answers that indicated that participant do not know was left out; 74 percent (n=34) of the respondents agreed that it is done while 21 percent (n=12) disagreed. These 2 questions were specifically asked in this manner to see if the answers would correlate with each other. However, the question now is, if 53% agreed in Question 35 where it was asked if research-related expenses are booked to a single line-item named research expenses, then why would 74 percent agree to the direct opposite of the same question that was just asked in another way? The conclusion is evident from the analysis that there is no defined policy or procedure followed either by staff or by management. This could result in inaccurate financial reporting and travelling cost such as flight tickets, accommodation, living out allowances and meals could be hidden under research expenditure.

Question 38: How is the financial information system set up to control expenditure?

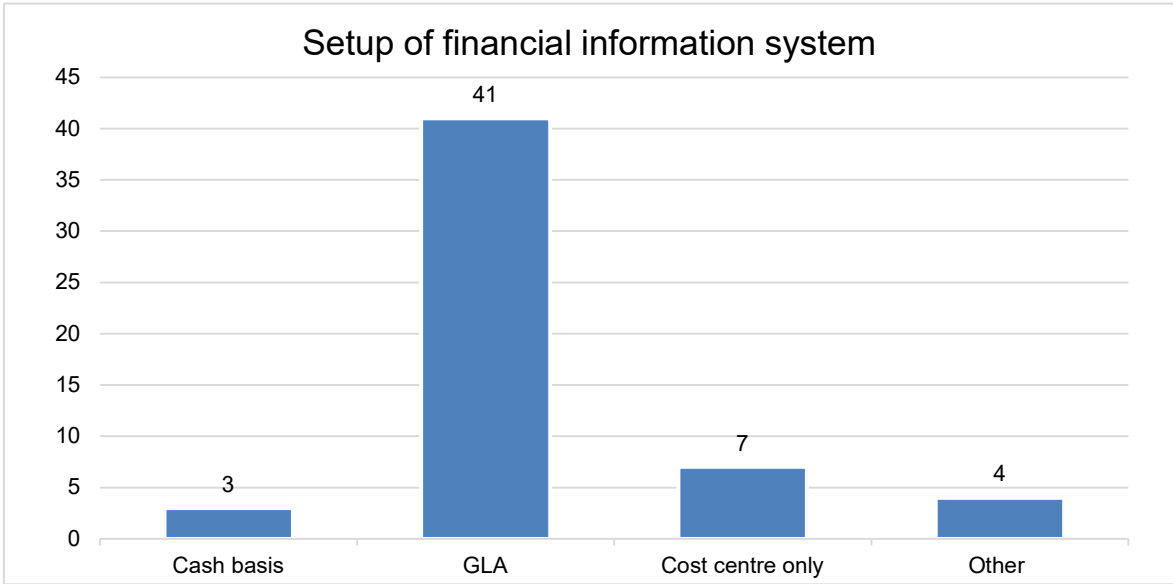


Figure 4.17: Setup of financial information system

Most of the participants, almost 80% (n=41) indicated that the financial system is set up according to the cost centre and account line item (GLA) to control expenditure. This is an indication that good expenditure control procedures are in place to ensure line-item budgets are spent as intended and that the department does not spend outside the planned budgets.

Question 39: Which methods are used to bring unused, outside funding forward to the new year?

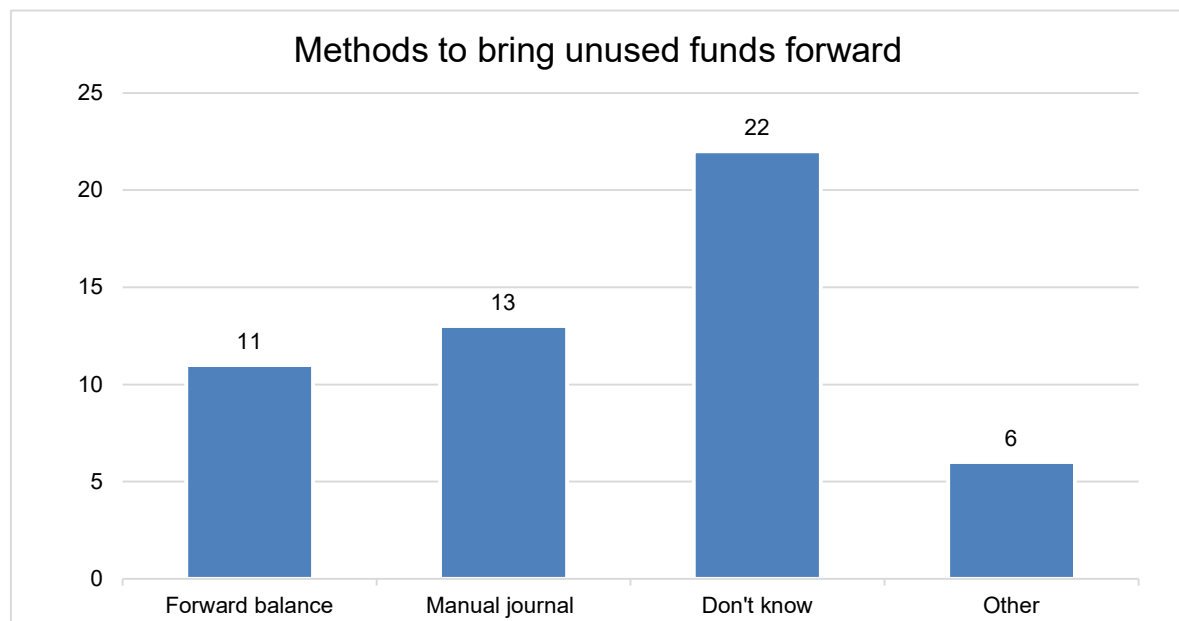


Figure 4.18: Methods to bring unused funds forward

Question 39 was ignored for this study because most participants did not know.

4.3.4 Budget income

This section support to ascertain the 4th sub-objective of this study that describes how income are calculated according to budgeted student fees income and whether student fees income is used to do a departments budget according to the faculty or the department or for the service department or for combinations of the above. The last part of this section investigates the opinion of participants to support the 3rd sub-objective on what were the ideas or reasoning behind decisions, measurements and attributes for calculations regarding the budgeting for different departments. Lastly it describes if the departments' expected income is part of the annual budget. Descriptive statistical analysis was used to identify frequencies and percentages.

Questions 10, 16, 23, 37 and 40 are questions on budgeted income.

Question 10: How are subject or class fees calculated?

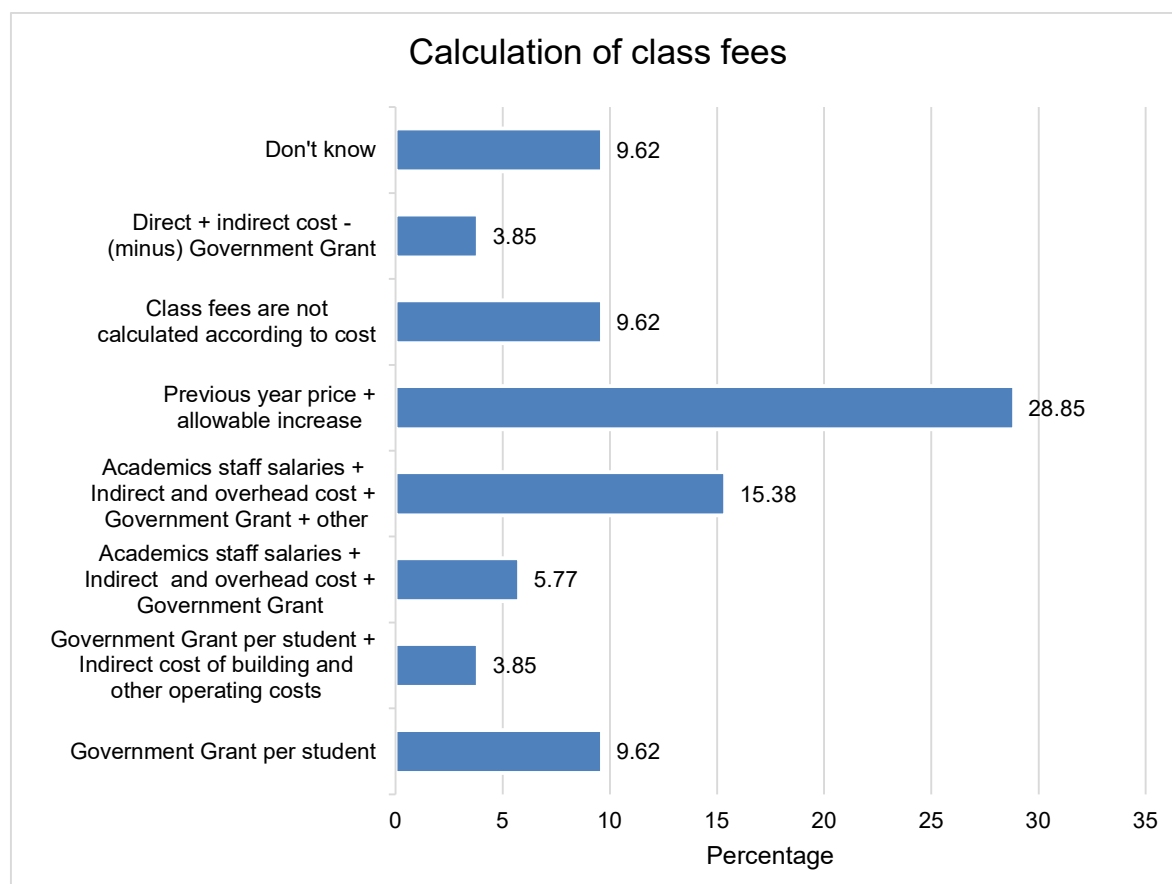


Figure 4.19: Calculation of class fees

The respondents indicated in Question 10 that the subject or class fees are calculated by using different options indicated as shown in table below:

How class fees are calculated	n=	Percentage (%)
Academics staff salaries ratio	0	0.0
Government Grant per student	5	11.1
Indirect cost of building and ground maintenance and other operating costs ratio	0	0.00

Government Grant per student + Indirect cost of building and ground maintenance and other operating costs	2	4.4
Academics staff salaries + Indirect costs + Government Grant	0	0.00
Academics staff salaries + Indirect and overhead cost + Government Grant	3	6.7
Academics staff salaries + Indirect and overhead cost + Government Grant + other	8	17.8
Previous year price + allowable increase	15	33.3
Class fees are not calculated according to cost	5	11.1
Direct cost	2	4.4
Direct + indirect cost - (minus) Government Grant	5	11.1

In Question 23, the same question was put in another way: Which of the following departments use the expected student fees income in the budget? This question was clearer; 44.4 percent (n=20) of respondents indicated per faculty and 26.7 percent (n=5) percent indicated per faculty and service departments. Only 8.9 percent (n=4) indicated that they use expected student fees income in the budget according to student count. 26.7 Percent (n=12) indicated that an allocation of a calculated percentage between service departments and faculty are used while 8.9 percent (n=4) percent indicated that other means are used to budget for expected student fees income.

Question 16: Use of the expected student fees income to plan the budget

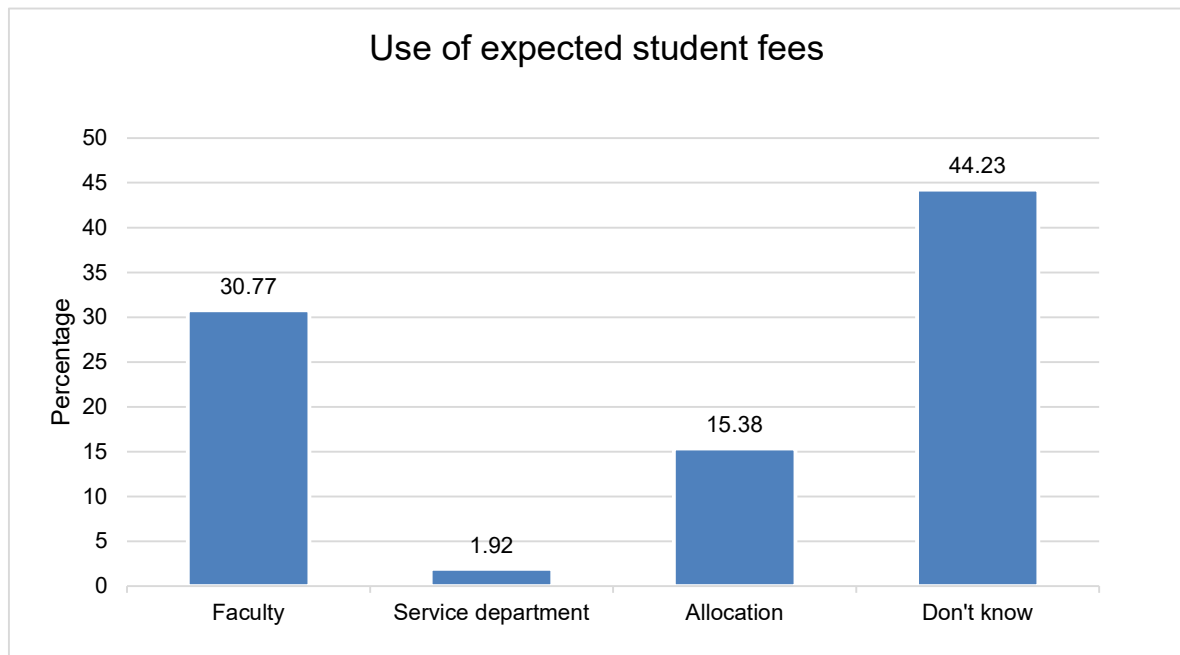


Figure 4.20: Use of expected student fees

In Question 16, it was expected from the respondents to indicate the expected student fees income used to plan the budget. Most of the respondents indicated that they do not know. 47.9 percent while 33.3 percent indicated the faculty and academic department. Around 20 percent indicated that they use an allocation of calculated percentage between service departments and faculty. The fact that about 50 percent indicated that they do not know is perturbing. If the budget models discussed in Chapter 2 were to be used, one would expect that the expected student fee income per faculty or department should be part of the calculations for planned expenditure within each faculty.

Question 23: Which of the following departments use expected student fees income in the budget?

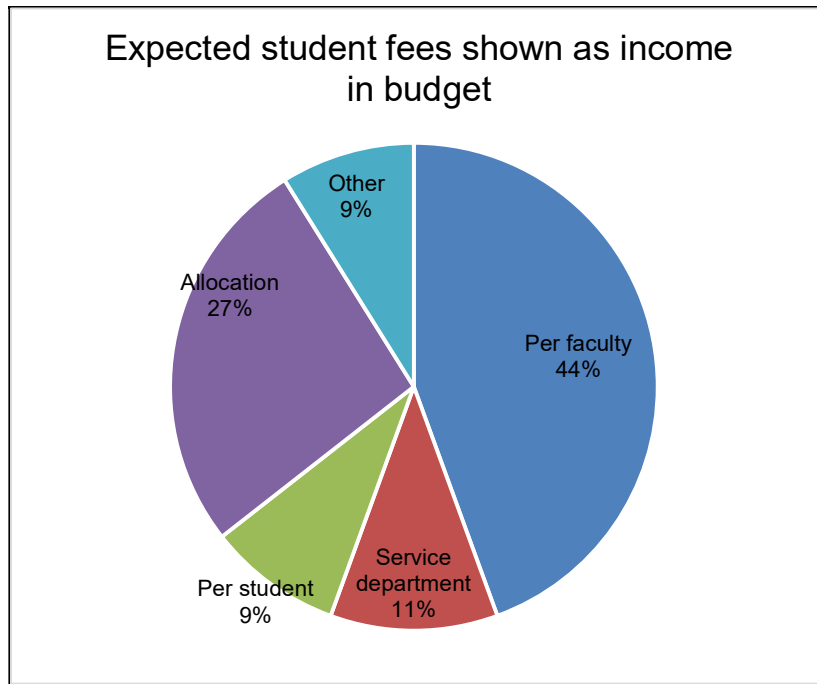


Figure 4.21: Expected students' fees shown as income in budget

In Question 23, the same question was put in another way – which of the following departments use the expected student fees income in the budget? This question was clearer, and 44.4 percent of the respondents indicated per faculty and 26.7 percent indicated per faculty and service departments. Although the analysis shows a higher rate of understanding and use, it is still worrying that only 8 percent indicated that per student income fee was used in their budget as the magnitude of scale of income will depend on the student numbers.

Question 37: DHET and NRF in some cases allow universities to make specific spending and the university can then claim later from these grants. The participants were asked if they believe that the university should bring in this expected income and expenditure as a budget for the expenditure where it will probably be spent.

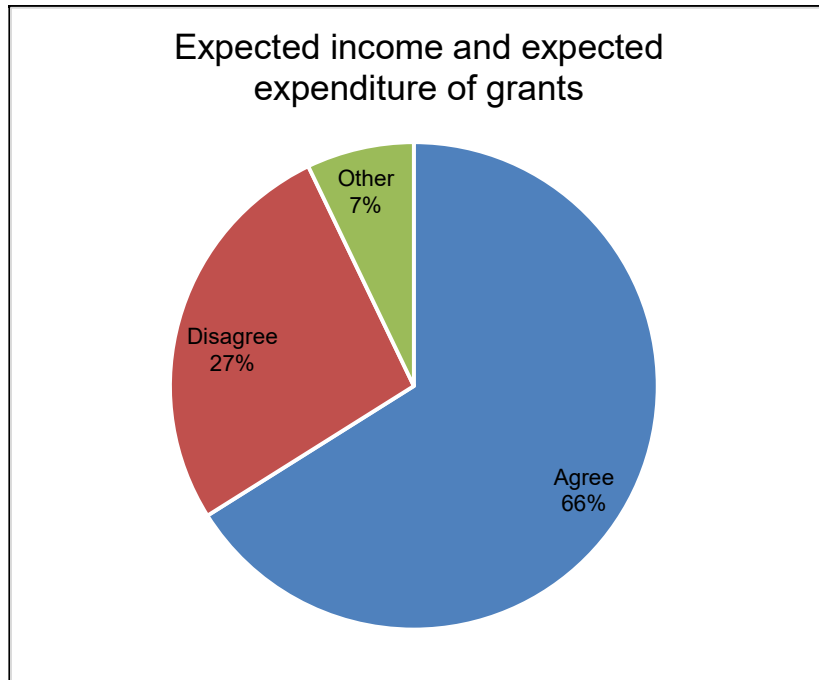


Figure 4.22: Expected income and expected expenditure of grants

Question 37 asked if the university should bring in the expected income and expenditure that the department of higher education provides universities with a (NRF)/another research grant after it occurred. Most of the respondents agree that it must be done (66%). The NRF grants should be brought into the budget per projects so that it will assist the internal control system of the university to measure how much of the allowable value are spent up to a specific stage of these research project to ensure that the expenses do not exceed the income.

Question 40: Does your university bring in the expected income per department's cost code as part of the annual budget?

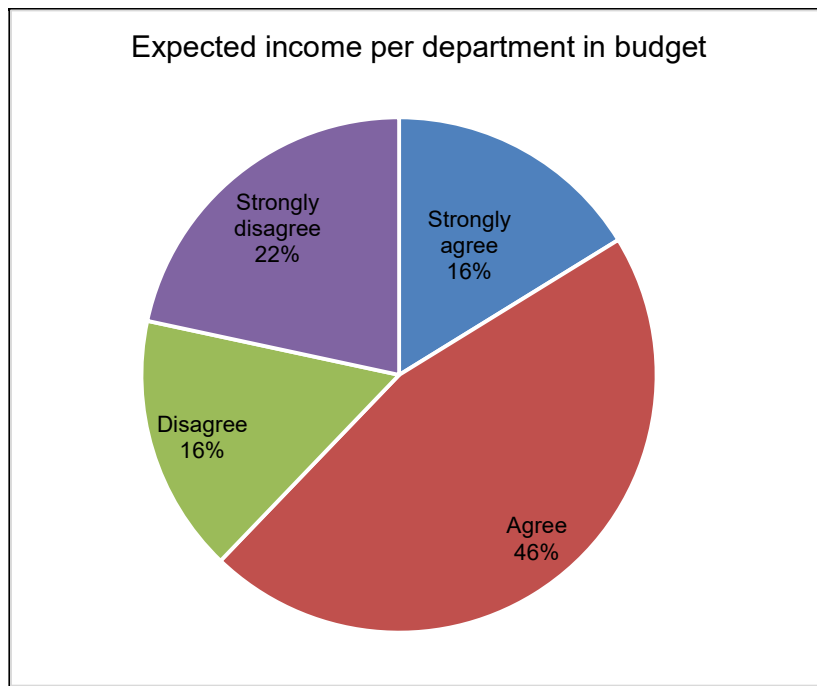


Figure 4.23: Expected income per department in budget

There was no consensus on Question 40 that the expected income must be part of the annual budget. 62 (16+46) percent of respondents were in favour that the expected income of the annual budget per cost code; and 38 (22+16) percent were not in favour of the expected income of the annual budget per cost code.

4.3.5 Budget expenditure

In this section, 2 categories are combined to combine two parts in the study are overlapping each other in the sense that how the universities budget are done according to the investigation of the 5th and the 6th secondary objective of the needs to be portrayed on how the budgeted expenditure are reported and the investigation and the relationship between Technology stations' budget and the universities' main budget. This section describes the budget methods, budgetary planning, how the budget is distributed. Descriptive statistical analysis was used to identify frequencies and percentages.

Budget expenditure questions were questions 11, 20, 21, 24, 25, 26, 27, 28 and 29.

Most of the institutions use the previous year budget plus inflation to budget for the expenditure (Question 11). This agrees with what was said in Chapter 1, that what a department spent for

supplies for a previous period, probably becomes the amount in the following year's budget forecast.

Question 11: What budget methods do your university or department use?

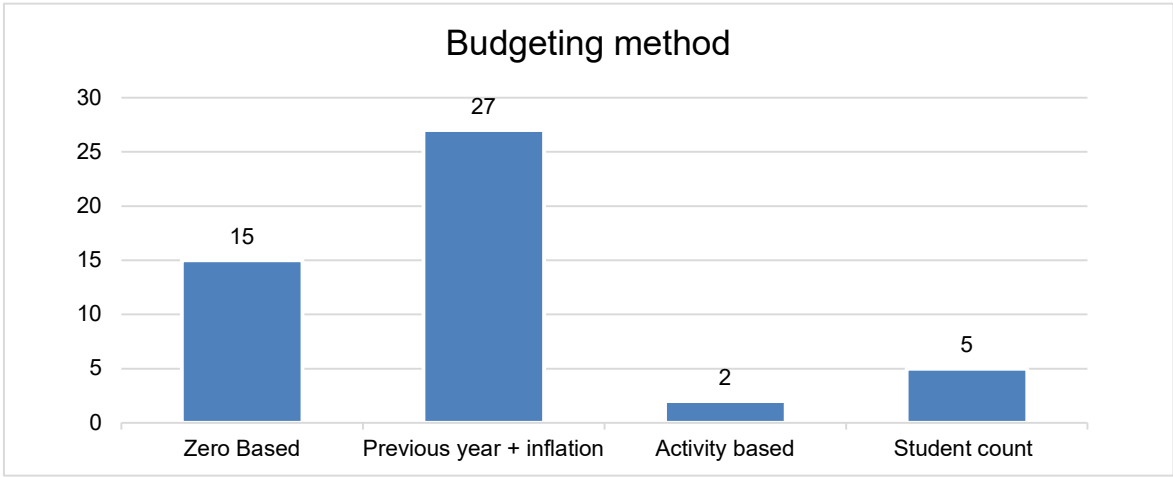


Figure 4.24: Budgeting method

According to the participants, the institution plans for operating expenses per faculty, academic department and service department (Question 20). For the 2019 budget, the 2018 budget plus a given percentage or the 2018 actual expenses plus a given percentage, or a combination of both was used (Question21).

Question 20: How does your department plan your operating expenses budget?

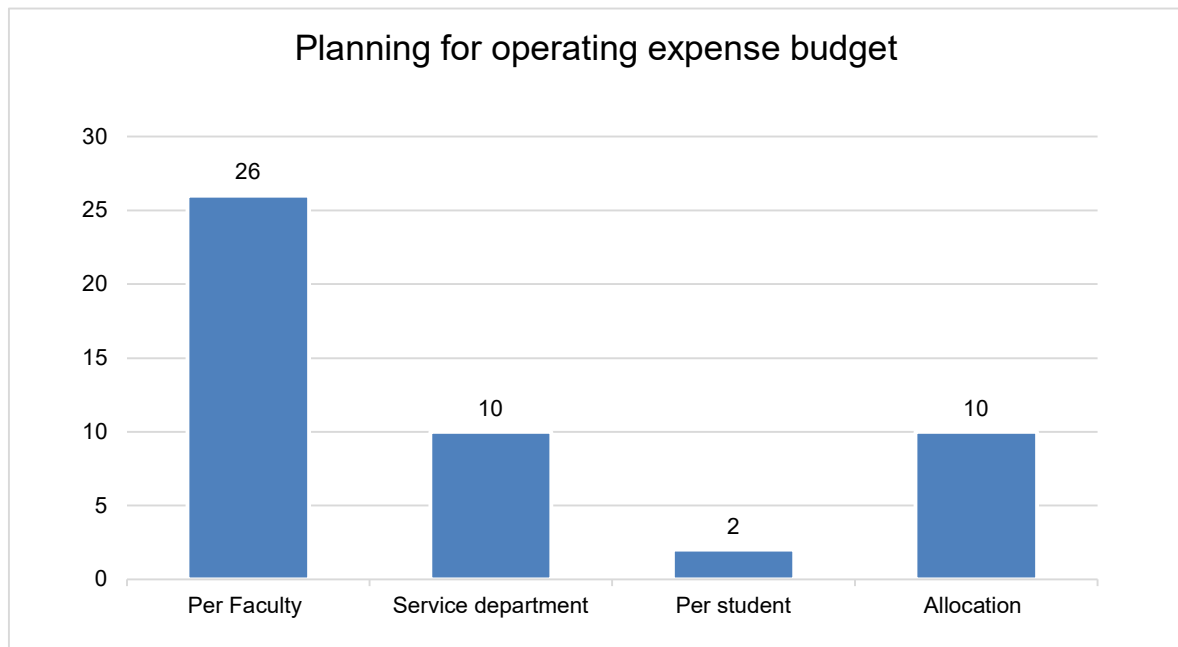


Figure 4.25: Planning for operating expenses budget

Question 21: On which of the following does your department base your budget?

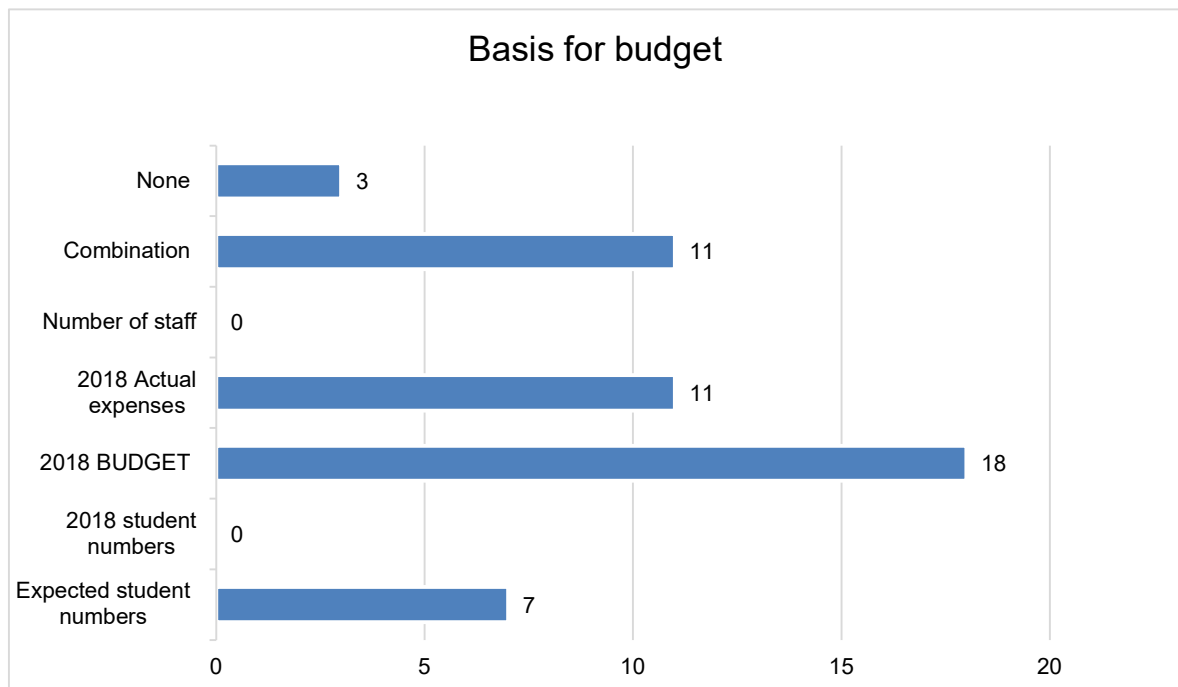


Figure 4.26: Basis for budget

There is no agreement between the participants that the budgeting method used by the university is effective for their department (Question 24). The answers range from agree, 27 percent, neither agree nor disagree 24 percent, disagree 29 percent and strongly disagree 18 percent.

Question 24: Do you agree that the budget method your department used is effective?

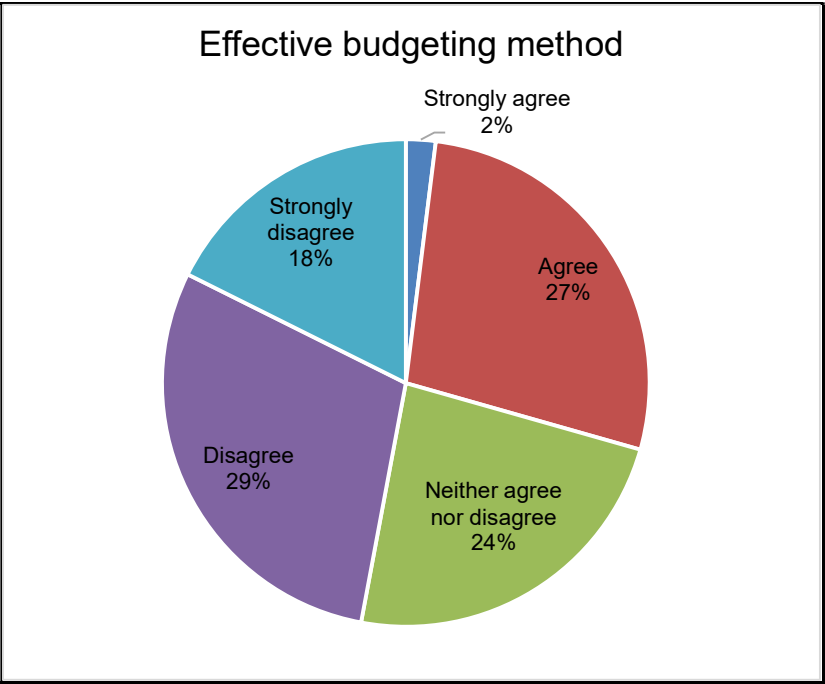


Figure 4.27: Effective budgeting method

Questions 25 to 27 display the various salary percentages as part of the budget.

Academic staff salaries contribute between 31-50 percent of the total budget, according to 41 percent of the participants. Admin and support staff salaries contribute between 0-30 percent of the total budget, according to 38 percent of the participants. Protection and cleaning services salaries contribute between 0 and 30 percent of the total budget, according to 67 percent of the participants.

Questions 28 and 29 display the travelling and accommodation expenses and the refreshments and entertainment expenses. Travelling and accommodation contribute between 0-10 percent of the total budget, according to 38 percent of the participants. Refreshments and entertainment contribute between 0-10 percent of the total budget, according to 43 percent of the participants.

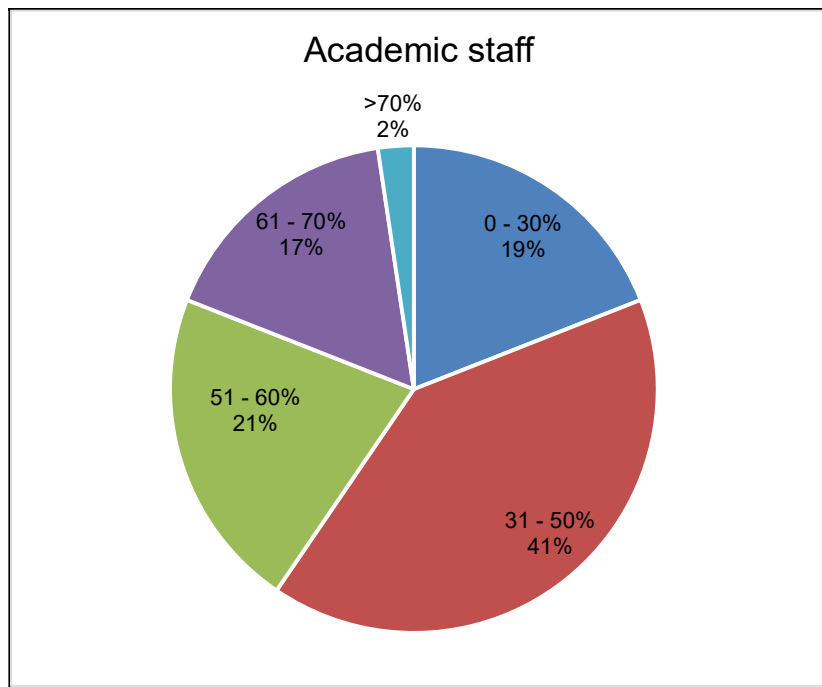


Figure 4.28: Salaries of academic staff percentage as part of the budget

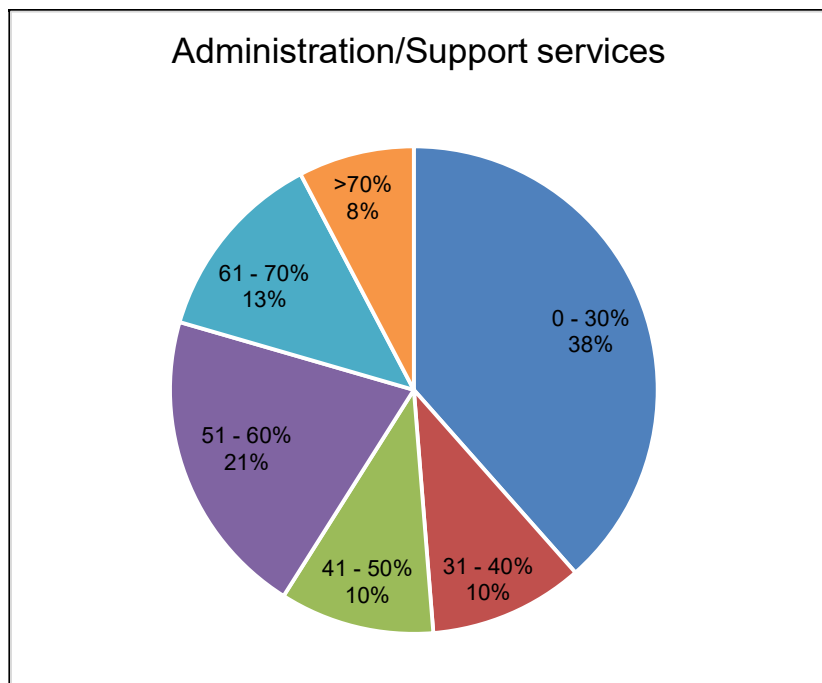


Figure 4.29: Salaries of administration/ support services percentage as part of the budget

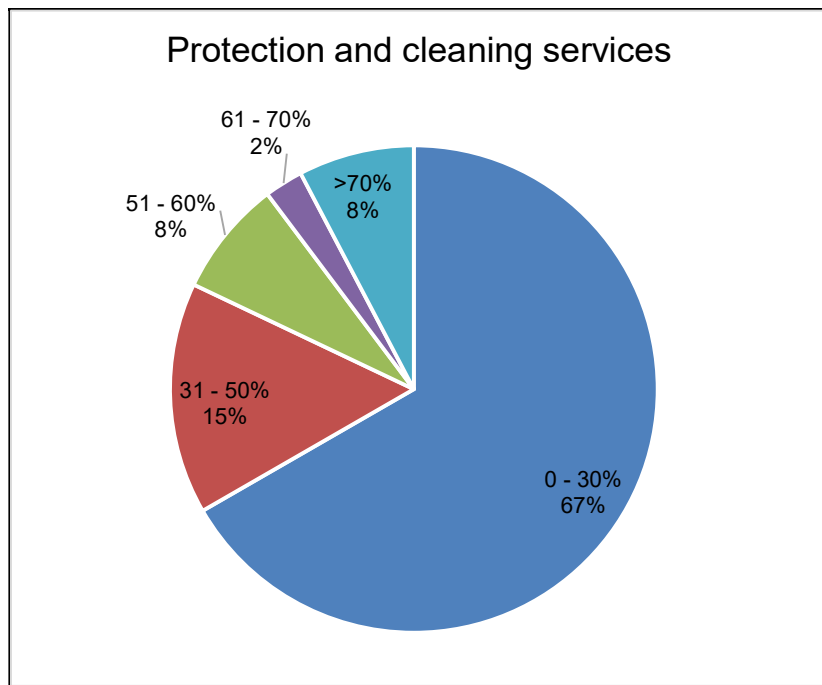


Figure 4.30: Salaries of protection and cleaning services percentage as part of the budget

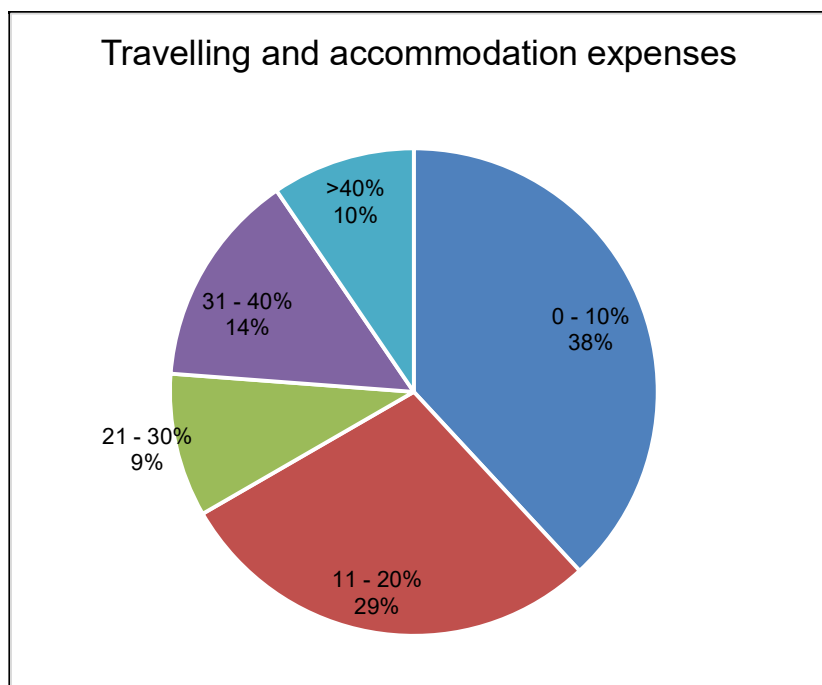


Figure 4.31: Travelling and accommodation expenses

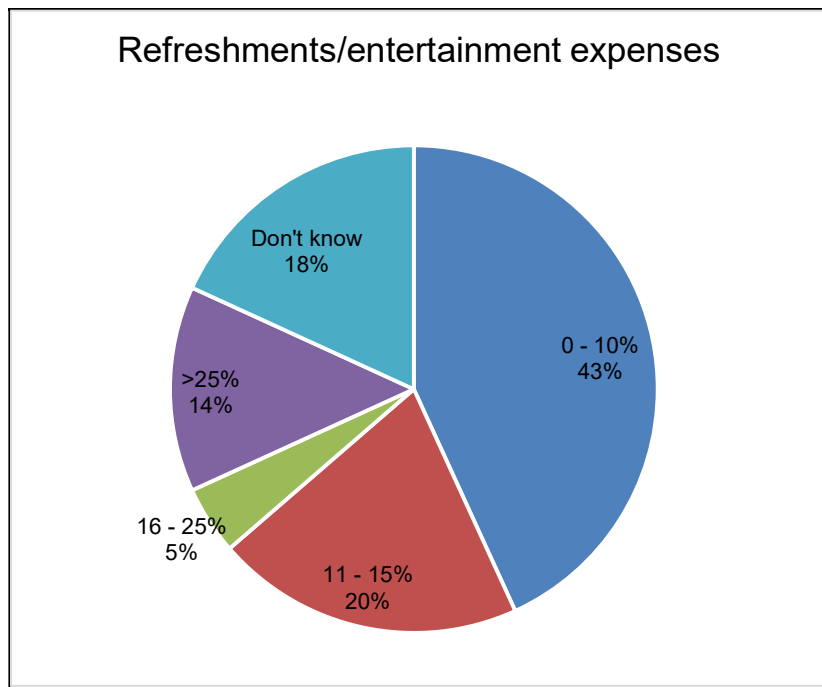


Figure 4.32: Refreshments/entertainment expenses

4.3.6 Technology station

This section describes in what way the technology stations/ business incubators plan the budget and control expenditure. Further is reveal how income is budgeted for and the treatment of outside funding. Descriptive statistical analysis was used to identify frequencies and percentages.

Questions pertaining to the technology station/ business incubator were questions 12, 13, 14, 15, 22, 38 and 39.

Question 12: Technology station and innovation centres etc. to raise income to cover their expenditure for salaries and other operational expenditure?

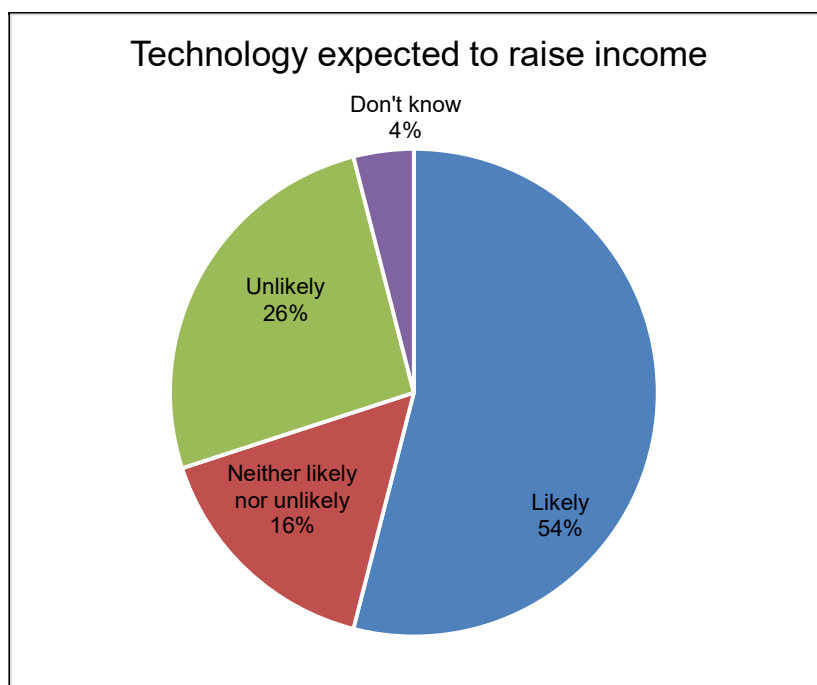


Figure 4.33: Technology to raise income

Question 13: University budget for technology station/ innovation centres etc. salaries in the universities main budget?

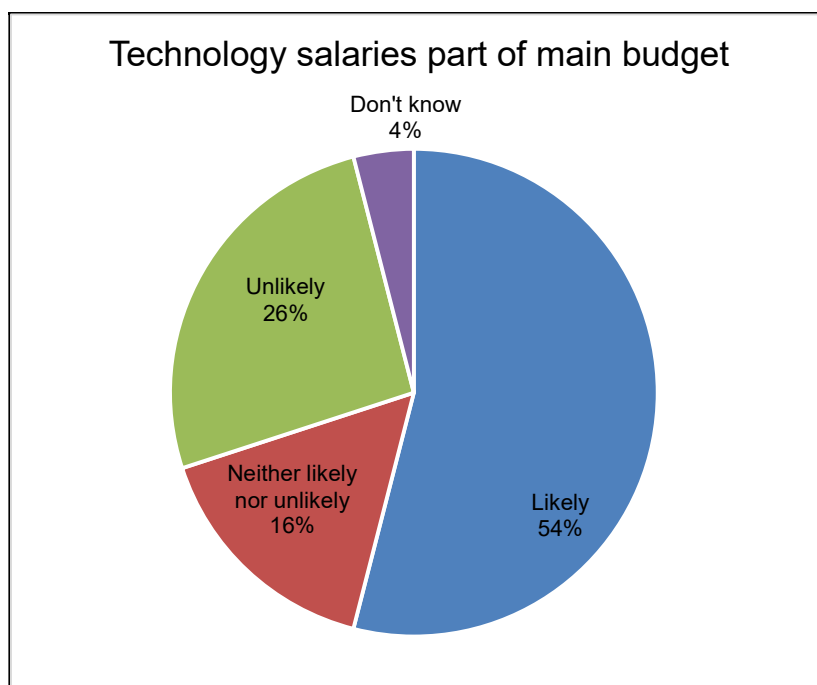


Figure 4.34: Technology salaries part of main budget

Question 14: University budget for technology stations or innovation centres' raw materials, operating expenses and building maintenance in the universities main budget?

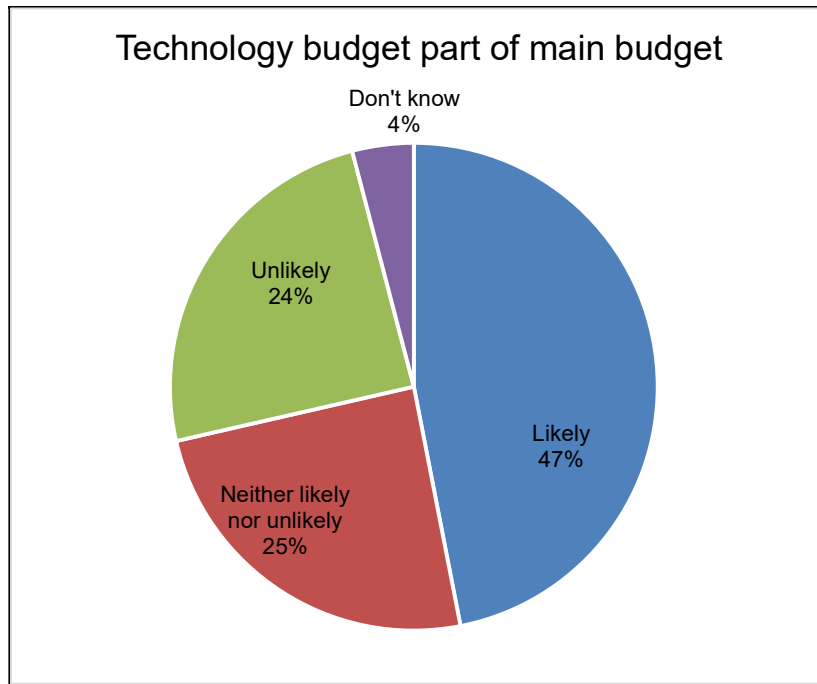


Figure 4.35: Technology budget part of main budget

As mentioned in Chapter 2, South African universities are funded mainly in three ways: by the state, by student fees and by third-stream income, including entrepreneurial activities, donor funding and research activities. Technology stations/ business hubs' income may form part of the third-stream income.

According to Question 12, 56 percent (25+31) indicated that it is likely that the university plan and expectations from the technology development centre/technology station/business incubator to raise income to cover their expenditure for salaries and other operational expenditure. Question 13 show that 54 percent (n=27) indicated that it is likely that the salaries are budgeted in the university's main income. Question 14 (47 percent) indicated raw materials, operating expenses and building maintenance of the technology station/business incubator form part of the main budget of the university. In Question 15, it was indicated (64%) that technology station/innovation centre's expected income is budgeted in the cost centre of the applicable facility. Only 24 percent indicated that it is budgeted in the university main budget and 16 percent indicated that it is not budgeted for. These figures are imperative in proving that there is no consensus of how it should be done unless each and every university does it differently or there are no clear guidelines from DHET as to how it is supposed to be budgeted.

Question 15: University budget for technology stations/ innovation centres etc. expected income in the main university budget or is it budgeted directly in the cost codes of these facilities?

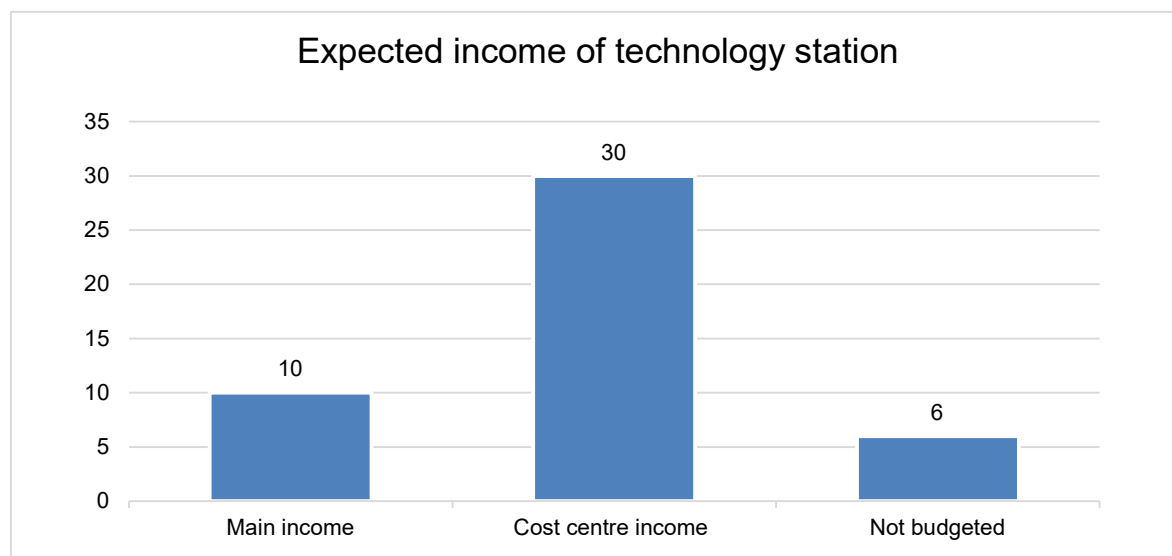


Figure 4.36: Expected income of technology station

It is likely (54 percent) that the university plan and expect the technology station/business incubator to raise income to cover their expenditure for salaries and other operational expenditure.

Question 22: University plan and expect from technology station and innovation centres etc. to raise income to cover their salaries and other operational expenses.

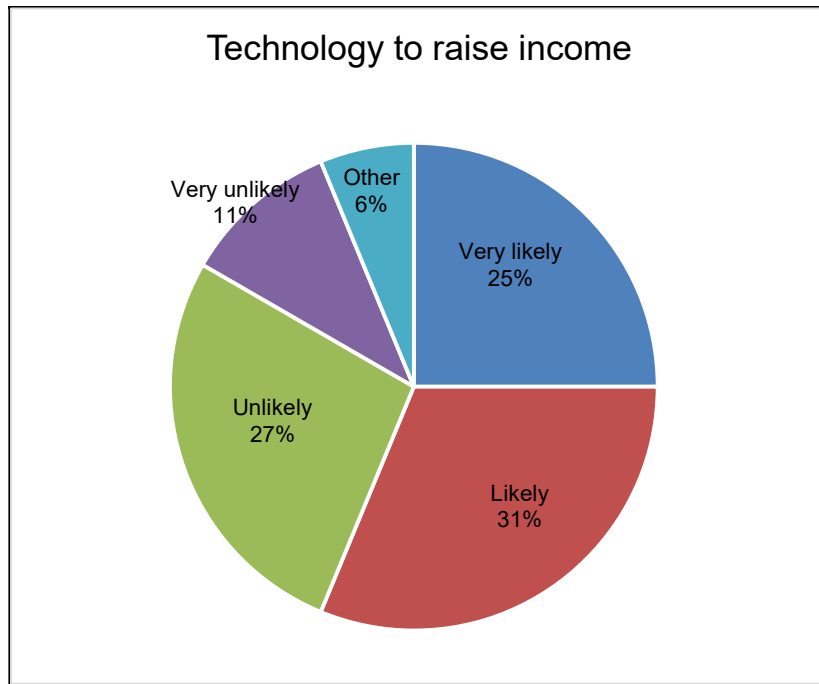


Figure 4.37: Technology expected to raise income

54 percent of respondents indicated that the technology station indicated that it expected to raise income for operations; however, in Figure 4.35 above, it shows that 47 percent indicated that the technology station's budget is part of the university main budget. Therefore, a conclusion can be made that it is not clear that the budget planning is similar at all universities for the technology stations.

4.3.7 Hostels

This last section, also the last secondary objective describes the budgetary planning, income and expenditure for student accommodation or residences. Descriptive statistical analysis was used to identify frequencies and percentages.

Questions pertaining to the hostels were questions 17, 18 and 19.

Q17: How do universities plan the budget (expense and income) for student residences?

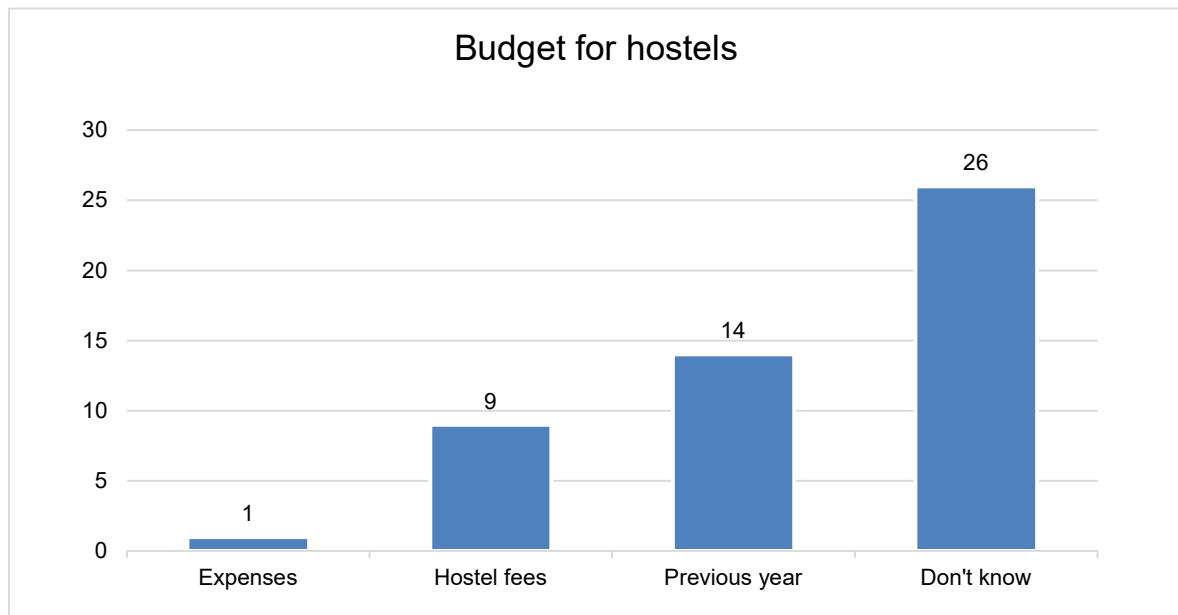


Figure 4.38: Budget for hostels

Q18: Student accommodation income (even if paid by NSFAS), budgeted to cover the exact total cost of hostels, including administrative salaries

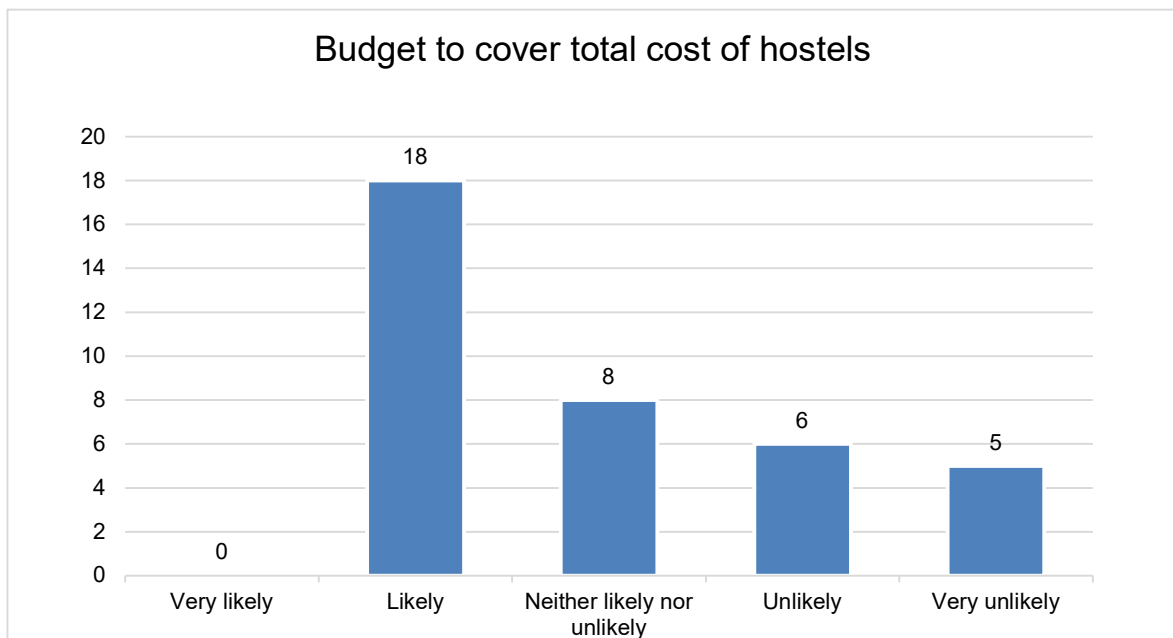


Figure 4.39: Budget to cover total cost of hostels

Question 19: Are hostels capital expenditure, such as fridges, beds and other assets to be used by the students, covered by accommodation income and levies or is it covered by government grants?

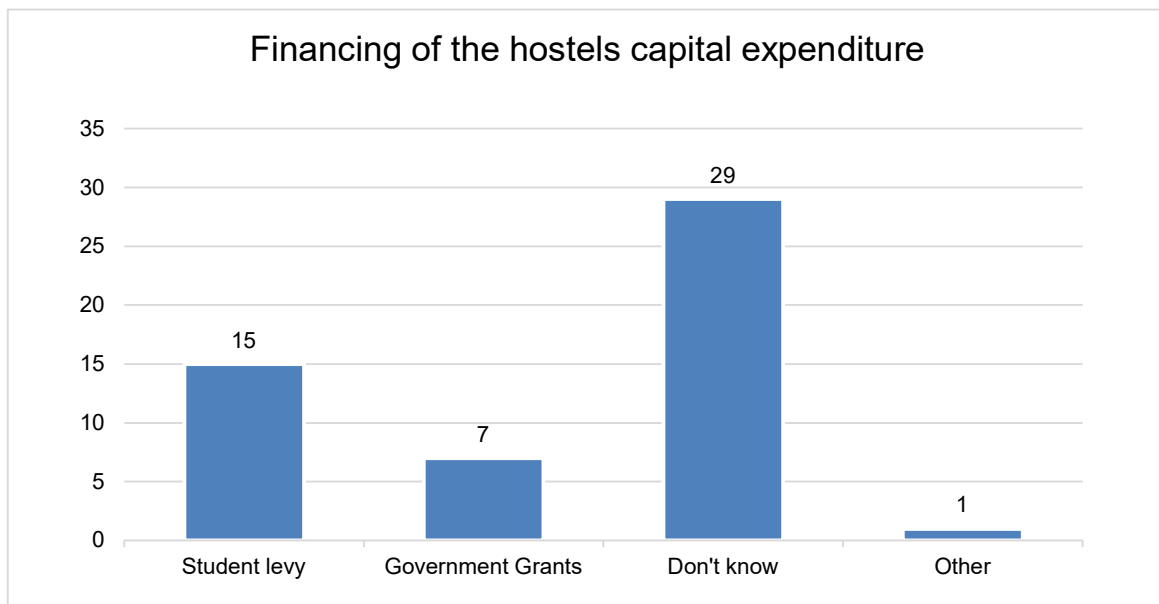


Figure 4.40: Financing of hostels capital expenditure

It is clear from the answers that the participants were not on par regarding the hostel budgeting model and budgetary planning procedures. Question 17 asked the participants to answer how the university planned the budget (expenditure and income) for hostels or student residents. 26 (54%) of the 50 participants indicated that they do not know. The same applied to Question 19 about the capital budget of the hostels; 29 (52 percent) out of 52 indicated that they do not know.

In Question 18, most of the participants (18 (56%) of 37) indicated that it is likely that student accommodation income (even if paid by NSFAS) will be budgeted to cover the exact total cost of hostels, including administrative salaries. As indicated in Chapter 2, NSFAS funds the full cost of study, in other words, not only tuition fees, but also accommodation and meals. However, if this operational and capital expenditure are not recovered from students (even through NSFAS), universities and government may not be able to maintain, upgrade or build additional student accommodation for the growth in student enrolments that is expected from universities according to the NDP and the department of higher education and government.

4.4 MEAN SCORE RANKING AND STANDARD DEVIATIONS OF THE DIFFERENT SECTIONS OF THE DATA ANALYSIS

Table 4.1 reveals the mean score rankings which were compiled with a view to provide a rating on the identified constructs. The means were calculated by summing the response values of variables that comprised each dimension divided by the number of variables in each dimension. For the sake of brevity, the responses in this section, only the highest means score will be discussed.

Table 4.1 Basic statistics

Dimension/ Construct	Question number	Minimum	Maximum	Median	Mean	Standard Deviation
Demographics	1	1	4	2	1.78	0.9
	2	1	5	2	2.17	1.19
Cost analysis	3	1	4	1	1.55	0.86
	4	1	5	3	3.11	1
	5	1	5	2	2.46	1.45
	6	1	6	1	2.11	1.62
Expenditure control	7	1	2	2	1.91	0.28
	8	1	5	2-3	>2	>2.14
	9	1	5	2-4	>2	>1.28
	30	1	3	1	1.47	0.67
	31	1	6	4.5	4.35	1.17
	32	1	3	2	1.73	0.74
	33	1	3	1	1.33	0.58

Dimension/ Construct	Question number	Minimum	Maximum	Median	Mean	Standard Deviation
	34	1	2	1	1.45	0.50
	35	1	2	1	1.45	0.50
	36	1	2	1	1.26	0.44
	38	1	4	2	2.22	0.65
Budget income	10	2	11	8	7	2.28
	11	1	6	2	2.31	1.54
	23	1	5	2	2.5	1.51
	16	1	5	3	2.87	1.32
	12	1	4	1	1.8	0.96
	37	1	3	1	1.41	0.62
	39	1	4	3	2.44	0.95
	40	1	4	3	2.55	0.92
Budget method	24	1	5	3	3.33	1.11
	25	1	5	2	2.43	1.05
	26	1	6	3	2.82	1.74
	27	1	5	1	1.69	1.20

Dimension/ Construct	Question number	Minimum	Maximum	Median	Mean	Standard Deviation
Budget expenditure	13	1	4	2	1.86	0.93
	14	1	4	2	1.92	0.94
	15	1	3	2	1.91	0.58
	20	1	4	1	1.92	1.19
	21	1	7	3.5	3.84	1.74
Technology station	14	1	4	2	1.92	0.94
	22	1	5	2	2.42	1.15
	28	1	5	2	2.29	1.35
	29	1	50	2	2.43	1.57
Hostels	17	1	5	3	3.22	0.99
	18	1	5	2	2.61	1.22
	19	1	3	3	2.26	0.89

Demographics

Questions 1 and 2, in Table 4.1 above regarding the size of the universities, the mean scores are equal for number of faculties on a median of 2 ($M=1.78$; $SD=0.9$) and the student head count at a median of 2 ($M=2.17$; $SD=1.19$). This analysis reveal that the participating universities is similar in faculty size as the mean and the median are close with a standard deviation less than 1. The student count per university does show a standard deviation of larger than 1 which indicate that the student numbers per university are not similar.

Cost analysis

Questions 7 to 9, 30 to 36 and 38, in table 4.1 above, section 3 refers to expenditure control. According to data of question 7 most universities in the sample use ITS software with a median of 2 ($M=1.91$; $SD=0.28$) with the mean and the median close and with a small deviation.

Data of question 8 are more complex because of the complexity of the question asked to investigate how costs of services, support and faculties are traced for the purpose of cost allocation. The median for the different combinations of possible cost allocation is between 2 and 3. The mean is more than 2 for all combinations of cost allocations ($SD=2.14$) which indicate a wide distribution of the analysis.

Like question 8, question 9 is also complex for the indirect cost assigned from service departments to academic departments and other service departments. The respondents clearly disagree on how student numbers are used for cost allocation because 26.19 percent indicated never and 26.19 percent indicated always and the remaining, 47.6 percent has indicated rarely, sometimes and often while the median for the results of question 9 varies between 2 to 4 ($M=2$; $SD=1.28$) which gives allocation methods mostly used are the direct cost, and values of salaries and number of student. Question 9 investigate the extend of allocations for indirect cost assigned from service departments to academic departments and other service departments. One of the options is "square meters" 15 indicated never, 9 indicated rarely and only 4 indicated sometimes. For "often" and "always" the answer was chosen by only 6 and 4 respectively, thus indicating that the use of square meters are hardly used for cost allocation which indicate that indirect costs are not in the equation when calculating the cost per service department or academic department.

In Question 30, the median is 1, ($M=1.47$; $SD=0.67$) which is a clear indication because the small standard deviation and the median is 1 that because it is close to the average which is probably because it is the norm that budget transfers are done because of poor budgetary planning or poor expenditure control. On the other hand, question 31, the median is 4.5, ($M=4.35$; $SD=1.7$) which is a wider spread from the average, but still most do a budget transfer bi-annually which may be an indication that the budget may have been poorly controlled in the beginning of the year and therefore budget transfers are done to enable departments to meet their needs for the last part of the year.

The indication of the answers in question 32, the median is 2, ($M=1.73$; $SD=0.74$) shows a small standard deviation is small but the median is more than 1 which indicated that there is not similarity of the way that ad-hoc requisitions are done, showing that some universities are better in using technology and may have better internal control on expenditure than other universities.

For question 33, the median is 1, ($M=1.33$; $SD=0.58$) has a low standard deviation, it can be seen that most people are of the opinion that there is sufficient control over expenditure.

Question 34, the median is 1, ($M=1.45$; $SD=0.50$) also have a low standard deviation but the answers are almost equal for agree and disagree whether internal departmental requisitions are done online vs paper based. This may be an indication that some universities do use online requisitions, and some are still using paper based internal requisitions. It may be that like in prior question, some universities are still not using their management information systems to its full potential. This may be because of lack of skills and training.

Questions 35 and 36 address the question of how research expenditure are reported in the general ledger. Question 35, the median is 1, ($M=1.45$; $SD=0.5$) while question 36, the median is 1, ($M=1.26$; $SD=0.44$). These two questions were asked directly the opposite of each other to investigate if the opposite answer will be given for question 36 vs question 35. If the same participants answered these two questions, the answer of 35 should be the direct opposite of 36. But that was not the case which give an indication of the evidence that there is no consistency in treating of research expenditure allocation. This can be seen in the difference in the standard deviations of the two questions.

Question 38, the median is 2, ($M=2.22$; $SD=0.65$) indicating that some departments are setup different than others, but the majority of universities use expenditure control systems on the cost code and on account (GLA).

Budget income

Question 10, 16, 23, 37 and 40 relate to budget income. Question 10, the median is 8, ($M=7$; $SD=2.28$) with a high score mean and a widespread standard deviation show that there is now standard on how class or subject fees are calculated. 28.85 percent just use the prices of the previous year fees and add an allowable increase which may course that either some students in one faculty may contribute to course fees of students in other faculties or departments, or that the university don't even know that some subjects are not sustainable and that there is very poor budget income and cost allocation planning.

Similarly question 16, the median is 2, ($M=2.31$; $SD=1.54$) and question 16, it is evident that there is very poor budgetary processes and procedures because 44.23 don't even know whether expected student fee income are used for planning a budget. This fact indicated that a budget shortfall in faculties may course a deficit in the universities overall cashflow if only a zero-based budget is used and not a performance or activity-based budget in line with the income for each faculty.

The answers to Question 23, the median is 2, ($M=2.5$; $SD=1.51$) contradict the answers of question 16 because in question 16, 44.23percent did not know whether expected student fees income is used to plan the budget but in question 23, 44 percent indicated that they use expected

student fee income per faculty to budget. It may be that there is no standard to use for proper faculty and university budgetary planning processes and procedures or the standards that there is such as activity based costing or performance based evaluation regarding expenditure over income are not used in public universities in Gauteng, South Africa.

Regarding the expected NRF funding, the participants was asked if they believe that NRF income and expenditure should be brought into the budget, 64% agreed. Question 37, the median is 1, (M=1.41; SD=0.62), this reflect that there is no conformity on how the budget are planned and what the process should be.

Question 40, the median is 3, (M=2.55; SD=0.92) on expected income per department in the budget. It is showing that service departments and academic departments or faculties are not treated the same but academic departments cannot be measured for expenses or cost vs income generation.

Budget method

Question 11, the median is 2, (M=1.92; SD=1.19) investigate what budget methods universities used. Only 30.6 percent indicated that Zero-based budgeting are used while 55.1 percent indicated previous year plus inflation which is incremental budget. The standard deviation is 1.19 and it is surprising that here 10.2 percent indicated that they use student count per department as budget method that may be an indication that there is no uniformity on budget models used in universities and maybe in different departments included in this study.

Question 20, the median is 1, (M=1.92; SD=1.19) indicated that budget planning is mostly done per faculty/ department (54.2%), for service department the percentage was 20.8 percent then surprisingly 20.8 percent indicated that they use a allocation of calculated percentage between service department and faculty cost, however in question on question 10 there was a 0.00 percent indicated that they use indirect cost of building and grounds and other operating cost ratio. This is an indication that income and expenses are not aligned in faculties.

Question 21, the median is 3.5, (M=3.84; SD=1.74) investigated how universities did their 2019 budget and it is evident that the prior year budget is used plus a percentage increase. Only 7 out of 62 answered that they used the expected student numbers in their department while 0 indicated that they use the number of staff to calculate plan their budget.

Question 24, the median is 3, (M=3.33; SD=1.11) made it clear that participants are divided on how they feel about the budget method universities used for budgeting which can be seen by the mean and median and the percentages of the answers. 27.5 percent says the methods are effective; 23.5 percent neither agree nor disagree; 29.4 percent disagree, and 17.6 percent

strongly disagree, this is an indication that more needs to be done on budgeting methods and training on universities budgets.

Question 25, the median is 2, (M=2.43; SD=1.05), question 26, the median is 3, (M=2.82; SD=1.74) and question 27, the median is 1, (M=1.69; SD=1.20) are discarded from this study.

Technology station/Business incubators

From question 12, the median is 1, (M=1.8; SD=0.96) it can be seen that universities are expecting technology stations to raise income to cover their salary and operational expenditure. 54 percent indicated that it is expected and 26 percent it is not likely for while 16 percent indicated neither likely nor unlikely therefor, they are also to an extent not in agreement. However, in question 13, the median is 2, (M=2.0; SD=1.0) 54 percent indicated that the university budget for salaries for the technology station but in the previous question, question 12 54 percent indicated that it is expected of technology stations to raise their own income for salaries expenses. In question 14 (mean=2; M=1.92; SD=0.94), 46.9 percent indicated that they budget for raw materials, operating expenses and building maintenance for the technology station in the main university budget. This is an indication that the DHET should give clearer guidelines on Technology stations budgeting principles. Question 22, the median is 2, (M=2.42; SD=1.15) is an indication that participants are divided, or universities do not treat their technology stations the same regarding the budget.

Hostels

Question 17, the median is 3, (M=3.22; SD=0.99) revealing that how do universities plan the budget (expense and income) for student residences? Question 18, the median is 2, (M=2.61; SD=1.22) Student accommodation income (even if paid by NSFAS), budgeted to cover the exact total cost of hostels, including administrative salaries. Question 19, the median is 3, (M=2.26; SD=0.89) Are hostels capital expenditure, such as fridges, beds and other assets to be used by the students, covered by accommodation income and levies or is it covered by government grants? In this three questions it revealed that there is a real need for information on how to budget for the student accommodation because for these the minimum was 1 and the highest maximum was 5 and the median highest median was 3.22 with standard deviations of $\sigma 0.89$, $\sigma 0.99$ and $\sigma 1.22$ which are not a wide spread dispersion, indicating that the answers of don't know are most probably that people don't know what the student accommodation or the "hostels" budgetary planning, process or budget module are or should be.

Table 4.1 reveals the mean score rankings which were compiled with a view to provide a rating on the identified constructs with absenteeism in terms of the level of agreement/disagreement from the perspective of budgetary planning and expenditure control in Gauteng universities.

4.5 CHAPTER CONCLUSION

This chapter outlined the analysis and interpretation of data. Initially, the chapter presented the data analysis methods. The chapter then progressed with the analysis of the main study. First, the general demographic information of the participants was examined. Sequentially data was analyzed and presented outlining cost analysis, expense control, budget income, budget expenditure, technology station and hostels. Significant findings were presented demonstrating the budgetary planning and expenditure control processes at South African public universities.

CHAPTER 5

RESEARCH CONCLUSION AND RECOMENDATIONS

5.1 INTRODUCTION

The previous chapter presented the research findings by using charts and the analysis of the research questions was discussed. This chapter first presents a synopsis of all the previous chapters and how they are formulated to address the objectives of this research project. The chapter concludes the study by giving a closing conclusion of the problem statement and recommendations for further studies.

5.2 SYNOPSIS OF CHAPTERS

A short summary of the previous chapters follows to give an overview to the background of the study, the literature used in the study, the research methodology employed and the analysis of data.

Chapter 1 provided a background to the study and highlighted the financial issues in higher education in South Africa by pointing out the #FeesMustFall phenomena and included a short description of universities and the funding of universities. It also referred to budget processes and expenditure control.

Chapter 2 discussed the literature regarding the institutional theory and its importance, including budgetary theory and expenditure control. The role of higher education and universities in South Africa and their financing models were discussed. The chapter specifically highlighted management information technology software, budget models and expenditure control processes and how information technologies are used to manage budgetary planning and expenditure control. Chapter 2 concluded with the budget process in universities and discussed policies on research funding.

Chapter 3 laid out the research methodology to this research study. The chapter highlights the questionnaire to the research, the data collection, data coding and the steps in data analysis using tables (see Annexure B and C). Chapter 3 concluded with the reliability and validity of the data and the analysis process.

Chapter 4 present a broad layout of the research questions and the participants answers are visually presented in the form of graphs and charts, accompanied by the interpretation of the information that was concluded from the analysis of the grouped questions. Chapter 4 concluded with a summary of analysed data and the interpretation of the analyses.

This chapter will further discuss the conclusion drawn from the analysed data and interpretation.

5.3 CONCLUSION TO THE STUDY

Using the research design and methodology presented in Chapter 3, the following empirical objectives were achieved with the following conclusions were drawn from the analysis in chapter 4 with specific attention to the figures in Chapter 4 and Annexure D: DATA FREQUENCY AND PERCENTAGE TABLES.

- Through data analysis, the 1st sub objective of the study identified demographics regarding difference in size regarding number of faculties and student count of the participating universities as per sub objective 1. Figure 4.1 indicates that 44 percent of the participating universities has between 1 and 4 academic faculties. Figure 4.2 indicates that 38 percent indicated a student count of between 1 and 20 000; 30 percent between 20 000 and 40 000 students, 13 percent between 40 and 60 000 students; 15 % has more between 60 000 and 80 000 students. This is in line with previous research done by Dr Prakash Naidoo in 2002 where he found that 47 percent of his participating universities had had between 1 and 5 academic faculties and 52 percent had between 5 and 10 000 students while 21 percent had between 10 000 and 15 000 student count (Naidoo 2002:172-173). One could expect the student growth in universities between the years 2002 to 2020 because of the National development plan of South Africa as discussed in chapter 3 above.
- Through data analysis, sub objective 2 was achieved to investigate whether Cost analysis was done by participating universities and how often cost analysis was done. Figure 4.3 indicated that 64 percent of participating universities are likely to analyse cost. In a previous study by Naidoo in 2002, he found that 54 percent of his respondents indicated that a separate management accounting department existed and 80% indicated that there was between 1 and 5 staff members in the management accounting departments that was engaged in the cost/ management department. This study also investigated the extend or timing of the cost analysis. Figure 4.4 in chapter 3 indicates that 49 percent indicated that faculties or departments analyse cost on a monthly basis. Figure 4.5 indicated that 40 percent always have a separate cost management department. In Naidoo's study, he found that 41 percent always analyse cost in their institution. Thus, there is an indication that this study is in line with previous research regarding institutional cost analysis and that cost analysis are done to a relatively large extend.

Figure 4.6 indicates that cost is more specifically the direct cost are traced and that most of the cost are traced while it also shows indirect cost are not often apportioned to departments, faculties, Hostels, Government grants, technology station, projects and services departments, research departments or courses. In some cases, (only for government grants and Research

department indicated more than 10%) such as for Government grants and the research department Direct and indirect cost were traced.

- Through data analysis, the study will identify the expense control process. Figure 4.6 shows that most of the cost departments, faculties, technology stations, projects and services and courses are traced of which projects and services was the highest score at 18 percent. Thus, it indicates that there are no specified or fixed model to trace cost, while as concurred by Naidoo and can be seen from the above, that the tracing of costs is an important aspect of cost control in universities (Naidoo 2002:176). The assigning of service cost can be seen in figure 4.7 that the use of classroom or office or building space according to Square meter are never used, while maintenance, cleaning and surely to an extend of water and electricity should be in line with each building per square meters or by the physical size of an academic building or faculty. The researcher is of the view that there is a gap in assigning of cost towards faculties for maintenance cost assignment per size of buildings and more research may be done in this field. In the same figure it shows that direct cost is mostly calculated and that the number of students are in some cases used to assign cost but in the same line student numbers are never used to assign cost, which portray that there is not balance in the calculation of cost per service departments, academic departments and administrative departments, therefore I disagree with Naidoo where he suggest that there is a reasonable understanding about the use and application of the cost allocation methods used in universities. A conclusion can rather be drawn that there is an inadequacy of cost allocation and assignment of indirect cost emphasising that further research and standardisation needs to be investigated and documented.
- Figure 4.8 identified that budget reporting software are mostly used and figure 4.9 identified ITS is the preferred software in universities in Gauteng.
- Through data analysis, the study will identify the budget income and expenditure process. In the budget process one can identify a specific challenge named depleted budget or budget overspent while budget requests may still be needed after the budget for a specific line item is depleted. How this challenge is handled in universities can be seen in Figure 4.10 and 4.11 that 32 out of 52 respondents indicated that budget transfers are done between accounts within the cost centre and 18 out of 42 respondents indicated that this is done bi-annually.
- When the budgets are depleted, most institutions do bi-annual budget transfers between expenditure accounts within a cost centre. Most of the respondents indicated that there is sufficient control over the expenditure. More than 50 percent indicated that the normal procurement payments are initiated online, and the ad-hoc payments are initiated manually on paper-based requisitions. Universities set up the system according to the cost centre and account line items to control expenditure. Most of the universities have a cost management department and analyse costs monthly. The majority use ITS software for budget control

purposes. This is in line with the research that Naidoo did in 2002, where 100 percent responded “Yes” to the question whether a budgetary system is used (Naidoo 2002:189).

- Through data analysis, figure 4.19 portray how subject or class fees are calculated each year. The majority of universities, 28 percent use the previous year’s price and add an allowable increase to determine the subject fees. In a study that Naidoo did in 2020, the respondents indicated (62%), that course costing are used for decision making and 45 percent indicated for pricing of courses. This is the exact opposite of what was found in this study on how class fees are calculated. I suggest that the Department of education should bring forth a formula or method as to how class fees should be calculated to ensure that universities stay financially viable.
- On budgeting method or costing models, the data analysed portrayed that the majority (27%) indicated that they use the previous year’s budget and add for inflation to budget for their departments’ operating expenses. There is no agreement that the budgeting method used by the institution is effective for their department because in the study that Naidoo did in 2002, he asked “Which is most appropriate in higher education?” (Naidoo 2002:176) To this question, 68 percent indicated that Activity-based costing is most appropriate. It is clear that what is seen as appropriate and what is actually done is two different things and clear guidelines as to what models should be used should be tabled by DHET.
- Most of the respondents in the data analysis indicated that the university expects the technology station to cover their expenditure for salaries, raw materials, and other operational expenditure. Thus, contradicting that these said expenditure, forms part of the main budget. Most of the respondents did not know if the hostel’s budget is part of the main budget as it operates separately.

This study concludes that further research is required to quantify the relationship and ascertain the correlation between the budgeting methods used and the income-and-expense budgets per department within the universities budget. The section that follows presents the limitations of the study.

5.4 LIMITATIONS OF THE STUDY

Possible limitations to this study include the following:

- Participants may indicate their processes for budget control during this study but in fact do something different in managing expenditure. This may result in the information not revealing the actual activities of respondents.
- All the universities chosen for this study may not be the same size. 38% universities have less than 20 000 students while 4% have more than 80 000 students.

- Universities chosen for this study may not provide the same course offerings which may vary in cost to class fees therefore differ according to the university's budget needs.
- The staff size may differ in numbers as well as the level of staff needed because some universities need more research professors and less administrative staff. Some universities may require less administrative staff and cleaning staff and more research professors and academic staff which may influence the structure of the budgetary planning.

5.5 RECOMMENDATIONS

5.5.1 Recommendations on expenditure control

- Questions 6 and 7 the topic was about budget reporting software. Reporting software and tailor-made software package for universities, such as ITS, are available in South Africa that will most probably ensure effective budgetary and expenditure control. It is recommended that new universities acquire ITS for their official accounting software since it is in use and tested by 80 percent of Gauteng universities in South Africa.
- Question 30 analysed what is done when a budget is depleted for a specific line item. The question asked option 1, if budget transfers were done within a cost code; option 2, if budget transfers between different cost codes; option 3, the requisition to be rejected and waited for the next financial year. The 29 percent that was transferred between different cost centres or departments indicates that there may have been a lack in the budgetary planning process. The recommendation may be that better planning must be done using a more suitable process, or that a completely different budget model must be applied. Chapter 2 discussed the different budgeting models and the suitable applications for each budget model to be used.
- Questions 31 asked how often budget transfers are done. This may be called budget virement, which is done when a cost code has insufficient budget funds for an expense that is required, then it needs to acquire unused budget funds from somewhere else. 27 percent of the participants indicated that it is done monthly, and 13 percent indicated weekly, which indicated evidence of lack of budgetary planning and/or that a wrong procedure was followed or even that the wrong budget model was used. It is recommended that heads of such departments go for budgetary planning training and it is also recommended that universities must order an investigation on what budget model should be used for different departments. Academic faculties may use a different budget model than the student residence department or the service departments and even a different model should be applied for the technology stations or innovation centres. Since Activity-based models was seen as the most appropriate for universities, while incremental budgeting was mostly use, I suggest that the Department

of education should bring forth a formula or method as to how class fees should be calculated to ensure that universities stay financially viable.

- Question 32 investigated procedures on ad-hoc payments; whether done paper-based or online. 45,1 percent initiated by manual paper-based requisitions and online, only 37,3 percent. Because the bigger percentage indicated paper based, it may allow for internal risk of errors and authority fraud. It is recommended that all ad-hoc payments are done by initiating them on the official management information software that is set up by super users via management policies that are audited by internal auditors to reduce the risk of errors and the risk of abuse/ forged signatures. Further, it is recommended that ad-hoc requisitions for ad-hoc payments are initiated by the department on the online system to ensure budget controls are done electronically, so that insufficient funds are not overlooked, and internal control processes are followed.
- In Question 33, 27 percent felt that there is not sufficient control over their departments' budget. Thus, it is an indication that more research be done as to why more than a quarter of participants feel this way.
- Question 34 analysed whether internal departmental requisitions are done online. 44 percent indicated that it is not done online. The risk is that if it is not done online by the department, the manual documentation will be sent to the finance department to capture in the financial system which is then a repetition of work from paper into the accounting system leaves room for typing errors in figures or on cost code numbers resulting in unauthorised transactions. Another risk is that the paperwork may be misplaced, or the budget checks and balances for available funding are by-passed because of lack of computerised internal control before the transaction is initiated. It is recommended that all finance administrators go through a training process to do interdepartmental requisitions online when services are rendered between departments or costs are recovered from one department to another. This recommendation will not only save time and labour but also the risk of error and risk of unallocated costs between departments and to ensure that such online requisitions are approved via the online approval system as set up by management.
- Questions 35 and 36 were asked to analyse how research expenditure is actually booked and reported, because of the evidence from the analysis that there is not a conclusive procedure or rules that are followed as required by IFRS as explained in Chapter 2. The recommendation is that a standard procedure that adheres to IFRS standards is developed and finance administrators in the research department are trained accordingly. In addition, a policy must be developed to adhere to.

5.5.2 Recommendations on budgeted income

- Questions 16 and 23 analysed how expected budgeted student fees income would be used to plan the budget. 51 percent indicated that they do not know. This should be worrying as a faculty would, according to most budget models, align their expected student fee income to their budget income to calculate what would be available for the faculty and its departments to budget for the faculty's expenses. It is recommended that the budget committee engage in proper budget training and top management engage with the department of higher education or the minister for guidelines and training on the university's budget process and what models to use. The risk is that a university may run out of reserve funds and cash flow. Each student, even if paid through NSFAS, as indicated in Chapter 2, contributes to the magnitude/economies of scale towards lecturer's remuneration and expenditure of service departments for fixed costs and variable costs.
- Questions 37 and 40 enquired if expected research funding income and expenditure and departments' expected income should be brought in as budgets; Not everybody agreed (only 65% agreed). In question 40, almost 50/50 agreed and disagreed. It is recommended that it should be brought into the official budget in the cost code for each project so that there is not only a control mechanism, but also that the holistic budgeted expenses do not exceed the total expected income and to leave space for unbalanced cash flow forecast.

5.5.3 Technology station or innovation centres

From the results of the analysis on questions 12-15, it is evident that there is no predetermined structure that universities in Gauteng must follow regarding non-academic/non-service departments, where expected third-stream income should form part of the income budget. It is recommended that the NRF and the DHET must give clear a prescription of how budgeted income and expenditure in non-academic and non-service departments should be planned and what specification procedures should be followed as well as what budget model should be employed. The University of the Free State and University of Pretoria, which were not part of the empirical study) were mentioned regarding their policy on research and innovation funding and how it is to be applied. These two universities are a good example of what funding and business and innovation contracts should stipulate. The policies of these two universities were found on their website and may be used to bring structure to policies of Gauteng universities.

5.5.4 Hostels

Questions 17 to 19 explored student residential housing on the principals applied for their budgeted income and expenditure budgets. The analysis revealed that universities are not on par on how the said budgets are planned and what cost model and budget models would be appropriate to use. Universities and government may not be able to maintain, upgrade or build

additional student accommodation for the growth in student enrolments that is expected from universities according to the NDP and the department of higher education and government. Therefore, it is recommended that activity-based costing is applied for the costing to ensure that the expenditure budget and the income budget are in equivalence with each other to ensure a healthy cash flow. It is also recommended that a capital reserve fund is built up and preserved to ensure and safeguard continuous expansion and maintenance of student accommodation for our growing student numbers.

5.6 CHAPTER CONCLUSION

The first chapter describes the purpose and background of the study while the second chapter presents a literature study on matters that form the basis of public universities. The second chapter includes the different theories of importance for the study. The chapter concluded with the literature on budgetary processes and expenditure control mechanisms. The third chapter discussed the research design of the study and the research methodology that was followed, by briefly discussing the paradigm of the research. Chapter 3 concluded by explaining the research population, sample, the coding structure and analysis of the raw data. Chapter 4 entailed the analysis and interpretation of the data. This chapter discussed the conclusions drawn from the study and concluded with the recommendations and suggestions for further research.

Budgetary planning is an extremely complex task. The purpose of a good budget model is to concentrate on the holistic approach to guard against budget deficits and wasteful and fruitless expenditure. The difficulty of this task may be broken down by exploring it from different perspectives, although it is not set in stone what budget model a university, faculty or service departments must use. Each type of department (academic and non-academic) will have to investigate and learn about all the different budgetary models to find the model that is most suitable for a specific type of department or maybe even for different universities. Benchmarking and a body of knowledge for best practice may be used for improvements to a universities budgeting model.

Expenditure control and the cost analysis and costing calculation functions may be a separate function from the normal accounting process. The use of budgetary models such as activity-based costing model, responsibility centre management and performance-based management may be used with other budget models such as zero-based budgeting and in very specific cases the incremental budget model as guidelines for calculating normal inflation but should not be confused with the magnitude of scale on student numbers, output-based or performance-based management systems.

In this research study, the researcher used the literature available from different sources to gain knowledge and a deeper understanding of the topic of the study. The research design and the

research method used assisted the researcher to systematically work through the research project to achieve the primary objective of the study by answering the secondary objectives of the study. The objectives were met through the analysis and interpretation of the data that were gathered from the different participating universities and the answers from the people that took the effort to answer a lengthy questionnaire.

The recommendations were made in the chronologic order that the analysis and interpretation of the data was done.

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ANNEXURE A

ETHICAL CLEARANCE CERTIFICATE AND PARTICIPANT INFORMATION SHEET

UNIVERSITY OF THE
WITWATERSRAND
JOHANNESBURG



Research Office

HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)
R14/49 Marx

CLEARANCE CERTIFICATE

PROTOCOL NUMBER: H19/02/17

PROJECT TITLE

Budgetary planning and expenditure control processes at public universities in Gauteng, South Africa

INVESTIGATOR(S)

Mrs M Marx

SCHOOL/DEPARTMENT

Vaal University of Technology/

DATE CONSIDERED

15 February 2019

DECISION OF THE COMMITTEE

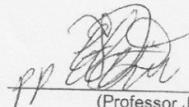
Approved

EXPIRY DATE

27 June 2022

DATE 28 June 2019

CHAIRPERSON


(Professor J Knight)

cc: Supervisor : Dr J Maseko

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10004, 10th Floor, Senate House, University. Unreported changes to the application may invalidate the clearance given by the HREC (Non-Medical)

I/we fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to completion of a yearly progress report.**


Signature

10 / 09 / 2019
Date

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES



29 July 2019

Magaretha Marx
Masters Degree Candidate
Vaal University of Technology

TO WHOM IT MAY CONCERN

"Budgetary planning and expenditure control processes at public universities in Gauteng, South Africa"

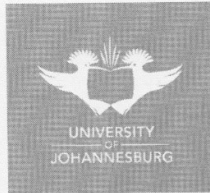
This letter serves to confirm that the above project has received permission to be conducted on University premises, and/or involving staff and/or students of the University as research participants. In undertaking this research, you agree to abide by all University regulations for conducting research on campus and to respect participants' rights to withdraw from participation at any time.

If you are conducting research on certain student cohorts, year groups or courses within specific Schools and within the teaching term, permission must be sought from Heads of School or individual academics.

Ethical clearance has been obtained. (Protocol Number: H19/02/17)

A handwritten signature in black ink, appearing to read 'Nicoleen Potgieter'.

Nicoleen Potgieter
University Deputy Registrar



14 April 2019

Ms M Marx
Vaal University of Technology

Dear Ms Marx

PERMISSION TO CONDUCT RESEARCH AT THE UNIVERSITY OF JOHANNESBURG

Your request for permission to conduct research on *Budgetary Planning and Expenditure Control Processes at Public Universities in Gauteng, South Africa*. We have reviewed the documentation sent and hereby grant permission to the conduct the study at the University of Johannesburg (UJ) subject to submission of the ethics approval certificate or letter.

Do note that relevant UJ processes have to be followed for access to the university and individuals while conducting the study. We also request a copy of the final report or thesis after completion of the study.

Sincerely

Dr Carol Nonkwelo
Executive Director: Research and Innovation
Email: cnonkwelo@uj.ac.za

**GATEKEEPER PERMISSION TO CONDUCT RESEARCH INVOLVING UNISA
EMPLOYEES, STUDENTS AND DATA**

Ref No: 2019_GKP_001

To: Ms. Magaretha Marx, VUT student number: 207046298

From: Dr Retha Visagie, Manager: Research Integrity, Directorate: Research Support

Contact details: visagrg@unisa.ac.za; 012 429 2478

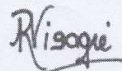
Date: 2019-07915

This is to confirm that Dr Retha Visagie, acting on behalf of the Executive Director: Research and Innovation of Unisa, Prof Les Labuschagne, has granted Ms. Magaretha Marx gatekeeper permission to undertake research involving Unisa employees and data, towards a M-Tech degree in Cost and Management Accounting, entitled:

**Budget and Expenditure control processes and procedures in Gauteng, South Africa
Public Universities**

The gatekeeper permission provides Ms. Magaretha Marx principal permission to conduct her research at Unisa. However, from a research ethics perspective, her application for ethics clearance will be reviewed on merit, after which the Unisa Senate Research, Innovation, Postgraduate Degrees and Commercialisation Committee will consider granting her permission, based on the merits of an application in that regard, to include Unisa employees and students in a survey/interviews. The latter permission is not to be confused with gatekeeper permission and is dependent on criteria that are contained in the Unisa Policy for conducting research involving Unisa employees, students or data.

Regards,



Dr R. G. Visagie: **Manager: Research Integrity**

☎ 012 429 2478, ✉ visagrg@unisa.ac.za





Office of the Deputy-Registrar

Mrs M Marx
Masters Candidate
Vaal University of Technology

05 September 2019

To whom it may concern,

This letter confirms that the study entitled: **'Budget and expenditure control policies and procedures in public universities in Gauteng, South Africa'** has received approval to be conducted on the university premises, and staff and/ or students will be invited to participate.

In conducting the research, the researcher agrees to adhere to all university regulations for the responsible conduct of research and will always consider the rights of a participant to voluntarily take part in the study or to withdraw without any negative consequence.

Research that involves specific cohorts, year groups or courses from Schools, require further approvals from specified Heads of Department or academics so that appropriate arrangements for access to potential participants may be made.

This letter, together with the Ethics Clearance Certificate and/or site approval letter from the Sefako Makgatho University Research Ethics Committee (SMUREC) must be available for all research conducted with staff and students at the university. A copy of the dissertation or thesis must kindly be submitted to the Sefako Makgatho Health Sciences University on completion of the study.

Sincerely

Ms Kanyisa Magwentshu
Deputy-Registrar



SEFAKO MAKGATHO
HEALTH SCIENCES UNIVERSITY

2019 -09- 30

DEPUTY REGISTRAR
ACADEMIC ADMIN
PO BOX 197, MEDUNSA, 0204



Vaal University of Technology

Your world to a better future

Memorandum

RESEARCH DIRECTORATE

Tel: +27(0)16 950 9573

Fax: +27(0)16 950 9898

To: Ms Magaretha Marx
CC: Director Research: Dr SM Nelana
Supervisor: Dr J Beneke
Co-Supervisor: Dr GJ Maseko
FRIC Chairperson: Prof P Joubert
From: DVC: Teaching, Learning & Student Support Services -Prof Riana van der Bank
Date: 09 September 2019
Subject: **Approval of Permission to Conduct Research**

Dear Ms Marx,

Thank you for your recent application wishing to conduct research within our Institution.

Faculty: - Management Sciences

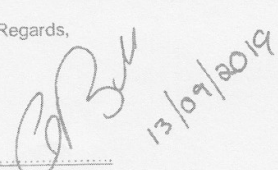
Topic of Study: - Budgetary Planning and Expenditure Control Processes at Public Universities in Gauteng, South Africa.

We would like to inform you that your request to conduct research in the Vaal University of Technology has been approved subject to your assurance that any information obtained will not be divulged or identifiable in any published results.

Kindly note that the Permission to Conduct Research committee has also requested access to your research study upon completion.

You are therefore required to sign a confidential letter of acknowledgement.

Kind Regards,


Prof Riana van der Bank

DVC: Teaching, Learning & Student Support Services

Participant information

BUDGET AND EXPENDITURE CONTROL POLICIES AND PROCEDURES IN PUBLIC
UNIVERSITIES IN GAUTENG, SOUTH AFRICA

Dear Professor/Doctor/Sir/Madam

I trust you are well and may you have a successful year.

You are invited to participate in this study and give your input on university budget planning and expense control.

I am currently conducting research for a Masters degree in Cost and Management Accounting, registered at Vaal University of Technology. I would appreciate your kind assistance in completing the attached questionnaire, which should not take more than thirty minutes of your time.

I wish to assure you that all responses will be treated as **highly confidential** and information will be used for statistical purposes only.

This questionnaire is intended for all Heads of departments (academic and non academic departments, service departments (Projects and maintenance, cleaning and other service departments), technology station/ business incubation, research department and the universities finance department.

I foresee that the results of my research can reflect on effective and efficient employment of management information and control system in university budget planning and expenditure control.

If you have any questions at any time about this research, feel free to contact me on the details listed below, or my supervisor, Dr Gauda Maseko [johannes@vut.ac.za]. This study will be written up as a research report which will be available online through the Vaal University of Technology library website. If you have any queries, concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Human Research Ethics Committee (non-medical) of WITS at telephone + 27(0)11 717 1408, or via email: Shaun.Schoeman@wits.ac.za.

Kindly respond by e-mail to magriet@profin.co.za

Please note that by completing and returning the completed questionnaire back to me, it is taken as participating consent. Participating in this study is voluntary and a participant has the right to withdraw from this study.

If you wish to receive a copy of this research finding please indicate your name and institution in the space provided on the attached questionnaire.

Please do not hesitate to contact me with any queries on 0719903822.

Thank you for your support.

Yours sincerely

Magaretha Marx



ANNEXURE B

ONLINE QUESTIONNAIRE ON SURVEY MONKEY

VAAL UNIVERSITY

BUDGETARY PLANNING AND EXPENDITURE CONTROL PROCESSES AT PUBLIC UNIVERSITIES IN GAUTENG

1. The number of academic faculties in your institutions

- ☐ 1-4
☐ 5-10
☐ 11-15
☐ >15

2. Total student headcount enrolments

- ☐ 1 - 20 000
☐ 20 001 - 40 000
☐ 40 000 - 60 000
☐ 60 000 - 80 000
☐ >80 000

* 3. Your institution analyse cost?

- ☐ Likely
☐ Neither likely nor unlikely
☐ Unlikely
☐ Other (please specify)

4. To what extent does your department analyze cost?

- Never Ad-hoc Monthly Quarterly Annually
- ☐ ☐ ☐ ☐ ☐

5. Your institution have a separate cost management department?

- ☐ Always ☐ Usually ☐ Sometimes ☐ Never
☐ Other (please specify)

6. Does your institution use budget reporting software for Budgeted vs Actual spending?

- ☐ Always ☐ Usually ☐ Sometimes ☐ Rarely ☐ Never
☐ Other (please specify)

7. What is the name of your official accounting package?

☐ SAP ☐ ITS

Other (please specify)

8. Which of the following best describes the tracing of costs of SERVICES, SUPPORT, and FACULTIES for the purpose of cost allocation?

	Direct cost only	Direct costs and some indirect costs which cannot be traced directly to the course or faculty	Most of the costs, including central administration, IT services, maintenance, security and cleaning	Cost are not traced	Indirect cost such as central administration, IT services ect, are not apportioned to faculties
Courses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Research department	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Projects and Services (Grounds and building maintenance)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Technology Station /Business incubator	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Specific Government Grants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hostels/Residences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Faculty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Department	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

9. Indirect costs are assigned from Service departments to academic departments and other service departments, to what extent are the following allocation methods used?

	Never	Rarely	Sometimes	Often	Always
Department size (Number of students)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Employee related - Department size (Number of staff in department or faculty)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Employee related - Total Rand value of salaries of the department or faculty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Direct cost plus overall recovery rate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Square meters of the building used by the department	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other (please specify)

10. How are subject or class fees calculated? Please choose most applicable

- ☐ Academics staff salaries ratio
 ☐ Academics staff salaries + Indirect and overhead cost + Government Grant + other
- ☐ Government Grant per student
 ☐ Previous year price + allowable increase
- ☐ Indirect cost of building and ground maintenance and other operating costs ratio
 ☐ Class fees are not calculated according to cost
- ☐ Government Grant per student + Indirect cost of building and ground maintenance and other operating costs
 ☐ Direct cost
- ☐ Academics staff salaries + Indirect costs + Government Grant
 ☐ Direct + indirect cost - (minus) Government Grant
- ☐ Academics staff salaries + Indirect and overhead cost + Government Grant

Other (please specify)

11. What type of Budgeting Method does your organization follow for your annual budget planning (Expenditure)?

- ☐ Zero Based ☐ Activity based
☐ Previous year + inflation ☐ Incremental
☐ Cumulative ☐ Student count per department

Other (please specify)

12. Your university plan and expect from your technology development centre /Technology station/ Business incubator to raise income to cover their expenditure for salaries and other operational expenditure?

- ☐ Likely ☐ Neither likely nor unlikely ☐ Unlikely

☐ Other (please specify)

13. Your university budget for Technology station/Business incubation or similar non –academic department's salaries in the main university budget?

- ☐ Likely ☐ Neither likely nor unlikely ☐ Unlikely

☐ Other (please specify)

14. The university budget for Technology station/Business incubation raw materials, operating expenses and building maintenance in the main university budget?

- ☐ Likely ☐ Neither likely nor unlikely ☐ Unlikely

☐ Other (please specify)

15. Your university budget for Technology station/Business incubation expected income in the main income of the university budget or is it budgeted directly under the cost code of these facilities?

- ☐ University main income
☐ Cost centre income (income driven expenditure)
☐ Not budgeted

16. Select those of the following use the expected student fees income to plan the budget

- ☐ Faculty and academic department
- ☐ Service department
- ☐ Allocation of calculated percentage between service departments and faculty
- ☐ Don't know
- ☐ Other (please specify)

17. How does your university plan the budget (expenditure and income) for hostels or student residents

- ☐ The expenses are calculated and the rates (income) are calculated by dividing the expenses between number of students per hostel (cost is used to calculate the hostel fees)
- ☐ The income per student is used to calculate the total income and then the expenses is budgeted according to income (hostel fees is used to calc budget)
- ☐ Hostel / Resident fees are calculated previous year price + inflation
- ☐ Don't know
- ☐ Other (please specify)

18. Student accommodation income (even if paid by NSFAS), budgeted to cover the exact total cost of hostels, including administrative salaries.

- ☐ Very likely
- ☐ Likely
- ☐ Neither likely nor unlikely
- ☐ Unlikely
- ☐ Very unlikely

19. Are the hostels Capital expenditure such as fridges, beds, and other assets to be used by the students covered by accommodation income and levies or is it financed by a Government Grant?

- ☐ Financed from student accommodation fees and student levy
- ☐ Financed from Government Grants
- ☐ Don't know

Other (please specify)

20. For university budget, select of the following that your university/department use to plan operating expenses budget.

- ☐ Per Faculty and academic department
- ☐ Service department
- ☐ Per student
- ☐ Allocation of calculated percentage between service departments and faculty direct cost

21. Which one of the following did your department/faculty use for your 2019 budget

- ☐ Expected Students numbers to enrol in your department
- ☐ Number of staff in your department
- ☐ 2018 students numbers in your department
- ☐ A combination of the above
- ☐ The 2018 BUDGET (prior year budget), + / - a given percentage
- ☐ None of the above
- ☐ 2018 Actual expenses (prior year ACTUAL values), +/- a given percentage

22. Your university plan and expect from your technology development centre /Technology station to raise income to cover their expenditure for salaries and other operational expenditure?

- ☐ Very likely ☐ Likely ☐ Unlikely ☐ Very unlikely
- ☐ Other (please specify)

23. Which of the following departments use the expected student fees income in the budget

- ☐ Per faculty
- ☐ Service department
- ☐ Per student
- ☐ Allocation of calculated percentage between service departments and faculty
- ☐ Other (please specify)

24. You feel that the Budgeting Method that your University uses is effective for your department?

- ☐ Strongly agree
- ☐ Disagree
- ☐ Agree
- ☐ Strongly disagree
- ☐ Neither agree nor disagree

25. What percentage of your universities total budget do the following contribute to Academic Staff salaries?

- ☐ 0 - 30%
- ☐ 61 - 70%
- ☐ 31 - 50%
- ☐ >70%
- ☐ 51 - 60%

26. What percentage of your universities total budget contribute to Admin /Support staff-salaries?

- ☐ 0 - 30% ☐ 50 - 60%
- ☐ 31 - 40% ☐ 60 - 70%
- ☐ 40 - 50% ☐ >70%

27. What percentage of your universities total budget contribute to Protection and Cleaning services (incl salaries)

- ☐ 0 - 30% ☐ 51 - 60%
- ☐ 31 - 40% ☐ >60%
- ☐ 41 - 50%

28. What percentage of your universities total budget contribute to Travelling and accommodation expenses?

- ☐ 0 - 10% ☐ 31 - 40%
- ☐ 11 - 20% ☐ >40%
- ☐ 21 - 30%

29. How much % (percentage) of the university expenditure contribute to Refreshments/entertainment expenses

- ☐ 0 - 10% ☐ >25%
- ☐ 11 - 15% ☐ Don't know
- ☐ 16 - 25%

30. Sometimes a department need to buy or pay for something, but the budget is depleted. What does your department do?

- ☐ Budget transfers between expenditure accounts within a cost centre/department
- ☐ Budget transfers between different cost centers/departments
- ☐ Reject the requisition and ask the applicant to wait for the next financial year to make the purchase or payment

Other (please specify)

31. How often are budget transfers done?

- ☐ Never
- ☐ Daily
- ☐ Weekly
- ☐ Monthly
- ☐ Bi-annual
- ☐ Annually

32. There are always ad-hoc payments outside the procurement system. How does your university initiate these payments?

- ☐ Manual paper-based requisitions
☐ Online requisitions
☐ Don't know

33. There is sufficient control over the expenditure on a department/cost centre budget?

- ☐ Agree
☐ Disagree
☐ Strongly disagree

34. Your department use online requisitions for **internal** departments purchases?

- ☐ Agree ☐ Disagree

Other (please specify)

35. Air travel tickets, travelling cost, subsistence allowance and other research expenses e.g. laptops used by researchers are all booked under Research expenses?

- ☐ Agree ☐ Disagree

Other (please specify)

36. Are air travel tickets, travelling cost, subsistence allowance and other expenditure to enable the research are booked to the actual expense type such as travel expenses; overseas travel, accomodation, ect. in the general ledger accounts.

- ☐ Agree ☐ Disagree

* 37. The department of Higher Education provides Universities with a (NRF) / other Research Grant that is claimed after it the expenditure actually occurred. You believe that the university should bring in this expected income and expected expenditure as a budget for the expenditure where it will probably be spent, for example on research consumables, traveling air tickets, printing and travel allowances.

- ☐ Agree ☐ Disagree
☐ Other (please specify)

38. How is the financial information system setup to control expenditure?

Please mark all relevant boxes.

☐ On Cash basis for income driven cost centres

☐ On cost centre and account line item (GLA)?

☐ On Cost centre only

☐ Other (please specify)

39. Which of the following methods are used to bring UNUSED Outside funding forward to the new year?

☐ System is setup to bring the balance of the cost code forward to new year

☐ Manual journal from prior year to current year

☐ Don't know

☐ Other (please specify)

40. Does your university bring in the expected income per department's cost codes as part of the annual budget?

☐ Strongly agree ☐ Agree ☐ Disagree ☐ Strongly disagree



ANNEXURE C

STATISTICAL RESULTS

VAAL UNIVERSITY OF TECHNOLOGY Inspiring thought. Shaping talent.				Option and valid percent (%) or number									
Question #	Variable	Valid N=56	Questionnaire question										
Q1	V1	54	The number of academic faculties in your institutions	1-4 44,4%		15-10 42,6%		11-15 3,7%		>15 9,3%			
Q2	V2	53	Total student headcount enrolments	1 - 20 000 37,7%		20 001 - 40 000 30,2%		40 000 - 60 000 13,2%		60 000 - 80 000 15,1%		>80 000 3,8%	
Q3	V3	56	Does your institution analyse cost?	Likely 64,3%		Neither likely nor unlikely 21,4%		Unlikely 8,9%		Other (please specify) 5,4%			
Q4	V4	53	To what extent does your department analyse cost?	Never 3,8%		Ad-hoc 20,8%		Monthly 49,1%		Quarterly 13,2%		Annually 13,2%	
Q5	V5	52	Does your institution have a separate cost management department?	Always 40,4%		Usually 17,3%		Sometimes 5,8%		Never 28,8%		Other (please specify) ,7%	
Q6	V6	54	Does your institution use budget reporting software for Budgeted vs Actual spending?	Always 57,4%		Usually 18.5%		Sometimes 5,6%		Rarely 3,7%		Never 9,3%	Other (please specify) 5,6%
Q7	V7	52	What is the name of your official accounting package?	SAP 7,7%		ITS 78,8%		Oracle 9,6%		Other 1,9%		Don't know 1,9%	

Q8	V8_C	39	Courses: Which of the following best describes the tracing of costs of SERVICES, SUPPORT, and FACULTIES for the purpose of cost allocation?	Direct costs 15	Direct + indirect costs 7	Most of the costs 11	Costs not traced 1	Not apportioned 5
	V8_R	39	Research	Direct costs 14	Direct + indirect costs 11	Most of the costs 10	Costs not traced 3	Not apportioned 1
	V8_P	41	Projects	Direct costs 10	Direct + indirect costs 5	Most of the costs 18	Costs not traced 4	Not apportioned 4
	V8_T	34	Technology	Direct costs 10	Direct + indirect costs 6	Most of the costs 11	Costs not traced 6	Not apportioned 1
	V8_G	36	Grants	Direct costs 14	Direct + indirect costs 12	Most of the costs 5	Costs not traced 2	Not apportioned 3
	V8_H	36	Hostels	Direct costs 9	Direct + indirect costs 3	Most of the costs 17	Costs not traced 4	Not apportioned 3
	V8_F	35	Faculty	Direct costs 11	Direct + indirect costs 10	Most of the costs 11	Costs not traced 1	Not apportioned 2

	V8_D	42	Departments	Direct costs 13		Direct + indirect costs 8		Most of the costs 12		Costs not traced 4		Not apportioned 3	
Q9	V9_D	42	Department: Indirect costs are assigned from service departments to academic departments and other service departments, to what extent are the following allocation methods used?	Never 11		Rarely 3		Sometimes 8		Often 6		Always 11	
	V9_DS	40	Department size	Never 10		Rarely 5		Sometimes 9		Often 7		Always 9	
	V9_S	40	Salary	Never 8		Rarely 7		Sometimes 9		Often 4		Always 12	
	V9_R	41	Recovery	Never 3		Rarely 6		Sometimes 11		Often 9		Always 12	
	V9_S M	42	Squared meters	Never 15		Rarely 9		Sometimes 4		Often 6		Always 4	
Q10	V10	45	How are subject or class fees calculated?	Government Grant per student 5	Government Grant per student + Indirect cost of building and ground maintenance and other operating costs 2	Academics staff salaries + Indirect and overhead cost + Government Grant 3	Academics staff salaries + Indirect and overhead cost + Government Grant + other 8	Previous year price + allowable increase 15	Direct cost 2	Class fees are not calculated according to cost 5	Direct + indirect cost - (minus) Government Grant 5		

Q11	V11	49	What type of budgeting method does your organisation follow for your annual budget planning (expenditure)?	Zero Based 15	Previous year + inflation 27	Activity based 2	Student count per department 5
Q12	V12	50	Your university plan and expect from your technology development centre /Technology station/ Business incubator to raise income to cover their expenditure for salaries and other operational expenditure?	Likely 54%	Neither likely nor unlikely 16%	Unlikely 26%	Don't know 4%
Q13	V13	50	Your university budget for Technology station/Business incubation or similar non – academic department's salaries in the main university budget?	Likely 54%	Neither likely nor unlikely 16%	Unlikely 26%	Don't know 4%
Q14	V14	49	The university budget for Technology station/Business incubation raw materials, operating expenses and building maintenance in the main university budget?	Likely 46,9%	Neither likely nor unlikely 24,5%	Unlikely 24,5%	Don't know 4,1%
Q15	V15	46	Your university budget for Technology station/Business incubation expected income in the main income of the university budget or is it budgeted directly under the cost code of these facilities?	University main income 21,7%	Cost centre income (income driven expenditure) 65,2%	Not budgeted 13%	
Q16	V16	48	Select those of the following use the expected student fees income to plan the budget	Faculty and academic department 33,3%	Service department 2,1%	Allocation of calculated percentage between service departments and faculty 16,7%	Don't know 47,9%

Q17	V17	50	How does your university plan the budget (expenditure and income) for hostels or student residents	The expenses are calculated and the rates (income) are calculated by dividing the expenses between number of students per hostel (cost is used to calculate the hostel fees) 1	The income per student is used to calculate the total income and then the expenses is budgeted according to income (hostel fees is used to calc budget) 9	Hostel / Resident fees are calculated previous year price + inflation 14		Don't know 26
Q18	V18	45	Student accommodation income (even if paid by NSFAS), budgeted to cover the exact total cost of hostels, including administrative salaries	Very likely 0	Likely 18	Neither likely nor unlikely 8	Unlikely 6	Very unlikely 5
Q19	V19	52	Are the hostels Capital expenditure such as fridges, beds, and other assets to be used by the students covered by accommodation income and levies or is it financed by a Government Grant?	Financed from student accommodation fees and student levy 15	Financed from Government Grants 7	Don't know 29	Other (please specify) 1	
Q20	V20	48	For university budget, select of the following that your university/department use to plan operating expenses budget	Per Faculty and academic department 26	Service department 10	Per student 2	Allocation of calculated percentage between service departments and faculty direct cost 10	

Q21	V21	50	Which one of the following did your department/faculty use for your 2019 budget	Expected Students numbers to enrol in your department 7	2018 students numbers in your department 0	The 2018 BUDGET (prior year budget) + / - a given percentage 18	2018 Actual expenses (prior year ACTUAL values), +/- a given percentage	Number of staff in your department 0	A combination of the above 11	None of the above 3
Q22	V22	48	Your university plan and expect from your technology development centre /Technology station to raise income to cover their expenditure for salaries and other operational expenditure?	Very likely 25%	Likely 31,3%	Unlikely 27,1%	Very unlikely 10,4%	Other (please specify) 6,3%		
Q23	V23	45	Which of the following departments use the expected student fees income in the budget	Per faculty 44,4%	Service department 11,1%	Per student 8,9%	Allocation of calculated percentage between service departments and faculty 26,7%	Other (please specify) 8,9%		
Q24	V24	51	You feel that the Budgeting Method that your University uses is effective for your department?	Strongly agree 2%	Agree 27,5%	Neither agree nor disagree 23,5%	Disagree 29,4%	Strongly disagree 17,6%		

Q25	V25	42	What percentage of your universities total budget do the following contribute to Academic Staff salaries?	0 - 30% 19%	31 - 50% 40,5%	51 - 60% 21,4%	61 - 70% 16,7%	>70% 2,4%	
Q26	V26	39	What percentage of your universities total budget contribute to Admin /Support staff-salaries?	0 - 30% 38,5%	31 - 40% 10,3%	41 – 50% 10,3%	51 - 60% 20,5%	61 - 70% 12,8%	>70% 7,7%
Q27	V27	39	What percentage of your universities total budget contribute to Protection and Cleaning services (incl salaries)	0 - 30% 66,7%	31 - 50% 15,4%	51 - 60% 7,7%	61 - 70% 2,6%	>70% 7,7%	
Q28	V28	42	What percentage of your universities total budget contribute to Travelling and accommodation expenses?	0 - 10% 38,1%	11 - 20% 28,6%	21 - 30% 9,5%	31 - 40% 14,3%	>40% 9,5%	
Q29	V29	44	How much % (percentage) of the university expenditure contribute to Refreshments/entertainment expenses	0 - 10% 43,2%	11 - 15% 20,5%	16 - 25% 4,5%	>25% 13,6%	Don't know 18,2%	
Q30	V30	52	Sometimes a department need to buy or pay for something, but the budget is depleted. What does your department do?	Budget transfers between expenditure accounts within a cost centre/department 61,5%		Budget transfers between different cost centers/ departments 26,9%	Reject the requisition and ask the applicant to wait for the next financial year to make the purchase or payment 9,6%	Other (please specify) 1,9%	
Q31	V31	50	How often are budget transfers done?	Never 2%	Daily 6%	Weekly 12%	Monthly 28%	Bi-annual 36%	Annually 16%
Q32	V32	51	There are always ad-hoc payments outside the procurement system. How does your university initiate these payments?	Manual paper-based requisitions 45,1%		Online requisitions 37,3%		Don't know 17,6%	

Q33	V33	52	There is sufficient control over the expenditure on a department/cost centre budget?	Agree 73,1%		Disagree 23,1%		Strongly disagree 3,8%	
Q34	V34	52	Your department use online requisitions for internal department's purchases?	Agree 53,8%		Disagree 44,2%		Other (please specify) 1,9%	
Q35	V35	49	Air travel tickets, travelling cost, subsistence allowance and other research expenses e.g. laptops used by researchers are all booked under Research expenses?	Agree 46,4%		Disagree 37,5%		Other (please specify) 3,6%	
Q36	V36	46	Are air travel tickets, travelling cost, subsistence allowance and other expenditure to enable the research are booked to the actual expense type such as travel expenses; overseas travel, accommodation, etc. in the general ledger accounts.	Agree 74%			Disagree 26%		
Q37	V37	56	The department of Higher Education provides Universities with a (NRF) / other Research Grant that is claimed after it the expenditure actually occurred. You believe that the university should bring in this expected income and expected expenditure as a budget for the expenditure where it will probably be spent, for example on research consumables, traveling air tickets, printing and travel allowances.	Agree 66,1%		Disagree 26,8%		Other (please specify) 7,1%	
Q38	V38	50	How is the financial information system setup to control expenditure? Please mark all relevant boxes.	On Cash basis for income driven cost centres 3	On cost centre and account line item (GLA) 41	On Cost centre only 7		Other (please specify) 4	

Q39	V39_1	52	Which of the following methods are used to bring UNUSED Outside funding forward to the new year?	System is setup to bring the balance of the cost code forward to new year 11	Manual journal from prior year to current year 13	Don't know 22	Other (please specify) 6
Q40	V40	47	Does your university bring in the expected income per department's cost codes as part of the annual budget?	Strongly agree 10,7%	Agree 30,4%	Disagree 28,6%	Strongly disagree 14,3%

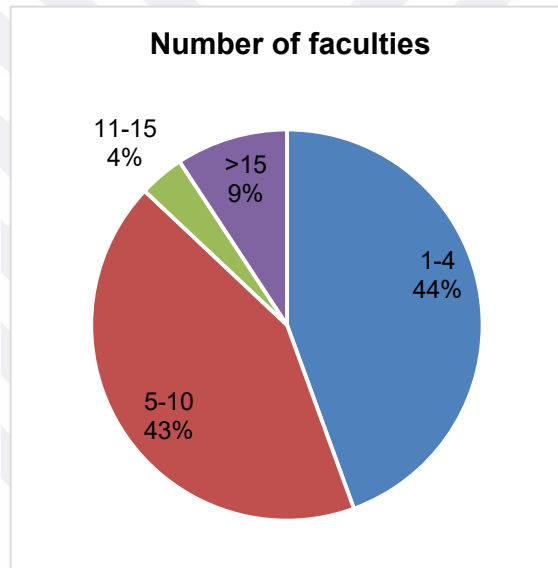


ANNEXURE D

DATA FREQUENCY AND PERCENTAGE TABLES

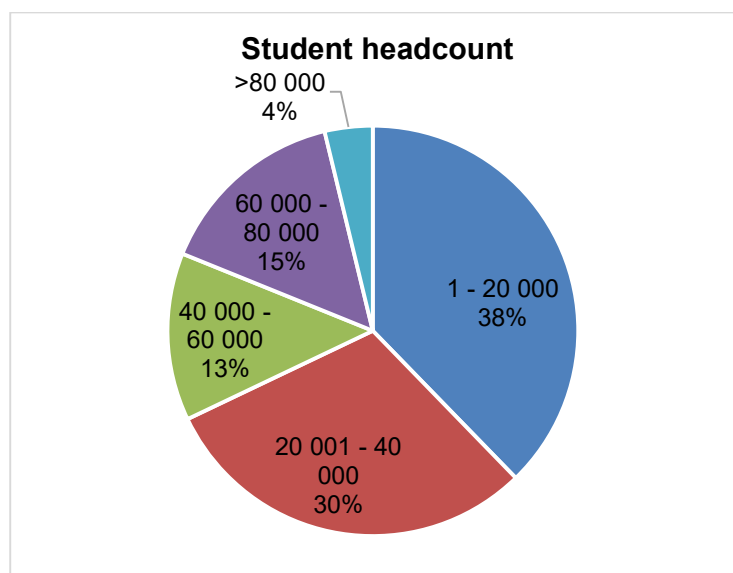
Q1 The number of academic faculties in your institutions

	Frequency	Percentage
1-4	24	44.4
5-10	23	42.6
11-15	2	3.7
>15	5	9.3



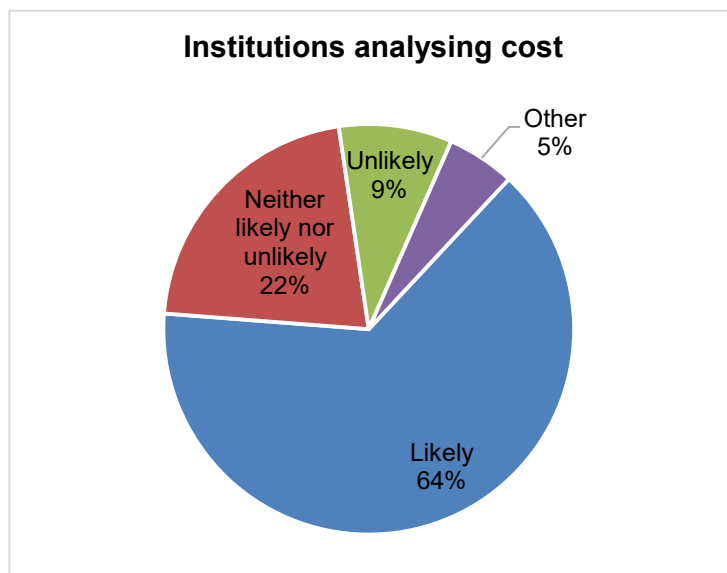
Q2 Total student headcount enrolments

	Frequency	Percentage
1 - 20 000	20	37.7
20 001 - 40 000	16	30.2
40 000 - 60 000	7	13.2
60 000 - 80 000	8	15.1
>80 000	2	3.8



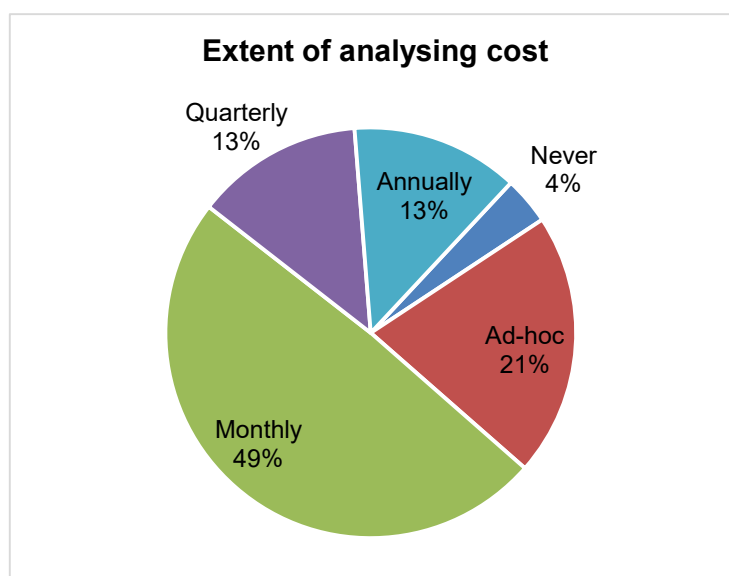
Q3 Your institution analyse cost?

	Frequency	Percentage
Likely	36	64.3
Neither likely nor unlikely	12	21.4
Unlikely	5	8.9
Other (please specify)	3	5.4



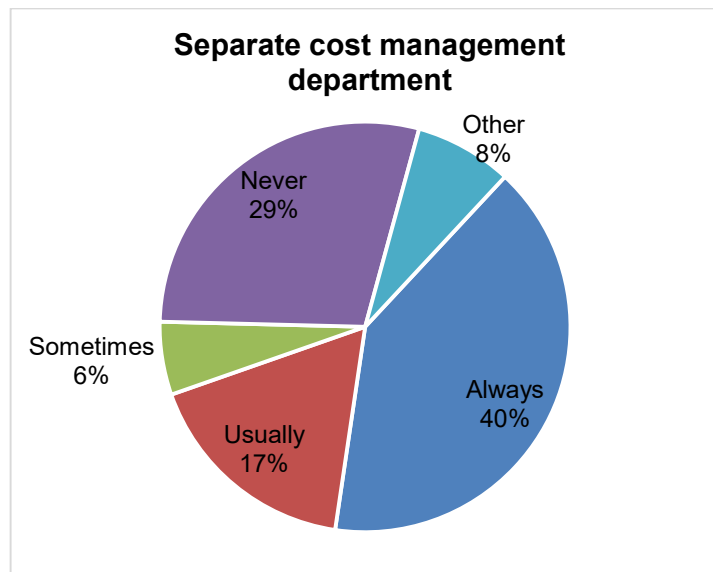
Q4 To what extent does your department analyse cost?

	Frequency	Percentage
Never	2	3.8
Ad-hoc	11	20.8
Monthly	26	49.1
Quarterly	7	13.2
Annually	7	13.2



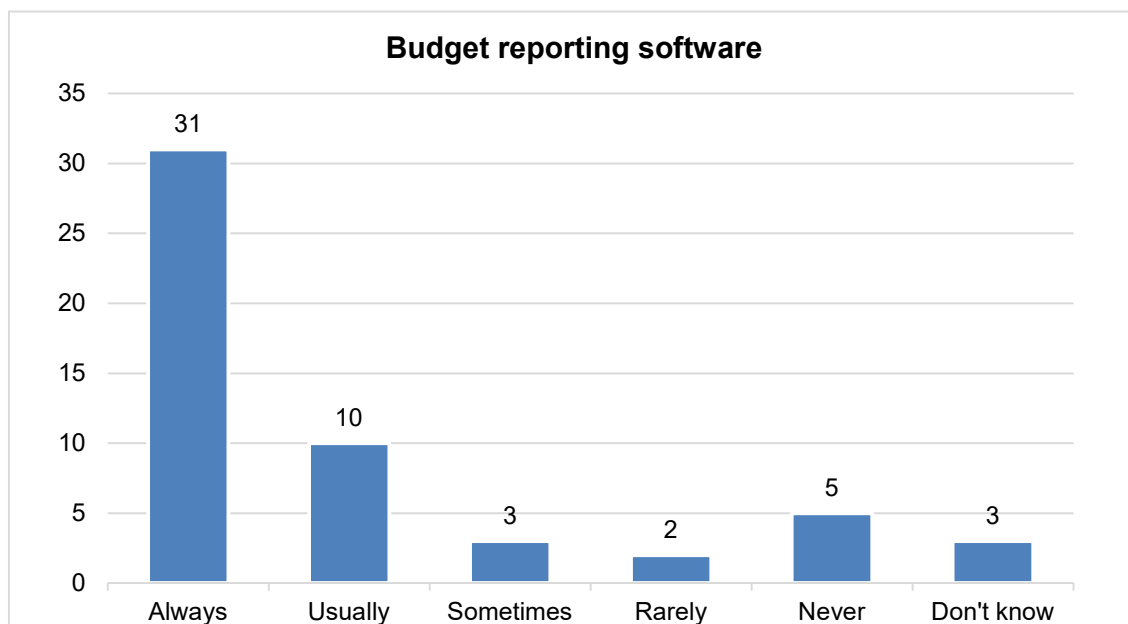
Q5 Your institution has a separate cost management department?

	Frequency	Percentage
Always	21	40.4
Usually	9	17.3
Sometimes	3	5.8
Never	15	28.8
Other (please specify)	4	7.7



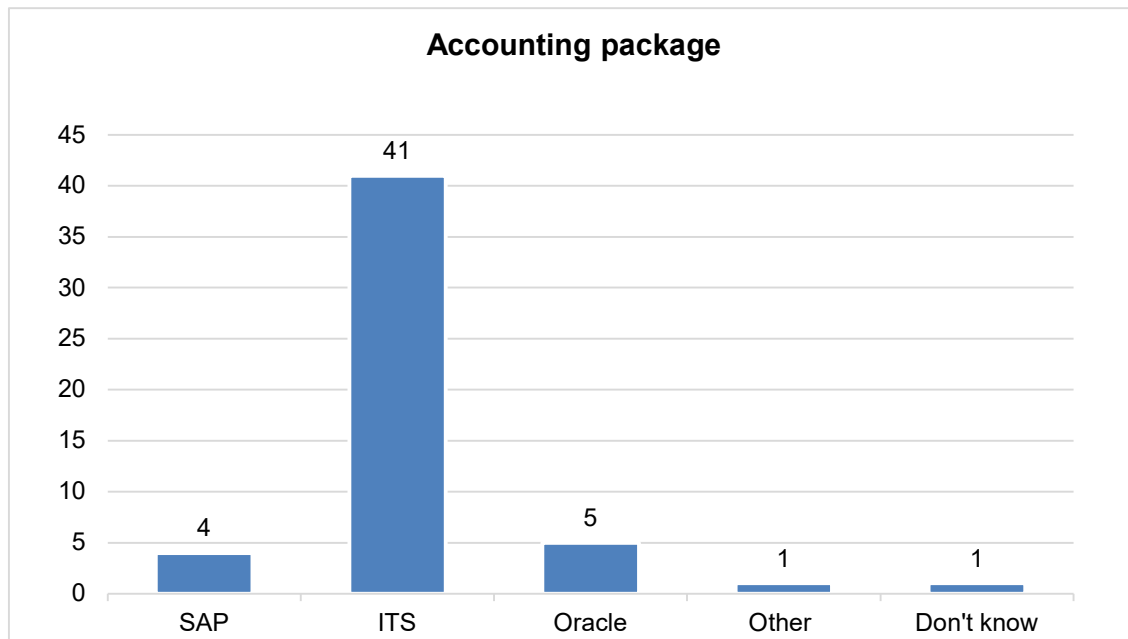
Q6 Does your institution use budget reporting software for budgeted vs Aactual spending?

	Frequency	Percentage
Always	31	57.4
Usually	10	18.5
Sometimes	3	5.6
Rarely	2	3.7
Never	5	9.3
Other (please specify)	3	5.6



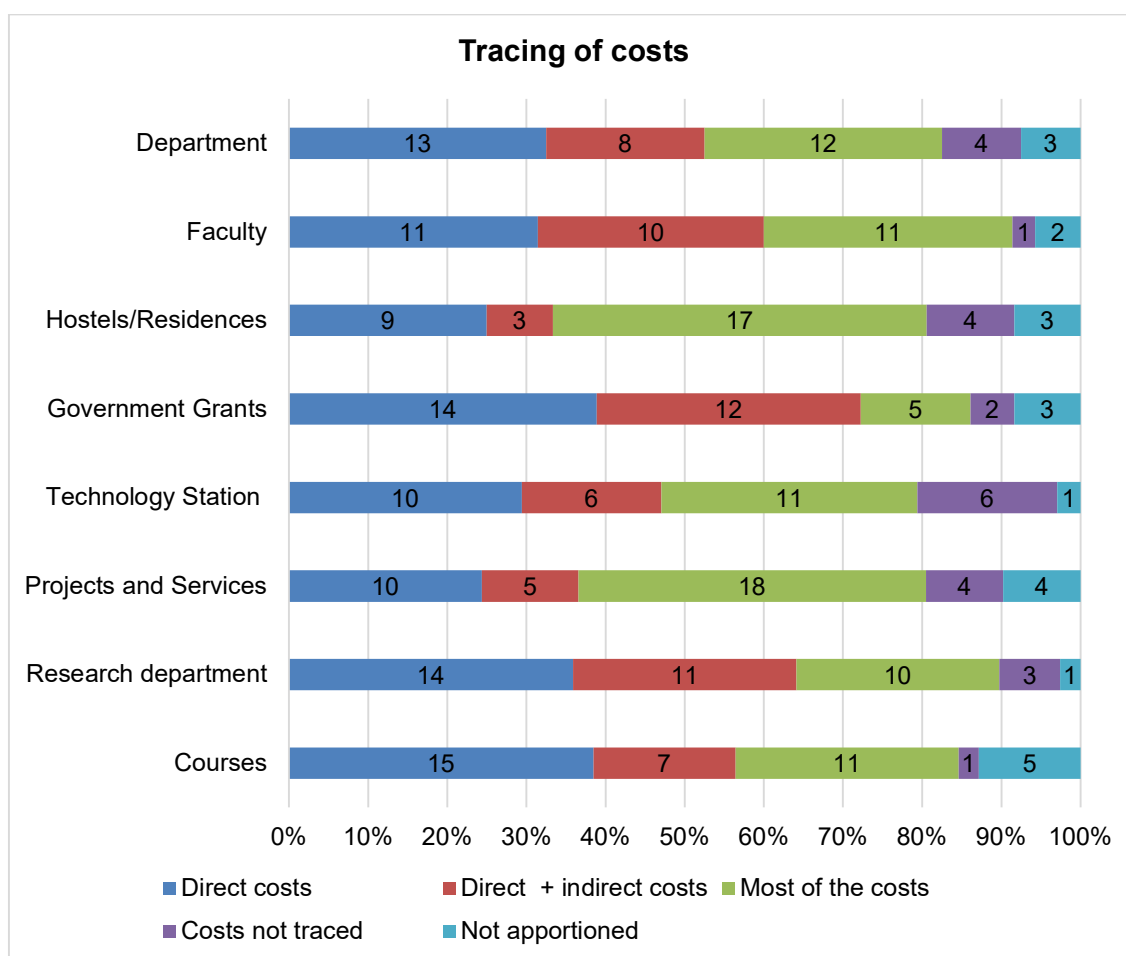
Q7 What is the name of your official accounting package?

	Frequency	Percentage
SAP	4	7.7
ITS	41	78.8
Oracle	5	9.6
Other	1	1.9
Don't know	1	1.9



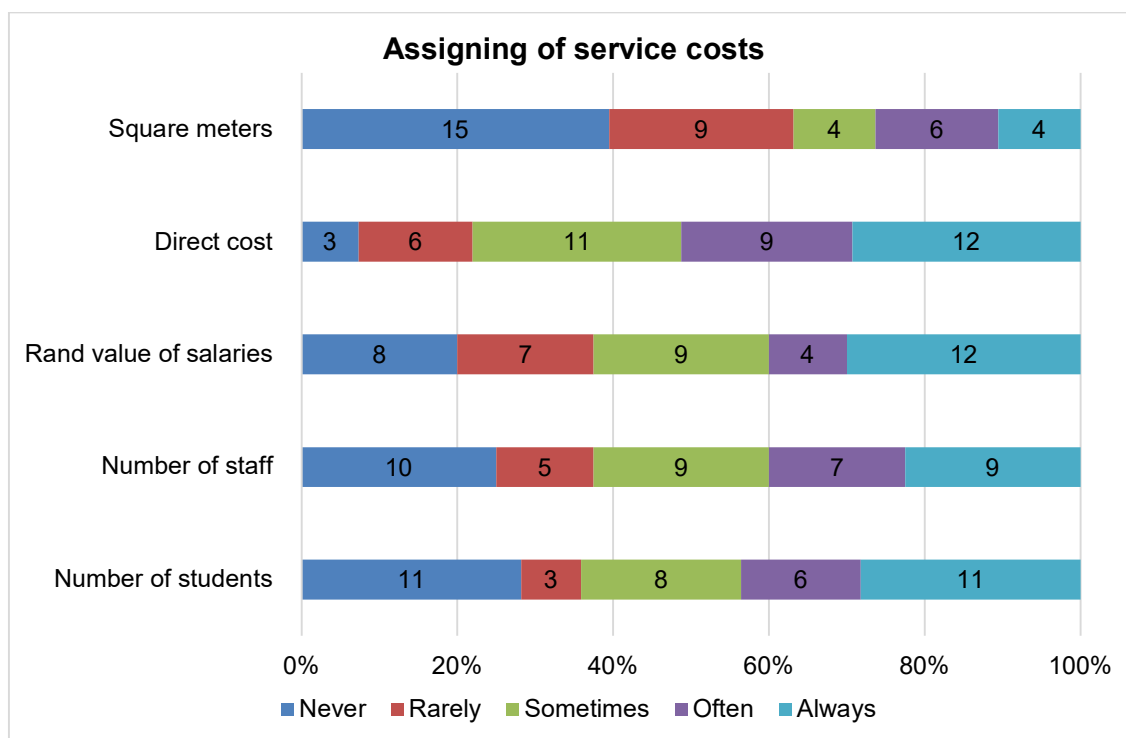
Q8 Which of the following best describes the tracing of costs of SERVICES, SUPPORT, and FACULTIES for the purpose of cost allocation?

	Direct costs	Direct + indirect costs	Most of the costs	Costs not traced	Not apportioned
Courses	15	7	11	1	5
Research department	14	11	10	3	1
Projects and Services	10	5	18	4	4
Technology Station	10	6	11	6	1
Government Grants	14	12	5	2	3
Hostels/Residences	9	3	17	4	3
Faculty	11	10	11	1	2
Department	13	8	12	4	3



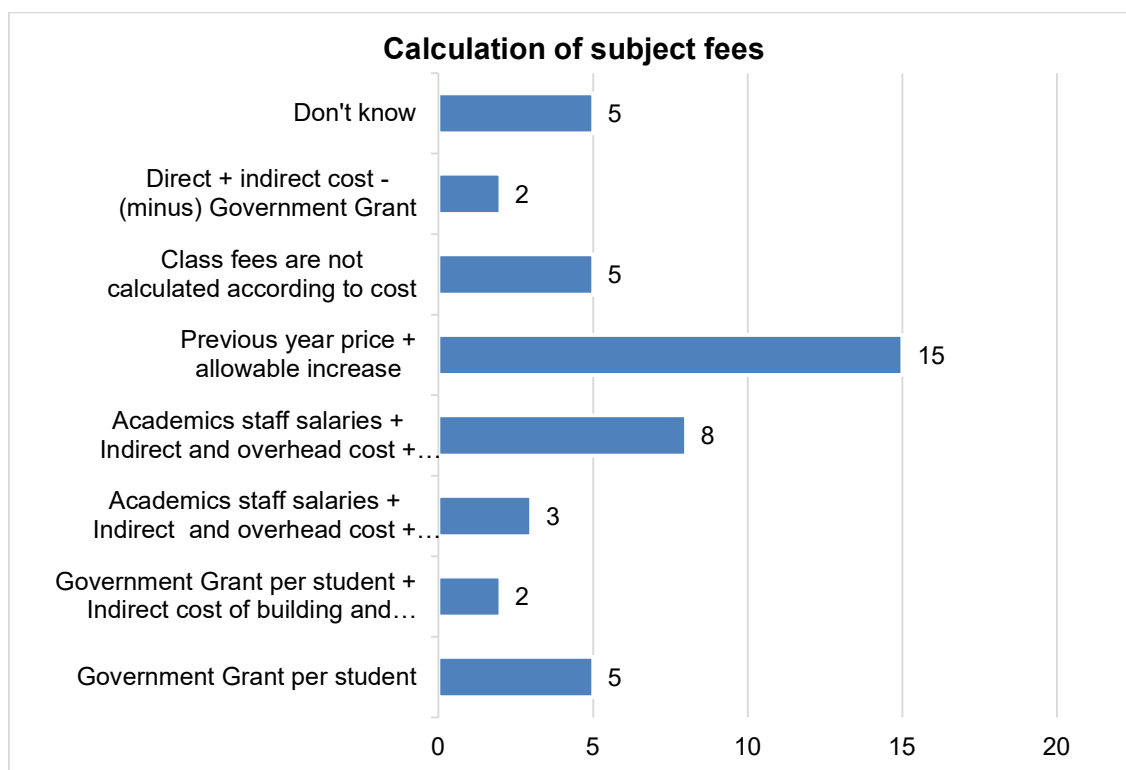
Q9 Indirect costs are assigned from Service departments to academic departments and other service departments, to what extent are the following allocation methods used?

	Never	Rarely	Sometimes	Often	Always
Department size (Number of students)	11	3	8	6	11
Employee related - Department size (Number of staff in department or faculty)	10	5	9	7	9
Employee related - Total Rand value of salaries of the department or faculty	8	7	9	4	12
Direct cost plus overall recovery rate	3	6	11	9	12
Square meters of the building used by the department	15	9	4	6	4



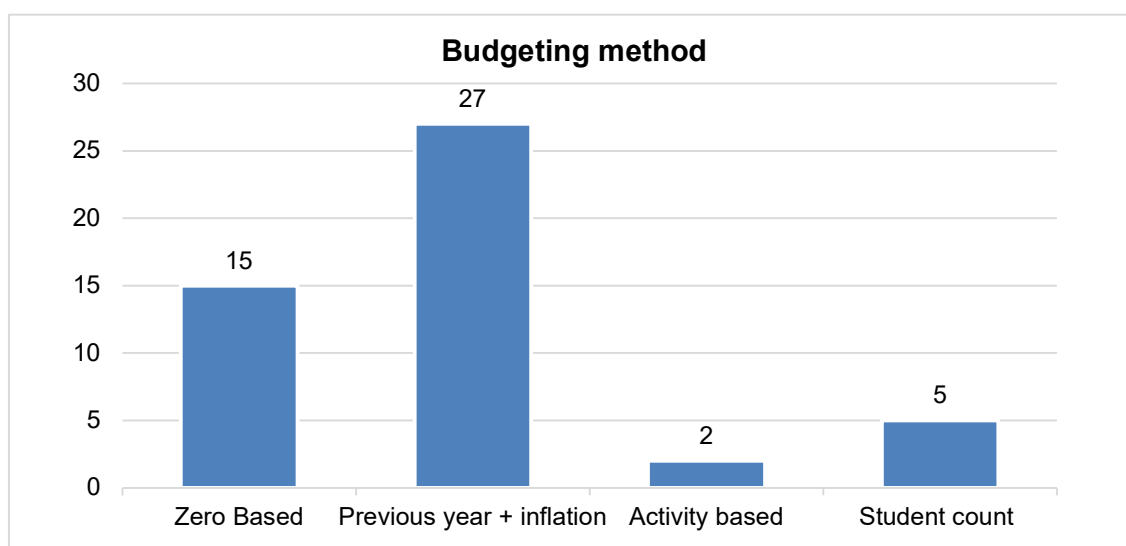
Q10 How are subject or class fees calculated?

	Frequency	Percentage
Academics staff salaries ratio	0	0.0
Government Grant per student	5	11.1
Indirect cost of building and ground maintenance and other operating costs ratio	0	0.00
Government Grant per student + Indirect cost of building and ground maintenance and other operating costs	2	4.4
Academics staff salaries + Indirect costs + Government Grant	0	0.00
Academics staff salaries + Indirect and overhead cost + Government Grant	3	6.7
Academics staff salaries + Indirect and overhead cost + Government Grant + other	8	17.8
Previous year price + allowable increase	15	33.3
Class fees are not calculated according to cost	5	11.1
Direct cost	2	4.4
Direct + indirect cost - (minus) Government Grant	5	11.1



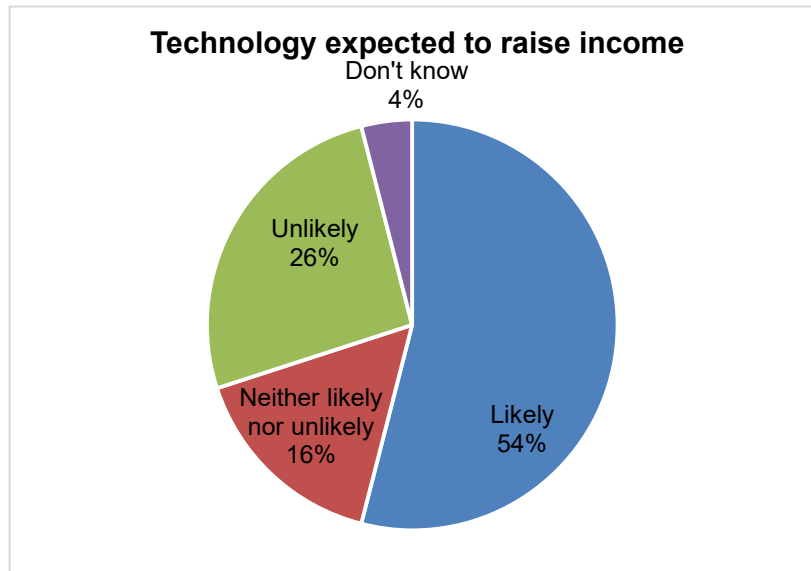
Q11 What type of Budgeting Method does your organization follow for your annual budget planning (Expenditure)?

	Frequency	Percentage
Zero based	15	30.6
Previous year + inflation	27	55.1
Activity based	2	4.1
Student count per department	5	10.2



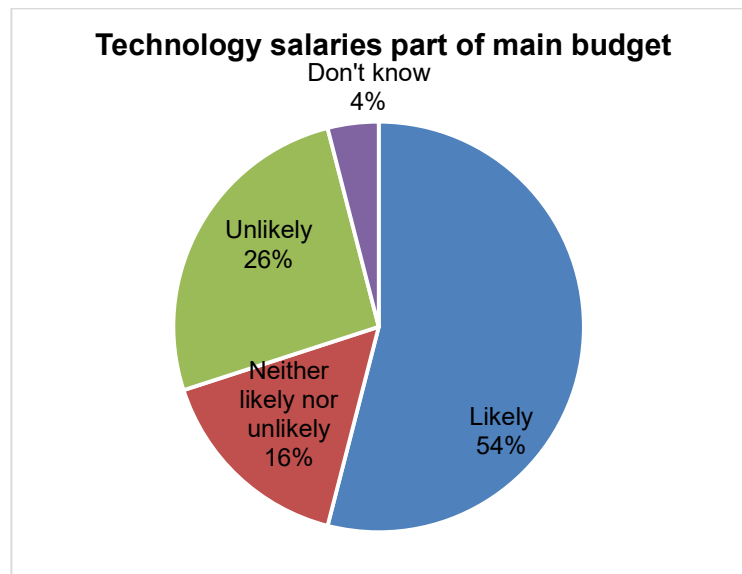
Q12 Your university plan and expect from your technology development centre/ technology station/ business incubator to raise income to cover their expenditure for salaries and other operational expenditure?

	Frequency	Percentage
Likely	27	54.0
Neither likely nor unlikely	8	16.0
Unlikely	13	26.0
Don't know	2	4.0



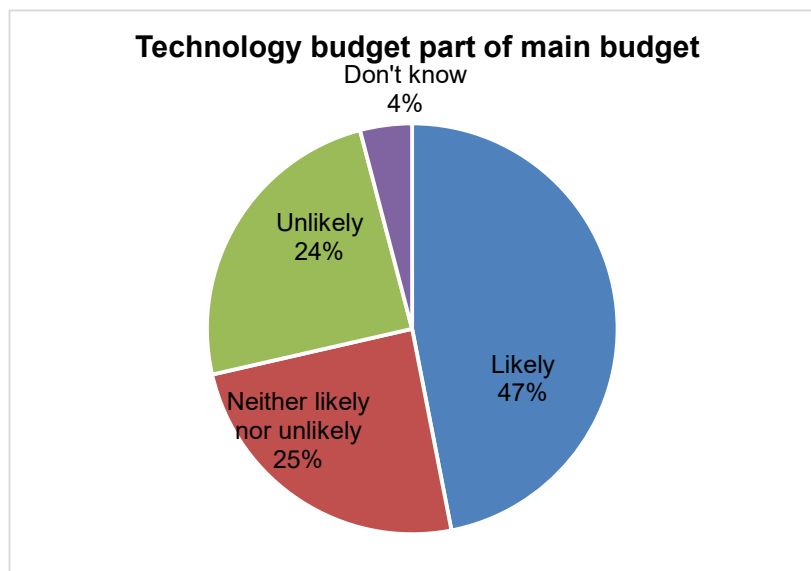
Q13 Your university budget for Technology station/Business incubation or similar non –academic department's salaries in the main university budget?

	Frequency	Percentage
Likely	27	54.0
Neither likely nor unlikely	8	16.0
Unlikely	13	26.0
Don't know	2	4.0



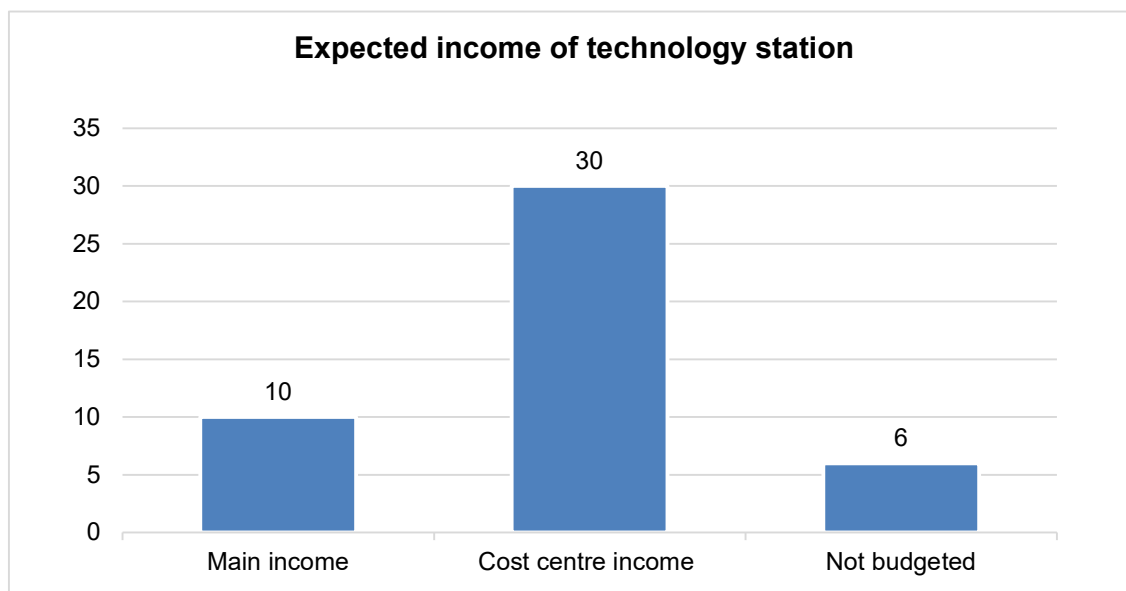
Q14 The university budget for Technology station/Business incubation raw materials, operating expenses and building maintenance in the main university budget?

	Frequency	Percentage
Likely	23	46.9
Neither likely nor unlikely	12	24.5
Unlikely	12	24.5
Don't know	2	4.1



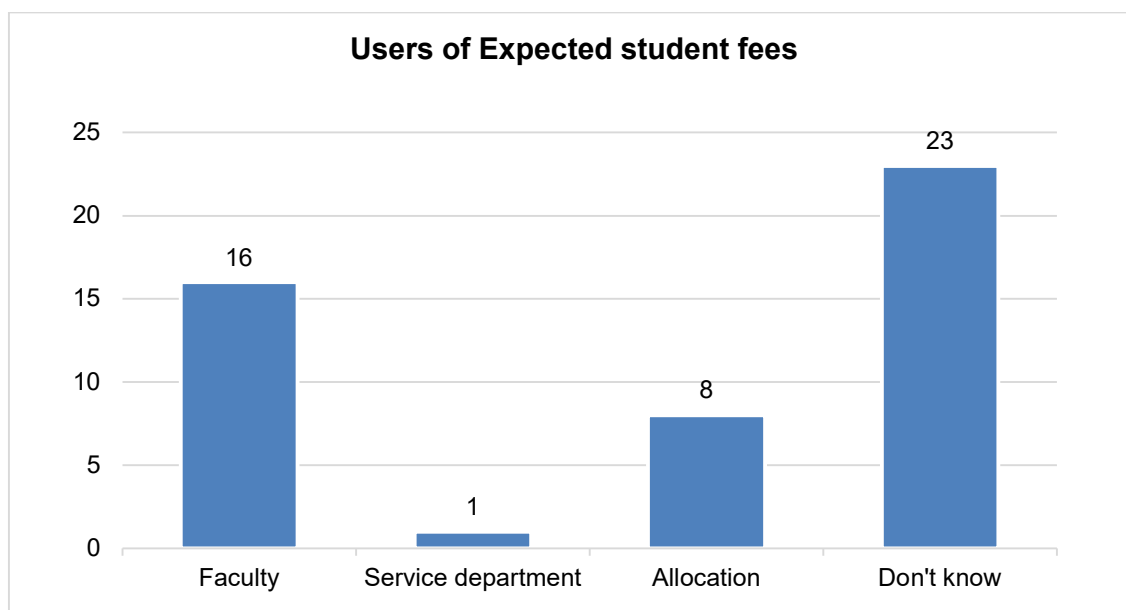
Q15 Your university budget for Technology station/Business incubation expected income in the main income of the university budget or is it budgeted directly under the cost code of these facilities?

	Frequency	Percentage
University main income	10	21.7
Cost centre income (income driven expenditure)	30	65.2
Not budgeted	6	13.0



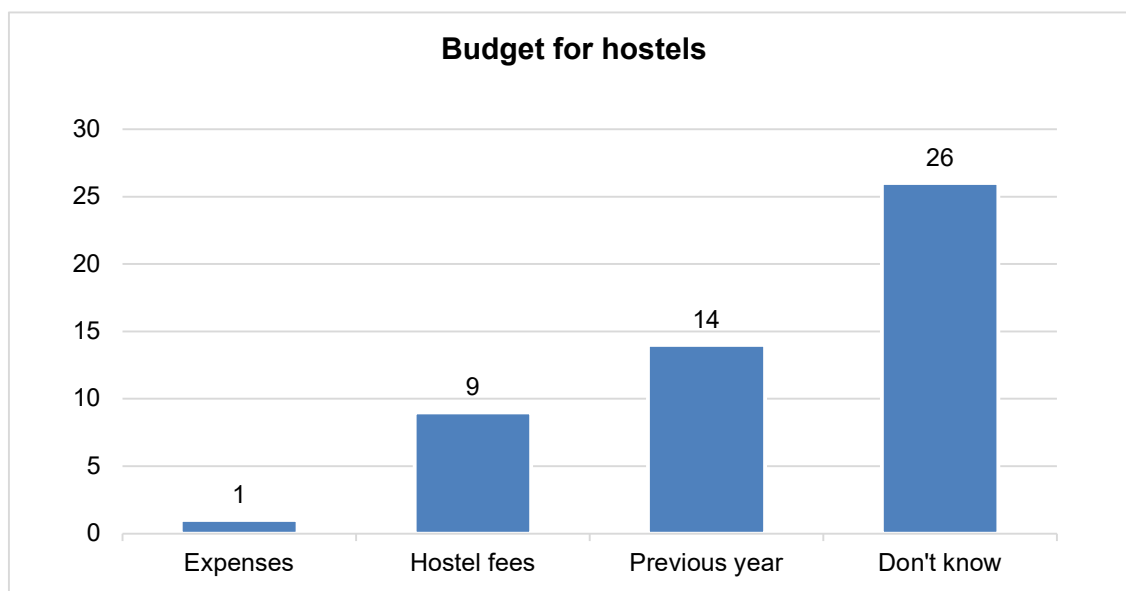
Q16 Select those of the following use the expected student fees income to plan the budget

	Frequency	Percentage
Faculty and academic department	16	33.3
Service department	1	2.1
Allocation of calculated percentage between service departments and faculty	8	16.7
Don't know	23	47.9



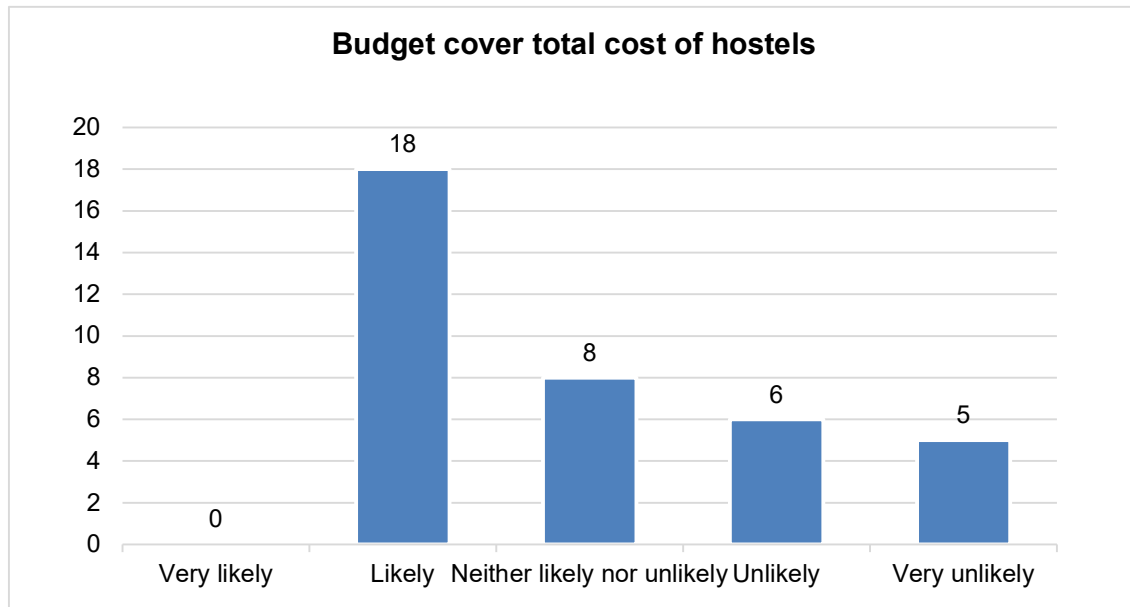
Q17 How does your university plan the budget (expenditure and income) for hostels or student residents

	Frequency	Percentage
The expenses are calculated and the rates (income) are calculated by dividing the expenses between number of students per hostel (cost is used to calculate the hostel fees)	1	2.0
The income per student is used to calculate the total income and then the expenses is budgeted according to income (hostel fees is used to calc budget)	9	18.0
Hostel / Resident fees are calculated previous year price + inflation	14	28.0
Don't know	26	52.0



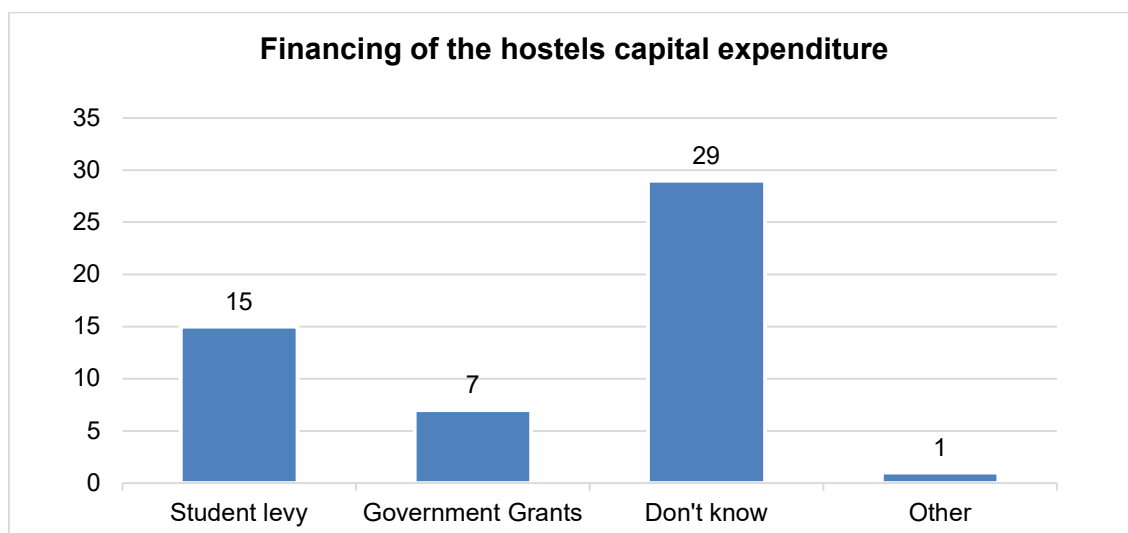
Q18 Student accommodation income (even if paid by NSFAS), budgeted to cover the exact total cost of hostels, including administrative salaries.

	Frequency	Percentage
Very likely	8	17.8
Likely	18	40.0
Neither likely nor unlikely	8	17.8
Unlikely	6	13.3
Very unlikely	5	11.1



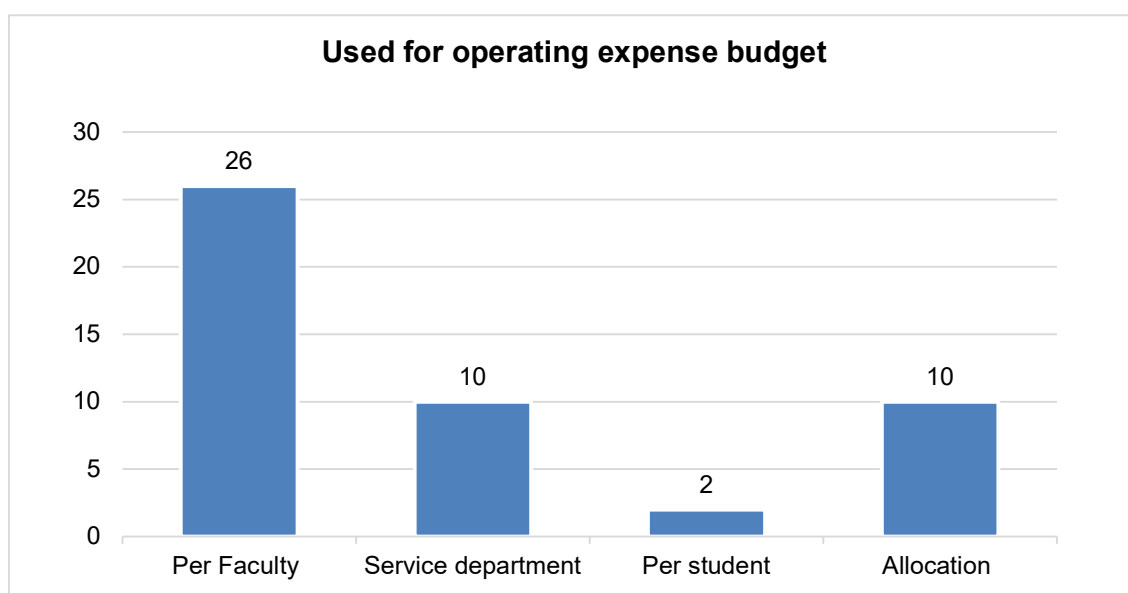
Q19 Are the hostels capital expenditure such as fridges, beds, and other assets to be used by the students covered by accommodation income and levies or is it financed by a Government Grant?

	Frequency	Percentage
Financed from student accommodation fees and student levy	15	28.8
Financed from Government Grants	7	13.5
Don't know	29	55.8
Other (please specify)	1	1.9



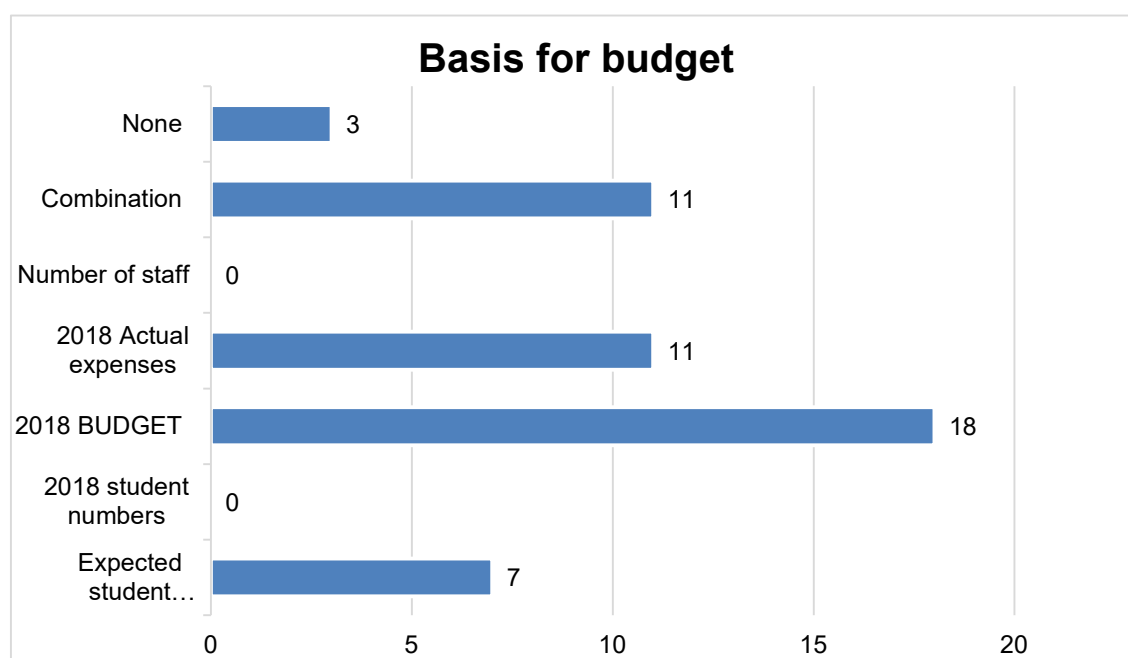
Q20 For university budget, select of the following that your university/department use to plan operating expenses budget

	Frequency	Percentage
Per Faculty and academic department	26	54.2
Service department	10	20.8
Per student	2	4.2
Allocation of calculated percentage between service departments and faculty direct cost	10	20.8



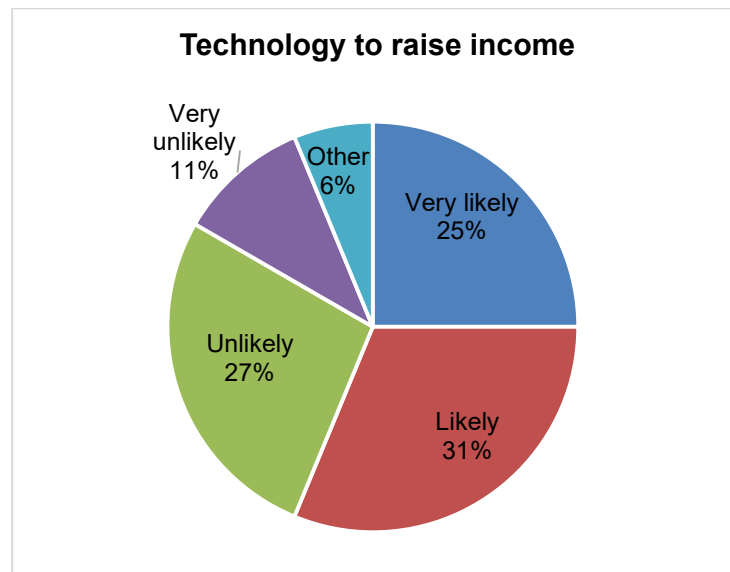
Q21 Which one of the following did your department/faculty use for your 2019 budget

	Frequency	Percentage
Expected Students numbers to enrol in your department	7	
2018 students' numbers in your department	0	
The 2018 BUDGET (prior year budget), + / - a given percentage	18	
2018 Actual expenses (prior year ACTUAL values), +/- a given percentage	11	
Number of staff in your department	0	
A combination of the above	11	
None of the above	3	



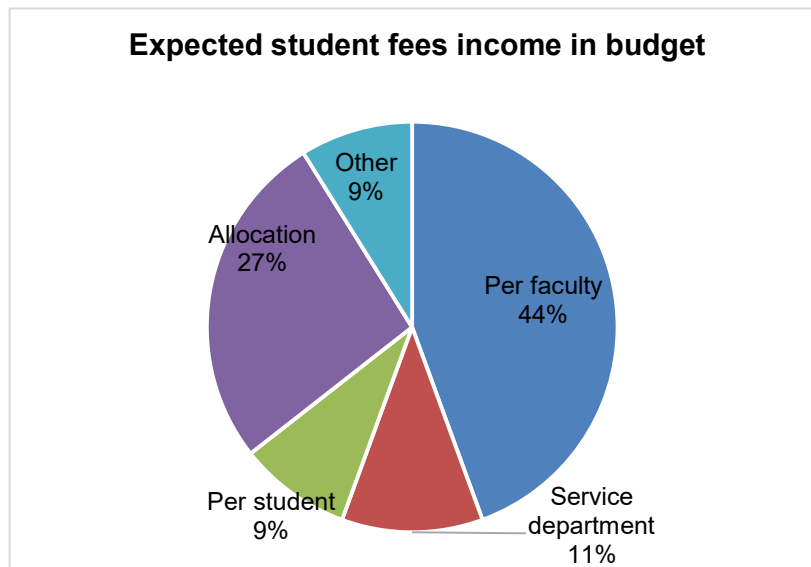
Q22 Your university plan and expect from your technology development centre /Technology station to raise income to cover their expenditure for salaries and other operational expenditure?

	Frequency	Percentage
Very likely	12	25.0
Likely	15	31.3
Unlikely	13	27.1
Very unlikely	5	10.4
Other (please specify)	3	6.3



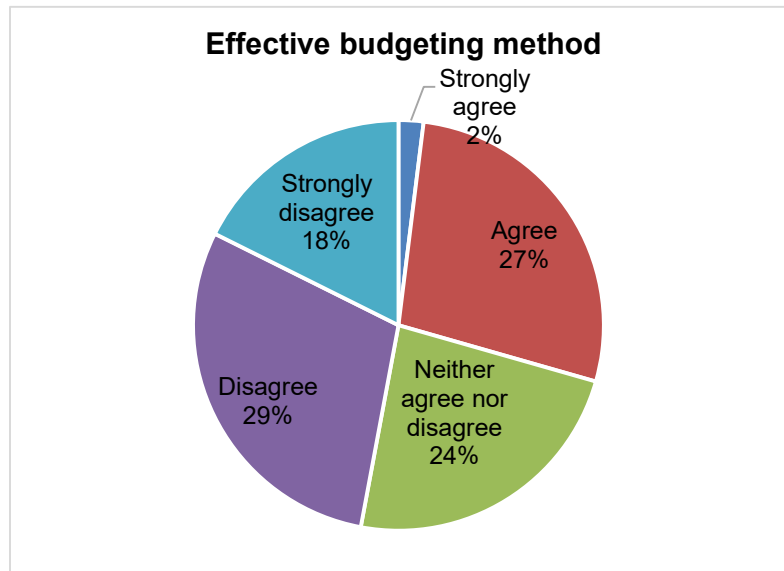
Q23 Which of the following departments use the expected student fees income in the budget

	Frequency	Percentage
Per faculty	20	44.4
Service department	5	11.1
Per student	4	8.9
Allocation of calculated percentage between service departments and faculty	12	26.7
Other (please specify)	4	8.9



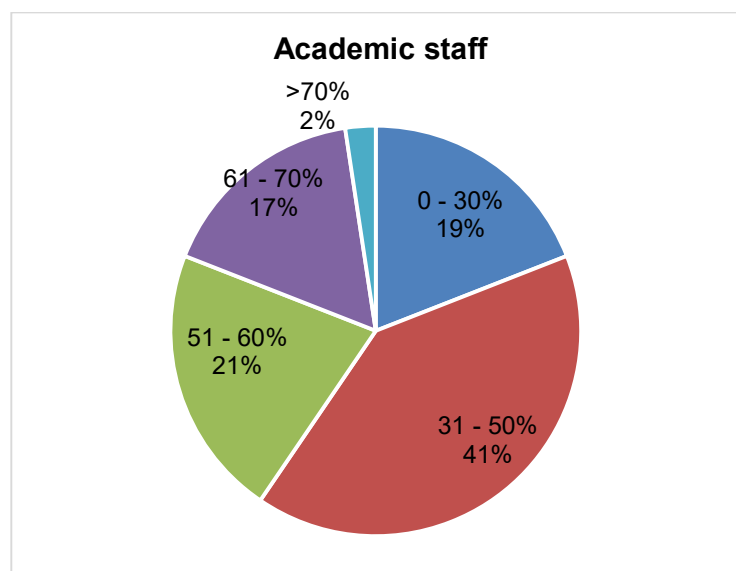
Q24 You feel that the Budgeting Method that your University uses is effective for your department?

	Frequency	Percentage
Strongly agree	1	2.0
Agree	14	27.5
Neither agree nor disagree	12	23.5
Disagree	15	29.4
Strongly disagree	9	17.6



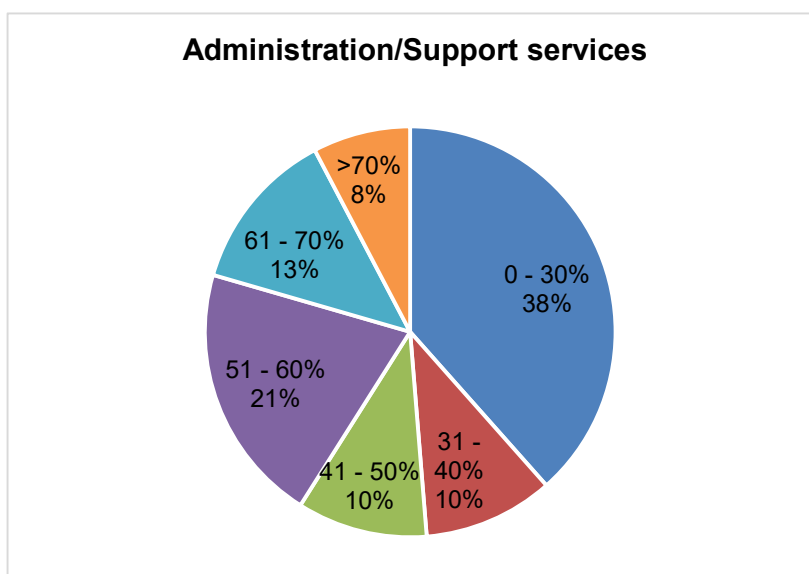
Q25 What percentage of your universities total budget do the following contribute to Academic Staff salaries?

	Frequency	Percentage
0 - 30%	8	19.0
31 - 50%	17	40.5
51 - 60%	9	21.4
61 - 70%	7	16.7
>70%	1	2.4



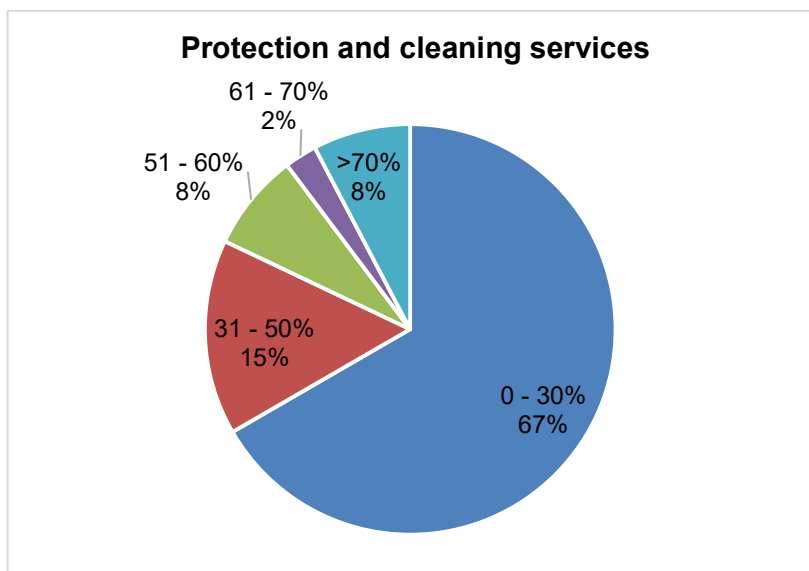
Q26 What percentage of your universities total budget contribute to Admin /Support staff-salaries?

	Frequency	Percentage
0 - 30%	15	38.5
31 - 40%	4	10.3
41 – 50%	4	10.3
51 - 60%	8	20.5
61 - 70%	5	12.8
>70%	3	7.7



Q27 What percentage of your universities total budget contribute to Protection and Cleaning services (incl salaries)

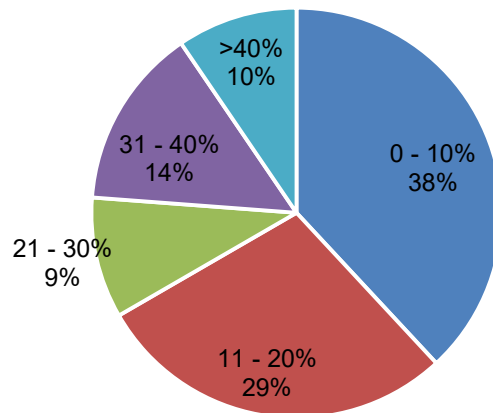
	Frequency	Percentage
0 - 30%	26	66.7
31 - 50%	6	15.4
51 - 60%	3	7.7
61 - 70%	1	2.6
>70%	3	7.7



Q28 What percentage of your universities total budget contribute to Travelling and accommodation expenses?

	Frequency	Percentage
0 - 10%	16	38.1
11 - 20%	12	28.6
21 - 30%	4	9.5
31 - 40%	6	14.3
>40%	4	9.5

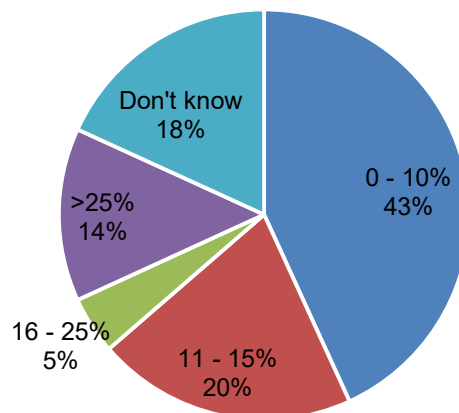
Travelling and accommodation expenses



Q29 How much % (percentage) of the university expenditure contribute to Refreshments/entertainment expenses

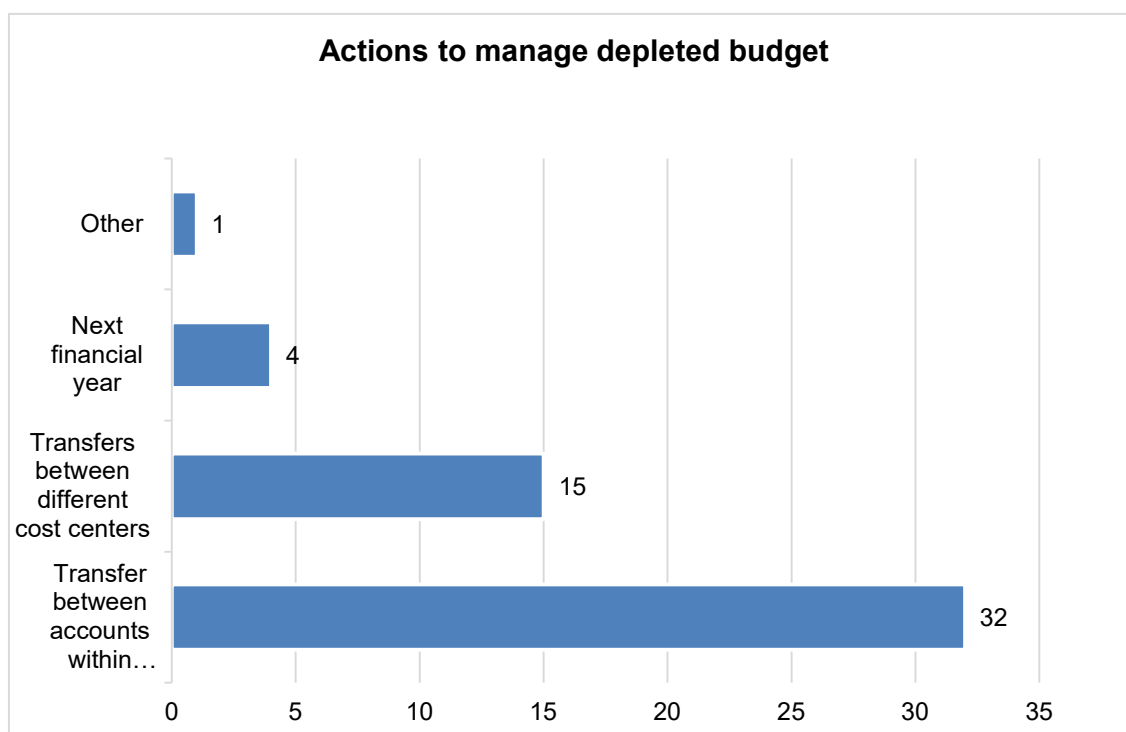
	Frequency	Percentage
0 - 10%	19	43.2
11 - 15%	9	20.5
16 - 25%	2	4.5
>25%	6	13.6
Don't know	8	18.2

Refreshments/entertainment expenses



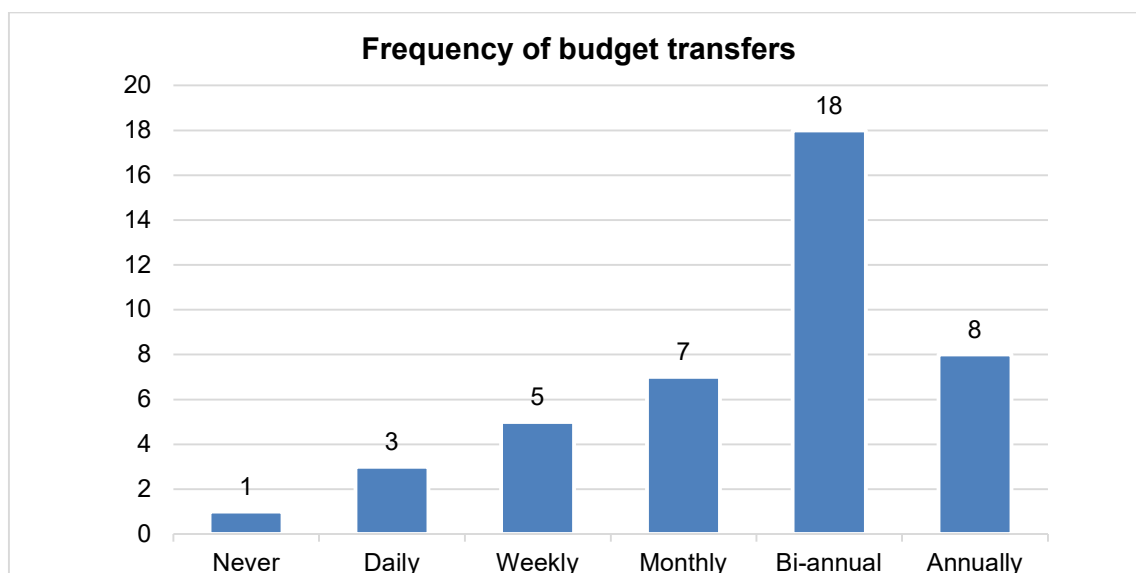
Q30 Sometimes a department need to buy or pay for something, but the budget is depleted. What does your department do?

	Frequency	Percentage
Budget transfers between expenditure accounts within a cost centre/department	32	61.5
Budget transfers between different cost centres/ departments	15	26.9
Reject the requisition and ask the applicant to wait for the next financial year to make the purchase or payment	4	9.6
Other (please specify)	1	1.9



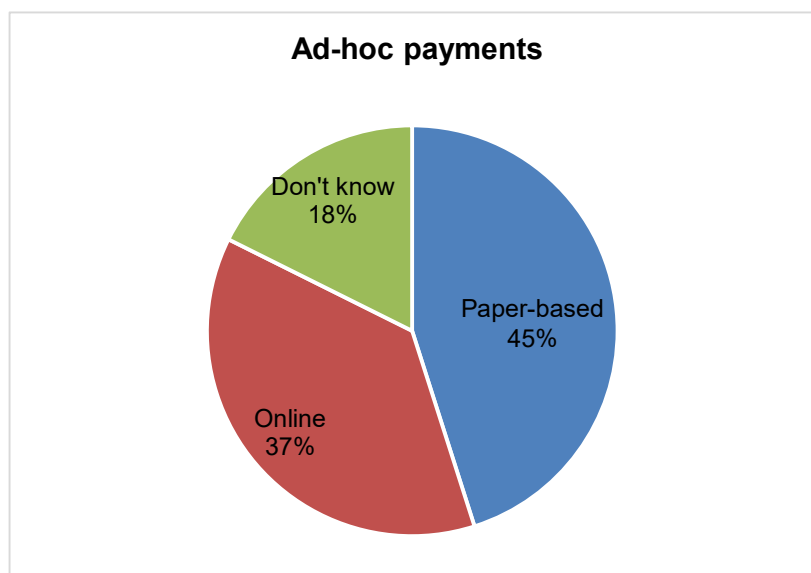
Q31 How often are budget transfers done?

	Frequency	Percentage
Never	1	2.0
Daily	3	6.0
Weekly	5	12.0
Monthly	7	28.0
Bi-annual	18	36.0
Annually	8	16.0



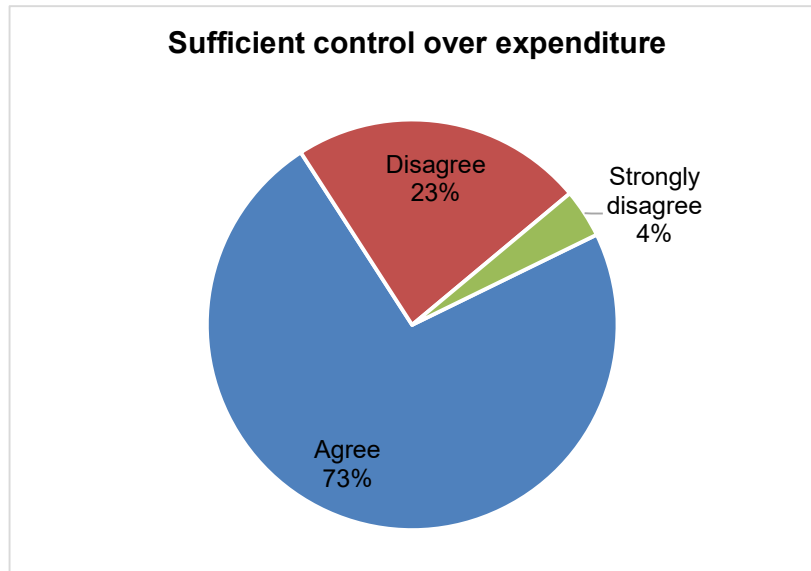
Q32 There are always ad-hoc payments outside the procurement system. How does your university initiate these payments?

	Frequency	Percentage
Manual paper-based requisitions	23	45.1
Online requisitions	19	37.3
Don't know	9	17.6



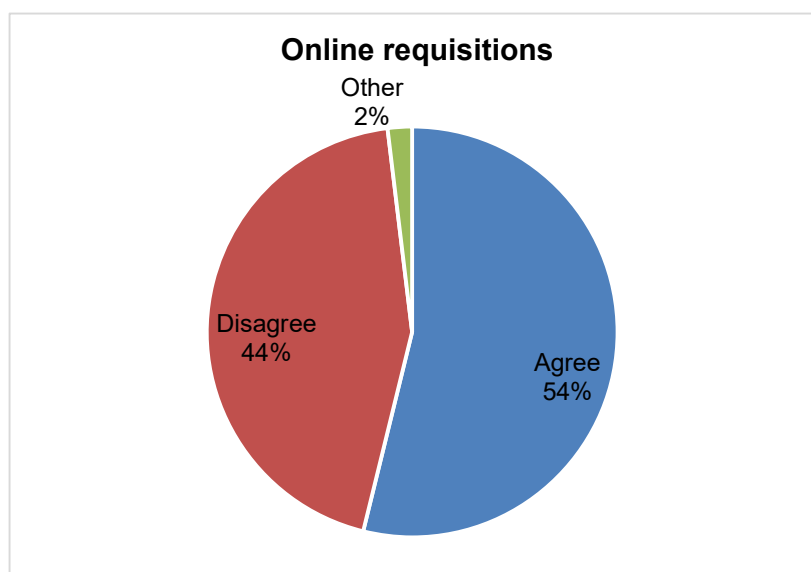
Q33 There is sufficient control over the expenditure on a department/cost centre budget?

	Frequency	Percentage
Agree	38	73.1
Disagree	12	23.1
Strongly disagree	2	3.8



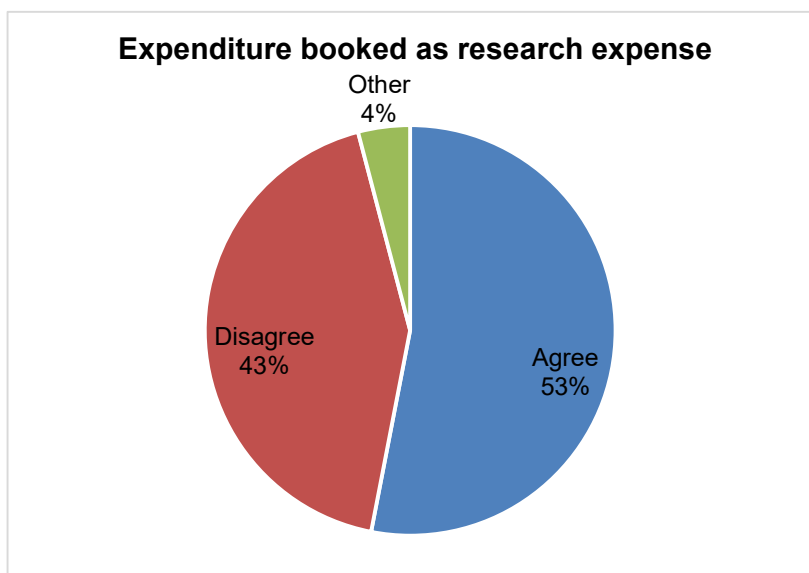
Q34 Your department use online requisitions for internal departments purchases?

	Frequency	Percentage
Agree	28	53.8
Disagree	23	44.2
Other (please specify)	1	1.9



Q35 Air travel tickets, travelling cost, subsistence allowance and other research expenses e.g. laptops used by researchers are all booked under Research expenses?

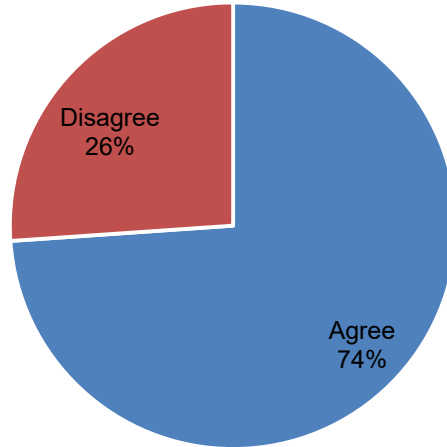
	Frequency	Percentage
Agree	29	46.4
Disagree	21	37.5
Other (please specify)	2	3.6



Q36 Are air travel tickets, travelling cost, subsistence allowance and other expenditure to enable the research are booked to the actual expense type such as travel expenses; overseas travel, accommodation, etc. in the general ledger accounts.

	Frequency	Percentage
Agree	34	60.7
Disagree	12	21.4

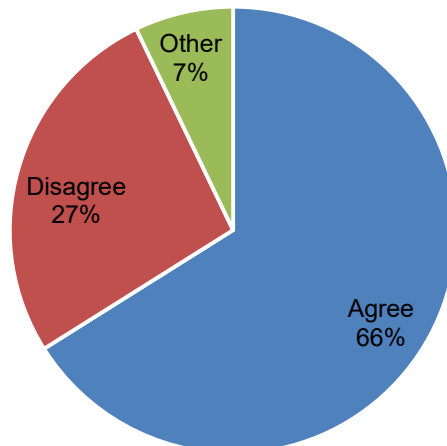
Expenditure booked as actual expense



Q37 The department of Higher Education provides Universities with a NRF/ other Research Grant that is claimed after it the expenditure actually occurred. You believe that the university should bring in this expected income and expected expenditure as a budget for the expenditure where it will probably be spent, for example on research consumables, traveling air tickets, printing and travel allowances.

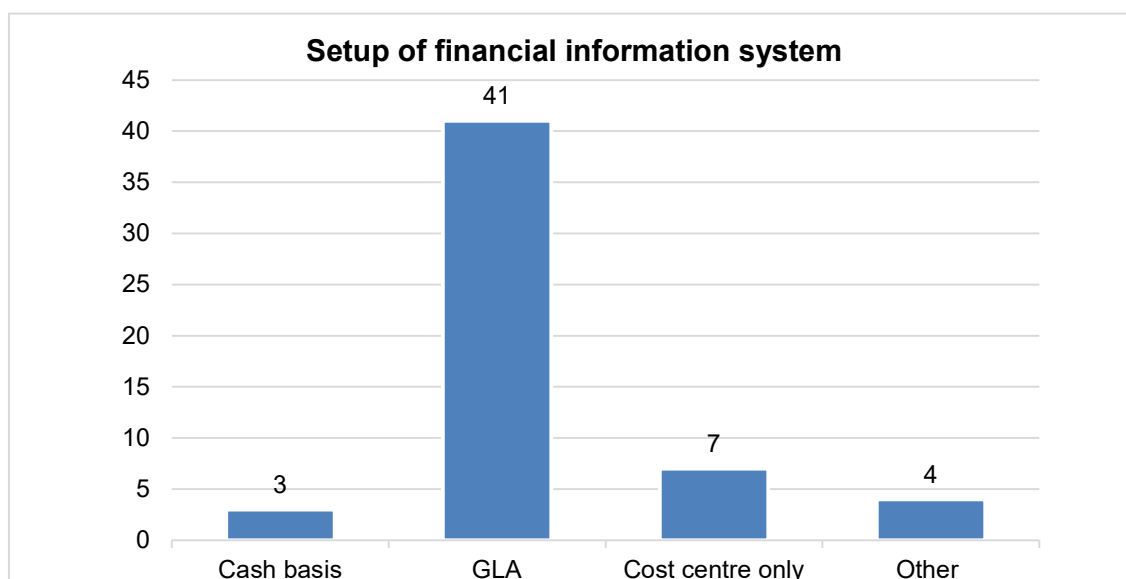
	Frequency	Percentage
Agree	37	66.1
Disagree	15	26.8
Other (please specify)	4	7.1

Expected income and expected expenditure



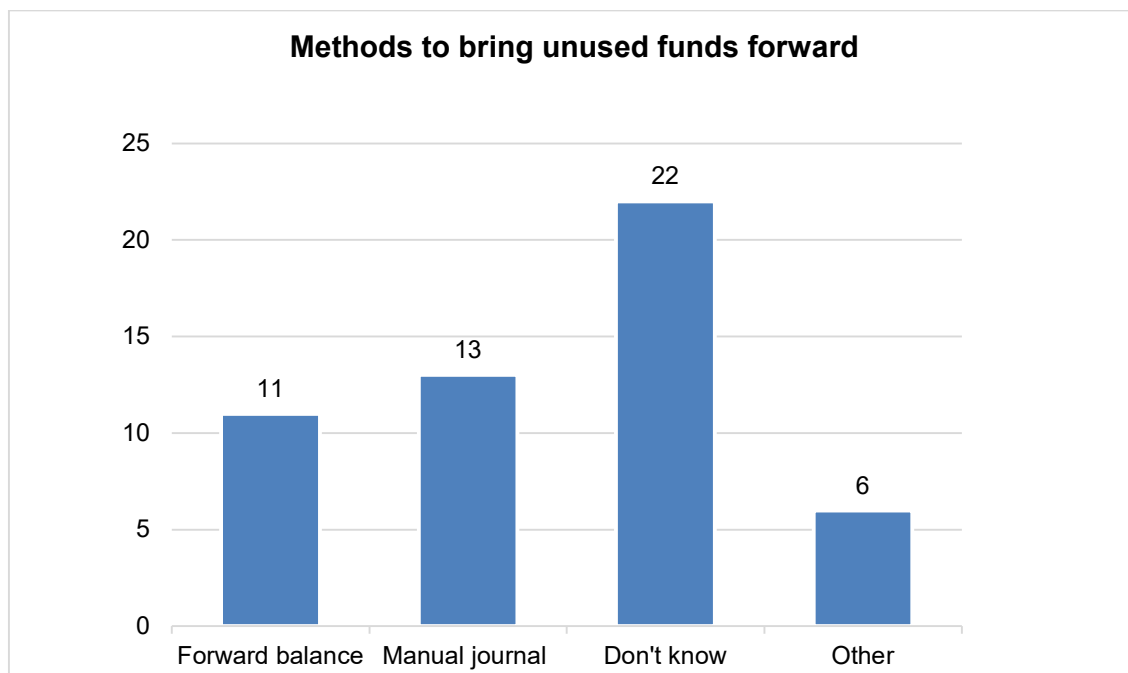
Q38 How is the financial information system setup to control expenditure? Please mark all relevant boxes.

	Frequency	Percentage
On Cash basis for income driven cost centres	3	5,77
On cost centre and account line item (GLA)	41	78,85
On Cost centre only	7	13,46
Other (please specify)	4	7,69



Q39 Which of the following methods are used to bring UNUSED Outside funding forward to the new year?

	Frequency	Percentage
System is setup to bring the balance of the cost code forward to new year	11	21,15
Manual journal from prior year to current year	13	25
Don't know	22	42,31
Other (please specify)	6	11,54



Q40 Does your university bring in the expected income per department's cost codes as part of the annual budget?

	Frequency	Percentage
Strongly agree	6	10.7
Agree	17	30.4
Disagree	6	28.6
Strongly disagree	8	14.3

