MINISTRY OF EDUCATION
Te Tāhuhu o te Mātauranga

University objectives

An analysis of university annual reports 2002 to 2006

New Zealand Government

Supporting the tertiary education system

This report forms part of a series called *Supporting the tertiary education system.*

Author
David Earle, Senior Analyst
Email: david.earle@minedu.govt.nz
Telephone: 04-463 8524

Acknowledgements
The author gratefully acknowledges comments provided by Roger Smyth (Ministry of Education), Grant Klinkum (Tertiary Education Commission), Bob Hall (University of Canterbury) and David Thomson (University of Otago).

All views expressed in this report, and any remaining errors or omissions, remain the responsibility of the author.

Published by:
Tertiary Sector Performance Analysis and Reporting
Strategy and System Performance
MINISTRY OF EDUCATION

This report is available from the Ministry of Education's Education Counts website:
www.educationcounts.govt.nz

March 2008

ISBN 978-0-478-13796-5 (print)
ISBN 978-0-478-13797-2 (web)

University objectives – an analysis of university annual reports 2002 - 2006

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Glossary

EFTS	Equivalent full-time student
FTE	Full-time equivalent
PBRF	Performance-Based Research Fund
STEP	Statement of Tertiary Education Priorities
TEC	Tertiary Education Commission
TEO	Tertiary education organisation

1 Executive summary

This report examines changes in the priorities of New Zealand universities over the period since the first Tertiary Education Strategy was introduced. It makes use of the objectives set out in university annual reports from 2002 to 2006 and builds on a previous analysis of tertiary education organisation profiles (Earle, 2006).

Universities are required to provide an annual report, which is tabled in Parliament. These reports serve several purposes, including accountability, provision of information, and communication. Within the reports, the statements of service performance provide the non-financial reporting. It is the objectives in these statements that have been used for this analysis. The objectives can provide system-level information on priorities, particularly at the management and governance levels. However, they are also shaped by funding and government policy.

The Tertiary Education Strategies have provided a government view of directions and priorities for tertiary education. Universities have been expected to respond to the strategies in their planning and objective setting. The first strategy was broadly based and intended as a framework for thinking about improving tertiary education outcomes, while the second, and current, strategy has a clearer statement of expectations and priorities.

This analysis has categorised university objectives into broad domains and themes covering the various aspects of university activity. These have also been examined in terms of cross-cutting areas of focus, namely Māori and iwi, Pasifika communities, internationalisation and people with disabilities. Further quantitative analysis has been undertaken to look at the relationship between occurrence of objectives and the size and nature of the university and its student makeup.

1.1 Key findings

Areas of focus

From 2002 to 2006, there has been a steady focus in annual report objectives on universities developing their teaching practice. However, there has been a switch from a focus on raising student achievement to improving the quality of research. This is likely to be a response to the introduction of the Performance-Based Research Fund. At the same time, mention of the role of critic and conscience of society has diminished.

The majority of universities addressed the following areas in most of their annual report objectives: the development of new qualifications and curriculum, recruiting students and developing relationships with their community, including iwi and Māori. However, less than a quarter of reports had objectives relating to improving the quality of teaching and learning provision, developing research plans and strategies and maintaining the role of critic and conscience of society.

Size and financial status make a difference

There were differences in priorities for different size universities, in terms of both student and research size. Large universities were more likely to have a focus on student achievement and support, on research quality and utilisation and on relationships with other tertiary education organisations, research institutes and alumni. They were also more likely to be developing their facilities. Small universities were more likely to be focused on developing research support,

capability and infrastructure, supporting postgraduate research students, developing relationships with schools and improving their financial status.

Financial status also made a difference to the mix of priorities. When universities had a sound financial status, they were more likely to focus on the quality of teaching and learning, research plans and strategies, developing research institutes and centres and developing organisational plans, processes and policies. When they had a low surplus, they were more likely to focus on teaching practice, student achievement, research funding and income, as well as quality and collaboration and relationships with schools, business and industry, and alumni. Universities in low liquidity were more likely to be developing relationships with research institutions and developing their financial status.

Population and interest groups most often referenced in terms of students and staff

Universities were most likely to include references to Māori and iwi in objectives relating to recruitment of students and relationships with Māori and iwi as stakeholders. Universities were most likely to include references to Pasifika in objectives relating to recruitment of students and staff; there has been increased recognition of Pasifika communities as stakeholders. The most common areas for reference to internationalisation in objectives were recruitment of students and international relationships with other universities. People with disabilities were only referenced in two areas – student access and equal employment opportunities for staff.

Universities with larger numbers of students were more likely to reference Māori, Pasifika and internationalisation in their objectives. These universities were also likely to have larger numbers of Māori, Pasifika and international students. However, universities with smaller numbers of Māori students were more likely to be developing relationships with Māori and iwi. Also, universities with a smaller proportion of international students were more likely to reference internationalisation within their capability objectives.

Responding to the Tertiary Education Strategies

Universities have responded in varying degrees in their objectives to the key messages of the first Tertiary Education Strategy.

They have had a steady focus on student access, recruitment and support, but the focus on increasing student achievement has declined. There has been continued focus on working with other tertiary organisations, and an increased focus on research quality.

There was initial increased attention to relationships with business and industry, complemented by increased attention to commercial utilisation of research. There has also been an increase in recognition of Pasifika communities as stakeholders. Universities have continued to develop relationships with iwi and Māori in a range of areas and to have an international focus, especially with regard to students and relationships with international universities.

Contributing to broader goals was mentioned by most universities, including utilisation of research and development of stakeholder relationships.

There are some areas where universities may need to give particular attention to respond to the second Tertiary Education Strategy. These include:

- increasing their focus on student achievement and teaching practice – as well as relationships with schools to support successful transitions to higher levels of study

— continuing to develop research collaboration and utilisation, both commercial and non-commercial

— giving further attention to developing relationships with business and industry and improving the quality of relationships with all stakeholder groups to better inform the relevance of education and knowledge and contribute to economic, social and cultural outcomes.

2 Introduction

2.1 Purpose of the report

The purpose of this report is to examine the changes in priorities of universities over the period since the first Tertiary Education Strategy was introduced. The report makes use of the statements of service performance in university annual reports from 2002 to 2006 as a source of data on priorities set by the universities. These are examined in terms of themes that emerge across the universities and these themes are considered in relation to the Tertiary Education Strategies.

This report builds on a previous analysis of tertiary education organisation (TEO) profiles (Earle, 2006). That analysis looked at the objectives set out by TEOs and their alignment with the Tertiary Education Strategy. As of 2008, the annual profiles have been replaced with three-year investment plans. This means that profiles will not provide an enduring instrument that can be used to track system performance over time. Therefore, it was decided to look at annual reports, which have been and will continue to be a statutory requirement for tertiary education institutions.

Annual reports also differ from profiles in that they report on what has been achieved, rather than what is planned to be achieved. The information in the statements of service performance is subject to audit. While achievement of objectives is not part of this analysis, inclusion within the statements of service performance is an indication in itself of areas that have been addressed by the university, not just those planned to be addressed.

This analysis also differs from the previous analysis of profiles, in that it starts with the themes as expressed in the statements of service performance and then considers their relationship to the Tertiary Education Strategies – rather than starting from the Strategies. This allows consideration of areas that may fall outside of the Strategies.

This report looks at New Zealand's eight universities. This is done in part to pilot and develop the methodology. It also reflects the increased interest in the distinctive contributions of each tertiary education sub-sector. It is intended that further reports will be produced on annual reports of institutes of technology and polytechnics, and on wānanga annual reports – in each case exploring the themes as expressed across those sub-sectors. As there is no consistent approach for industry training organisations to report non-financial performance information, it is unlikely that a similar analysis would be possible for that sub-sector.

2.2 Structure of the report

The following chapter provides an overview of university annual reports and the Tertiary Education Strategies. Chapter 4 provides discussion of the methodology used to analyse the reports. Further details of the methodology are presented in the appendices. Chapter 5 presents a brief synopsis of New Zealand universities, to provide a descriptive context for understanding the findings of the report.

The main findings of the analysis are presented in chapter 6, which looks at the overall patterns of reporting, including the areas most frequently reported and general differences by size and characteristics of universities. This is followed in chapter 7 by a discussion of the implications for the two Tertiary Education Strategies.

Chapters 8 to 13 provide detailed analysis of each thematic area in terms of the overall pattern of reporting, differences in reporting by university size and characteristics, and reference to population and interest groups – namely Māori, Pasifika, international students and students with disabilities.

3 Annual reports and the Tertiary Education Strategies

3.1 University annual reports

All tertiary education institution councils are required to provide an annual report to the Minister responsible for tertiary education (Education Act 1989, s.220). These reports are then presented to Parliament. The reports are required to include:

- financial statements, including the audit report
- a statement of responsibility signed by the chairperson of the council
- a statement of service performance
- information on actions relating to equal employment opportunities, reducing barriers to the progress of students and attracting students from disadvantaged and underrepresented groups.

In the 1980s, university annual reports were largely financial reporting documents and were not made widely available. In the late 1980s major changes were introduced to modernise and improve public sector reporting and accountability, including introduction of the Public Finance Act 1989. These changes resulted in more extensive requirements for annual reporting by universities. The annual reports developed into broader public accountability documents, providing both non-financial and financial performance information of potential interest to a range of audiences. The reports began to be professionally designed and distributed to a much wider range of people (Dixon et al, 1995; Coy & Dixon, 2004).

University annual reports serve several purposes including accountability, providing information for decision-making and communication to stakeholders. Research conducted in 1993 and 2001 on the recipients of university annual reports highlighted a significant internal audience for these reports. This research found that the reports are an important source of information for university council members, as well as those involved in internal resource allocation decisions. The research also demonstrated considerable readership across institutions. Wider readership appears to be limited, with institutions themselves being sceptical about the extent of public interest in the reports (Dixon et al, 1995; Coy et al, 1997; Coy & Pratt, 1998; Dixon & Coy, 2007). However, there have been a number of instances where information from annual reports has been used quite intentionally by stakeholder groups to inform and advance their interests (Coy & Pratt, 1998); and considerable investment has been made over the last six years in making the reports more attractive and appealing to a broad readership, as evidenced in the emphasis on layout and increased visual and narrative content.

3.2 Statements of service performance

Statements of service performance provide the core part of non-financial performance reporting for institutions. Considerable importance is placed on these statements within the New Zealand public accountability framework (Alves et al, 2005). Non-financial reporting provides the larger ‘performance story’, beyond the financial performance of the institution. Publicly funded bodies are expected to show in their non-financial reporting how their goals and performance contribute to the achievement of the government’s long-term goals; their performance against their

organisational goals; their capability to continue to perform over the long term; and their management of risks and uncertainty (Audit New Zealand, 2002).

Until 2003, institutions were required to prepare a statement of objectives, in consultation with staff, students and communities served by the institution. These included performance indicators. The institutions were required to provide a statement of service performance in their annual reports which compared planned and actual performance against their objectives and performance indicators (Education Act 1989, s.203(2)(d)).[1]

The tertiary education reforms in 2002 introduced funding to TEOs on the basis of annual profiles. Universities were required to prepare full profiles from the 2004 academic year onwards. Profiles included the organisation's objectives and the performance measures and targets used to measure performance (Education Act 1989, s.159W). The statement of service performance was then required to report on the performance of the institution as compared with the objectives and performance targets specified in the profile for that financial year (Education Act 1989, s.220(f)).

As noted in Earle 2006, the objectives set out in profiles can provide system-level information about TEOs. While they are shaped in the context of the funding process, they do represent a TEO management and governance view of priorities and activities and reflect the organisation's own thinking about strategy and direction at the management and governance levels. However, it needs to be noted that the objectives are not independent of government policy and priorities, and in some cases they are responding to funding opportunities. The objectives only provide a partial view of the huge amount of activity that goes on within a university (Earle, 2006, pp. 6-8).

Earlier research on annual reports of institutions confirms this view (Dixon et al, 1995). The research found that the structure and content of reports had been developed to meet the expectations of government departments and auditors, with a view to ensuring the security of ongoing funding. However, the reports were also used as a means of promoting the activities and legitimacy of the institution, and as a means of improving internal information flows. Other research highlights the internal political context of university reporting and points out that the content and presentation of annual reports is a result of political compromises within the university. This research cautions against assuming there is a unified view of university priorities and activities that can be embodied in annual reports (Coy & Pratt, 1998).

The reporting on objectives within annual reports provides a somewhat broader context for presenting performance information than is the case within funding documents, such as profiles. It also places the reporting within an ongoing series of reporting that goes beyond changes in legislative requirements.

The 1990s saw significant improvements in the quality of reporting in university annual reports (Coy et al, 1997; Coy & Dixon, 2004). However, there is a widespread view that the quality of service reporting continues to be varied and falls short of expectations of key readers, including university council members (Coy et al, 1997; Alves et al, 2005; Dixon & Coy, 2007).

Statements of service performance vary in length and style. In the period examined in this report, the statements range from as short as three pages to more than 70 pages. Some are strongly focused on objectives and quantitative targets, while others have more extensive reporting of activities and achievements.

[1] As introduced by the Education Amendment Act 1990, s.37, and the Public Finance Act 1989, s.41(2)(e).

Alves et al (2005) provides a more detailed discussion of the varied approaches to setting performance indicators, with illustrative examples. Their study of information accessibility of the 2000, 2002 and 2003 university statements of service performance found that quality of reporting not only varied considerably between universities, but between years for the same university. Coy and Dixon (2004) reported a similar lack of uniformity of coverage for the period 1992 to 2000.

3.3 The Tertiary Education Strategies

The 2002/07 Strategy

The first Tertiary Education Strategy was the centrepiece of a series of reforms of the tertiary education system (Office of the Associate Minister of Education (Tertiary Education), 2002). The role of the Strategy was to present a vision of the development of New Zealand's tertiary education system and to show how this development is consistent with, and linked to, the government's broader vision for economic and social development.

The strategy was not a 'top-down', prescriptive document with detailed plans and targets. Rather, it was intended as a framework for thinking about improving tertiary education outcomes; it was expected that it would be responded to in different ways in different parts of the system. However, it was intended that publicly funded tertiary education would be consistent with the overall strategy and its goals and outcomes (Ministry of Education, 2006).

The Strategy was broad in nature. It was composed of six sub-strategies, covering foundation skills, skills for a knowledge economy, research and knowledge creation, Māori development, Pasifika development, and capability and quality. These were supported by 35 objectives and underpinned by nine key changes.

The Strategy was supported by Statements of Tertiary Education Priorities (STEPs), which set out shorter-term priorities in more specific detail. An interim STEP was issued at the same time as the Strategy and was largely confirmed by the first official STEP, issued in 2003 (Office of the Associate Minister of Education (Tertiary Education), 2003). It provided a breakdown of areas of responsibility for achieving the Strategy between government agencies and TEOs. The second STEP, in 2005, had a much stronger emphasis on specific priority areas (Office of the Minister of Education, 2005).

The Tertiary Education Commission (TEC) was required to give effect to the STEP through negotiating charters and profiles, allocating funding and facilitating consultation and greater connectedness within the system.

The 2007-12 Strategy

The second Tertiary Education Strategy builds on the first Strategy (Office of the Minister for Tertiary Education, 2006). It is also associated with a further set of tertiary education reforms, focused primarily on improving mechanisms for planning, allocating funding and monitoring performance and quality. This second Strategy provides a clearer statement of expectations and priorities, while confirming the government's commitment to a broad and inclusive tertiary education system.

The document focuses the tertiary education sector on its contribution to the government's goals for New Zealand. These are expressed as success for all New Zealanders through lifelong learning, creating and applying knowledge to drive innovation, and strong connections between TEOs and the communities they serve. There is a statement of the distinctive contributions that

each part of the sector needs to make. The Statement of Tertiary Education Priorities (STEP) is incorporated in the strategy document itself and identifies four priority areas of focus – increasing the educational success of young New Zealanders, increasing literacy and numeracy levels for the workforce, increased achievement in advanced level trade, technical and professional qualifications, and improved research connections and linkages to create economic opportunities.

The TEC is expected to give effect to the Strategy and priorities through negotiation of three-year investment plans with TEOs.

4 Methodology

Annual reports of the eight universities for the years 2002 to 2006 inclusive were examined in this project. These five years cover the period of the first Tertiary Education Strategy.

The analysis focused on the objectives set out in the statements of service performance. These provide the most consistent basis for comparison across universities. Initially, performance information was also examined. However, each university reports this material in its own way, making assessment and comparison of performance problematic. For the same reason, this analysis does not attempt to look at the size and extent of change set out in the objectives or the extent to which objectives were achieved or not.

The objectives were coded and analysed using Nvivo7, a qualitative analysis tool. The first round of coding allocated the material to a set of broad domains, which represent the main areas of activity of universities. As shown in Figure 1 below, these domains were teaching and learning, students, research and knowledge creation, critic and conscience of society, stakeholders and capability. Within each domain, further coding was undertaken to more specific areas. Material was allocated to more than one domain or theme where appropriate.

The domains and themes were also examined in terms of cross-cutting areas of focus, namely Māori and iwi, Pasifika, internationalisation and people with disabilities. Objectives were only coded to one of these areas where there was specific and explicit mention in the wording of the objectives. If the objective was generally worded and then had mention of one of these groups within the performance information, it was not coded as such.

Objectives were categorised according to whether they represented new or further developments or maintenance of existing standards. This coding was based on the language used in the objectives. Objectives were coded as development objectives if they contained words and phrasing such as increasing, improving or establishing new initiatives. Most of the analysis in this report refers to development objectives. This follows a similar approach to Alves et al (2005).

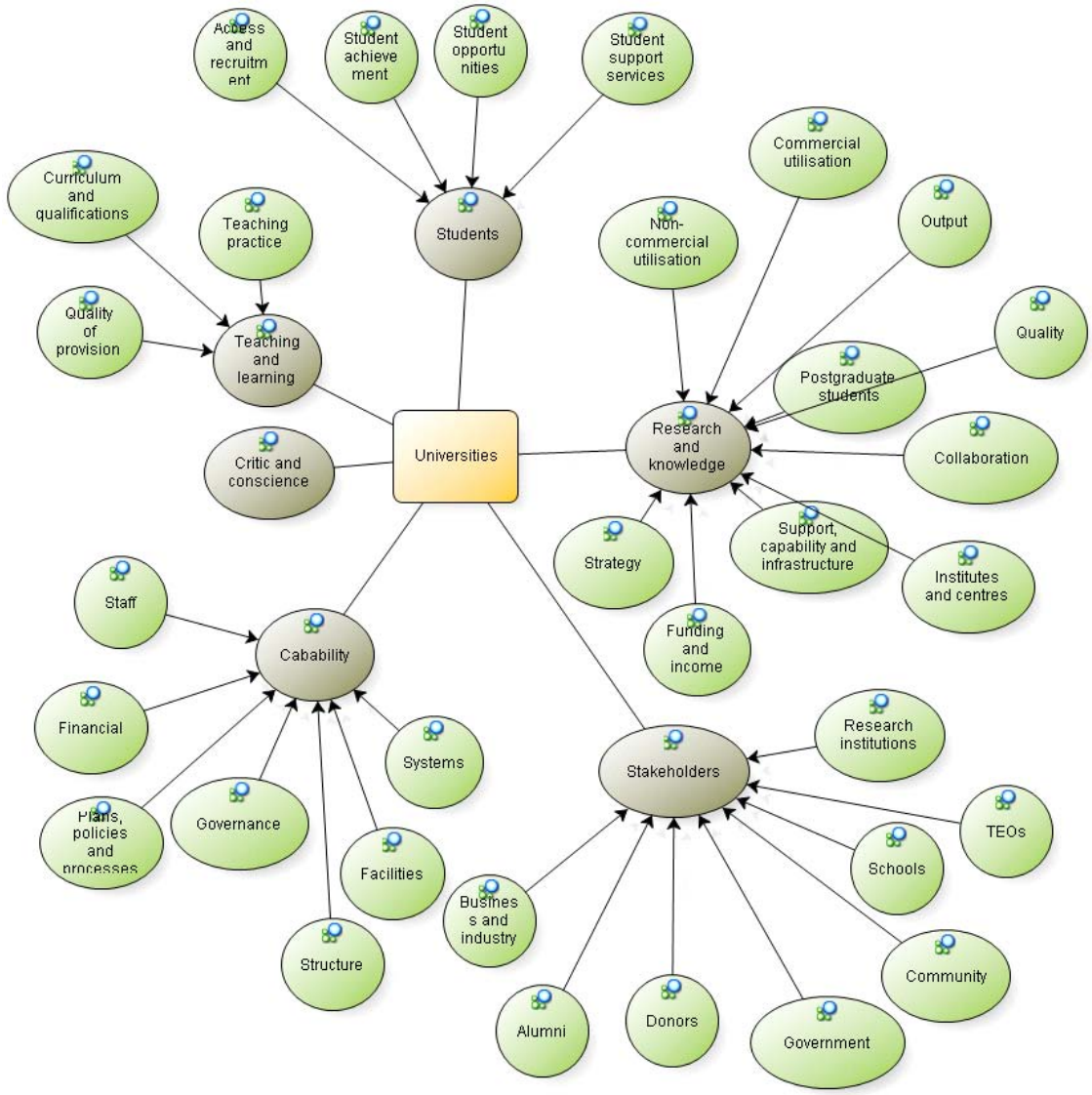
The coding of material is subject to the interpretation of the statements made by the researcher. It is based entirely on the material as presented in the annual report and the wording used to express the objective.

Two types of quantitative analysis were undertaken to examine the relationship between the objectives stated in the annual reports and the size and nature of the university. Details of both types of analysis are set out in the appendices.

Cluster analysis was used to group each university in each year into clusters with similar characteristics. Three different groups of characteristics were used – students, research and financial status. Each of these yielded clusters with different membership.

Non-parametric tests of significance were used to look at the relationship between having objectives relating to specific population and interest groups and the representation of those groups within the student body of the university.

Figure 1: Domains and themes used for analysis



The makeup of the student body was chosen as the best available measure of representation of the population or interest group within the university and its potential catchment. It was decided not to use population makeup of the region in which the university is located, as universities draw students from across the country. A study of school leavers' travel to tertiary study found that the proportion of students within universities travelling more than 354 kilometres to attend ranged from 2 percent for the Auckland University of Technology to 58 percent for the University of Otago. The study also found that Māori students were more likely than other students to travel long distances for tertiary study (Ussher, 2006).

5 New Zealand universities

The New Zealand tertiary education system includes eight universities. They are all set up as public bodies under the Education Act 1989 and are subject to some of the provisions of the Crown Entities Act 2004. The universities are recognised as autonomous institutions, particularly in regard to the exercise of academic freedom. However, they are required to be accountable for the resources allocated to them (Education Act 1989, s.161).

5.1 Characteristics of universities

A university is "characterised by a wide diversity of teaching and research, especially at a higher level, that maintains, advances, disseminates, and assists the application of, knowledge, develops intellectual independence, and promotes community learning" (Education Act 1989, s.162(4)(b)(iii)). They should have all of the following characteristics:

- "They are primarily concerned with more advanced learning, the principal aim being to develop intellectual independence:
- "Their research and teaching are closely interdependent and most of their teaching is done by people who are active in advancing knowledge:
- "They meet international standards of research and teaching:
- "They are a repository of knowledge and expertise:
- "They accept a role as critic and conscience of society." (Education Act 1989, s.162(4)(a)).

5.2 Distinctive contribution of universities

The concept of distinctive contributions of different types of tertiary education institutions was foreshadowed in the 2002/07 Tertiary Education Strategy, in terms of 'increased differentiation and specialisation across the system'. This objective focused on individual providers developing their areas of distinctive strength (Office of the Associate Minister of Education (Tertiary Education), 2002). The concept was further developed in the 2005/07 STEP, which had a focus on 'increasing differentiation and clarity of roles'. This included tertiary education sub-sectors focusing more on their core roles. The primary roles of each sub-sector were set out in the document (Office of the Minister of Education, 2005).

The 2007-12 Tertiary Education Strategy has a very strong focus on distinctive contributions, as an integral part of the new approach to funding and quality assurance. The section on universities is as follows:

> New Zealand needs a system of high quality academic education and research that provides for the development of skills and knowledge that supports New Zealand and New Zealanders to compete internationally.
>
> Universities are core to this system. They will continue to:
>
> 1. provide a wide range of research-led degree and postgraduate education that is of international quality

2. undertake excellent research in a broad range of fields

3. engage with external stakeholders (communities, business, industry, iwi, and the research community) in the dissemination and application of knowledge and in promoting learning.

The key shifts to advance these roles are:

— enhanced differentiation and complementarity among universities (and with other sub-sectors) to ensure an effective, high quality network of university provision

— increasing the achievement at degree and postgraduate levels of under-represented groups, especially Māori and Pasifika students, through strengthening pathways from schools and other TEOs, and enhancing support structures within universities

— enhancing the contribution that university teaching and research make to economic growth, and exploring what more can be done to further understand that contribution

— increasing collaboration and building critical mass in teaching and research, particularly in postgraduate research degree provision, and in more specialised areas of undergraduate teaching

— focusing capability building efforts to achieve increased quality and performance against international benchmarks.

(Office of the Minister for Tertiary Education, 2006)

5.3 Education and research in New Zealand universities

New Zealand universities are the main providers of research and postgraduate education within the tertiary education system. They also provide most of the bachelors-level education. Over the period of this study, there have been a number of changes affecting universities. These included institutional changes due to mergers, increased numbers of international students and changes in the way research is funded.

Institutional mergers

Since 1999, there have been a number of changes and mergers involving universities. In 1999, Wellington Polytechnic merged with Massey University. The following year, the Auckland University of Technology was established as a university from the Auckland Institute of Technology. Over the period to 2006, both institutions have been focusing on moving from below-degree provision to bachelors level and above. In 2004 and 2005, the Auckland College of Education merged with the University of Auckland, and the Wellington College of Education merged with Victoria University of Wellington. In 2007, the Christchurch College of Education completed its merger with the University of Canterbury, and the Dunedin College of Education with the University of Otago.

Students

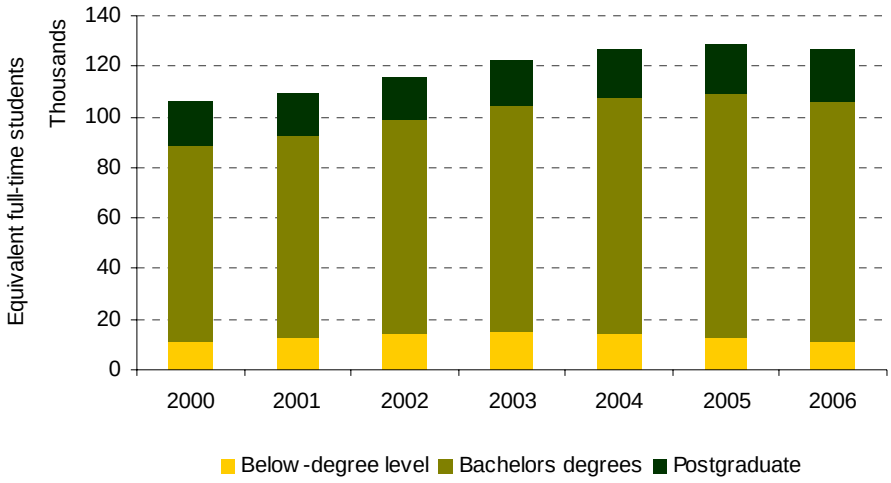
In 2006, there were 138,000 equivalent full-time students (EFTS) enrolled at New Zealand universities, a 10 percent increase from 2000. In 2006, universities ranged in size from 3,200 EFTS to 34,300 EFTS. The extent of growth has also varied by individual institution, ranging from a decrease of 9 percent to an increase of 33 percent.

In 2006, there were 166,000 formal students enrolled at universities, an increase of 7 percent on 2002. Formal student numbers at universities ranged from just under 4,000 to nearly 38,000 in 2006.

Most of the provision in universities is in formal qualifications (99 percent of EFTS). There is a small, but important, amount of provision of adult continuing education through non-formal and short courses.

In 2006, 75 percent of university EFTS were at bachelors level, 16 percent were at postgraduate level and 9 percent at below-degree level. From 2002 to 2006, the largest proportional of growth in EFTS was in doctorates (59 percent), due to more students studying full-time, as well as the introduction of a policy of funding international doctoral students as domestic students. The level with the next highest growth was bachelors with honours and postgraduate certificates and diplomas. The proportion of EFTS at below-degree level decreased from 2002 to 2006.

Figure 2: EFTS in universities by level of qualification



In 2006, 16 percent of university EFTS were international students. This was a decrease from a peak of 19 percent in 2004, but still higher than the 2002 proportion of 13 percent.

In 2006, 57 percent of formal students at university were female; 60 percent of students were aged under 25. The largest ethnic group was Europeans, making up 59 percent, followed by Asians at 25 percent, while Māori students represented 8 percent and Pasifika students 7 percent of formal students.

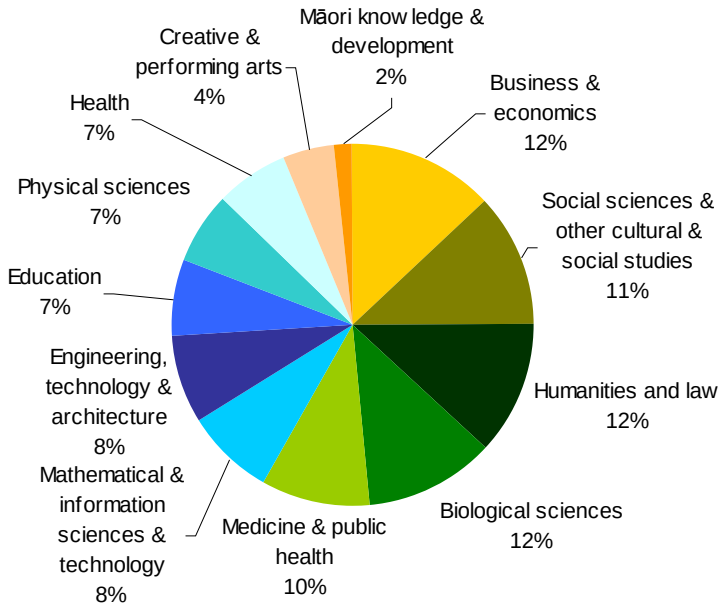
Research

Universities are the major producers of research within the tertiary education system. Around 98 percent of funding from the Performance-Based Research Fund (PBRF) was allocated to universities in 2005.

Universities have a strong focus on basic research. Around 48 percent of university research expenditure in 2006 was in this area. Universities produced 52 percent of all basic research in New Zealand, as measured by expenditure (Statistics New Zealand, 2006).

The four largest areas of research and teaching focus for universities, in terms of academic staff numbers, are 'business and economics', 'social sciences', 'humanities and law' and 'biological sciences'.

Figure 3: Distribution of academic staff in universities by 2006 PBRF subject panels (in FTEs)



Source: Tertiary Education Commission

Universities receive three main streams of research funding – the PBRF, which allocates general funding for research based on quality of research outputs; Centres of Research Excellence funding, which provides funding for collaborative research centres focusing on areas of national priority; and external research contracts.

The PBRF was phased in from 2004 to 2007, replacing previous research funding based on student numbers. The funding involves an assessment of the quality of research of each academic staff member in the institution, external research income and research degree completions. Funding is weighted towards institutions with higher performance.

The first round of Centres of Research Excellence funding was allocated in 2002, for a six-year period. Seven centres, involving seven of the universities, two wānanga and six Crown Research Institutes, were funded in the first round. A second round of funding was allocated in 2007. Six of the original centres secured ongoing funding through this round and one new centre received funding.

External research contracts have grown steadily over the period from 2002 to 2006. They include funding from contestable government research funds and contract research for business, industry, government departments and not-for-profit organisations. In 2005, income from these contracts accounted for around 67 percent of research funding at universities.

Resources

In 2006, universities as a group employed 7,960 academic and 10,500 non-academic staff. They had total revenue of $2,475 million and managed net assets of $4,709 million.

Total university revenue[2] has increased by 30 percent since 2002. Government funding for tuition and research made up 37 percent of university revenue in 2006, a decrease from 44 percent in 2002. From 2002 to 2006, the largest proportion of growth in revenue has been from international student fees and 'other sources'.

Table 1: Sources of university revenue

	2002		2006	
	$m	*%*	$m	*%*
Government funding (excl PBRF)	829	*44*	915	*37*
Domestic student fees	350	*18*	403	*16*
International student fees	187	*10*	303	*12*
Research income	237	*12*	277	*11*
Performance-Based Research Fund	-	*-*	110	*4*
Other sources	300	*16*	465	*19*
Total revenue	1,903	*100*	2,473	*100*

Note: Colleges of education have been included for both years for purposes of comparability.

[2] Including colleges of education in both years.

6 Where do universities seek to make a difference?

This chapter presents the overall findings of the analysis, highlighting the main areas of attention across universities. The next section looks at the findings in terms of the Tertiary Education Strategies.

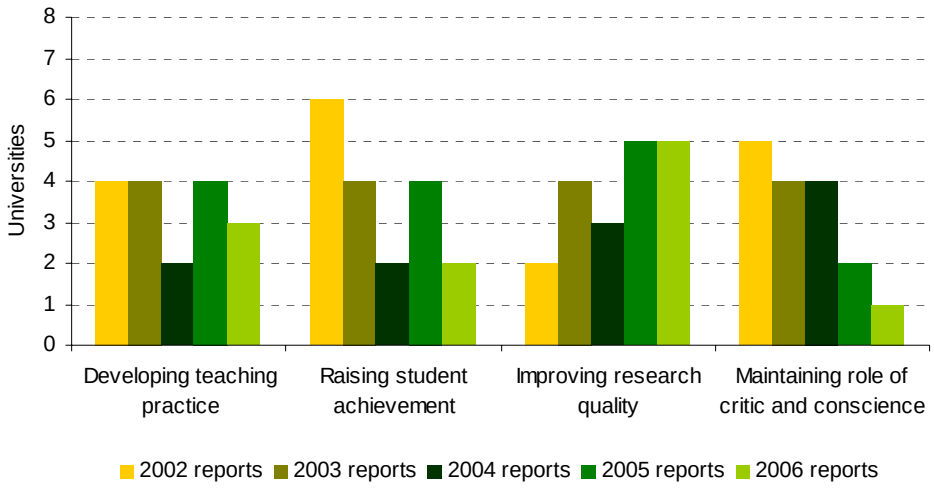
6.1 Focus on areas of characteristic

The following four themes have been selected from the analysis as strongly relating to the characteristics of universities, as set out in the Education Act 1989 (see page 16):

- Developing teaching practice
- Raising student achievement
- Improving research quality
- Maintaining the role of critic and conscience of society.

There has been a fairly steady focus in annual report objectives on developing teaching practice over the period from 2002 to 2006. This includes a focus on research-led teaching. In most years, half of the universities included objectives to make improvements in this area.

Figure 4: Objectives in annual reports relating to key themes



Following a widespread focus on raising student achievement in 2002, there has been an overall decline in the number of universities including this as an area for development in their annual report objectives. This has been offset by an increased number of universities focusing on improving the quality of their research. The latter is very likely to be a response to the implementation of the PBRF and a desire to improve the quality assessment of the university. It is possible that this has occurred at the expense of an ongoing focus on raising student achievement or has overshadowed the focus on student achievement in planning and reporting.

The fourth theme is the role of the university as critic and conscience of society. This sets a measure of the number of universities that specifically mentioned the role of critic and conscience of society in their annual report objectives. No objectives to develop the role were included in

annual reports. Over the period from 2002 to 2006, the number of universities with objectives to support and maintain this role decreased from five to one.

While this is an important role of universities, it is not directly funded by government or other funders. Therefore, the role may have become less connected to objective setting, which has become more closely tied to funding and accountability. It may be argued that the role is better expressed in other guiding documents such as the charter. Five out of the eight universities referred to the role in their charter, usually as part of their overall values and principles and/or as an aspect of academic freedom. It may be that the role is now being considered as an expected part of research, teaching and community service, rather than a stand-alone area for consideration in planning.

6.2 Areas of most frequent focus

Table 2 sets out the themes examined in this analysis by the proportion of university annual reports from 2002 to 2006 that contained development objectives in each area.

Table 2: Development objectives by frequency of occurrence across reports (2002 to 2006)

Number of reports	Area	Theme
More than three-quarters	Teaching	Curriculum and qualifications
	Students	Access and recruitment
	Stakeholders	Community
Half to three-quarters	Capability	Financial
	Capability	Plans, policies and processes
	Stakeholders	TEOs
	Capability	Staff
	Research	Postgraduate students
	Students	Student support services
	Research	Support, capability and infrastructure
	Research	Commercial utilisation
	Stakeholders	Business and industry
	Capability	Facilities
	Research	Collaboration
Quarter to a half	Research	Quality
	Research	Funding and income
	Students	Student achievement
	Teaching	Teaching practice
	Research	Institutes and centres
	Capability	Systems
	Research	Non-commercial utilisation
	Students	Student opportunities
	Stakeholders	Alumni
	Capability	Governance
	Stakeholders	Government
	Research	Output
	Stakeholders	Schools
Quarter or less	Teaching	Quality of provision
	Capability	Structure
	Research	Strategy
	Stakeholders	Research institutions
	Stakeholders	Donors
	Critic and conscience	Critic and conscience

There were three themes that were consistently included in most reports as areas for development and improvement – curriculum and qualifications, student access and recruitment, and community relationships (including relationships with Māori and iwi).

More than half of reports had development objectives relating to aspects of capability (financial, policies, staff and facilities), working with other TEOs and business and industry, and aspects of research (postgraduate students, support and capability, commercial utilisation, and collaboration).

There were six areas with relatively infrequent mention in terms of development objectives. These included improving quality of teaching and learning provision, developing organisational structure, developing research strategies, relationships with research institutions and donors, and the role of the university as critic and conscience of society.

6.3 Differences by university size and characteristics

Throughout this analysis, the distribution of objectives across universities is examined in terms of the characteristics of universities, namely student size, research size and financial status. This section summarises areas where there were clear relationships between university characteristics and types of objectives.

A relationship to student size was evident in several areas:

- Large universities were more likely to be developing:
    - student achievement, student opportunities and student support services
    - research funding and income, research support, capability and infrastructure, postgraduate research students, research quality and research utilisation
    - (maintaining) their role as critic and conscience of society
    - relationships with other TEOs, schools, research institutes, business and industry, government and alumni
    - their governance, staff, financial status, structure, systems and facilities.
- Medium-sized universities were more likely to be developing
    - teaching practice
    - student achievement and student support services
    - research plans and strategies and research output
    - their governance, structure and systems.
- Small universities were more likely to be developing:
    - research support, capability and infrastructure, postgraduate research students and research quality
    - relationships with schools and their communities
    - their plans, policies and processes, and financial status.

Slightly different relationships were evident with research size:

- Large universities were more likely to be developing:
    - teaching practice
    - student achievement and student support services
    - research quality, research collaboration and research utilisation
    - (maintaining) their role as critic and conscience of society
    - relationships with other TEOs, research institutes and alumni
    - their facilities.
- Medium-sized universities were more likely to be developing:
    - quality of teaching and learning provision
    - student achievement and student support services
    - research plans and strategies and research institutes and centres
    - relationships with other TEOs
    - their governance, structure and systems.
- Small universities were more likely to be developing:
    - quality of teaching and learning provision
    - research support, capability and infrastructure, postgraduate research students and research quality
    - relationships with schools
    - their financial status.

There were also differences according to financial status:

- Universities with a sound financial status were more likely to be developing:
    - quality of teaching and learning provision
    - student support services
    - research plans and strategies and research institutes and centres
    - their governance, plans, policies and processes, structure and systems.
- Universities with a low surplus were more likely to be developing:
    - teaching practice
    - student achievement and student support services
    - research funding and income, research support, capability and infrastructure, postgraduate research students, research quality and research collaboration
    - relationships with schools, business and industry and alumni
    - governance, structure and systems.
- Universities with low liquidity were more likely to be developing:
    - research support, capability and infrastructure, and postgraduate research students
    - relationships with research institutions

- their financial status.

6.4 Population and interest areas

Māori and iwi

Over the five-year period, the number of universities that included explicit reference to Māori and iwi in their objectives was fairly steady across all six areas examined. Access and recruitment of students was the most common area with explicit reference to Māori, along with developing relationships with iwi and Māori communities. The next most common area was the recruitment and support of Māori staff, followed by internal policies. References were also made to Māori representation on councils, Māori student achievement, support services for Māori students, Māori content in curriculum and qualifications, research collaboration with Māori and iwi, and utilisation of research to support Māori and iwi development.

Across most of the areas examined, universities with larger total numbers of students were more likely to include explicit references to Māori in their objectives. Larger universities were more likely to have larger numbers of Māori students, although not necessarily a larger proportion.[3] A relationship was also found between universities with larger numbers of Māori students and references to Māori in their student objectives. However, universities with smaller numbers of Māori students were more likely to have references to Māori and iwi in their stakeholder objectives.

Pasifika

From 2002 to 2005, there was increased recognition of Pasifika communities as key stakeholders, with the number of universities making explicit reference to them increasing from one in 2002 to four in 2005 and 2006. However, there has been no clear pattern of change over time in the other areas examined, with the exception of teaching and learning, where the number of universities explicitly referencing Pasifika increased from one in 2002 to three in 2005. However, this was followed by no references in 2006.

The most common area where there were specific references to Pasifika was access and recruitment of students, followed by support and recruitment of Pasifika staff and relationships with Pasifika communities. References were also made to support services for Pasifika students, utilisation of research to benefit Pasifika communities and Pasifika content in curriculum and qualifications.

As with Māori, universities with larger numbers of students were more likely to have references to Pasifika in their objectives. The larger universities were more likely to have more Pasifika students, and were somewhat more likely to have a larger proportion of Pasifika students.[4] It was found that universities with a larger proportion of Pasifika students were more likely to have objectives relating to recruitment and support of Pasifika staff and Pasifika content within their curriculum and qualifications.

[3] Correlation of total number of students with number of Māori students is 0.82, with $p<0.0001$, and with percentage of Māori students is -0.02 with $p=0.910$.

[4] Correlation of total number of students with number of Pasifika students is 0.73, with $p<0.0001$, and with percentage of Pasifika students is 0.44, with $p=0.004$.

Internationalisation

Most universities had explicit reference to internationalisation in most of the areas examined in this report. The number of universities referencing internationalisation in each area fluctuated from year to year. The most common areas with reference to internationalisation were access and recruitment of students and international relationships with other universities. Other areas mentioned included international benchmarking of the quality of teaching and learning, internationalisation plans and policies, international content in curriculum, opportunities for study abroad, and support services for international students.

Universities with larger numbers of students were more likely to have references to internationalisation in their student, research and stakeholder objectives. The larger universities were more likely to have more international students, but a smaller proportion.[5] Universities with larger numbers of international students were more likely to reference internationalisation in their student objectives. However, universities with a smaller proportion of international students were more likely to reference internationalisation within their capability objectives.

People with disabilities

People with disabilities were only mentioned in two areas – students and capability. Explicit references to people with disabilities decreased from 2002 to 2003 and then remained fairly steady. With regard to students, the main mention was in the area of access and recruitment. In the area of capability, the main mention was in regard to equal employment opportunities for staff with disabilities. No clear relationship was found between the number and proportion of students with disability and objectives referencing people with disabilities. This may in part reflect the variability of data collected on students with disability. It may also reflect a lack of visibility of people with disabilities within the university.

[5] Correlation of total number of students with number of international students is 0.82, with $p<0.0001$, and with percentage of international students is -0.69, with $p<0.0001$.

7 Implications for the Tertiary Education Strategies

This section examines the extent to which changes in reporting patterns show a response to the key messages in the first Tertiary Education Strategy and how well university priorities match with the areas of focus in the second Tertiary Education Strategy.

7.1 The first Tertiary Education Strategy 2002/07

The first Tertiary Education Strategy set out six strategies, with 35 objectives, that established the government's goals for the tertiary education system. Threaded through the document were nine key changes that provided a focus on the overall change sought throughout the system. The first stage of the evaluation of the Tertiary Education Strategy used these key changes as a frame for considering the extent to which the Strategy had influenced change in the system (Ministry of Education, 2006).

The following analysis uses the same framing to look at the extent to which changes signalled in the Strategy were reflected in university priorities in annual reports over the period.

Improvement within the tertiary education system

Increased responsiveness to the needs of, and wider access for, learners
There has been a continued and steady focus on developing student access and recruitment and student support services. However, the focus on developing student achievement has decreased.

Greater collaboration and rationalisation within the system
There has been a continued and steady focus on developing research collaboration. From 2003 to 2005 there was widespread focus on developing relationships with other TEOs.

Increased quality, performance, effectiveness, efficiency and transparency
There has been a fairly steady focus on developing teaching practice and quality of provision. However, the focus on developing student achievement has decreased over the period. At the same time, the focus on research quality has increased.

Improving linkages with stakeholders

Stronger linkages with business and other external stakeholders
The period 2002 to 2004 saw widespread focus on developing relationships with business and industry. This decreased in 2005 and again in 2006, possibly as universities focused on consolidating existing relationships. This was complemented by an increased focus on developing commercial utilisation of research and knowledge in the period from 2002 to 2005.

Over the five-year period there was a steady increase in the number of universities explicitly referencing Pasifika communities as stakeholders. Developing engagement with other stakeholder groups remained reasonably steady over the period.

Effective partnership arrangement with Māori
Over the five-year period most universities continued to make explicit reference to Māori and iwi as stakeholders in their objectives. Some universities engaged with iwi around research collaboration and utilisation of research and knowledge. Several were developing Māori representation at governance level, as well as plans and policies for engagement with Māori.

Improved global linkages

There has been a continued, steady focus over the period on international stakeholders, particularly international relationships with other universities. The focus on internationalisation in teaching and learning has fluctuated over the period. Most universities have continued to have a focus on internationalisation and students, including opportunities for domestic students to study abroad. From 2002 to 2004, there was a decrease in the number of universities making explicit reference to internationalisation and research.

Contribution to wider outcomes

Greater alignment with national goals

More future-focused strategies

A culture of optimism and creativity

The university annual reports do not provide much evidence of how well universities have responded in these areas. Contributing to broader goals was mentioned in a number of places by most universities, including utilisation of research and development of stakeholder relationships. There was limited reference to plans and strategies in the statements of service performance. However, this may simply reflect universities not considering these as appropriate to include within their objectives.

7.2 The second Tertiary Education Strategy 2007-12

The second Tertiary Education Strategy sets out three areas of expected contribution of tertiary education to the government's goals for New Zealand. This Strategy was published after the period covered by the annual reports covered in this analysis. While it is not expected that the universities would have yet responded to these areas, the annual reports do provide some sense of how well universities are positioned to respond.

The second strategy also sets out four priority areas. These are more specific than can be addressed by this analysis. However, these priorities do follow on from the broader areas of contribution. Similarly, the key shifts expected of universities, as set out in the distinctive contributions section of the Strategy and detailed in the TEC's investment guidance, are too specific to comment on from this present analysis.

Success for all New Zealanders through lifelong learning

Universities have had a consistent focus on improving access and recruitment and student support services, including for Māori and Pasifika students. The focus on improving teaching practice has been less widespread and there has been a decrease in the number of universities focusing on improving student achievement. These are areas where renewed attention may need to be given to achieve the new Strategy. The other area which may require greater focus is developing relationships with schools, particularly in terms of the first priority of 'increasing educational success for young New Zealanders'.

Creating and applying knowledge to drive innovation

Universities have had a steady focus on research collaboration, and an increased focus on developing research quality and commercial utilisation of research. The focus on developing non-commercial utilisation has been less widespread. These are areas where continued attention will be required to achieve the Strategy, particularly strengthening the link between knowledge and innovation. Developments in this area will also contribute to the fourth priority of 'improving research connections and linkages to create economic opportunities'.

Strong connections between tertiary education organisations and the communities they serve

There has been a decrease in the number of universities indicating in their annual reports that they are further developing their relationships with business and industry. There may be a need to give attention to this area to achieve aspects of the Strategy.

There has been a fairly steady focus on developing relationships with the community, including a focus by most universities on Māori and iwi and an increase in attention to Pasifika communities.

The challenge for universities will be to improve the quality of these relationships to inform the quality and relevance of education and knowledge, and to contribute to economic, social and cultural outcomes.

8 Teaching and learning

This section examines objectives that relate to supporting the process of teaching and learning. Objectives relating to student access and achievement are examined in the next section. Three themes were identified for teaching and learning from the objectives:

— Supporting teaching practice

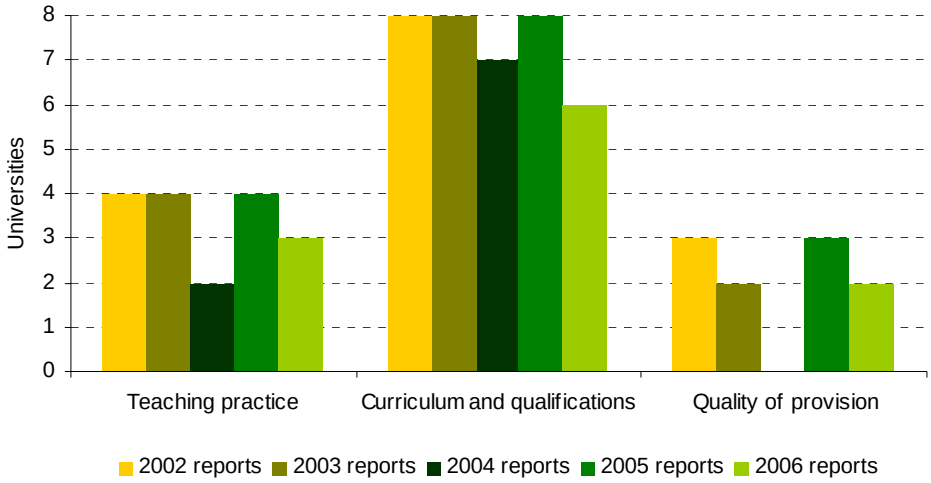
— Development of curriculum and qualifications

— Assuring quality of provision.

8.1 Areas of focus

Improvement and development efforts in the area of teaching and learning have most commonly focused on improving the content and structure of curriculum and qualifications. Half or fewer of the universities had a focus in their annual reports on improving teaching practice and quality systems in each year.

Figure 5: Development objectives relating to teaching and learning by theme



Teaching practice covered objectives related to developing and supporting aspects of teaching. The discourse in the teaching practice objectives changed over the years. In 2002, the objectives most often referred to research-led and/or research-informed teaching. In 2004, there was more mention of teaching to meet student needs in the objectives. In 2006, the objectives mostly referred to excellence and high quality in teaching.

Curriculum and qualifications covered the content of what is taught at universities. Across the five years examined, objectives in this area addressed the relevance and quality of qualifications and programmes, managing a relevant and current portfolio of provision, including reviewing qualification structures and curriculum, and development of flexible learning options, including distance and online learning.

Quality of provision covered measures to ensure that provision meets quality standards. Objectives covered areas such as quality standards, quality assurance and review, and meeting international standards. Most of the 2002 reports mentioned developing quality assurance and

review. This was less prominent in following years, with 2006 reports looking at more specific initiatives to improve quality. The years 2002 and 2006 marked the beginning and end of Cycle 3 of the Academic Audit Unit topic reports, which focused on teaching and learning (New Zealand Universities Academic Audit Unit, 2007).

8.2 Differences by university size and characteristics

The distribution of objectives across universities was also examined in terms of characteristics of the universities. This was done by means of cluster analysis, whereby universities were allocated to clusters according to their student size, research size and financial situation.

Teaching practice objectives were somewhat more likely to be included in annual reports of medium-sized universities in terms of students, and less likely to be included in large universities. There appears to be a relationship between having objectives to develop teaching practice and being a larger university in terms of research. This may be reflecting more frequent references to the connection between teaching and research in the annual reports of larger research universities. The analysis suggests that universities with low liquidity were less likely to be focusing on developing teaching practice.

Objectives relating to developing curriculum and qualifications were fairly evenly distributed across all three sets of clusters.

Universities that were large in terms of research were less likely to have objectives relating to improving the quality of teaching provision. However, those that were financially sound were more likely to have objectives in this area.

Figure 6: Teaching and learning objectives by student clusters (2002 to 2006)

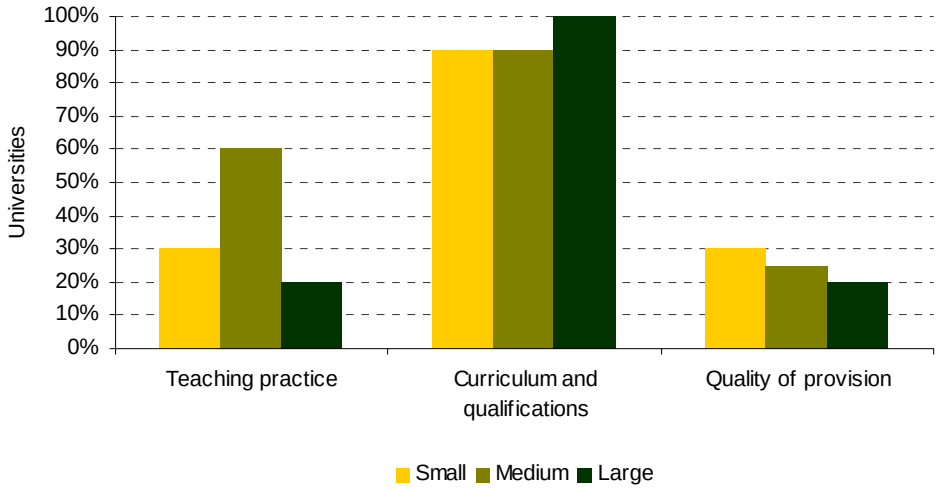


Figure 7: Teaching and learning objectives by research clusters (2002 to 2006)

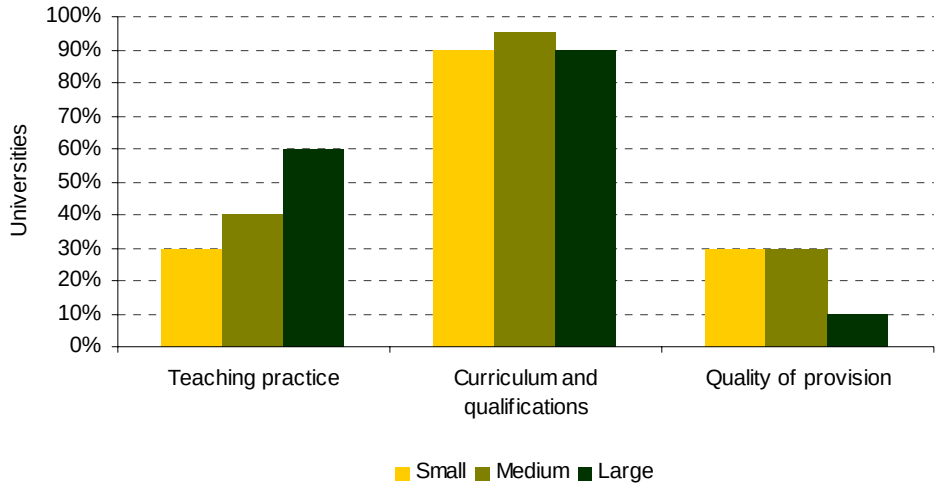
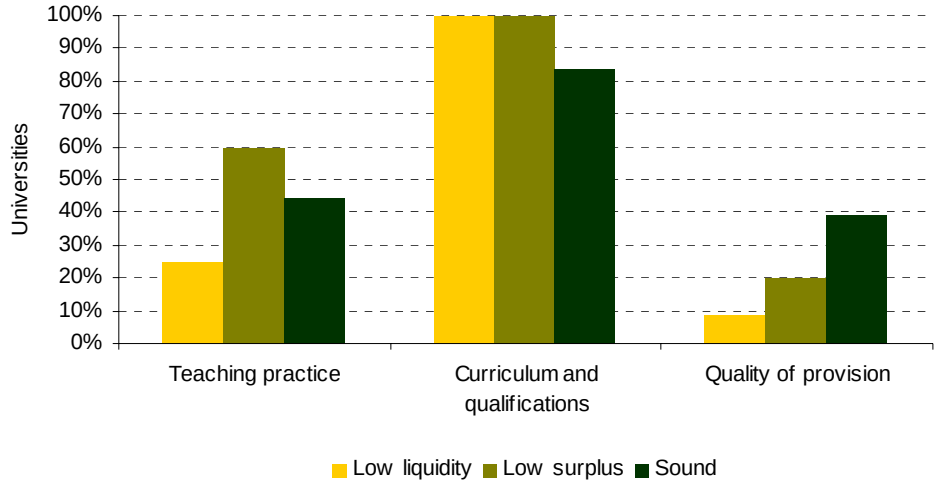


Figure 8: Teaching and learning objectives by financial clusters (2002 to 2006)



8.3 Population and interest areas

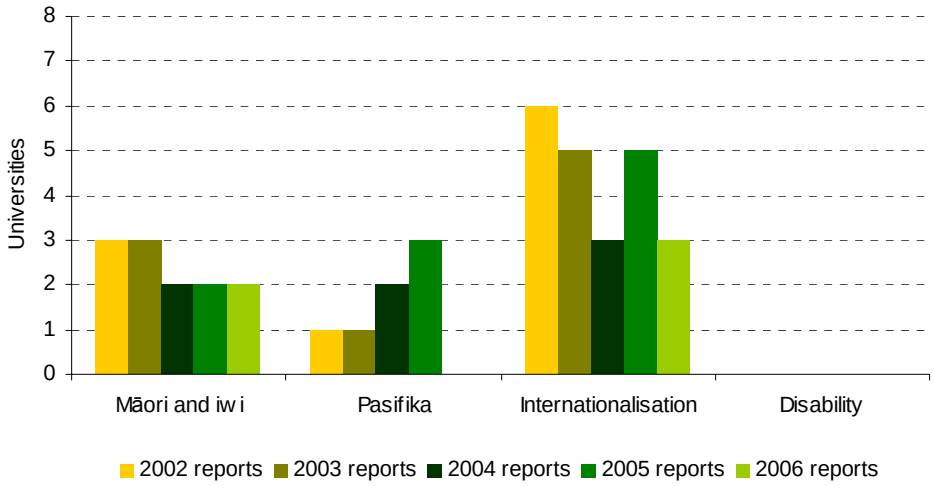
Half or fewer of universities in each year made specific references to Māori and iwi or Pasifika communities in their objectives relating to teaching and learning. A larger number made reference to internationalisation. There were no specific references to people with disabilities.

Teaching and learning objectives relating to Māori and iwi most often occurred in relation to curriculum and qualifications. Objectives relating to Māori and iwi covered consultation to ensure teaching and programmes were relevant to Māori and iwi, including Māori perspectives in programmes and supporting Māori language and culture.

Universities with larger numbers of students were more likely to have teaching and learning objectives relating to Māori and iwi.[6] No relationship was found to the number of Māori students at the university.

[6] Total students – W: p=0.036 / M: p=0.173.

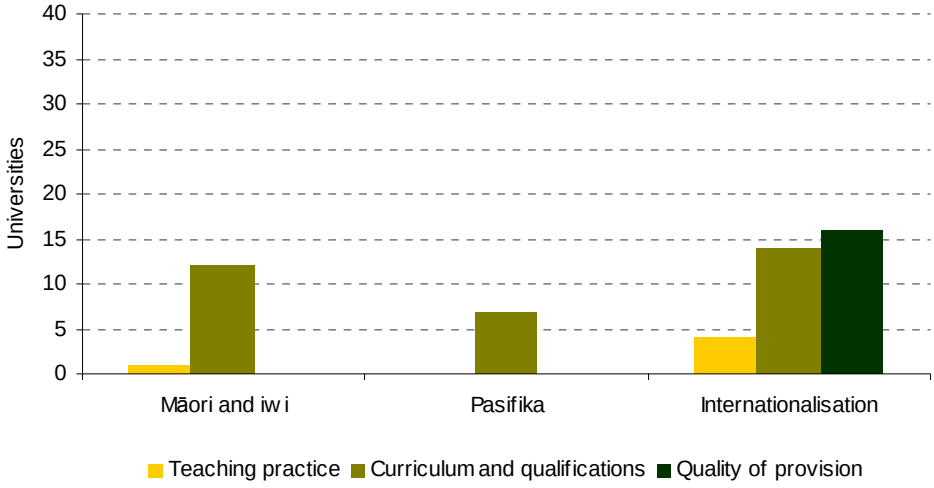
Figure 9: Teaching and learning objectives referencing population and interest areas by year



Teaching and learning objectives with an explicit reference to Pasifika were framed in terms of ensuring that qualifications and curriculum were relevant to the needs of Pasifika peoples. There was a small increase in the number of universities with these objectives from 2003 to 2005. However, no universities included these objectives in 2006.

Universities with larger numbers of students were also more likely to have teaching and learning objectives relating to Pasifika.[7] No relationship was found to the number of Pasifika students but it seems that universities with a higher proportion of Pasifika students were more likely to do so.[8]

Figure 10: Teaching and learning objectives explicitly referencing population and interest areas by theme (2002 to 2006)



There were some explicit references to internationalisation and teaching and learning, most often in regard to qualifications and curriculum and quality of provision. The objectives mostly covered achieving internationally recognised quality standards and including international perspectives

[7] Total students – W: p=0.041 / M: p=0.040.

[8] Percent of students who are Pasifika – W: p=0.444 / M: p=0.040.

and content in programmes. One case referred to developing offshore provision. The number of universities including these objectives fluctuated over the time period.

No relationship was found between having teaching and learning objectives with references to internationalisation and the number or proportion of international students at the university.

9 Students

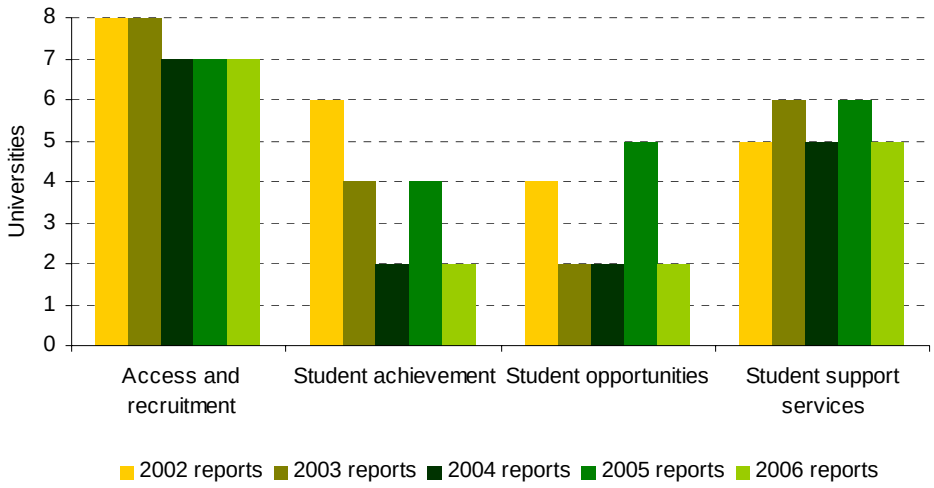
This section examines objectives that relate to the students at the universities. Four themes were identified from the objectives:

- Access and recruitment
- Student achievement
- Providing additional opportunities for students
- Student support services.

9.1 Areas of focus

Most universities included objectives relating to developing access and recruitment in their annual reports in each year. There was an overall decline in the mention of improving student achievement in objectives from 2002 to 2006. The numbers mentioning improving student opportunities fluctuated, while around three-quarters of universities mentioned improving student support services in each year.

Figure 11: Development objectives relating to students by theme



Student access covered improving access for specific target groups, as well as general marketing and recruitment of students. Examples of objectives in this area included increasing the number and/or proportion of postgraduate students, as well as increasing participation from underrepresented groups, such as Māori, Pasifika and students with disabilities. There was also a consistent focus on international recruitment and, in some cases, recruitment of domestic students from the local region. The 2002 reports often had a focus on increasing students overall, whereas the 2004 and 2006 reports were more focused on increasing participation of specific groups. Objectives were also included relating to initiatives to support the transition into university study. Initiatives included bridging qualifications, mentoring and scholarships. Objectives relating to these initiatives were more common in the later reports.

Student achievement covered objectives with a specific focus on improving academic achievement. Most of the objectives focused on improvement against measures of student

achievement, such as pass rates, retention and completion. In several instances, the measures were referenced to specific groups, including Māori, Pasifika and undergraduate students. Two universities also addressed the kinds of skills and attributes they wished their students to achieve.

Student opportunities covered things that the university did to provide additional opportunities for students. Nearly all of the objectives referred to study abroad. There was one other objective supporting the work of the students' association to enhance student life at the university.

Student support services covered objectives relating to activities and services to support students academically and personally. The objectives covered both learning support and welfare services, with a focus on retention and achievement of students. The later reports had a greater focus on student achievement, as well as retention. Objectives were also included to assess and review the quality of services provided.

9.2 Differences by university size and characteristics

Looking at universities by student and research size and financial status reveals some differences in the distribution of objectives.

There was little difference in distribution of development objectives relating to access and recruitment across all three types of cluster.

Smaller universities, in terms of students and research, were less likely to have development objectives relating to student achievement. Universities with a low surplus were more likely to have objectives in this area.

Universities with a large student population were much more likely to have development objectives relating to student opportunities. The distribution by research size and financial status was even.

Small universities, in terms of research and students, were less likely to have objectives relating to student support services, as were universities with low liquidity.

Figure 12: Student objectives by student clusters (2002 to 2006)

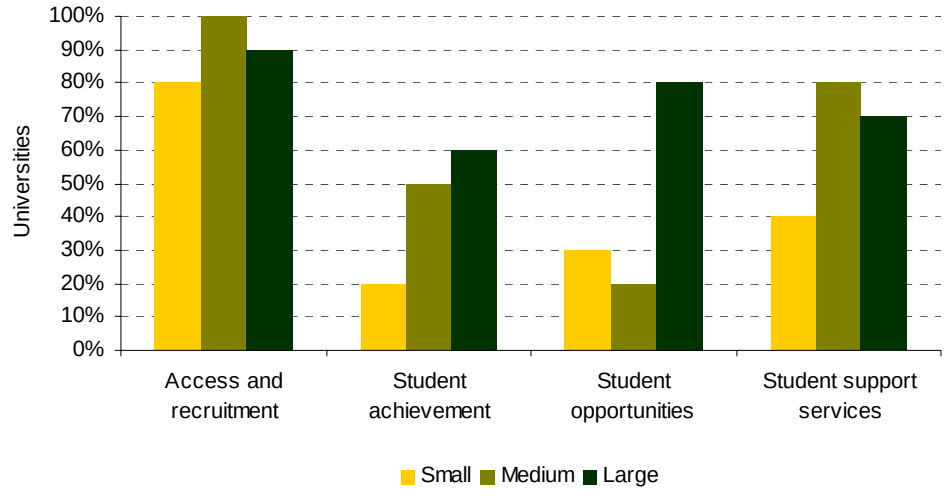


Figure 13: Student objectives by research clusters (2002 to 2006)

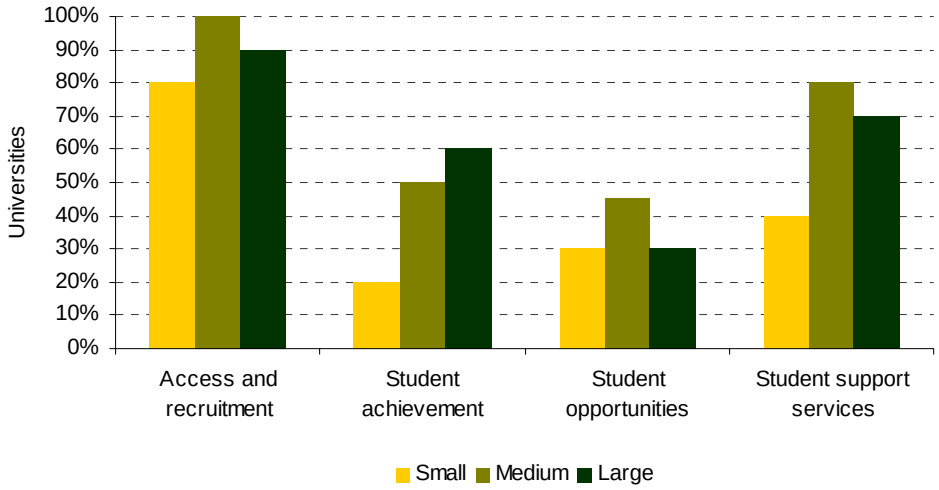
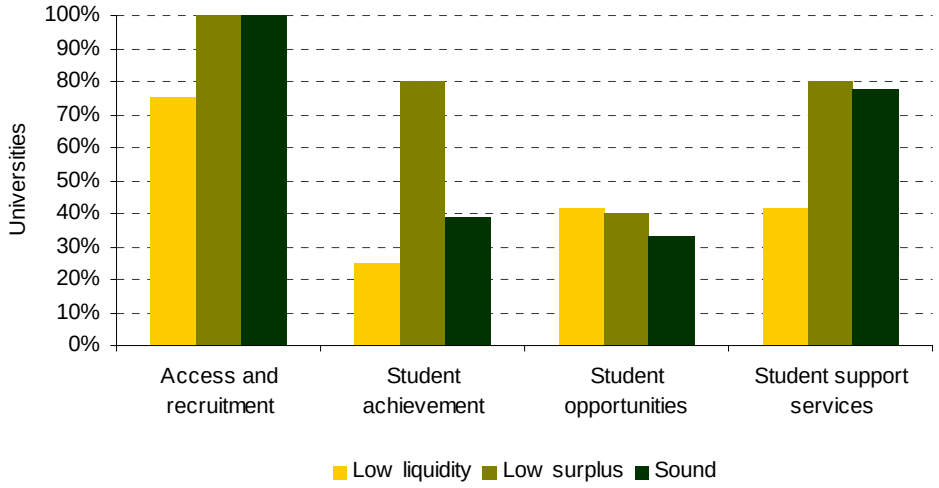


Figure 14: Student objectives by financial clusters (2002 to 2006)



9.3 Population and interest areas

Most universities included specific references to Māori students and internationalisation in their student-related objectives in each year. Half or more of universities included specific references to Pasifika students. References to students with disability were less frequent.

The majority of annual reports contained specific reference to increasing the number and/or proportion of Māori students in objectives relating to student access and recruitment. The next most common areas were providing support services for Māori students and focusing on Māori student achievement. Universities with larger numbers of EFTS were somewhat more likely to include objectives relating to Māori student achievement, opportunities and support services. These universities were also more likely to have more Māori full-time equivalent students.[9]

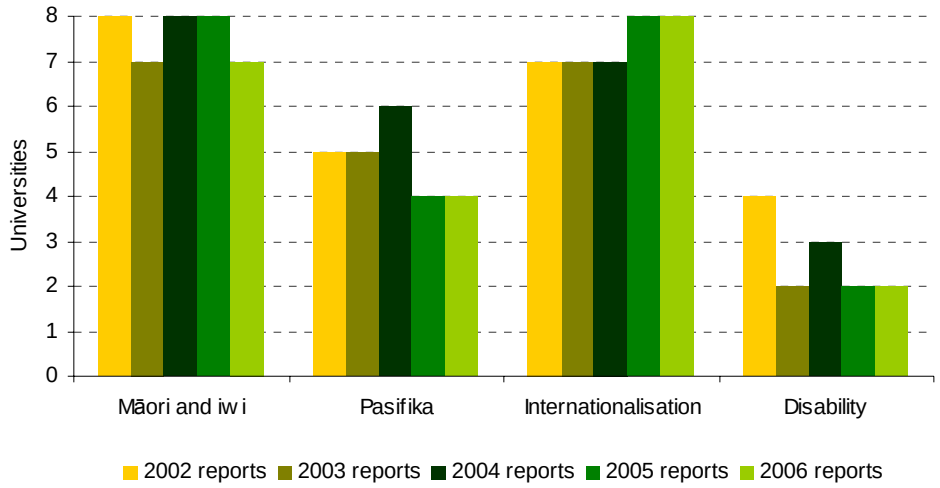
[9] Student access and recruitment was excluded from the analysis so as to look at the characteristics of the universities that had broader considerations than just student numbers.

Total EFTS – W: p=0.122 / M: p= 0.027.

Māori EFTS – W: p=0.158 / M: p=0.027.

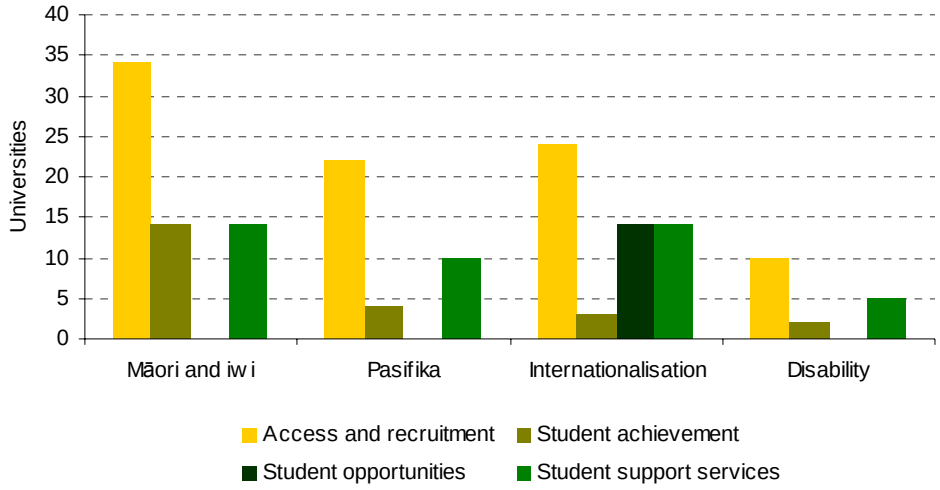
Correlation of total to Māori EFTS is 0.46 (p=0.002).

Figure 15: Student objectives explicitly referencing population and interest groups by year



Objectives relating to Pasifika students were also most common in the area of access and recruitment. Some universities also mentioned Pasifika students in the context of support services and sometimes in relation to student achievement. No relationship was found between having explicit reference to Pasifika students in objectives and the number or proportion of Pasifika students at the university.

Figure 16: Student objectives explicitly referencing population and interest areas by theme (2002 to 2006)



The student objectives relating to internationalisation most often focused on access and recruitment of international students. Supporting international opportunities for domestic students was the next most common area of objectives, along with support services for international students. Universities with more students were more likely to have objectives relating to internationalisation and student achievement, support and opportunities. These universities also had larger numbers of international students.[10]

[10] Total students – W: p=0.005 / M: p=0.011.
International students – W: p=0.050 / M: p=0.056.
Correlation of total to international students is 0.82 (p=<0.001).

Objectives relating to students with disabilities covered access and recruitment and support services. There was one instance of an objective relating to achievement. No relationship was found between having objectives relating to students with disabilities and the number or proportion of students with disabilities at the university.

10 Research and knowledge creation

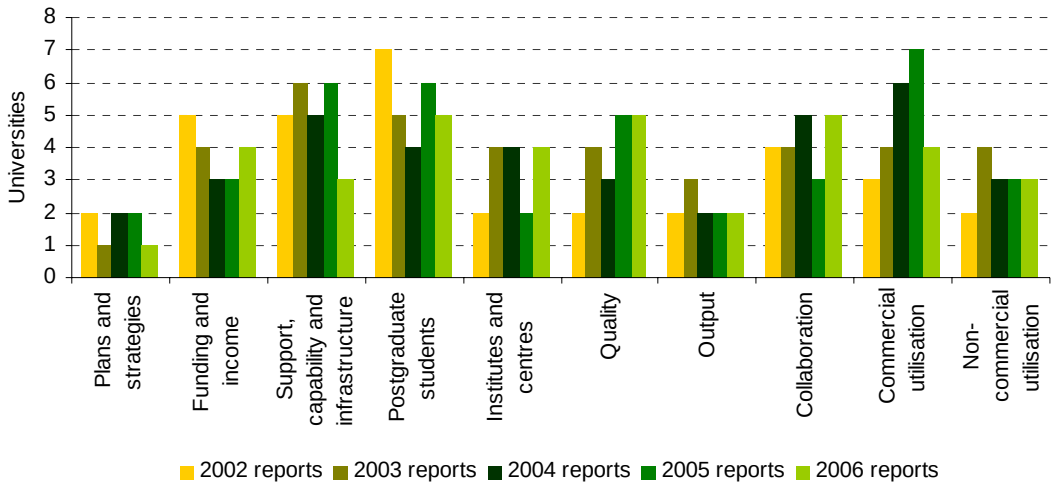
This section examines objectives that relate to research, the creation of new knowledge and transfer of knowledge beyond the university. Ten themes were identified that covered the research and knowledge creation process from funding and support through to utilisation:

- Research plans and strategies
- Research funding and income
- Support, capability and infrastructure
- Research institutes and centres
- Collaboration
- Postgraduate research students
- Quality of research
- Research output
- Commercial utilisation of research knowledge
- Non-commercial utilisation of research knowledge.

10.1 Areas of focus

Only a few universities mentioned developing research plans and strategies in their annual report objectives. Objectives relating to research funding and income were more common. Mostly the objectives focused on increasing the amount of funding. In 2002, there was also discussion about broadening the range of sources of funding.

Figure 17: Development objectives relating to research and knowledge creation by theme



Support, capability and infrastructure objectives covered the range of areas where universities support staff to undertake quality research – from library collections through to professional development. The number of universities with developmental objectives in this area fluctuated over the period. From 2002 to 2006, there was a shift in emphasis away from physical infrastructure, such as library collections and information technology, to staff support and professional development, with an increasing emphasis on professional development of new research staff. This is likely to be a reaction to the implementation of the PBRF, which put attention on the capability of all staff to produce quality research outputs.

In 2002, most universities had objectives relating to improving recruitment and support of postgraduate students involved in research. The number of universities with development objectives in this area decreased in 2003 and 2004 and then increased again in 2005. The peaks coincide with preparation for the PBRF quality evaluations.

In the 2002 annual reports, objectives relating to postgraduate students mostly focused on increasing the number of students. In the 2004 and 2006 reports there was an increased emphasis on supervision and support of postgraduate students, although increasing numbers was still mentioned often. In 2006, one university also focused on completion of qualifications.

The number of universities with objectives to establish or develop specialist research institutes and centres has fluctuated. These objectives include establishing new centres and improving the quality and reputation of existing centres.

From 2002 to 2006, there was an overall increase in the number of universities with objectives to develop the quality of their research. These objectives tended to focus on building the reputation of the university as an international standard research institution. In some cases objectives also reference recognition of quality research and systems to review quality. The 2006 reports often referred to the PBRF as a benchmark for quality.

Each year, two or three universities had objectives relating to increasing the volume of research output.

Around half of the universities had objectives to develop research collaboration with other universities and tertiary education providers, and with stakeholders, including iwi, research institutions, government and industry. In 2002, the collaboration objectives were general and often didn't name specific groups with whom collaboration would be undertaken. In 2004, there was more frequent reference to specific groups. In 2006, there was a return to more generally phrased objectives.

From 2002 to 2005 there was a definite increase in the number of universities with objectives to develop commercial utilisation of research. These objectives covered the use of research in business and industry and generating a commercial return on research findings.

In the 2002 reports, commercial utilisation objectives most commonly focused on the transfer of research knowledge and technology. There were also references to commercial activities and partnerships. The 2004 reports had a more frequent emphasis on protecting and managing commercialisable intellectual property. The 2006 reports continued this trend towards commercialisation by the university, rather than more general transfer of research and technology.

Up to half of the universities in each year had objectives relating to improving non-commercial utilisation of research. These objectives covered making use of research knowledge for social, cultural and environmental purposes. This includes research of benefit to local communities and

nationally. In the non-commercial utilisation objectives, from 2002 to 2006 there was increased use of terms such as ‘community development’ and ‘social and cultural advancement’ to describe the purposes of these areas of research. This indicates a shift from knowledge about society and culture to applying knowledge to improve well-being.

10.2 Differences by university size and characteristics

Looking at universities by student and research size and financial status reveals some general patterns about emphasis on research developments. Universities that were small or large in terms of students were more likely to have developmental objectives for research than medium-sized universities. However, when universities are looked at in terms of their research size, the distribution is more even. Universities with low liquidity or low surplus were more likely to have research development objectives, particularly relating to developing internal capacity and areas that could potentially increase their income.

Universities developing research plans were all medium sized in terms of students, were either medium or large in terms of research and were in a sound financial position. Increasing funding and income was evenly spread across universities by student and research size. However, it was a more common area of focus for universities with a low liquidity or surplus. Support and capability objectives were more common in universities that were small and medium sized in terms of research and in universities with low liquidity or low surplus.

All of the small universities (in terms of student and research size) included objectives in each year relating to developing postgraduate students, as did the universities that were large in terms of student size. Again, universities with low surplus and liquidity were more likely to include these objectives. Small and medium-sized universities (in terms of research) were more likely to be developing institutes and centres. Universities were more likely to be doing so if they were in a sound financial position.

Developing quality was fairly evenly spread across universities by research and student size, as well as financial status. Small and medium universities (by student and research size) were more likely than large universities to be focusing on increasing output. These objectives were evenly spread by financial status.

Improving or extending collaboration was also fairly evenly spread across universities by research size, with it being slightly more common in larger universities. Universities with a low surplus were much more likely to be developing collaboration. Developing both commercial and non-commercial utilisation was more common in the larger student and research universities and fairly evenly spread by financial status.

Figure 18: Research objectives by student clusters (2002 to 2006)

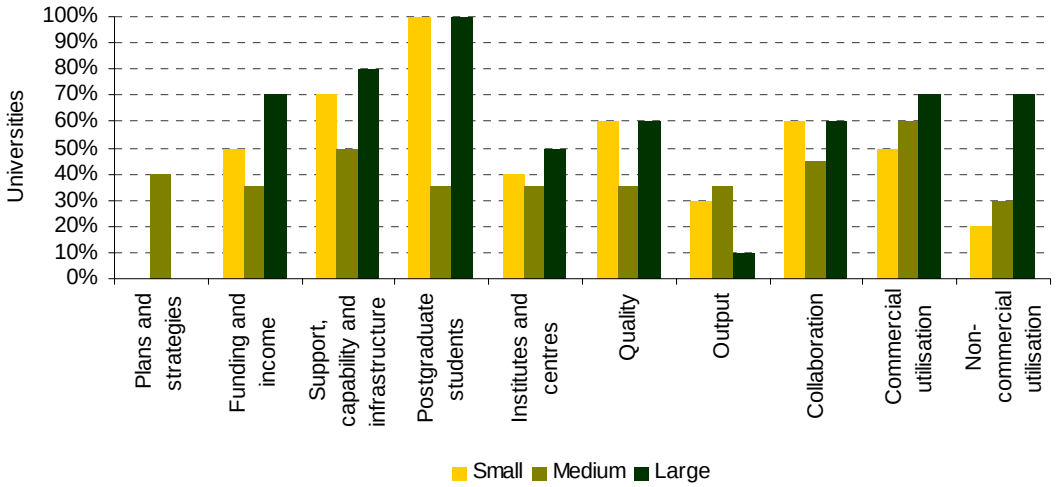


Figure 19: Research objectives by research clusters (2002 to 2006)

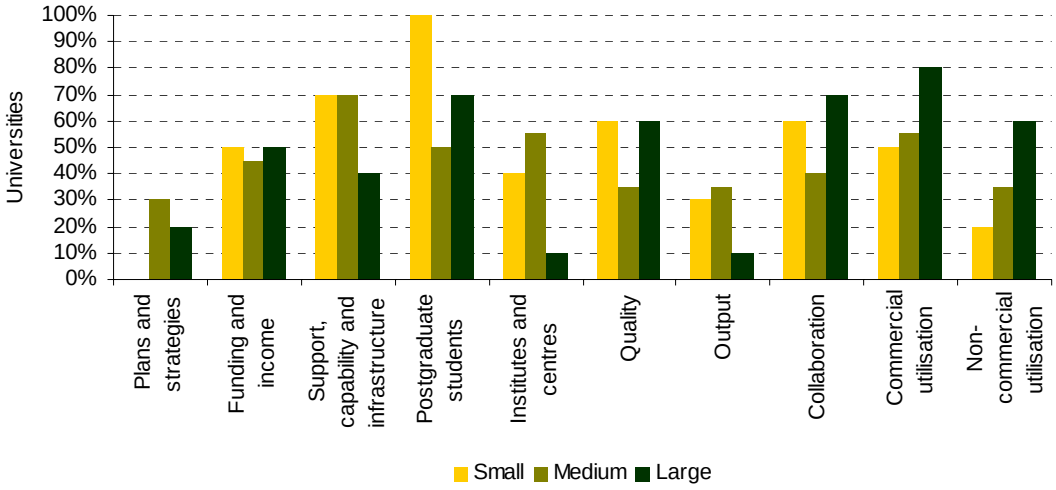
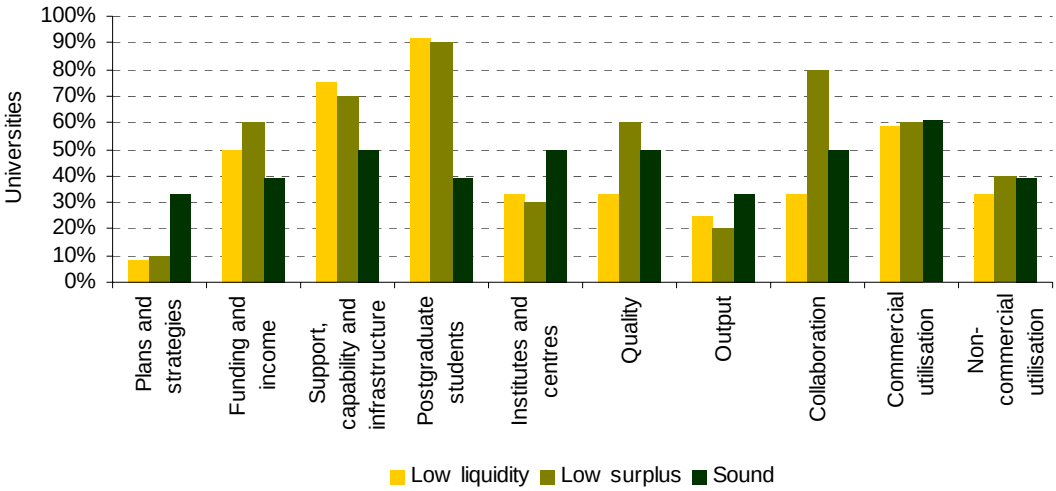
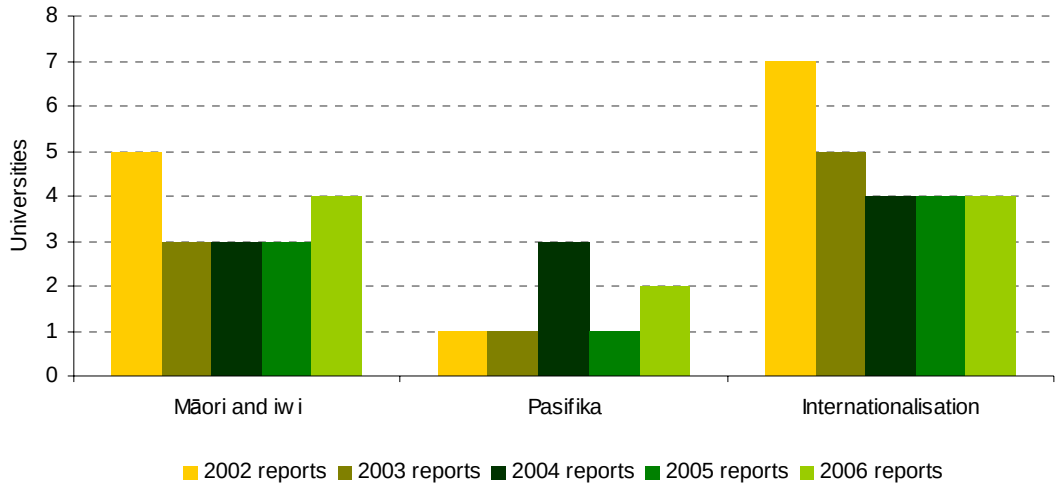


Figure 20: Research objectives by financial clusters (2002 to 2006)



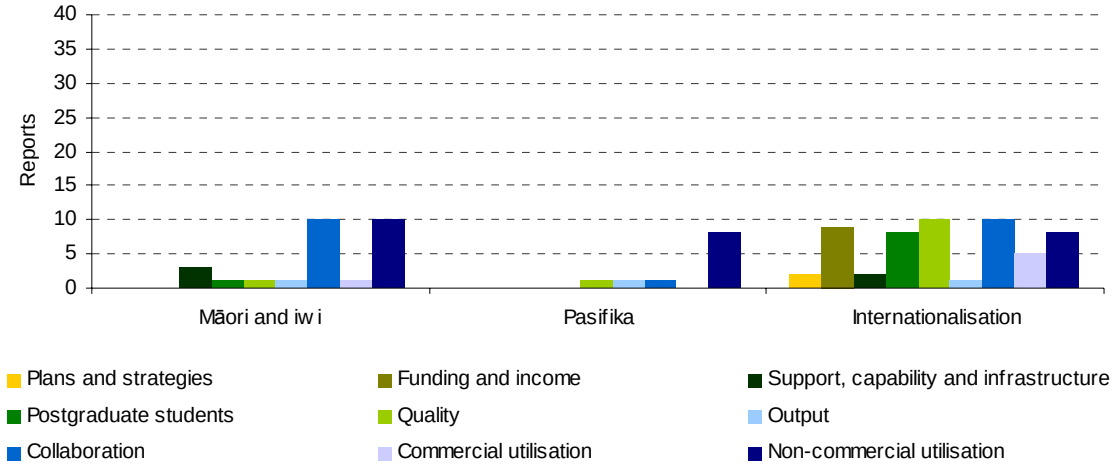
10.3 Population and interest areas

Figure 21: Research and knowledge objectives explicitly referencing population and interest areas by year



Just under half of universities in each year had research objectives with an explicit reference to Māori and iwi. These mostly related to collaboration and non-commercial utilisation of research results. The collaboration objectives covered building links with iwi and Māori to undertake and support research relevant to Māori language, culture and society. The non-commercialisation objectives covered providing research to inform Māori and iwi development. Universities with larger numbers of EFTS were more likely to have research objectives referencing Māori.[11] However, there was no relationship to the number or proportion of Māori students.

Figure 22: Research and knowledge objectives explicitly referencing population and interest areas and themes (2002 to 2006)



Pasifika communities were only occasionally referenced in research objectives, with the exception of 2004, when there was increased attention following the implementation of the Tertiary Education Strategy. These objectives mostly related to non-commercial utilisation and covered using research to inform Pasifika community development. Universities with more EFTS were

[11] Total EFTS – W: p=0.19 / M: p=0.60.

more likely to have research objectives referencing Pasifika.[12] No relationship was found to the number or proportion of Pasifika students at the university.

From 2002 to 2004, there was a steady decrease in the number of universities with explicit reference to internationalisation in their research objectives. These objectives most often related to international funding, attracting international postgraduate students, establishing an international reputation for quality, and international collaboration. Universities with more EFTS were somewhat more likely to have research objectives referencing internationalisation.[13] No relationship was found to the number or proportion of international students.

[12] Total EFTS – W: p=0.008 / M: p= 0.019.

[13] Total EFTS – W: p=0.116 / M: p= 0.011.

11 Critic and conscience of society

This section examines objectives that explicitly referred to the role of the university as critic and conscience of society. This is a role that is recognised in legislation (Education Act 1989, s.162(4)(a)(v)) and is traditionally expected of universities. The role of critic and conscience is closely associated with the traditions of academic freedom.

An Academic Audit Unit report on universities as critic and conscience of society (Jones et al, 2000) noted that the role "suggests that universities are to provide an environment within which academic staff can state and publish ideas and conclusions without fear of retribution or persecution, either within or beyond the walls of the university". The role requires "universities to have a responsibility towards society, to work for what they view as the good of society, even at the cost of passing judgement on aspects of society". Achieving this requires dialogue "between universities and society, dialogue that will only be possible if university staff act with integrity and this integrity is widely respected outside universities". The report notes that the role of critic and conscience of society is closely tied with research and teaching and the interrelationship of the two. "It should not be an add-on or a peripheral characteristic that can be safely marginalised in practice." The report also notes that "there are many threats to academic freedom, both from within the university's own ranks and from outside its walls". Therefore it is something that needs to be "constantly earned and defended" and promoted by "individual academics, by their institutions and by society as a whole".

Judging the importance given to the role of critic and conscience of society from performance objectives is problematic. The existence of separate 'critic and conscience' objectives could represent marginalisation of the role, as warned against above. Conversely, the absence of such objectives does not necessarily indicate a lack of regard for the role. It may be that the universities consider this role as integral to their research, teaching and community engagement programmes, and therefore it is not explicitly referenced in their performance objectives. Also, it is a not a role that is funded by government or other funders. As objectives become more closely aligned with funding and accountability, it can be argued that general roles such as this are better dealt with through other guiding documents, such as the charter.

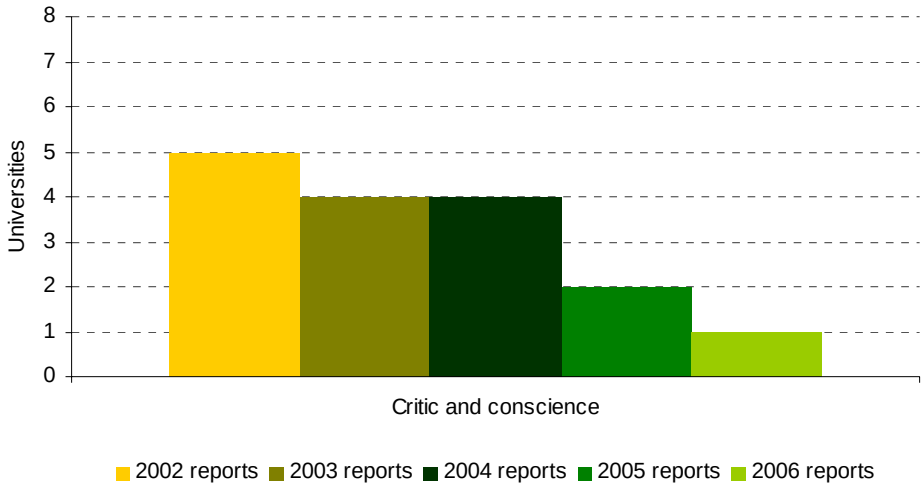
However, some tentative conclusions can be drawn from this type of analysis. A general silence about the role within performance objectives could be troubling, given the ongoing need for universities to balance this role against demands for research and knowledge that supports specific social and economic agendas (Jones et al, 2000). However, the mention of the role within performance objectives provides just one indication of the extent to which it is deliberately considered as part of the performance discourse of the university.

In this analysis, the role of critic and conscience is dealt with as a single aspect of the university and has not been further subdivided into areas.

11.1 Change over time

There has been a decline in the mention of the role of critic and conscience within performance objectives. In the 2002 reports, five universities mentioned the role. In the 2006 reports, only one university did so. In all cases, these objectives were phrased in terms of maintaining the current role, rather than new developments or enhancement to the role.

Figure 23: Critic and conscience objectives



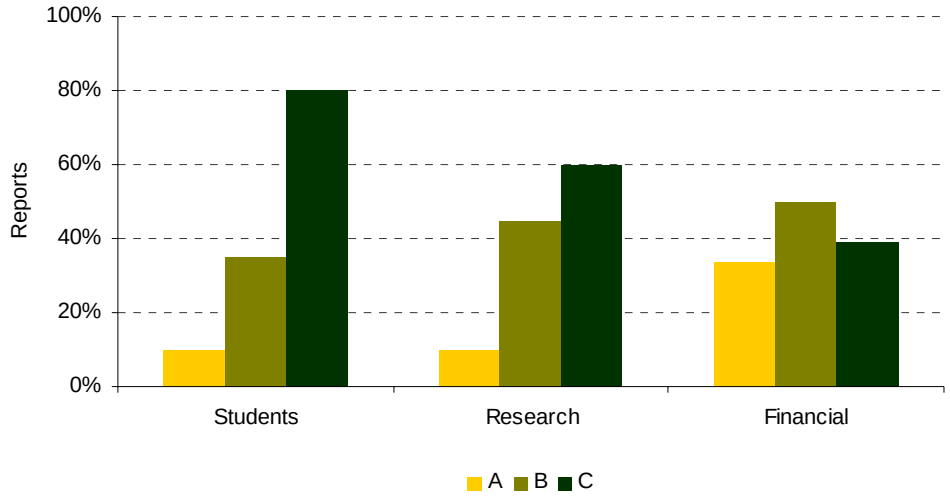
The role was articulated in different ways by different universities. Some focused on the contribution that the university makes to the intellectual and cultural life of the community and the nation. This included taking a leadership role in discussions and debates. Maintaining the respect of the community was also mentioned. One university linked the role specifically to maintaining the 'community service outputs' of academic staff; and one university made a specific link with preserving and protecting the academic freedom of staff. However, there was an absence of clear linkages made between this role and the core roles of universities in teaching and research.

It can be argued that this role is better treated within the university charter, which sets out the institution's mission and role in the tertiary education system (Education Act 1989, s.159L(a)). Revised requirements for charters were introduced as of 2004. Five out of the eight universities referred to the role of critic and conscience in their charters but the references were brief and either related it to mission and principles statements or mentioned it as an aspect of academic freedom. None of the charters expounded on how the role would be supported and achieved. There was one university that had references neither in its charter nor in its annual report.

11.2 Differences by university size and characteristics

A focus on the critic and conscience role was more common in large universities (by student and research size) than small universities. It did not seem to be affected by the financial status of the university.

Figure 24: Critic and conscience objectives by university clusters (2002 and 2006)



Note: For student and research clusters, cluster A is 'small', cluster B is 'medium' and cluster C is 'large'. For the financial clusters, A is 'low liquidity', B is 'low surplus' and C is 'sound'.

None of the critic and conscience objectives made explicit reference to population groups or internationalisation.

12 Stakeholders

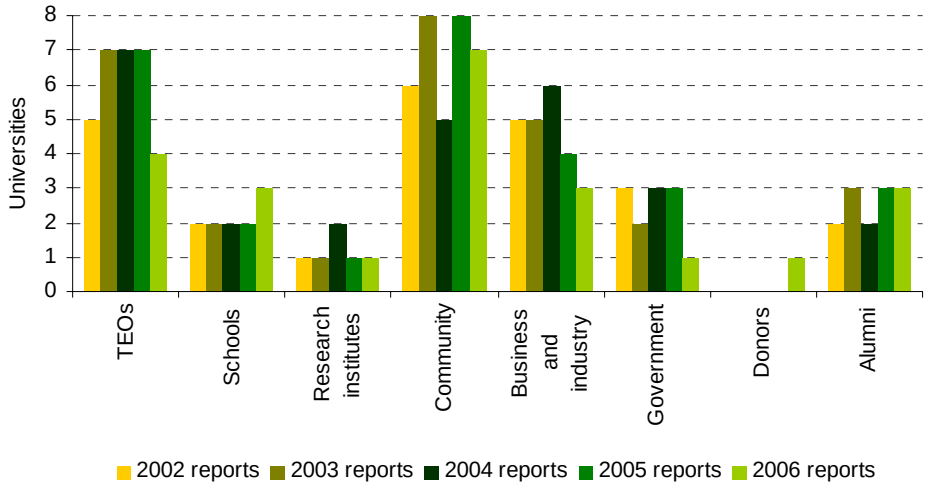
This section examines objectives that relate to maintaining and building relationships with external stakeholder groups. The objectives have been categorised by broad groups of stakeholders:

- Other TEOs
- Schools
- Research institutes
- Community
- Business and industry
- Government
- Donors
- Alumni.

Relationships with Māori and iwi, with Pasifika communities and with international stakeholders were included within the type of group that the relationship was with, rather than treating each of them as a separate group of stakeholders. These relationships are looked at across the groups in the last section of this chapter.

12.1 Areas of focus

Figure 25: Development objectives relating to stakeholders by group



From 2003 to 2005, most universities had objectives to develop their relationships with other TEOs. In 2006, only half of the universities had these objectives. This may reflect a focus on consolidating initiatives from the previous years. These objectives generally focused on relationships with other universities, particularly internationally, and with other tertiary education providers within the region of the university. In at least one case, the latter included setting up formal processes for institutions to collaborate with each other. Relationships covered both

research and education. They included student and staff exchange agreements, recognition of qualifications, and knowledge and technology transfer. In some cases, the objectives were framed as a means of enhancing the reputation of the university.

Objectives relating to developing relationships with schools were less frequently mentioned. When these objectives did refer to schools, they were often framed in the context of developing linkages with the wider community, rather than in the context of relationships with educational organisations. The relationships covered running open days, providing information to schools on university study options, running tertiary programmes within schools and providing scholarships.

Developing relationships with research institutes was included by a few universities in their objectives. These mostly related to research partnerships with Crown Research Institutes and technology transfer through Crown Research Institutes.

Objectives for developing relationships with various parts of the community were included by the majority of universities in each year. These included objectives for developing relationships with Māori and iwi and Pasifika communities, which are discussed later in this section. With regard to the community in general, the objective related to various ways of sharing knowledge and expertise. These included lecture series, art and cultural performances and projects, publications and marketing of the university. There were few examples of building partnerships with the community, other than Māori and Pasifika.

From 2002 to 2004, more than half of the universities included objectives to develop relationships with business and industry. However, this decreased in 2005 and 2006, possibly as universities focused on consolidating relationships. In 2002, the objectives generally focused on business and industry as a source of research contracts. At least two universities were developing active partnership arrangements with local business around research and technology. In 2004, there was a continued focus on research, but also an increased focus on providing professional programmes to meet the skills needs of business and industry. In 2006, there was a fairly even balance between research and education, with universities seeking both the knowledge and educational needs of industry. There was more emphasis on increasing the interaction between staff and students and industry, including via industry placements and industry representation on advisory boards.

Some universities also identified central and local government, and international governments, as a stakeholder. In many cases, government was simply identified as a stakeholder and/or a source of funding. In a few cases, there was mention of provision of policy advice to central government. There were more detailed descriptions of relationships with international governments, by way of delegations and presentations on the work of the university.

There were a few instances of universities mentioning relationships with donors and only one case of an objective to develop and strengthen the relationships. Donors were seen as important to diversifying sources of income and accessing funding for projects that might not be funded from other sources, such as industry or government.

Several universities also had a focus on developing relationships with alumni. These objectives focused on formalising alumni networks and organisations, providing events for alumni and establishing alumni magazines. There were also objectives to establish international networks of alumni.

12.2 Differences by university size and characteristics

The distribution of stakeholder objectives varies across the different types of clusters. In general, universities that are large in student terms are more likely to have objectives to develop relationships with stakeholders, and across a wider range of stakeholder groups. The variation is less apparent when universities are examined by research size. There are also variations in stakeholder engagement by financial status.

Large universities, in terms of both research and student size, are more likely than small universities to be developing relationships with other TEOs. There is almost no variation in this regard across financial status. However, small universities, particularly when measured by research size, are more likely to be developing relationships with schools,. Most of the universities developing relationships with schools are in the low surplus cluster. Large universities, by student and research size, are much more likely to be developing relationships with research institutions. Most of the universities doing so are in the low liquidity cluster.

The proportion of universities developing relationships with the community was fairly even across student, research and financial clusters. This is an area in which nearly all universities are active. Universities that were large in terms of student numbers were slightly more likely than small universities to be developing relationships with business and industry. Universities with a low surplus were much more likely to be developing these relationships than other universities. Universities that were large in terms of student numbers were much more likely than medium and small universities to be developing their relationships with the government. There was very little difference in this area by research size and financial status.

Large universities (in terms of research and students) were more likely to be developing relationships with their alumni. However, they were more likely to do so if they had a low surplus or low liquidity. Interestingly, the one university with an objective to develop relationships with donors was doing so from a sound financial situation.

Figure 26: Stakeholder objectives by student clusters (2002 to 2006)

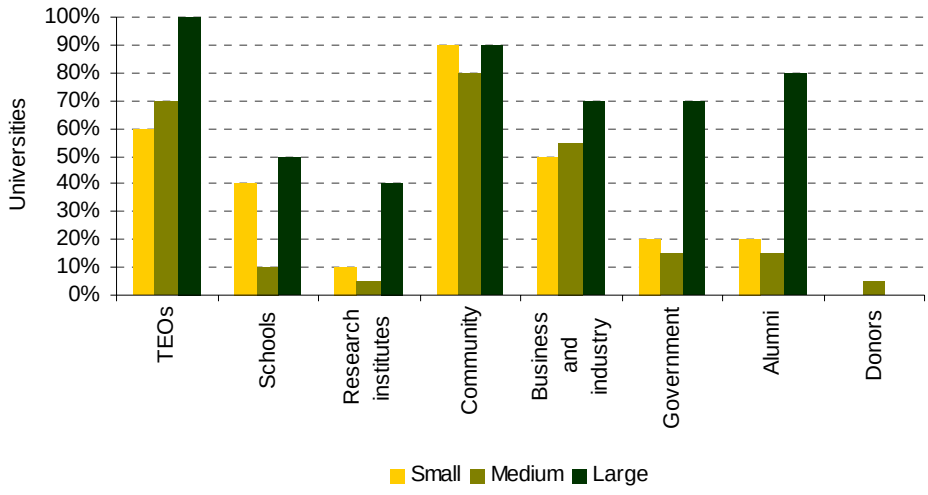


Figure 27: Stakeholder objectives by research clusters (2002 to 2006)

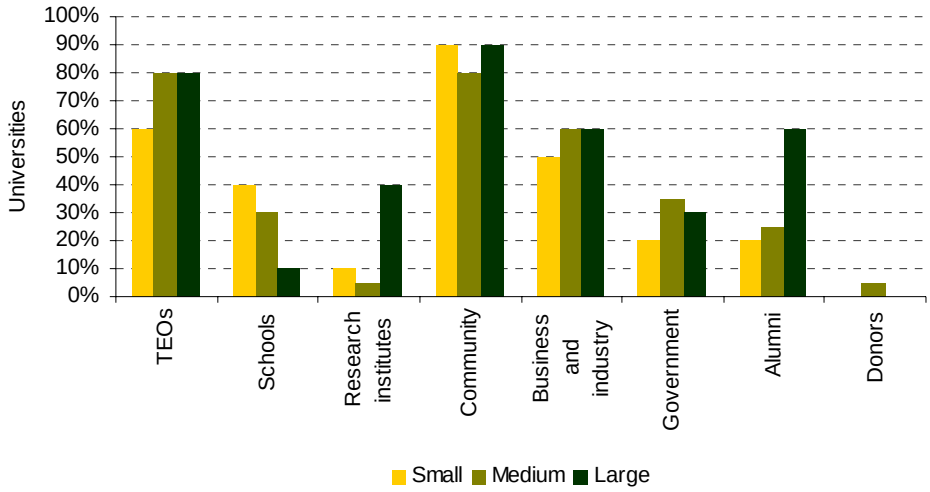
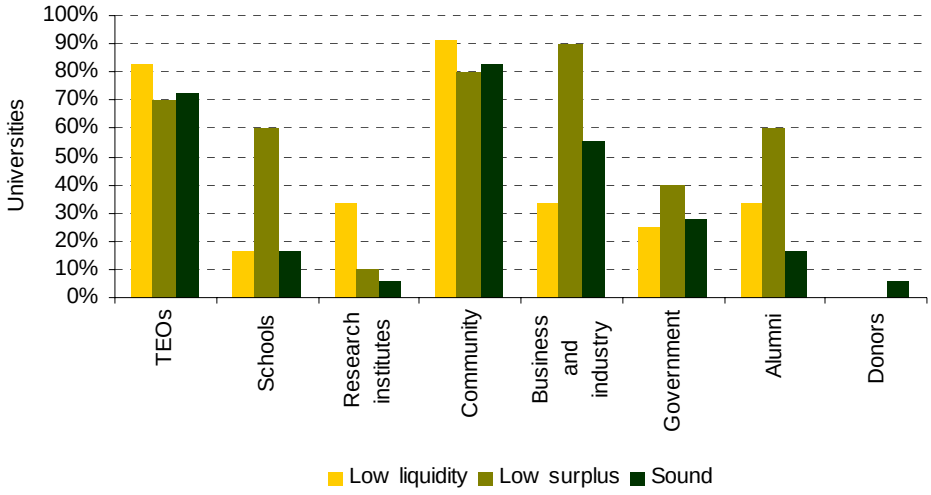


Figure 28: Stakeholder objectives by financial clusters (2002 to 2006)

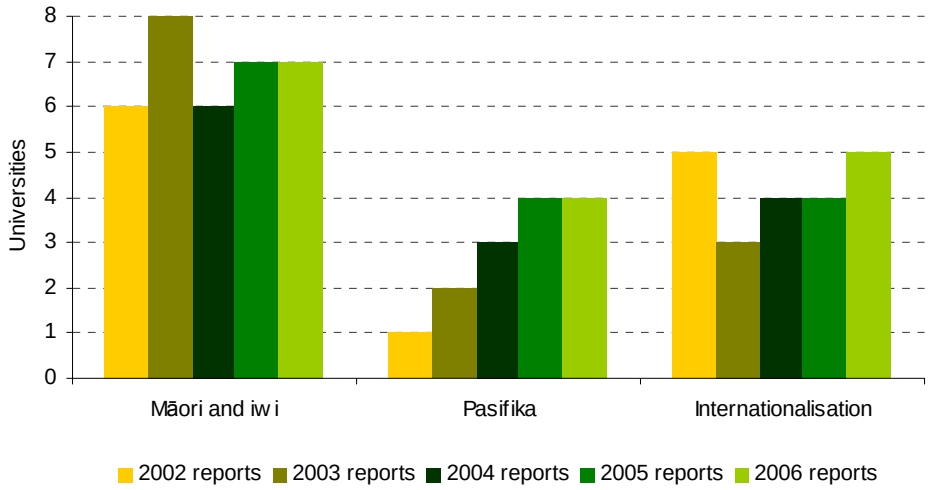


12.3 Population and interest areas

Most universities included objectives relating to Māori and iwi as stakeholders. These relationships were most often presented generally and/or within the context of community relationships. In most instances the relationships involved establishing formal partnerships with iwi. The aims of the relationships were to improve the relevance of research and education for Māori. A few universities framed them in terms of contributing to iwi development and some identified support for Māori language and culture as an important focus. There were only a few instances of Māori and iwi being considered within other stakeholder groups, such as business and industry. Universities with fewer Māori EFTS tended to be more likely to have objectives relating to Māori and iwi stakeholders.[14]

[14] Māori EFTS – W: p=0.064 / M: p=0.080.

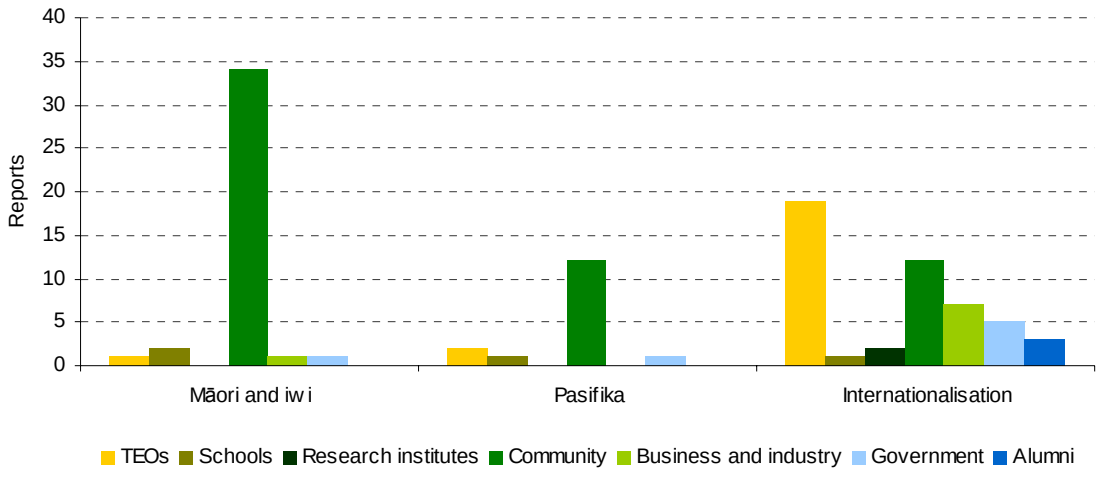
Figure 29: Stakeholder objectives explicitly referencing population and interest areas by year



From 2002 to 2005 there was a steady increase in the number of universities including objectives relating to Pasifika stakeholders. The objectives generally focused on improving the relevance of teaching and research, and included Pasifika people both in New Zealand and in the wider Pacific region. Relationships were generally seen as being with the community. Pasifika people were only occasionally referenced as part of other stakeholder groups, with larger universities more likely to have objectives relating to Pasifika stakeholders.[15] However, no relationship was found to the number or proportion of Pasifika students at the university.

Around half of the universities in each year included objectives relating to international stakeholders. Relationships with international stakeholders most often focussed on building relationships with other universities internationally. In many cases, this was a critical element of the university's internationalisation strategy. Universities with more EFTS were more likely to have objectives relating to international stakeholders.[16] However, no relationship was found to the number or proportion of international students at the university.

Figure 30: Stakeholder objectives explicitly referencing population and interest areas by theme



[15] Total students – W: p=0.133 / M: p=0.049.

[16] Total EFTS – W: p=0.107 / M: p=0.029.

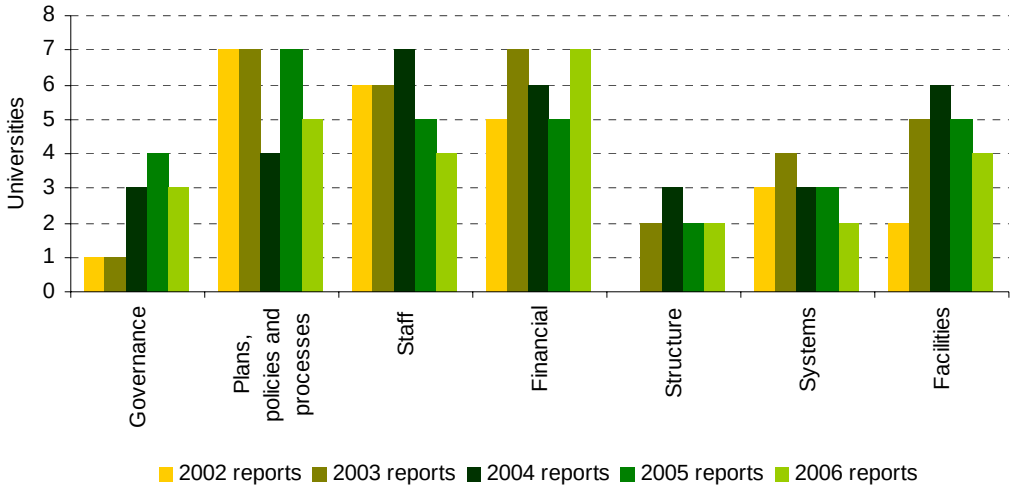
13 Capability

This final section looks at objectives relating to developing the overall capability of the university that are not specifically tied to any of the areas of activity discussed previously. The themes identified from the objectives are:

- Strategy and goals
- Governance
- Staff
- Financial situation
- Policies and processes
- Organisational structure
- Facilities
- Systems.

13.1 Areas of focus

Figure 31: Development objectives relating to capability by theme



From 2003 to 2004 there was an increase in the number of universities including objectives relating to governance. These objectives referred to improving governance processes and increasing Māori participation at the governance level.

Plans, policies and processes covered objectives relating to making improvements across the university. Areas covered included budget and planning processes, internationalisation, relationship management and partnership with iwi. The number of universities undertaking developments in these areas fluctuated from year to year.

The number of universities including development objectives relating to staff varied from year to year, with the numbers falling off from 2004 to 2006. These objectives covered staff professional development, as well as increasing the proportions of Māori and Pasifika staff.

The number of universities with objectives to improve their financial situation fluctuated from year to year. In most cases these objectives focused on increasing and diversifying revenue sources. In some cases, improving efficiency was also being addressed.

Organisational structure objectives covered reviews of the structure of all or part of the university. These included reviews following mergers with colleges of education.

Systems objectives covered development and re-development of information and management systems, including financial and human resource management.

Facilities objectives covered development of the physical assets of the university. These included projects to develop the campus and improve its value for teaching and attractiveness to students. The number of universities with objectives to develop facilities peaked in 2004.

13.2 Differences by university size and characteristics

There were some differences in how capability objectives were distributed by university size and financial situation.

Universities with development objectives relating to governance were likely to be of medium or large size and were likely either to be in a sound financial situation or to have a low surplus. The likelihood of having objectives relating to plans, processes and policies was fairly evenly spread across all university clusters.

Universities with larger numbers of students were more likely to have development objectives relating to staff. However, there was little or no difference by research size and financial status. Small universities, in terms of students and research, were more likely to have objectives to improve their financial situation. However, these objectives were fairly evenly spread across the different types of financial status.

Universities with larger numbers of students were more likely to have objectives to develop their structure, systems and facilities. Medium-sized universities, in terms of research, were more likely to have objectives to develop structure and systems than small and large universities. Universities with low liquidity were less likely to have objectives to develop their structure and systems. There was little difference by financial status in terms of developing facilities.

Figure 32: Capability objectives by student clusters (2002 to 2006)

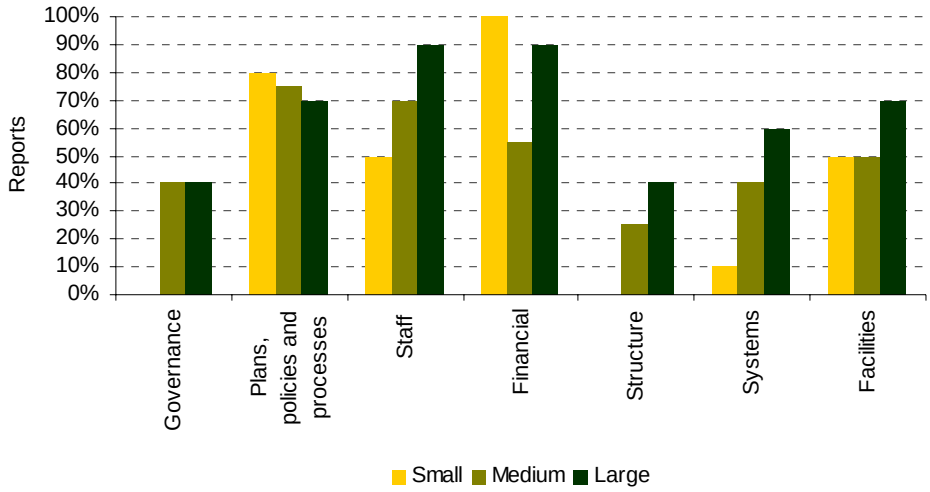


Figure 33: Capability objectives by research clusters (2002 to 2006)

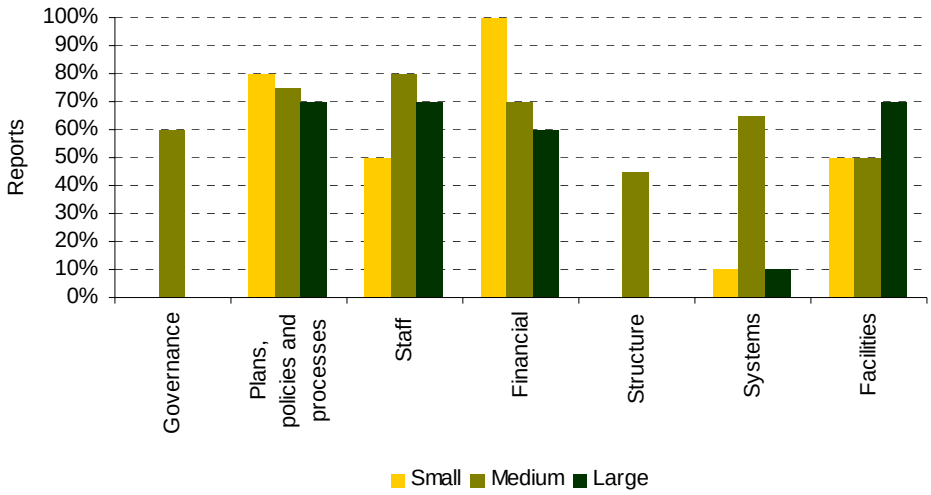
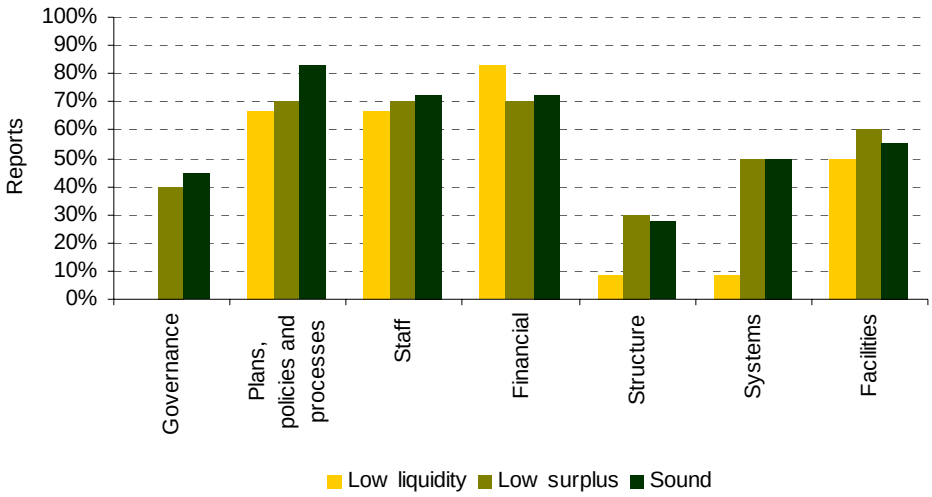


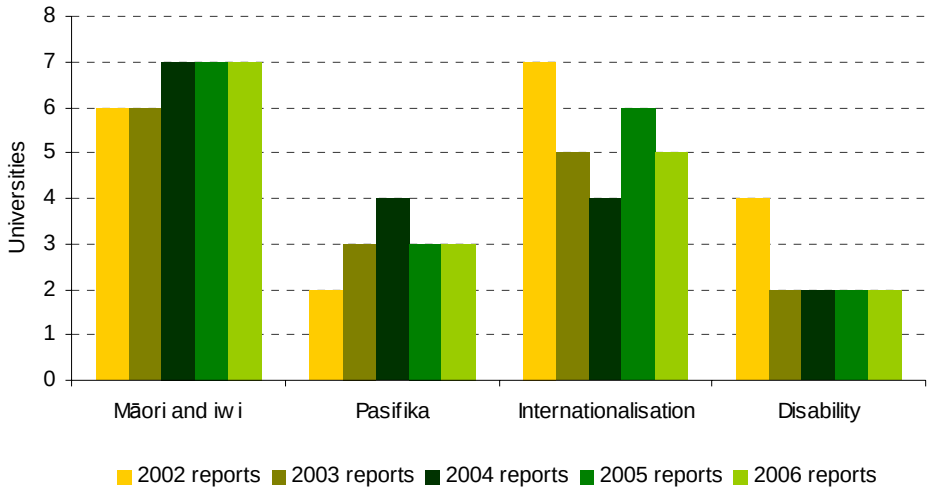
Figure 34: Capability objectives by financial clusters (2002 to 2006)



13.3 Population and interest areas

Most universities referenced Māori and iwi within their capability objectives in each year. From 2002 to 2004 there was an increase in the number referencing Pasifika. The number of universities referencing internationalisation fluctuated over the period. In 2002, four universities referenced people with disabilities, decreasing to two in each of the following years.

Figure 35: Capability objectives explicitly referencing population and interest areas by year



Māori and iwi were referenced with regard to several aspects of capability. These included recruiting, supporting and developing Māori staff, implementing Treaty and Māori language policies and increasing Māori representation at governance level. Universities with larger numbers of students were more likely to have capability objectives relating to Māori.[17] No relationship was found to the number or proportion of Māori students at the university.

Pasifika were mostly referenced only in terms of recruiting, supporting and developing Pasifika staff. Universities with larger numbers and proportions of Pasifika students were more likely to have capability objectives relating to Pasifika.[18]

Internationalisation was referenced in terms of developing policy, diversifying revenue and attracting international staff. Larger universities and universities with a smaller proportion of international students were more likely to have capability objectives referencing internationalisation.[19]

Staff objectives also referenced recruiting and supporting staff with disabilities, as part of equal employment opportunities. Universities with a lower proportion of students with disabilities appear to be more likely to reference people with disabilities in their capability objectives.[20] However, this finding may reflect lower rates of reporting of students with disabilities in 2002, when more universities included these types of objectives.

[17] Total students – W: p=0.002 / M: p= 0.004.

[18] Pasifika students – W: p=0.008 / M: p= 0.004.

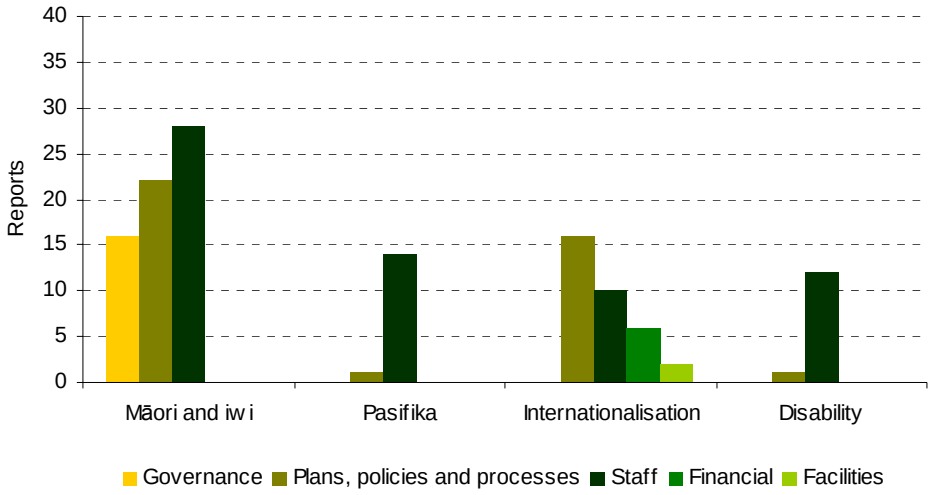
Percent of students who are Pasifika – W: p=0.003 / M: p=0.024.

[19] Total students – W: p=0.025 / M: p=0.020.

Percent of students who are international – W: p=0.006 / M: p=0.020.

[20] Percent of students with a disability – W: p=0.067 / M: p=0.006.

Figure 36: Capability objectives explicitly referencing population and interest areas by theme (2002 to 2006)



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Appendix 1: Cluster analysis

Cluster analysis was used to classify the universities into groups. Cluster analysis seeks to identify similar groups of cases within a population. The aim of the analysis is to form groups where members are more similar to one another than they are to other groups.

The analysis was undertaken using each university annual report as a case. This yielded a set of 40 cases. The data for each variable was standardised using standard deviations. This removes any distortions due to dissimilar scales of variables. The variables were then tested for fit to a normal distribution. In one case (quick ratio), the data was transformed using the natural log to create a more normal distribution. The data was pre-processed with the SAS ACECLUS (approximate covariance estimation for clustering) procedure. This procedure circumvents problems of the observation order influencing the clustering outcome. The resulting canonical values were then clustered using the SAS CLUSTER procedure, with Ward's minimum variance method. Various values of p were tested in the ACECLUS procedure to identify three clusters, with observations from at least two different universities in each.

The tables below show the variables used to cluster the universities. They show the differences between the clusters for each variable. The difference is expressed as standard deviations from the population mean. The tables also show the p-value results for the Wilcox-rank and median-sum tests which were used to test the degree to which clusters were significantly different on each dimension.

Student clusters

Three clusters were identified based on the number of EFTS at bachelors and postgraduate levels.

The 'small' cluster was over one standard deviation below the mean on both measures. The 'medium' cluster was on average. The 'large' cluster was more than one standard deviation above the mean. There was a greater relative spread between the clusters in terms of postgraduate EFTS than in terms of bachelors EFTS. These figures suggest a fairly even spread between the clusters.

Table 3: Variables used to cluster universities by student size

	Clusters (sd from mean)			p-values	
	Small	Medium	Large	Wilcox	Median
Number of reports	*10*	*20*	*10*		
Bachelors EFTS	-1.13	-0.08	1.30	<0.0001	0.0001
Postgraduate EFTS	-1.21	-0.10	1.41	<0.0001	0.0001

Research clusters

Three research clusters were identified using measures of staff rated A and B in the PBRF, number of doctoral students and amount of external research income.

The 'small' cluster was up to one standard deviation below the mean on all three measures. The 'medium' cluster was near the mean in terms of A and B rated staff and doctoral students, but below the mean in terms of external research income. The 'large' cluster was around one and a half standard deviations above the mean on all three measures. This suggests less distance between the 'small' and 'medium' clusters than between the 'medium' and 'large' clusters.

Table 4: Variables used to cluster universities by research size

	Clusters (sd from mean)			p-values	
	Small	Medium	Large	Wilcox	Median
Number of reports	*10*	*20*	*10*		
A and B rated staff	-1.12	-0.17	1.46	<0.0001	<0.0001
Doctoral students	-1.08	-0.12	1.32	<0.0001	<0.0001
External research income	-0.74	-0.39	1.52	<0.0001	0.0003

Note: Staff rated A in the PBRF are assessed as producing research work of international standard and reputation and staff rated B are assessed as producing research work of national standard and reputation. The staff figures were added on a weighted basis, with A rated staff having a weight of 2 and B rated of 1. This recognises the additional contribution of A rated staff to the reputation of the university.

Financial clusters

Thre clusters were also identified on the basis of financial status, using surplus/deficit as a percent of revenue to measure profitability and current assets over current liabilities (quick ratio) as a measure of liquidity.

Of the three clusters, one was relatively sound on both measures. One had low surpluses, and in some cases deficits, but high liquidity. The remaining cluster had low liquid liquidity, but average surplus.

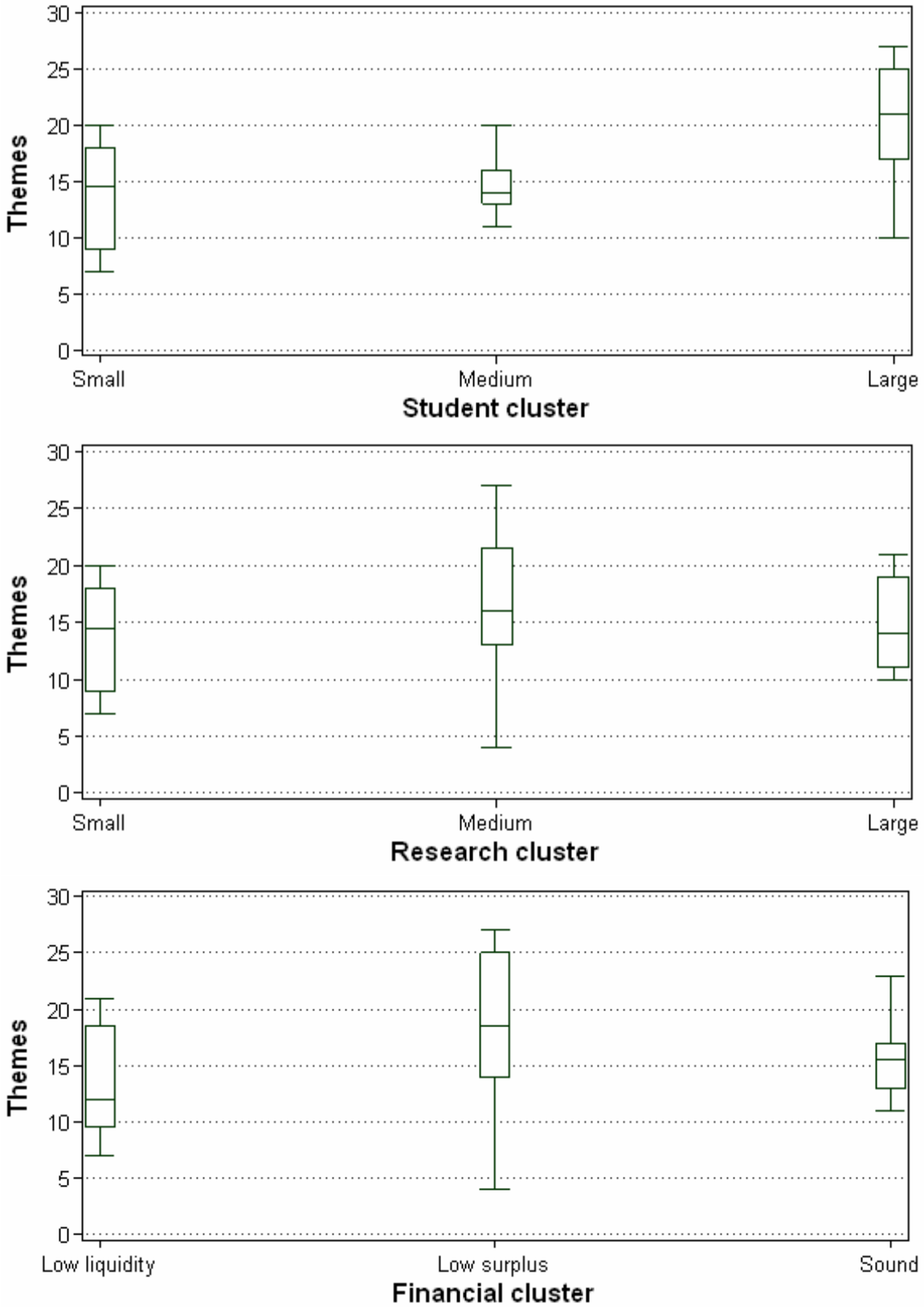
Table 5: Variables used to cluster universities by financial status

	Clusters (sd from mean)			p-values	
	Low liquidity	Low surplus	Sound	Wilcox	Median
Number of reports	*12*	*10*	*18*		
Surplus/Deficit	-0.25	-1.10	0.77	<.0001	<.0001
Quick ratio	-1.08	0.64	0.36	<.0001	0.0002

Distribution of themes by clusters

There is some variation in the breadth of reporting in annual reports by clusters, as measured by the number of themes with development objectives in each report. This needs to be taken into account in interpretation of results. The difference is particularly noticeable for the student clusters, where large universities tend to include development objectives across more theme areas in their reports than medium and small universities. However, though the range within clusters is generally larger than the differences between clusters, this is likely to have a minimal impact on the results presented in this report.

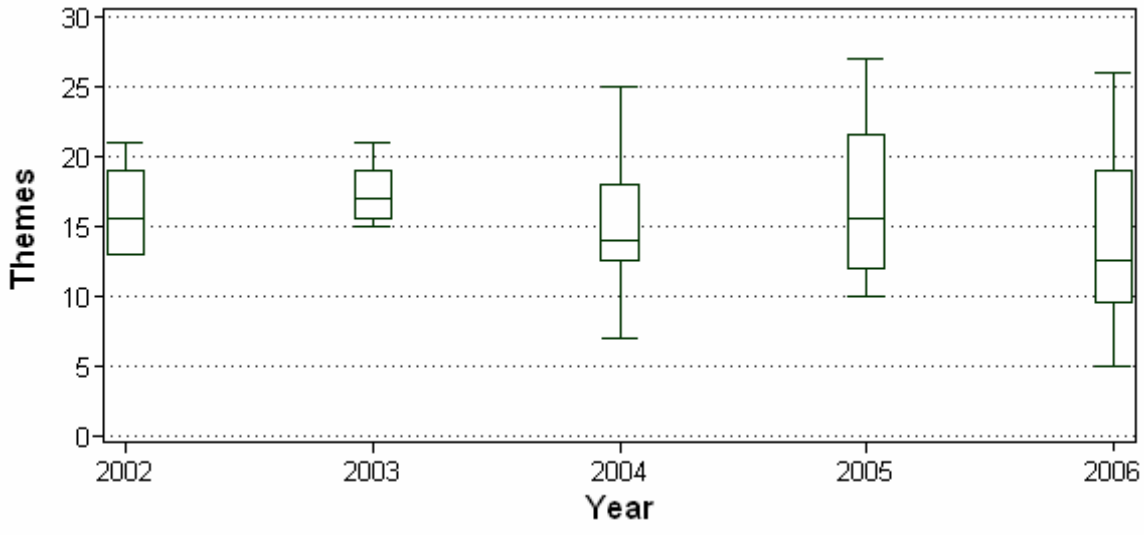
Figure 37: Number of themes with development objectives in annual reports by cluster



Note: The boxes show the spread of the middle half of reports – from the 25th to the 75th percentiles. The line in the middle shows the median – that is 50 percent of reports are above and 50 percent below this number. The whiskers show the spread of 90 percent of all reports – from the 5th to the 95th percentiles.

There was also some variation in the number of themes covered by reports in each year. While the median number of themes has fluctuated, the range across universities has increased.

Figure 38: Number of themes with development objectives in annual reports by year



Appendix 2: Analysis of relationships

Statistical tests were used to check the relationship between having objectives relating to specific population groups and interest areas and the student makeup of the university. The two tests used were the Wilcox-rank test and the median-sum test.

For the purposes of the analysis, a dataset of 40 observations was constructed with an observation for each university in each year examined. The variables in the dataset were the total number of students at the university, the population group number of students, the population group proportion of students, the total number of EFTS, the population group number of EFTS and the population group proportion of EFTS. The values were taken for the same calendar year as the annual report.

The relationship between these variables and having or not having an objective referencing the population group in question was then tested. The Wilcox-rank and median-sum tests are both non-parametric tests and therefore do not rely on the variables being normally distributed. They also test each variable independently of the others. The Wilcox-rank test ranks each observation and determines whether there is a significant difference in the rank score between the two groups. The median-sum test looks at whether either group is more likely to have values above the overall median for the variable.

Results have been reported where either one of the tests is below the 5 percent significance threshold and/or both of the tests are below the 10 percent threshold. The p-values for each test are presented in the footnotes, following the name of the variable in question (i.e. variable – W(ilcox): p-value / M(edian): p-value). The results variables measured in EFTS terms are only reported where significance was not found for the same variable measured by total number of individual students.

Some universities had considerable variability from year to year in their reporting of the number of students with disabilities. This is likely to be a result in changes in administrative practices rather than actual student numbers. To control for this potentially confounding effect, the numbers for each provider across the five-year period were smoothed out using a linear regression.