THE DEVELOPMENT OF A FINANCIAL PERFORMANCE MEASUREMENT FRAMEWORK FOR SOUTH AFRICAN EDUCATION INSTITUTIONS

BY

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Dissertation submitted in partial fulfilment of the requirements for the Degree:
MAGISTER IN BUSINESS ADMINISTRATION
in the Faculty of Management
at the Port Elizabeth Technikon

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DATE: DECEMBER 2003
Declaration

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ACKNOWLEDGEMENTS

1.2.2.1 The successful completion of this research would not have been possible without the support, guidance and encouragement of certain individuals. In particular, the assistance of the following are gratefully acknowledged:

- Dr Tim Hutton for his valuable input and guidance given throughout this project.

- The Port Elizabeth Technikon for financial assistance.

- The respondents of this research who supplied empirical data.

- Ms Lee Kemp for editing the text.

- My wife Novella for her encouragement and support.
ABSTRACT

Limited research has been conducted on financial performance indicators in South Africa. In European countries, Australia and the United States of America, literature has shown that there has been extensive research and implementation of performance indicators, to measure the achievements of objectives.

A literature study was conducted for this research on the usage of PI's, with a view to pinpointing the financial indicators. The literature study was used to develop a questionnaire. The questionnaire was distributed to universities and Technikons in South Africa, to obtain a measure of relevance and agreement on the performance indicators.

The findings of the questionnaire culminated in a model that only consists of those indicators with a high level of concurrence among respondents.

Performance indicators can serve as a management tool to measure performance and as a means to enhance transparency and accountability.
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CHAPTER 1
INTRODUCTION, PROBLEM STATEMENT
AND DEFINITION OF KEY CONCEPTS

1.1 INTRODUCTION

Research conducted for this study revealed that financial performance measurement within higher education (HE) institutions, although regarded as important, is lacking among the South African institutions. Based on the research, performance measurement within the identified measurement areas - effectiveness, efficiency and economy - is seen as essential in order to achieve a balanced view of the financial performance of the institution.

HE institutions in South Africa have undergone major changes. The Department of Education (DOE) instructed the Council on HE (CHE) to formulate a proposal to restructure the size and shape of education in South Africa. This move caused great concern within the institutions as to how these structural changes may affect them. The CHE has produced two reports on the topic of restructuring and within these reports; it was clearly identified that the performance of HE institutions should, in some way, be measured.

This research aimed to develop a standard framework of financial performance indicators (PI) for institutions of HE and at the same time make available to the DOE at least a standard set of financial indicators from which to assess performance.

In the debate concerning the National Plan for HE, Professor Kader Asmal, the Minister of Education said: “HE institutions must be held accountable to the people of this country for the large investment that is made in the system. Universities and Technikons are key public institutions and as such, must
contribute to the reconstruction and development of South African society”. (2001:04:05)

After considering the recommendations of the National Commission on HE (NCHE), the Ministry decided on a balanced strategy of greater cost-effectiveness, growth and transformation. Furthermore, they envisaged continued growth of private expenditure flows to HE institutions. Institutions should improve internal efficiency, reduce unit costs and increase productivity.

The Green Paper on HE supports the Ministry’s strategy that, apart from measures designed to aid institutions to greater efficiency, they should also broaden their funding base by various means.

According to Noam, Pines and Rey (2001:162), “State subsidies of tertiary institutions have diminished steadily since a new formula was initiated some years ago.” They specify a cut of R30,1 million for 2002, 2003 and that it will have staff and expenditure control implications.

1.2 THE MAIN PROBLEM

The main problem was developing a balanced framework of standard financial performance measures/indicators that is essential to the effective financial management of HE institutions. This framework could be adapted and implemented by HE institutions, with the view to measuring progress towards achieving goals and objectives.

1.3 SUB-PROBLEMS

In solving the main problem of the research, a number of sub-problems needed to be addressed. These included:

a) What financial PI are presently used in education institutions?
b) Do education institutions use financial PI to measure their financial effectiveness?

c) What are the cost drivers in HE institutions?

d) What financial PI do knowledgeable people feel are applicable to HE institutions?

1.4 DEFINITION OF KEY CONCEPTS

The following definitions are regarded as key terms and concepts of this research.

1.4.1 Performance Indicators

Hilliard (1995:5) believes that the public service faces a difficult task, to try to develop PI, “or measures for efficient, effective and economical government and administration.”

Dochy, Segers and Wijnen (1990: 72) state that PI are the empirical data, quantitative and qualitative, which indicate how an organisation operates and the processes it implements to achieve its goals. The financial indicators are context and time-related. PI are tools to measure the achievement of goals, for example, the pass rate of students, or the number of students who find employment after completion of their qualifications, expressed as a ratio and compared with a standard set by the institution.

The empirical data are only important as PI if they are expressed against the plans/goals and parameters of the institution using them. Because they are context related, certain indicators/data may only be regarded and used as management statistics, while others may be interpreted as PI. Dochy et al (1990: 72) give the example that from a governmental point of view, concerning the
liberation goals, the male/female ratio within a student community is a clear indication of the performance of an institution. The institution may regard this ratio as irrelevant and view it as only a statistic. Dochy et al (1990: 85) argue that PI highlight the problems, act as a catalyst for action and can initiate discussion, disagreement and further action by government and institutions for HE.

Hilliard (1995:5) regards public accountability and the pressure placed on public managers to employ tools and techniques to assist them in their pursuit of greater efficiency, as a more “businesslike approach” and encourages the use of PI as tools.

1.4.2 HE Institutions, Universities and Technikons

HE is defined, according to Bowen (1980: xxi), as education beyond the secondary level and conducted in accredited institutions. The concept of the HE institution refers to universities and technikons. Although research from international sources may refer to colleges, polytechnics or schools, it is assumed that these all fall under the definition of HE institutions.

According to the Government Gazette No.18515 (1997: 8) the Higher Education Act, 1997 defines HE as all learning programmes leading to qualifications higher than grade 12 or its equivalent, and includes tertiary education. In addition it defines the HE institution as any institution that provides HE on a full-time, part-time or distance basis, which is:

a) Established as a public HE institution under The Act;

b) Declared as a public HE institution under The Act; or

c) Registered, or conditionally registered as a private HE institution under The Act.
1.4.3 Cost drivers

Cost drivers are used to allocate costs to cost objectives. They are used to describe the events or forces that are significant determinants of the cost of the activities. This definition refers to those factors whose occurrence creates the costs.

1.4.4 Effectiveness

Fox and Meyer (1995:60) describe effectiveness as: "A criterion according to which an alternative is recommended if it results in the achievement of a valued outcome. In particular it refers to a condition in which a focal organization, using a finite amount of resources, is able to achieve stated objectives as measured by a given criteria, and the extent to which a programme is achieving or failing to achieve its stated objectives."

1.4.5 Indicators and measures

a) The Oxford Dictionary for International Business provide the following explanation:
   Indicator: "Statistical measure representing an economic variable. Indicators are useful both in the formulation of economic theory and in assessing the effectiveness of economic theory." (1998)

b) The Reader’s Digest Dictionary provides the following explanation:
   Measure: "A reference standard or sample used for the quantitative comparison of properties. A basis for evaluation or comparison: the measure of achievement. A specified extent, degree, or amount..." (1987:957)
1.5 DELIMITATION OF THE RESEARCH

The theoretical information comprises mainly international data obtained from a literature review. Limited information on the subject was found in South African literary sources.

The research was limited to the South African universities and technikons named below:

1.5.1 Universities

University of Cape Town       University of Pretoria
University of Durban-Westville Rand Afrikaans University
University of Fort Hare         Rhodes University
University of the Free State    University of South Africa
Medical University of Southern Africa University of Stellenbosch
University of the North         University of Transkei
University of Natal (Durban)    Vista University
University of Natal (Pietermaritzburg)  University of the Western Cape
University of the North-West    University of the Witwatersrand
University of Port Elizabeth    University of Zululand
Potchefstroom University for Christian Higher Education

1.5.2 Technikons

Border Technikon              Technikon Natal
Cape Technikon                Technikon Northwest
Eastern Cape Technikon        Technikon Northern Gauteng
In addition, the research was limited to financial PI which were determined in a way that allowed them to be applicable to the South African situation and calculated from data available to South African universities and technikons. The financial performance measurement frameworks were determined by a survey of all South African universities and technikons concerning factors believed to be relevant to the institutions in South Africa.

1.6 KEY ASSUMPTIONS

It was assumed that all research relating to international HE institutions would pertain equally to South African HE institutions, and in particular, to all universities and technikons.

It was assumed that any information relating to South African HE institutions applied equally to universities and technikons.

1.7 RESEARCH METHODOLOGY

In this section the broad methodology that was followed to solve the main and sub-problems in the study is described.

1.7.1 Literature survey

A literature review was conducted to determine the literature available on the topic of financial performance measures in HE institutions. This review included both local and international literature.
Information was gathered from two or three international institutions that have successfully implemented financial performance measurement systems to determine which PI were selected and the methods used for implementation.

1.7.2 Empirical study

Data was collected via a global survey of all HE institutions, and a questionnaire was designed to standardize responses. A framework of performance measures for each category of institution was established from the literature review, information gathered from international institutions and the objectives identified. These frameworks were sent to all universities and technikons in a questionnaire format to establish the most appropriate performance measures per category of institution. The universities and technikons were asked to rank the most important indicator, within each measurement area appropriate for each category of institution.

1.8 LITERATURE REVIEW

1.8.1 Performance indicators and measures

Visser and Erasmus (2002:243) indicate that the concept of performance measurement “requires a verifiable unit in terms of which an output can be measured, and it includes the determination of efficiency, effectiveness, economy and equity.”

The literature survey established that PI should allow for informed decisions to be made and provide a starting point from which academic and managerial decisions should originate. Dochy et al (1990: 1) state that PI are no substitute for managerial judgments, but the fewer the indicators, the greater the gap that has to be bridged. Having made decisions and identified appropriate progress
measures of performance, a comparison of expected versus actual measures (based on PI) should form a part of the assessment of whether past decisions have been successfully implemented.

PI, properly defined and properly interpreted, can play a useful role both in the determination of policy and the management of an institution. Requirements that PI should adhere to, are identified by Dochy et al (1990: 1) include:

- they should be clearly related to the defined functions of the institution;
- they should be recognised for what they are - only indicators of the extent to which the institutional goals are achieved;
- they should be a valid representation of what they intend to indicate and capable of being measured and interpreted in a dependable and correct way;
- they should be incorporated into the machinery of “management technology” with caution, given that their values are relative rather than absolute.

At the time of the study research conducted thus far on efficiency and economy indicators was extended to incorporate effectiveness indicators to ensure that each area was adequately researched.

1.8.2 Current and proposed structures of South African HE institutions

During the course of 2000 the CHE presented two papers on the Size and Shape of HE in South Africa. The second report according to the CHE (18 July 2000: 4) was directed at the Minister of Education and presented proposals by the Size and Shape Task Team of the CHE on a new more effective size and shape for South African HE.

The categories proposed by the CHE (18 July 2000: 6) were as follows:
Institutions that constitute the bedrock of the HE system. The focus of these institutions would be on quality undergraduate programmes, limited postgraduate programmes up to a master’s level and research related to curriculum, learning and teaching with a view to application.

Institutions whose orientation and focus is on quality undergraduate programmes, comprehensive postgraduate tuition and research programs up to the doctoral level and extensive research capabilities across a broad range of areas.

Institutions whose orientation and focus are quality undergraduate programmes, extensive postgraduate tuition and research programs up to the doctoral level and select areas of research.

Institutions whose orientation and focus are dedicated to distance education.

Private HE institutions.

1.8.3 Strategic goals and objectives

The strategy of an organization as defined by Johnson and Scholes (1997: 10) is the direction and scope of the organisation over the long-term. The strategy achieves advantage through the organisation of resources within a changing environment, to meet the needs of markets and satisfy stakeholder expectations.

The strategic goals and objectives of an institution would be developed and regularly monitored by management and other stakeholders of the institution. The base objective of institutions operating within the same category would be similar; however, other goals and objectives may differ dependant on their offerings and other unique features.
1.8.4 Proposed content of the research

The thesis includes the following chapters.

CHAPTER ONE
Chapter 1 provides the problem statement, definition of concepts, delimitation of the research area, significance of the research, research methodology and organisation of the study.

CHAPTER TWO
Chapter 2 contains a general discussion on accounting practices which will provide the basis of the study that tertiary institutions are part of the public sector.

CHAPTER THREE
In chapter 3 all the possible financial performance measures identified in the literature review are determined and defined.

CHAPTER FOUR
Chapter 4 describes the international institutions were researched to gain information on the financial performance measurement systems they have implemented. Details on the PI used and the areas they measured will be highlighted.

CHAPTER FIVE
Chapter 5 gives an outline of the methodology used to collect the empirical data and describes the questionnaire structure. Next follows a review of the results of the empirical survey done on the universities and technikons and the conclusions drawn.
CHAPTER SIX
Chapter 6 describes the development of the financial performance measurement model, based on the results of the survey a framework of standard financial performance measures were developed for HE institutions.

CHAPTER SEVEN
Conclusions are drawn and recommendations made in chapter 7.

1.9 CONCLUSION

This chapter has outlined the focus and scope of the study. The government has instituted a number of changes to the HE landscape. Tertiary institutions have certain obligations towards the public, government, students and staff. These obligations are accountability, transparency and good governance. In achieving these goals councils and management will have to follow more guidelines and rules set by government. Financial indicators can be a tool or a warning to indicate action and decisions to be taken when problems arise.

The following chapters will focus on HE institutions (universities and technikons) as part of the public sector, as well as PI and international use of financial indicators. The survey results, the data analysed and a model for the South-African institution will be produced.
CHAPTER 2

TER TIARY EDUCATIONAL INSTITUTION AS PART OF THE PUBLIC SECTOR

2.1 INTRODUCTION

The public sector is defined by Lane (1993:14) "...as government activity and its consequence; state decisions and its outcomes, consumption by government and investments," thus raising questions about authority, legislation, budgets and employment by the government in public entities. Wilson (1998:1) stresses the importance of the public sector by indicating that an individual cannot isolate him/herself totally from public services. Everyone has to contribute to the running of these entities, because, “...services are used directly, for example roads, whilst others may be used indirectly, such as environmental regulation, police.” Jones and Bates (1994:1) say that the “Bylaws aided a more generic definition of the public sector bodies dividing them broadly into central and local government, public utilities accountable to parliament, other bodies funded gateway for taxation, bodies largely regulated, owned or controlled by central or local government, and educational and training establishments”

Profit making is not part of their strategy, bankruptcy is not an important aspect to be considered, because are financed by public funds and they are accountable to parliament and in turn to the people of a country. Their authority and existence stem from legislation that is needed to bring them into existence.

Gildenuys, Fox and Wissink (1991:71) provide reasons for the establishment of public entities:

- They are essential services that cannot be financed by private entrepreneurs;
- Users cannot afford these services;
They are needed for the security of the country;
They provide an environment of fair competition and economic growth;
They promote a certain ideology.

The public sector is governed by the goals of government, the allocation of resources and the needs of society. Some similarities can be drawn between public entities and profit orientated organizations as both are subject to the same influences of supply and demand and the management principles of planning, control and evaluation. However, public entities provide goods and services to the benefit of society at large, for example, protection and security.

Gildenhuys, et al (1991:71) provide the following characteristics of a collective service as provided by the public sector. It is non exclusive because it cannot be provided to one or a select few; it is usually inexhaustible, that is, the use of the product does not deplete the source or supply; and it is indivisible because the goods or benefits cannot be apportioned per unit cost.

The following accounting practices will be considered: cash-, budgetery-, fund- and accruals accounting. Activity based costing is reviewed as a method to allocate costs and to measure performance. Institutions have to provide financial statements to the Education Minister and must have certain accounting practices in place to produce these statements.

2.2 EDUCATIONAL INSTITUTION AS PART OF THE PUBLIC SECTOR

Technikons and universities are part of the education and training function that is available to individuals in our society. Gildenhuys states (1997:9) that governments must employ social welfare methods to uplift the welfare of individuals. The education and training function is one of these social welfare
functions. Tertiary education institutions form part of this function, and are essentially non-profit organizations that offer education and training.

The following factors indicate that tertiary institutions are public entities as stated by the HE Act, 1997 (No 23 of 2001): The introduction to the act states that it wants to regulate HE; to provide for the establishment, governance and funding of public HE Institutions and the registration of Private HE Institutions. Chapter 1 defines an institutions as being established or seen to be established as a Public HE Institution, declared as a Public HE Institution under this Act; registered as a Private HE Institution under this Act. The establishment of the Council of HE (CHE) as a juristic person and the merging of Education Institutions. Lastly, The government has certain control mechanisms in place that show that educational institutions are public entities, e.g. the funding from taxes, governance determined by government through laws, the decision to merge institutions and the establishment of the CHE to monitor HE.

“The responsible Minister, in relation to a public entity, means the Minister or the member of the Executive Council of the province who administers the department of the State national or provincial government under which that public entity falls, or, in the absence of such Minister or member of Executive Council of the province, the Minister or the member of the Executive Council of the province designate by the State President or the Premier of that province;”

Amendment of section 6 of the Act of 1992 (Public Entities Act):
Section 6 of the principal Act is hereby amended by the substitution for subsection (4) by the following subsection:

The annual financial statement mentioned in subsection (1) shall, in conformity with generally accepted accounting practice, fairly present the state of affairs of the public entity.
2.3 PUBLIC SECTOR FINANCIAL ACCOUNTING PRACTICES

2.3.1 The role of accounting

Visser and Erasmus (2002:217) state that accounting has the following purpose for any entity: financial results are determined by the difference between the income generated and the expenditure that has been incurred for a specific period, that is, the financial year. A public entity will thus show a deficit or a surplus. The financial position of the organization is shown in the balance sheet which reflects its assets and liabilities, or its net worth. One of the objectives of a public entity should be to improve the financial management function.

Visser and Erasmus (2002:219) identify the following objectives of accounting that should be an indication that public institutions should identify financial indicators to achieve these.

- Control
  There are two dimensions in financial accounting concerning control; authorisation for expenditure and the statements to show the financial position and how the entity controls finances.

- Accountability
  The line managers must adhere to procedures in their custodian role of public finances and be held accountable for such money and property.

- Responsibility accounting
  Each line manager must be held responsible for actual expenses against a budget
Internal and external reporting

The accounting process must provide financial information and statements to be used internally for planning and control. External reporting will be used for parliament to view the financial state of the organisation.

Managers of public entities must have knowledge of accounting practices to manage their departments (units of responsibility) as effectively and economically as possible. They must be aware that the objective of the Public Finance Management Act 1, of 1999 is to secure transparency, accountability and sound management of revenue and expenses, assets and liabilities of the institutions (departments) under their control. Furthermore, they should take responsibility for the use of financial and other resources.

2.3.2 Accounting practices

The purpose of accounting is to record and measure economic transactions. Faul, Everingham, Redelinghuys and Van Vuuren (1994:22) describe this purpose as measuring and communicating the financial results and position of an organization. There are several different accounting practices to use and they will be discussed next. A discussion on budgets will also follow due to its control value to management of an organization.

a) Cash accounting

Cash accounting is where a transaction is recorded, when actual monies are paid out or received. Studies on cash accounting by Jones and Pendlebury (as quoted by Visser and Erasmus, 2002:230) show that the final accounts produced by cash accounting systems can be seen as summarised cash books showing only the income and cash-flow statements. The cash accounting system provides the least disclosure, but is simplistic, has low maintenance cost, low cost in
accounting expertise and the advantage of objectivity. Visser and Erasmus (2002:230) note that the following disadvantage the cash accounting system is that a balance sheet cannot be completed, debtors and creditors do not exist and non-current assets are not recorded.

b) Budgetary accounting

All public entities from parliament to the provinces and councils receive a certain amount of money for a specific purpose. Visser and Erasmus (2002:233) contend that “There is not an inexhaustible supply of resources and budgetary accounting is a practice that public institutions and governments in general can follow by keeping and presenting their operative accounts in the same format within their budget” They add that the use of this accounting system is to highlight the role of a budget in the planning, control and accounting phases. Irving (1983:26) states that budgeting system have functional and dysfunctional aspects. The functional aspect is that it facilitates control, planning and evaluation of the activities of an organisation. The dysfunctional aspect is the negative impact it can have on staff if the budgets are used for evaluation.

c) Fund accounting

According to Davidson and Weil (1983:41), a fund is a fiscal accounting structure. There is a self-balancing set of accounts recording cash and other financial resources as well as related liabilities. If an organisation uses the fund accounting method, there will be different funds for different activities. The finances allocated to a fund will be used strictly for the purpose of these activities.
e) Accuruals accounting

This system is based on the accrual principle that allows costs and revenue to be recognised as they are incurred or earned. The actual payment of expenditure or the receipt of the cash for revenue is not of importance. Under this system, cost and revenue are matched to a specific period, for example, the financial year. Davidson and Weil (1983:2) state that in determining the value of income, assets and liabilities, generally accepted accounting principles require that accrual accounting be used. Visser and Erasmus (2002:230) quote the Organisation for Economic Cooperation and Development concerning the additional benefits which accrual accounting can provide to public sector entities. These include the ability to reflect and provide the basis for accountability for the additional flexibility provided to public sector managers. Accrual accounting also aids the public sector in being more competitive in providing services by underlining objectives. It facilitates more efficient and effective management of resources and it helps to improve accountability by extending the notion of performance beyond the use and application of cash and provides a focus on the long term effect of the government and its management decisions.

Archibald (1994:2) argues the use of accrual accounting as providing more transparency, improved financial management, and performance and financial control measures, and a more business-like approach to management.

e) Activity based costing (ABC)

Price Waterhouse Coopers (PWC) believes that activity base costing (ABC) measures cost where it arises, that is, at the level of activities. Drury (1998:296) states that there are four stakes to the design of ABC systems, namely, identifying the major activities that are placed in an organisation; assigning costs to cost pools/cost centers for each activity; determining the cost driver for each major activity; and assigning the cost of activities to products according to each
product’s demand for activities. According to PWC, “ABC requires the selection of an implementation procedure designed to take into account both a company’s specific business situation and the complexity of the costing method.”

Granof, Platt and Vaysman (2000:18) conducted the study for PWC on ABC and focused on Universities for the following reasons:

- The cost of HE is increasing faster than any other goods or services;
- Decisions concerning costs are made, not by administrators, but by Heads of Department (HOD) and Deans of Faculties;
- The budgets and financial reports are normally understood by a few of the shareholders;
- Faculties can be divided into departments;
- The cost and revenues of a university may be integrally related and cost would not be incurred, unless funded externally; and
- The accounting system for a department is more manageable, than the university.

The university is then divided into individual departments to make ABC more effective. This study culminated in the development of several models. Tables 2.1, 2.2 and 2.3 are examples of this exercise.

<table>
<thead>
<tr>
<th></th>
<th>Cost</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research</td>
<td>$1,621,560</td>
<td>31%</td>
</tr>
<tr>
<td>Service</td>
<td>496,209</td>
<td>9%</td>
</tr>
<tr>
<td>Teaching</td>
<td>3,176,368</td>
<td>60%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$5,294,137</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
Table 2.2
Accounting department teaching costs by programme

<table>
<thead>
<tr>
<th>Programme</th>
<th>Cost</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPA (A)</td>
<td>$932,840</td>
<td>29%</td>
</tr>
<tr>
<td>BBA* (C)</td>
<td>468,823</td>
<td>15%</td>
</tr>
<tr>
<td>MBA (C)</td>
<td>370,706</td>
<td>12%</td>
</tr>
<tr>
<td>MPA (A)</td>
<td>352,163</td>
<td>11%</td>
</tr>
<tr>
<td>PhD (A)</td>
<td>210,351</td>
<td>7%</td>
</tr>
<tr>
<td>Other (C)</td>
<td>78,251</td>
<td>2%</td>
</tr>
<tr>
<td>Subtotal</td>
<td>2,413,134</td>
<td>76%</td>
</tr>
<tr>
<td>Unused Capacity</td>
<td>763,234</td>
<td>24%</td>
</tr>
<tr>
<td>Total</td>
<td>$3,176,368</td>
<td>100%</td>
</tr>
</tbody>
</table>

a) Costs incurred to provide courses in accounting degree programmes
b) Costs incurred to provide courses in support of college-wide programmes

A small portion of these costs were incurred to educate students graduating with four-year undergraduate accounting degrees. Most are for supporting classes provided to all undergraduate students.
Table 2.3
Annual accounting department costs
Traditional and ABC reporting

<table>
<thead>
<tr>
<th>Traditional Reporting</th>
<th>ABC Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty salary and benefits</td>
<td>Research</td>
</tr>
<tr>
<td>Other than faculty salary:</td>
<td>Service</td>
</tr>
<tr>
<td>Research and teaching asst.</td>
<td>Teaching by Program</td>
</tr>
<tr>
<td>Admin. Salary and benefits</td>
<td>PPA</td>
</tr>
<tr>
<td>Admin. Expenses</td>
<td>BBA</td>
</tr>
<tr>
<td>Furnishings and equipment</td>
<td>MBA</td>
</tr>
<tr>
<td>Travel</td>
<td>MPA</td>
</tr>
<tr>
<td>Events</td>
<td>PhD</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>Other</td>
</tr>
<tr>
<td>Unused capacity</td>
<td>1,040,828</td>
</tr>
<tr>
<td>Total expenditures</td>
<td>Total expenditures</td>
</tr>
</tbody>
</table>

Business Wire, (April 17, 2000) had this to say about the above study: “Universities, Government Agencies, and other non profit and public sector organisations can improve the financial management by adopting activity – based costing accounting systems that measure not only their “inputs” but also their “outputs.”

f) Budgets

The Encyclopedia Britannica (1975:vol.11: 346) describes a budget as “The document representing a company’s estimate of its financial expenditures and receipts during a given future period.” Financial data is used in preparing budgets and it is usually for the financial year of any organisation. Golembiewsky and Rabin (1983:1) state that budgets require an estimate of the resources that
will be needed to achieve predetermined objectives and adherence to some total figure, as well as to their individual components. Budgets are therefore a future plan of the financial resources, to achieve certain objectives with the resources. They have built-in control mechanisms. Jones and Pendlebury (2000:58) indicate the following functions for the annual budget: determining income and expenditure; assisting in policy making and planning; authorizing future expenditure; providing the basis for controlling income and expenditure; setting a standard for evaluating performance; motivating managers and employees; and co-ordinating the activities of multi-purpose organisations. According to Irvine (1983:24), a budget is used to achieve greater effectiveness and efficiency. To be effective, however, the functional aspects must outweigh the dysfunctional aspects. Irving explains that a budget is only a formal set of figures written on paper and is in itself merely a quantified plan for future activities. He sees functional aspects as being effective planning that results in goals that will guide the behavior of employees and must be communicated to employees and control to assist management in decision-making. The information and goals in the budget will give direction to and evaluation of the activities within the business. The dysfunctional aspects are the negative connotation when budgets are imposed from the top down and the tendency of managers to spend all the monies allocated in the budget because of the fear that it will be reduced the following year. Reviews of budgets can be done on a quarterly or half-year basis.

2.4 REPORTING BY TERTIARY INSTITUTIONS

Henley, Likerman, Perrin, Luan, Lapsley and Whiteoak (1993:11) point out that financial reporting, as set out by the government, is a key element in determining the accountability of the public sector bodies. They state that financial reporting has the following objectives: compliance and stewardship – conformity with legal requirements, accountability to monitor performance and to provide information on the efficiency and effectiveness in the use of resources, providing the basis for future planning, helping stakeholders judge whether the organisation can
continue to provide the service and that it is viable and providing an opportunity for the organization to influence the public. In most countries the aspect of financial reporting is a matter of law. Certain aspects of legislation govern this part of the public sector. Accounting standards that have been developed by various bodies in different countries also help to define this procedure. The following section discusses the legal requirements for South African tertiary institutions in respect of financial reporting.

2.4.1 Legislation

The HE Act No.101 (1997) lists the records that are to be provided to the Minister of Education by the institutions of HE; namely:

- All records of all its proceedings;
- Complete accounting records of all assets, liabilities, income and expenses and other financial transactions of the public HE institution as a whole, of its substructures and other bodies operating under its auspices;
- Reports on the overall governance of the public HE institution;
- Duly audited statements of income and expenditure;
- Balance sheets and cash flow statements;
- The information that must be provided in terms of the Reporting by Public Entities Act, No. 93 (1993);
- Such additional information as the Minister may reasonably require.

Section 41A as amended in the HE Amendment Bill (2001), published in the Government Gazette No 22440 (July 2001) states that if an audit or an investigation by an independent assessor reveals financial or other maladministration of a serious nature, the Minister may appoint an administrator to take over the authority and management of the institution.
In terms of the Public Finance Management Act No. 1 (1999) Government Gazette No.19814, the accounting authority of a public entity has the following system responsibilities:

- Effective, efficient and transparent systems of financial risk management and internal control;
- A system of internal audit;
- An appropriate procurement and provisioning system which is fair, equitable, transparent, competitive and cost-effective;
- A system to collect all revenue due to the public entity concerned;
- A system to prevent irregular expenditure, fruitless and wasteful expenditure, losses from criminal conduct, and expenditure not complying with the operational policies of the public entity;
- The management, and the safeguarding of the assets and the management of the revenue, expenditure and liabilities of the public entity.

2.4.2 Balance sheet

Archer, Hamman and Kelly (1990:42) note that a “…balance sheet is drawn up on a specific date to provide a summary of the funds available to the enterprise and how these are employed.” The balance sheet is a financial statement that consists of the owner’s interest and liabilities plus the assets of the organisation.

2.4.3 Income statement

Archer et al (1990:52) describe an income statement as a summary of the organisation’s results, for a “specific period,” that is, a financial year. The turnover, income and expenditure are shown. The balance sheet and income statement are the financial statements that provide a number of measurements. Van Rooyen and Kelly (1990:79) describe the “…measurement and evaluation of financial performance “ as the “analysis and interpretation of the statements to determine the position and performance of an organisation.”
Van Rooyen and Kelly (1990:86) identify the following groups of ratios:

- Profitability
- Liquidity
- Solvency
- Ratios from statement of source and application of funds

2.4.4 Cash flow statements

Archibald (1994:67) maintains that the purpose of a cash flow statement is to reflect how an organisation has generated and absorbed cash in the financial period. It should assist the users of the financial statements in their assessment of the liquidity, liability and financial adaptability of the organisation. According to Archibald (1994:67), the cash flow consists of the following categories: operating activities, returns on investments and servicing of finance, taxation, investing activities and financing. Van Rooyen and Kelly (1990:126) identify the following ratios to measure performance applicable to cash flows:

a) Cash flow turnover ratio

\[
\text{Turnover} = \frac{\text{Net cash from activities of the organization}}{\text{Turnover}} \times 100
\]

This is a way to determine whether a particular marketing approach has negatively affected the cash flow. The larger the ratio, the more positive the enterprise.

b) Cash flow for financing costs

\[
\text{Financing costs (1-T)} \times \frac{\text{Net cash from activities less taxation}}{}\]

This ratio shows how much cash is available, after tax, to meet financial costs?
c) Change in working capital to cash flow from activities of the enterprise

\[
\frac{\text{Change in working capital}}{\text{Change in turnover}}
\]

This indicates whether the increase in current assets is fully covered by cash from activities of the organization.

d) Ability to repay debt

\[
\frac{\text{Cash flow}}{\text{Debt}} \times 100
\]

This ratio is used to determine the ability to repay an organization’s debt from its cash flow. The lower the percentage, the less likely (able) it will repay its debt from its cash flow.

e) Interest cover from cash flow

\[
\frac{\text{Cash flow} + \text{Int Paid} (1-T)}{\text{Interest Paid} (1-T)}
\]

This ratio shows the extent to which the organization can make its interest payments from the cash flow.

f) Cover of fixed obligations from cash flow

\[
\frac{\text{Cash} + (\text{Interest} + \text{Rent}) (1-T)}{\text{(Interest} + \text{Rent} (1-T) + \text{Capital repayments})}
\]

This ratio determines the organization’s ability to cover all fixed obligations from the cash flow. Obligations include: interest payable, rent, lease and capital repayments.
g) Gibson (1998:486) shows the following ratio

\[
\frac{\text{Operating Cash Flow}}{\text{Total Debt}}
\]

- **Operating cash flow**
- **Total debt**

This ratio shows that the higher the ratio, the better it is for the organization to carry its total debt.

### 2.5 CONCLUSION

This chapter has examined the government definition of HE institutions, which includes universities and technikons. Universities and technikons are non-profit entities that are constituted by laws passed by Parliament and funded by government. They are public entities that are partially controlled by the state.

It was further pointed out that these institutions have a responsibility and accountability to the Minister of Education and have to submit certain reports to the Minister, namely, a balance sheet, income statement and cash flow statement. The practical value of various financial ratios was examined.

Finally, it was determined that the accounting practice that would best fulfill this obligation of any tertiary institution is accruals accounting.

The fact that financial performance management can be assisted by tools such as budgeting, activity-based costing for departments and financial statements (cash flow statements, income statements) was discussed in detail.

The following chapter will review PI in terms of their value, characteristics and weaknesses.
CHAPTER 3
PERFORMANCE INDICATORS

3.1 INTRODUCTION

Visser and Erasmus (2002:242) believe that performance must be measured because it enhances accountability. This leads to a better usage of scarce resources and the aspect of accountability places a greater importance and focus on financial management in the public sector.

Lapsley (1998:26) believes that, “there are many unresolved issues of accounting principle and practice in public sector organisations which stem from absence of a satisfactory conceptual framework.”

Gardner (1998:170) states that there is a need for performance measurement, which stems from the notion of “value for money” (VFM) in the public sector, and points out how it plays an important role in demonstrating accountability by public service organizations and their managers.” Performance measurement derives its underpinning primarily from the concept of VFM. VFM is defined as the “…economic acquisition of resources and their efficient utilisation in the realisation of the purposes of the organization.”

VFM is also seen as the achievement of economy, efficiency and effectiveness. Economy measures input and involves the acquisition of resources at the lowest cost. Efficiency measures the relationship between inputs and outputs and focuses on the maximisation of output at lowest cost. Effectiveness measures the impact, or the desired result and is the most difficult to measure.

Gardner (1998:171) believes that all three measures are important and relevant and can be used individually and collectively.
Wellman (2000:1) poses the following questions:

“Why is it important that the public know more about HE performance? The value HE adds? The return on investment? Some say the reasons it is important are as simple as one, two, three, but answers these questions with the following:

- The public increasingly insists on accountability for state government.
- Competition for funding forces colleges and universities to show their efficiency and effectiveness.
- HE must demonstrate its value to students, to businesses and industry, and to the public to gain the support it needs.

Wellman comes to the following conclusions: Literature shows no disagreement that HE must improve its capacity to demonstrate how it serves social expectations. HE serves broad social purposes, it is heavily subsidized with public funds (either through direct appropriations or the privilege of tax-exempt status, or both), and it is increasingly the gateway to social opportunity and economic productivity in the larger society. The academy cannot survive if it is perceived as serving institutional rather than social purposes. In the age of consumerism and public transparency, accountability is necessary for preserving the relationship between HE and society.

Wellman adds that states have always been the primary funding and policy centers for HE in the United States, particularly for public institutions but also for independent colleges and universities. State legislatures and governors have long played a critical role in HE policy through the power of the budget and their influence on the agendas and membership of public governing boards. There is a perception that state funds for HE will not grow enough to accommodate future demand if resources are used in the same way as they have been thus far.
Burke (1991:1) poses the question whether the budget should be linked to performance in the USA. Should it be part of educational support by the state? It was found that 30 states had either added or considered performance as part of the budgeting process of public colleges and universities. This was developed from the movement to improve quality and increase productivity. When focusing on performance and not compliance; managers could combine the goals of accountability and improvement.

Burke notes that academics and the councils of colleges and universities propagate theories (performance and measurement) in their own institutions. He states that a tertiary institution is mostly judged by its resources, quality of students and research, but not by its financial results.

3.2 REASONS FOR INTRODUCING FINANCIAL PI TO HE

Kloot (1999: 2) regards a lack of performance measurement as a lack of accountability in any organisation, but adds that financial performance alone measures only a limited aspect of an organization’s performance. Government needs to measure economy, efficiency and effectiveness as well. Financial performance and resource utilisation only measure economy and efficiency, but effectiveness is defined as the extent to which the defined task/strategy has been accomplished.

Hutton (1999:50) consulted Cave, Hanney, Henkel and Kogan to express the original use of PI and discovered that they were initiated by government to exert greater control over HE and establish a stronger link between funding and performance. Usable forms of assessing or measuring the performance of institutions in respect to economy, efficiency and effectiveness are other reasons for PI to have grown in value over the past decade.
Dickey (1994:10) states that PI were built into the Dutch Educational system after Arthur Andersen consultants investigated the Dutch organisation for International Co-operation in HE. The result was a regular review (evaluation) of the structures and activities of HE.

3.3 FRAMEWORK FOR ANALYSIS

According to the handbook of the South African Institute of Chartered Accountants (1999: 3), effectiveness refers to the extent to which set, or predetermined objectives are achieved. The measurement of achievement against set or predetermined objectives need not be rigid, but should allow for changes to objectives as a result of a continuously changing environment. The need for accountability of public funds requires special treatment of the measures established by institutions to ensure that resources are acquired economically as well as utilized efficiently and effectively to obtain value for money. The management of HE institutions should encourage its internal audit function to conduct performance audits as part of good corporate governance practices. A clear description of how performance will be measured and what it entails is necessary to implement successfully any procedure where the costs incurred will justify the benefits to be gained.

According to Otley (1987:50) managers who are aware that their performance will be appraised and that they are accountable, will be concerned about both their and the staff’s actions.

Otley (1987:52) adds the following types of standards, namely:

- The performance necessary to achieve desired goals
- Estimates of what might have been achieved, but after the event
- The performance of the same unit in previous times, and
- The performance of similar units in the same time.
Hutton (1999:51) used the framework of Cave et al and it include methodology, decision relevancy and evaluation of PI:

A framework for finding a methodology to develop PI:
- Identifying the relevant objectives of the organization;
- Specifying the parts or levels of the system to be analysed and the uses to which the assessment will be put;
- Listing the PI to be used;
- Devising simple strategies for their application to the organisation and predicting the implications that their application might have.

A framework to successfully use “decision relevant” PI:
- A clear conceptual framework within which the indicators are derived and the associated set of purposes that they are intended to serve is outlined;
- A selection process to determine which indicators are to be applied and how;
- A specification of how the indicators fit into the management and decision making process.

A framework for judging and applying PI for HE:
- Have a clear purpose
- Be co-ordinated throughout an organisation or system
- Extend across the entire range of organisational processes
- Be derived from a variety of co-ordinated methods
- Be used for informed decision-making.

Visser and Erasmus (2002:243) state that performance measurement requires a verifiable unit in terms of which an output can be measured reliably. This includes the determination of efficiency, effectiveness, economy and equity.
Efficiency
Efficiency refers to the relationship between resource inputs and outputs. It includes the extent to which inputs are used optimally to produce outputs and can also be described as attaining the best possible use of scarce resources to complete a job.

Effectiveness

Economy
Economy refers to the relationship between quantity and quality of resource inputs and the related cost, which can be viewed as the lowest cost for a given quality and quantity of inputs. Visser and Erasmus (2002:243) quote Sheldon who views economy as obtaining resources at the lowest possible cost.

Equity
Equity refers to the social impact of resources inputs on the institution and returning outputs to society. Visser and Erasmus (2002:243) quote Chambers who defines equity as the net effect of the enterprise (institution) upon society and the environment.

Based on the above four relevant aspects of performance measurement, then can be summarized as follows:

Effectiveness = doing the right things
Efficiency = doing things the right way
Economy = doing things cheaply
Equity = doing right to others (as in being fair)

Rutherford, Sherer and Wearing (1992:26) agree that performance can be divided into efficiency and effectiveness. They define efficiency and effectiveness as follows:

- Efficiency – the conversion rate of inputs into output
- Effectiveness – the comparison of outputs to the desirable or predetermined rate of output.

Effective control is dependent on performance measurement.

3.3.1 Performance measures in practice

Visser and Erasmus (2002:245) identify the following measures to achieve the performance measurement objectives mentioned above:

3.3.2 Performance measures to achieve economy

- cost of actual compared to planned input
- cleaning costs per hour worked
- maintenance cost per unit area
- cost of the finance function per 10 staff, and
- cost of the Chief Executive’s department per 1000 clients.

3.3.3 Performance measures to achieve efficiency

- ratio of actual input to actual output
- cleaning time per unit area
- breakdowns per day, and
- workplace accidents per 1000 personnel.
3.3.4 **Performance measures to achieve effectiveness**

- actual compared to planned output
- service delivery per 100 staff members of the engineering department, and
- ratio of customer complaints to services delivered.

3.3.5 **Performance measures to achieved equity**

- housing allowance per staff member
- number of library books per category of user
- gender equity of employees, and
- proportion of disabled employees.

Archibald (1994:131) identifies four categories of key financial targets that cover financial performance:

- Break even
- Cost recovery
- Return on sales
- Return on assets

3.3.6 **Other measures that can be used**

- Unit costs
- Finance and borrowing
- Debtor days
- Credit days
- Stock days
3.4 CRITERIA FOR SELECTION AND EVALUATION OF PERFORMANCE MEASURES

Visser and Erasmus (2002:247) use Leithe’s criteria in selecting and evaluating performance measures. Their application is critical to ensuring the identification of appropriate measures:

- Appropriateness and validity refers to the fact that measures must relate to the objectives of the programme and should measure the extent to which customers’ needs are being met.
- Completeness evaluates whether the measures cover all or most objectives.
- Comprehensibility evaluates whether the measure is understandable.
- Controllability evaluates whether the condition measured is at least government’s or the organisation’s responsibility.
- Cost evaluates whether costs and staffing requirements necessary for data collection are reasonable.
- Timeless and feedback examine whether performance results will be available timeously, allowing managers to act on the findings before the data become obsolete.
- Accuracy and reliability test whether sufficient, accurate and reliable measurement data can be obtained.
- Privacy and confidentiality evaluate whether there are concerns for client or user privacy that will prevent analysts from obtaining the required information.
- Comparability and benchmarking examine whether the measurements are similar to those used by other governments to accurately compare productivity.

Visser and Erasmus (2002:247) believe that by applying of these criteria, officials and decision makers should be able to choose and develop the correct
measures. However, it is necessary also to be able to measure performance effectively.

3.5 Principles for the development of performance measures

Visser and Erasmus (2002:250) use the Inter-departmental Working Group’s principles which state that developing and establishing of performance measures must be built on a few sound principles to ensure the enhancement of the management-for-results approach. These principles are:

- Financial resources must be optimally planned and allocated.
- The investment in total assets must be quantified and economically funded.
- The use of financial resources requires monitoring and controlling relative to the business plan.
- Internet controls must be designed, implemented, and maintained.
- Accountability for performance is to be established allowing the freedom to consume scarce financial resources.

3.6 PLANNING AND COMPETITION IN HE

The National Plan for HE in South Africa (2002:8) states that: The most important consequence of the absence of a national plan has been the development of a competitive climate between public HE institutions. This competitive climate has, furthermore, been fuelled by the emergence of a market in HE as a result of a growing private HE sector. The increased competition between HE institutions has further fragmented and exacerbated the inequalities within the HE system.

The intensified competition between public HE institutions is the product of two interrelated factors. First, was the decline in student enrolments in the late 1990s. The average annual growth rate of 5%, which was a feature of the HE
system between 19993 and 1998 has not been sustained and there was a 4% drop in enrolments between 1998 and 2000.

Secondly, financial constraints occurred as a result of pressures on financial resources. Government expenditure on HE (excluding the National Student Financial Aid Scheme) as a percentage of Gross Domestic Product increased from 0.72% in 1995/96 to 0.77% in 1996/97, and fluctuated between 0.75% and 0.77% until 2000/01 when it dropped to 0.73%. It was 0.72% for 2001/02 and is projected to decline to 0.68% in 2003/04 according to the Medium Term Expenditure Framework. The decline, coupled with rapidly declining student enrolments, has impacted on institutional operational budgets. Institutions have attempted to respond by introducing efficiency measures and widening their income stream.

3.7 PROGRESS TOWARDS PERFORMANCE REPORTING

Hutton (1999:18) surveyed eight institutions to determine the progress made towards performance reporting, by posing four questions. The DOE was included to ascertain what their requirements were regarding the HE institutions that fall under their control. The response from the Department came from a staff member directly involved with reporting requirements of HE institutions.

3.7.1 The View of the DOE

The topic of performance reporting is high on the Department’s list of priorities and a working group is currently investigating the various issues directly related to assessing the effectiveness of management in education institutions. Currently no details are available on exactly what performance reporting is required by the Department.
The Department believes that each institution will need to develop a culture of accountability. With funding not keeping in line with inflation, institutions will need to closely monitor their own performance and develop alternative income sources to support their subsidy income. In doing this, the Department is hoping that institutions will lead the way with performance reporting as opposed to being forced to comply.

3.7.2 Institutional Views

Hutton (1999:19) discovered that the general consensus was that institutions were in need of ways to assess effectiveness in order to monitor problem areas and make informed decisions on the correction of these problems. It was the view of most of the institutions that PI should be kept simple and user friendly.

Suggestions made by the institutions included:
- Workshop the importance of PI and advise institutions on how to interpret them;
- Establish a standard list of PI that should be used, allowing for some deviation by each institution to suit individual circumstances;
- Establish a standard information technology system that is able to simplify the calculations of PI and performance reporting.

Hutton (1999:20) further found that a number of the institutions surveyed had formed committees to determine and interpret the reporting requirements as required by the Public Entities Act. They had also drawn up lists of PI for inclusion in the required reports. The institution’s progress towards performance reporting is complicated by the fact that the DOE has not given sufficient details on what they require to be reported on in the performance report.

Currently most performance reporting is in respect of student numbers, including pass rates and demographics. Most PI, for the institution as a whole, can be
calculated from the financial information available within the institution's information technology system. However, limited information is available on specific departments, programmes or support services, thereby restricting the use of PI.

A number of the institutions have implemented costing models that allow them to determine the cost of running a programmes/department and the costs and income per student, per support function and per square meter to run and maintain the facilities. These indicators are then used to draw comparisons year by year in order to assess improvements.

To her question, concerning which PI in particular are believed to be important, Hutton (1999:20) reports the following: Cost per student per department, income per student per department, cost per academic staff member, cost per non-academic staff member, cost per square meter for facilities, percentage utilization of facilities and cost per student to manage the student affairs.

Hutton (1999:21) concluded that most institutions are becoming more aware of the importance of monitoring performance with the objective of becoming more effective and running their institutions more efficiently.

Archibald (1994:131) argues that in order to understand an organisation’s performance, a comparison needs to be made of a series of performance over time, against targets set and between similar organizations.

Archibald (1994:136) also highlights other aspects of financial performance: The first, finance and borrowing, is the difference between cash inflows (generated) and outflows (expenditure). The second, balance sheet management, shows how the individual items in the balances sheet are managed, for example, debtors, creditors, fixed asset turnover.
3.8 CHARACTERISTICS OF PI

Gardner (1998:179) uses Jackson’s description of what ideal PI should be:

- **Consistent**: definitions used to produce the indicators should be consistent over time and between units.
- **Comparable**: following from consistency it is only reasonable to compare like with like.
- **Clear**: PI should be simple, well-defined and understood.
- **Controllable**: the manager’s performance should only be measured for those areas over which she or he has control.
- **Contingent**: performance is not independent of the environment in which decisions are made, including the organisation’s structure, the management style adopted and the uncertainty and complexity of the external environment.
- **Comprehensive**: do indictors should reflect those aspects of behaviour which are important to manage decision making.
- **Bounded**: indicators should concentrate on a limited number of key indices of performance, for example, those that are most likely to give the biggest pay-off.
- **Relevant**: many applications require specific PI relevant to their special needs and conditions. Do the indicators service these needs?
- **Feasible**: are the targets based on unrealistic expectations? Can the targets be reached through reasonable actions?

3.9 OBJECTIVES OF PERFORMANCE MEASUREMENT

Visser and Erasmus (2002:246) express two views of performance measures: “if you can measure, you can manage” and to “measure is to know”. These perspectives are intended to assist in achieving the following objectives:
They enable accounting officers (chief executive officers) to continuously evaluate financial management in their institutions and continuously to report on financial management in their annual report;

They enable the Auditor-General to report annually on the financial management performance;

They encourage the raising of the general standard of financial management;

They promote a focus on results, service quality, and customer satisfaction.

3.10 PROBLEMS

Lapsley (1998:27) recalls Mayston who contends that “…the development of PI cannot take place in isolation from decision reliance and reliability”. Lapsley stresses the point that the issue of PI, especially the development and context in which to apply them, is still in the beginning stages. Louise (1996:1) mentions that:

“The business performance measurement resolution which is now under way has identified that traditional financial measures do not give a ‘true’ reflection of corporate performance.”

According to Barker (1995:2) the following must be noted:

“For many years we have been brainwashed into thinking that financial performance measurement and control are the only legitimate or correct way to appraise business efficiency, guide development and meet market needs. Throughout history monetary control has been the universal standard unit of measure, which reported company profitability and performance in the marketplace. By using this monetary link it was possible to decide whether investment could be justified, a product was made obsolete, or return on capital was acceptable, or so we thought. Unfortunately we must now admit that our
financial planning and control systems, with their origins in an uncompetitive era, can no longer cope with market demands and the speed of change driven by international competition in the 1990’s.”

The use of financial performance measurement alone is weak because market selling price is invariably the “driver” used to determine input/output conversion efficiency in the factory, while value-adding capability, cost of adding value and throughput time/total factory cost are often obscured. Barker asks the following questions:

How is it possible to measure the value of long-term continuous improvements and investments to reduce throughput time, install robust processes and develop human resources with financial units of measure gathered monthly? How can these short-term control mechanisms, which emphasise a recording of profit, be used to direct, develop or analyse long-term improvements, which today are needed to ensure company survival?

According to van Schalkwyk (1998:2) the following is a list of the most common shortcoming of traditional performance measurement systems:

- Collection and manipulation of financial data take so long that it is useless for rapid decision making when it finally reaches the user.
- Financial data to set goals and control actions typically lead to manipulation of output levels to achieve cost targets.
- Top-down financial performance information encourages management by remote control. Financial information easily takes on a life of its own.
- Financial data does not identify unnecessary complexity. Poor financial results may indicate the existence of problems, but offer no insight into the sources of waste or the opportunities for improvements and cost saving through continuously linking and improving processes.
- Many traditional financial performance systems completely ignore the client.
Financial goals, such as to achieve a 25 per cent return of capital, provide no inspiration to employees.

Opportunities for improvements are typically not utilized due to the one-time reduction in financial measures this would cause.

Parker (2000:1) considers the following problems:

- Financial data is inward looking but can facilitate comparison to similar organizations
- Failure to include intangible factors, for example, product, service quality and satisfaction and staff morale; and
- Financial data are nagging indicators as they show the past.

3.11 USES OF PERFORMANCE MEASURES

Gardner (1998:173) list the following advantages of using performance measures:

- They help to improve management practice;
- They increase the accountability of management;
- They provide a basis for policy planning and control;
- They provide essential management information by enabling activities to be monitored at several levels in the organisation to confirm that the intended outcomes of various decisions are being achieved;
- They provide information for ex-facto strategic post-mortems when policies and management practices and methods are reviewed;
- They can provide the basis of staff appraisal systems;
- They play a development role in that they identify opportunities for corrective action;
- They can aid policy and priority formulation, implementation, monitoring and control; and
They define goals, help set priorities and help senior managers to understand how the whole organisation fits together in delivering final output.

3.12 FUNDAMENTALS OF PERFORMANCE MEASUREMENT

There are certain principles that must be considered when an organization wants to implement performance measurement. Parker (2000:2) adds the following insights:

- Performance measures need to be aligned with the organisation’s strategy.
- Measures for each sub-unit that aggregate into organisation-wide measures.
- There must be commitment to the measurement regime.
- Measurement must have an effect on performance.
- Measures must be reliable.
- They must help to improve management practice.
- They must increase accountability of management.
- They provide a basis for policy planning and control.

3.13 CONCLUSION

According to Ball and Wilkinson (1994: 426), it is essential that an institution give considerable thought to its mission and objectives and how to measure performance to achieve these. Each institution should “own” its performance management process. Diversity of institutional missions is important as they give a genuine choice to prospective students, in particular, and society in general. In order to maintain public accountability, it is necessary to provide performance information. Institutions should be allowed to develop a set of PI on which to
base their performance reporting and from which to make informed decisions about institutional management.

The need for measurement is indicated by the increase in government spending on HE. Coupled with resources becoming more scarce. It is imperative that managers at tertiary education level provide information to reflect the accountability and transparency that is needed in the public entities. Enforcing of legislation will make it easier for the education department to apply indicators, do a comparison and ask for explanations from management.

Various PI, both financial and other, were examined in this chapter with a view to providing a foundation for a model. The development of a model should be an ongoing process, involving all stakeholders. The resulting model should be flexible enough to use in various educational institutions. The development of such a model is discussed in chapter 6.

The following chapter explores the use of financial indicators in South Africa as well as other countries.
CHAPTER 4

INTERNATIONAL INFORMATION ON FINANCIAL PI

4.1 INTRODUCTION

Information on financial indicators for HE institutions was difficult to find as indicated in chapter 1. Research is also limited because the management of these organizations did not deem it necessary to measure their performance in the past. Financial statements were produced but no analysis was done.

Van Rooyen and Keely (1990:79) focus on “…the analysis and interpretation of the annual financial statements in order to determine the financial position and performance of the enterprise and if the objectives have been achieved.”

Hutton (1999) researched the international perspective on PI extensively. She did a literature survey on the United Kingdom, Netherlands and Australia. Her findings will be discussed in this chapter.

Visser and Erasmus (2002:253) caution that measures which have been successfully applied elsewhere will not always be functional in another organisation. The measures must be appropriate to the nature of the organization, must be relevant and must assist in the decision-making, planning and budgeting process.

The survey conducted to gather information to complete the model for South Africa had to cover all the institutions and all feedback was considered.
4.2 INTERNATIONAL PERSPECTIVE OF PI

The following section reveals the importance of financial PI in countries that have been using them. A list of indicators will be included that formed the basis of the questionnaire used in the survey.

4.2.1 The United Kingdom

Hodson (2001:101) quotes Frazer who notes that the previous two decades have seen three trends in United Kingdom (UK) education. There was a decline of government funding, a growth in quality assurance and institutions seeking more international collaborations.

Hodson (2001:102) states that Higher Education Institutions (HEI) had to review their financial situations in view of the reduction in government funding. Institutions had to review their financial viability and look at income generating approaches to further increase their independence.

The result was more collaboration and franchising of the courses to other institutions outside the UK. Hodson’s (2001:105) discussion on PI focuses on the validity of quality assurance revision to measure the quality and the state of the education system.

Bunting (1997:140) also reviewed the UK situation: Initially the introduction of indicators was seen as a limiting device on the institutions’ autonomy. In other countries with a strong central control by government, the educational institutions viewed it as becoming more involved in the managing process.

In her literature search, Hutton (1999:27) discovered two recommendations of the Jarratt Committee of 1984 to study efficiency in UK universities. This
committee recommended a number of ways that institutional management in HE might be improved. The first of these was the establishment of a Planning and Resources Committee to provide a more co-ordinated and integrated approach to institutional decision-making.

The second recommendation was that institutions should develop and use PI. According to Ball and Wilkinson, the committee suggested the following categories of indicators that should be developed: internal PI, external indicators and operational indicators. In response to the report, the Committee of Vice Chancellors and Principals (CVCP) and the University Grants Committee (UGC) established a joint working party to investigate PI and published a set of thirty-nine PI in 1987. The joint CVCP/UGC Steering Committee revised their research and developed further indicators in 1988 and according to Sizer, these contained a number of improvements over the first list and developed and increased the number of indicators to 54. Table 4.1 below lists only those financial PI needed for the purposes of this study.
### Table 4.1
Selected Performance Indicators published by the CVCP/UGC 1988

<table>
<thead>
<tr>
<th>No.</th>
<th>University Management Information and PI</th>
<th>Cost Centre</th>
<th>Institution</th>
<th>Academic subject Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Expenditure in academic departments - FTE academic staff.</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Expenditure per FTE student</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Expenditure per FTE academic staff</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Expenditure on support staff per FTE academic staff</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Expenditure on Equipment per FTE academic staff</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Research income per FTE academic staff</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td><strong>Expenditure on central administration</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Central admin expenditure as a % of grand total expenditure</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Central admin pay expenditure as a % of central admin expenditure</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Central admin expenditure per FTE student</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Central admin expenditure per FTE academic staff</td>
<td>*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hutton (1999:31) quotes Ball and Wilkinson who insist that it is essential that an institution give considerable thought to its mission and objectives and how to measure performance to achieve these. Each institution should “own” its performance management process. To maintain public accountability, it is
necessary to provide performance information. Institutions should be allowed to develop a set of PI on which to base their performance reporting and from which to make informed decisions about institutional management.

4.2.2 The Netherlands

Hutton (1999:32) found that the Dutch HE department has been attempting to make PI one of the instruments of management. The process of implementation has been difficult. A working group, which included government, the inspectorate, the institutions of HE and academic researchers was formed to investigate the opportunities that PI offered. This led to the establishment of a technical working group on PI.

Hutton (1999:33) continues to recall that Mertens and Bormans argue that within the Dutch context, PI were used to achieve the following goals:

- The development of a system of PI helped resolve problems related to the division of responsibility among the various levels of the system. To achieve this goal it is necessary to give a precise description of who does what and know what information is required for decisions already assigned.

- PI were helpful in monitoring the major points of quality control. They themselves are not assessments of quality, but are a condensed ‘input’ into the system of quality control.

- The concept of efficiency was clearly defined regarding what may be assumed to be an (in) efficient turning point. A system of indicators would promote this clarity.
If a system of PI is to be used to meet the above requirements, the development of the system should emerge from dialogue among the various participants. According to Mertens and Bormans the indicators published by the government for the Dutch universities in a policy document in September 1987 were met with criticism. Although the Dutch government invited the public to participate, there remained resistance to the issue.

Hutton (1999:33) uses a survey conducted on all Dutch institutions, which resulted in a list of potential PI for HE. Again Table 4.2 only lists the financial indicators needed for the purposes of this study.

**Table 4.2**

*Selected PI from a survey on all Dutch institutions*

<table>
<thead>
<tr>
<th>No.</th>
<th>Performance Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Financial matters</strong></td>
</tr>
<tr>
<td>1.1</td>
<td>Financial management</td>
</tr>
<tr>
<td>1.2</td>
<td>Tuition costs as compared to other costs</td>
</tr>
<tr>
<td>1.3</td>
<td>Percentage costs for housing</td>
</tr>
<tr>
<td>1.4</td>
<td>Percentage costs for equipment</td>
</tr>
<tr>
<td>1.5</td>
<td>Percentage costs for library, percentage costs for audio-visual-centres. Output ratio in terms of completed exams</td>
</tr>
<tr>
<td>1.6</td>
<td>Percentage expenditure on innovation projects</td>
</tr>
<tr>
<td>1.7</td>
<td>Ratio total expenditure in relation to budget for innovation</td>
</tr>
<tr>
<td>1.8</td>
<td>Percentage of budget spent on continuing training</td>
</tr>
<tr>
<td>1.9</td>
<td>Analysis of the expenditure for educational goals, surveys of budgets</td>
</tr>
<tr>
<td>1.10</td>
<td>by types of costs</td>
</tr>
<tr>
<td></td>
<td>Budgeted versus real expenditure</td>
</tr>
</tbody>
</table>
4.2.3 Australia

Taylor (2001:379) states that PI have become an integral part of Western governments’ approach to the management of any HE system. This has proved to have some benefits, as improved accountability and feedback on performance has shown. Australia has gone a step further by linking research funds to the study of PI. This implementation had many setbacks, but the government has remained committed. Taylor (2001:380) maintains that the involvement and input of academics is a way to minimise resistance and that the government should encourage employee participation, buy-in and consultation.

Hutton (1999:40) quotes Teather who outlines the process as follows: A national report on PI was published in 1988 in Australian HE. The report was written by a working party established jointly by the Australian vice-chancellor’s Committee (AVCC) and the Association of College Direction and Principals in Advanced Education (ACDP). A cautious approach formed the basis of the report. The AVCC/ACDP report states that an unrealistic attitude has surrounded the use of PI, assuming that by collecting and using them great benefits will miraculously result. This erroneous attitude can arise when PI are considered in isolation and out of the context for which they were created. According to Teather, a review done by the Commonwealth Tertiary Education Commission, defines the concepts of efficiency and effectiveness as follows:

“An efficient system is one which enables given outputs to be met at the lowest possible level of inputs or costs. However a system which is efficient in this sense will not be worth much if what is achieved is only of limited value. Hence, the effectiveness of a system – the extent to which the output achieves specified objectives – is also important. The phrase ‘efficient and effective’ is thus used to mean the achievement of the best, or most desired, outcome as economically as possible.”
Teather states that the manner in which the PI are used, by whom and for what purposes are at least as important as the technical details of the indicators themselves.

Hutton (1999:41) recalls how Stanley maintained that PI are measures of institutional activity that can be used to understand aspects of efficiency, effectiveness and quality. They are meant to be indicators, that is pointers to aspects of institutional performance. These indicators need to be interpreted in the context of goals and objectives and should include the following properties:

- **Relevance**: they should relate to the goals and objectives of the institution.
- **Reliability**: they must be based on consistent data.
- **Transparency**: they must have a clear meaning.
- **Efficiency**: the data used should be of use to management and be cost effective in collection.
- **Auditability**: the data should be able to stand audit scrutiny.

Most universities in Australia have reached the point where their management information system can provide them with some time-series data on their key PI. This enables management to track changes in performance and set improvement targets. As these indicators are commonly represented as numbers, concern is commonly expressed about their usefulness in indicating quality. Indicators are considered as inputs to judgments rather than as a substitute for judgments about institutional performance.
Hutton (1999:42) concludes that Australia has made several attempts to produce a set of system indicators. At institutional level most institutions use PI as part of their strategic planning. Table 4.3 presents some examples of key financial PI likely to be available on an annual basis. The table originally divided the PI into six areas of measurement.

These areas are as follows:

- Academic PI
- Resource PI
- Efficiency indicators
- Income PI
- Expenditure PI
- Effectiveness PI.

Only the income and expenditure indicators have been replicated here:

**Table 4.3**

**Examples of key financial PI in Australia.**

<table>
<thead>
<tr>
<th>A</th>
<th>Income PI</th>
<th>B</th>
<th>Expenditure PI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Government grants as % of total income</td>
<td></td>
<td>Unit costs / FTE</td>
</tr>
<tr>
<td></td>
<td>Tuition fees as % of total income</td>
<td></td>
<td>Scholarships as % of student fees and charges</td>
</tr>
<tr>
<td></td>
<td>Private income as % of total income</td>
<td></td>
<td>Academic staff cost as % of total expenditure</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total staff cost as % of total expenditure</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Average fee per FTE as a % of unit cost</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Full fee as % of unit cost</td>
</tr>
</tbody>
</table>
As with the previous tables, the emphasis in Table 4.3 is also to identify the most important areas requiring measurement within the institution before selecting the financial PI that could assist in effectively managing these areas.

In the financial report of University of Tasmania (2001), the following key ratios are listed:

- Financial stability and liquidity
  - Current ratio
  - Net cash balances
  - Net assets

- Revenues
  - Government grants as a percentage of total income
  - Other income as a percentage of total income

4.2.4 Germany

According to Hufner (1987:134) Germany is moving towards a zero growth in public funding for HE. The German Federal Government introduced legislation setting out the conditions for granting public grants to students and tertiary institutions. The following objectives were addressed:

- Competition between universities for academic recognition, excellence in research and teaching;
- Increased independence of institutions, resulting in financial flexibility in their budgets and staff policies;
- Financing of HE must be viewed in the light of competition and excellent performances are to be rewarded with financial incentives.

The results of these German Federal Government objectives are: transparency, incentives, specialization and competition for students. The Science Council demanded self-explanation by institutions of HE as a first step, followed by an
examination by academics. German universities decided on three series of indicators, namely: expenditure indicators, capacity indicators and indicators of study time and student pass rate concerning certain subjects. Institutional performance was ranked and published and had to improve or institutions were asked to defend their positions.

4.2.5 South Africa

Bunting (1999:141) maintains that PI introduced at universities and technikons will have a negative affect. They will be viewed as interference by government in the internal affairs of the respected universities. Bunting (1997:146) argues that performance of national education must be measured against the following key goals, namely:

- Increased democratic participation must be increased;
- Equity of access and resource distribution;
- Redress of inequalities; and
- Improved quality, efficiency and productivity.

Visser and Erasmus (2002:11) believe that performance management has brought the profit motive to government departments. Systems to manage performance are focused on effectiveness, efficiency, economy and appropriateness.

Visser and Erasmus (2002: 344) state that managers are required to monitor and report on the performance of their entities against approved budgets for the financial year and to submit a performance report.

HE institutions enjoy a great deal of independence and autonomy, but with this autonomy comes responsibility and accountability to all the shareholders of the different institutions. Visser and Erasmus (2002:42) maintain that “The limited financial resources available to government departments threaten their ability to
deliver necessary services and goods in addressing the needs of the community.”

Visser and Erasmus (2002:246) to raise the following points:
- A system is needed to facilitate decision-making regarding fund allocations and service delivery options.
- Financial resources are unlikely to increase, requiring funds to be used more wisely.
- There is a challenge to establish, implement and maintain performance measures (financial).

4.2.6 United States of America

Wellman (2001:1) states that the public insists on accountability: competition for funding forces institutions to show their efficiency and they must demonstrate their value to students, business, industry and the public.

Layzell (1998:103) notes that policy-makers in the US have been monitoring the performance of publicly funded institutions of higher learning using accountability mechanisms. Budgetary constraints and the policy-makers’ interest in accountability have created benign interest in the uses and implications of performance based budgeting. An example is the allocation of resources to institutions according to the achievement of goals, objectives and outcomes. Layzell also notes that the state’s approach to indicators is ultimately based on the desire for accountability.

Layzell (1998: 104) quotes Ewell and Jones’ view of accountability, goals and objectives. They emphasise the following:
- A production model aimed at measuring value-added to students must be introduced.
The efficient use of resources like space, equipment and facility must be examined using ratio analyses.
The state’s return on investment must be realised. The focus is on the preparation of the workforce.
Meeting individual customer needs.

Payne and Whitfield (1999:34) note that the use of benchmarking or PI to improve quality in HE has been increasing. There are over 100 business schools in America that have participated in this exercise and formed a benchmarking partnership. Ewell (1999:192) states that the use of PI’s was developed to manage growing national education systems in Australia and Europe. Some were developed for benchmarking purposes, for example, in the USA. Ewell (1999: 192) maintains that PI’s have been linked directly to funding and national decision-making in the UK and Australia. In the US they are being used for accountability and focus on enrolments, staffing and finances.

McCracken, Mcllwain and Fottler (2001:3) did a study measuring performance in the hospital industry that can assist in this study. They discovered that financial measures of performance are reported consistently to be the best indicators of healthcare organization performance. From their research on hospital performance, McCracken et al quote Brecher and Nesbitt who identified four dimensions of performance required to comprehensively assess a hospital’s performance. These dimensions are annual operating results, long-run solvency, age of plant and liquidity. Other authors have used these measures with good success, for example, (Friedman and Shortell). The present study uses six measures (see Table 4.4) to assess these four dimensions of hospital performance.

The operating margin ratio is a measure of the proportion of total revenue that has been realized in income from operations. The operating margin is used by
many analysts as the primary measure of the profitability of hospitals; it describes the results of operations while excluding non-operating sources of income.

Table 4.4
Measures of hospital performance

<table>
<thead>
<tr>
<th>Annual operating results</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Return on assets =</td>
<td>Net income</td>
</tr>
<tr>
<td></td>
<td>Total assets</td>
</tr>
<tr>
<td>2. Operating margin</td>
<td>Operating income</td>
</tr>
<tr>
<td>(return on sales) =</td>
<td>Operating revenue</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Long-run solvency</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Debt ratio =</td>
<td>Total debt</td>
</tr>
<tr>
<td></td>
<td>Total assets</td>
</tr>
<tr>
<td>4. Cash flow to debt ratio =</td>
<td>Cash flow</td>
</tr>
<tr>
<td></td>
<td>Total debt</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age of plant</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Cumulative</td>
<td>Cumulative depreciation</td>
</tr>
<tr>
<td>depreciation ratio =</td>
<td>Cost of fixed assets</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Liquidity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Current ratio =</td>
<td>Current assets</td>
</tr>
<tr>
<td></td>
<td>Current liabilities</td>
</tr>
</tbody>
</table>

The debt ratio is the degree of financial leverage employed by a hospital and is measured using the long-term debt to total assets ratio. The cash flow to total debt ratio is another important measure of hospital performance because it is an indication of future financial problems or insolvency. This ratio is the sum of net income and current depreciation divided by total liabilities (current liabilities +
long-term debt), and it measures the proportion of a hospital’s total debt obligations that could be met if creditors demanded payment within one year.

- Return on assets
- Operating margin
- Market share
- Sales growth
- Current ratio
- Debt ratio
- Cash flow to debt ratio
- Cumulative depreciation ratio
- Full time-equivalent personnel

This study is mentioned as the hospital industry has many similarities to education, both being public entities.

4.2.7 New Zealand

The University of Canterbury has the following objectives of financial viability and in the financial statements. Director of Business and Finance is responsible the university financially viable in accordance with national guidelines and best practice for the sector. Table 4.5 gives an overview of the indicators over a period of time for the university.
### Table 4.5
Financial Indicators, University of Canterbury

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Current assets to current liabilities (ratio)</td>
<td>0.44</td>
<td>0.20</td>
<td>0.25</td>
<td>0.30</td>
<td>0.39</td>
</tr>
<tr>
<td>Public equity to total assets (percentage)</td>
<td>91</td>
<td>88</td>
<td>89</td>
<td>90</td>
<td>91</td>
</tr>
<tr>
<td>Depreciation to capital expenditure (ratio)</td>
<td>0.53</td>
<td>0.49</td>
<td>1.28</td>
<td>1.15</td>
<td>0.94</td>
</tr>
<tr>
<td>Debt to equity (percentage)</td>
<td>1.4.</td>
<td>1.6</td>
<td>1.5</td>
<td>1.3</td>
<td>1.3</td>
</tr>
<tr>
<td>Debt covers to operating cash flow (ratio)</td>
<td>393</td>
<td>30</td>
<td>12</td>
<td>18</td>
<td>31</td>
</tr>
<tr>
<td>Return on equity (percentage)</td>
<td>0.51</td>
<td>-1.10</td>
<td>0.52</td>
<td>0.68</td>
<td>1.36</td>
</tr>
<tr>
<td>Operating surplus ($ 000)</td>
<td>2 227</td>
<td>4 357</td>
<td>2 056</td>
<td>2 686</td>
<td>5 309</td>
</tr>
<tr>
<td>Operating cashflow surplus</td>
<td>18</td>
<td>14 157</td>
<td>20 389</td>
<td>22 696</td>
<td>26 575</td>
</tr>
<tr>
<td>Government funding as a percentage of total income</td>
<td>49</td>
<td>52</td>
<td>53</td>
<td>52</td>
<td>51</td>
</tr>
<tr>
<td>Cost per EFTStudent ($) (exclusive of GST)</td>
<td>13</td>
<td>13 905</td>
<td>13 557</td>
<td>13 481</td>
<td>13 44</td>
</tr>
</tbody>
</table>

The university council decided on the following proposed activities to advance the objective:

- Grow income and operating surplus to enable ongoing investment and resources;
- Shrink expenditure patterns by ensuring the best use of available resources;
Maximise the amount of government funding available and seek ways to diversify sources of income.

Table 4.6 shows the University of Otago’s list of PI’s:

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2002</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Indicators</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Ratio</td>
<td>0.88:1</td>
<td>0.92:1</td>
</tr>
<tr>
<td>Liquid Ratio</td>
<td>1.35:1</td>
<td>1.94:1</td>
</tr>
<tr>
<td>(Current Assets which will result in cashflow: Current Liabilities which will result in cashflow)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of Total Debts</td>
<td>13.1%</td>
<td>12.3%</td>
</tr>
<tr>
<td>(Debts as a percentage of Net Assets)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increase in Net Assets</td>
<td>1.5%</td>
<td>2.2%</td>
</tr>
</tbody>
</table>

Notes: Current ratio = Current Assets: Current Liabilities
        Liquid Ratio = Current Assets, which will result in cash flow:
                         Current Liabilities, which will result in cash flow
        Level of total debt = Debts as a percentage of Net Assets

Victoria University (Wellington) uses the following to review performance:

- Total revenue versus EFTS;
- Operating surplus to community equity;
- Assets to equity;
- Current assets to current liabilities.
4.3 CONCLUSION

The United Kingdom and the Netherlands have been using PI 1980. Government spending on education decreased and the result was competition between the institutions for students, funds and grants. This led to many institutions reaching out internationally. They started by establishing links with other institutions in other countries and recruiting students abroad.

Universities in Australia and New Zealand already reflect financial indicators in their annual reports. In South Africa the education landscape has been changing. There is more emphasis on accountability and transparency. Management has been requested to report on efficiency and effectiveness. The emergence of private institutions of higher learning has added pressure to the public institutions. Performance measurement has become important and needs to be addressed by the HE institutions.

To summarise the key financial PI most often reflected were as follows:

- Current ratio
- Return on assets
- Level of debt
- Liquid ratio
- Academic staff costs
- Expenditure per FTE student

In the following chapter the research methodology and questionnaire used in this study will be described.
CHAPTER 5


5.1 INTRODUCTION

The goal of this chapter is to describe the research methodology that was chosen, the development of the questionnaire and the analyses of the responses from the survey.

In order to solve the problem highlighted in chapter 1, an empirical survey was done to provide the relevant data/information to develop a model for the South African HE situation.

Leedy (1997:3) defines research as “The systematic process of collecting and analysing information (data) in order to increase our understanding of the phenomena with which we are concerned or interested.”

Research methodology determines the focus of the study; the population and the sample to be used; the design of the questionnaire and the analyses of the response.

5.2 RESEARCH DESIGN

The main aim of research is to seek solutions to problems or to answer questions. The main problem and sub-problems identified in chapter one are part of the research design. The main problem was to identify financial performance measures that are essential to the effective financial management of HE institutions.
To facilitate the research the following sub-problems were identified:

- What financial performance measures are presently in use?
- Do educational institutions use financial PI to measure their financial effectiveness?
- What financial PI do knowledgeable people feel are important to HE institutions?

A questionnaire was developed from the literature study and sent to both academic and administrative managers at all South Africa universities and technikons. Data obtained was used to develop a model.

### 5.3 THE DEVELOPMENT OF THE QUESTIONNAIRE

Leedy (1997:191) states that the questionnaire is the tool to observe data that is beyond the physical reach of the observer because the respondents are not in close proximity to the researcher. The respondents in this study had to make decisions based on a rating scale of one to five, where one was not important and five was extremely important.

The questionnaire was divided into four sections, namely cash flows, administration, financial ratios and income.

The complete questionnaire appears as Appendix C. The questionnaire that was sent, consisted of the following:

- The covering letter;
- The questionnaire;
- The explanation of indicators.
5.4 THE SAMPLE POPULATION

Leedy (1997:210) maintains that the rule of “the larger the sample the better” is not always helpful to the researcher. There are factors like homogeneity and characteristics of the population that need to be considered.

In the survey that was conducted there was no need to consider a sample because the universal population (universities and technikons) was small enough to include everyone in the survey.

5.5 QUESTIONNAIRE ADMINISTRATION

Because of the geographical distribution of respondents throughout South Africa, in the interests of costs and time saving, it was decided to distribute a questionnaire via email. The questionnaire was initially emailed together with a covering letter around mid-October 2003. The covering letter appears as Appendix A. Respondents were asked to complete the questionnaire by the end of October 2003. However, by this date the response rate was 0%. Therefore the questionnaire was once again emailed to the respondents, this time with a covering letter from PE Technikon’s Academic Vice Rector. The aim of the letter was to encourage respondents to complete the questionnaire by showing that the survey had the support of PE Technikon. This letter appears as Appendix B. The new deadline was mid-November 2003. In each case, two questionnaires were emailed to each government sponsored tertiary institution, one to a specific respondent in the Financial Administration Department and one to a specific respondent in the Department of Financial Management (Academic). Names of respondents were obtained from the websites of each institution.

A total of 60 questionnaires were emailed to respondents. After the second deadline, 25 completed questionnaires were received. This equates with a response rate of 41.7%. The response rate was disappointingly low. However,
because of the email distribution method employed, this is considered to be a valid response. Table 5.1 shows the response rate.

Table 5.1:
Response Rate

<table>
<thead>
<tr>
<th>Financial Administration Respondents</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dept of Financial Management (Academic) Respondents</td>
<td>16</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
</tr>
</tbody>
</table>

Possible reasons for the disappointing response from Financial Administration were confidentiality issues, fear of imparting compromising information, or that these respondents are too busy at the particular time of year with closing administration issues.

5.6 CONCLUSION

In this chapter, the method of research used in the study was outlined. The construction of the questionnaire, which was developed from the literature study, was discussed. The questionnaire consisted of Section A comprising four subsections, covering 38 PI. Section B allowed all respondents to add any additional PI that were not covered by Section A.

The research questionnaire included all PI to measure financial performance. Respondents were asked to rank the PI according to their perceived importance.

The response was disappointing due to various reasons. A major consideration could have been that respondents felt that the timing was inconvenient to them. The overall response rate was 41.7% of the total population.

In chapter 6 an analysis of the responses is made and the additional PI given by respondents are discussed.
CHAPTER 6

ANALYSIS AND INTERPRETATION OF THE RESULTS OF THE EMPIRICAL STUDY

6.1 INTRODUCTION

In chapter 5 the research methodology used in solving the defined sub- problems was described. This chapter presents the results of the empirical study, which was conducted to evaluate the applicability of PI. The empirical data was analysed to reveal a strong argument for certain indicators.

The data was analysed and interpreted following the questionnaire structure, namely:

- Section A – Cash Flows, Administration, Financial Ratios, Income
- Section B – Additional PI’s

The indicators ranged from one to five, one being the least important and five the most important. The results appear as Appendix D.

PI were analysed based on the average percentage attained on ratings four and five only, from highest to lowest percentage. Only those achieving an average of 35% upwards were considered relevant to the model. This analysis, together with an examination of the literature study, helped to develop a model, to assist with the monitoring of financial performance in HE institutions.

6.2 ANALYSIS OF PI

In chapter one PI are described as empirical data that indicate how an organization operates. PI are tools to measure the achievement of goals, efficiency, effectiveness and economy.
6.2.1 Cash Flow PI

Table 6.1 shows the analysis of the cash flow indicators

<table>
<thead>
<tr>
<th></th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Ability to repay debt</td>
<td>47.5</td>
</tr>
<tr>
<td>2 Cover of fixed obligation from cash flow</td>
<td>45.5</td>
</tr>
<tr>
<td>3 Operating cash flow surplus/deficit</td>
<td>45</td>
</tr>
<tr>
<td>4 Interest cover from cash flow</td>
<td>37.5</td>
</tr>
<tr>
<td>5 Cash flow for financing cost</td>
<td>32.5</td>
</tr>
<tr>
<td>6 Cash flow turnover ratio</td>
<td>27.5</td>
</tr>
</tbody>
</table>

Table 6.1 shows that respondents gave the highest ranking to ability to repay debt. This indicates the institution’s ability to repay its debt from the cash flow and is expressed as a percentage of debt. The higher the ratio, the better the institution’s ability to carry its total debt.

Cover of fixed obligation from cash flow received the second highest ranking and shows the ability to cover all fixed obligations from cash flow. The cash budget is a useful tool for planning and controlling of the optimal level of cash that will be needed to cover institution’s obligation. The institution’s overdraft is an indication of this indicator and serves as a solution. This indicator also measures the liquidity of the organization.

Operating cash flow surplus/deficit received the third highest rating. This indicates whether the organization has managed its cash flow correctly for the financial year. Interest cover from cash flow indicates the organization’s ability to
cover its interest obligation from its cash flow. This received the fourth highest rating. The higher the figure, the more favourable for the institution.

6.2.2 Administration

Table 6.2 shows the ranking of the administration indicators.

<table>
<thead>
<tr>
<th>Table 6.2 Administration PI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage</td>
</tr>
<tr>
<td>1. Central admin salary expenditure as a % of central admin expenditure</td>
</tr>
<tr>
<td>2. Academic staff cost as % of total expenditure</td>
</tr>
<tr>
<td>3. Total staff cost as % of total expenditure</td>
</tr>
<tr>
<td>4. Expenditure per FTE academic staff member</td>
</tr>
<tr>
<td>5. Central admin expenditure as % of a grand total expenditure</td>
</tr>
<tr>
<td>6. Tuition costs as compared to other costs</td>
</tr>
<tr>
<td>7. Ratio total expenditure in relation to budgeted expenditure</td>
</tr>
<tr>
<td>8. Percentage of budget spent on continuing training</td>
</tr>
<tr>
<td>9. Expenditure per FTE student</td>
</tr>
<tr>
<td>10. Analysis of the expenditure for educational goals, surveys of budgets by types of costs. Budgeted versus real expenditure</td>
</tr>
<tr>
<td>11. Full fee as % of unit cost</td>
</tr>
<tr>
<td>12. Expenditure on support staff per FTE academic staff member</td>
</tr>
<tr>
<td>13. Research income per FTE academic staff</td>
</tr>
</tbody>
</table>
Table 6.2 indicates that total staff cost as a percentage of total expenditure, was ranked highest (45%). These PI are useful to monitor the salary cost in relation to total expenditure of the institution. Comparison over time can be made and the growth percentage should agree with the students’ growth percentage. Academic staff cost as a percentage of total expenditure is an indication of the relationship between the two costs. Comparison can be made between institutions and a norm established.

Central administration salary expenditure as a percentage of central administration expenditure shows the relationship of administrative salary to expenditure. Central administration expenditure as a percentage of total expenditure monitors the cost of administration against total expenditure. Expenditure for FTE academic staff monitors the total expenditure per FTE academic staff and is useful for comparison between departments. Tuition costs
compared to other costs, refers to the percentage tuition spent in relation to another cost (for example, library services).

Expenditure per FTE student in different departments can be compared. Comparison can be made between departments. Total expenditure in relation to budgeted expenditure determines whether the budgeted targets have been met. This reflects on the controls in place and management’s willingness to operate within the set parameters. Benchmarking can take place between HE institutions. Government can determine the targets and objectives to be met.

6.2.3 Financial Ratios

Table 6.3 reflects the response for the financial ratios.

<table>
<thead>
<tr>
<th></th>
<th>Financial Ratios as Indicators</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Operative surplus/deficit</td>
<td>40</td>
</tr>
<tr>
<td>2</td>
<td>Debt ratio</td>
<td>37.5</td>
</tr>
<tr>
<td>3</td>
<td>Liquid ratio</td>
<td>37.5</td>
</tr>
<tr>
<td>4</td>
<td>Current ratio</td>
<td>35</td>
</tr>
<tr>
<td>5</td>
<td>Level of total debt</td>
<td>32.5</td>
</tr>
<tr>
<td>6</td>
<td>Return on assets</td>
<td>22.5</td>
</tr>
</tbody>
</table>

Table 6.3 shows that operative surplus/deficit was ranked highest (40%). This is an indication of the effective management of the institution. The debt ratio focuses on the value of assets compared with the debt and shows the extent of solvency. However, institutions do not concern themselves with this ratio because the Government is not a judicial force, but a support. This is reflected in the huge debt of many institutions. The liquid ratio is the organization’s ability to settle its financial obligations in the short term. An indication is the overdraft of
institutions, which must be authorized by the Minister of Education. The current ratio is the relationship between current assets and current liabilities and indicates the creditworthiness and the short-term debt-paying ability of an institution.

6.2.4 Income PI

Table 6.4 shows the income indicators.

Table 6.4
Income Indicators

<table>
<thead>
<tr>
<th></th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Government subsidies as a percentage of total income</td>
</tr>
<tr>
<td>2</td>
<td>Tuition fees as a percentage of total income</td>
</tr>
<tr>
<td>3</td>
<td>Research income as a percentage of total income</td>
</tr>
</tbody>
</table>

Table 6.4 indicates that government subsidies as a percentage of total income, was ranked highest (45%). This indicator details the reliance on government funding and assists in monitoring the split in various incomes. Tuition fees as a percentage of total income looks at the division of different incomes. Research income as a percentage of total income monitors the income from research in relation to total income.

6.2.5 Additional Proposed PI

Table 6.5 is a summary of the additional indicators that respondents perceived as important.
Table 6.5  
**Additional indicators**

<table>
<thead>
<tr>
<th></th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Risk management indicators</td>
</tr>
<tr>
<td>2</td>
<td>Student fee recovery</td>
</tr>
<tr>
<td>3</td>
<td>Effective service delivery</td>
</tr>
<tr>
<td>4</td>
<td>Academic staff costs to non-academic staff costs</td>
</tr>
<tr>
<td>5</td>
<td>Percentage fees to Government subsidy</td>
</tr>
<tr>
<td>6</td>
<td>Percentage of outside income (grants, research) to total income</td>
</tr>
<tr>
<td>7</td>
<td>Benchmarking universities and technikons in terms of indicators.</td>
</tr>
<tr>
<td>8</td>
<td>Comparison over time</td>
</tr>
</tbody>
</table>

Table 6.5 indicates that 3 respondents included effective service delivery as an indicator. Indicators 4 to 8 were perceived as important and points to the income structure of the institution.

### 6.3 MODEL OF FINANCIAL PI

Table 6.6 represents the model developed from the empirical data that was collected, analysed and ranked as described in sections 6.2.1 to 6.2.5 above. The model is divided into three sections and incorporates the additional indicators. This model is in no way complete, but does represent those indicators deemed crucial for South African HE institutions to consider.
Table 6.6
Model of Financial PI

<table>
<thead>
<tr>
<th>Cash Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ability to repay debt</td>
</tr>
<tr>
<td>2. Cover of fixed obligation from cash flow</td>
</tr>
<tr>
<td>3. Operating cash flow surplus/deficit</td>
</tr>
<tr>
<td>4. Interest cover from cash flow</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Central admin salary expenditure as a percentage of central administration expenditure</td>
</tr>
<tr>
<td>2. Academic staff cost as a percentage of total expenditure</td>
</tr>
<tr>
<td>3. Total staff cost as a percentage of total expenditure</td>
</tr>
<tr>
<td>4. Expenditure per FTE academic staff</td>
</tr>
<tr>
<td>5. Central admin expenditure as a percentage of a grand total expenditure</td>
</tr>
<tr>
<td>6. Tuition costs as compared to other costs</td>
</tr>
<tr>
<td>7. Ratio total expenditure in relation to budgeted expenditure</td>
</tr>
<tr>
<td>8. Percentage of budget spent on continuing training</td>
</tr>
<tr>
<td>9. Expenditure per FTE student</td>
</tr>
<tr>
<td>10. Analyses of the expenditure for educational goals, surveys of budgets by types of costs. Budgeted versus real expenditure</td>
</tr>
<tr>
<td>11. Academic staff costs to non-academic staff costs</td>
</tr>
<tr>
<td>12. Effective service delivery</td>
</tr>
<tr>
<td>13. Student fee recovery</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Financial Ratios</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Operative surplus/deficit</td>
</tr>
<tr>
<td>2. Debt ratio</td>
</tr>
<tr>
<td>3. Liquid ratio</td>
</tr>
<tr>
<td>4. Current ratio</td>
</tr>
<tr>
<td>5. Risk management indicators</td>
</tr>
<tr>
<td>6. Benchmarking</td>
</tr>
</tbody>
</table>
### Income Indicators

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Government subsidies as a percentage of total income</td>
</tr>
<tr>
<td>2</td>
<td>Tuition fees as a percentage of total income</td>
</tr>
<tr>
<td>3</td>
<td>Research income as a percentage of total income</td>
</tr>
<tr>
<td>4</td>
<td>Percentage fees to government subsidy</td>
</tr>
<tr>
<td>5</td>
<td>Percentage of external income to total income</td>
</tr>
</tbody>
</table>

#### 6.4 CONCLUSION

The results of the empirical study were revealed in this chapter together with some comments on those indicators that have an average rating of thirty-five percent and upward. The indicators were ranked according to the percentage achieved, as rated by the respondents. All cash flow, income and certain PI under administration received a high percentage rating. This suggests that respondents considered these indicators to be very important. The cash flow turnover ratio and return on assets each had a 20% rating. This would imply that respondents rated these as being of less importance.

The next chapter will examine the findings of the empirical survey and the problems encountered and make certain recommendations.
CHAPTER 7

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

7.1 INTRODUCTION

The aim of this chapter is to identify the significant findings of the research, to look at the main problem and sub-problems and review briefly the solutions the research has provided and the reasons for the need for financial PI. The problems and limitations encountered during the research, opportunities for further research and recommendations conclude this chapter.

7.2 REASONS FOR THE RESEARCH

Financial PI must be seen as a management tool to enhance the effective management of the institution. Financial measures should be used if institutions want to achieve appropriate financial results. Financial performance must be measured to ensure expenditure and income lead to the enhancement of service delivery. The cost to educate a student has increased greatly in South Africa, but total government expenditure has not increased at the same rate.

7.3 FINDINGS

The greatest importance has been placed on questions and indicators that were important to the respondents. The indicators that were rated the highest on the scale were:

- Ability to pay debt. Tertiary institutions have not always regarded this aspect as important at all. The DOE should review their allocation of funds and reward those management teams who operate within the set parameters.
The cover of fixed obligations from cash flow and the operating cash flow surplus/deficit were both rated at 50%. This suggests that respondents felt that cash management is important and certain institutions should try to solve the overdraft crisis they are experiencing.

Government subsidies as a percentage of total income reflect the reliance on the government for funding. The trend is that this funding from government is steadily decreasing.

Tuition fees as a percentage of total income are also significant because income influences the liquidity of the institutions. The collection of the fees relates to the liquidity of the institution.

Certain indicators were rated as three and less on the scale. This equates with average to below average ratings. In these cases their importance had to be disregarded for the model because respondents thought they were unimportant to the study of the PI.

The cash flow turnover ratio had a 20% response on the not important side. Cash flow for financing costs also rated below average importance. Forty five percent of respondents rated this indicator as two or lower on the scale. This suggests that a fairly significant number of respondents found this indicator to be of little importance.

Expenditure on equipment per FTE and research income per FTE was not considered to be valid.

The indicators relating to FTE rate very average and lower. Questions 8, 9, 18 and 23 of administration section, were considered not to be relevant to the respondents.

Return on assets also had a 22,5% rating. Respondents did not rate it as important because the purpose of the assets of institutions are not to make a profit, but to provide a service,
7.3.1 The Main Problem

The main problem was to develop a framework of standard financial PI that will assist in the effective management of HE institutions. The culmination of the research was a model tabulated in Chapter 6, Section 6.3.

7.3.2 Sub-problems

The first sub-problem dealt with the current use of financial PI. It was established that certain institutions use indicators, but they are in the minority. The next problem was concerned financial indicators. There is a serious lack of these in use in all institutions. Management in financial administration is not in favour of this measurement and believes that finances are not managed by means of ratios, but planning and control.

The third problem is the question of cost centres in institutions. The cost centres identified were faculties and departments. Institutions have budgets for academic departments and faculties.

The fourth sub-problem was determining what indicators knowledgeable people felt were applicable to HE institutions. The literature survey and the questionnaire resolved this problem.

7.4 PROBLEMS AND LIMITATIONS

The following should be kept in mind when considering financial performance measures:

- An institution’s success cannot only be measured using financial indicators.
- Indicators agreed upon in this study are a matter of opinion and not an absolute.
HE in South Africa is changing and tertiary institutions must adapt and not remain closed, but be more transparent.

More consideration should have been given to the time of year that the questionnaire was distributed.

7.5 OPPORTUNITIES FOR FURTHER RESEARCH

The subject of (financial) PI needs a lot more research, as research in this area is in its infancy. There are opportunities for case studies using financial PI, or for the Education Department to organise a workshop to iron out any concerns. There is also the opportunity to look at control measures (financial) in tertiary education and adherence to the budget. Lastly, an activity-based exercise for various departments, or one department of an institution can be done.

7.6 RECOMMENDATIONS

- Management of institutions should become actively involved in developing a performance framework for their institution.
- All government-sponsored institutions must supply the DOE with financial statements and it should be simple to provide the indicators as listed in the model.
- Institutions should start implementing those financial PI that are a natural outflow of the administration departments. They should not view PI as an extra burden.
- Transparency has become an important aspect to all public entities. PI will give the stakeholders of institutions a window into the management of the institution.
- The model is a starting point for organisations and can lead to the development of other indicators. The four findings mentioned in section 7.3 can also be further unpacked into functional aspects. They cover the
areas of debt, cash flow, subsidies as a percentage of income and tuition fees as a percentage of income.

7.7 CONCLUSION

PI are an important part of the management function, as they assist in control and the achievement of objectives. Institutions have to measure what they manage. The model discussed in chapter 6 is only the beginning of this process of measuring and the development of a set of indicators for HE institutions. The government can only demand more accountability and transparency in financial reporting to ensure that institutions confirm commitment as custodians of public money.

PI can be a help to managers to identify warning signs, strengths and weaknesses and can lead to an improvement in the management of HE institutions.
REFERENCES


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05 October 2003

Dear Sir/Madam

Research Questionnaire – Financial PI in HE Institutions

I am currently conducting research on the above mentioned topic and would appreciate it if you could distribute this questionnaire, to the correct persons responsible for the management of your institution. I require one from an Administration and one from an Academic department to be completed. The questionnaire should take approximately 15 minutes to complete.

The research is in partial fulfilment of the requirements for a Master’s degree in Technology (Business Administration) and will also be important to my further research in the field of HE issues.

Once completed the questionnaire can be Emailed or faxed back to the number mentioned above. If there are any queries on issues regarding the questionnaire, I can be contacted on cell phone number: 041-5043760.

Thanking you in anticipation.

Yours sincerely

Terrance Leo
Dear Sir/Madam

Attached please find a questionnaire from one of our Senior Lectures who is currently doing his Master's degree.

I would appreciate it if you could please complete the questionnaire as well as send a copy to your Administrative department for completion.

Regards.

I N Moutlana (Prof)
Vice-Rector: Academic
PE Technikon
QUESTIONNAIRE

SECTION A

3.3 **Applicable PI**

The list below includes the most commonly used efficiency and economy related PI by international institutions. Please rate each according to their importance to you in managing your institution and making informed decisions.

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<thead>
<tr>
<th>No</th>
<th>Performance Indicator</th>
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<td>A</td>
<td>Cash Flows</td>
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<td>Cash flow turn over ratio</td>
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<td>Cash flow for financing costs</td>
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<td>Ability to repay debt</td>
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<td>Interest cover from cash flows</td>
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<td>Operating cash flow surplus/deficit</td>
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<td>Expenditure per FTE academic staff</td>
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<td>Expenditure on support staff per FTE academic staff</td>
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<td>Research income per FTE academic staff</td>
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**Expenditure on central administration**

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<td>Central admin expenditure as % of a grand total expenditure</td>
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<td>Central admin salary expenditure as a % of central admin expenditure</td>
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<td>8</td>
<td>Central admin expenditure per FTE student</td>
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<td>Central admin expenditure per FTE academic staff</td>
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**Financial management:**

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<td>Tuition costs as compared to other costs</td>
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<td>Percentage costs for housing</td>
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<td>12</td>
<td>Percentage cost for equipment</td>
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<td>Percentage costs for library, percentage costs for audio-visual centers</td>
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<td>Percentage expenditure on innovation projects</td>
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<td>Ratio total expenditure in relation to budgeted expenditure</td>
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<td>Percentage of budget spent on continuing training</td>
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<td>Analyses of the expenditure for educational goals, surveys of budgets by types of costs Budgeted versus real expenditure</td>
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<td>18</td>
<td>Unit costs/ FTE</td>
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<td>19</td>
<td>Scholarships as % of student fees and charges</td>
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<td>20</td>
<td>Academic staff cost as % of total expenditure</td>
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<td>21</td>
<td>Total staff cost as % of total expenditure</td>
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<td>22</td>
<td>Average fee per FTE as a % of unit cost</td>
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<td>23</td>
<td>Full fee as % of unit cost</td>
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<td><strong>C. Financial Ratios</strong></td>
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<td>1</td>
<td>Return on assets</td>
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<td>2</td>
<td>Debt ratio</td>
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<td>Current ratio</td>
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<td>Liquid ratio</td>
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<td>Level of total debt</td>
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<td><strong>D Income</strong></td>
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<td>Government subsidies as % of total income</td>
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<td>Tuition fees as % of total income</td>
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<td>Research income as % of total income</td>
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SECTION B

Complete the following section if you believe there are efficiency measurement PI of importance not mentioned above.

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<tr>
<th>No</th>
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Please indicate below if your institution would like to receive a copy of the research paper, including the findings, developed from the questionnaire completed.

Yes | No

If yes, attach details of the address to which the document should be sent.
SECTION C

EXPLANATION OF INDICATORS

Cash Flows:

Van Rooyen and Kelly (Financial Management.Ed. Lambrechts, J)) identify the following ratios applicable to cash flows, to measure performance:

- **Cash flow turn over ratio**
  
  \[
  \frac{\text{Net cash from activities of the organization}}{\text{Turnover}} \times 100\%
  \]

  It is a way to determine whether a particular marketing approach has negatively affected the cash flow. The larger, the ratio, the more positive for the enterprise.

- **Cash flow for financing costs**
  
  \[
  \frac{\text{Net cash from activities less taxation times Financing costs (1-T)}}{\text{Financing costs (1-T)}}
  \]

  How much cash is available, after tax, to meet financial costs?

- **Change in working capital to cash flow from activities of the enterprise.**
  
  \[
  \frac{\text{Change in working capital}}{\text{Change in turnover}}
  \]

  It indicates whether the increase in current assets is fully covered by cash from activities of the organization.

- **Ability to repay debt**
  
  \[
  \frac{\text{Cash flow}}{\text{Debt}} x \frac{100}{1}
  \]

  To determine the ability to repay an organization's debt from its cash flow. The lower the percentage, the less likely (able) it will repay it's debt from its cash flow.
- **Interest cover from cash flow**

\[
\frac{\text{Cash flow} + \text{Int Paid} (1-T)}{\text{Interest Paid} (1-T)}
\]

This ratio shows the extent to which the organization can make its interest payments from the cash flow.

- **Cover of fixed obligations from cash flow**.

\[
\frac{\text{Cash} + (\text{Interest} + \text{Rent}) (1-T) \times (\text{Interest} + \text{Rent} (1-T) + \text{Capital repayments})}{\text{Times}}
\]

The organization’s ability to cover all fixed obligations from the cash flow. Obligations include: interest payable, rent, lease and capital repayments.

- **Gibson (1998:486) shows the following ratio:**

\[
\frac{\text{Operating cash flow}}{\text{Total debt}}
\]

The higher the ratio, the better it is for the organization to carry its total debt.

**Administration:**

- **Full-time equivalent (FTE)**

Student numbers, including part-time students, which are calculated to equate to full-time equivalent numbers.

- **Total Expenditure**

Total expenditure is the sum of all expenditure incurred by the institutions as a whole.

- **Total Income**

Total income is the sum of all income, from all sources, received by the institution as a whole.

- **Salary expenditure**

All costs (direct and indirect) related to the employment of staff members within the institution.

- **Academic Staff**

All staff members (full-time or part-time) involved with teaching or lecturing duties at the institution.
Non-academic Staff
All staff members (full-time or part-time) with no involvement in teaching or
lecturing, including all support staff of the institution.

Other Income
All income that does not fall under government grants, student fees and
research income for the institution.

Total salary expenditure as % of total expenditure for the institution.
Total salary bill for the institution as a whole as a percentage of the total
expenditure of the institution.

Salary expenditure as % of total expenditure, per department, per faculty.
The percentage of each department or faculty salary bill to the total
expenditure for that particular department or faculty.

Ratio of academic staff to non-academic staff per department, per faculty.
The ratio of academic staff numbers to non-academic staff numbers per
department or per faculty.

Academic administration salary expenditure as % of total academic
administration expenditure.
Total salary expenditure for academic administration as a percentage of
total academic administration expenditure.

Total expenditure per FTE academic staff per department, per faculty
Total expenditure per department or per faculty divided by FTE academic
staff numbers.

Total expenditure per FTE non-academic staff per department, per faculty
Total expenditure per department or per faculty divided by FTE non-
academic staff numbers.

Income:

Research income as % of total income
Total research income as a percentage of total income of the institution or
per department.

Government grants as % of total income
Total government grants received as a percentage of total income
received.

Tuition fees as % of total income
Total tuition fees received as a percentage of total income received.
Other income as % of total income
Total other income received as a percentage of total income received.
RESPONSE ANALYSIS

The table below analysis the response per indicator and expresses them as a percentage.

| A | Cash Flows               | 1. Cash flow turn over ratio | 20 | 5 | 20 | 35 | 20 |
|   |                          | 2. Cash flow for financing costs | 5  | 15 | 15 | 30 | 35 |
|   |                          | 3. Ability to repay debt      | -  | - | 5  | 30 | 65 |
|   |                          | 4. Interest cover from cash flows | 5  | 10 | 10 | 40 | 35 |
|   |                          | 5. Cover of fixed obligation from cash flow | -  | - | 5  | 45 | 50 |
|   |                          | 6. Operating cash flow surplus/deficit | -  | - | 10 | 40 | 50 |
| B | Administration           | 1. Expenditure per FTE student | -  | - | 1  | 70 | 20 |
|   |                          | 2. Expenditure per FTE academic staff | -  | 5 | 1  | 60 | 20 |
|   |                          | 3. Expenditure on support staff per FTE academic staff | 5  | 5 | 5  | 50 | 10 |
|   |                          | 4. Expenditure on Equipment per FTE academic staff | 5  | 15 | 3  | 30 | 15 |
|   |                          | 5. Research income per FTE academic staff | -  | - | 4  | 25 | 35 |

**Expenditure on central administration**

|   | Central admin expenditure as % of a grand total exp. | -  | - | 2  | 50 | 30 |
|   | Central admin salary exp. as a % of central admin exp. | -  | 10 | 1  | 45 | 35 |
### 8. Central admin expenditure per FTE student

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### 9. Central admin expenditure per FTE academic staff

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### Financial management:

#### 10. Tuition costs as compared to other costs

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#### 11. Percentage costs for housing

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#### 12. Percentage cost for equipment

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#### 13. Percentage costs for library, percentage costs for audio-visual centers

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#### 14. Percentage expenditure on innovation projects

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#### 15. Ratio total expenditure in relation to budgeted expenditure

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#### 16. Percentage of budget spent on continuing training

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#### 17. Analyses of the expenditure for educational goals, surveys of budgets by types of costs

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#### 18. Unit costs / FTE

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#### 19. Scholarships as % of student fees and charges

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#### 20. Academic staff cost as % of total expenditure

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#### 21. Total staff cost as % of total expenditure

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#### 22. Average fee per FTE as a % of unit cost

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#### 23. Full fee as % of unit cost

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### C. Financial Ratios

#### 1. Return on assets

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<td>Debt ratio</td>
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<td>Operating surplus / deficit</td>
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<td>15</td>
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<td>Tuition fees as % of total income</td>
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<tr>
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<td>Research income as % of total income</td>
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