

**FINANCIAL PREPAREDNESS
OF HEADS OF DEPARTMENTS
IN THE FACULTY OF HEALTH SCIENCES
AT THE DURBAN UNIVERSITY OF TECHNOLOGY
KWAZULU-NATAL, SOUTH AFRICA**

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**Submitted in fulfilment of requirements for the award of a Masters Degree in
Accounting (Management) Degree, Durban University of Technology**

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Declaration

I, Wendy Allison, hereby declare that this research thesis is wholly my own work, and that all references to the best of my knowledge are accurately reported. This research thesis has never been submitted for a Degree in any institution other than the Durban University of Technology for examination purposes.

I have not plagiarised the work of anyone else in completing this thesis, and have appropriately referenced the work of other people I have used.

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Abstract

This study investigated the financial knowledge and skill levels of the Heads of Departments in the Faculty of Health Sciences (FoHS) at the Durban University of Technology (DUT). These department heads in the FoHS receive no formal training in financial management, yet are required to manage budgets and ensure that their department is financially viable. The study established the financial management proficiency of the Heads of Departments with a view to offering ways in which the financial management of the department heads could be improved.

The data generated used a combination of open-ended and closed-ended questions, comprising of both qualitative and quantitative methodology, which followed a pragmatist paradigm. A total of 22 participants, all of whom served as the Heads of Departments between 2013 and 2020 were included in the sample. The researcher used SPSS Version 26[®] to analyse the quantitative data, and NVIVO to analyse the qualitative data. The identities of all the Heads of Departments in this study are withheld to maintain anonymity.

The findings indicated that the financial management skills of these department heads are severely lacking, resulting in departments with compromised financial management. Added to this, universities can no longer rely on 1st or 2nd stream income alone, but departments need to create and manage 3rd stream income. None of this, especially the management of 3rd stream income, is possible without the relevant financial management training. These Heads of Departments require training in the creation of their budgets, as well as in the implementation and control thereof. The department heads agreed that they do not have these skills, and expressed a desire for financial management training.

Keywords: Financial Management, 3rd Stream Budgeting, Healthcare, University.

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Abbreviation and Terminology

CAPEX:	Capital Expenditure
CCPE:	Centre for Continuous and Professional Education
CTG:	Clinical Training Grant
DUT:	Durban University of Technology
DHET:	Department of Higher Education and Training
ECP:	Extended Curriculum Programme
EXCO:	Executive Committee (per Faculty)
FTE:	First Time Entry
HELDP:	Higher Education Leadership Development Programme
HESA:	Higher Education South Africa
HOD:	Head of Department
ITSS:	Integrated Tertiary Software System
LINE ITEM:	Traditional Budget format that identifies objects-of-expenditure (salaries, benefits, travel, and so forth) rather than their intended programmatic use
NSFAS:	National Student Financial Aid Scheme

OPEX: Operational Budget: Core Budget of the University reflecting all operational revenue and expenses

SFA: Strategic Focus Area

SPECIAL FUNDS BUDGET: Budget established for designated programs or services

UCDG: University Capacity Development Grant

CHAPTER ONE: INTRODUCTION

1.0 Introduction

From 2000 to 2009, real state appropriations per full-time equivalents (FTE) student decreased by 1% per annum. This resulted in shifts by universities towards second and 3rd stream funding to compensate for the relative decrease in the state's contribution and remain financially viable (Ntshoe and De Villiers 2013). Departments, which are the lowest sub-units within the University structure, were tasked to manage their finances to ensure financial viability. Although finance officers were devolved to Faculties to assist in financial matters, the Heads of Departments remained the custodians of financial management and viability. This came without development or empowerment in financial management.

This study investigated the financial knowledge and skill levels of the Heads of Departments in the Faculty of Health Sciences (FoHS) at the Durban University of Technology (DUT). The findings provide direction for the empowerment of the department heads in financial management. The FoHS offers certificates, diplomas, Bachelors degrees, Masters and Doctoral programmes, in some health care professions as well as in the allied health professions. Many of the professions offered at DUT include clinical service training.

When health professional academics are appointed as the Heads of Departments at DUT, they are expected to create and manage budgets, 3rd stream income, create and manage project budgeting, increase their department's financial viability, maintain financial control, manage programme budgeting, follow the procurement process, as well as oversee asset control. The departmental budgets are often in excess of millions of Rands. DUT's financial policies and procedures delegate these financial responsibilities to the Heads of Departments (DUT 2012b).

The Heads of Departments in the FoHS are required to be proficient in business management, as well as in their other management duties, which include health service management, general student training management, and staff personnel

management. Since the department heads are academics in their clinical professions, they have insufficient knowledge and skills in the area of financial management, (G.H. Bass¹, 2020 personal communication, 15 December 2020). Each department within the FoHS is unique in its own right. Each belongs to a professional body, where very specific and unique rules and regulations need to be adhered to.

1.1 Background

Generally, academics appointed as the Heads of Departments within the FoHS have not received training in the area of financial management, (G.H. Bass, 2020 personal communication, 15 December 2020). While some of the department heads work with finances on a regular basis, others, particularly health professionals, would prefer to avoid working with financial matters (Morton Thomas and Smith 2016). According to the University (DUT), the Heads of Departments are expected to manage programme and project budgeting, to account for 3rd stream income within their units including clinics, to manage their departmental financial viability, to manage their departmental budgets in respect of operational expenses, student levies, capital expenditure, external funding and many other financial management aspects (DUT 2018). Having financial management training is vital to the planning, operating, leading, and controlling of their respective departments.

One of the responsibilities of the Executive Dean's office includes reporting on external funding received by departments within the FoHS. The researcher observed, when deployed to the FoHS Executive Dean's office to manage external funding received by departments, that the Heads of Departments were inadequately trained in the area of financial management. This affected their ability to manage their finances, causing a loss to the department and ultimately to the Faculty.

¹ Mr. G.H. Bass is a former Acting Dean, Deputy Dean of the FoHS and Head of Department: Department of Dental Sciences at DUT. He also served for a period as Acting Registrar of DUT. During his time as a lecturer he lectured financial management to a number of departments in the FoHS.

In DUT's Strategic Plan 2.0 (DUT 2017), as well as DUT's revised Strategic Plan "ENVISION2030" (DUT 2020), the strategic objective is to build stewardship across the University, to promote sustainability and the optimisation of all DUT resources and facilities, and to encourage the diversification and maximisation of DUT's income streams, particularly 3rd stream income. Barr and McClellan (2011) confirm that with the increasing need for government funding in higher education, the need for the development of 3rd stream income has become a necessity in higher education (Ntshoe and De Villiers 2013).

Barr and McClellan (2011) explain that being skilled in terms of financial management is an essential skill for leaders in the health sectors of higher education. The department heads within the FoHS at DUT are required to balance both academia and business in making their departments viable. These Heads of Departments, however, are health professionals in their respective health fields, with little or no financial training. If a highly experienced health professional, employed as an academic head, spends less time on the academic duties and more time on the administrative function, departmental efficiency, the Faculty, the University, and the training of future academics, as well as on the training of future healthcare professionals, is negatively impacted (Darabi, Macaskill and Reidy 2017).

The fourth strategic focus area within the DUT's strategic plan 2.0, Strategic Focus Area (SFA) 4 'Building a Sustainable University', suggests that this study is essential for DUT (DUT 2017), as well as for DUT's Strategic Plan 2020-2030: ENVISION2030 (DUT 2020). Qualified financial management of departmental finances is essential in building a financially sustainable Faculty and University. Financially empowered Heads of Departments will proactively seek avenues to address financial management shortfalls within their departments and ensure financial sustainability. This will promote development of sustainable growth within their department, ensuring that planning, resource allocation, risk assessment and quality is maintained at all levels (DUT 2017) and (DUT 2020). Adequate financial management within a department impacts directly on the financial viability of the department, the Faculty, and ultimately the University.

In order to build relationships across the University, promoting sustainability and the optimisation of all DUT's resources and facilities needs to take place. Focus must also be placed on the maximisation of income streams, particularly 3rd stream income. To achieve this, the Heads of Departments will need to be appropriately trained in the area of financial management.

Therefore, this study sought to examine the financial preparedness of the Heads of Departments within the FoHS at DUT, South Africa.

1.2 Problem Statement

The Heads of Departments in the FoHS receive no formal training in financial management, yet are required to manage budgets, which in some cases exceed one million rand, and at the same time ensure that their department is financially viable. The study will establish the financial management proficiency of the department heads with a view to offering ways that the financial management of the Heads of Departments can be improved. The need for proficiency in financial management is exacerbated by the fact that 48.7% of the FoHS have departments that are not financially viable.

This study will determine whether the Heads of Departments in the FoHS have been or are adequately trained, or have financial skills in managing finances as required in their positions. Moreover, the need exists to determine methods to develop the required financial management knowledge and skills of the department heads. If financial management skills are not improved, the current situation where 48.7% of departments in the FoHS are not viable, will continue and may deteriorate further in the future.

1.3 Aim

This study aims to investigate the knowledge, skills, understanding, and management of finances by the Heads of Departments within the FoHS at DUT.

1.4 Objectives

- i. To ascertain the knowledge and financial skills required of the Heads of Departments within the FoHS at DUT.
- ii. To determine the training needs of the Heads of Departments within the FoHS to allow for more effective financial management knowledge and skills.
- iii. To recommend methods by which the financial management knowledge and skills required of the Heads of Departments within the FoHS may be developed.

1.5 Research Questions

- i. What are the knowledge and financial skills required of the Heads of Departments within the FoHS at DUT?
- ii. What are the training needs of the Heads of Departments within the FoHS to allow for more effective financial management knowledge and skills?
- iii. What are the methods by which the financial management knowledge and skills required of the Heads of Departments within the FoHS may be developed?

1.6 Research Hypotheses

H₀: There is no need for training in the area of financial management for the Heads of Departments within the FoHS at DUT.

H₁: There is the need for financial management training for the Heads of Departments within the Faculty of Health Sciences at DUT.

H₀: Training needs of the Heads of Department does not allow for more effective financial management knowledge and skills.

H₁: Training needs of the Heads of Department does allow for more effective financial management knowledge and skills.

1.7 Significance of the Study (Justification)

In order to develop sustainable growth within departments, to ensure planning and the optimisation of all resources and facilities, as well as to maximise income streams, particularly 3rd stream income, it is vital that the Heads of Departments are trained in the area of financial management.

The financial viability of departments in the FoHS between 2011 and 2017 has been problematic, with unviable departments averaging 48.7% of the Faculty over a seven year period. Table 1.1 below shows the number of departments that were financially unviable per year between 2001 and 2017:

Table 1:1 Financial Viability of Faculty of Health Sciences per Year

FISCAL YEAR	NUMBER OF DEPARTMENTS FINANCIALLY UNVIALE	PERCENTAGE
2011	Four of nine	44.4%
2012	Four of nine	44.4%
2013	Six of ten	60.0%
2014	Seven of ten	70.0%
2015	Six of ten	60.0%
2016	Two of nine	22.2%
2017	Four of ten	40.0%
	Average	48.7%

Source: Annual Quality Report – Faculty of Health Sciences 2020 (MIS DUT)

Consequently, it is imperative to examine the financial preparedness of the Heads of Departments within the FoHS at DUT and thus enhance the financial sustainability of the Faculty and the University.

In an effort to raise the financial viability of the departments within the FoHS, skills development in terms of financial management of the Heads of Departments is crucial to the financial health of the departments, the FoHS as well as the University. This study may result in the empowerment of the department heads so that their financial management skills will improve and that their departments will become financially sound and viable.

1.8 Scope of the Study

This study will focus on the Heads of Departments within the FoHS at DUT. While it is aimed at the department heads, the study should be relevant to administrators and health workers at varying levels in departments and clinics.

The FoHS is the chosen case study. Hussein, Maelah and Amir (2016) highlight that healthcare managers have unusual characteristics as business entities, due to the nature of their activities that include both health services and management. The

financial decisions made by members within the FoHS are consequently crucial, as incorrect financial decisions can incur financial losses and affect the efficiency and viability of departments. The FoHS provides services such as the training of healthcare professionals, and driving community-based projects, not products.

While there are eleven departments within the FoHS, the Heads of Departments who have served since 2013, twenty-two in total, were interviewed. In addition, five clinics offered by five of the eleven departments, offer a clinical service to the community, students and staff.

1.9 Delimitations

The following delimitations are boundaries set by the researcher, which cannot be controlled for the purpose of this study:

- The researcher is an administrator within the Faculty and consequently, a degree of professional interaction occurred with some of the participants. Thus, the use of structured interviews minimised any obtrusion and influence on participants.
- This study was confined to the current and former Heads of Departments in the FoHS at DUT. The findings or results of this study can be generalised to other professions, or other universities.
- All available persons who met the research criteria participated in the research. Consequently, a saturated homogenous purposive sample was used.
- All the participants' identities are protected during the study and they will be referred to as being anonymous Head of Department (HoD) numbers.

1.10 Limitations

The following limitations are influencers that cannot be controlled for the purpose of this study:

- Only the Heads of Departments who have served between 2013 and 2020 were included in the sample population. The department heads who left prior to 2013 could not be reached.
- The Heads of Departments who served during this time, but are no longer employed at DUT, are not included in the sample population.
- The current and former Executive Deans of the Faculty were excluded from the study

1.11 Structure of the Study

This thesis is comprised of five chapters.

Chapter one provides a background to the study, which directed the chapter towards the aim and research objectives and consequently, the investigation into the Financial Preparedness of the Heads of Departments within the FoHS. The flow of the thesis is also included in this chapter.

Chapter two presents a review of the literature by initially discussing the theoretical review, followed by an overview of approaches to, and conceptions of financial management in healthcare.

Chapter three details the research design and methodological rationale employed in this study.

Through the medium of figures and tables, chapter four reports on the findings and analysis regarding the necessity for knowledge, skills, understanding, and

management of finance by the Heads of Departments within the FoHS at DUT. This chapter will present the findings of both quantitative and qualitative analysis. Overall, this chapter focuses on financial management within the University environment through the results and discussion.

Chapter five forms the final chapter of this thesis. It provides the summary, conclusions, and recommendations of the thesis, based on the findings presented in chapter four. This final chapter also identifies the de-limitations and limitations of the study and considers future directions for this research, without compromising the quality of the findings in this thesis.

1.12 Chapter Summary

In higher education management, being skilled in terms of financial management is an essential skill for the Heads of Departments, administrators, and health workers at varying management levels in order to improve financial viability, to manage departmental budgets in respect of operational expenses, to negotiate student levies, capital expenditure, and external funding, among others.

Without the correct knowledge and skills in the area of financial management, the Heads of Departments may not be successful in addressing financial management within their departments, or to ensure that their respective departments can be financially viable and meet the targets set in the University's strategic plan.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

The preparedness of financial management of managers in a University of Technology is determined and discussed. Academic managers are invariably not trained in financial management, yet are required to manage budgets which usually run into millions of Rands. The Heads of Departments in the FoHS are not well trained in financial management. These department heads receive financial training as part of their undergraduate qualifications but this too, is limited (G.H. Bass², 2020 personal communication, 15 December 2020). Consequently, financial management decisions are compromised, with some departments being financially unviable and their departments requiring cross-subsidisation to continue offering qualifications in their specific fields.

In this chapter, the literature determining the financial preparedness of the Heads of Departments in higher education, with particular reference to the academic health sector, will be discussed. This review will discuss the conceptual review, theoretical review, and empirical review of financial management. Moreover, the conceptual framework for this study will be established. Thereafter, the methodologies and approaches of University authorities to the financial management of academic Heads of Departments will be investigated and discussed.

2.1 Conceptual Review

The responsibilities of the academic Heads of Departments include the provision of strong academic leadership and management, which includes financial management (University of Sheffield 2013). The department heads should be equipped to deliver on the departmental strategy, which aligns with the Faculty and the University's

² Mr. G.H. Bass is a former Acting Dean, Deputy Dean of the FoHS and Head of Department: Department of Dental Sciences at DUT. He also served for a period as Acting Registrar of DUT. During his time as a lecturer he lectured financial management to a number of departments in the FoHS.

strategic plan. In order for the department to achieve its highest possible standards of excellence, with the support of the Faculty the Head of Department should lead, manage, and advance the department. The department heads must comply with financial policies and procedures at all times, ensuring that the budgeting, income, expenditure, and financial development of the department is well managed (University of Sheffield 2013).

It is imperative to departments that the Heads of Departments have a firm understanding of all sources of revenue as well as budgeting skills. Should the department's major source of revenue be from a specific academic programme, their budgets would be adversely affected by a reduced enrolment. This is a significant driver in the financial viability of departments (Barr and McClellan 2011).

DUT's Strategic Plan 2.0 (DUT 2017), as well as DUT's revised Strategic Plan "ENVISION2030" (DUT 2020), focuses on building a sustainable University. The objective for this includes building stewardship across the University to promote sustainability and the optimisation of all DUT resources and facilities, and importantly, the diversification and maximisation of DUT's income streams, in particular, 3rd stream income. This would, in addition, include optimising the use of DUT resources and facilities; developing a culture of considered reduction of consumption and wastage; introducing strategies to promote sustainable growth; introducing fair, transparent, equitable competition, and cost-effective supply chain management, as well as fostering environmental consciousness. The revised DUT Strategic Plan, "ENVISION2030" (DUT 2020) prompts a sustainable and efficient business model. It also includes improving the efficiency of resource allocation and utilisation. Central to sustainability is the generation of 3rd stream income. The units within departments generating 3rd stream income are considered auxiliary units. Within the FoHS at DUT, these units could be clinics or short courses offered by departments. The income and expenses relating to 3rd stream income must abide by institutional policies and procedures. The expenses generated by these units should be funded by the income thereof so that the units themselves become profit-making units, unsubsidised by the University (Barr and McClellan 2011).

Financial Management does not only entail overseeing the finances of the department but also monitoring the resources assigned to the department. This includes all available facilities and resources. These facilities could include lecture venues, laboratories (which are specialised in respect of the offerings in Health Sciences), specialised vehicles, as well as specialised equipment and instruments (Barr and McClellan 2011). The budget from which these assets such as specialised equipment, instruments and vehicles) are purchased, is known as the Capital Expenditure budget (CAPEX). The CAPEX budget supports the improvements in technology and includes the supply of equipment, furniture, building, infrastructure, and other expenses related to projects.

When it comes to decision-making, the management of the department's financial affairs can be much more complex than simply a series of procedures and processes. Unexpected events that affect the budget do occur. All stakeholders should make decisions that positively impact their department (Barr and McClellan 2011).

When faced with financial shortfalls in specific budgets, departments at DUT are given the opportunity to transfer funds between line items on an annual basis (DUT 2012a). This transferring of funds does not change a department's total operational budget and is usually requested from and authorised by the University's finance department. Barr and McClellan (2011) reinforce that transferring budgets between categories of expenditure must be approved by the institutional budget office. Understanding the measured implementation of an annual budget review creates an environment for the Heads of Departments to practice efficient financial management. The department heads must consider whether or not a transfer from one line item would lead to a shortfall on another line item thereafter. Another issue to be considered is whether the following year's budget would be based on the initial budget, or on the revised budget. If the Heads of Departments had a more in-depth understanding of financial management within their department, they would have a thorough understanding of this process (G.H. Bass³, 2020 personal communication, 15 December 2020).

³ Mr. G.H. Bass is a former Acting Dean, Deputy Dean of the FoHS and Head of Department: Department of Dental Sciences at DUT. He also served for a period as Acting Registrar of DUT. During his time as a lecturer he lectured financial management to a number of departments in the FoHS.

In a higher education department, the greatest cost driver with the greatest effect on financial sustainability and profitability is staff salaries (Barr and McClellan 2011). Given that staff at DUT are required to obtain Masters degrees, and that pursuing a PhD is strongly recommended, departmental costs are increased even further. It can be safely assumed that the higher the qualifications of staff within the department, the higher the staff salary budget. Being a University requirement, this is a cost that is expected, and the Heads of Departments need to factor this in to ensure the sustainability of their departments. The department heads are however unaware of how to mitigate against such a basic requirement as having the right qualified staff in the University and their departmental financial management is compromised. The generation of departmental income through research and maximising state subsidy through Doctoral and Masters students is poorly understood.

DUT's Strategic Plan 2.0 (DUT 2017), as well as DUT's revised Strategic Plan "ENVISION2030" (DUT 2020), focus on building a sustainable University. The objective for this strategic focus area includes developing a sustainable growth framework that ensures rigorous and aligned planning, resource allocation, risk assessment, and quality assurance. This would prioritise the need for the budgeting and resource allocation to be aligned with the strategic plan and planning cycle, as well as aligning the divisional budgets to be more reflective of the current challenges and expenditure.

Barr and McClellan (2011) highlight the need for budget managers to be able to identify individuals in departments who are qualified to control various financial aspects. This is vital for financial decision-making. Being familiar with whom to contact in the event of an accounting error, or when a purchase order is delayed, is essential to the efficiency and effectiveness of any department. Barr and McClellan (2011) explain that the Heads of Departments must also be able to assess the financial competencies of colleagues within the department. This will assist in achieving efficient financial management. Six of the departments in the FoHS have technicians or administrative staff who manage or control the finances of the department, in consultation with the Heads of Departments. Managing the budget in a department involves multiple cost centres and a multitude of different accounts. If the department has individuals who are able to manage the financial matters of the department, they can be an asset to

the department and consequently, to the Heads of Departments (Barr and McClellan 2011). A good finance assistant will be able to identify what the department needs to know and will seek guidance from others within the institution, to attain the needed information and skills. The individual or individuals who manage or control the budgets must be in a position to provide information and data to those who make the decisions, namely the Heads of Departments, who are the immediate line managers (Barr and McClellan 2011).

The Heads of Departments are accountable for all resources that are entrusted to them, thus it is imperative that the department heads have control measures in place (DUT 2018). In order to manage the resources of a department, Faculty, or University effectively, financial control procedures are crucial (World Health Organisation, 2008). DUT's Finance Policies and Procedures indicate that the control procedures must be strictly adhered to (DUT 2018). The framework for financial control is one of the most important necessities of a budget (Barr and McClellan, 2011). This control can range from highly centralised to highly de-centralised. The highly centralised control would see approval at a central point. It is a costly and cumbersome process, expected to limit the professional development of the department heads. The highly de-centralised control would see approval at the departmental level, allowing decision-making at the Head of Department level. This would require the department heads to receive training and to be fully conversant with financial policies, procedures, and processes. In order for to be trained in control measures, however, they need to have been trained in the creation, implementation and control of their budgets. While policies, procedures, and processes are available to the Heads of Departments, they need to be trained in the full understanding and application thereof. (G.H. Bass⁴, 2020 personal communication, 15 December 2020).

⁴ Mr. G.H. Bass is a former Acting Dean, Deputy Dean of the FoHS and Head of Department: Department of Dental Sciences at DUT. He also served for a period as Acting Registrar of DUT. During his time as a lecturer he lectured financial management to a number of departments in the FoHS.

2.2 Conceptual Framework

Assuming the Heads of Departments of departments within the FoHS are financially skilled, this research attempts to establish that departments with the required financial management skills should be managed as determined in the diagram below (Figure 2.1). The following diagram, designed by the researcher, is a representation of the conceptual review. A financially skilled manager is required to manage the following core responsibilities (DUT 2017):



Figure 2.1 Financially Skilled Head of Department

Source: Author's design

- **Improved financial viability:** this encompasses proactively seeking avenues to address shortfalls, promoting the optimisation of all resources and facilities, and developing financial skills to optimise sustainable growth.
- **Increased 3rd stream income:** this includes developing and managing 3rd stream income, project budgeting, setting targets for revenue and expenditure as well as determining the form and value of the revenue required.
- **Aligned programme budgeting:** this includes programme budgeting in respect of operational budgets, levies, capital expenditure, external funding, and others. It also includes interpreting how budgets are allocated and spent, ensuring that targets address the efficiency and effectiveness of the department, distributing scarce resources across programmes, and processing in such a way as to maximise benefit.
- **Increased compliance to the University strategic plan:** this embraces delivering the departmental strategic plan, which aligns with the Faculty and University strategic plan. It also includes storing relevant data and information in order to make informed strategic plans and decisions.
- **Increased financial control:** this is a very important function that includes controlling the use, misuse, and abuse of resources through budgeting, tracking, and reporting on financial resources, ensuring planning, resource allocation, risk assessment, and ensuring that quality is maintained at all times. Regular reviewing and reporting regularly, constant monitoring and evaluation of all processes, as well as ensuring that all control measures, instruments, and systems are observed.
- **Quality and Risk:** this includes complying with University policies, procedures, and professional standards and practices, including overseeing the quality of decisions made by all stakeholders.

The notion of the financially skilled Heads of Departments are contingent upon the understanding that the department heads have the requisite skills and understanding to enable the successful implementation and achievement of these six core responsibilities (DUT 2017). To the extent that such knowledge and skills are available to the respective department heads, they will be able to effectively manage their departmental budgeting and finance.

If managers are to be efficient in financial management, they should understand and be proficient in the above core responsibilities. These core responsibilities will be included in the questionnaire and will be discussed in the analysis thereof in chapter four.

2.3 Empirical Review

Several authors have outlined the necessity for leaders to be skilled in the area of financial management. Much literature in this regard, however, does not refer to financial management in universities, nor healthcare departments within a university environment. Lachmann, Knauer, and Trapp (2013) note that empirical evidence in healthcare financial management is weak, since most of the literature refers to the non-university environment. Albeit, financial management in Health Sciences is not much different from financial management in other faculties in universities or general business. Good financial management entails understanding from where income is derived and the management of expenditure (G.H. Bass⁵, 2020 personal communication, 15 December 2020). Connor (2015) also agrees that literature on financial management written for healthcare workers in universities is limited. Some personnel work with finances on a regular basis while others, particularly professional health workers, would prefer to avoid working with financial matters (Morton, Thomas and Smith 2016).

The relationship between management accounting information and the financial performance of healthcare organisations has a substantial impact on the economy of a country (Hussein, Maelah and Amir 2016). Information analysis can greatly influence an organisation's management skills, organisational processes and routines, and the information it controls. The relationship between budget management and managerial performance in healthcare found that the majority of healthcare managers are medical professionals and therefore have insufficient knowledge and skills in the

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area of financial management (Bresnen *et al*, 2017). Within the healthcare environment, financial management is not the most advanced area of activity among healthcare workers and is not instinctive. Given this challenging arena, attention must be directed to the knowledge base available to and used by leaders in healthcare. Importance has been placed on the need for leaders in healthcare management to act in a more pioneering, financially aware, and entrepreneurial way (Bresnen *et al*, 2017).

Ward, Calabrese, and Finkler (2018) endorse the need for an effective healthcare manager to understand financial management. In order to be successful in financial management, this understanding has become imperative. It is, therefore, imperative that informed financial management is cascaded down in an educational institution to the Dean of the Faculty and to the individual Heads of Departments. The Head of Department must be empowered to make the necessary assessment of the financial data and make informed financial decisions. The department heads have to balance the physical environment, the human factor, academic activities, as well as many aspects of financial management. In addition to that, they have to provide quality health services. In order to meet these goals of profitability and financial viability in an efficient and effective manner, the Heads of Departments need to have a firm understanding of financial management (Ward, Calabrese, and Finkler 2018).

Healthcare organisations have many goals, one of which is to be profitable. Other goals include providing quality healthcare services, and improving the well-being of the community (Ward, Calabrese and Finkler 2018). In terms of financial management, an organisation's two goals would be profitability and viability.

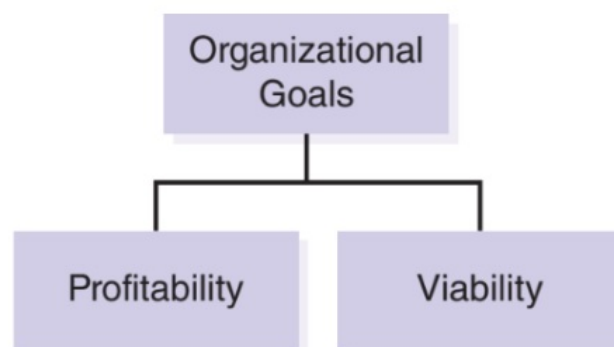


Figure 2.2 Organisational Goals (Adopted from Ward, Calabrese and Finkler 2018:2)

Sin and Amaral (2017) argue that the current education climate has changed to that of mass higher education, knowledge growth, reduced government and public funding to universities, increased emphasis on employment skills, and pressure for more accountability. The increased costs of mass higher education mean that academics, specifically the Heads of Departments, are under constant pressure to produce more with less. With the increased demands of administration and reporting procedures, the department heads are caught having to balance academia and business (Sin and Amaral, 2017). If a highly experienced health professional employed as an academic Head of Department, spends less time on the academic duties and more on the administrative function, the Faculty, the University, the training of future academics, as well as the future of health professionals, is negatively impacted. The Heads of Departments within the Faculty of Health are expected to manage academic activities, curriculum development, research activities, as well as manage the human factor (both staff and students). Added to this, the department heads are tasked with designing and delivering strategic planning, overseeing facilities and physical environment, ensuring the provision of quality healthcare, managing quality and risk assessment and at the same time managing finances of the department. The broad range of duties is complex and the Heads of Departments are often weak in the area of financial management. Consequently, providing administrative support, especially in financial management for those in academic leadership roles, is imperative (Sin and Amaral, 2017).

One of the key difficulties for universities is financial sustainability (Sazonov *et al*, 2015:34). In order for a university to reach its goals in providing academic and research activities, sound financial structures must be in place. Universities are confronted with increased costs in the form of human resources, mass higher education and accountability, as well as other challenges. Additional sources of income other than the State University subsidy, such as 3rd stream income, are indicated in order to meet these challenges.

Budget challenges faced by the Gallaudet University in the USA prompted the university to implement universally accepted practices in higher education, namely, to increase enrolment, to increase 3rd stream income, as well as to identify and implement restrictions on expenditure. To ensure that these expense restrictions were

implemented, accountability was assigned to administration officers within departments. Performance in this regard was monitored regularly by means of reporting. These changes yielded favourable results (Cordano 2018). It should be noted that within higher education in South Africa, enrolment at universities is fixed by the Department of Higher Education and Training (DHET). Moreover, student numbers in the FoHS at DUT are limited by laboratory space and professional boards (South Africa DHET 2018).

Globally, universities are being financially affected by volatile investments, credit tightening, declining private contributions from individuals and corporations, declining state funding, and increased student financial need, leading to decreased tuition revenue (Weisbrod and Asch 2010). Whilst these problems can be overcome individually, collectively they have a negative overall effect on financial management. This notion is confirmed by Powell, Gilleland, and Pearson (2012) that universities are faced with the challenge of experiencing fluctuating unstable state support, while facing considerable pressure to increase efficiency, effectiveness, and transparency. Managing financial resources demonstrates the capability to correctly and efficiently allocate human resources, money, time, and equipment to a project (Cojocaru 2016). These capabilities extend to financial forecasting, organisation, distribution, communication and control. Moreover, in the interests of efficiency and effectiveness, it is necessary to get maximum usage of the resources available (Cojocaru 2016). Due to the increasing pressure of resource constraints on the healthcare industry in general, and on financial management within healthcare organisations in particular, firmer controls in the area of financial processes are imperative. The healthcare industry is faced with limited resources and greater expenditure, whilst it aims to provide better health care at lower costs (Adebanjo, Laosirihongthong, and Samaranayake 2016).

Importantly, quality healthcare requires quality equipment, funds to maintain the equipment, as well as funds to maintain buildings and other assets (Ward, Calabrese and Finkler 2018). Medical equipment is often only obtainable overseas. Consequently, many of the materials and equipment purchased by the University are purchased from international suppliers. Thus, one of the financial challenges facing the University health departments is the international monetary exchange rate. The purchasing power of departments is largely dependent upon the fluctuating exchange

rates, and the US Dollar. In July 2016, the USD was equivalent to approximately R14.78 (Figure 2.3). In April 2020 the USD was equivalent to approximately R19.26, while in July 2021 the USD was equivalent to R14.32. XE Corporation (XE Currency Charts 2021) provided the currency chart which reflects the ZAR (South African rand) vs USD over the last five years.

Whilst the needs of the departments within the University remain stable, the increases in costs due to the changes in the fluctuating exchange rates, is an added financial challenge.

USD to ZAR Chart

US Dollar to South African Rand



Figure 2.3 USD vs ZAR 2016 to 2021 (Xe Currency Charts 2021)

Universities are finding it difficult to retain students, as well as to improve student throughput while simultaneously minimising tuition increases, as well as funding operational expenses (Li 2017). Meeting the needs of all stakeholders (students, employees, state) is a complicated process for all concerned (Li 2017). Higher education institutions, in general, are suffering major losses due to the diminishing funds from governmental sources and rising costs of providing educational services (Lapovsky 2013). In order for universities, and consequently departments to be financially viable, strategies need to be adopted. These include enrolment and financial management (Barron 2017). Within current higher education, financial

viability cannot be sustained from income generated via tuition fees alone (Barron 2017).

Increased student enrolment, combined with the increased costs of university education, has resulted in universities in South Africa having financial challenges. In addition, government funding to universities has been reduced. This has forced universities to increase their tuition fees (Kwasi-Agyeman, Langa and Swanzy 2020). Worldwide, more than 140 million students are pursuing higher education, and this number is growing. Government subsidy for universities in South Africa continues to diminish, while the higher education institutions experience growth in student numbers (Altbach 2013).

In order to allocate overheads (indirect expenditure) to departments, DUT uses a system where Full Time Equivalent (FTEs) are used to apportion these overheads. FTEs are defined as the number of students carrying a full coursework load. To determine the FTEs, several factors are considered, which include teaching inputs, teaching outputs as well as several other institutional factors (Kudangaa 2018).

From 1987 to 2003, government subsidies to higher education institutions were based on enrolment numbers, which meant that DUT's subsidy was based on the number of students enrolled in the University. The revised government subsidy formula is now heavily weighted on both student throughput and research (Kudangaa 2018).

The government subsidises universities in the form of block grants and earmarked grants. These block grants comprise approximately 77% of the total University budgets, excluding National Student Financial Aid Scheme (NSFAS). Universities then report to DHET on the use of these grants. Conversely, the earmarked grants must follow strict guidelines for their specific purpose and require the universities to produce project proposals and annual progress reports. These include foundation and where applicable, clinical training grants. The calculations and annual progress reports of these funds, be they block grants or earmarked grants, depend on HEMIS (Higher Education Management Information System) data (South Africa DHET 2018).

To calculate these grants, there are four sub-block grant categories. These are: teaching input, teaching output, research output, and institutional factors. Research output includes Masters degrees, Doctorate or equivalent degrees, publications, conference proceedings and innovations. Teaching input and output weighting factors are applied to the corresponding HEMIS unweighted enrolled FTE. Funding for Masters degrees would exceed that of Undergraduate degrees, and funding for Doctorate or equivalent degrees would exceed that of Masters degrees. Funding is further broken down into groups, as laid out below. Regrettably, this subsidy system and the calculation thereof is not clearly understood by the Heads of Departments within the FoHS (G.H. Bass⁶, 2020 personal communication, 15 December 2020). The department heads need to understand that departmental academic viability is dependent on undergraduate throughput and the proportionally larger contribution made from postgraduate qualifications and research output. As depicted in table 2.1 below, healthcare professions and clinical sciences are granted higher funding than other professions. The reason for this is that depending on the profession, the number of staff to student ratio differs. In healthcare, there may be situations where the ratio is one staff member to five students, whereas in other professions there could be a hundred students to one lecturer (South Africa DHET 2018).

Table 2:1 Funding Groups for 2019/20 and 2020/1 (South Africa, DHET 2018)

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

Resource Dependency theory is highlighted here, in that with the constraints of the economic conditions facing the government, universities are encouraged to develop the most efficient and effective strategies of managing their financial resources. These

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strategies include improving on research output, publishing peer-reviewed papers, journals and articles (South Africa, DHET 2018). In addition to this, to increase funding and reduce dependency upon the government subsidy, departments at DUT are being encouraged to develop 3rd stream income (DUT 2020).

Due to the limited distribution of resource dependence by universities on multiple revenue sources, declining government funding causes instability and vulnerability. The main funding challenges facing higher education in South Africa are the reduction in government funding, and the dependence on tuition fee as a source of revenue (Wangenge-Ouma and Cloete 2008).

In order to unpack the Resource Dependency theory, three different theoretical models were reviewed, namely, the Agency theory, the Expectation theory, and the Resource Dependency theory.

2.4 Theoretical Review

There are several financial theories, most of which apply to investments, the stock market, and the corporate sector. Reviewing financial theories helps to identify the existing theory in the specific area under investigation. In this regard, the Agency Theory, Expectation Theory, and Resource Dependency Theory were reviewed for this study.

2.4.1 Theory 1: Agency Theory

Teeboom (2018) describes the Agency theory as “the relationship between the principals and agents, as well as the delegation of control”. Principals are clients and their agents, possibly financial planners or portfolio managers, have been hired to oversee or protect the clients’ assets. Another example of an agent may be a lessee. The lessee may be in charge of protecting property that belongs to the principal or client, referred to as the lessor. According to Cheriyan (2013), the Agency theory could be between stockholders and managers, or between debt-holders and stockholders. In higher education, the management board of the university, the Vice-

Chancellor or Principal, the Deputy Vice-Chancellor, or the Deans could be considered the principals. Those who receive salaries or instructions from the principals could be considered the agents. The Heads of Departments in the FoHS in the context of this theory would be agents reporting to the Dean, who is the principal.

Complications in the Agency theory arise due to the conflict of interest between agents and principals (Fitri 2018). The agent has less interest in the asset than that of the principal. This may lead to agents' actions benefiting themselves rather than having the best interests of the principals in mind. In order to ensure that the agent promotes the principals' best interests, the principal may offer a financial incentive. In order to avoid conflicts of interest, the agent should have a stake in the entity. If both the agent and the principal have a common investment, their interests will align. Financial management in higher education is more limited in the sense that complications or conflicts are less likely to occur and conflicts are resolved by mutual agreement. This part of the theory is more relevant to profit-making corporate industry.

In his article "Agency theory as a framework for the government-university Relationship", Kivisto (2007) describes the usage of the Agency theory in a university environment. He asserts that universities are capable of controlling their finances and are able to report, explain, and justify how resources are used. As this research was conducted in Finland, the Finnish government questioned the efficient allocation of resources by the university, which resulted in a lack of trust between the government (Principal) and the university (Agent).

2.4.2 Theory 2: Expectation Theory

Expectation theory is the term structure of interest rates (Malkiel 2015). Investments are made based on future interest rates. Whether an investment is made or not depends on how the forward interest rates compare to the current short-term interest rates.

Chen and Murphy (2019) explain the Expectation theory as one which aims to assist investors in making decisions based upon future interest rates. The theory is to determine what short-term interest rates will be based on current long-term rates in the future. According to Chen and Murphy (2019), the theory suggests that an investor who invests in a two-year bond today, will earn the same amount of interest by investing in two consecutive one-year bonds.

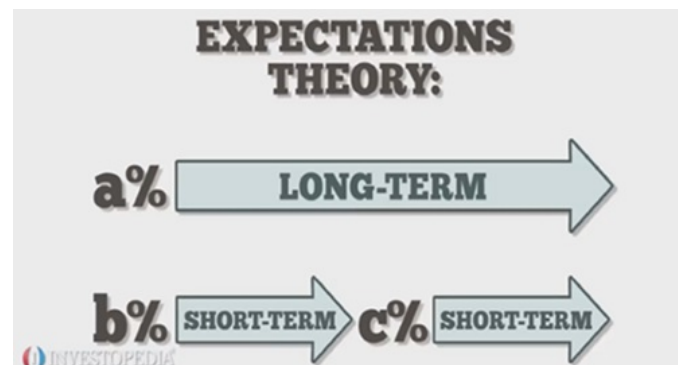


Figure 2.4 Expectation Theory (Chen and Murphy 2019)

Whilst this theory is mostly applicable to the profit-making corporate industry, within the context of higher education, university management does make interest-bearing investments. Interest-bearing investment decisions, however, are not delegated to departments. Nevertheless, the decisions made by management could indirectly influence the viability of Faculties and consequently departments.

2.4.3 Theory 3: Resource Dependency Theory

This study is anchored on the Resource Dependency Theory propounded by Powell and Rey (2015) who describe the Resource Dependency theory as one where the role of the manager is to reduce the dependency of vital resources, as well as to reduce the power of those who exercise control over these resources. With the increasing demand for government funding in higher education, the need for the development of 3rd stream income has become a necessity (Barr and McClellan 2011).

Universities are not viewed as independent but seen as a web of dependent relationships with the external environment and government departments. Powell and

Rey (2015) note that in the current economic climate, with the increased demand for government funding and increased expenditure, Resource Dependency in public higher education universities is critical.

Strategies need to be introduced at the departmental level to create 3rd stream income, in an effort to reduce their financial dependence on the University resources and external funding.

2.5 Theoretical Framework

This study hangs on Resource dependence theory. Given the increased pressure for government funding, the Heads of Departments need to reduce the power that this source of revenue has over their departmental budgets and vital resources, Powell and Rey (2015). As a result of being less dependent upon the University and government funding, the department heads must be empowered to create 3rd stream income. Furthermore, they must be in a position to accurately report on budgeting and have increased financial control.

2.6 Chapter Summary

This chapter reviewed the literature on the subject of the financial preparedness of academic department heads in healthcare in a university. The majority of those in the position of the Heads of Departments received basic financial management training as part of their undergraduate qualification. This financial management training was insufficient for the position of Heads of Departments within a University.

This chapter reviewed the conceptual review, theoretical review, and empirical review of financial management. Moreover, the conceptual framework for this study was established, which included programme budgeting, project budgeting, financial control and improved financial viability.

Furthermore, the financial theories were reviewed. These included the Agency Theory, Expectation Theory and Resource Dependency Theory. This study was anchored on the Resource Dependency Theory. Given the increased pressure for government funding, the Heads of Departments role includes reducing dependency upon vital University resources. The department heads would be empowered to generate and manage 3rd stream income.

The methodology used in this research is discussed in chapter three.

CHAPTER THREE: METHODOLOGY

3.0 Introduction

This research studied the financial management capabilities of the Heads of Departments in the FoHS at the Durban University of Technology (DUT). Good financial management includes both the management of human and physical resources. The data generated by this mixed-method research is both quantitative and qualitative. The researcher was able to provide more in-depth information by combining quantitative and qualitative research, strengthening the findings of the research. The strengths of quantitative research include conceiving how a variable can be measured, measuring data quality, tracing trends and relationships, as well as structuring comparisons by means of representative samples (Punch 2014: 303-306). The strengths of qualitative research include the in-depth study of samples and the study of process and change. The strength of mixed-method research is such that where quantitative research is weak, qualitative research is strong, and vice-versa, thus using both quantitative and qualitative findings in research offers strengths from both, while compensating for the weaknesses found in the other (Punch 2014: 303-306). The mixed-method “allows the researcher to tackle a broader and a more complete range of research questions owing to the fact that the researcher is not confined within the tenets of a particular method of research” (UKEssays 2018).

3.1 Research Design

This research employs a mixed-method design, which includes both qualitative and quantitative methodology and follows a pragmatist paradigm. Pragmatism is a paradigm that supports the use of mixed methods in research. A pragmatic mixed-method study focuses on real-world situations upon which decision-makers are focused upon and consequently, make decisions (Frey 2018). A pragmatic paradigm could be defined as a ‘shared understanding of reality’ and is suited to this study using a mixed-method data source (Rossman and Rallis 2016).

Quantitative research data was generated by means of a questionnaire which was subsequently analysed. Qualitative research data was generated through interviews and was analysed to generate data for this research study. Qualitative data can also be subjective and perceived differently. The researcher's experiences and ideas are integrated into the design and analysis. Qualitative data is necessary to increase knowledge and provide information that can be used for change. The process of this pragmatic mixed-methods study included the gathering of both qualitative and quantitative data concurrently.

The quantitative data was analysed with the use of SPSS - Version 26[®], while the qualitative data was transcribed and analysed using NVIVO.

3.2 Population, Sample, Nature, and Source of Data

Population: The FoHS at DUT consists of eleven departments. The Heads of Departments who have served as the department heads between 2013 and 2020 were included in the sample population, twenty-two in total. Twenty-three invitations were extended for participation in the study. One person declined to participate. As reflected in table 3.1 below, due to the turnover of the Heads of Departments in certain departments, the sample number per department is not equal.

Table 3:1 Population

DEPARTMENT	POPULATION SIZE	SAMPLE SIZE
Basic Medical Sciences	1	1
Biomedical Technology and Clinical Technology	3	2
Chiropractic	2	2
Dental Sciences	4	4
Emergency Medical Care and Rescue	2	2
Community Health Studies	3	3
Homoeopathy	3	3
Medical Orthotics and Prosthetics	1	1
Nursing	1	1
Radiography	2	2
Somatology	1	1
TOTAL	23	22

3.3 Delimitations

The following delimitations are boundaries set by the researcher, which cannot be controlled for the purpose of this study:

- The researcher is an administrator within the Faculty and consequently, a degree of professional interaction occurred with some of the sample participants. Thus, the use of structured interviews minimised any obtrusion and influence on participants.
- This study was confined to the current and former Heads of Departments in the FoHS at DUT. The findings or results of this study may be generalised to other professions, or other universities.
- All available persons who met the research criteria participated in the research. Consequently, a saturated homogenous purposive sample was used.
- All the participants' identities are protected during the study and they will be referred to as being anonymous Head of Department (HoD) numbers.

3.4 Limitations

Limitations are “those characteristics of design or methodology that impacted or influenced the interpretation of the findings” (Shailemo 2013). :

- Only the Heads of Departments who have served between 2013 and 2020 were included in the sample population. The department heads who left prior to 2013 could not be reached.
- The Heads of Departments who served during this time, but are no longer employed at DUT, are not included in the sample population.
- The current and former Executive Deans of the Faculty were excluded from the study

3.5 Sampling

Homogenous purposive sampling was used for data collection in this study. Purposive sampling is chosen when the researcher requires a selective or subjective sample, for example, the Heads of Departments past and present in the FoHS at DUT. There are eight different types of purposive sampling which include maximum variation, homogenous, critical case, typical case, extreme, deviant, total population or expert purposive sampling. Each type has its own purpose. Homogenous purposive sampling, chosen for this study, is defined as a technique that aims to achieve a homogeneous sample, that is, a sample whose units (people, cases, and the like) share the same or similar characteristics, for example, a group of people that are similar in terms of age, gender, background and occupation, (Baran 2016). The participants being addressed in this research are or were the Heads of Departments in the FoHS who are a group of people sharing the same or similar characteristics of the population being studied (Baran 2016). All the department heads share the same attributes, in that despite coming from different health professional backgrounds, they have all served as the Heads of Departments within the FoHS. In addition to that, most of them received a form of basic financial acumen training as part of their

undergraduate qualifications. They are all leaders in healthcare, have strong ethical values, analytical skills, and the ability to recognise challenges and find efficient and effective solutions. They all possess either a Masters degree or a higher qualification and are all active participants in research output as well as in curriculum development.

3.5.1 Data Collection

Primary data, collected from the main source, through qualitative data (interviews) and quantitative data (surveys) has been used for this study in order to get the richness of data and depth of detail to allow for the theorising of the problem being investigated. Qualitative and quantitative data were collected concurrently.

3.5.1.1 Quantitative Phase

In the quantitative phase, the data was collected using structured questionnaires comprising of closed-ended questions. In the interests of straightforwardness, clear understanding, and ease of reading, five-point Likert scale type questions were used for this questionnaire. The survey questionnaire is attached as Appendix B.

3.5.1.2 Qualitative Phase

The tools used to gain this data were semi-structured interviews, with open-ended questions in order to allow for discussion. The Heads of Departments within the FoHS were interviewed in terms of their experiences and knowledge. Questions that led the discussion are attached as Appendix C. The interviews took place in private, at a time and place convenient to the participant. Each interview took on average of 55 minutes. With the participants' permission, the interviews were recorded and later transcribed.

Semi-structured interviews are used to understand how the participants think and feel (Blanche *et al*, 2006). Semi-structured interviews, which are flexible and dynamic, and are multi-dimensional and unstructured in their content, were held in order to give validity to the quantitative data (Lauterbach 2018).

3.5.2 Data Analysis:

3.5.2.1 Quantitative Phase

SPSS - Version 26[®] has been used to analyse the quantitative data. Inferential techniques include the use of correlations and chi-square test values which are interpreted using the p-values. The bivariate correlation will be performed on the (ordinal) data.

3.5.2.2 Qualitative Phase

NVIVO was used to analyse the qualitative data. Interviews were transcribed and thereafter organised around developing themes using thematic analysis.

3.6 Validity and Reliability

These are observations used to gauge the quality of the study. The outcome of the research can be measured by the technique or methods used, which is indicated by reliability and validity. The accuracy of the quantitative data is measured by the validity, while the consistency and trustworthiness of the qualitative data are measured by the reliability (Middleton 2020).

The validity reflects the degree to which the results measure what they are expected to. The reliability reflects the degree to which the results can be replicated when the research is conducted within the same environments (Middleton 2020).

The validity can be considered by interrogating how the results relate to recognised theories and other measures of the same model. The reliability can be considered by examining the stability of results across time and different researchers (Middleton 2020).

The validity of this study followed the principles of credibility, dependability, transferability, and confirmability. Credibility is essential for ensuring the trustworthiness of findings. Dependability is also essential for ensuring trustworthiness, as it ensures that the researcher's findings are consistent and retest reliable. Trustworthiness is essential for ensuring confidence in the findings and is, therefore, one of the most important conditions (Polit and Beck 2006). Transferability is the degree to which findings can be transferred or be applicable in similar settings.

Reliability was achieved by the trustworthiness of the data. Trustworthiness is essential for ensuring confidence in the findings, and is therefore, one of the most important conditions (Polit and Beck 2006).

Reliability focuses on the consistency of an instrument, whereas validity focuses on the extent to which the instrument measures what it is intended to measure. An instrument can be reliable without being valid, but cannot be valid without being reliable. The most widely used objective measure of reliability is Cronbach's alpha, (Tavakol and Dennick 2011).

3.7 Ethical Clearance

The Ethical clearance required to administer structured questionnaires in the FoHS has been received from the Faculty of Accounting and Informatics, DUT (Clearance dated 03 March 2020 attached as Appendix D).

3.7.1 Ethical consideration

All ethical aspects have been considered to ensure that there is no invasion of privacy, no harm to participants, no lack of informed consent, and no deception. All these have been adhered to during the research study. In an attempt to maintain confidentiality and anonymity, all participants' identities are protected during the study and they will be referred to as the Heads of Departments (HoD) by numbers. A participation consent form was issued to each participant (Appendix E).

Each participant was presented with the Ethics Approval Clearance letter prior to the interviews and assured of their confidentiality and anonymity. Permission to be recorded during the interview for open-ended questions was requested and granted to each participant. These recordings are accessible to the researcher only. The data collected is for this study only. The report will provide figures, tables, graphs, and information, but names will not be disclosed.

3.8 Chapter Summary

In a quest to identify the financial management skills required by the Heads of Departments, this chapter explains the research design adopted. This research followed a pragmatist paradigm, which included both quantitative and qualitative research methods. The strengths of using both quantitative and qualitative data were previously discussed.

For the quantitative phase, the Heads of Departments were interviewed using structured questionnaires.

For the qualitative phase, the Heads of Departments were interviewed using semi-structured questionnaires, with open-ended questions in order to allow for discussion. The department heads within the FoHS were interviewed in terms of their experiences and knowledge.

This study was confined to the FoHS at DUT. Chapter four, to which the discussion now turns, will discuss the findings generated by this study, as well as the analysis thereof. The findings or results of this study can be generalised to other professions, or other universities.

CHAPTER FOUR: DISCUSSION OF RESULTS

4.0 Introduction

This chapter presents the results in relation to the three objectives outlined in chapter one, in the form of tables. Based on the data from the first two objectives, the proposal for the third objective will be framed. The findings related to each aspect of each objective will be discussed concurrently. The objectives are repeated below for clarity.

- i. To ascertain the knowledge and financial skills required of the Heads of Departments within the FoHS at DUT
- ii. To determine the training needs of the Heads of Departments within the FoHS to allow for more effective financial management knowledge and skills
- iii. To recommend methods by which the financial management knowledge and skills required of the Heads of Departments within the FoHS may be developed.

The quantitative and qualitative results will be presented in 4.1 in 4.2, respectively.

The response rate was 96%. The demographic profile of the participants is presented first. The distribution of the 22 participants from the eleven departments in the FoHS at the Durban University of Technology is shown in table 4.1 below.

Table 4:1 Numbers of participants by department

DEPARTMENT	POPULATION SIZE	NO. OF PARTICIPANTS
Basic Medical Sciences	1	1
Biomedical Technology and Clinical Technology	3	2
Chiropractic	2	2
Dental Sciences	4	4
Emergency Medical Care and Rescue	2	2
Community Health Studies	3	3
Homoeopathy	3	3
Medical Orthotics and Prosthetics	1	1
Nursing	1	1
Radiography	2	2
Somatology	1	1
TOTAL	23	22

4.1 Quantitative Analysis

A questionnaire was the primary tool used to collect data and was distributed to participants who had served as the Heads of Departments between 2013 and 2020. The quantitative data collected from the responses were analysed with SPSS version 26.0. The results will present the descriptive statistics in the form of graphs, cross-tabulations and other figures for the quantitative data collected. Inferential techniques include the use of correlations and chi-square test values, which are interpreted using the p-values.

4.1.1 Reliability Statistics

The two most important aspects of precision are **reliability** and **validity**. Reliability is computed by taking several measurements on the same subjects. A Cronbach's alpha

reliability coefficient of 0.70 or higher is considered as “acceptable”, (Tavakol and Dennick 2011). The table below reflects Cronbach’s alpha score for all the items that constituted the questionnaire.

Cronbach's Alpha	Number of Items
0.717	31

The overall reliability exceeds the recommended Cronbach’s alpha value. This indicates a degree of acceptable, consistent scoring for the various sections of the research.

It should be noted that reliability is conducted on large samples. Since this small group of 22 participants forms a saturated sample, the data can be conclusive and generalised to the selected Faculty.

Reliability focuses on the consistency of an instrument, whereas validity focuses on the extent to which the instrument measures what it is intended to measure. An instrument can be reliable without being valid, but cannot be valid without being reliable. The most widely used objective measure of reliability is Cronbach’s alpha, (Tavakol and Dennick 2011).

4.1.2 Gender and Age

The gender distribution of the participants by age category is shown in table 4.2.

Table 4:2 Number of participants by Gender in each age category

Age Group	Male No (%)	Total No (%)
30 - 39	3 (27.3)	3 (100)
40 - 49	4 (50.0)	8 (100.0)
50 - 59	4 (36.4)	11 (100.0)
Total	11 (50.0)	22 (100.0)

Overall, the ratio of males to females is 1:1, (50.0%: 50.0%) (p = 0.1).

The majority of the participants in the age categories of 30-39 were male. Females made up the majority in the 50-59 age category. The majority of the respondents were aged between 50-59 years.

4.1.3 Qualifications

Almost two-fifths (39.13%) of the participants possessed a Doctoral degree and the remainder (60.87%), a Masters qualification. Higher level qualifications, educational skills, and academic growth are now required within a university (Baverstock and Wenger 2018). A higher level of education increases the researchers' employability, allowing them to maximise their professional contribution. The combination of academic thinking skills and professional practice allows researchers to be well placed to function effectively and efficiently in their chosen profession. Furthermore, producing published work contributes to their knowledge (Baverstock and Wenger 2018). It is reported that a higher "level of education can improve personal confidence and cognitive functioning, which lead to increased professionalism" (Massimi *et al*, 2017).

It is often assumed that the capabilities of the Heads of Departments increase with the level of qualification and thus the qualification of Masters degree or PhD becomes a minimum requirement to be appointed as a Head of Department. The argument that supports the idea that the Heads of Departments must have a Masters degree or PhD to effectively function as a Head of Department, is lacking. A Masters degree or PhD qualification lies within the specific discipline of the department head, whilst financial management training forms part of their undergraduate qualification, but this is limited (G.H. Bass⁷, 2020 personal communication, 15 December 2020).

⁷ Mr. G.H. Bass is a former Acting Dean, Deputy Dean of the FoHS and Head of Department: Department of Dental Sciences at DUT. He also served for a period as Acting Registrar of DUT. During his time as a lecturer he lectured financial management to a number of departments in the FoHS.

4.1.4 Marital Status

Figure 4.1 below indicates the marital status of the participants.

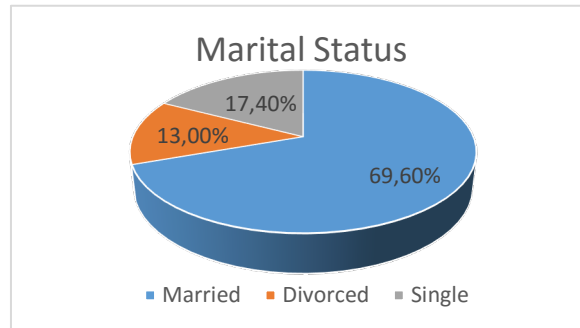


Figure 4.1 Marital Status of Participants

Two-thirds (69.6%) of the participants were married, with smaller and similar numbers of single and divorced participants ($p = 0.001$).

4.1.5 Race

Figure 4.2 below indicates the racial composition of the participants.

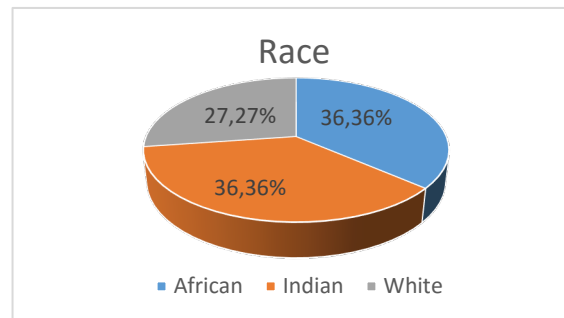


Figure 4.2 Racial Composition of Participants

Equal numbers of participants were Indian or African but the majority of the participants (47.8%) were Indian. African and White participants were of an equal number, 26.1% ($p = 0.337$). This is a reflection of those who have served as the Heads of Departments since 2013.

4.1.6 Experience as Head of Department

Figure 4.3 below indicates the length of service of the participants as the Heads of Departments.

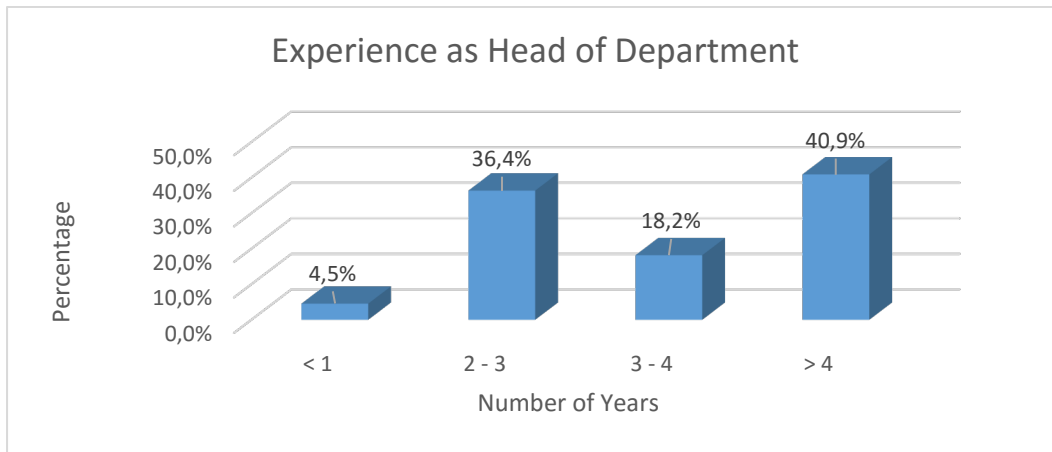


Figure 4.3 Experience as Head of Department

The majority of participants (40.9%) served in the position for more than four years, ($p = 0.037$). This implies that participants had been in their positions for a while and indicates that most responses are from experienced staff. Only one (4.5%) of the participants had been in the position for less than a year.

This question focuses on the knowledge and skills gained over a period of time, through experience. Ishola, Adeleye and Tanimola (2018) believe that more experience in a position can enhance the quality of decision-making, by being able to recall relevant procedures, and anticipate contradicting challenges.

4.1.7 Objective 1: Knowledge and Financial Skills of the Heads of Departments within the Faculty of Health Sciences at DUT

The following section analyses the scoring patterns of the participants. The results are presented in the form of graphs, figures and tables.

4.1.7.1 Awareness of Job Description

Table 4.3 reflects the respondents' knowledge of their job expectations. The data shows that the respondents were aware of crucial elements of their job descriptions.

Table 4:3 Awareness of Job Description

Job Description	n %	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	p-value
Facilities and physical environment	n	0	1	0	16	5	0,000
	%	0,0	4,5	0,0	72,7	22,7	
Human factor	n	0	1	2	8	11	0,005
	%	0,0	4,5	9,1	36,4	50,0	
Academic activities	n	0	0	0	8	14	0,144
	%	0,0	0,0	0,0	36,4	63,6	
Quality and risk assessment	n	0	1	0	12	9	0,008
	%	0,0	4,5	0,0	54,5	40,9	
Providing quality healthcare	n	0	1	1	11	9	0,001
	%	0,0	4,5	4,5	50	40,9	
Departmental strategy	n	0	0	0	13	9	0,297
	%	0,0	0,0	0,0	59,1	40,9	
Curriculum development	n	0	0	0	8	14	0,144
	%	0,0	0,0	0,0	36,4	63,6	
Research activities within your department	n	0	0	0	9	13	0,297
	%	0,0	0,0	0,0	40,9	59,1	
Financial management	n	0	1	0	13	8	0,004
	%	0,0	4,5	0,0	59,1	36,4	

As shown in Table 4.3 above, the majority of the respondents agreed that they were aware that financial management is a part of the job description ($p= 0.004$). Other aspects of the job description were also known. An average of 46% reflected “strongly agree”, while 50% “agree”.

To determine whether the scoring patterns per statement were significantly different per option, a chi-square goodness-of-fit test was done. The null hypothesis claims that similar numbers of respondents scored across each option for each statement (one statement at a time). The alternate states that there is a significant difference

between the levels of agreement and disagreement. The highlighted significant values (p-values) are less than 0.05 (the level of significance), which implies that the distributions were not similar, that is, the differences between the way respondents scored (agree, neutral, disagree) were significant. The values (p-values) not highlighted only have two options that were considered, as there was a zero percent response to disagreement and neutral.

While the p-value for the awareness of academic activities was insignificant with a p-value of 0.144, when examining the crosstabulations, the p-value was 0.038 within the marital status group.

The p-value for the awareness of departmental strategy was insignificant with a p-value of 0.297; however, when examining the crosstabulations, the p-value was 0.036 within the gender group. Of these, 71.4% were male, while the remaining 28.6% were female.

The p-value for the awareness of curriculum development was insignificant with a p-value of 0.144, however, when examining the crosstabulations, the p-value was 0.026 within the race group.

4.1.7.2 Management of Project Funding

The participants' responses to knowledge and skills regarding project budgeting are shown in table 4.4.

Table 4:4 Responses of Management of Project Funding

Project Budget Management	n %	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	ρ - value
The skill of financial management is required to engage in projects undertaken by your department (CTG / UCDG / ECP)	n	0	0	1	14	7	0,002
	%	0,0	0,0	4,5	63,6	31,8	
In order to create and manage 3rd stream income in your department, the skill of financial management is required	n	0	1	0	11	10	0,013
	%	0,0	4,5	0,0	50,0	45,5	
You have been able to financially develop projects within your department (new labs / refurbishments of labs, and the like)	n	0	2	3	12	5	0,005
	%	0,0	9,1	13,6	54,5	22,7	

Despite the need to upskill with regard to project management ($p=0.003$) and 3rd stream income generation ($p=0.013$), a significant number of respondents managed projects within their departments ($p=0.005$)

4.1.7.3 Awareness of Project Funding

Table 4.5 shows responses to participants' knowledge of how external funding is considered, proposed, and managed.

Table 4:5 Responses on Awareness of Project Funding

Project Budgeting Awareness	n %	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	p - value
ECP	n	0	2	6	8	6	0.529
	%	0,0	9,1	27,3	36,4	27,3	
UCDG	n	1	7	3	7	4	0.125
	%	4,5	31,8	13,6	31,8	18,2	
Skills Development	n	1	4	3	9	5	0.105
	%	4,5	18,2	13,6	40,9	22,7	
YB / YE	n	0	4	2	9	7	0.266
	%	0,0	18,2	9,1	40,9	31,8	

Responses obtained with regard to awareness of funding mechanisms within the University system confirm that financial management skills are imperative to successful project budgeting.

4.1.7.4 Management of Financial Viability

The responses to the management of their departmental financial viability are provided in table 4.6.

Table 4:6 Responses to Management of Financial Viability

Project Budgeting Awareness	n %	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	ρ - value
As a HoD, you are in a position to identify and reduce wastage, (do more with less)	n	0	1	2	14	5	0.001
	%	0,0	4,5	9,1	63,6	22,7	
When appointing staff, you consider the financial viability of your department	n	1	1	3	8	9	0.014
	%	4,5	4,5	13,6	36,4	40,9	
When accepting students, you consider the financial viability of your department	n	0	1	2	10	9	0.005
	%	0,0	4,5	9,1	45,5	40,9	
As a HoD, you are in a position to provide a financial report of what has been purchased within this financial year	n	1	2	3	11	5	0.010
	%	4,5	9,1	13,6	50,0	22,7	

A significant proportion of the respondents indicated that they were able to manage the different aspects of ensuring financial viability through departmental finance management. Ward, Calabrese, and Finkler (2018) reported that to meet these goals of profitability and financial viability in an efficient and effective manner, the Heads of Departments need to have a firm understanding of financial management

In order for universities, and consequently departments to be financially viable, strategies need to be adopted. These include enrolment and financial management

(Barron 2017). Within current higher education, financial viability cannot be sustained by income generated from tuition fees alone (Barron 2017).

4.1.7.5 ITSS and the General Ledger

The responses with regard to the access and interpretation of the general ledger and the integrated tertiary system (ITSS) are shown in table 4.7.

Table 4:7 Responses on Access and Interpretation of the General Ledger and the Integrated Tertiary System (ITSS)

General Ledger Interpretation	n %	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	ρ - value
You are able to download the General Ledger from the ITS System	n	3	6	1	7	5	0,442
	%	13,6	27,3	4,5	31,8	22,7	
You are able to interpret the General Ledger	n	3	6	1	8	4	0,283
	%	13,6	27,3	4,5	36,4	18,2	

A significant proportion of the respondents indicated that they were unable to download or interpret the general ledger from the ITSS system.

4.1.8 Objective 2: To Determine the Training Needs of Heads of Departments within the Faculty of Health Sciences to Allow for More Effective Financial Management Knowledge and Skills

4.1.8.1 Determining Knowledge of Financial Management

The participants' responses regarding knowledge and skills of financial management are presented below in table 4.8:

Table 4:8 Respondents' Knowledge of Financial Management

Knowledge of Financial Management	n %	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	ρ - value
Financial management is a skill required to be a HoD	n	0	0	1	12	9	0.032
	%	0,0	0,0	4,5	54,5	40,9	
You would recommend that HoDs receive training in the area of financial management	n	0	0	0	4	18	0.002
	%	0,0	0,0	0,0	18,2	81,8	
When making a financial decision, you refer to the policy documents regularly	n	1	2	4	11	4	0.010
	%	4,5	9,1	18,2	50,0	18,2	
Your financial decisions are influenced by the regulatory body of your programme	n	2	6	4	7	3	0.508
	%	9,1	27,3	18,2	31,8	13,6	
You have a sound knowledge of how the procurement system works	n	0	5	3	11	3	0.059
	%	0,0	22,7	13,6	50,0	13,6	
As HoD, you are fully aware of all the budgets in your department	n	0	2	0	10	10	0.119
	%	0,0	9,1	0,0	45,5	45,5	

As shown in table 4.8, only 50% of the items in this category yielded significant responses. The remaining 50% of responses suggest a lack of knowledge, thereby supporting the significant responses for the need for training in managing departmental finances. Statement (B3) reflected 82.6% “strongly agree” and 17.4% “agree”, being 100% in agreement. This statement indicates that the Heads of Departments would highly recommend that they receive training in the area of financial management.

4.1.8.2 Management of Departmental Finances

The Heads of Departments' views on who should manage the finances of the department are reflected in table 4.9.

Table 4:9 Responses on Management of Departmental Finances

General Ledger Interpretation	n %	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	ρ - value
The HoD	n	0	2	2	11	7	0,014
	%	0,0	9,1	9,1	50,0	31,8	
A financially skilled member of staff within the department	n	1	5	1	9	6	0,014
	%	4,5	22,7	4,5	40,9	27,3	
The Faculty finance officer	n	0	9	1	8	4	0,043
	%	0,0	40,9	4,5	36,4	18,2	

A significant proportion of the respondents indicated that the departmental finances should be managed by the Heads of Departments or a skilled staff member. Bresnan *et al* (2017) suggest that hybrid managers often play a critical role in possessing the required business skills to manage academic departmental finances.

Managing the budget in a department involves multiple cost centres and a multitude of different accounts. Individuals who are able to manage the financial matters of the department, can be an asset to the department (Barr and McClellan 2011). A good finance assistant will be able to identify gaps in knowledge and seek help from others within the institution, to attain the necessary information and skills. The individual or individuals who manage or control the budgets must be in a position to provide information and data to those who make the decisions, namely the Heads of Departments, their immediate line manager (Barr and McClellan 2011).

Budget challenges faced by the Gallaudet University in the USA prompted the university to implement universally accepted practices in higher education, namely, to increase enrolment, to increase 3rd stream income, as well as to identify and implement restrictions on expenditure. To ensure that these expense restrictions were implemented, accountability was assigned to administration officers within

departments. Performance in this regard was monitored regularly by means of reporting. These changes yielded favourable results (Cordano 2018).

4.1.9 Correlations

Detailed correlation coefficients between various variables are provided in **Appendix A**. Other relationships between variables are presented below.

4.1.9.1 Facilities and Physical Environment

Significant moderate correlations were found between the facilities and physical environment and identified person related factors as shown in Table 4.10. This indicates the Heads of Departments' understanding of the importance of how each of the listed activities relies on the importance of the facilities and physical environment. The values are all positive, implying that an increase in the Heads of Departments awareness of facilities and physical environment, for example, tends to increase the Heads of Departments awareness of the human factor involved, and vice versa ($p = 0.518$).

Table 4:10 Correlation Coefficient for the relationship between the awareness of the Facilities and the Physical Environment being within the job description of the Heads of Departments and related activities

	Facilities and Physical Environment (Correlation Coefficient, ρ)
Human factor	0,518
Quality and risk assessment	0,623
Providing quality healthcare	0,434
Departmental strategy	0,456
Financial management	0,486
As HoD, you are in a position to identify and reduce wastage (do more with less)	0,542
As HoD, you are in a position to provide a financial report of what has been purchased within this financial year	0,576

4.1.9.2 Human Factor

The correlation coefficient for the relationship between the awareness of the human factor being within the job description of the Heads of Departments, and that of the activities listed below, was significant. This indicates that the department heads understand the value of human involvement in each of these activities.

Table 4:11 Correlation Coefficients for the relationship between the awareness of the human factor being within the job description of the Heads of Departments and their related activities

	Human Factor (Correlation Coefficient, ρ)
Academic activities	0,521
Quality and risk assessment	0,636
Departmental strategy	0,420
Curriculum development	0,415
Financial management	0,469
As HoD, you are in a position to provide a financial report of what has been purchased within this financial year	0,548

Moderate significant correlations were observed for the relationship between each of the factors listed in Table 4.11 and the awareness of the human factor is within the job description of the Heads of Departments.

4.1.9.3 Academic Activities

The moderate correlation coefficients between the awareness of the academic activities being within the job description of the Heads of Departments, and that of three of the activities listed below, are significant. Curriculum development showed a significantly high correlation. This indicates that the department heads understand the importance of ensuring that each of the activities listed below is linked to the academic activities.

Table 4:12 Correlation Coefficients for the relationship between the awareness of the academic activities being within the job description of the Heads of Departments and their related activities

	Academic Activities (Correlation Coefficient, ρ)
Quality and risk assessment	0,442
Departmental strategy	0,586
Curriculum development	0,808
Research activities within your department	0,537

4.1.9.4 Quality and Risk Assessment

The significant moderate correlation coefficients between the awareness of the quality and risk assessment activities being within the job description of the Heads of Departments, and that of the activities listed below, are significant. This indicates that the department heads understand the importance of ensuring that the activities listed below are of high quality, and are constantly assessed for risk.

Table 4:13 Correlation Coefficients for the relationship between the awareness of the quality and risk assessment being within the job description of the Heads of Departments and their related activities

	Quality and Risk Assessment (Correlation Coefficient, ρ)
Departmental strategy	0,462
Curriculum development	0,442
Financial management	0,604
As HoD, you are in a position to identify and reduce wastage, (do more with less)	0,482
As HoD, you are in a position to provide a financial report of what has been purchased within this financial year	0,537

4.1.9.5 Providing Quality Healthcare

The significant moderate correlation coefficient between providing quality healthcare, and that of the Heads of Departments being in a position to provide a financial report of what has been purchased within the financial year, is significant. This indicates that the department heads understand that in order to provide quality healthcare, they must be in control of the finances of the department.

Table 4:14 Correlation Coefficients for the relationship between the awareness of providing quality healthcare being within the job description of the Heads of Departments and the department heads being in a position to report on financial activity

	Providing Quality Healthcare (Correlation Coefficient, ρ)
As HoD, you are in a position to provide a financial report of what has been purchased within this financial year	0,479

4.1.9.6 Departmental Strategy

The significant moderate correlation between the awareness of the departmental strategy being within the job description of the Heads of Departments, and that of being aware of how the skills development budget is considered, proposed and managed, as well as being in a position to provide a financial report of what has been purchased within the financial year, is shown in Table 4.15. This indicates that the department heads are aware of how the skills development fund and the finances of the department form an essential part of the departmental strategy.

Table 4:15 Correlation Coefficients for the relationship between the awareness of the departmental strategy being within the job description of the Heads of Departments and their related activities

	Departmental Strategy (Correlation Coefficient, ρ)
Skills Development	0,462
As HoD, you are in a position to provide a financial report of what has been purchased within this financial year	0,481

4.1.9.7 Research Activities

The significant moderate correlation between the awareness of the research activities being within the job description of the Heads of Departments and that of the awareness that financial management is a skill required in order to create and manage 3rd stream income, is shown in Table 4.16. This indicates that the department heads are aware of the financial skills required of them.

Table 4:16 Correlation Coefficients for the relationship between the awareness of the research activities being within the job description of the Heads of Departments and their ability to manage 3rd stream income

	Research Activities (Correlation Coefficient, ρ)
In order to create and manage 3rd stream income in your department, the skill of financial management is required	0,440

4.1.9.8 Financial Management

The significant moderate correlation between the awareness of financial management being within the job description of the Heads of Departments, as well as that of being in a position to identify and reduce wastage, is shown to be significant (Table 4.17). This indicates that the department heads are aware that the two activities are interdependent.

Table 4:17 Correlation Coefficients for the relationship between the awareness of the financial management being within the job description of the Heads of Departments and being in a position to be able to identify and reduce wastage

	Financial Management (Correlation Coefficient, ρ)
As HoD, you are in a position to identify and reduce wastage, (do more with less)	0,499

4.1.9.9 Policy Documents

The significant moderate correlation between the Heads of Departments referring to policy documents when making financial decisions and that of the finances of the department being managed by the department heads is shown in table 4.18. This indicates that when the Heads of Departments make-financial decisions, they refer to policy documents.

Table 4:18 Correlation Coefficients for the relationship between referring to policy documents when making financial decisions and the financial management of the department being managed by the Heads of Departments.

	When making financial decisions you refer to the policy documents regularly (Correlation Coefficient, ρ)
The HoD	0,511

4.1.9.10 Regulatory Body

A significant moderate inverse relationship was observed between accepting students and considering the financial viability of the department, that is, the more the department considers the effect on the financial viability of accepting the student, the less the influence of the regulatory body affects the programme's financial decisions.

Table 4:19 Correlation Coefficients for the relationship between making decisions influenced by the regulatory body and the effects on financial viability in the recruitment of new students

	Your financial decisions are influenced by the regulatory body of your programme (Correlation Coefficient, ρ)
When accepting students, you consider the financial viability of your department	-0,472

4.1.9.11 Management of Finances of the Department Should be Handled by the Heads of Departments

Significant moderate correlations between the finances of the department being managed by the Heads of Departments and that of the activities listed below, are shown in Table 4.20. This indicates that the department heads are aware of how these budgets are proposed and managed. It also indicates that the Heads of Departments are familiar with the ITSS System and general ledger.

Table 4:20 Correlation Coefficients for the relationship between the financial management of the department being managed by the Heads of Departments and the management of project budgets, as well as being able to download the general ledger from the ITSS system

	The HoD (Correlation Coefficient, ρ)
UCDG	0,504
YB / YE	0,454
You are able to download the General Ledger from the ITSS System	0,455

4.1.9.12 Management of Finances of the Department Should be Handled by a Financially Skilled Member of Staff within the Department

The significant moderate inverse relationship between the finances of the department being managed by a financially skilled member of staff within the department and the ability to download the general ledger, is shown in Table 4.21. The Heads of

Departments responded that their administrative staff, and not themselves, were downloading the general ledger, hence the negative correlation.

A significant moderate correlation between the finances of the department being managed by a financially skilled member of staff within the department and the consideration of the department's financial viability on students' acceptance, is observed in table 4.21. This indicates that the Heads of Departments would ensure that the financial viability of the department would be considered when accepting students. The significant moderate inverse relationship between a financially skilled member of staff within the department and their ability to download the ledger, affirms the Heads of Departments' lack of skill referred to earlier.

Table 4:21 Correlation Coefficients for the relationship between financial decisions being made by a financially skilled member of staff within the department, and the related activities

	A financially skilled member of staff within the department (Correlation Coefficient, ρ)
When accepting students, you consider the financial viability of your department	0,591
You are able to download the General Ledger from the ITSS System	-0,425

4.1.9.13 Procurement System

The significant moderate correlations between having a sound knowledge of how the procurement system operates and that of the activities listed below, are shown in Table 4.22. This indicates that the department heads believe that being aware of how these budgets are considered, proposed and managed, and how being able to interpret the general ledger, is linked to the operation of the procurement system.

Table 4:22 Correlation Coefficients for the relationship between having a sound knowledge of the procurement system and related activities

	You have a sound knowledge of how the procurement system operates (Correlation Coefficient, ρ)
UCDG	0,537
YB / YE	0,534
You are able to interpret the General Ledger	0,435

4.1.9.14 Project Budgets

The significant moderate to high correlations between the Heads of Departments being aware of all the project budgets in their departments and the activities listed below, appear in Table 4.23. This indicates that the management of these activities depends on being aware of the budgets within the department.

Table 4:23 Correlation Coefficients for the relationship between the Heads of Departments being aware of the budgets within their department and the project budgets.

	As HoD, you are fully aware of all the budgets in your department (Correlation Coefficient, ρ)
ECP	0,457
UCDG	0,569
Skills Development	0,553
YB / YE	0,795

4.1.9.15 3rd Stream Project Budgeting

The significant moderate correlation between the requirement of financial management as a skill in order to engage in projects, and that of the requirement of financial management in order to create and manage 3rd stream income, is given in

Table 4.24. This indicates that the Heads of Departments agree that financial management is a necessary skill.

Table 4:24 Correlation Coefficients for the relationship between requiring the skill of financial management in managing financial projects and the 3rd stream income.

	The skill of financial management is required to engage in projects undertaken by your department? (CTG / UCDG / ECP) (Correlation Coefficient, ρ)
In order to create and manage 3rd stream income in your department, the skill of financial management is required	0,510

4.1.9.16 3rd Stream Income

The significant moderate inverse relationship between the requirement of financial management in order to create and manage 3rd stream income, and that of the Heads of Departments being in a position to identify and decrease wastage is shown in Table 4.25. This indicates that the two variables have an opposite effect on each other.

Table 4:25 Correlation Coefficients for the relationship between requiring the skill of financial management in project budgeting and being able to identify and reduce wastage.

	In order to create and manage 3rd stream income in your department, the skill of financial management is required (Correlation Coefficient, ρ)
As HoD, you are in a position to identify and reduce wastage, (do more with less)	-0.446*

4.1.9.17 Projects

The significant moderate correlation between the Heads of Departments having the ability to financially develop projects and that of being aware as to how the University Capacity Development Grant (UCDG) is considered, proposed, and managed

indicates that the department heads are aware of how to make use of external funding in order to financially develop projects.

Table 4:26 Correlation Coefficients for the relationship between the Heads of Departments having the ability to financially develop projects and that of being aware of how the UCDG is considered, proposed, and managed

	You have been able to financially develop projects within your department (new labs/refurbishments of labs, and the like) (Correlation Coefficient, ρ)
UCDG	0,485

4.1.9.18 Identify and Reduce Wastage

The significant moderate relationship between the Heads of Departments being in a position to identify and reduce wastage, and of being in a position to provide a financial report of purchases, indicates that the department heads are aware that the two aspects are interrelated.

Table 4:27 Correlation Coefficient for the relationship between the Heads of Departments being in a position to identify and reduce wastage, and the department heads being in a position to report on financial activity

	As HoD, you are in a position to identify and reduce wastage, (do more with less) (Correlation Coefficient, ρ)
As HoD, you are in a position to provide a financial report of what has been purchased within this financial year	0,662

4.1.9.19 Financial Viability

The correlation between the consideration of the financial viability when appointing staff, and that of accepting students was significantly moderate (0,520). This indicates that the Heads of Departments are aware of the impact of appointing staff or accepting students on the financial viability of the department.

Table 4:28 Correlation Coefficient for the relationship between the effects on financial viability when appointing staff and effects on financial viability in the recruitment of new students

	When appointing staff, you consider the financial viability of your department (Correlation Coefficient, ρ)
When accepting students, you consider the financial viability of your department	0,520*

4.1.9.20 Financial Report

The relationship between the Heads of Departments being in a position to provide a financial report of purchases and that of being able to download and interpret the general ledger from the ITSS system is moderately significant. This indicates that the department heads are aware that it is not possible to provide said report without being able to download and interpret the general ledger.

Table 4:29: Correlation Coefficient for the relationship between the Heads of Departments being in a position to provide a report and the department heads being in a position to report on financial activity

	As HOD, you are in a position to provide a financial report of what has been purchased within this financial year (Correlation Coefficient, ρ)
You are able to download the General Ledger from the ITSS System	0,414
You are able to interpret the General Ledger	0,550

4.1.9.21 General Ledger

The statement: “You are able to download the General Ledger from the ITSS System” was significantly highly correlated with “**You are able to interpret the General Ledger**”. This indicates that the Heads of Departments are aware that that these two aspects are interlinked.

Table 4:30 Correlation Coefficient for the relationship between the Heads of Departments being able to download the general ledger and being able to interpret it

You are able to download the General Ledger from the ITSS System (Correlation Coefficient, ρ)	
You are able to interpret the General Ledger	0,819

4.2 Qualitative Analysis

Qualitative data was collected by interviewing the Heads of Departments. The qualitative data collected from the responses were analysed by grouping the subjects discussed, into themes. The results reflect the observations, thoughts, opinions, and challenges faced by the department heads in respect of financial management in the Faculty of Health Sciences.

NVIVO was used to analyse the qualitative data. Interviews were transcribed and thereafter organised around developing themes using thematic analysis.

The names of the interviewees have been changed to pseudonyms to ensure anonymity. The Heads of Departments are identified by the acronym HoD and a number.

4.2.1 Research Instrument

The research instrument consisted of thirteen open-ended questions. From the questionnaire, seven themes, as detailed in Table 4.31 below, were extracted:

Table 4:31: Themes

Section Number	Theme Number	Theme
4.2.1.1	1	The need for Skills Training
4.2.1.2	2	Understanding Planning
4.2.1.3	3	Attention to Risk
4.2.1.4	4	Understanding 3 rd Stream Budgeting
4.2.1.5	5	Management of CAPEX
4.2.1.6	6	Understanding and Dealing with Financial Shortfalls
4.2.1.7	7	Understanding Financial Viability
4.2.1.8	8	Understanding Financial Systems and Procedures
4.2.1.9	9	Financial Management and Control Measures

4.2.1.1 Theme 1: The Need for Skills Training

The efficient and effective distribution of resources under crisis can be an extremely challenging (Hernandez-Perez and Ponce-Ortega: 2021). To optimise the use of resources, the Heads of Departments must therefore be expected to use the tools at their disposal. Each department is unique and should find the ideal formula for its department. This is not obtainable without the correct training being provided.

It would appear, for the most part, that the Heads of Departments are not so much making informed decisions, as deferring decision- making to the inherent structure of the operational expenditure budget.

A few participants highlighted that the work of the Heads of Department is multi-faceted, and that the department heads do not receive proper induction or training. They expressed the need for training in the areas of financial management, human resources, academic leadership, strategic planning, and curriculum development. Two of the participants were of the opinion that they had entered into the leadership role with no preparation or training in financial management.

“Heads of Departments are thrown into the deep end so to speak. You either sink or swim. There’s no training whatsoever.”

[HoD 19]

“It was still like being thrown in at the deep end without any managerial skills. Being in this HoD position, going over the courses and learn how to be a HoD. Having to balance academia and headship. There were lots of things to juggle, and lots of things to learn. It wasn’t an easy task. Now the Heads of Departments don’t go on any form of training whatsoever. There are lots of managerial skills required. That was a challenge.”

[HoD 23]

This Head of Department stated that financial management was learned while already engaged in the position. The department heads have good intentions but have no training in financial management.

“In terms of financial decision making, heads, in my experience, come into the position of HoD with the best of intentions, and they’d like to make it work, but nobody ever sits you down and explains where the pockets of money are, or what they could be used for. I developed a clear understanding of the relationship between budgets, and the restrictions on budgets, which ‘bags’ of money could be used for which activities.”

[HoD 8]

Between 2013 and 2015, the Vice-Chancellor of the time encouraged training sessions that covered both human resources and financial management. These participants felt that those training sessions helped tremendously but indicated that there is currently no support in terms of financial challenges.

“There were lots of [training] programmes that we were put on. I was given a chance to be on programmes devised by Higher Education South Africa (HESA). They had a programme called the Higher Education Leadership development programme (HELDP). So I went on that programme and I learned a lot on that programme. Then the VC at the time had this leadership

development programme at DUT for all Heads of Departments. That was very helpful. But it was still like being thrown in at the deep end without any managerial skills. Being in this HoD position, going over the courses and learn how to be a HoD. Having to balance academia and headship. There were lots of things to juggle, and lots of things to learn. It wasn't an easy task. Now the Heads of Departments don't go on any form of training whatsoever. There are lots of managerial skills required. That was a challenge."

[HoD 23]

Participants explained that negotiating financial matters was a challenge for the department heads within the FoHS. The respondents believe that in order to be more effective, efficient and more financially viable, training in the areas of financial management, as well as human resource management, is essential. Their greatest fear was dealing with the financial aspects of the position.

"Heads of Departments must be formally inducted, not just an Executive Committee (EXCO) delivery [to be appointed]. Finance is a whole academic stream on its own. Just like we have degrees in the medical stream, there needs to be some formal course or training for academics that become a HoD in order to understand that beast properly, in order to be more efficient and viable and make better choices. There needs to be formal training for Heads of Departments, not just a short seminar-type thing. Maybe a two or three week long course, where everything is broken down. Everything needs to be broken down in finance as well as in HR. Both ambits are dangerous and require out-of-the-box thinking. We rely on some previous knowledge and common sense to make it happen. It shouldn't be that way. When I became the HoD my biggest fear was how to manage the finances. Fortunately, my secretary at the time taught me how to access the Ledger, then I asked [the Acting Dean at that time] and he showed me how to use it."

[HoD 7]

"They [University Management] didn't teach you financial implications. They should teach you practically - How to read those financial documents. Don't tell

me I am accountable and ultimately everything is going to be my responsibility. There needs to be more practical training.”

[HoD 14]

“The most important thing is that leaders need to be trained and constantly in-service, because businesses are about finances, and if finances are not managed properly, the businesses will collapse. So one of the key things is getting people first appropriately placed, then appropriately trained and ongoing in-service.”

[HoD 18]

“It's so multifactorial being a Head of Department, we don't get inducted or trained. We should get a week of intensive training. Even if it's over a few weeks. One day a week we should receive training on a new topic. What happens is you focus on the things that you know. For me, I got thrown in the deep end.”

[HoD 21]

A significant majority of the participants quoted above agreed that training in the area of financial management is essential. These participants expressed that training in financial and practical matters, such as how to interpret the financial documents, the financial viability report and the general ledger, is essential.

Responses indicated that academic heads had an untrained understanding of the systems that should be in place in order to maximise the benefit of their budgets and resources. Their lack of understanding was due to a lack of training in financial management and consequently, they lacked the necessary knowledge to budget effectively.

4.2.1.2 Theme 2: Understanding Planning

Having financial management training is vital to the planning, operating, leading, and controlling of their respective departments. Financially empowered Heads of Departments will proactively seek avenues to address financial management shortfalls within their departments and ensure financial sustainability. As the department heads, they would be able to develop sustainable growth within the department, ensuring that planning, resource allocation, risk assessment, and quality is maintained at all levels, as well as the financial skills that DUT requires of its financial managers (DUT 2017; 2020). In order to develop sustainable growth within departments, the Heads of Departments must ensure that planning and the optimal usage of all resources and facilities are firmly in place.

Two of the participants reported having done all their planning in the previous year, in line with their departmental strategic plan, implying that this would maximise the benefit of the budgets applied.

“We put a schedule together and had it approved by the Dean the year before we were planning to use it so that plans could go smoothly the following year.”

[HoD 20]

“Planning was done at strategic planning the year before, so if we needed to do repairs or calibration, or if we wanted to replace certain things in the department, we needed to have that plan in place beforehand.”

[HoD 4]

Head of Department 8 below emphatically explained that the department heads are not taught to manage or plan their financial resources.

“The important thing to learn is the financial fabric of the University. It took me a very long time as a HoD to have a very clear sense of where these bags of money were, and their particular characters, and the scope of each bag. If you don't have a sense of the geography of your finances, it's very difficult for you

to think creatively. You're not really doing the management, you just know that you buy these things from that cost centre, then when the money runs out, you go 'oh darn'. You have to understand what's happening to your money before you can start figuring out creative ways of where the bags are in the geography - and that's not taught! If it was taught, people would be far more empowered."

[HoD 8]

These participants explained that when they became Heads of Departments, they inherited their operational budgets. There was not much to consider since the budget was increased by a set 5% or 6% annually by the finance department. The budgets appeared to be historical and were often inherited from the previous department heads. They pointed out that no financial planning was required of the Heads of Departments. These participants stated their belief that training is imperative if the Heads of Departments are expected to formulate budgets on their own.

"I had inherited an operational budget when I first became HoD and at that time there was not a hell of a lot to do because you pretty much got a fixed percentage increase each year. There was a point where we had to do zero-based budgeting⁸ and at that point, it was a consultative process but I don't think a HoD should be expected to formulate a budget on their own."

[HoD 8]

"The systems that we had in place were in many instances historical. We implemented that historical system unless there was a change in financial policies within DUT. So we would draw up a budget of everything we required for the year, look at how the previous year's budget turned out, and most of the time it was roughly the same in the year that we were considering."

[HoD 23]

The lack of understanding among the Heads of Departments was noted. Specific indications of individual line items were poorly understood:

⁸ Although zero-based budgeting was required this was never implemented and in the end departments received a fixed percentage increase (G.H. Bass, 2020 personal communication, 15 December 2020).

“They [the department heads] don’t understand the range of budget items, what needs to be purchased from which budget. It’s important to understand the terminology of financial management and systems and be able to do the budget and whatever allocations of the funds in terms of knowing what you are doing. There is no being proactive or forward-looking.”

[HoD 10]

The majority of the participants’ responses implied that they are largely unaware of the manner in which the operational expenditure budget in their department is allocated.

“We’re not sure, all we know is we just get a thing that says this is your OPEX [operating expenditure] budget and when we look at the OPEX budget there are very few lines that were increased most of the budget line stay the same”

[HoD 4]

“I never understood that. I only knew that I got given the operational expenditure budget each year. How it was determined I’m not sure. It may have been based on student numbers. Of the big pie that the University receives [FTE’s funding fees], they have to slice the pie by Faculty, then within the Faculty by department. They have a formula they use.”

[HoD 13]

4.2.1.3 Theme 3: Attention to Risk

Maintaining quality and identifying risk factors within a department includes complying with University policies, procedures, as well as professional standards and practices. It also includes overseeing the quality of decisions made by all stakeholders. Ishola, Adeleye and Tanimola (2018) believe that more experience in a position can enhance the quality of decision-making via the knowledge previously learned, to recall relevant procedures, and to anticipate contradicting challenges.

All departments are expected to present annual quality improvement plans that include financial management and risk mitigation.

Interviewees pointed out that in order to manage the risks, the University has a risk officer who can be called upon to check on risk issues as they relate to financial matters in a department.

“We’d always consult with [the] University Risk officer [if needed].”

[HoD 23]

Other participants offered that their way of managing risk and financial management within their department was to have regular departmental meetings where matters at all levels were discussed. The risk for under-spending would result in budgets being reduced in subsequent years.

“We have staff meetings where she [the departmental finance officer] can bring up what our financial status is within the programme. She’ll say we’re not spending enough, or we haven’t done this or haven’t done that.”

[HoD 14]

Head of Department 20 reported that the department planned well in advance or at regular departmental meetings, thus mitigating the risk.

“We had finance meetings, we had a core team, myself, the secretary, and the technician. We had meetings on the different accounts and where we were at every quarter, then we would report back at staff meetings. Planning was done at strategic planning the year before, so if we needed to do repairs or calibration, or if we wanted to replace certain things in the department, like air-conditioning for example, or fix little things, we needed to have that plan in place beforehand.

[HoD 20]

“We had meetings to make sure people knew what was going on. To ensure that people prioritise and it’s agreed upon by everyone.”

[HoD 22]

Some participants identified having strong systems in place as a way of maintaining quality and mitigating risks.

“We have hardly any risks in place because we have such strong systems, so we have hardly any risks. There will only be risks when the systems are failing, so we manage risks by putting systems in place.”

[HoD 4]

One participant explained that the main driver for quality is trying to understand the risk, and that staff members are taking responsibility for risk mitigation, ~~and~~ thus mitigating risk becomes a communal responsibility.

“For me as a HoD I need to understand the risks, I need to understand all the things that are my responsibility - but what is important is that staff need to own⁹ the department. If they own the department, they feel that they belong and that they’re part of the department. ”

[HoD 18]

On the matter of risk in a department that runs a clinic, a participant disclosed that the risks faced by the clinic are twofold, to the clinic and individual clinicians. The risk to individuals is mitigated by clinicians having malpractice insurance and the clinic per se being covered by DUT insurance.

“Treating patients is a risk – every medical treatment, no matter what it is – always poses a risk. We follow national guidelines to mitigate those risks and carry malpractice insurance. Each staff member has their own malpractice insurance, but then that’s for treating their own patients. Doing work as employees of DUT, DUT insurance covers us, the students, and the activities.

⁹ Interviewee loudly emphasized the word “own”

We have a reporting system should someone get injured, either a student, patient or staff member, we [Heads of Departments] need to report it to the risk office.”

[HoD 21]

Two participants agreed that managing finances for the Heads of Departments in healthcare in respect of risk management is a difficult process. Knowledge of processes must be strengthened. The department heads should be more aware of the financial implications of their decisions and be aware of risks associated with those decisions. Training and workshops in risk management are required to understand and manage risk, which in turn, will aid in efficient departmental management, reducing time spent on financial matters and allowing more time to be dedicated to management of the core function, namely, teaching and learning.

“I feel that the process is for Heads of Departments to be aware of financial implications and to be aware of risk assessment and how budgets should be maintained and managed needs to be strengthened. They [University Management] need to have workshops. Our core business is to teach, so we find it difficult to do these administrative functions that take us away from our core business, but nothing can survive without being managed properly. We need to have checks and balances. So I would say that we would require training and workshops. Also for Heads of Departments to realise that dealing with budgets they [the department heads] need to be more transparent. It’s not a HoD’s autocratic right to say that they control the budget. It should be transparent motivated and negotiated and based on priorities.”

[HoD 22]

4.2.1.4 Theme 4: Understanding 3rd Stream Budgeting

Project budgeting significantly includes the developing of projects to generate income for and managing of 3rd stream income. It further includes setting targets for revenue and expenditure, as well as determining the form and value of the revenue required.

Universities are faced with the challenge of experiencing fluctuating and unstable state support, while facing increasing pressure to increase efficiency, effectiveness and transparency. Sound project management of financial resources, including 3rd stream income, demonstrates the capability to correctly and efficiently allocate human resources, money, time, and equipment to a project (Cojocaru 2016).

The FoHS provides services such as the training of healthcare professionals as well as driving community-based projects. Ten of the eleven departments have developed some form of 3rd stream income. Five departments run discipline-specific health clinics, while others have developed short courses.

“We had two main areas of 3rd stream. One was clinical activities which generated a fair amount by both student and staff activities. The other 3rd stream income which was significant for [our department] was a partnership with an [International organisation¹⁰].”

[HoD 8]

“We’ve got a very busy Clinic which provides a lot of 3rd stream income for us. We also run competency tests for the AHPCSA.”

[HoD 21]

“We’ve run short courses for other departments in the Faculty and we offer short courses for industry. Last year we trained guys from the military. We will continue to train these people this year.”

[HoD 19]

One department, whilst acknowledging the importance of 3rd stream income, stated that their department lacks motivation due to unsupportive DUT systems.

“We have the potential, we have the ability, what we don’t have is the motivation, because, in the past, we have not gotten the support we needed from DUT with respect to these short courses. From actually putting together

¹⁰ Name withheld to ensure anonymity.

an application to do it, passing it through EXCO and Faculty Board, and arranging the tea and the accommodation and the room where we'd actually deliver it, it's basically a task on its own for a staff member. For me, the academics were already overwhelmed on delivering on the three main areas of research, teaching, and community engagement, and to add this to somebody's portfolio was really an onerous task."

[HoD 20]

With regards to the financial reliance on 3rd stream income, some participants' financial projections indicated that no planning was occurring. In their departments, the planning and subsequent generation of income was most often completed by predecessors. In those cases where new short courses were indicated, financial projections were completed by the lecturer delivering the short course in conjunction with the Heads of Departments and often with assistance from either the Faculty Finance Officer or the Centre for Continuous and Professional Education (CCPE).

"people within the institution [CCPE], and our [Faculty] finance officer [assisted us]"

[HoD 18]

A few participants were unsure as to how to negotiate the financial projections for the creation of their 3rd stream income and suggested that the institution should provide help.

"There should be someone in the institution that can run these models for you on how to maximise 3rd stream income and someone who could do it timeously, and that you get your funding timeously, and that you able to implement things timeously."

[HoD 21]

It would appear that most of the Heads of Departments, together with their staff, are making an effort to create 3rd stream income for their departments. These participants

insist, however, that in order to improve their generation of 3rd stream income, more support and direction is required from the University.

4.2.1.5 Theme 5: Management of CAPEX

Financial Management includes ensuring that the resources and facilities assigned to the department are maintained in good condition. These facilities could include lecture venues, laboratories (which are specialised in respect of the offerings in Health Sciences), specialised vehicles, as well as specialised equipment and instruments (Barr and McClellan 2011). The budget from which these assets, (specialised equipment, instruments, vehicles, and so forth) are purchased is known as the Capital Expenditure budget (CAPEX). The CAPEX budget supports the improvements in technology and includes the supply of equipment, furniture, building, infrastructure, and other expenses related to projects.

The Heads of Departments were asked to describe how their CAPEX requirements were determined. These participants explained that the need for specialised equipment was determined by the University requirement to upgrade the curriculum. The current re-curriculation process requires advanced technological equipment to aid teaching and learning.

With the new qualification, the groups will be larger, and we'll need more of the specialised equipment. With the advanced diploma kicking in, I need high priced equipment."

[HoD 14]

Some of the Heads of Departments envision CAPEX replacing ageing equipment, as well as obtaining new specialised equipment. It was also noted that advancing technologies were a requirement for the department to upgrade equipment.

"Determined by the training needs, the life span of the equipment, the life span of the electronic equipment, so based on that we determine our CAPEX

requests. Also advances in technology, for example, we have using standard training models, but now we're going into high fidelity models, so even the advancements in technology will influence our CAPEX needs."

[HoD 18]

Some of the department heads, uncharacteristic of Head of Department management, admitted that they have technicians who oversee the CAPEX requirements of the department.

"One staff member handles the laboratory equipment. They [the technicians]¹¹ will tell me what their needs are then we submit these items. If they tell me this is the latest in terms of teaching, and we don't have it, we submit this. I don't drive the CAPEX requirements or needs, my staff does."

[HoD 19]

Other Heads of Departments ensure that the CAPEX decisions are a departmental decision which the departmental head facilitates, with the secretary doing the costings.

"It was a consultative process. Everyone in the department identified what they might need. We had a meeting around it to discuss it. Sometimes there were major CAPEX Investments, for example, we needed to set up a computer lab - what will we need for that computer laboratory - what do we need from special funds - what will the University provide. We put this into the CAPEX request costings were done by the secretary put that into the template and submitted it."

[HoD 8]

¹¹ Name withheld to ensure anonymity

4.2.1.6 Theme 6: Understanding and Dealing with Financial Shortfalls

Given the costs associated with the training of health professionals, inevitability departments will lack funds to be financially viable and function outside the confines of the University department budget, for example, to attend conferences not supported by a University budget or to accommodate the individuals without a research fund. Ultimately, financially empowered Heads of Departments will proactively seek avenues to address financial management shortfalls within their departments and ensure financial sustainability (DUT 2017; DUT 2020).

Some departments receive a *Clinical Training Grant* (CTG) from DHET to address financial shortfalls and further clinical training in critical shortage areas. This clinical training includes, but is not limited to, the financial operating costs of on-campus clinics. Consequently, financial shortfalls are covered by both the CTG and the 3rd stream income generated by the clinic.

“We use 3rd stream income. Now that we have the Clinical Training Grant that [has] helped but otherwise it's very difficult to manage financial shortfalls.”

[HoD 15]

Another Head of Department claimed that, as they are operating at a maximum in their department, they are never short of money. They understand, however, that maximum operation is possible due to the planned generation of 3rd stream income, which allows for financial sustainability.

“We haven't had a situation where we're short of money because we have the viable 3rd stream income to fall back on.”

[HoD 21]

A significant number of the Heads of Departments admitted that they have no way of dealing with financial shortfalls other than to request monetary assistance from the Executive Dean's budget or securing financial help from other departments.

“I always beg and borrow from people. Sometimes I will ask the Dean for some money.”

[HoD 19]

“Often if it was for CAPEX or maintenance [urgently needed but not expected nor budgeted for], we would ask the Dean to use Dean's budget.”

[HoD 22]

Head of Department 14 reported sourcing external aid from suppliers/advisory boards/industry to support their student needs. Consequently, the reliance on University resources reduces the possibilities of shortfalls.

“We asked the advisory board for supplies. One needs to have very strong connections with the industries. Most people understand the education situation in our country is in dire straits and need of much support. If they want quality ...¹² going out into the industry, they need to start investing back. You need to be very strategic and pool in all your stakeholders and role players. It's about a partnership. If you want them to know how to work with your products when they go out into the industry, be prepared to engage with the respective trainer. We're basically saying, ‘you want your product to be affiliated to DUT, so what benefit are you going to provide to the students?’ They will then give us marketing material, provide us with free training.”

[HoD 14]

One participant volunteered that it had taken the department between two to three years to rearrange their teaching structure and explore creative ways in which to manage finance and consequently, shortfalls.

“You have to rethink and restructure things to channel money in another direction. It's very dynamic, it changes regularly month-to-month even. The thing is the HoD has to be that type of person that can switch from one thing to

¹² The profession concerned withheld to maintain anonymity

another. If one thing isn't working you have to look at imaginative ways. Without being corrupt, it's about creative thinking and creative accounting. You have to do that within the constraints of DUT policies. That is a skill which some people are really good at it and others take a while. It takes at least two to three years to start thinking like that."

[HoD 15]

The majority of participants reported making requests to the Faculty finance officer for the transferring of funds between budget line items, as their means of dealing with financial shortfalls. When faced with financial shortfalls in specific budgets, departments at DUT are given the opportunity to transfer funds between line items on an annual basis (DUT 2012a). This does not change a department's total operational budget. This transfer is requested from and authorised by the University finance department. Understanding the measured implementation of annual budget review creates an environment for the Heads of Departments to practice efficient financial management. This transferring of budgets can be a very dangerous practice, as taking from one budget to feed another may result in a shortfall. This further highlights the need for training in financial management which includes the formulation and usage of budgets.

"Every year we get a call from finance, giving us the opportunity to move budgets between line items. There is that latitude, but you're still moving around a fixed total."

[HoD 19]

"The only flexibility that really existed from that inherited budget was at the point within the year when you could shift monies between line items you could then consider whether you really needed to distribute and distribute something somewhere else but it didn't happen that often."

[HoD 8]

4.2.1.7 Theme 7: Understanding Financial Viability

The participants interviewed knew whether their department was viable or not. Where a department was not financially viable, the Heads of Departments showed little understanding of how to mitigate this. State subsidy contributes significantly to financial viability. State subsidies are calculated on teaching outputs and the FTEs which are registered against a department. The understanding of the way state subsidies can be positively influenced is not perceived by the department heads.

In a higher education department, the greatest cost driver with the greatest effect on the financial sustainability of profitability is staff salaries (Barr and McClellan 2011). Given that the academic staff of DUT is required to obtain their Masters degrees, while others are studying towards PhDs, costs are further increased. It can be safely assumed that the higher the qualifications of staff within the department, the higher the staff salary budget. With furthering of qualifications being a University requirement, this is a cost that is expected, and the financial management of departments by the Heads of Departments needs to factor this in to ensure the sustainability of their departments. However, whilst accepting that staff qualifications drive up costs, not many understood how to mitigate against this additional cost to financial viability.

“As people [academic staff] starting getting their PhDs, they will apply for senior lecturing and that will increase the salary expenses.”

[HoD 21]

“Everyone with a Masters was made a senior lecturer so the salaries went up, which meant that I had a department full of senior lecturers, so my staff were expensive. Then the University wanted a drive for doctorates and I got a doctorate so I became more expensive. So the mean salary was higher than anyone else's.”

[HoD 8]

Other participants reported that the greatest cost driver was specialised equipment required by the Faculty of Health Sciences.

“Our department is a very expensive department to run, because medical equipment costs so much, and because these things break all the time. [Specialised]¹³ equipment is super expensive because we teach in real life scenarios. So the biggest drive is the teaching equipment.”

[HoD 15]

“The other thing that becomes expensive are our models, especially since we’re now using high-fidelity models.”

[HoD 18]

DUT uses a financial viability model to determine departmental viability, yet the Heads of Departments are not, in the main, understanding of the model and how they as the department heads can influence viability. This highlights the need for training.

“Nobody knows what an FTE is, nobody explains it to you. You know it relates to your viability, but you don’t know how. You don’t know the impact is on increased class sizes. You don’t understand how to look at that financial viability model because some of the figures are current, and some of the figures are two years old, so you can’t necessarily tell which of your actions as a HoD is now reflecting in the next model.”

[HoD 8]

4.2.1.8 Theme 8: Understanding Financial Systems and Procedures

Participants had great difficulty comprehending DUT financial systems. Most participants reported that they inherited the systems within their departments.

¹³ The description of the equipment concerned withheld to maintain anonymity

Regrettably, they did not understand some of these financial systems, and expressed huge frustrations.

“The systems that we had in place were in many instances historical. We implemented that historical system unless there was a change in financial policies within DUT. So we would draw up a budget of everything we required for the year, look at how the previous year’s budget turned out, and most of the time it was roughly the same in the year that we were considering.”

[HoD 23]

Other Heads of Departments indicated that they did not understand the budgeting system which often required multiple engagements with finance personnel and inferred that training would help them gain clarity.

“Having so many pockets of budgets, this complicates matters. Also, the other problem is that there are too many other people that control these different pockets of money, so it’s not just a relationship between me and the finance officer, I still need to speak to another person in another section which compounds the problem. It’s important that we have a clear understanding of which budget you can use for what. At times it’s a little bit of a challenge having enough money on one budget and none on another.”

[HoD 18]

Most of the participants reported on the financial challenges faced by their department regarding the procurement of goods and services. These challenges included time delays and the choice of suppliers. Suppliers who are not on the database are often far less expensive than those on the database. Not only are goods received from suppliers on the DUT database often more expensive, but the quality, durability, and appropriateness is often in question. In addition, participants complained of a lack of communication from the department responsible for procurement.

“We have to use people who are on the database. There are cheaper options, but we have to use the people on our database.”

[HoD 18]

In order to deliver quality education to students, the purchase of capital items and consumables need to be made timeously.

“There are major risks when we are not delivering to the students. This is a major risk for me, and also for [with] procurement [procedures]. There are major delays between finance and procurement and it's a major risk.”

[HoD 4]

“I can go online and buy [specialised equipment] from Amazon, and get it delivered here for a fraction of the price compared to the suppliers we have on the DUT database. The other thing is we have poor service delivery from these approved suppliers. There are some good providers, but some provide a very poor service. So poor that I've complained to finance, and asked them to get those people off. They take us for granted because they know we're a captive customer with no choice. So there's very little a HoD can do. It's more about all the other role players. At the end of the day, it's finance – it's the finance department and their policies that you are held ransom to. Some of them are good and we understand that in a large organisation, where there's [potential] corruption we need things in place. Someone sitting in the finance department doesn't understand the needs and wants of a department.”

[HoD 15]

“One of the things that seriously hampered my ability to manage, or to grow a department with what was available, was that some of the processes were murderous. So although you could imagine something, and you could imagine where the money could come from, and it probably could legitimately come from there, you didn't even go there because you just knew you would be writing 20 letters and walking a requisition for miles and having to argue with someone here, and having to explain something there, and the process just became too difficult and time consuming.”

[HoD 8]

These participants were of the opinion that due to assistance from University support departments not being forthcoming, the financial processes within DUT stifle motivation to create short courses or 3rd stream income.

“We have the potential, we have the ability, what we don’t have is the motivation, because, in the past, we have not gotten the support we needed from DUT with respect to these short courses. From actually putting together an application to do it, passing it through EXCO and Faculty Board, and arranging the tea and the accommodation and the room where we’d actually deliver it, it’s basically a task on its own for a staff member. For me, the academics were already overwhelmed on delivering on the three main areas of research, teaching, and community engagement, and to add this to somebody’s portfolio was really an onerous task.”

[HoD 20]

The participant below did not want to create any short courses due to the complicated financial systems.

“The only 3rd stream income we have are the clinics. We’ve never had short courses or any other means of generating income for the department. One of the reasons for that is that the systems were a mission to set up a short course. The process was very onerous and there was a lot of red tape. Then the institution took a portion of that away, and we were left with a small amount. People [academic staff] felt it wasn’t worth it to do this.”

[HoD 23]

4.2.1.9 Theme 9: Financial Management and Control Measures

DUT’s Finance Policies and Procedures indicate that the control procedures must be strictly adhered to (DUT 2018). The framework for financial control is one of the most important necessities of a budget (Barr and McClellan, 2011). Increased financial control is a very important function that includes controlling the use, misuse, and abuse

of resources through budgeting, tracking, and reporting on financial resources, ensuring planning, resource allocation, risk assessment. Ensuring that quality is maintained at all times, reviewing and reporting regularly, constantly monitoring and evaluation of all processes, as well as ensuring that all control measures, instruments, and systems are in place and followed, all fall into the category of financial control.

Most of the participants admitted that they had no financial control systems in place due to a lack of skills. A few of the participants recalled being trained by Faculty management between 2013 and 2015. Instruction was offered as to how to maintain records and systems on spreadsheets.

“At one point Greg Bass, the ex-Deputy Dean used to do workshops to teach us how to keep excel spreadsheets on finance systems. That helped us keep track of what was being bought, and when, and I could question things. As HoD you don’t do the requisitions, other people do them. You can always check if you have your own record because procurement doesn’t capture everything as quickly as possible, so then you have an idea of exactly what’s where.”

[HoD 22]

Six of the departments in the FoHS reported having technicians or administrative staff who manage or control the finances of the department, in consultation with the Heads of Departments. Managing the budget in a department involves multiple cost centres and a multitude of different accounts. If the department has individuals who are able to manage the financial matters of the department, they can be an asset to the department and consequently to the Heads of Departments (Barr and McClellan 2011). A competent finance assistant will be able to identify what the department needs to know and will seek help from others within the institution to attain the needed information and skills. The individual or individuals who manage or control the budgets must be in a position to provide information and data to those who make the decisions, namely the Heads of Departments, their immediate line manager (Barr and McClellan 2011).

“There are two people in our department who oversee the budgets, our technician and our secretary.”

[HoD 14]

“Between [secretary¹⁴] and I - I rely a lot on [secretary] - she does the printing, she gets the ledgers and tells me how much money we have left. She keeps a spreadsheet, and records all our purchases and the balances in the accounts.”

[HoD 19]

“Two people in the department had the all the accounts of the department split between them. The secretary, the technician, and myself as HoD.”

[HoD 20]

“[The secretary]¹⁵ runs all the financial aspects of the programme, obviously in consultation with me. She really manages that whole process.

[HoD 21]

One participant believes that financial control includes controlling all resources under the care of the Heads of Departments.

“Control doesn't only mean controlling the use of the money it means controlling and looking after whatever it is that you have purchased. Making sure people are trained to use the equipment and maintain the equipment. Also, the utilisation of time because finances paid the salaries - effective utilisation of staff is part of financial control.”

[HoD 18]

Another participant believes that financial control and financial management can be gained from regular communication.

“Heads of Departments should have checks and balances in terms of their expenditure and how it's allocated and budget allocations should be fair and transparent. They should have regular meetings to make sure people know what's going on. They should ensure that people prioritise and it's agreed upon

¹⁴ Name withheld to ensure anonymity

¹⁵ Name withheld to ensure anonymity

by everyone. The expenditure must benefit students and teaching and learning.”

[HoD 22]

In terms of financial management, Head of Department 8 is of the opinion that the department heads are unaware of how to make optimum use of the resources available to them.

“I think most heads are flying by the seat of their pants, and hoping that nobody above them is going to ask them what they're doing. People are not sticking their necks out or taking calculated risks financially, they're just doing what they know they can do, which is fine, because it doesn't put you in chaos, but they don't necessarily optimise on the resources available. This is something that comes with time, and the HoD term is 3 years. By the time you've been there for 3 years, you haven't worked that out.”

[HoD 8]

Another participant felt that the University does not offer the Heads of Departments sufficient support in terms of financial management.

“When you are at this point, you should be maximising on expertise rather than doing admin work. Heads of Departments need admin support, financial support. They [departmental heads] can have brilliant dreams but until it's made logistically doable with the right people offering the right support, it's just a dream. If you come to me and ask me to put a course together, I can do that in a heartbeat, but don't ask me to handle the finances of it, or find venues, or sort out admin issues. It's a big hole at DUT. There's a lot of potential, but a lack of support. I feel that academics have to be a jack of all trades, financial management, lawyer-speak, psychiatric evaluations and healthcare. We are not making use of our true talents. Because we are so concerned with doing an adequate job of all these other things, we are not doing a brilliant job of what we're here to do - teaching and learning. We could be doing a brilliant job of teaching and learning, but we just don't have the time. We're too busy following the admin trail, and the finance trail, and the management trail, and

procurement processes. We don't get support, we have to chase after these 'support' departments. As HoD I have to chase after my requisitions. They should be informing me, not me chasing them. We're getting the quotes, we're doing the requisitions, we're phoning suppliers."

[HoD 20]

The responses received indicated that in order for the Heads of Departments to be in a position to implement control procedures, they should be trained to create and distribute budgets. Only then would they be in a position to effectively control the budgets allocated to them.

It became apparent that Heads of Departments' main priority is the need for training in the various areas of financial management. The discussion now turns to chapter five where the conclusions and recommendations of this study will be discussed.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter is a discussion on the findings of this research, as well as conclusions and recommendations to aid in the development of the financial management knowledge and skills required of the Heads of Departments in the FoHS.

The study set out to achieve four research areas and provided evidence to these areas. These areas included financial management skills required of the Heads of Departments in order to carry out their duties, highlighted financial management skills they possessed, indicated where the gaps were, and discussed requirements recommended in order to fill those gaps in financial management. The objectives were:

- i. To ascertain the knowledge and financial skills required of the Heads of Departments within the FoHS at DUT
- ii. To determine the training needs of the Heads of Departments within the FoHS to allow for more effective financial management knowledge and skills
- iii. To recommend methods by which the financial management knowledge and skills required of the Heads of Departments within the FoHS may be developed.

This concluding chapter also considers suggestions for further study in this area, without compromising the quality of the findings of this thesis.

5.1 Summary on Findings

The majority of the participants admitted that they had no financial control systems in place due to their lack of skills in financial management. Between 2013 and 2015, the

Vice-Chancellor of that time encouraged training sessions that covered financial management. A minority of the study participants who were trained by Faculty management during this time, felt that those training sessions were beneficial. The study overwhelmingly found that training of the Heads of Departments in financial management post-appointment, was vital and that limited training had been provided during their time as the Heads of Departments.

Of the sample population of 22 Heads of Departments, 11 were male and 11 were female, making the relevance of gender inconsequential, as no difference in responses was noted between the two groups. Most of the participants were married, with smaller numbers being single or divorced. This too showed no influence in responses based on marital status. The demographics of race were quite balanced, with 36.6% being African, 36.6% being Indian, and 27.27% being White.

With regards to qualifications, the majority, 60.87%, of respondents held a Masters qualification, while the remainder, 39.13%, possessed a Doctoral degree. This indicated that even those with a doctoral degree in health sciences required training in the area of financial management, despite the minimum requirements to be appointed as the Heads of Departments at DUT being a Doctorate.

The majority, 21 of the 22 participants, agreed that they were aware that financial management is a part of the job description ($p= 0.004$). Other aspects of the job description were also known. An average of 46% reflected “strongly agree”, while 50% fell into the “agree” category. The majority of participants stated that financial management was the area in which they required training in order to be competent Heads of Departments.

The findings determined that a significant number of the Heads of Departments are unfamiliar with downloading or interpreting the general ledger, and also indicated that their departmental finances are managed by a staff member within their department. The majority of participants indicated that the financial aspect of their department is managed by a financially skilled member of staff within the department. Bresnan *et al* (2017) suggest that finance assistants often play a critical role in possessing the required business skills to manage academic departmental finances. Managing the

budget in a department involves multiple cost centres and a multitude of different accounts. If the department has individuals who are able to manage the financial matters of the department, they could be an asset to the department, and consequently, it is imperative that the Heads of Departments is proficient in all aspects of financial management, which includes understanding the workings of the general ledger (Barr and McClellan 2011). Nevertheless, if the department heads recognises and delegates responsibility to a competent finance assistant, the Heads of Departments will still need to be able to identify the relevant necessary knowledge, and if necessary, obtain help from others within the institution to attain the needed information and skills. If the Heads of Departments delegate this responsibility, the designated individual or individuals who manage or control the budgets must be in a position to provide information and data to those who make the decisions, namely the Heads of Departments (Barr and McClellan 2011).

As described in the previous chapter, the majority of participants had served in the position for more than four years. Only one of the participants had been in the position for less than a year. Ishola, Adeleye and Tanimola (2018) believe that more experience in a position can enhance the quality of decision making by being able to recall relevant procedures, and to anticipate contradicting challenges. The study found this to be true in that the experienced Heads of Departments were far more forthright in their answers and confirmed that they were not, when appointed, in a position to understand the financial management requirements of the position. However, they learned to become competent while engaged in the position, with some believing that this process took in excess of three years. Consequently, half the period of the department heads appointment was learning in-service. Up to 2019, the Heads of Departments at DUT were appointed for a period of three years only. Subsequently, since 2020, Heads of Departments are being appointed for a period of five years.

The Heads of Departments are responsible for the financial viability of a department. One way of generating finance for viability is through 3rd stream income, which included developing and managing 3rd stream income, project budgeting, setting targets for revenue and expenditure, as well as determining the form and value of the revenue required. The correlation between the requirement of financial management as a skill in order to engage in projects, and that of the requirement of financial

management in order to create and manage 3rd stream income, is significant ($p=0.510$). The study indicates that department heads agree that in order to create and manage 3rd stream income, financial management is a necessary skill. Most of the Heads of Departments, together with their staff, have no training as to how to financially predict the profitability of 3rd stream income. While efforts are being made to create 3rd stream income for their departments, the department heads expressed that in order to improve their generation of 3rd stream income, more support and direction is required from the University. Some of the Heads of Departments lack the motivation to generate or manage 3rd stream income. They were of the opinion that a lack of support existed in the University, in respect of 3rd stream income and that the financial processes within DUT stifle motivation to create 3rd stream income. This needs serious attention from University management to address systems that reserved the enthusiasm of the Heads of Departments to engage with initiatives that generate 3rd stream income.

The study found consistency with Sin and Amaral (2017), who express that with the increased demands of administration and reporting procedures, the Heads of Departments are caught having to balance academia and business (Sin and Amaral, 2017). Highly experienced health professionals employed as academic Heads of Departments, spending less time on academic duties, and more time on the administrative function, impacts negatively on the department, the Faculty, the University, the training of future academics, as well as the future of health professionals.

With regards to the participants' financial projections, some interviewees indicated that no financial planning was occurring in their department. Planning and subsequent generation were most often completed by predecessors. This shows that the Heads of Departments themselves lack an understanding of the job requirements and whilst it is easy to find excuses for poor management, the department heads should be cognisant that planning is a requirement of the job and where the institution does not provide it, they should seek help regarding financial matters. The study concludes that the Heads of Departments lack the training for financial management competence, nor do they have the motivation to seek the training.

Participants had great difficulty understanding DUT financial systems operating in their departments. Most participants reported that they inherited the systems. Regrettably, there appeared to be little understanding of some of these financial systems, resulting in frustrations of the incumbents. Once again, the Heads of Departments did not seem to have the motivation to correct this.

Other Heads of Departments indicated that they did not understand the budgeting system, which often required multiple engagements with finance personnel. They further stated that training would help their understanding, especially post-appointment.

Some participants explained that operational budgets were inherited when they were appointed as the Heads of Departments. There was not much to consider since the budget was increased by a set 5% or 6% annually by the finance department. The budgets appeared to be historical and were often inherited from the previous department heads. They pointed out that no financial planning was required of the Heads of Departments. This again illustrates the non-existence of financial training afforded to the new and existing Heads of Departments who stated that they were unskilled and that if they were to be competent in financial budgeting, training was required. Surprisingly, they believed that they were incapable of producing budgets.

Most of the participants' responses stated that they are largely unaware of how the operational expenditure budget in their department was allocated. Without knowing how their operational budget was allocated, the Heads of Departments could not be expected to maintain or control their budgets. This finding, however, suggests that equal blame may be apportioned to the department heads of the University, as attempts should be made to understand the operational budget and its formulation.

Lack of support from the finance department was frequently raised by the Heads of Departments. The department heads indicated that the University does not offer them sufficient support in terms of financial management. DUT's Strategic Plan 2.0 (DUT 2017), as well as DUT's revised Strategic Plan "ENVISION2030" (DUT 2020), focuses on building a sustainable University. The objective for this strategic focus area includes developing a sustainable growth framework that ensures rigorous and aligned

planning, resource allocation, risk assessment, and quality assurance. This should prioritise the need for the budgeting and resource allocation to be aligned with the strategic plan and planning cycle, as well as aligning the divisional budgets to be more reflective of the current challenges and expenditure.

With regard to financial shortfalls (exhausted budgets) to operate the department, a significant number of the Heads of Departments admitted that they have no way of dealing with these financial shortfalls, other than to request assistance from the Executive Dean's budget or appeal for financial help from other departments. One participant reported that learning to rearrange the teaching structure and exploring creative ways to manage finance and consequently shortfalls, had taken between two and three years. If the Heads of Departments received the correct financial management training required for their role, it would not take this length of time. Inevitably, departments will lack funds to be financially viable and function outside the confines of the University department budget, for example, to attend conferences not supported by a University budget. Ultimately, financially empowered Heads of Departments must proactively seek avenues to address financial management shortfalls within their departments and ensure financial sustainability (DUT 2017; DUT 2020). When faced with financial shortfalls in specific budgets, departments at DUT are given the opportunity to transfer funds between line items on an annual basis (DUT 2012a). This can be a dangerous practice, since taking from one budget to maintain another may result in a shortfall. Therefore, the need is highlighted for training in financial management which includes the formulation and usage of budgets.

The study examined the matter of the financial viability of departments. To be financially viable entails proactively promoting the optimisation of all resources and facilities and developing financial skills to optimise sustainable growth. It is imperative to departments that the Heads of Departments have a firm understanding of all sources of revenue as well as budgeting skills. Should the departments' major source of revenue (FTE's) be from a specific academic programme, their budgets would be adversely affected by a reduced enrolment. This is a significant driver in the financial viability of departments (Barr and McClellan 2011). A significant proportion of the respondents indicated that they were able to manage the different aspects of ensuring financial viability through departmental finance management. Ward, Calabrese, and

Finkler (2018) assert that to meet these goals of profitability and financial viability in an efficient and effective manner, the Heads of Departments need to have a firm understanding of the direct consequences of student enrolment on financial management. In order for universities, and consequently departments to be financially viable, strategies need to be adopted. These include understanding enrolment and financial management (Barron 2017). It is understood that within current higher education, financial viability cannot be sustained by income generated from tuition fees alone (Barron 2017). DUT uses a financial viability model to determine departmental viability. Nevertheless, the Heads of Departments, in the main, are not understanding of the model or the effect of enrolment and they require training in order to influence viability. This once again highlights the need for training.

Increased financial control is a very important function that includes controlling the use, misuse, and abuse of resources through budgeting, tracking, and reporting on financial resources. Added to this is ensuring planning, resource allocation, risk assessment, ensuring that quality is maintained at all times, reviewing and reporting regularly, constantly monitoring and evaluation of all processes, as well as ensuring that all control measures, instruments, and systems are in place and followed.

5.2 Recommendations

Arising from the research, the following recommendations are suggested:

1. It is crucial that all the Heads of Departments must have ongoing training in financial management.
2. In the minimum requirements for the position of the Heads of Departments, the University should include that applicants should have a basic understanding of financial management.
3. Academic qualifications should not be the requirement for the appointment of the Heads of Departments. Financial competency and not qualifications, should be required as part of the appointment process.

4. It is recommended that informed financial management is cascaded in an educational institution to the Faculty and the individual department heads. The Heads of Departments must be empowered to make the necessary assessment of the financial data and make informed financial decisions.
5. Training and workshops are required for the Heads of Departments to understand and manage financial management, which, in turn, will aid in efficient departmental management, reducing time spent on financial matters and providing time to be devoted to the management of the core function, namely, teaching and learning.
6. As a priority, the financial training given to the Heads of Departments should include the understanding of FTEs, how they are calculated, and the effect these FTE's have on the department's financial viability.
7. Effective annual budgeting should be executed, rather than simply adding a percentage to the budget each year.
8. If the Heads of Departments are expected to formulate budgets on their own, training is imperative.
9. Planning workshops should be provided to allow for innovative and creative thinking in respect of financial management, without creativity being stifled. Appropriate containment measures in terms of budget constraints to prevent overspending should also be included in these workshops.
10. In order for the Heads of Departments to understand the DUT financial systems and processes, workshops should be held whereby these systems are explained and fully understood.
11. The Heads of Departments should receive training in the workings and understandings of the general ledger.
12. In order to fully understand the DUT financial viability model, the Heads of Departments should be trained in the understandings thereof.

13. University systems, especially those relating to 3rd stream income, should offer support to the Heads of Departments so as to motivate them to seek 3rd stream income opportunities.
14. With the analysis of data, it is recommended that the researcher complete a course on thematic analysis prior to data analysis.

5.3 Suggestions for Further Study

1. In terms of future studies, it is suggested that comparative studies be carried out with other DUT Faculties, as well as other universities.
2. Investigate the effects of adding a yearly increase to budgets on the motivation of the Heads of Departments to plan for sound financial management of departments.
3. Investigate the effects of 3rd stream income on the financial viability of departments.
4. NVIVO software was employed for the thematic analysis of transcribed data. Careful attention, however, must be given when extracting data as comments can become decontextualized. The length of time that transcribing took was greatly underestimated.
5. With the analysis of data, it is suggested that a course on thematic analysis is completed prior to data analysis.
6. An area of focus should be the formulae for financial viability, and a cost model for indirect costs. Currently, there is no clear cost model for indirect costs.

5.4 Conclusion

This study aimed to determine the knowledge, skills, understanding, and management of finances by the Heads of Departments within the FoHS at DUT. This study has met the objectives, in that the researcher has found what financial management skills were required of the department heads in order to carry out their duties, what financial management skills they possessed at the time of the interview, where the gaps were, and what requirements would be recommended in order to fill those gaps.

This research found that the Heads of Departments are ill-equipped for the role, specifically in the area of financial management, yet it is imperative that they have these skills as the lack of such skills hamper continued financial management in their departments. Furthermore, this research found that the department heads have acquiesced that they do not have these skills, and expressed a desire for training in this area. Whilst many of the Heads of Departments did not have the initial financial management skills, through necessity, the department heads learned on the job and were able to financially manage albeit not optimally.

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Appendices

6.1 Appendix A: Correlations

Bivariate correlation was also performed on the (ordinal) data. The results indicate the following patterns. Positive values indicate a directly proportional relationship between the variables and **negative values** indicate an inverse relationship.

CORRELATIONS																							
	Facilities and physical environment	Human factor	Academic activities	Quality and risk assessment	Providing quality healthcare	Departmental strategy	Research activities within your department	Financial management	When making financial decisions, you refer to the policy documents regularly	Your financial decisions are influenced by the regulatory body of your programme	The head of department	A financially skilled member of staff within the department	You have a sound knowledge of how the procurement system operates	As you are HOD, fully aware of all the budgets in your department	The skill of financial management is required to engage in projects undertaken by your department	In order to create and manage 3rd stream income in your department, the skill of financial management is required	You have been able to financially develop projects within your department	As head of department, you are in a position to identify and reduce wastage	When appointing staff, you consider the financial viability of your department	As head of department, you are in a position to provide a financial report of what has been purchased within this financial year	You are able to download the general ledger off the ITSS System		
Human factor	.518																						
Academic activities		.521																					
Quality and risk assessment	.623	.636	.442																				
Providing quality healthcare	.434																						
Departmental strategy	.456	.420	.586	.462																			
Curriculum development		.415	.808	.442																			
Research activities within your department			.537																				
Financial management	.486	.469		.604																			
The head of department								.511															
In order to create and manage 3rd stream income in your department, the skill of financial management is required							.440								.510								
ECP														.457									
UCDG											.504		.537	.569			.485						
Skills development						.462								.553									
YB / YE											.454		.534	.795									

Financial Preparedness of Heads of Departments in the Faculty of Health Sciences at the Durban University of Technology

QUESTIONNAIRE

This questionnaire focuses on financial processes and controls within the university environment, and how decisions can impact the future financial health of the departments.

The questions were chosen based on the areas we consider most commonly would apply to a Head of Department within the Faculty of Health Sciences at the Durban University of Technology.

PART A: DEMOGRAPHICS

Title:	Prof	Dr	Mr	Mrs	Ms
Age Group:	20 - 29	30 - 39	40 - 49	50 - 59	
Sex:	M	F			
Marital Status:	Single	Married	Divorced		
Race:	African	Coloured	Indian	White	
No. of Years as HOD	< 1 year	2 – 3 years	3 – 4 years	> 4 years	

PART B: QUESTIONNAIRE – OPEN ENDED QUESTIONS

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	<i>You are fully aware of the job description of a head of department in terms of the:</i>					
1a	Facilities and physical environment.					
1b	Human factor.					
1c	Academic activities.					
1d	Quality and risk assessment.					
1e	Providing quality healthcare.					
1f	Departmental strategy.					
1g	Curriculum development.					
1h	Research activities within your department.					
1i	Financial management.					
2	Financial management is a skill required to be a Head of Department.					
3	You would recommend that heads of departments receive training in the area of financial management.					
4	When making financial decision, you refer to the policy documents regularly.					

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
5	Your financial decisions are influenced by the regulatory body of your programme.					
6	<i>In your opinion, the management of finances for your department should be handled by:</i>					
6a	The Head of Department.					
6b	A financially skilled member of staff within the department.					
6c	The Faculty finance officer.					
7	You have a sound knowledge of how the procurement system works.					
8	As a head of department, you are fully aware of all the budgets in your department.					
9	The skill of financial management is required to engage in projects undertaken by your department? (eg: CTG / UCDG / ECP / etc.,).					

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
10	In order to create and manage 3 rd stream income in your department, the skill of financial management is required.					
11	You have been able to financially develop projects within your department (new labs / refurbishments of labs, etc.,).					
12	<i>You are fully aware of how the following budgets are considered, proposed and managed:</i>					
12a	ECP					
12b	UCDG					
12c	Skills Development					
12d	YB / YE					
13	As a Head of Department, you are in a position to identify and cut waste, (do more with less).					
14	When appointing staff, you consider the financial viability of your department.					

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
15	When accepting students, you consider the financial viability of your department.					
16	As a head of department, you are in a position to provide a financial report of what has been purchased within this financial year.					
17	You are able to download the General Ledger off the ITS System.					
18	You are able to interpret the General Ledger.					

Financial Preparedness of Heads of Departments in the Faculty of Health Sciences at the Durban University of Technology

QUESTIONNAIRE

This questionnaire focuses on financial processes and controls within the university environment, and how decisions can impact the future financial health of the departments.

The questions were chosen based on the areas we consider most commonly would apply to a Head of Department within the Faculty of Health Sciences at the Durban University of Technology.

PART C: QUESTIONNAIRE – INTERVIEW

1. According to DUT policies and procedures, heads of departments are expected to ensure that operational and levy budgets are distributed across programmes and processes in such a way as to maximise their benefit. How do you do that? What systems do you have in place?

.....

2. What informs your decision on which budget to use?

.....

3. How was the budget allocation in your department determined?

.....

4. What systems do you have in place to ensure that these budgets are distributed in such a way as to maximise their benefit?

.....

5. What financial control procedures are in place?

.....

6. The University Strategic Plan 2.0 calls for 3rd stream income to be developed and managed. What 3rd stream income has your department developed?

.....

7. Who completed the financial projections for your 3rd stream income?

.....

8. How do you determine what your CAPEX requirements are?

.....

9. How are financial shortfalls within your department managed?

.....

10. What is your greatest cost driver? (what factors impact the financial viability of your department)

.....

11. How is quality and risk assessment in your department managed?

.....

12. How do you ensure that the quality of decisions made by all stakeholders (students, staff, practitioners, patients), is improved?

.....

13. Any other comments you'd like to make? Anything I may have missed that may be relevant to this topic?

.....

04 March 2020

Dear Participant,

LETTER OF INFORMATION AND CONSENT

I am currently undertaking a research project in partial fulfilment of a Master of Technology Degree in Cost and Management Accounting. The research aims to highlight the "*Financial Preparedness of Heads of Departments, within the Faculty of Health Sciences at Durban University of Technology*".

Your assistance in participating in this study would be greatly appreciated and would contribute significantly to research in Management Accounting. If you agree to participate in this research, the completed thesis will be made available to you on completion of this study.

The researcher hereby requests approximately 15 - 20 minutes of your time, during which we will complete a questionnaire which comprises of both closed and open ended questions.

The information you provide will be used only for research purposes. Furthermore, your identity and response will be kept completely confidential.

Yours sincerely

Wendy Allison

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(office) 031-3735632

04 March 2020

Dear Participant,

LETTER OF INFORMATION AND CONSENT

I am currently undertaking a research project in partial fulfilment of a Master of Technology Degree in Cost and Management Accounting. The research aims to highlight the “*Financial Preparedness of Heads of Departments, within the Faculty of Health Sciences at Durban University of Technology*”.

Your assistance in participating in this study would be greatly appreciated and would contribute significantly to research in Management Accounting. If you agree to participate in this research, the completed thesis will be made available to you on completion of this study.

The researcher hereby requests approximately 15 - 20 minutes of your time, during which we will complete a questionnaire which comprises of both closed and open ended questions.

The information you provide will be used only for research purposes. Furthermore, your identity and response will be kept completely confidential.

Yours sincerely

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