

**Measuring Service Performance Reporting
Quality by New Zealand Universities
Using an Information Accessibility Index**

**WORKING PAPER SERIES
Working Paper no. 29
2005**

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There has been a widely reported view that the quality of service performance reporting by New Zealand universities is in need of improvement. The purpose of this study is to measure the quality of service performance reporting as provided in the Statement of Service Performance by the university sector of New Zealand in the years 2000, 2002 and 2003. A new methodology is developed that complements existing methodologies employed in research addressing university reporting, specifically the Modified Accountability Disclosure Index (Coy et al. 1993) and the Performance Accountability Index (Coy and Dixon 2002). The Information Accessibility Index introduced here measures the clarity rather than the content of presentation. The rankings afforded by different indices are sensitive to the metric adopted. Future research might further explore the development of alternative methods to further exploit context specific differences between countries.

1. Introduction

Public sector bodies in New Zealand are generally required to provide a Statement of Service Performance (SSP) as part of their published financial statements. The SSP provides information on the success of the organization in achieving the objectives for which it was established. This complements the conventional accrual-based financial statements which the organizations must also present. Both the financial statements and the SSP are subject to audit, but there is almost no regulation of the content and presentation of the SSP. This provides a setting in which managerial disclosure decisions can be examined in the near-absence of regulatory pressures.

There has been a widely reported view that the quality of service performance reporting by New Zealand Universities is in need of improvement. Audit New Zealand's Tertiary Sector Unit has been critical of the standards of University reporting, contending that the sector has focused on compliance rather than effective performance management (Audit New Zealand 2001, p. 2). This opinion prevails despite the existence of empirical evidence that New Zealand universities compare favorably to their international counterparts in this respect (Coy et al. 1993; Coy and Dixon 2002).

This study offers a new way of assessing the quality of service performance reporting, applying it to the university sector of New Zealand. Because public-sector bodies are extremely diverse, it is important to study disclosure choices within a single public-sector "industry" such as universities. The study develops a new methodology that can be

contrasted with existing methodologies employed in research addressing university reporting, specifically the Modified Accountability Disclosure Index (Coy et al. 1993; Dixon et al. 1991) and the Performance Accountability Index (Coy and Dixon 2002). Information about current reporting practices is gathered to provide a comparative overview of universities' SSPs during the years 2000, 2002 and 2003. A significant difference between this study and prior research is that it focuses solely on SSPs rather than on Annual Reports as a whole. This focus is adopted in recognition of the importance placed on the SSP within the New Zealand accountability framework, an institutional factor unique to the public sector in New Zealand.

The performance reporting requirements for New Zealand Universities in the time period 2000 to 2003 are set out in the Education Amendment Act 1993. This Act states that tertiary education providers are recognized as Crown Entities for the purpose of the Public Finance Act (1989). Therefore they were required to produce an annual report with financial statements, a Statement of Objectives, and a Statement of Service Performance. The Education Act 1989 also required tertiary education providers to produce an additional document: a Charter. Tertiary education institutions were required to submit a list of performance indicators with the statement of objectives.

The service performance reporting requirements for the tertiary sector in New Zealand have recently been reformed, with new requirements in place from December 2004. The new system is based on Charters and Profiles.

The system focuses on Charters as high-level governance documents, and Profiles as annually-negotiated descriptions of activities and performance expectations, all in the context of a Tertiary Education Strategy. (Working Party on Charters and Profiles, p. 15).

A Charter is intended as a concise governance document outlining the unique character of the provider and its broad objectives. This document is a long-term vision, which should only need minor revision during a five- to ten-year period. A Profile is negotiated annually, but will include a three-year plan. Profiles are intended to provide more detailed information about the aims set out in the Charter as: "an ex ante document of accountability setting out agreed activities and associated objectives" (Working Party on Charters and Profiles, p. 15). Indeed, Profiles will replace Statements of Objectives as the basis for ex post performance reporting, and so the introduction of Profiles will have a significant

impact on Statements of Service Performance (Tertiary Education Advisory Commission 2001, p. 136). This study provides evidence of current practice in order to inform an analysis of the impending changes to the service performance reporting framework for the tertiary education sector.

The remainder of the study is set out as follows. Section 2 provides an overview of prior research. A discussion of the methodology and development of the new index, called the Informational Accessibility Index (IAI), is set out in Section 3. Section 4 presents the results of the analysis and compares these results to those obtained using the MAD and PAI. The study concludes with Section 5.

2. Prior Research

Coy, Dixon and Tower (1993), motivated by concerns about the quality of reporting provided by universities in the 1980s, established an Accountability Disclosure Index to measure the quality of the annual reports in the tertiary sector in New Zealand. The Accountability Disclosure index was then modified, as part of ongoing improvements to the index and because of the “transformation in the reports published in 1991 and 1992 compared with earlier years” (Coy et al 1994). This new index is referred to as the Modified Accountability Disclosure Index (MAD). These early studies found that the quality of reporting was poor, but was improving very rapidly.

The MAD consists of a list of 26 items that the authors believe ought to be disclosed for good quality accountability reporting. In the simplest version of the MAD, the annual reports are only evaluated on whether the item is or is not present, receiving a score of 1 if the item is present and 0 if it is not. Hence the maximum score is 26. In the more complex version of the MAD the authors give different weightings to each item and give a score between 1 and 5 depending on the quality of the disclosure. This is then normalized to give a maximum score of 100.

Banks *et al.* (1997) used MAD to evaluate the annual reports of universities in England, Wales and Northern Ireland for the period 1992-1994. There is also international data available from New Zealand and from Ontario, Canada for this time period. Banks *et al.* use this data in their paper to provide international comparisons. In 1994, using the quantity

scale with a maximum score of 26, New Zealand universities averaged a score of 26, meaning that every university had disclosed all of the items on the MAD list. The international universities did not compare favorably: the United Kingdom averaged 11.2 out of 26, and Ontario averaged 6.6. Furthermore, in comparing the average quality scores in 1994 for service performance reporting, New Zealand scored 85 out of 100, England, Wales and Northern Ireland 6 out of 100, and Ontario 1 out of 100.

Questions are raised by this contradiction between the high international standing of New Zealand's reporting according to the MAD index and the generally poor view of service performance reporting outlined above. The MAD may no longer be as insightful as it once was, because of the continuing improvement in the quality of reporting in New Zealand. Arguably, the items on the MAD list are a bare minimum of the disclosures one would expect from a high quality university report. Indeed, in 1994 all the universities studied were disclosing all of the items on the list.

Coy and Dixon (2002, 2004) have recently created a new version, called the Performance Accountability Index (PAI), which gives some weight to this argument. Coy and Dixon (2002) make the following comment:

Disclosure indices are ephemeral in nature and can measure the quality of annual reports only in terms of the standards and expectations of society at the time of their construction.

The PAI uses the same concept as the MAD – assessing the quality of reporting using a list of desirable content. However, there are important differences in how the list is developed and how the disclosures are scored. The literature on corporate disclosures scores such as the DSCORE of Botosan (1997), a disclosure index for US machinery firms, also uses the approach of assessing disclosure against a list of desirable content.

It is possible that New Zealand's high international standing as presented in Banks *et al.* (1997) could be a rogue result. Because the index was developed in New Zealand, the list of criteria may unfairly favor New Zealand universities, because of international differences in mandatory reporting requirements. Coy and Dixon (2002, p. 16) lend some support to this argument when they state:

The New Zealand university PAI is therefore specific to New Zealand conditions, and some modification would be needed to apply it to university reports in other countries.

3. Method

The data set for this study is the 2000, 2002 and 2003 Statements of Service Performance for each of the eight universities in New Zealand. The years 2002 and 2003 are the most recent reports available and constitute a time period of stable reporting requirements for the tertiary sector. That is, the new framework to be implemented from December 2004 was known but not yet applicable. Data is also analyzed for 2000 to provide an earlier benchmark and to allow comparison with the results obtained using the same data studied by Coy and Dixon (2002) using the MAD and PAI indices. Information was collected on the number of performance indicators reported, the number of performance indicators that included targets, and the number of targets which were achieved.

3.1. Definition of Performance Indicators

Finding an objective definition of a performance indicator is difficult because of the wide variety in presentation and quality of reporting. Some reports are clear and concise, and provide their performance indicators with a minimum of additional written material. Some reports are filled with paragraphs of explanatory text, or simply 'performance highlights' in addition to performance measures. An added complication is that several reports include items under the heading 'performance indicators' which clearly would not meet any definition of a performance indicator. It is important to find a definition that reliably excludes such extraneous material.

The decision rule adopted for this study is whether a reader could reasonably comprehend, access, and use the information presented as an indicator of performance. In order to give a sense of the possible classification problems when applying this decision rule, a number of examples from the data set are discussed next.

Example 1. Victoria University of Wellington, *Annual Report 2000*, p. 42.

Research Revenue (\$000)

	Past Performance				Projection	Actual
	1996	1997	1998	1999	2000	2000
Total	\$7,567	\$8,549	\$6,728	\$7,703	\$6,500	\$6,930

Example 1 is a very useful performance indicator. It is a numerical and objective item. A time series of past performance is provided so that one can easily view the recent trend. Additionally, the projection for this year is provided, giving the reader additional information about whether the entity anticipated these trends to continue this year. This entire table would count as one performance indicator in the study, since only one piece of information is provided pertaining to this year's performance. Reporting disaggregated data about the amount of research revenue earned by the various faculties or schools would provide further useful information. If such a breakdown were provided, each total figure for the year would count as a performance indicator: so if there were totals for each of four faculties, plus a university total, this would count as five performance indicators for the purposes of this study.

Example 2. University of Waikato, *Annual Report 2003*, p. 39.

Achieve high levels of academic achievement and completion.

Indicator	Target	Achievement
Number of papers passed as a percentage of paper enrolments	82%	81%

Example 2 is also a very useful performance indicator providing comprehensible information to the reader. A performance target has been set by the entity, and actual performance reported against that. There is no past information reported, although it may be possible to gather such information from past reports.

Example 3. University of Canterbury, *Annual Report 2002*, p. 20.

To have active external local, national and international alliances and partnerships enhancing the reputation of the University in research and teaching, and fostering scholarship, research and technology transfer locally, nationally and internationally.

15 new Memoranda of Understanding, student exchange agreements or expanded exchange agreements were finalised with overseas universities during 2002.

Example 3 provides less useful information than examples 1 and 2. It is still objective and numerical; however, without a target or past performance to compare it to, the information has no context for the reader. Hence, it is difficult for the reader to judge whether having 15 new agreements in one year is good performance or poor performance. However, it is possible that past reports might provide comparable past information.

Example 4. Lincoln University, *Annual Report 2000*, p. 54.

The Professional Studies School, Report on Achievement.

In 2000, there were 16 undergraduate subjects delivered in the regional education programme. Three of these subjects were new subjects including the first 200 level subject. There were 101 subject enrolments in the first semester and 129 enrolments in the second semester.

In example 4, context is missing for the reader, with no targets or past performance included. Additionally, because the information is included in a report on achievement, surrounded by other anecdotes, the reader could not be confident that information would be available in past reports to provide context.

Example 5. Auckland University of Technology, *Annual Report 2000*, p. 52.

11.2 Establish an AUT Code of Ethics by December 2000

Achievement: An AUT Code of Ethics entitled, Ethical Guidelines for AUT Staff, was adopted by the University in March 2000.

Example 5 raises a particularly interesting issue when trying to find an objective definition for performance indicators. There is a target set, but it is a binary target - either it is or it is not achieved. Additionally, this cannot be measured for many years to develop a time series - it is unlikely that the university would need to establish a new code of ethics every year. However, it does provide the reader with useful information.

Example 6. University of Otago, *Annual Report 2000*, p. 49.

Objective 37, iv. The provision of staff training courses on EEO issues

Three courses were provided on equity, mediation and ethical behaviour issues, attracting 165 participants.

Example 6 provides less useful information. There is no context provided for the reader: is 165 a large number of participants indicating good performance, or a small number indicating poor performance? In a further twist the wording of the objective is quite vague: is it enough that the entity provided at least one course, even if no one attended? This would seem to fulfill the wording of the target. The information this indicator provides is clearly not as useful as that provided in the first examples.

Example 7. Victoria University of Wellington, *Annual Report 2000*, p. 60.

Interim report on the inclusion of the capital city dimension in academic leadership strategies by the end of 2000. Relevant programmes identified by the end of 2000, and then developed or implemented progressively.

Actual:

In the final report of the Deficit Reduction Project, recognition was given to the importance of the University's location. It was recommended that priority be given to the research and teaching of subjects where the University has existing strengths and where opportunities are presented by its special location, relationships, and reputation, and by the resources available in Wellington. These include:

- Victoria's location in the capital city
- Victoria's location in the cultural centre of New Zealand
- Victoria's physical proximity to national libraries and primary sources of information
- Victoria's urban nature
- Victoria's unique physical environment
- Victoria's unique relationships with government-funded research bodies and
- Victoria's unique relationships with government entities.

Example 7 is an item under the heading of performance indicator which clearly would not qualify under almost any definition. The target, while vaguely worded, could be reported as a binary target: was there an interim report produced by the end of 2000, or not? However, the information that is reported does not address this issue at all. It is little more than a blurb, and contains virtually no useful information. It is not a useful indicator of the university's performance.

These examples provide an insight into the wide variety of items that are reported, and hence an insight into the difficulty of deciding what should and what should not qualify as a performance indicator under the chosen decision rule. Particularly challenging is to reliably operationalize the decision rule, drawing a clear line between what is and what is not a performance indicator.

Financial information such as budgets, costs or ratios is not included. Pure financial information would have different properties in terms of target setting and achievement. For

example, since financial information is developed as part of a budget process it would likely have much higher rates of target setting. Including financial information would potentially distort the results. However, information on targeted expenditure or revenue is included because this reflects specific performance targets: for example, “to increase spending on scholarships for Maori students to \$50,000 per year.” This is the only exclusion made before applying the decision rule.

The definition adopted is as follows: To qualify as a performance indicator, the item must be potentially measurable over multiple years, and must actually report either a series of past information as a comparison, or set a clear and specific target. That is, the item must provide some context for it to be a useful and informative indicator. For example, an SSP might report that 96 PhDs were completed. However, without either a target or past results to compare it with, the reader has no idea whether 96 is poor, good, or average performance. This need for context was arguably supported by the Working Party on Charters and Profiles (2001, p. 35), when it stated that: “recent historical performance of the organization should be included alongside performance targets.”

Items that could be reported according to the definition, but are not, are excluded from the study. The key is what is actually reported, not what the heading or target indicates will be reported. Data from the previous year is treated as sufficient to fulfill the requirement for reporting past information for comparison.

Certain items are excluded under this definition. Where an entity uses a phrase such as ‘continue’, ‘provide’, or ‘ongoing’, this is not interpreted as providing a clear target. If an entity introduces a new indicator for which there is no past data, and for which they choose not to set a target until a trend has been established, this is not included in the study. Hence, information such as that in Example 3 is excluded. In addition, one-off performance indicators, such as that in Example 5, are excluded by the definition.

3.2 Definition of Targets

Another important issue is the definition of a target. This is usually clear, but in some cases there is potential for confusion. If a long term target (*e.g.* “by 2005”) is provided, and no interim targets are reported for the current year, it will not qualify as a target for the purposes of this study. If the report uses words such as ‘increase’ or ‘at least maintain’, and

one can determine whether this has been achieved from included past performance, this is interpreted as a target. More vague terms such as ‘continue’, ‘provide’ or ‘ongoing’ are not interpreted as specifying a target.

3.3 Development of a Quality Index

This section presents a new methodology for objectively measuring the quality of service performance reporting: the Informational Accessibility Index (IAI). The IAI does not address what is reported, but how it is reported. This is based on the premise that, while it is important that the right information is reported, it is equally important that users can easily comprehend, access and use the information presented to them.

The IAI and PAI measure two different aspects of the quality of reporting, and are thus complementary rather than substitute indices. The PAI defines quality as the type of information reported: in other words, as the content of the report. The Informational Accessibility Index defines quality as how the information is reported, or how the content is presented. Neither of these is a complete definition of quality: it is not ideal to report the right indicators poorly, or to report wrong indicators well.

Summarizing the presentation in an index enables comparisons to be made between universities in a quantitative and objective manner, since overall rankings are developed for each university, and is a brief and comprehensible way to condense complex results.

The IAI measures the quality of SSPs by analyzing the manner in which Universities present information relative to each other. The index does not have a maximum value - a university cannot get 100 out of 100. The highest ranking university only represents the best performance in its peer group, not the best performance possible; and the lowest ranking university is only poor in comparison to this sample. No comparison is made to other types of institution, or overseas universities, so performance cannot be compared outside the sample group.

Four items are included in the index: number of performance indicators (PI), percentage of indicators with a target (%T), percentage of targets achieved (%M), and word count per indicator (wc/PI). For each of these items a qualitative position was developed. This was transformed into a relative measure setting out what level of each term would represent higher quality.

The index is distinctive because the ideal scores are not absolute numbers, but reflect the level of best practice in the sample. Unlike the PAI, the IAI does not need to be updated as standards and expectations change. We next consider what should be taken as “best practice” for each item.

The ideal number of performance indicators is not obvious. Too many indicators can overwhelm the reader of a performance report, but too few will not provide enough information:

Stakeholders want to read the vital few indicators necessary to report on diverse activities, but sufficient to give the overall picture of achievement. (Controller and Auditor-General 2002, p. 50).

In the case of performance indicators, more is not necessarily better:

Too many indicators will result in overload and obfuscation. (Performance Indicators Taskforce 1989, p. 7.)

The number of performance indicators that represents current best practice is presumably in the middle of the observed range. Hence, the optimal number of indicators is taken to be the median of the various reports. The median is chosen, rather than the mean, because of concerns regarding possible outliers: using the median ensures that the index is unaffected by universities which report exceptionally few or many indicators.

For the percentage of indicators with a target, however, more is unambiguously better. Setting targets is an important aspect of performance reporting. Indeed, FRS 2 dealing with the presentation of non-financial statements states that:

The statement of service performance shall present both projected service performance and actual service performance.

Accordingly, the optimal percentage of indicators having targets is 100%.

Using the level of achievement of targets as a proxy for quality is slightly more complex. While higher levels of achievement may reflect higher levels of performance by an entity, they do not necessarily reflect higher quality reporting. The reason is that universities report independently and are free to set their own performance targets. This could lead organizations to set lower targets which are easy to achieve, so that their level of achievement seems high. Indeed this behavior concerned the Tertiary Education Advisory Commission (2001, p. 120) during their discussion of sanctions for poor performance. The

rate of achievement that represents best practice is therefore not necessarily the highest rate. In this study we assume that the “best practice” rate of achievement is the average achievement of all the universities. The assumption is that near the average a university is setting suitably challenging targets, and still achieving many of them through good performance.

Another aspect of quality performance reporting is that the reporting entity should place an emphasis on performance indicators, providing written explanation only in exceptional circumstances.¹ Therefore the number of words per performance indicator reported is another aspect of the quality of reporting. Here the “best practice” rate is to be as low as possible, the fewer words per indicator the better. However, a score of zero is impossible, since the methodology counts all of the words in the SSP: even the indicator itself is included.

For the purposes of this index the minimum word count per performance indicator that has been achieved in the reporting year by any university is set as the “best practice” for this item.

3.4 Combining the scores

For each item in the index the average score for the item is standardized to equal 1. Then the scores for the items are added together to give the final IAI index score for each individual university. The formula is:

$$IAI_i = w_{PI} |PI_i - PI_{med}| + w_T(100 - \%T_i) + w_M |\%M_i - \%M_{ave}| + w_W (wc_i/PI_i - wc_0/PI_0)$$

where PI_{med} = median of the PI_i

$\%M_{ave}$ = average of the $\%M_i$

wc_0/PI_0 = minimum of the wc_i/PI_i

The weightings w_{PI} , w_T , w_M , and w_W are chosen so that the average of each term across all universities is one. This implies that all items in the index are of equal importance. The weights could easily be altered to give greater emphasis to certain terms.

¹ It can be argued that written information provides further explanation about the information, assisting the reader in interpreting it. However, much of the text included in these reports is not intended to assist in the interpretation of the objective information provided by the indicators. Instead it is mostly used to provide additional subjective anecdotes about the university’s performance.

The steps in the computation of the index are shown in Table 1, using the year 2003 as an example. Since the IAI comprises four items with an average of one, the average for the IAI itself is 4. A lower score is better, and any score below four is better than the average.

4 Results

Table 2 presents the results for each university for the years studied, including the score for each term, the final IAI score and the university's ranking. In interpreting the results it should be remembered that the average score is set by the index methodology at four. In 2000, Victoria, Waikato, AUT and Auckland were ranked number 1, 2, 3 and 4 respectively and scored better than the average, while Canterbury, Lincoln, Massey and Otago scored below the average. The order changed slightly in 2002 with Auckland rising to rank one, Victoria dropping to fifth rank and Massey improving to third rank. In 2003, Waikato rose to first rank while Massey dropped back to rank seven. A graphical comparison of the scores between 2000 and 2003 is shown in Figure 1.

The correlations and rank correlations between the scores and the ranks in the three years are shown in Table 3. The correlations are in the range 0.3-0.8, suggesting a fair amount of instability in disclosure quality of the individual universities.

4.1 Comparison of different indices

Further analysis of the 2000 data was undertaken. Coy et al. (2002) provided sufficient detail about their sample to permit a reconstruction of their results for the eight Universities included in this study. Table 4 summarizes the rankings obtained in this study with the IAI and those obtained by Coy *et al.* applying the PAI and MAD indices.

As Table 4 shows, the three methodologies result in different rankings for the universities.² There are also substantial differences in the rankings developed using the PAI compared to those using the IAI. For example, Victoria and Waikato rank first and second using the IAI, yet rank sixth and seventh respectively using the PAI. Furthermore, Otago and Auckland rank first and second using the PAI, yet rank seventh and fourth respectively using the IAI.

² The MAD results are presented for completeness. Discussion is focused on a comparison with the PAI, because the PAI is the newer, and arguably better, index.

These differences represent not only a difference in the methodology, but also a difference in the content that is being assessed: the PAI reviews the entire annual report, while the IAI reviews only the Statement of Service Performance. It is possible to remove this difference in the content covered by the indices, using the detailed information provided in the appendices of Coy and Dixon (2002). The appendices present the scores for each university in each category. This makes it possible to recalculate the PAI and MAD results to include only service performance categories. These altered results are referred to as PAI* and MAD*. These results are presented in Table 5.

There are only two major changes between the original PAI and the PAI*: Auckland and Canterbury swap rankings, as do Victoria and Lincoln. There are still substantial differences between the results of the PAI* and the IAI with the content distortion removed. Victoria is the most extreme example of the difference between the PAI* and the IAI, ranking last in the PAI* and first in the IAI.

These differences confirm that the PAI and the IAI measure different aspects of the quality of reporting. If the rankings using the PAI and the IAI were the same, this would suggest that they were measuring the same aspect of quality.

The development of the IAI highlights many opportunities for future research. The first of these is to develop the index further, particularly to broaden the number of items that contribute to the index. The second item for future research is to assess the portability of the IAI to other sectors within New Zealand and to other countries. The third opportunity for future research is to explore the relationship between the PAI and the IAI.

There is one aspect in particular where exploring this relationship would be of interest. One limitation of the IAI concerns the PI term. The term included in the index only measures whether the number of indicators is appropriate - not too many nor too few. However, it is possible to report an ideal number of completely inappropriate and uninformative indicators. For example, if it is assumed that there are 20 important indicators (measured by the PAI), and that 30 is a good total number of indicators (measured by the IAI), it is possible to report the 30 indicators, getting full marks from the IAI, yet report none of the right 20 as measured by the PAI. It is also possible to report all 20 of the right indicators, getting full marks for PAI, but to swamp them amongst 300 others. Finding a methodology

for combining the two indices regarding this term might be a valuable topic for future research.

5. Conclusion

This study has developed a new index for measuring the quality of Statements of Service Performance, the Informational Accessibility Index, and has presented the results of applying the IAI to a sample of New Zealand universities. The quality of most University reporting was found to be relatively stable in the time period examined. Notable exceptions were Massey University, which improved its reporting quality from last ranked in 2000 to top three ranking in 2002 then returned to last rank in 2003, and Victoria University of Wellington which dropped from the top ranking position in 2000 to middle rankings in the later years. The top ranking universities were Victoria University of Wellington in 2000, Auckland University in 2002, and Waikato University in 2003.

Comparisons between the rankings afforded by alternate indices highlight how sensitive the results of studies comparing reporting quality across the University sector are to the metric adopted and to the context of specific countries. Future research might further explore the development of alternative methods.

The IAI index does find differences of disclosure quality between the universities, and the IAI index values are different from the PAI index measures of disclosure content. The implications of these findings are that the IAI or other alternative indices could add extra dimensions to comparisons between reporting quality. Since the different indices measure different aspects of quality, these indices could be used to complement each other.

There are several limitations to the use of the Informational Accessibility Index in this study. First, it only applies to service performance reporting, so it cannot be used to assess the quality of other aspects of reporting. Second, it has only been applied to New Zealand universities, although it should be possible to extend its use to other public sector entities and to other countries. Third, the items comprising the IAI (and the representations regarding best practice) are still subject to debate, because of the exploratory nature of the research.

This study highlights the need for further information to be gathered on current reporting practice, and on the impacts of the impending reporting changes in New Zealand. Another important avenue for future research includes the further development of the IAI and other alternative indices to improve its usefulness as a tool for assessing the quality of service performance reporting.

Table 1.
Computing the Informational Accessibility Index, 2003.

University	No of indicators	No. with targets	No. of targets met	Word count	% T	% M	wc/P.I.	Unsigned difference from reference value				Scaled differences				I.A.I.
								P.I.	% T	% M	wc/P.I.	P.I.	% T	% M	wc/P.I.	
Auckland	72	58	27	8,058	81%	47%	112	6.5	19%	14%	68	0.12	0.88	1.70	1.16	3.86
AUT	59	55	29	2,582	93%	53%	44	6.5	7%	8%	0	0.12	0.31	0.94	0.00	1.36
Canterbury	30	25	14	9,236	83%	56%	308	35.5	17%	4%	264	0.65	0.75	0.53	4.49	6.42
Lincoln	130	56	32	8,119	43%	57%	62	64.5	57%	3%	19	1.18	2.56	0.39	0.32	4.45
Massey	239	128	77	17,209	54%	60%	72	173.5	46%	0%	28	3.18	2.09	0.01	0.48	5.76
Otago	181	131	90	15,274	72%	69%	84	115.5	28%	8%	41	2.11	1.24	1.05	0.69	5.10
Victoria	52	50	42	4,730	96%	84%	91	13.5	4%	24%	47	0.25	0.17	2.95	0.80	4.17
Waikato	44	44	25	2,068	100%	57%	47	21.5	0%	3%	3	0.39	0.00	0.43	0.06	0.88
Mean	100.9	68.4	42.0	8,410	78%	60%	103	54.6	22.2%	8.0%	58.8	1.00	1.00	1.00	1.00	4.00
Standard deviation	75.2	39.2	27.0	5,518	20%	11%	86									
Median	65.5	55.5	30.5	8,089	82%	57%	78									
Reference value	65.5				100%	60%	44									
Value is:	median				100%	mean	minimum									

Table 2.
Informational Accessibility Index by university, 2000, 2002 and 2003.

University	2000						2002						2003					
	PI	%T	%M	wc/PI	IAI	Rank	PI	%T	%M	wc/PI	IAI	Rank	PI	%T	%M	wc/PI	IAI	Rank
Auckland	51	92%	64%	96	3.4	4	57	100%	63%	82	2.9	1	72	81%	47%	112	3.9	3
AUT	158	58%	56%	45	3.2	3	76	83%	67%	59	3.1	2	59	93%	53%	44	1.4	2
Canterbury	214	47%	58%	78	5.0	6	262	85%	54%	52	5.1	6	30	83%	56%	308	6.4	8
Lincoln	94	34%	66%	68	4.2	5	140	21%	50%	54	5.3	7	130	43%	57%	62	4.4	5
Massey	410	60%	47%	29	6.9	8	141	79%	46%	30	3.3	3	239	54%	60%	72	5.8	7
Otago	129	68%	85%	84	5.5	7	135	77%	81%	125	5.5	8	181	72%	69%	84	5.1	6
Victoria	138	99%	60%	48	1.2	1	42	100%	64%	91	3.5	5	52	96%	84%	91	4.2	4
Waikato	19	100%	74%	27	2.7	2	111	26%	66%	7	3.3	4	44	100%	57%	47	0.9	1
Means	152	70%	64%	59	4.0		121	71%	61%	62	4.0		101	78%	60%	103	4.0	
Std dev	121	25%	12%	26	1.8		69	31%	11%	37	1.1		75	20%	11%	86	2.0	

PI: Number of performance indicators; %T: percentage of performance indicators for which targets were established; %M: percentage of targets which were met; wc/PI: word count per performance indicator; IAI: Informational Accessibility Index, mean is 4, lower scores are better; Rank: ranking on IAI, lower is better.

Table 3

Correlations between IAI scores in different years.

The table shows the Pearson correlations between IAI scores of the 8 universities in different years (upper triangle) and the Spearman correlations between the ranks (lower triangle).

	2000	2002	2003
2000	-	0.37	0.62
2002	0.29	-	0.55
2003	0.79	0.50	-

Table 4

Ranking of University Reporting using IAI, PAI and MAD

The data for PAI and MAD are from Coy and Dixon (2002).

	IAI 2000	PAI 2000	MAD 2000
Auckland	4	2	4
AUT	3	3	1
Canterbury	6	4	4
Lincoln	5	8	6
Massey	8	5	3
Otago	7	1	2
Victoria	1	6	8
Waikato	2	7	7

Table 5

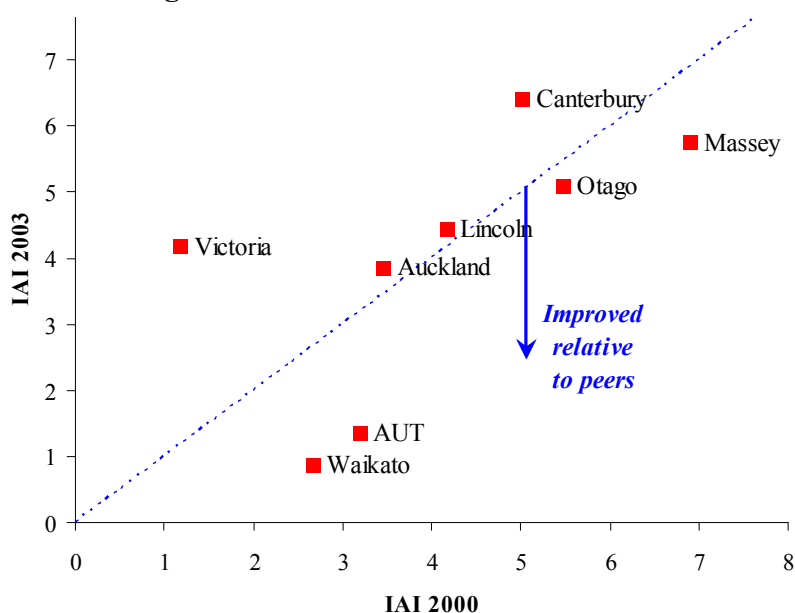
Ranking of Service Performance Reporting using IAI, PAI* and MAD*

Data are for the year 2000. The PAI and MAD scores have been modified to include only service performance disclosures. The PAI* ranking is based only on the scores achieved in the following categories: General service, Teaching service, Research service, and Community service. This represents 48% of the total PAI score. The MAD* ranking is based only on the scores achieved in the Service Performance section. This represents 26.4% of the total MAD score. Underlying PAI and MAD data are from Coy and Dixon (2002).

	IAI 2000	PAI* 2000	MAD* 2000
Auckland	4	4	6
AUT	3	3	3
Canterbury	6	2	4
Lincoln	5	6	7
Massey	8	5	2
Otago	7	1	1
Victoria	1	8	8
Waikato	2	7	5

Figure 1

Changes in IAI scores between 2000 and 2003



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