A Profile of Participation and Performance of Māori and Pacific Peoples in the Performance-Based Research Fund 2003 - 2006

A working paper contributing to the independent strategic review of the Performance-Based Research Fund

Paula White
Janet Grice

March 2008

March 2008

Tertiary Education Commission
Te Amorangi Mātauranga Matua
National Office
44 The Terrace
Wellington, New Zealand
PO Box 27048

www.tec.govt.nz

This paper is in the Tertiary Education Commission electronic document management system at Objective ID # A366492

Contents

Acknowledgements

Numerous individuals contributed to this document. The authors thank Sean Alexander, Dr Nuran Cinlar, and other colleagues of the Tertiary Education Commission Te Amorangi Matua for their work and advice in support of this paper. Special thanks to Louise Pirini and Judy Zhang for their supporting analytical work and formatting assistance. Roger Smyth and Warren Smart from the Ministry of Education, Chris Milne and Andrew Hawkins of ARTD Consultants, Lesley Campbell, Paul Vance, Brenden Mischewski, Daniel Haines, and Craig Workman reviewed drafts of this work and provided helpful feedback that allowed us to strengthen the analysis.

List of Tables

List of Figures

Executive Summary

This is one of four papers identifying trends in tertiary sector research from 2003 to 2006, the period when the Performance-Based Research Fund (PBRF) was introduced. The papers are based on analysis of data from the PBRF census and quality evaluation in 2003 and 2006. Their immediate purpose is to provide a baseline view of trends to support further analysis by an external independent reviewer.[1] The papers' other purpose is to provide information to the sector addressing their interest in the effects of the PBRF; and to meet ministerial instructions to the TEC.

Purpose

Phase two of the PBRF evaluation is intended to examine the early positive or unintended effects of the PBRF, resulting from the PBRF's implementation. One aspect of the evaluation is a focus on Māori and Pacific Peoples researchers. To support the evaluation, this paper examines PBRF data, including staff census, EP and research-based degree completions data, and profiles the participation and performance of Māori and Pacific Peoples researchers in the PBRF.

One limitation of this analysis is that shifts in participating TEOs' researchers in the system between 2003 and 2006, and wider shifts in the tertiary sector during this time, had considerable impact on the changes in PBRF data. Also the three-year period that is the focus of this paper is a short time-frame in which researchers might raise their PBRF quality scores. Therefore changes in the profile Māori and Pacific Peoples researchers from 2003 to 2006 cannot definitively be said to have been caused by the system itself, or broader external trends, because causal factors are not measured here. The PBRF may have caused some changes, but also reflects other shifts within and external to the system.

Ethnic profile of researchers in the PBRF 2003 – 2006

Notwithstanding an increase in the number of PBRF researchers from 8,012 in 2003 to 8,665 in 2006, the overall composition of ethnic group responses remained stable across Quality Evaluations, most noticeably for the Māori, Pacific Peoples and European/Pākēha groups. Conversely, the proportions of Asian and Other groups increased slightly.

In both 2003 and 2006, the European/Pākēha category comprised the majority of PBRF researcher's ethnic group responses. The Māori ethnic group was the third largest group in 2003 and the fourth largest group in 2006, only slightly behind the Asian ethnic group. The Pacific Peoples group, encompassing Cook Island Māori, Fijian, Niuean, Samoan, Tokelauan, Tongan, and Other Pacific ethnic groups, made up the smallest proportion of all PBRF researchers in both Quality Evaluations.
The proportions of research-based degree completions in 2003 and 2006 achieved by Māori and Pacific Peoples were very similar to the proportions of Māori and Pacific Peoples researchers in the PBRF.

Profile of Māori researchers in the PBRF 2003 – 2006

Of eligible Māori researchers, the proportion for whom EPs were submitted was considerably larger in 2006 than it was in 2003. However, even in 2006, the proportion of Māori researchers was some ten percent lower than the figures across the whole of the PBRF.

In both 2003 and 2006, the number of female Māori researchers was considerably higher than the number of male Māori researchers in the PBRF. This gender ratio is very distinct

[1] Jonathan Adams of Evidence Ltd., Leeds, UK.

compared to the wider PBRF population which has a gender ratio of almost exactly the reverse.

The average age of Māori researchers was similar to the average age across the PBRF in both Quality Evaluations. However, the spread of Māori researchers across different age bands was distinctive compared to the profile of all PBRF researchers. In both 2003 and 2006, the considerable majority of Māori researchers were located in age bands up to 54 years of age, with slightly more in the 35 – 44 age band. On the other hand, the majority of all PBRF researchers were spread across the 35 – 64 band, with slightly more in the 45 - 54 band. In 2006, Māori researchers featured less strongly in the youngest age band, and there were increased proportions of researchers in all older age bands. This shift is not easily explained by movements of stayers into higher age bands, therefore the flows of Māori researchers into and out of Quality Evaluations appears to have effected this shift.

The profile of Māori PBRF researchers by academic positions was also distinctive. While most Māori researchers were in Lecturer or Senior Lecturer positions, more than twice as many were Lecturers than were Senior Lecturers, compared to comparatively even proportions across the whole PBRF. Almost as many Māori researchers were Assistant Lecturers as Senior Lecturers, and a high proportion of both Māori Assistant Lecturers and researchers in senior positions identified as NE, both of which compare markedly with the wider PBRF. The most striking shift from 2003 to 2006 among Māori researchers was the decrease in the proportion of Māori Assistant Lecturers, while the numbers of Lecturers and Professors increased. Despite a similar pattern across the wider PBRF from 2003 to 2006, the shift appears more pronounced among Māori researchers.

Māori researchers' EPs were largely assessed by two PBRF panels: Education; and Māori Knowledge and Development. Other panels that assessed high numbers of Māori researchers' EPs included Creative and Performing Arts, Social Sciences and Other Cultural/Social Sciences, and in 2006, Medicine and Public Health. One implication of this pattern is that a much higher proportion of Māori researchers' EPs attracted lower subject weightings relative to all PBRF researchers' EPs.

The analysis of cross-referral information relating to the MKD Panel in 2006 highlighted that while there were numerous transfers of EPs into and out of the MKD Panel in the first Quality Evaluation, there were fewer transfers in the second.

Māori researchers' EPs contained comparatively lower mean numbers of NROs in both Quality Evaluations. The most common NROs types submitted in Māori researchers' EPs, however, were comparable to common, arguably traditional, NRO types submitted across the PBRF. This may reflect the fact that the majority of Māori researchers in both Quality Evaluations were located in the university sub-sector, where the prevalence of traditional research outputs might be expected. On the other hand, Māori researchers, more noticeably among Māori researchers in participating wānanga, submitted considerably lower proportions of outputs such as journal articles and books, compared with PBRF researchers more generally.

The mean scores achieved by Māori researchers in 2006 were lower than they were in 2003 across all three components – RO; PE; and CRE. In addition, the difference between Māori and all PBRF scores increased across the period. By comparison, the mean scores across the whole PBRF were comparatively stable across Quality Evaluations. CRE was more likely to be lower than PE among Māori researchers, and both were generally lower than the RO scores across all PBRF researchers.

In both 2003 and 2006, the quality scores achieved among Māori researchers were also comparatively lower. In 2006, for example, the higher numbers of Māori researchers who achieved quality scores less than 200 is reflected in lower mean scores overall, and this may

reflect higher numbers of submissions by Māori NE researchers. A similar increase in the proportion of researchers achieving a less than 200 quality score happened across the whole of the PBRF 2003-2006, but because the decreased proportions were less marked in the higher quality score bands, the mean scores were more stable.

Māori researchers' final quality categories reflect the patterns outlined in component and quality scores. The proportions of A and B among Māori researchers were fairly stable from 2003 to 2006, compared to small increases in these categories across the whole PBRF. There was, however, a noticeable increase in both the number and proportion of Māori researchers from 2003 to 2006 who achieved a C funding outcome overall. In 2006, over a quarter of the Cs achieved were C(NE), and the proportional increase in Cs among Māori researchers compared to 2003 is higher than the increase across the PBRF generally. This compares with a proportional decrease in unfunded Rs achieved from 2003 to 2006. It may be inferred from this that the introduction of the NE category has allowed more Māori researchers to achieve a C result.

Profile of Pacific Peoples researchers in the PBRF 2003 – 2006

Among Pacific Peoples researchers the proportion of EP submissions in 2003 was lower than the figure for all PBRF researchers, however the proportions were comparable in 2006. The majority of Pacific Peoples researchers who entered the PBRF in 2006 were located in the university sub-sector, in which EPs submissions were generally higher.

In both Quality Evaluations, the mean age of Pacific Peoples researchers was close to the mean across all PBRF researchers; however, more Pacific Peoples researchers were in younger age bands than in the PBRF generally. There was a clear shift from 2003 to 2006 in the age spread of Pacific Peoples researchers, with fewer in the youngest age band and more in the older age bands in 2006. This 'ageing' of researchers across Quality Evaluations mirrored a broader trend across the PBRF.

The gender ratio of Pacific Peoples researchers also changed from 2003 to 2006. Whereas the majority of Pacific Peoples researchers in 2003 were female, similar to the profile of Māori researchers, the ratio was reversed in 2006, where the ratio paralleled the wider PBRF. This shift related to higher numbers of female exiters, and higher numbers of male entrants among Pacific Peoples researchers in 2006.

Most Pacific Peoples researchers were in early to mid career positions, with the majority in Lecturer and Senior Lecturer positions in both 2003 and 2006. The decrease in the proportion of Pacific Peoples researchers in the Assistant Lecturer position from 2003 to 2006 was more marked than the general PBRF shift.

Three panels assessed the majority of Pacific Peoples researchers' EPs in both Quality Evaluations: Education; Social Sciences and Other Cultural/ Social Sciences; and Medicine and Public Health. In both 2003 and 2006 the number of EPs submitted to the Education Panel was noticeably higher than the proportion of EPs assessed by this Panel across the PBRF overall. Pacific Peoples researchers' EPs attracted lower subject weightings compared to the PBRF overall.

The numbers of NROs submitted for individual Pacific Peoples researchers increased considerably from 2003 to 2006, and perhaps this reflects the higher proportions of Pacific Peoples researchers in higher age bands and in more senior academic positions in the second round. The most common NRO types submitted by Pacific Peoples researchers were fairly comparable to the profile across the whole of the PBRF. Again, this may reflect the high proportion of researchers in the university sub-sector.

The mean component scores achieved by Pacific Peoples researchers were stable between 2003 and 2006, although they were comparatively lower than mean PBRF scores. The proportion of PE scores lower than RO scores decreased among Pacific Peoples researchers from 2003 to 2006 suggesting an improvement in this area across Quality Evaluations. This perhaps reflects the demographic and academic shift in the profile of Pacific Peoples researchers in 2006, which was older, male and more senior in career than in 2003.

The number of As and Bs achieved among Pacific Peoples researchers was stable from 2003 to 2006. Conversely, the proportion of Rs reduced from some 68 percent to 50 percent. At the same time, there was a marked increase in the number of Pacific Peoples researchers in the PBRF that achieved a funded C category, from 20 in 2003 to 36 in 2006. Again, the NE category may have facilitated this outcome, with more early career researchers moving into the C(NE) funding category.

Effects or unintended consequences on Māori and Pacific Peoples researchers in the PBRF 2003 – 2006

Overall, the numbers of Māori and Pacific Peoples researchers in the PBRF and the proportions of these ethnic groups in RDC data appeared disproportionately low, in the context of recent census population figures. Still, age-standardised figures show steady growth in the participation of Māori and Pacific Peoples in tertiary education overall.

The core question this paper attempted to explore was whether there is any evidence in the PBRF data of positive effects or unintended outcomes for Māori and Pacific Peoples researchers, based on analysis of the data from the Quality Evaluations in 2003 and 2006.

The transitions of researchers in, across and out of the PBRF among both Māori and Pacific Peoples researchers appear to be generally comparable to wider PBRF patterns. EP submissions for Māori and Pacific Peoples researchers, as a proportion of all PBRF-eligible researchers, showed two distinct patterns for these groups respectively. For Pacific Peoples researchers the proportion increased from 2003 to 2006, and in 2006 was comparable with the wider PBRF. The proportion of EPs submitted for Māori researchers also increased from 2003 to 2006, yet there were still fewer in 2006 compared to the PBRF generally. Overall, the results of Māori and Pacific Peoples researchers were concentrated, more so than across the PBRF generally, at the lower end of component scores, quality scores and final quality categories.

The demographic, academic and Panel assessment profiles of Māori and Pacific Peoples researchers in the PBRF revealed distinctive characteristics among the two groups in the PBRF. However, it is unclear whether these characteristics are linked with final quality category outcomes outlined. The panels which assessed the majority of Māori and Pacific Peoples researchers' EPs were in lower subject weighting areas, and this has implications for the level of funding that Māori and Pacific Peoples researchers attracted overall.

On the other hand, the higher proportions of NE researchers among Pacific Peoples researchers, and especially among Māori researchers, appeared to have a positive effect on the funding outcomes of Māori and Pacific Peoples researchers. The provisions of the NE category introduced in 2006 appears to have assisted more early career Māori and Pacific Peoples researchers to achieve C funding outcomes through the C(NE) category.

Future research

More detailed information on the transitions of Māori and Pacific Peoples researchers into and out of the PBRF between 2003 and 2006 would contribute to increased understanding of

any effects of PBRF on these groups researchers. To this end, the data generated in the 2012 Quality Evaluation will provide an even more robust frame for longitudinal analysis.

The specific subject areas, and kinds of research, in which Māori and Pacific Peoples researchers in the PBRF are active might be investigated more fully. This paper highlighted that very high numbers of Māori and Pacific Peoples researchers' EPs were submitted to the Education Panel. Moreover, it highlighted the difficulty of ascertaining the subject areas of Māori researchers, where the EPs were assessed by the MKD Panel. More information on the functioning of the MKD Panel would be useful.

More detailed analysis across PBEF census, EP and RDC data would better link information on post-graduate outcomes with information on Māori and Pacific academic staff, and Māori and Pacific Peoples researchers. Whether the gender and age profile of RDCs for Māori and Pacific Peoples impacts on the profile of the Māori and Pacific Peoples tertiary workforce, and participation of Māori and Pacific Peoples researchers in the PBRF might be investigated.

An idea scoped for this paper was to profile 'Māori research' and 'Pacific research' within the PBRF, in addition to profiling Māori and Pacific Peoples researchers. This idea was not pursued in the present paper, however, because the approach requires more conceptual thought to develop valid proxies for 'Māori research' and 'Pacific research', and this has broader time and consultation implications.

1 Background

This working paper is one of a series of papers examining some of the early effects of the Performance-Based Research Fund (PBRF) as shown in the PBRF data sets of the Tertiary Education Commission Te Amorangi Mātauranga Matua. These working papers will inform the work of an independent external reviewer. The other working papers consider:

- human resource trends
- trends in the subjects, and
- baseline trends.

These papers are available from the Tertiary Education Commission (TEC) website at http://www.tec.govt.nz/templates/standard.aspx?id=2547.

Key terms used in this report are defined in the Glossary, which is before the References at the end of this report.

1.1. PBRF as an incentive to change

The PBRF distributes substantial research funding to the tertiary sector. It also affects the research reputations of tertiary education organisations (TEOs). Human resource shifts following the introduction of the PBRF could respond to both the financial opportunity inherent in the PBRF and the likely reputational impact of PBRF scores.

TEOs receive funding from a variety of sources. These include:

- fees from students
- external research and contract income
- gifts and donations, and
- grants and subsidies from government.[2]

In 2007, the largest single subsidy was the Student Component fund. This was directly linked to the volume of equivalent full-time students (EFTS) enrolled at TEOs and totalled $1.85 billion.[3] This was received by over 200 organisations, including all those participating in the 2006 PBRF quality evaluation. Before the introduction of the PBRF, TEOs received a research subsidy that was included within the Student Component – the research top-up. This was progressively reduced as the PBRF was introduced.

In the 2007 funding year, the funding allocated by means of PBRF performance measures was forecast to be $231 million. It was derived from 100 percent of the former degree top-up funding and $67 million additional funding from the government.

The following examples illustrate the contribution made to TEO funding by the PBRF.

- The University of Auckland's 2006 annual report states that its total consolidated revenue was $674 million. In 2007, its indicative PBRF funding was $69.9 million.

[2] TEOs can secure research funds from the Foundation for Research, Science and Technology, the Health Research Council, the Marsden Fund (managed by the Royal Society of New Zealand), government departments, and the private sector.

[3] From 2008, the Student Component fund was replaced by new funds including the Student Achievement Component and the Tertiary Education Organisation Component.

- In 2006, the University of Waikato had a total consolidated revenue of $184 million. In 2007, its indicative PBRF funding was $14.8 million.
- Unitec New Zealand's total revenue for 2006 was $113 million. In 2007, its indicative PBRF funding was $2.5 million.

In general, it is expected that the influence of prospective PBRF funding on the tertiary sector is likely to be stronger in TEOs where PBRF funds make up a larger proportion of revenue.

The importance of the PBRF for reputation should also be considered. Both the University of Auckland and the University of Otago feature their PBRF-based reputations for research leadership on their website home pages. The University of Auckland states that it is "New Zealand's leading research university", and repeats this statement in much of its promotional material. The statement is backed by details from the PBRF quality evaluation results. The University of Otago's home page states that it is "New Zealand's top-ranked university for research", and has links to a page of PBRF data detailing its ranking.[4] Other TEOs also detail the areas in which their PBRF scores indicate they lead.

For both financial and reputational reasons, TEOs had incentives to strive to improve their PBRF quality scores.

1.2. PBRF evaluation strategy

The PBRF was introduced when government tertiary funding in New Zealand was based primarily on the number of student enrolments. Research funding via Vote Education was available through 'top ups' based on domestic enrolments at bachelor degree and higher levels and through competitive special-purpose funds. The funding system had only limited ability to recognise and support research in areas that did not attract student enrolments. By the late 1990s, some observers believed the funding model should be changed. There was concern that research funding was insufficient, dispersed across too many areas, and too volatile and short term.[5] The introduction of the PBRF re-focused tertiary research by allocating research funds on the basis of research excellence. This approach would also ensure that any increased research funding would be concentrated in high-performing research organisations, and that research would have longer-term funding.

The Government called for periodic reviews of the PBRF when the policy was first introduced. In response to this direction the Ministry of Education and the TEC developed an evaluation strategy. It features three distinct phases and will operate for about 10 years from mid-2004 to late 2014.

The first phase of the evaluation was to evaluate the implementation of the PBRF and the conduct of the 2003 quality evaluation. This phase recognised the complexity of the research funding system and, hence, the need to ensure that it was implemented in a way that was consistent with the policy intent and minimised additional compliance costs on the sector. This phase was completed in 2004, with a report by WEB Research to the TEC, which is available from the TEC website.[6]

---

[4] See http://www.auckland.ac.nz and http://www.otago.ac.nz.

[5] See Jonathan Boston, "Rationale for the Performance-Based Research Fund", in Leon Bakker, Jonathan Boston, Lesley Campbell and Roger Smyth, *Evaluating the Performance Based Research Fund: Framing the Debate* (Wellington: Institute of Policy Studies, Victoria University of Wellington, 2006), pp 5–31. See also TEAC, *Shaping the Funding Framework: Fourth Report of the Tertiary Education Advisory Commission* (Wellington: Tertiary Education Advisory Commission, 2001).

[6] WEB Research, *Phase 1 Evaluation of the Implementation of the PBRF and the Conduct of the 2003 Quality Evaluation* (Wellington: Centre for Research on Work, Education and Business,

The second phase of the PBRF evaluation responds to concerns that were identified during the development of the PBRF. It was regarded as essential to identify emerging effects and any unintended consequences of the PBRF at the earliest stage possible. This paper is part of that work.

The third and final phase of the evaluation concerns the long-term outcomes of the PBRF. It is expected that this will be conducted after the next quality evaluation in 2012.

1.3. Phase two of the PBRF evaluation

Phase two of the PBRF evaluation is composed of three major aspects.

The first aspect of the evaluation featured work streams to support the set up and design of the PBRF evaluation. An intervention logic (IVL) model was developed that focused the evaluation on the broader outcomes of the PBRF. A research symposium based on the IVL model resulted in *Evaluating the Performance-Based Research Fund: Framing the Debate*.[7] A further work stream involved a literature review of evaluation approaches adopted for the United Kingdom Research Assessment Exercise. This informed the methodological development of the evaluation. A literature scan of research published on the PBRF was produced by an external, independent specialist reviewer. Finally, an overseas expert evaluator was recruited to advise on the design, development, and implementation of the evaluation.

The second aspect of the evaluation involves using existing data sources. Researchers at the Ministry of Education produced and published research papers from the data in the first quality evaluation round in 2003. A PBRF monitoring framework is under development. This will provide commentary on the impact of the PBRF on a prioritised set of indicators. This framework is due for publication shortly and will be updated and republished annually. The present paper also contributes to the second aspect of the evaluation. It is one of several papers based on an analysis of the evidence portfolios (EPs) and PBRF census data to address selected evaluation questions identified earlier, for example, in the IVL model's output.[8]

The third aspect of the evaluation is an independent strategic review of the PBRF that involves:

- interviews and focus groups with informants in the sector and outside
- the collection of submissions from a wide range of interested parties, and
- an analysis of a range of secondary data sources.

The information collected will be synthesised in a review report that will complete phase two of the PBRF evaluation.

2004), available from http://www.tec.govt.nz/upload/downloads/eval-of-implementation-pbrf-and-2003-quality-eval-conduct.pdf.

[7] Leon Bakker, Jonathan Boston, Lesley Campbell and Roger Smyth, *Evaluating the Performance Based Research Fund: Framing the Debate* (Wellington: Institute of Policy Studies, Victoria University of Wellington, 2006).

[8] See Paul Duignan, *Performance Based Research Fund (PBRF) Intervention Logic, Evaluation and Monitoring Framework Discussion Paper* (Wellington: Parker Duignan Ltd., 2005). Other work also contributed to defining the evaluation questions.

1.4. Focus on Māori and Pacific Peoples researchers in the PBRF

Phase two of the PBRF evaluation is intended to identify the early positive or unintended effects of the PBRF, resulting from the PBRF's implementation, on Māori and Pacific Peoples researchers. Cabinet directives for phase two require, among other things, that the TEC actively monitor impacts of the PBRF on Māori and Pacific Peoples researchers.

In addition, the importance of monitoring early effects on Māori and Pacific Peoples researchers in the PBRF is underscored by a wider literature on PBRF from within the tertiary sector. While the issues raised in this literature are not able to be addressed by this paper, a brief overview is useful for context. Some Māori scholars, for example, have commented that the PBRF process discriminates against Māori researchers. This commentary focuses on a number of points:

The mismatch between Māori values and those underpinning the PBRF – the production of an EP does not fit with Māori values including but not limited to the values of humility, whakahihi and whakaiti;

Using Kaupapa Māori processes, research is slower than conventional research thus reducing the number of outputs – Kaupapa Māori is deemed safer for participants but does it disadvantage researchers in the PBRF process? And;

The belief that the PBRF is simply another tool to assimilate Māori into the hegemonic processes of the dominant group (McMurchy-Pilkington 2005)

Other authors have suggested that Māori research is completed for Māori thus making it difficult to gain international recognition. This disadvantages Māori researchers as greater weight appears to be given to international recognition than to satisfaction of local iwi under the PBRF system. In addition, collection of research output may be difficult for some Māori researchers as it requires the formalising of processes that have a history of informality. There are also difficulties in the implementation processes related to evidence of Peer Esteem. Māori rely on verbal agreements for performing artists rather than the collection of letters or attestations, leading to a cultural mismatch with PBRF processes (Tawhai et al 2004).

Another issue raised is that Māori researchers may be further disadvantaged by the opportunity to choose between the panels to which they may submit their EP. The ability to submit to the Māori Knowledge and Development (MKD) panel (based on research approach) or discipline panel (based on discipline) and the differing subject weightings may undervalue Māori research (Smith 2006). Additionally, the use of the individual as the unit of assessment was perceived as inappropriate in Māori research. This fails to recognise the contribution of the community to research. This may result in some researchers not participating in the PBRF process (Smith 2006).

Pacific Peoples have similar – and additional – concerns. In particular, the grouping of several nationalities under the title "Pacific" results in the homogenising and silencing of the diversities of these peoples (Airini 2005). As well, the bias towards written rather than oral documentation in the PBRF process, and the small number of Pacific Peoples researchers is seen as disadvantaging Pacific Peoples researchers (Tanielu 2005). [9]

With these comments in mind, it is possible that researchers identifying with Māori or Pacific Peoples ethnicities in New Zealand might disproportionately work in areas of national importance and priority, yet find their research receives lower quality scores because of, perhaps, the cultural characteristics of their research. Alternatively, tertiary providers who educate in areas of Māori and Pacific research focus might find that the PBRF, for example,

[9] While researchers can nominate which PBRF panel will assess their EP, the academic institution chooses the panel of assessment.

has limitations in recognizing the research inputs of community consultation that this research often involves.

In each of these respects, concerns would be that the PBRF might unduly disadvantage productive researchers working in areas of national and cultural importance and priority. The possible unintended consequence of such systematic uncertainty would be that tertiary institutions would shift resources away from those researchers and research areas whose value the PBRF might less reliably recognize, and towards ones that would more reliably gain PBRF-allocated funds.

While the above commentary provides a useful backdrop in which to consider this paper, the present paper, which analyses PBRF data, can only address the issues raised above in a very limited way. This is because of the kind of information captured in the PBRF dataset, and also because the questions raised would also need to be explored through qualitative information sources.

Therefore, the current paper serves several purposes. First, it provides an evidence base to inform the independent strategic review of the PBRF. In doing so, the paper presents early indications of trends in the datasets held by the Tertiary Education Commission (TEC) for Māori and Pacific Peoples researchers who participated in PBRF 2003 and 2006. Second, the paper will inform the tertiary education sector - in accordance with the relevant undertakings regarding confidentiality[10] - from the datasets held by the TEC. Third, where possible, the paper considers the PBRF data for signs of unintended consequences, positive or negative, resulting from PBRF implementation, as a first step to investigation of the sector issues previously discussed.

1.5. Evaluation questions and analysis

The core question this paper addresses is whether there are effects, or any unintended consequences – positive or negative - of the PBRF on PBRF-eligible Māori and Pacific Peoples researchers. In doing so, it canvasses trends in participation and results across the two Quality Evaluations. The specific evaluation questions derive from ministerial instructions under section 159ZA of the Education Act 1989, and are informed by feedback in the wider literature.

Do the patterns of participation 2003 – 2006 indicate any positive or negative unanticipated effects of PBRF for Māori and Pacific Peoples researchers?

> The rates of participation of Māori and Pacific Peoples researchers in both rounds can be compared across 2003 and 2006 Quality Evaluations, and with broader PBRF patterns.
>
> This paper also investigates the transitions of Māori and Pacific Peoples researchers across the 2003 and 2006 rounds, by demographic and final funding category information, as against the whole of the PBRF.

Are there any aspects of the demographic, academic or research area profile of Māori and Pacific Peoples that might have implications for these groups of researchers in terms of overall funding outcomes?

> This question is addressed by analysing demographic and academic position information data, and spread of Māori and Pacific researchers' EPs across panels and subjects (by subject weighting) to determine any possible implications for these profiles for funding. Examination of the New and Emerging (NE) category will also address this question. Moreover, final Quality Category data is assessed to identify how the results of participating Māori and Pacific Peoples in the PBRF compare with overall trends.

[10] These are documents such as the 'TEC use of data. Consultation paper' issued in 2006 available from http://www.tec.govt.nz/templates/standard.aspx?id=590.

How is the Māori Knowledge and Development Panel being accessed by Māori PBRF researchers in 2003 and 2006?

Transfers to and from the MKD panel in 2003 and 2006 are analysed, looking at Māori researchers' subject areas and (primary) panels to draw inferences about the access of MKD by Māori researchers.

Does the data suggest that the research outputs of Māori and Pacific Peoples researchers are distinctive within the PBRF?

The paper examines nominated research output (NRO) data for Māori and Pacific Peoples researchers, to evaluate any distinctive features compared with the overall pattern of NROs.

Is there any evidence in the data to suggest differences in the component measurement of Peer Esteem (PE) or Contribution to the Research Environment (CRE) for Māori and Pacific Peoples researchers compared with all PBRF researchers?

This question is explored through analysis of mean component scores data, and also, by mapping Māori and Pacific Peoples researchers PE and CRE scores, vis a vis research output (RO) scores.

This paper does not undertake the work that would be required to discern which changes in the participation and performance of Māori and Pacific Peoples researchers outlined in the paper are direct effects of the PBRF and which are attributable to other factors. Addressing those questions requires qualitative information through discussion with the sector.

1.6. Data

This paper analyses the PBRF data generated from 2003 to 2006, including:

- the staff censuses identifying PBRF-eligible staff across the tertiary sector and PBRF EP data from the Quality Evaluations in 2003 and 2006; and
- research-based degree completions data from 2003 and 2006

A third funding measure, External Research Income (ERI), is not considered in this paper because the data does not capture information by ethnicity.

1.6.1 Research-based degree completions

In addition to PBRF census and EP data, this paper provides basic information on postgraduate research-based degree completions (RDCs) by ethnicity.[11] The RDC measure is one of the three elements of the PBRF funding formula. It is a measure of the number of research-based postgraduate degrees completed within a TEO where there is a research component of 0.75 EFTS[12] or more. Of the total funds allocated through the PBRF in any one year, 25 percent is allocated based on the RDC measure.

The use of RDCs as a performance measure in the PBRF serves two key purposes. It captures to some degree the connection between staff research and research training, indicating the future capability of tertiary education research. It also provides a proxy for research quality, as there is an underlying assumption that research-degree students will select departments and supervisors who have a reputation for high quality research and research training.

The funding formula for RDCs is weighted for the following factors:

A cost weighting: based on the cost of the subject area, where certain subject areas receive a higher weighting.

---

11 Data was sourced through TEC systems, eSDR and TFS, as at January 2008.

12 Equivalent Full-time Student.

An equity weighting: based on Māori and Pacific student completions, to encourage TEOs to enrol and support Māori and Pacific Peoples, as they have relatively low representation at higher levels of the qualifications framework.

A research component weighting: based on the volume of research in the programme, where the larger the EFTs value the larger the weighting. PhD degrees have a longer timeframe for completion, and therefore will receive a higher weighting of funding than Masters Degrees.

1.6.2 Other data issues

The data used for this and other working papers differs slightly from the data used in previous TEC publications. The unit of analysis in this paper is the staff member. Because some individuals worked at more than one TEO, an individual may count as two or more staff under some circumstances. Hence, a researcher who worked part time at two TEOs in 2003 and full time at one of these in 2006 counts as one staff member who exited the PBRF and one who stayed. Because of such data issues, in some cases the counts in this paper do not add up across categories or equal previously published totals. The differences, however, are small, in no case adding up to more than 10, and in most cases comprising only one or two counts.[13]

This paper uses data provided to the Ministry of Education and to the TEC. Its authors have maintained the security of the data, and have reviewed the work to ensure it meets ethical standards maintaining the privacy, legal confidentiality, and anonymity of individuals whose work in the tertiary sector is examined here.

1.7. Approach to ethnicity data reporting

In this paper, data is compared, differences are noted, categories are sorted and ranked, and shifts between the 2003 and 2006 Quality Evaluations are of particular interest. In order to situate the focused information on Māori and Pacific Peoples PBRF researchers within the broader PBRF, context is provided with data for all PBRF researchers. This paper does not compare Maori with non-Māori, and Pacific Peoples with non-Pacific Peoples, and this is deliberate.

It is important to bear in mind throughout this paper that owing to the considerably smaller numbers of Māori and Pacific Peoples researchers in the PBRF, comparing trends between specific ethnic groups of PBRF researchers requires discretion. Moreover, it is incorrect to interpret differences in data between ethnic groups as having been caused simply by ethnicity, as differences may be attributable to an array of complex factors. The primary purpose of this paper is to profile researchers by ethnic group, not to make comparisons by ethnicity, nor to link any differences to causal factors. Hence, this paper does not assess whether ethnicity is a causative factor in any differences between groups of PBRF researchers, although other PBRF reports have assessed the extent to which ethnicity is a factor in PBRF outcomes.[14]

Moreover, a limitation of comparisons between PBRF researchers by ethnicity is the much smaller numbers of Māori and Pacific Peoples researchers. The small numbers mean that the more disaggregated Māori and Pacific Peoples data is such as by gender or age, the more spurious any comparisons between numbers for those groups and all PBRF becomes. This issue is mitigated in the paper by presenting data as proportions, to show indicative results for ethnic groups, where raw numbers would have been meaningless. However, in the Pacific Peoples section, the majority of tables present numbers only, because calculated

[13] A full description of the data processes is provided in the Appendix section.

[14] See for example Warren Smart, *What determines the research performance of staff in New Zealand's tertiary education sector? An analysis of the Performance-Based Research Fund Quality Evaluation.* (Wellington: Ministry of Education, 2005).

proportions could have been misleading (owing to the very small numbers). This decision was made after initial counts of Pacific Peoples researchers showed there were less than 100 people in each Quality Evaluation.

The key variable throughout the analysis in this paper is PBRF-eligible researchers' self-reported ethnicity. Ethnicity data has limitations due to the large numbers of staff for whom no ethnicity information is available[15]. Moreover, in a small number of cases, reported ethnicity was different in 2003 to 2006 for the same researcher.[16] Some of this variation may be due to changes in TEO reporting conventions. Alternatively, this may reflect changes in the self-reporting of ethnicity. Because ethnicity information is self-reported, we have chosen to use the reported ethnicity in each year rather than create a uniform profile for each staff member regardless of changes in self-reporting. Only in one area of analysis, namely staff transitions between 2003 and 2006, is the researchers' ethnicity reported in 2003 counted as the researchers' ethnicity in 2006. For the remainder of the analysis, total counts for 2003 and 2006 are provided.

In the PBRF census, staff may nominate up to three ethnic groups with which they identify, rather than one 'primary' ethnicity, and ethnic group responses are not prioritised in any way. Therefore, ethnic group responses were managed for the purposes of different aspects of the analysis. In order to provide a comparative ethnic profile of researchers across the whole of the PBRF, Section 2 of this paper counts total ethnic group responses, rather than counts of distinct researchers. This means a staff member who reports their ethnicity as Māori, European/Pākehā, and Asian is counted three times when ethnicity data is reported. Section 2 is intended to provide an introductory profile of all PBRF researchers by ethnicity and raw counts of responses by ethnic group are appropriate to this end. Sections 3 and 4, on the other hand, intend to profile Māori and Pacific Peoples researchers specifically. This requires a different method of counting, where each individual researcher is identified as belonging to either Māori or Pacific Peoples ethnic groups, respectively.[17]

Because of the centrality of the ethnicity variable to this paper, it is pertinent to highlight the unknown factor within the ethnicity data. Of all ethnic groups identified in 2003 and 2006, 14.7 percent and 13.3 percent of EPs were submitted by researchers of unspecified ethnicity.

1.8. Definitions

The PBRF staff censuses involved all staff at TEOs that participated in the PBRF. This paper only reports information for those staff who were identified as PBRF-eligible researchers. Throughout the paper, PBRF-eligible researchers are simply referred to as PBRF researchers. Furthermore, within this broader group, the paper refers to different groupings of researchers. Definitions for the different groups of PBRF researchers reported on in this paper are outlined below.

For the most part, the paper deals with three groupings of PBRF researchers, namely:

- Māori researchers: PBRF-eligible researchers who identified themselves as Māori, including people who also identified with other ethnic groups at the same time.

[15] Reported hereafter in this paper as 'Not supplied'.

[16] Analysis of researchers' transitions showed that of those researchers who participated in both Quality Evaluations, there were 16 researchers (belonging to Māori or Pacific Peoples' ethnic groups in 2003) whose ethnic identity changed between 2003 and 2006.

[17] Five participants in 2003, and six in 2006, self-reported as belonging to *both* Māori *and* Pacific ethnic groups. These few cases have not been prioritised into one or the other ethnicity, therefore are counted twice.

- Pacific Peoples researchers: PBRF-eligible researchers who identified with one or more Pacific[18] ethnic group, including people who also identified with other non-Pacific ethnic groups in tandem. It is acknowledged that this aggregation of multiple Pacific Peoples' ethnic groups into one pan-grouping obscures the distinct characteristics of, and trends for, different Pacific Peoples. However, the very small numbers of researchers in these distinct groups warrants the approach to maintain confidentiality of individuals' information.
- All PBRF researchers: this literally means all PBRF-eligible researchers in the PBRF, including all Māori and Pacific Peoples.

PBRF researchers reviewed in this paper are grouped into four further sub-categories, namely:

Re-evaluated researchers: Those who appeared in both the 2003 and 2006 quality evaluations, and had their EPs to be re-submitted by their TEO for re-assessment in 2006.

Carry-overs: Researchers who appeared in both the 2003 and 2006 quality evaluations, and retained their scores from 2003 into 2006. They were not re-evaluated in 2006 but were counted in the PBRF results for that year. This category includes some researchers for whom TEOs did not submit EPs in 2003 and who "carried over" their R category score into 2006.

Exiters: Those researchers who participated in the 2003 quality evaluation but not in 2006.

Entrants: Those researchers who first appeared in the 2006 quality evaluation.

[18] For the purposes of this paper this group includes the PBRF ethnic group categories: Cook Island Māori; Fijian; Niuean; Samoan; Tokelauan; Tongan; and 'Other Pacific Island'.

1.9. Contextual factors

A number of wider factors also influence and bound the information generated in the PBRF data, and so impact on data used to highlight the profile of Māori and Pacific Peoples in the PBRF.

Several changes in the tertiary sector between 2003 and 2006 affected Māori and Pacific Peoples in ways that were not directly related to the PBRF. In addition there were some contextual factors specific to the PBRF that may also influence the data. Factors affecting the data used in this paper that should be kept in mind include:

- increased TEO participation in the PBRF in 2006
- limited wānanga participation in the PBRF in 2003 and 2006
- the overall growth in the tertiary sector in New Zealand since 2000
- structural changes in the tertiary sector between the two quality evaluations, and
- the timing of the second quality evaluation.

1.9.1 Increased TEO participation

In 2006, 10 TEOs participated in the PBRF that had not participated in 2003. This included eight institutes of technology and polytechnics (ITPs) and one wānanga. The number of ITPs participating went from two to 10, and the number of wānanga went from one to two. The participation of these TEOs raised the numbers of Māori and Pacific Peoples in the PBRF, and provides more opportunity to discern differences and continuities in Māori and Pacific Peoples research experiences in the different tertiary sub-sectors.

Increased TEO participation complicates the picture of changes in the participation and results of Māori and Pacific Peoples researchers since the introduction of the PBRF. Because the TEOs involved in the PBRF changed between the two Quality Evaluations, the sub-sector representation and the groups of researchers in the PBRF changed between 2003 and 2006 also. Therefore, comparisons across the two Quality Evaluations can be made only cautiously. It may be more appropriate to consider these two evaluations as a single phenomenon – the introduction of the PBRF – and make initial observations about how that introduction affected Māori and Pacific Peoples researchers.

1.9.2 Limited wānanga participation in the PBRF

There are three wānanga in the New Zealand tertiary education system. One of these, Te Wānanga o Aotearoa, participated in the PBRF in both 2003 and 2006. In 2006 a second wānanga, Te Wānanga o Awanuiarangi, chose to participate in the PBRF. The third wānanga, Te Wānanga o Raukawa, has chosen not to participate in the PBRF.

This means that the PBRF data on researchers employed at wānanga can not be used to track changes in this part of the sector. To a large extent, changes in the wānanga sector between 2003 and 2006 are heavily influenced by the result of changes at one TEO. It is also important to note that this TEO, Te Wānanga o Aotearoa, underwent significant reorganisation in 2005 resulting in substantial changes in staffing.

In addition to changing wānanga participation in the PBRF and substantial reorganisation at one TEO, there have been other shifts affecting wānanga. One major shift was student numbers in the wānanga. The number of students enrolling grew substantially between 2000 and 2003, requiring the wānanga to adapt to rapid growth, although after 2004 those numbers were reduced considerably (See Figure 0).

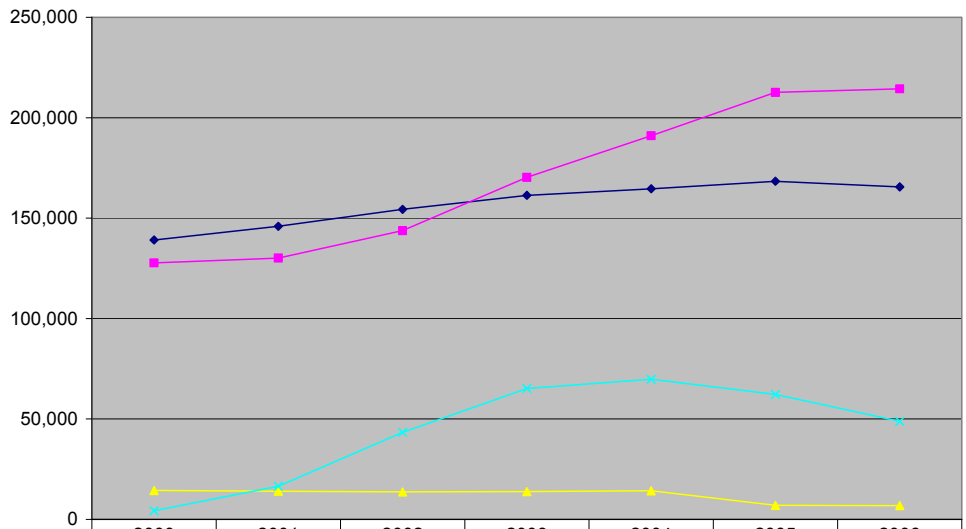
Overall, the unevenness in wānanga participation in the PBRF, and other changes that occurred in the wānanga sub-sector are important considerations for interpreting the wānanga information in the PBRF datasets. It is particularly difficult to discern how researchers in this part of the sector were affected by the introduction of the PBRF, despite the focus of this paper. The wānanga employ a substantial number of both Māori and Pacific Peoples researchers, yet researchers in non-participating wānanga are not represented in PBRF data, and this factor influences the analysis presented this paper. It may prove useful for later studies to use additional non-PBRF data to address this weakness in the PBRF datasets.

1.9.3 Overall growth in the tertiary sector in New Zealand

Student numbers have grown in the tertiary sector since 2000, with consequent pressures on TEO staffing. In addditon to rapid growth in the wānanga, there was substantial growth in the Institutes of Technology and Polytechnics (ITP) sub-sector, and university enrolments also increased over the period. Much of the growth in student enrolments occurred at the sub-degree level, but some also occurred in areas affecting members of the tertiary workforce who were PBRF-eligible.[19]

[19] Decreased enrolments at colleges of education are the result of the merger of two colleges of education with universities in 2004.

Figure 0: Number of student* enrolments by sub-sector, 2000- 2006



	2000	2001	2002	2003	2004	2005	2006
Universities	139,112	145,890	154,381	161,399	164,660	168,333	165,571
ITPs	127,686	130,158	143,773	170,261	190,989	212,634	214,394
Colleges of Education	14,394	14,062	13,692	13,832	14,247	6,990	6,908
Wananga	4,251	16,456	43,359	65,178	69,768	62,200	48,842

Source: Ministry of Education, see: http://www.educationcounts.govt.nz/statistics/tertiary_education/participation/Provider-based_enrolments.xls#ENR.34!A1

Note

* Includes domestic and international students.

Growth in both domestic and international student enrolments may have created pressures for academic staff to focus on teaching rather than research in this period. It may have created opportunities for relatively rapid growth in the tertiary academic workforce. How these opportunities and pressures affected Māori and Pacific Peoples researchers is not known, but the PBRF data will reflect some of these changes as well as any influenced by the introduction of the PBRF.

1.9.4 Structural changes in the tertiary sector

Between 2003 and 2006, a number of structural changes in the tertiary sector occurred that were likely to have effects on Māori and Pacific Peoples staff. These structural shifts affected the employment and employment conditions of academic staff members. Therefore these changes are likely to have affected the movements of Māori and Pacific Peoples researchers in and out of the PBRF 2003 - 2006.

Auckland College of Education merged with the University of Auckland in 2004, resulting in large numbers of education staff joining the university over a short period.

Wellington College of Education merged with Victoria University of Wellington in 2005 with similar effects to the merger in Auckland.

In addition, the remaining two colleges of education began preparations for their own mergers with universities.

Te Wānanga o Aotearoa underwent a significant staffing review, resulting in fluctuating numbers of full-time academic staff and consequently, the number of PBRF-eligible staff.

1.9.5 Timing and other aspects of the second PBRF quality evaluation

Designers of the PBRF chose to have a partial quality evaluation in 2006 in recognition of the immense amount of work involved in putting together EPs for all academic staff members and the relatively short time since the 2003 evaluation. Accordingly, in 2006, TEOs were able to carry over quality categories from 2003 without re-evaluation. Those staff whose TEOs believed they might receive better quality categories in 2006 had new EPs submitted, and any staff member whose TEO transferred them to a subject with a higher subject weighting was required to submit a new EP if they sought a funded quality category in the new subject. Over a third (37 percent) of the staff from 2003 carried over their scores in 2006. Researchers who received strong scores in 2003 were less likely to have EPs re-submitted by their TEOs in 2006. This has technical implications for analysis of PBRF results in particular.[20]

The short time period between the first and second quality evaluations also limited the ability of TEOs to alter their PBRF scores. The usual period between PBRF quality evaluations is intended to be six years, which would allow researchers a longer period to develop and present new research findings. The short time period between quality evaluations may have encouraged TEOs to focus their hiring on more established researchers rather than on junior researchers who were still developing their research programmes.

On the other hand, following the recommendation of the PBRF Sector Reference Group in 2005, the New and Emerging (NE) researcher category was introduced in 2006. New eligibility criteria were established for both 'new' and 'emerging' researchers to recognise the distinct characteristics of these groups. The new Quality Category R(NE) carried a funding weight of 0, however the new category C(NE) carried a weighting of 1. The latter provided a route for less established researchers who nevertheless completed a doctoral degree or equivalent research outputs during the assessment period to be eligible for TEO funding.

These different factors may have influenced the experiences of Māori researchers and, possibly, Pacific Peoples researchers as seen in the PBRF data.

1.10. Summary

This paper examines PBRF data, particularly staff census and EP data, to profile trends in the PBRF among participating Māori and Pacific Peoples researchers. The paper seeks to describe key aspects of the participation and performance of Māori and Pacific Peoples researchers by reviewing EP submissions, transitions into and out of the PBRF, demographic and academic profiles, access of the MKD Panel, and the nature of research outputs, quality score components, and final quality categories.

It is important to note that the three-year period that is the focus of this paper is a short time-frame in which researchers might raise their PBRF quality scores. It is likely that movements of researchers belonging to Māori and Pacific Peoples ethnic groups in to and out of the system between 2003 and 2006 had considerable impact on overall PBRF results among the two groups. The next quality evaluation in 2012, as a full evaluation, is likely to provide even better information to explore trends further.

Finally, this paper traces shifts in the participation and results of Māori and Pacific Peoples researchers that cannot definitively be said to be caused by the system itself. The extent to which changing patterns among those groups of researchers between 2003 and 2006, were driven by the PBRF or broader external trends is not measured here. The PBRF may have

[20] See Appendix for data methodology and how this issue was managed.

caused some changes, but also reflects other shifts within the system, and wider contextual factors.

1.11. Paper structure

Section 2 of this working paper profiles PBRF researchers by ethnicity, and in doing so provides context for the focused analysis on Māori and Pacific Peoples researchers.

Next the two main sections, Sections 3 and 4, profile Māori and Pacific Peoples researchers and results in the 2003 and 2006 Quality Evaluations. These sections of the paper compare the profile of each researcher group in 2003 and 2006 to identify shifts between the quality evaluation rounds, and information about all PBRF researchers is provided for context. Points of comparison between Māori and Pacific Peoples researchers are made where considered useful. For the most part, however, the paper deals with the different ethnic groups of PBRF researchers separately.

Finally, the two main sections are summarised and the implications for the core questions of this paper are discussed. Areas for further research are also identified.

2 Overview of PBRF Researchers and Performance 2003 – 2006

This paper has a particular focus on ethnicity, specifically on Māori and Pacific Peoples researchers in the PBRF. To give context to the focused analysis of these ethnic groups in Sections 3 and 4, the current section profiles all PBRF-eligible researchers by ethnicity, and provides detail information about the ethnic composition of Māori and Pacific Peoples researchers in the PBRF specifically.

To give context for later comparisons between Māori or Pacific Peoples researchers, and all PBRF researchers, this section also provides tables of highlights on the participation and results of Māori, Pacific Peoples, and all PBRF researchers respectively. A further table highlights the movements of all PBRF researchers into and out of the PBRF across the two Quality Evaluations. This is intended to frame the analysis of similar data for Māori and Pacific Peoples researchers in later sections of this paper.

Finally, this section also overviews 2003 and 2006 RDC data by ethnicity.

2.1. Ethnic profile of PBRF researchers 2003 and 2006

In both the 2003 and 2006 rounds, the European/Pākēha ethnicity comprised the majority of PBRF researcher's ethnic group responses, at just under 64 percent (see Table 1). The next largest group of responses in both Quality Evaluations was the 'Other' category, although it is unclear what specific ethnic groups this might include.[21]

Table 1: Ethnic group responses of PBRF-eligible researchers, 2003 and 2006

Ethnic group responses	2003		2006	
	number	Proportion (%)	number	Proportion (%)
Māori	481	5.9	517	5.8
Pacific Peoples**	97	1.2	97	1.1
European/Pākēha	5,210	63.8	5,629	63.7
Asian***	426	5.2	524	5.9
Other	758	9.3	897	10.1
Not supplied	1,200	14.7	1,176	13.3
Total responses*	8,172	100.0	8,840	100.0
Total PBRF-eligible researchers	8,012	-	8,665	-

Source: PBRF census and EP data.

Note

* Count of total ethnic group responses, where PBRF participants were eligible to select up to 3. Therefore this total is slightly higher than the count of total PBRF-eligible researchers.

** This group includes Cook Island Māori, Fijian, Niuean, Samoan, Tokealuan, Tongan, and Other Pacific.

*** This group includes Chinese, Indian, and Other Asian.

Percentage columns may not sum to 100 percent exactly due to rounding.

[21] Both 'Not known' and 'Other' were categories explicitly available to PBRF participants.

The Māori ethnic group was the third largest group in 2003 with a 5.9 percent share. In 2006, Māori was the fourth largest group proportionately (5.8 percent), only slightly behind the Asian ethnic group (5.9 percent).

The Asian ethnic group comprised the fourth largest number of responses in 2003 with a 5.2 percent share, increasing to 5.9 percent in the 2006 quality evaluation round.

Table 2: Change in total ethnic group responses of PBRF researchers, 2003 and 2006

Ethnic group*	Ethnic group responses
	change in number 2003 – 06
Māori	36
Pacific Peoples**	0
European/Pākēha	419
Asian	98
Other	139
Not supplied	-24

Source: PBRF census and EP data.

Note

* Count of ethnic group responses, therefore slightly higher than the count of distinct participants.

** Group includes Cook Island Māori, Fijian, Niuean, Samoan, Tokealuan, Tongan, and Other Pacific.

*** Group includes Chinese, Indian, and Other Asian.

The Pacific Peoples group, encompassing Cook Island Māori, Fijian, Niuean, Samoan, Tokelauan, Tongan, and Other Pacific ethnic groups, made up the smallest proportions of all PBRF researchers in 2003 and 2006. These ethnic groups comprised a 1.2 percent share of the ethnicities specified in the first round, decreasing slightly in the second round to 1.1 percent.

Notwithstanding an increase in the number of distinct PBRF researchers, from 8,012 in 2003 to 8,665 in 2006, the overall composition of ethnic groups represented by those participants remained stable, most noticeably for the Māori, Pacific Peoples and European/Pākēha groups. Conversely, the Asian and 'Other' groups increased slightly as a proportion of all participants across the two Quality Evaluations.

However, within the Pacific Peoples group there were several marked shifts in the ethnic composition 2003 – 2006 of different groups. 34 percent of Pacific ethnic group responses in 2003 were Samoan, yet only 14 percent of Pacific Peoples researchers identified with this ethnic group in 2006. While much smaller numbers overall, total responses for Cook Islands Māori, Nuiean, and Tokealuan also decreased across Quality Evaluations. While it is possible some of this shift is accounted for by the increase in the 'Other Pacific Island' group

between the two years, from 32 percent of all responses in 2003 to 57 percent in 2006, it is unclear why this shift happened (see Table 3).

Table 3: Pacific Peoples researchers' ethnic group responses, 2003 and 2006

Ethnic group responses of Pacific Peoples researchers	2003 proportion (%) n=97	2006 proportion (%) n=97
Cook Islands Maori	5.2	2.1
Fijian	7.2	10.3
Niuean	4.1	2.1
Samoan	34.0	14.4
Tokelauan	4.1	1.0
Tongan	13.4	13.4
Other Pacific Island	32.0	56.7

Source: PBRF census and EP data.

2.1.1 Multiple ethnicity holders

Māori and Pacific Peoples researchers were more likely to identify with multiple ethnic groupings than PBRF participants of other ethnic groups.

For example, of the 482 individual PBRF-eligible researchers who identified themselves as New Zealand Māori in the 2006 round, over one fifth (104 participants or 21.6 percent) identified with Māori and one other ethnic group, and several researchers identified with Māori and two other ethnic groups.

Researchers identifying as Pacific Peoples were also more likely than people of other ethnic groups to identify with multiple ethnic groups. In 2006, nearly a quarter (23.4 percent) of Pacific Peoples researchers identified with two distinct ethnic groups, and several with three.

While the numbers are too small to have a marked effect on counts overall, it is worth noting that a small number of participants identified with both Māori and Pacific Peoples ethnic groups, namely five in 2003 and six in 2006.

2.2. Highlights on PBRF researchers by ethnicity

For both the 2003 and 2006 quality evaluation rounds, the following three tables highlight selected information on three different groups of PBRF researchers - all PBRF, Māori and Pacific Peoples. The tables show some similarities across all three groups in both rounds. The vast majority of PBRF researchers were located in the university sub-sector, for example, and the majority were also FTE employees.

However, the tables also show some key differences between the three groups, most notably the composition by gender, age, sub-sector and final quality category results for each. These similarities and differences are the focus for Sections 3 and 4 of this paper.

Table 4: Highlights on all PBRF researchers, 2003 and 2006

All PBRF Researchers		2003	2006
Gender	Female	3,327	3,592
	Male	4,685	5,072
Total		**8012**	**8665**[⊥]
Sub-sector	College of Education	572	211
	Polytechnic/Institute of Technology	484	1,393
	Private Training Establishment	111	144
	University	6,775	6,808
	Wānanga	70	109
Age Band*	34 or less	1,034	947
	35-44	2,319	2,337
	45-54	2,566	2,775
	55-64	1,774	2,052
	65+	159	296
Mean Age*		*47*	*48*
FTE	< 0.25	0	0
	0.25 - 0.49	254	238
	0.50 - 0.74	684	671
	0.75 - 1	6,986	7,657
Mean FTE		*0.93*	*0.93*
Subject Weighting	1	3,815	4,048
	2	2,659	2,916
	2.5	1,538	1,701
Final Quality Category	A	443	629
	B	1,802	2,166
	C	2,494	2,138
	C(NE)		825
	R	3,273	1,964
	R(NE)		943

Source: PBRF census and EP data.

Note

[⊥] Includes Invalid Response.

* Excludes invalid responses. Age bands are grouped individual responses and mean ages are calculated from individual responses.

Table 5: Highlights on Māori researchers, 2003 and 2006

Māori Researchers		2003	2006
Gender	Female	257	280
	Male	191	202
Total		**448**	**482**
Sub-sector	College of Education	61	23
	Polytechnic/Institute of Technology	33	73
	Private Training Establishment	18	6
	University	301	291
	Wānanga	35	89
Age Band*	34 or less	113	89
	35-44	132	148
	45-54	118	152
	55-64	66	72
	65+	13	18
Mean Age*		*44*	*45*
FTE	< 0.25	3	5
	0.25 - 0.49	16	13
	0.50 - 0.74	37	39
	0.75 - 1	392	425
Mean FTE		*1*	*1*
Subject Weighting	1	317	347
	2	88	89
	2.5	43	46
Final Quality Category	A	10	13
	B	52	55
	C	114	102
	C(NE)	0	35
	R	272	153
	R(NE)	0	124

Source: PBRF census and EP data

Note

* Excludes invalid responses. Age bands are grouped individual responses and mean ages are calculated from individual responses.

Table 6: Highlights on Pacific Peoples researchers, 2003 and 2006

Pacific Peoples Researchers		2003	2006
Gender	Female	50	44
	Male	40	50
Total		**90**	**94**
Sub-sector	College of Education	17	3
	Polytechnic/Institute of Technology	5	16
	Private Training Establishment	2	3
	University	64	69
	Wānanga	2	3
Age Band**	34 or less	35	34
	35-44	25	32
	45-54	8	15
	55-64	1	2
	65+	1	1
Mean Age*		*42.7*	*46.1*
FTE	< 0.25	1	3
	0.25 - 0.49	4	4
	0.50 - 0.74	7	8
	0.75 - 1	78	79
Mean FTE		*0.92*	*0.9*
Subject Weighting	1	55	66
	2	18	11
	2.5	17	17
Final Quality Category	A	1	3
	B	8	8
	C	20	24
	C(NE)	0	12
	R	61	33
	R(NE)	0	14

Source: PBRF census and EP data

** Excludes invalid responses. Age bands are grouped individual responses and mean ages are calculated from individual responses.

2.3. Transitions of PBRF researchers 2003-2006

Table 7 overviews the transitions of researchers in to, across and out of the PBRF across the 2003 and 2006 Quality Evaluations.

For those researchers who were PBRF eligible in 2003, TEOs had the opportunity to choose whether researchers' scores would be re-evaluated in 2006 or carried over. Forty percent of researchers whose EPs were submitted in 2003 were selected to be re-evaluated in 2006.

Twenty-nine percent (2,341) of the total 2003 entrants exited the PBRF by 2006. The majority of exiters were researchers whose EPs were not submitted in 2003.

An additional 2994 PBRF-eligible researchers entered the 2006 Quality Evaluation. Of those entrants, thirty-eight percent of did not have EPs submitted by their TEOs.

Table 7: Movements of 2003 PBRF researchers into and out of the 2006 Quality Evaluation

2003 Entrants	2006		
	Researcher group	number	Proportion (%)
EP submitted	Re-evaluated	2,312	40.1
	Carry-over	2,270	39.3
	Exiter	1,188	29.0
	Total	5,770	100.0
No EP submitted	Re-evaluated	362	16.1
	Carry-over	727	32.4
	Exiter	1,153	51.4
	Total researchers	2,242	100.0

Source: PBRF census and EP data

2.4. Research degree completions

Table 8 outlines the proportion of RDCs by ethnic group in 2003 and 2006. The proportions are based on annual count data for each year.

From 2003 to 2006, there was an increase in the number of RDCs for most ethnic groups. The exception was the number of completions in the 'Other' ethnic group category that declined slightly across the period.

Table 8: Proportion22 of RDCs by ethnicity, 2003 and 2006

	2003		2006	
Ethnic group*	**number**	**proportion (%)**	**number**	**proportion (%)**
NZ Māori	131	5.8	144	5.9
Pacific Peoples **	37	1.6	52	2.1
European/Pākēha	1,207	53.4	1,296	52.7
Asian ***	349	15.4	407	16.5
Other ****	276	12.2	269	10.9
Not supplied	259	11.5	293	11.9
Total	2,259	100.0	2,461	100.0

Source: eSDR and TFS, as at January 2008.

Note

* Time constraints restricted this analysis to existing data, where completions were nominated one ethnicity variable according to ethnic prioritisation. This methodology for ethnicity data is being phased out in line with current official statistics collections policy (Statistics New Zealand).

** Group includes Cook Island Maori, Fijian, Niuean, Samoan, Tokelau, Tongan, and Other Pacific.

*** Group includes Chinese, Indian, and Other Asian.

**** Group includes international students.

Percentage columns may not sum to 100 percent due to rounding.

Although the number of RDCs increased from 2003 to 2006 among the European/Pākēha group, the proportion of total RDCs in this group declined proportionately over this period, while the proportions of RDCs for some other ethnic groups grew more quickly.

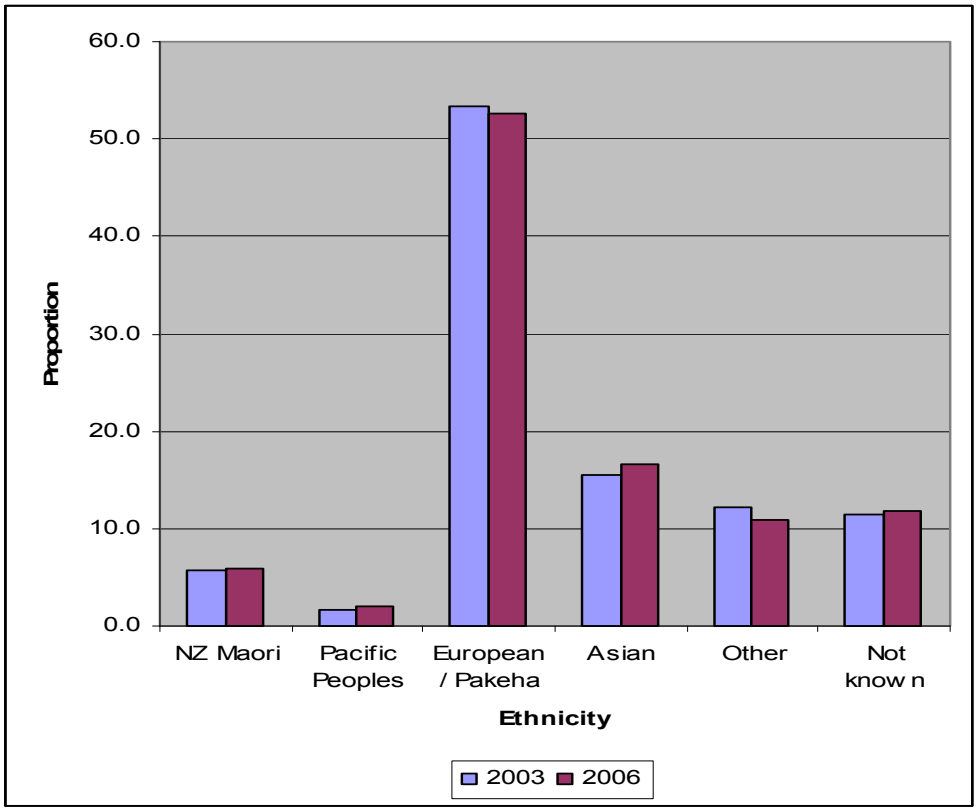
The number of research-based degree completions among the Asian and Pacific Peoples ethnic groups increased, albeit the numbers for the Pacific Peoples category increased from a low base. The slight decrease in the number of completions in the 'Other' ethnic group may have contributed to the rise in RDCs identified in the 'Not supplied' group.

Figure 1 presents the RDC proportions in Table 8 by ethnic group, for 2003 and 2006.

[22] 2003 RDCs data has been revised to incorporate updated completions data provided by TEOs. Therefore historical data presented here may differ to previous publications as, for example, data supplied on 2003 completions is likely to be more up to date than data supplied on 2006 completions. Note also that comparisons over a three year period obscure the effects of annual changes.

[23] 2003 RDCs data has been revised to incorporate updated completions data provided by TEOs. Therefore historical data presented here may differ to previous publications as, for example, data supplied on 2003 completions is likely to be more up to date than data supplied on 2006 completions. Note also that comparisons over a three year period obscure the effects of annual changes.

Figure 1: RDCs by ethnicity, 2003 and 2006



Source: eSDR and TFS, as at January 2008.

3 Profile of Māori Researchers in the PBRF, 2003 - 2006

This section profiles Māori researchers who participated in the PBRF Quality Evaluations in 2003 and 2006. The profile includes descriptions of the demographic and academic characteristics of Māori researchers in the PBRF, the nature of EPs submitted, and of Māori researchers' results.

Two central aspects of the description of Māori researchers and EPs within the PBRF are descriptive summaries of the 2003 and 2006 PBRF data and the identification of any shifts, and where possible, to identify any sub-sector shifts. In addition to data on Māori researchers and their EPs, data is also provided for the whole of the PBRF, to provide context in which to consider the profile of Māori researchers.

3.1. EP submissions

Overall, lower proportions of Māori researchers participated in the 2003 and 2006 Quality Evaluations, of all those who were eligible, compared with the proportions for all PBRF-eligible researchers (see Table 9). Just over half (52 percent) of the 448 eligible Māori researchers submitted EPs, compared with 72 percent of all eligible participants in the PBRF. The proportion of eligible Māori researchers for whom EPs were submitted was, however, much higher (74.9 percent) in 2006, mirroring an overall PBRF increase (to 86. 8 percent) in that year.

Table 9: Māori and all PBRF EPs of all eligible to submit, 2003 and 2006

	EPs of total eligible to submit	
	2003 Proportion (%)	2006 Proportion (%)
Māori	52.0	74.9
All PBRF	72.0	86.8

Source: PBRF census and EP data

3.2. Transitions of Māori researchers between 2003 and 2006

In 2003, TEOs submitted EPs for 233 Māori researchers in total. Of those Māori researchers, 163 had their scores carried over in the 2006 round, while 111 had their EPs submitted to be re-evaluated. Thirty-eight percent (169) of Māori PBRF researchers in 2003 were exiters in 2006. The majority of those exiters had not had an EP submitted in 2003 (see Table 10). In addition, there were 208 Māori PBRF entrants in 2006. Fifty-eight percent of those entrants had no EP submitted.

Table 10: Transitions of Māori researchers from 2003 to 2006

2003 Māori PBRF Entrants	2006		
	Researcher category	Number	Proportion (%)
EP submitted	Re-evaluated	85	36.5
	Carry-overs	92	39.5
	Exiters	56	24.0
	Total	233	100.0
No EP submitted	Re-evaluated	29	13.5
	Carry-over	73	34.0
	Exited	113	53.0
	Total	215	100.0

Source: PBRF census and EP data

3.3. Māori researchers by sub-sector

Overall, of those Māori PBRF-eligible researchers who participated in both 2003 and 2006 Quality Evaluations, there were very few (around 3 percent)[24] who changed sub-sector. There were, however, shifts in the proportions of Māori researchers located in different sub-sectors between 2003 and 2006 (see Table 11).

Table 11: Māori researchers by sub-sector, 2003 and 2006

	Māori researchers	
Sub-sector	2003 Proportion (%)	2006 Proportion (%)
College of Education	13.6	4.8
Polytechnic/Institute of Technology	7.4	15.1
Private Training Establishment	4.0	1.2
University	67.2	60.4
Wānanga	7.8	18.5
Total	100.0	100.0

Source: PBRF census and EP data

[24] This figure excludes Māori staff employed at Colleges of Education in 2003 and Universities in 2006 involved with the mergers of Auckland and Wellington Colleges of Education with universities.

The majority of Māori EPs submitted in 2003 (67.2 percent) and 2006 (60.4 percent) were by researchers in the university sub-sector, although the proportion in universities decreased relative to other sub-sectors in 2006.

The proportions of Māori EPs in other sub-sectors shifted even more noticeably between 2003 and 2006. For example, there was a decrease of EPs submitted through Colleges of Education. This may be in part explained by the mergers of those institutions into the university sub-sector, however, this is uncertain. Alternatively, the increased proportions of EPs submitted through polytechnics and institutes of technology and wānanga in 2006 reflect the entrance of a much larger number of those two TEO types in the second Quality Evaluation. In 2006, there were an additional 16 Māori EPs submitted through the polytechnics and institutes of technology sector as well as an additional 20 in the wānanga sector.

3.4. Demographic and academic profile of Māori researchers

3.4.1. Age

In both Quality Evaluations, the mean age of Māori researchers was younger than the mean age of all PBRF researchers. However, as shown in Table 12 below, the difference was slightly less marked in 2006. The table highlights this pattern in more detail, which contrasts the age spread of Māori PBRF researchers and all PBRF researchers respectively.

The age spread of Māori researchers was fairly similar across Quality Evaluations. There was a shift, however, among younger researchers in the 34 years or less group. This group comprised just over a quarter (25.2 percent) of all Māori researchers in 2003, however, this dropped to 18.5 percent in 2006 (see Table 12). The table also shows the increase (5.2 percent) in the proportion of Māori researchers who were between the ages of 45 and 54, and increased proportions in all other age bands between 2003 and 2006.

Table 12: Māori and all PBRF researchers by age band, 2003 and 2006

	Māori		All PBRF	
	2003 proportion (%)	**2006 proportion (%)**	**2003 proportion (%)**	**2006 proportion (%)**
Age band	n= 448	n= 482	n= 8,012	n= 8,665
34 or less	25.2	18.5	12.9	10.9
35-44	29.5	30.7	28.9	27.0
45-54	26.3	31.5	32.0	32.0
55-64	14.7	14.9	22.1	23.7
65+	2.9	3.7	2.0	3.4
Not supplied	1.3	0.6	2.0	3.0
Total	100.0	100.0	100.0	100.0

Source: PBRF census and EP data

The age spread among Māori researchers was different to the overall pattern across the whole of the PBRF. Most clear are much lower proportions (12.9 percent in 2003

and 10.9 percent in 2006) of all PBRF researchers in the youngest age band. There were similar proportions for Māori and all PBRF in the 35-44 age band, both in 2003 and 2006. While there was a higher proportion of 45-54 year old researchers across the wider PBRF in the first round, the proportions for both groups were very close in the second. Similarly, the proportion of Māori researchers in the 65 years and above age group was slightly higher among Māori researchers in the first round, yet fairly comparable (3.7 percent and 3.4 percent respectively) with the overall spread in 2006. A much smaller proportion of Māori researchers compared to all PBRF comprised the 55-64 age group. The change in the pattern of age groups for Māori from 2003 to 2006 can not be attributed entirely to band creep, but also reflects the age groups of entrants and those who exited the PBRF. Of those who exited the PBRF, 31 percent were aged 34 years or less and 27 percent were aged 35-44 years. This was similar to entrant data (29 percent and 28 percent respectively). However, while 24 percent (40) of those who exited were aged 45-54, 30 percent (62) of those who entered were in this age group.

3.4.2. Gender

Female researchers comprised a considerable majority of all Māori researchers in both rounds, namely 57.4 percent in 2003 and 58.1 percent in 2006. This compares with the overall pattern in the PBRF, where the gender composition was almost exactly the reverse. Across all PBRF participants, male researchers comprised a majority of 58.5 percent in both years (see Figure 2).

While the gender composition remained stable across the whole of the PBRF between rounds, the gap in gender composition amongst Māori researchers widened slightly between the two rounds. As shown in Table 13 below, the 9 percent increase in the number of female Māori participants 2003 – 06 also exceeded the 5.8 percent increase in the number of their male Māori counterparts. Of those entering the PBRF in 2006, only 38 percent were male. A similar proportion of those exiting were male.

Figure 2: Māori and all PBRF researchers by gender, 2003 and 2006

Source: PBRF census and EP data

Table 13: Change in Māori and all PBRF researchers by gender, 2003 – 2006

	2003-2006 change in number		2003-2006 % change	
Gender	**Māori**	**All PBRF**	**Māori**	**All PBRF**
Female	23	265	9.0	8.0
Male	11	387	5.8	8.3
Total*	34	653	7.6	8.2

Source: PBRF census and EP data

Note

* Total figures exclude one participant for whom gender was unspecified in 2006.

This trend of increasing female gender composition amongst Māori researchers is more marked with a focus on the university sub-sector, where the majority of Māori researchers in PBRF were located.

Figure 3 below demonstrates the contrasting gender proportions between Māori researchers and all PBRF researchers in the university sub-sector in 2003 and 2006. Again, female Māori researchers are in the majority, and again, the trend appears to be a widening gap. Within the ITP sub-sector, a similar situation applies, although in the other sub-sectors, the gender split is equal.

Figure 3: Māori and all PBRF university researchers by gender, 2003 and 2006

Source: PBRF census and EP data

3.4.3. Academic position[25]

The large majority of Māori researchers who participated in the PBRF in both rounds were in Lecturer (or equivalent) positions, including Assistant and Senior levels. Altogether, Māori researchers in Lecturer positions comprised 88.6 percent of all Māori PBRF researchers in the 2003, and 84.1 percent in 2006, and therefore the proportion was relatively stable across Quality Evaluations.

Between 2003 and 2006, there was however, a shift in the composition of Māori researchers by academic position at different levels of experience in their academic

[25] For the purpose of this report, the wide range of job titles in the PBRF census data are grouped into seven positions by equivalency. See Appendix for groupings.

career (see Table 14). In particular, the proportion of researchers in early career Assistant Lecturer positions dropped from 16.7 percent in 2003 to 5.2 percent in 2006. Yet the proportion in Lecturer positions increased by only seven percentage points across years. The proportion of Māori in later career Associate Professor or Professor positions rose from 4.4 percent in 2003 to 6.6 percent in 2006, albeit these figures represent fairly small numbers of people. The large decrease in Assistant Lecturer positions may be accounted for, in part, by the number of researchers in equivalent positions in 2003 who exited the PBRF in 2006.

Table 14: Māori and all PBRF researchers by academic position*, 2003 and 2006

	Māori		All PBRF	
Academic position*	**2003 proportion (%)** n = 448	**2006 proportion (%)** n = 482	**2003 proportion (%)** n = 8,012	**2006 proportion (%)** n = 8,665
Assistant Lecturer	16.7	5.2	7.4	4.8
Lecturer	50.7	57.5	34.2	33.7
Senior Lecturer	21.2	21.4	35.2	34.5
Associate Professor	2.2	2.9	8.6	9.9
Professor	2.2	3.7	7.2	9.6
Other Administrative/Leadership	5.4	5.8	5.5	3.8
Other Staff Position	1.6	3.5	1.9	3.7
Total	100.0	100.0	100.0	100.0

Source: PBRF census and EP data

Note

* Categories derived from a wide range of job titles, grouped by equivalency (see Appendix).

The proportion of Māori researchers across all academic positions contrasts with the proportions of researchers in those positions across the whole of the PBRF, and this disparity is most marked at the entry level on the one hand, and the more advanced level academic positions on the other. For example, the proportions of Māori (16.7 percent) and all PBRF (7.4 percent) participants at Assistant Lecturer level were significantly different in the 2003 round, although the proportions were equal at around 5 percent each in 2006. Additionally, at the level of Lecturer, there was also a much greater proportion of Māori researchers (50.7 percent) in 2003 than for the PBRF overall (34.2 percent). Just over a fifth (21.2 percent in 2003 and 21.4 percent in 2006) of Māori researchers were in positions equivalent to Senior Lecturer, compared with well over a third (35.2 and 34.5 percent respectively) of all researchers across the PBRF. In both years 2.2 percent of Māori researchers were in positions of Associate Professor and Professor, with small increases to 2.9 percent and 3.7 percent respectively in 2006. This compares with just under ten per cent of all PBRF researchers in each position type in 2006.

3.4.4. New and Emerging (NE) researchers

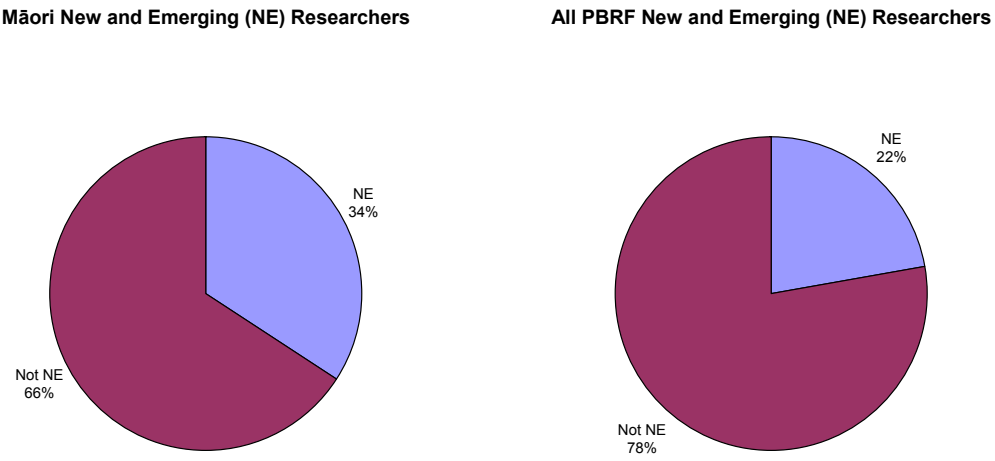
The NE Researcher categories were introduced in 2006.[26] NE researchers are identified as those who were first appointed to a PBRF-eligible or equivalent position on or after 1 January 2000 or whose conditions of employment changed on or after 1 January 2000 to include a requirement to undertake research or degree-level teaching.

In 2006, over a third (34.2 percent) of all Māori researchers in the PBRF were identified as NE.[27] This compared with just over a fifth (22.2 percent) of NE researchers across the whole PBRF (see Figure 4).

[26] Analysis of this aspect of the data is therefore limited to 2006 data. Owing to movement of staff in and out of the two PBRF quality evaluations, particularly amongst early career researchers, a decision was made not to backfill 2006 NE data to identify, by proxy, 2003 NE researchers.

[27] It is possible that there was a small undercount of Māori NE researchers among EPs assessed by the MKD Panel, as the Panel considered some that seemed to fit the criteria for NE, were not identified as such (MKD Panel Report, 2007, p. 6).

Figure 4: Māori and all PBRF NE researchers, 2006



Given the relatively high proportion of Māori researchers at the start of their career, it would be expected that the majority of Māori researchers were in less senior academic positions. However, Table 15 suggests that the spread of NE Māori researchers across academic positions contrasted with the broader pattern for all PBRF researchers.

Table 15: Māori and all PBRF NE researchers in different academic positions, 2006

Academic position*	Māori NE researchers as a proportion of all in position (%)	All PBRF NE researchers as a proportion of all in position (%)
Assistant Lecturer	36.0	57.4
Lecturer	47.3	42.2
Senior Lecturer	12.6	10.2
Associate Professor	14.3	0.9
Professor	0.0	0.1
Other Administrative/Leadership	21.4	13.4
Other Staff Position	23.5	29.6

Source: PBRF census and EP data

Note

* Categories derived from a range of job titles and grouped by equivalency (see Appendix).

For instance, a higher proportion of Māori researchers in Lecturer positions (47.3 percent) were identified as NE than the proportion in Assistant Lecturer positions (36 percent). Across the whole of the PBRF, the opposite was true, with well over half (57.4 percent) of Assistant Lecturers classed as NE, and just under half (42.2 percent) of Lecturers. Moreover, within other academic positions at the more senior levels, the proportions of NE at each level are generally higher amongst Māori

researchers than is the case for all PBRF researchers. Again though, the percentages for Māori reflect much smaller numbers of individual people.

3.5. Māori researchers' EPs

This next section provides information about the EPs submitted by Māori researchers in the PBRF, including the spread of EPs across panels and subjects, and the types of research outputs included within those EPs. In addition, some key figures are provided on cross-referrals to and from the Māori Knowledge and Development (MKD) Panel.

3.5.1. Panels and subjects

The majority of Māori researchers' EPs in both Quality Evaluations were assessed by the MKD Panel and the Education Panel (33.6 percent and 24.3 percent in 2006, respectively). Three other panels that assessed a high number of the overall Māori EPs, which each assessed similar proportions of Māori EPs in both rounds, were the Creative and Performing Arts Panel (9.3 percent), the Social Sciences and Other Cultural/Social Sciences Panel (6.4 percent) and the Medicine and Public Health Panel (6 percent).

The lowest proportions of Māori researchers' EPs submitted in 2003 and 2006 were to the Panels: Biological Sciences; Business and Economics; Engineering Technology and Architecture; Mathematical and Information Sciences and Technology; and Physical Sciences. Overall, the proportions of EPs assessed by the various panels remained steady 2003-2006. There was, however, a decrease in the number of Māori researchers' EPs assessed by the Health panel, from 6.9 percent in 2003 to 3.9 percent in 2006. This compares with steady numbers of EPs to this panel in both years for all PBRF researchers. Of the Māori researchers whose EPs were assessed by the Medicine and Public Health Panel in both rounds, most (23 out of the 29) Māori researchers submitted EPs in the subject Public Health. The remaining researchers submitted in the subjects Clinical Medicine and Biomedical respectively. Table 16 illustrates that the proportion of Māori researchers' EPs in each Panel remained fairly stable across 2003 and 2006.

Table 16: Māori and All PBRF EPs by panel and subject weighting, 2003 and 2006

		Proportion of Māori EPs (%)		Proportion of All PBRF EPs (%)	
Subject Weighting	**Panel**	**2003**	**2006**	**2003**	**2006**
1	Māori Knowledge and Development	29.2	33.6	1.9	2.2
1	Education	24.3	24.3	13.4	12.2
2	Creative and Performing Arts	8.0	9.3	5.7	7.0
1	Social Sciences and Other Cultural/Social Sciences	7.8	6.4	10.0	10.3
2	Health	6.9	3.9	8.3	8.4
1	Humanities and Law	6.5	4.1	11.1	10.2
2.5	Medicine and Public Health	6.5	6.0	8.7	8.6
1	Business and Economics	4.2	3.7	11.3	12.0
1	Mathematical and Information Sciences and Technology	2.5	2.5	7.9	7.8
1	Biological Sciences	2.0	3.1	9.3	8.9
2.5	Engineering Technology and Architecture	1.8	2.3	6.8	7.3
2	Physical Sciences	0.2	0.6	5.7	5.2
	Total	100.0	100.0	100.0	100.0

Source: PBRF census and EP data

The concentration of nearly 60 percent of Māori EPs in the MKD and Education subject areas in 2006 meant the majority of Māori EPs commanded a subject weighting of one, with implications for the amount of funding Māori researchers' EPs attracted overall (see Figure 5). The distribution of proportions of subject values was constant between 2003 and 2006. It differs from that of all PBRF participants with a larger proportion in subjects with a weighting of 1, and much smaller proportions in those with a weighting of 2 and 2.5.

Figure 5: Māori and all PBRF researchers' EPs by subject weighting, 2003 and 2006

Source: PBRF census and EP data

3.5.2. MKD Panel activity

In considering Māori researchers' EPs, it is useful to overview the activity of the MKD panel. In the 2003 Quality Evaluation, twenty EPs were transferred out of the MKD Panel and seven EPs were transferred into the MKD Panel. In the second round, the MKD Panel assessed three EPs transferred from other panels, and no EPs submitted to it were transferred out. EPs are transferred for reasons including, but not restricted to instances where: the primary subject area of research falls within the coverage of another panel; a conflict of interest exists within the primary panel; or, where relevant subject-area expertise may be located in a different panel.

Table 17: Transfers of EPs to and from MKD Panel, 2003 and 2006

Transfers	2003 count	2006 count
Transfers to MKD Panel	7	3
Transfers from MKD to other panels	20	0

Source: Tertiary Education Commission, Māori Knowledge and Development Panel Report, 2007.

In both 2003 and 2006 the MKD Panel provided additional advice to other panels, and also received additional advice from other panels. Of the 88 EPs assessed by MKD in 2006, 60 were cross-referred to other panels for additional assessment advice from those panels. A total of 12 EPs were sent to Specialist Advisors for further advice and assistance in the assessment of EPs (see Table 18).

Table 18: Cross-referrals from MKD Panel to other panels*, 2006

Cross-referral Panel	Number of cross-referrals
Social Sciences and Other Cultural/Social Sciences	14
Creative and Performing Arts	10
Education	9
Humanities and Law	8
Medicine and Public Health	6
Business and Economics	5
Health	3
Biological Sciences	2
Engineering Technology and Architecture	2
Mathematical and Information Sciences and Technology	1
Physical Sciences	0
Total	88

Source: Tertiary Education Commission, Māori Knowledge and Development Panel Report, 2007.

Note

* The number of cross-referrals includes only the cross-referrals that were assessed by a panel member of the cross-referral panel and excludes advice provided by panel members in the capacity of specialist advisors.

In 2006, the MKD Panel also received 57 cross-referrals from other panels, where those panels were able to utilise additional input from MKD Panel members. The number of cross-referral assessments that the MKD Panel provided to other panels is shown in Table 19 below by subject area.

Table 19: Requests for MKD cross-referral advice by panel and subject areas, 2006

Primary Panel	Subject area	Subject area weighting	Number of cross-referrals
Creative and Performing Arts	Visual arts and crafts	1	11
Medicine and Public Health	Public Health	2.5	9
Education	Education	1	8
Creative and Performing Arts	Music, literary arts and other arts	1	5
Humanities and Law	History, history of art, classics and curatorial studies	1	3
Social Sciences and Other Cultural/Social Sciences	Anthropology and Archaeology	1	3
	Psychology	1	3
Medicine and Public Health	Clinical medicine	2.5	2
Business and Economics	Management, Human Resources, Industrial Relations and other businesses	1	2
Social Sciences and Other Cultural/Social Sciences	Political Science, international relations and public policy	1	2
	Sociology, social policy, social work, criminology and gender studies	1	2
Engineering Technology and Architecture	Engineering and technology	2.5	1
Medicine and Public Health	Biomedical	2.5	1
Creative and Performing Arts	Design	2	1
Health	Nursing	2	1
Creative and Performing Arts	Theatre and dance, film, television and multimedia	1	1
Humanities and Law	English language and literature	1	1
Social Sciences and Other Cultural/Social Sciences	Human Geography	1	1
Total			57

Source: Tertiary Education Commission, Māori Knowledge and Development Panel Report, 2007.

There were 57 requests for advice from the MKD Panel in 2006. The majority of cross-referral advice provided by the MKD Panel to other panels in 2006 was given to the Visual Arts and Crafts (11), Public Health (9) and Education (8) Panels. This indicates that TEOs are choosing to submit researchers' EPs to discipline panels even when those EPs are eligible to submit to the MKD panel. This is particularly true where the discipline receives a higher weighting than the MKD panel.

While Māori EPs submitted to the Visual Arts and Crafts and Education as primary panels, had subject weightings equal to MKD, those submitted to Public Health would have been disadvantaged by the lower MKD subject weighting if they had been assessed by the MKD panel as the primary panel. This would also have been the case for those cross-referred EPs submitted in the subject areas of Design (1), Engineering and technology (1), Nursing (1), Biomedical (1), and Clinical Medicine (2).

3.5.3. Nominated research outputs (NROs)

Researchers participating in the PBRF were eligible to submit up to four nominated Research Outputs (NROs) and up to 30 other Research Outputs (ROs). The next section focuses on the former, specifically overall counts[28] for each NRO type. The following table shows the mean counts of NROs for Māori, with an all PBRF comparison. Table 20 highlights that the mean number of NROs (out of a possible four) submitted by Māori researchers was just over two in 2003, increasing to nearly two and a half in 2006. This compares with a higher mean number of NROs submitted per researchers across the whole of the PBRF, at just under three in 2003, and just over three in 2006.

Table 20: Mean NROs for Māori and All PBRF, 2003 and 2006[29]

	2003 NRO mean (1-4)	2006 NRO mean (1-4)
Māori	2.09	2.33
All PBRF	2.87	3.10

Source: PBRF census and EP data

Many of the most common Māori researchers' NROs in 2003 and 2006 were what might be described as more traditional academic outputs, such as Journal articles, book chapters, conference contributions and awarded theses. Nevertheless, also prevalent in the most common Māori researchers' NROs were arguably less traditional research activities, such as reports for external parties, and exhibitions, artefacts, oral presentation and performance (see Table 21).

[28] Note this report considers the composition of NROs across all participating researchers, where individual EPs may include up to four NROs each.

[29] All EPs with carry-over scores in 2006 did not require NROs to be submitted in 2006. However, for the purposes of this report, the NROs for carry-overs have been counted again in the 2006 totals. This may obscure any change in the types of research outputs produced by those researchers who carried over scores and therefore discretion is needed in any comparative interpretation between 2003 and 2006.

Table 21: The ten most common* NRO types among Māori EPs, 2003 and 2006

Order	2003	2006
1	Journal Article	Journal Article
2	Conference Contribution	Conference Contribution
3	Chapter in Book	Chapter in Book
4	Report for External Body	Report for External Body
5	Thesis	Exhibition
6	Exhibition	Authored Book
7	Authored Book	Awarded Doctoral Thesis
8	Oral Presentation	Artefact/Object
9	Composition	Awarded Research Masters Thesis
10	Performance	Performance

Source: PBRF census and EP data

Note

* Two unspecified categories, 'Blank' and 'Other' featured in the top ten in both years. However, it is unclear what these categories represent therefore they are excluded.

The top ten NRO types submitted in Māori researchers' EPs overall were similar to those submitted in all PBRF researchers' EPs (see Table 22). PBRF researchers' EPs, however, were more likely to include an Authored or Edited Book and be awarded a doctoral thesis as an NRO than were Māori researchers' EPs. The overall similarity between the two groups may be explained by the fact that the majority of Māori researchers (as for all PBRF researchers) are employed in universities which have particular expectations for research outputs.

Table 22: The ten most common* NRO types among all PBRF EPs, 2003 and 2006

Order	2003	2006
1	Journal Article	Journal Article
2	Conference Contribution	Conference Contribution
3	Chapter in Book	Chapter in Book
4	Authored Book	Authored Book
5	Thesis	Awarded Doctoral Thesis
6	Report for External Body	Exhibition
7	Edited Book	Report for External Body
8	Exhibition	Edited Book
9	Performance	Performance
10	Oral Presentation	Awarded Research Masters Thesis

Source: PBRF census and EP data

Note

* Two unspecified categories, 'Blank' and 'Other' also featured in the top ten across all the three groups in the table. It is unclear what these categories represent therefore they are excluded.

The list of ten most common NRO types among wānanga researchers' EPs, while reflecting smaller numbers of PBRF researchers, has a slightly different composition than the lists for Māori and all PBRF researchers' EPs, respectively (see Tables 21-23).[30]

Research outputs submitted within wānanaga researchers' EPs appear to have a different focus in those submitted from University sector EPs, for example. EPs submitted through wānanga PBRF researchers included the types: Exhibition; Artefact/Object; and Performance (at much higher levels than among Māori researchers' EPs) along with the more traditional Conference Contribution and Journal Article.

Table 23: The 10 most common* NRO types among wānanga researchers' EPs, 2006**

Order	NRO type 2006
1	Exhibition
2	Conference Contribution
3	Artefact/Object
4	Journal Article
5	Report for External Body
6	Chapter in Book
7	Performance
8	Authored Book
9	Awarded Research Masters Thesis
10	Awarded Doctoral Thesis

Source: PBRF census and EP data

Note

* Two unspecified categories, 'Blank' and 'Other' also featured in the top ten across all the three groups in the table. It is unclear what these categories represent therefore they are excluded.

** Figures are for all wānanga researchers, including a small proportion of non-Māori researchers.

Focusing on the 2006 figures (shown in Table 24), the proportions of the top four NROs among Māori researchers stand in marked contrast to the relative proportions across the PBRF generally. Journal Articles comprised almost a third (28.1 percent) of all Māori researchers' NROs, compared with half (50.1 percent) of all PBRF NROs. Conversely, the relative proportions of Conference Contribution, Chapter in Book, and Report for External Body all had considerably higher proportions among Māori researchers' EPs than among all PBRF EPs.

[30] Only one wānanga was involved in the 2003 PBRF Quality Evaluation, compared with two in 2006, therefore the second quality evaluation was chosen as a more indicative comparison.

Table 24: Selected NRO types among Māori and all PBRF researchers' EPs, 2006

	2006	
NRO types	Proportion of Māori NROs (%)	Proportion of all PBRF NROs (%)
Journal Article	28.1	50.1
Conference Contribution	15.7	11.4
Chapter in Book	9.9	6.8
Report for External Body	7.4	1.7
Exhibition	7.0	2.0

Source: PBRF census and EP data

Note

* Two unspecified categories, 'Blank' and 'Other' also featured in the top ten across all the three groups in the table. It is unclear what these categories represent therefore they are excluded.

3.6. Performance of Māori researchers

EPs submitted to the PBRF were evaluated in a three stage process.

Researchers were allocated points (between 0 and 7) for each of the three components of the EO – Research Output (RO), Peer Esteem (PE) and Contribution to the Research Environment (CRE).

A quality score is then determined by using a weighting system (RO – 70, PE – 15, CRE – 15) and adding the resultant scores. This score is then used to provide an initial placement into a Quality Category. The relationship between weighted score and Quality Category is shown in Table 25.

Table 25: Relationship between Weighted Quality Score and Final Quality Category

Total Weighted Score	Quality Category
600 – 700	A
400 – 599	B
200 – 399	C and C(NE)
Less than 200	R and R(NE)

Panels then take into account any other factors to determine holistically the final quality categories. Quality categories range from a high of A to the lowest R. Those who do not submit an EP are automatically given an R or R(NE). A category of C(NE) can be gained using completion of a doctoral degree or equivalent research in the assessment period as part of the research output. Additionally NE researchers are not required to supply evidence of PE or CRE.

3.6.1. Component scores

The quality scores discussed above are made up of the three component scores of between 0 and 7, namely RO, PE and CRE. This section looks at the performance of Māori researchers across these component areas, and maps the relationships of PE and CRE scores to RO scores.

Tables 26 and 27 show the mean component scores for Māori and all PBRF researchers respectively, and the difference across the two Quality Evaluations. The changes in component mean scores decreased for both Māori researchers and across the wider PBRF. The decreases in the means were more marked across Māori scores overall, with smaller decreases in PE and CRE scores across the PBRF relative to the decreases in Māori scores.

Table 26: Mean component scores of Māori researchers, 2003 and 2006

Component	2003 Mean (0-7)	2006 Mean (0-7)	Change in mean 2003-2006
RO	3.1	2.5	-0.6
PE	2.9	2.4	-0.5
CRE	2.5	2.1	-0.4

Source: PBRF census and EP data

Table 27: Mean component scores of all PBRF researchers, 2003 and 2006

Component	2003 Mean (0-7)	2006 Mean (0-7)	Change in mean 2003-2006
RO	3.6	3.4	-0.2
PE	3.1	2.9	-0.2
CRE	2.9	2.9	0.0

Source: PBRF census and EP data

Table 28 highlights the proportion of PE and CRE scores achieved by Māori researchers that were less than RO scores. In 2006 a lower proportion of Māori researchers' EPs (28 percent) received a PE score less than the RO score than in 2003 (38 percent).

Similarly, the proportion of Māori researchers' CRE scores lower than RO scores was also lower from 2003 to 2006.

The decreasing proportions in Māori researchers' PE and CRE scores mirror decreases in proportions for all PBRF researchers from 2003 to 2006.

Table 28: Relationship of Māori researchers' RO scores to PE and CRE scores, 2003 and 2006

	Māori		All PBRF	
	2003 Proportion (%)	2006 Proportion (%)	2003 Proportion (%)	2006 Proportion (%)
Relationship	n = 233*	n = 361*	n = 5,770*	n = 7,525*
RO > PE	38	28	51	41
RO > CRE	47	36	53	45

Source: PBRF census and EP data

Note

* The total number of researchers (n) in 2003 and 2006 excludes researchers who did not have EPs assessed. The 2006 figures include carry-overs from the 2003 Quality Evaluation.

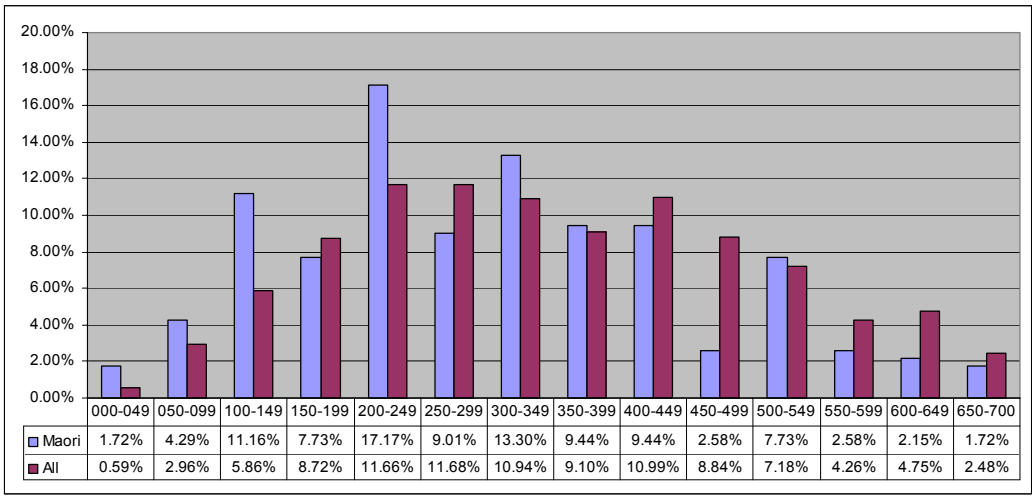
3.6.2. Quality scores

Figures 6 and 7 illustrate the distributions of quality scores among Māori and all PBRF researchers in the 2003 and 2006 Quality Evaluations.

In the 2003 year, the biggest concentrations of Māori researchers' scores fell in the ranges 200-399 (provisional 'C' Quality Category) and less than 200 (provisional 'R' Quality Category), or about 25 percent and 49 percent of all Māori researchers' scores respectively. The largest proportion fell in the 200-249 band or just within the provisional 'C' category.

The proportions of Māori researchers' scores in all portions of the less than 200 range were consistently higher than the proportions of scores in those portions across the whole of the PBRF, with the exception of the upper portion. In the 200-399 range, the Māori researchers' scores were generally higher than the proportions across the whole of the PBRF. A much higher proportion of Māori researchers' scores were in the 200-249 (that is, just in the provisional 'C' Quality Category) than across the whole PBRF. In the range 400-599, Māori researchers' scores were generally lower than proportions across all PBRF scores. This compares with much smaller proportions of Māori researchers' scores compared with all PBRF in the higher score ranges (600 – 700).

Figure 6: Distribution of quality scores among Māori and all PBRF researchers, 2003*



	000-049	050-099	100-149	150-199	200-249	250-299	300-349	350-399	400-449	450-499	500-549	550-599	600-649	650-700
Maori	1.72%	4.29%	11.16%	7.73%	17.17%	9.01%	13.30%	9.44%	9.44%	2.58%	7.73%	2.58%	2.15%	1.72%
All	0.59%	2.96%	5.86%	8.72%	11.66%	11.68%	10.94%	9.10%	10.99%	8.84%	7.18%	4.26%	4.75%	2.48%

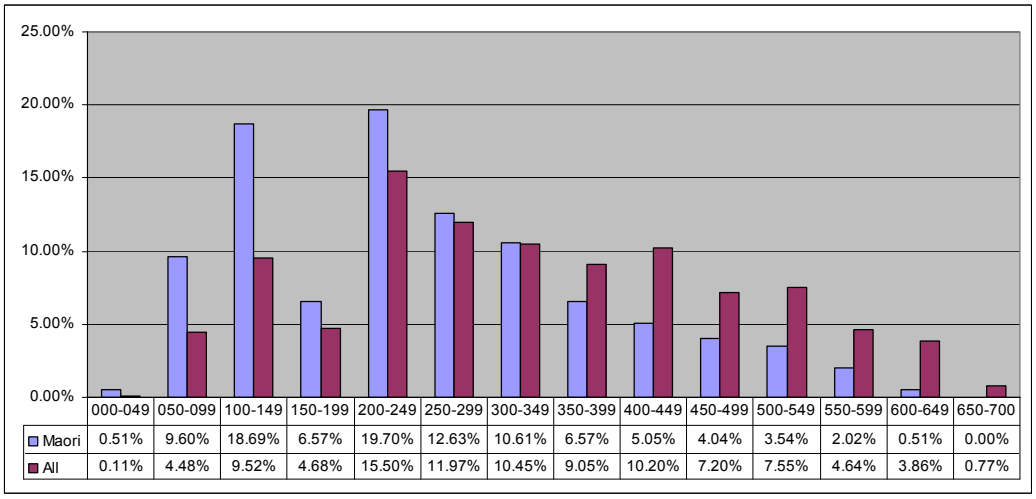
Source: PBRF census and EP data

Note

* Where no EP was submitted, participants were given a nominal value of zero. These participants are not included in this graph.

In 2006, the distribution of Māori researchers' quality scores looked different to that in 2003. For example, the proportions in the 50-99, 100-149, and 200-249 ranges grew substantially compared from 2003. In all other ranges proportions fell. In 2006, almost 40 percent of Māori researchers' scores were in the less than 200 range. The proportions in the provisional 'B' range were also smaller than in 2003 with less than 1 percent in the provisional 'A' range.

Figure 7: Distribution of quality scores among Māori and all PBRF researchers, 2006*



	000-049	050-099	100-149	150-199	200-249	250-299	300-349	350-399	400-449	450-499	500-549	550-599	600-649	650-700
Maori	0.51%	9.60%	18.69%	6.57%	19.70%	12.63%	10.61%	6.57%	5.05%	4.04%	3.54%	2.02%	0.51%	0.00%
All	0.11%	4.48%	9.52%	4.68%	15.50%	11.97%	10.45%	9.05%	10.20%	7.20%	7.55%	4.64%	3.86%	0.77%

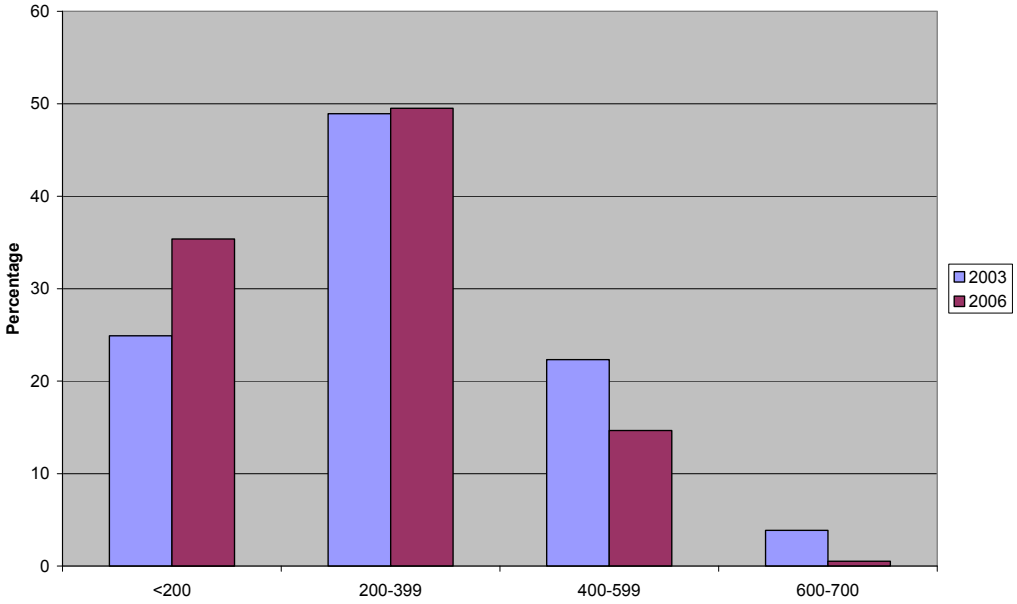
Source: PBRF census and EP data

Note

* Where no EP was submitted, researchers were given a nominal value of zero. These researchers are not included in this graph. Researchers who carried over their score from 2003 are included in this graph.

The distribution of Māori quality scores illustrated in Figures 6 and 7 suggests an overall decline in quality scores from 2003 to 2006. Among both Maori and all PBRF researchers' scores, the proportions that fell in the provisional 'B', and 'A' Quality Categories decreased across the Quality Evaluations. Conversely, scores in the provisional 'R' category increased for both groups (although at much higher levels among Māori researchers' scores). The proportion of Māori researchers' scores in this range was twice that of all PBRF researchers' scores in 2006. The proportions of both Māori and all PBRF scores in the provisional 'C' category also increased during the period, although less significantly among Māori researchers' scores.

Figure 8: Distribution of Māori quality scores*, 2003 and 2006**



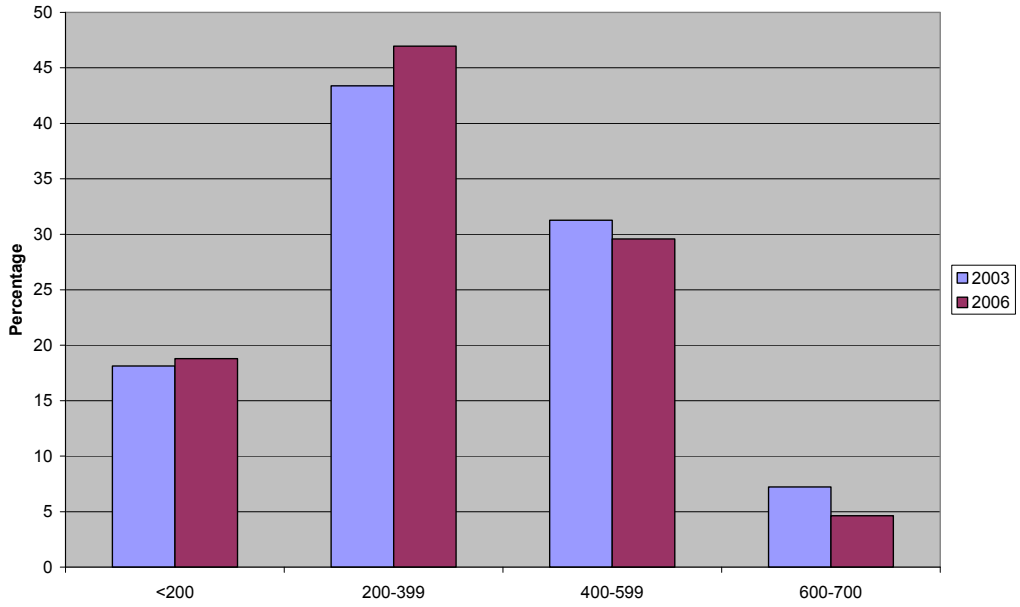
Source: PBRF census and EP data

Note

* Grouped by provisional funding category ranges.

** Where no EP was submitted, researchers were given a nominal value of zero. These researchers are not included in this graph. Researchers who carried over their score from 2003 are included in this graph.

Figure 9: Distribution of all PBRF quality scores*, 2003 and 2006**



Source: PBRF census and EP data

* Grouped by provisional funding category ranges
** Where no EP was submitted, researchers were given a nominal value of zero. These researchers are not included in this graph. Researchers who carried over their score from 2003 are included in this graph.

3.6.3. Final Quality Categories

The final section describes the final quality categories assigned to PBRF researchers following the holistic assessment of the component scores previously discussed.

The proportions of Māori researchers achieving different quality categories remained reasonably stable between 2003 and 2006. There were, however, minor increases in As and Cs, and small decreases in the number of Bs and Rs, as outlined in Table 29.

Table 29: Final quality categories of Māori researchers, 2003 and 20066

Final Quality Category	2003 Number	2003 proportion (%)	2006 Number	2006 proportion (%)
A	10	2.2	13	2.7
B	52	11.4	55	11.4
C	114	25.4	102	21.2
C (NE)*	-	-	35	7.3
R	272	60.7	153	31.7
R (NE)*	-	-	124	25.7
Total	448	100.0	482	100.0

Source: PBRF census and EP data

Note

* NE applied in 2006 only but did not affect the funding rate.

Just over a quarter (26 percent) of Māori researchers who achieved the C category in 2006 were identified as C(NE).

A smaller proportion were NE within the C Funding Category, compared to all PBRF (27.8 percent), more Māori EPs (44.7 percent of all Rs) were R(NE) than across the whole PBRF (32.4 percent of all Rs).

Table 30: Final quality categories of all PBRF researchers, 2003 and 2006

Final Funding Category	2003 number	2003 Proportion (%)	2006 number	2006 Proportion (%)
A	443	5.5	629	7.3
B	1802	22.5	2166	25.0
C	2494	31.1	2138	24.7
C (NE)*	-	-	825	9.5
R	3273	40.9	1964	22.7
R (NE)*	-	-	943	10.9
Total	-	100.0	-	100.0

Source: PBRF census and EP data

Note

* NE applied in 2006 only but did not affect the funding rate.

Table 30 above shows that the changing proportions in funding categories across the PBRF from 2003 to 2006 had a different pattern to that previously described for Māori researchers. In the PBRF generally, there were increased proportions across all of the higher funding categories, A, B and C (including C(NE)). The drop in the proportion of Rs across the PBRF was also marked, from 40.9 to 33.5 percent, compared with a less significant drop in the proportion of Māori researchers.

3.6.4. Quality category changers among re-evaluated researchers' EPs

Of those researchers who were in both Quality Evaluations and were re-assessed in 2006, 81 percent of Māori researchers improved their Quality Category, while 19 percent achieved a decreased category between 2003 and 2006. This compares with category increases among 94.9 percent of re-evaluated EPs across the PBRF, and decreases in 5.1 percent of cases.

Table 31 shows that of the 34 Māori researchers who improved category, 22 were re-evaluated from R in 2003 to C or C(NE) in 2006. It also shows that the few Māori researchers who dropped to a lower Quality Category did so from either B to C, or C to R.

Table 31: Māori researchers who changed Quality Category, 2003 – 2006

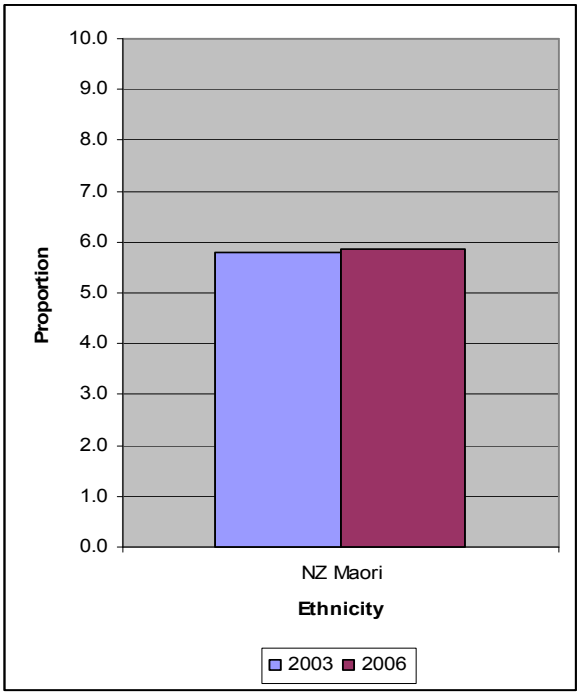
	Quality Category change	Number of Māori researchers
Improvers	B to A	2
	C to A	0
	C to B	10
	R to B	0
	R to C	13
	R to C(NE)	9
	Total	34
Decreasers	C to R	5
	C to R(NE)	0
	B to C	3
	B to C(NE)	0
	Total	8

Source: PBRF census and EP data

3.7. Māori research degree completions

In 2003 5.8 percent of all RDCs were identified as achieved by students of Māori ethnicity. This proportion increased slightly in 2006 to 5.9 percent, in line with a small overall increase in the number of Māori RDCs 2003-2006.

Figure 10: Māori RDCs as a proportion of all RDCs, 2003 and 2006



Source: eSDR and TFS, as at January 2008.

From 2003 to 2006 the number of Māori RDCs increased at a rate consistent with the increases in RDCs for all ethnicities.[31]

[31] See also See Ministry of Education, *Profiles and Trends 2006: New Zealand's tertiary education sector* (Wellington: Ministry of Education, 2007), at p 151. Ngā Pae o te Māramatanga's Capability Building Programme, a major initiative of the Māori Centre of Research Excellence, is supporting the postgraduate advancement of Māori students.

4 Profile of Pacific Peoples researchers in the PBRF, 2003 - 2006

This section profiles Pacific Peoples researchers who participated in the PBRF Quality Evaluations in 2003 and 2006. This includes descriptions of the demographic and academic characteristics of Pacific Peoples researchers, of the nature of EPs submitted, and of Pacific Peoples researchers' performance.

Two central aspects of the description of Pacific Peoples researchers and their EPs within the PBRF are descriptive summaries of the 2003 and 2006 PBRF, identification of any shifts, and where possible, identification of any sub-sector shifts. In addition, data is also provided for all PBRF researchers, to provide context in which to consider the profile and performance of Pacific Peoples researchers.

4.1. EP submissions

Of the numbers of Pacific Peoples researchers eligible to participate in the PBRF in 2003, only around half had EPs submitted by their TEOs, a similar to Māori researchers. Just over half (51.1 percent) of the 90 eligible Pacific Peoples in 2003 had EPs submitted, compared with 72 percent of all eligible researchers in the PBRF. A much higher number had EPs submitted in 2006, a proportion comparable with the higher figures across the whole of the PBRF in that year.

Table 32: EPs submitted for Pacific Peoples and All PBRF researchers, 2003 and 2006

	Proportion of EPs of total eligible researchers (%)	
	2003	2006
Pacific Peoples	51.1	84.0
All PBRF	72.0	86.8

Source: PBRF census and EP data

4.2. Transitions of Pacific Peoples researchers between 2003 and 2006

In 2003, TEOs submitted EPs for 90 Pacific Peoples researchers in total, as outlined in Table 33. Of those researchers, 30 had their scores carried over in 2006, while 30 had EPs submitted for re-evaluation. A total of 30 Pacific Peoples researchers exited the PBRF and 32 entered in 2006 (see Table 33).[32] 15 Pacific Peoples researchers who were entrants did not have an EP submitted in 2006.

[32] This gives a total of 92 Pacific Peoples researchers in 2006. Because some Pacific Peoples researchers changed their ethnicity between 2003 and 2006, this transitions section counts those who identified themselves as Pacific Peoples in 2003. Entrants in 2006 who classified themselves as Pacific Peoples are included. However, those who did not identify as Pacific Peoples in 2003 but did in 2006 are not included in this data.

Table 33: Transitions of Pacific Peoples researchers from 2003 to 2006

2003 Pacific Peoples Entrants	2006		
	Researcher category	number	Proportion (%)
EP submitted	Re-evaluated	21	45.7
	Carry-overs	14	31.8
	Exiters	11	23.9
	Total	46	100.0
No EP submitted	Re-evaluated	9	20.5
	Carry-overs	16	36.4
	Exiters	19	43.2
	Total	44	100.0

Source: PBRF census and EP data

In 2006 the transitional pattern of Pacific Peoples researchers from 2003 to 2006 was different to the pattern across the whole of the PBRF. For all 2003 Pacific Peoples entrants, the proportion of EPs submitted for re-evaluation was higher and the proportion of those exiting lower.[33]

4.3. Pacific Peoples researchers by sub-sector

There were several shifts in the proportions of Pacific Peoples researchers by sub-sector between 2003 and 2006, and this is highlighted in Table 34. There was a large decrease in the proportion of researchers in colleges of education, mirroring the same trend across the whole of the PBRF. On the other hand, the reverse trend can be seen in the proportion of Pacific Peoples researchers located in the polytechnic and institutes of technology sub-sector, which increased to 17 percent in 2006.

Table 34: Pacific Peoples researchers by sub-sector, 2003 and 2006

	Percent of total Pacific Peoples researchers	
Sub-sector	**2003**	**2006**
College of Education	18.9	3.2
Polytechnic/Institute of Technology	5.6	17.0
Private Training Establishment	2.2	1.1
University	71.1	73.4
Wananga	2.2	3.2
Total	100.0	100.0

Source: PBRF census and EP data

[33] See figures for all PBRF in Section 2. Again, the number of Pacific researchers was small and therefore discretion is needed in interpretation of proportions.

4.4. Demographic and academic profile of Pacific Peoples participants

4.4.1. Age

The mean age of Pacific Peoples who participated in the PBRF increased across the two quality evaluation rounds, from a relatively low 42.7 years in 2003, to 46.1 years in 2006. While in both years the Pacific mean age was below the mean age of all researchers across the PBRF, the difference was much less marked in 2006 (see Tables 4 and 6).

This pattern in participant ages is highlighted in detail in Table 35, which contrasts the ages of Pacific participants and all PBRF participants in the two respective rounds.

Table 35: Pacific Peoples and all PBRF researchers by age band, 2003 and 2006

	Pacific Peoples		All PBRF	
	2003	2006	2003	2006
Age band	n = 90	n = 94	n = 8,012	n = 8,665
34 or less	22.2	10.6	12.9	10.9
35-44	38.9	36.2	28.9	27.0
45-54	27.8	34.0	32.0	32.0
55-64	8.9	16.0	22.1	23.7
65+	1.1	2.1	2.0	3.4
Not supplied	1.1	1.1	2.0	3.0
Total	100.00	100.00	100.00	100.00

Source: PBRF census and EP data

The age spread of Pacific Peoples researchers in 2003 was quite different to the pattern across the whole of the PBRF, with far more in the age bands up to 44 years and fewer in the 45 years and over groups.

There was a shift in the age spread of Pacific Peoples researchers between quality evaluation rounds, particularly in the younger and the more senior age bands. The proportion of Pacific Peoples researchers in the 34 years or less group dropped to half (10.6 percent) the figure it was in 2003 (22.2 percent). While in the 35-44 age band the proportion of researchers remained fairly stable, the proportion in the 45-54 age band increased, and comprised over a third (34 percent) of all Pacific Peoples researchers in 2006. Although reflecting small numbers, the proportions in the age bands from 55 years and over nearly doubled as a proportion of all Pacific Peoples researchers in the second round. Pacific Peoples were over-represented in the 54 years or less age bands (89 percent in 2003 and 81 percent in 2006) compared to all PBRF participants (74 percent and 70 percent respectively).

4.4.2. Gender

Similar to the shift in age spread among Pacific Peoples researchers between 2003 and 2006, the ratio of female to male Pacific Peoples researchers underwent a notable shift also. In 2003, a majority (56 percent) of all Pacific Peoples researchers were female, compared to 44 percent male, a similar gender composition to Māori researchers. However, those figures

were almost the reverse in the second Quality Evaluation, with 53 percent male Pacific Peoples researchers and 47 percent female (see Figure 11).

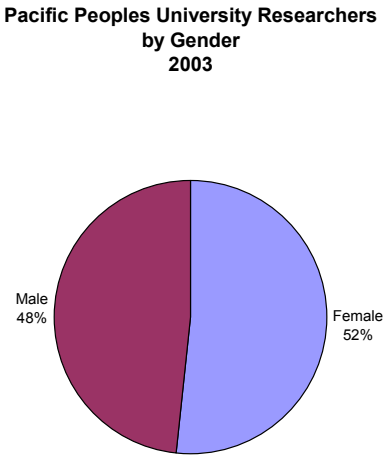
Figure 11: Pacific Peoples and all PBRF researchers by gender, 2003 and 2006

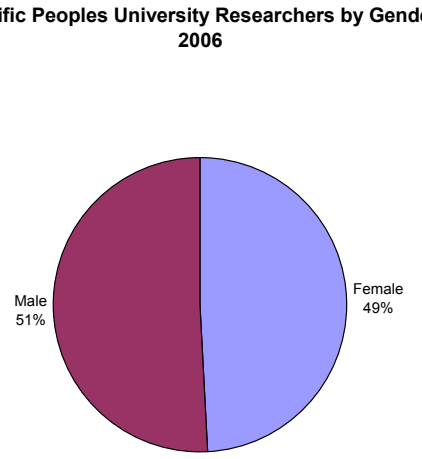
Source: PBRF census and EP data

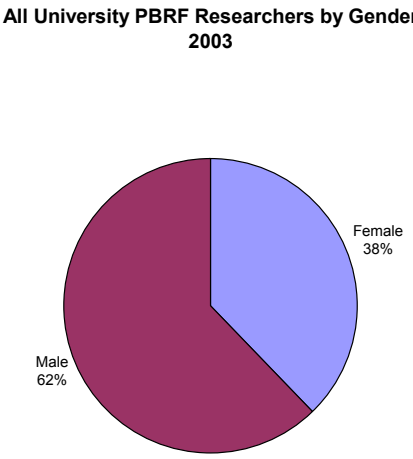
Therefore while the gender balance among Pacific Peoples researchers was more similar to the pattern among Māori researchers in 2003 than it was to the whole of the PBRF, the opposite was true in 2006. There was also a similar increase in the proportions of male researchers among Pacific Peoples (up 8.7 percent) and all PBRF (up 8.3 percent) researchers from 2003 to 2006. Alternatively, the decrease in female Pacific Peoples researchers across rounds contrasted with an increase in the proportion of female researchers across the whole of the PBRF. These changes in gender composition may be explained by both exits (70 percent of exits were female) and entrants in 2006 (56 percent of new entrants were male).

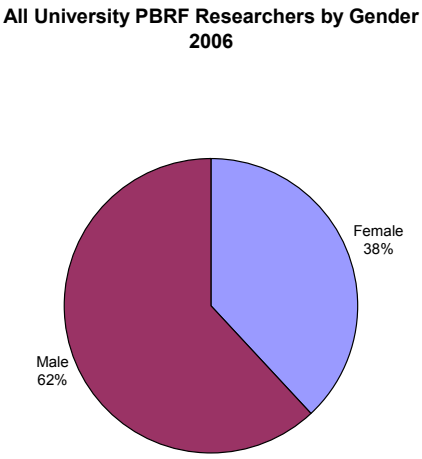
The swing in gender composition of Pacific Peoples researchers is also apparent in Figure 12, which displays gender proportions in the university sub-sector. However, the gender ratio is more balanced when the figures are focused on this sub-sector alone, reflecting that the majority of Pacific Peoples researchers were located in universities.

Figure 12: Pacific Peoples and all PBRF university researchers by gender, 2003 and 2006









Source: PBRF census and EP data

4.4.3. Academic position[34]

In addition to age band and gender shifts among Pacific Peoples researchers in 2003 and 2006, the compositions of researchers in different academic positions also changed.

Over half of Pacific Peoples researchers in both Quality Evaluations were in Lecturer or equivalent positions, namely 53.3 percent (48 people) in 2003 increasing slightly to 55.3 percent (52 people) in 2006. The number of Assistant Lecturers was the only position type for which there was a decreased proportion in 2006, aside from 'Other Administrative/Leadership' positions. Assistant Lecturers comprised 12.2 percent in the first round and this decreased to 4.3 percent in the second.

As Table 36 highlights, the spread of researchers at different levels of academic position was somewhat different across the whole of the PBRF, with some 20 percent fewer Lecturers, ten percent more Senior Lecturers, and much higher proportions of Associate Professors and Professors.

Table 36: Pacific Peoples and all PBRF researchers by academic position*, 2003 and 2006

	Proportion of Pacific Peoples researchers (%)		Proportion of all PBRF researchers (%)	
	2003	2006	2003	2006
Academic position*	n = 90	n = 94	n = 8,012	n = 8,665
Assistant Lecturer	12.2	4.3	7.4	4.8
Lecturer	53.3	55.3	34.2	33.7
Senior Lecturer	20.0	26.6	35.2	34.5
Associate Professor	0.0	2.1	8.6	9.9
Professor	2.2	3.2	7.2	9.6
Other Administrative/Leadership	8.9	4.3	5.5	3.8
Other Staff Position	3.3	4.3	1.9	3.7
Total	100.0	100.0	100.0	100.0

Source: PBRF census and EP data

Note

* Categories derived from a range of job titles and grouped by equivalency (see Appendix).

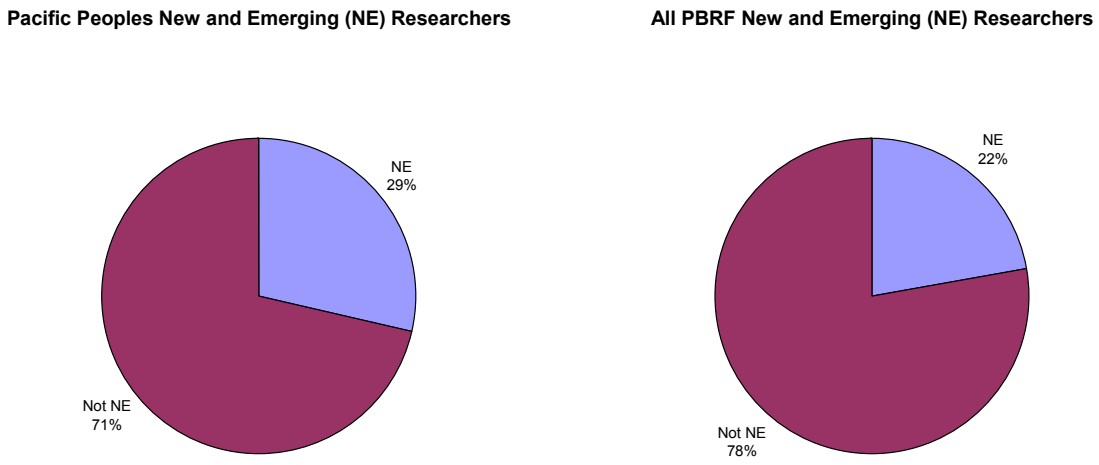
[34] For the purpose of this report, the wide range of job titles in the PBRF data are grouped into seven positions by equivalency. See Appendix for groupings.

4.4.4. New and Emerging (NE) Researchers

NE researchers are identified as those who were first appointed to a PBRF-eligible or equivalent position on or after 1 January 2000 or whose conditions of employment changed on or after 1 January 2000 to include a requirement to undertake research or degree-level teaching.

Among Pacific Peoples researchers in the PBRF, nearly a third (29 percent) were identified as NE researchers in 2006. This compared with just over a fifth (22.2 percent) of NE researchers across the whole PBRF (see Figure 13).

Figure 13: Pacific Peoples and all PBRF NE researchers, 2006



Source: PBRF census and EP data

Table 37 shows the proportions (of numbers in each position) of NE researchers in each academic position for Pacific Peoples and all PBRF researchers in 2006. The table shows that all (100 percent) of Pacific Peoples researchers in Assistant Lecturer positions were NE, and around a third (30.8 percent) of Lecturers. This compares with over half (57.4 percent) of Assistant lecturers across the whole of the PBRF, and 42.2 percent in all PBRF Lecturer positions. Higher numbers of Pacific Peoples researchers in the 'Other' categories were also NE compared with the proportions for all PBRF. As would be expected, much lower numbers of Pacific Peoples researchers in the later career positions, such as Senior Lecturer and Professor positions, were NE.

Table 37: Pacific Peoples and all PBRF NE researchers in different academic positions, 2006

Academic position*	Pacific Peoples NE researchers as a proportion of all in position (%)	All PBRF NE researchers as a proportion of all in position (%)
Assistant Lecturer	100.0	57.4
Lecturer	30.8	42.2
Senior Lecturer	8.0	10.2
Associate Professor	0.0	0.9
Professor	0.0	0.1
Other Administrative/Leadership	50	13.4
Other Staff Position	75	29.6

Source: PBRF census and EP data

Note

* Categories derived from a range of job titles and grouped by equivalency (see Appendix).

4.5. Pacific Peoples researchers' EPs

This next section provides information about the EPs submitted by Pacific Peoples researchers in the PBRF, including the spread of EPs across panels and subjects, and the types of research outputs included within those EPs.

4.5.1 Panels and subjects

The four highest concentrations of Pacific Peoples researchers' EPs submitted in 2003 and 2006 were in the panel areas of Education, Social Sciences and Other Cultural/Social Sciences, Medicine and Public Health, and Business and Economics. The proportions of Pacific Peoples researchers' EPs in each of these categories increased from 2003 to 2006, with the exception of Medicine and Public Health, which decreased proportionately from 15.6 percent in 2003, to 10.6 percent in 2006.

Table 38: Pacific Peoples and all PBRF EPs by panel and subject weighting, 2003 and 2006

Subject Weighting	Panel	Proportion of Pacific Peoples' EPs		Proportion of All PBRF EPs	
		2003	2006	2003	2006
1	Education	25.6	27.7	13.4	12.25
1	Social Sciences and Other Cultural/Social Sciences	17.8	20.2	10.0	10.3
2.5	Medicine and Public Health	15.6	10.6	8.7	8.6
1	Business and Economics	8.9	11.7	11.3	12.0
1	Humanities and Law	8.9	6.4	11.1	10.2
2	Health	7.8	3.2	8.3	8.45
2.5	Biological Sciences	5.6	2.1	9.3	8.9
2	Creative and Performing Arts	3.3	2.1	5.7	7.0
2.5	Engineering Technology and Architecture	3.3	7.4	6.8	7.35
1	Mathematical and Information Sciences and Technology	2.2	4.3	7.9	7.8
2	Physical Sciences	1.1	1.1	5.7	5.2
1	Māori Knowledge and Development	0.0	3.2	1.9	2.2
	Total	100.0	100.0	100.0	100.0

Source: PBRF census and EP data

Similar to the figures for Māori researchers' EPs, the proportion of Pacific Peoples researchers' EPs submitted to the Education Panel was much higher than across the whole of the PBRF. In 2006, for example, over a quarter (27.7 percent) of Pacific Peoples researchers' EPs were assessed by that panel compared with less than half of that figure (12.3 percent) across the whole of the PBRF.

The biggest proportional increase from 2003 to 2006, for all Pacific Peoples researchers' EPs, was in the area of Engineering Technology and Architecture, from 3.3 percent in 2003 to 7.4 percent in 2006. The latter figure was comparable with the figure across the whole of PBRF. Similarly, there was an increase in the proportion of Pacific Peoples researchers' EPs submitted to the Business and Economics Panel, from 8.9 percent in 2003 to 11.7 percent in 2006, with the latter figure comparable with all PBRF EPs (12 percent).

Pacific Peoples researchers' EPs were generally lower, relative to the whole of the PBRF, in other areas such as in Biological Sciences, Creative and Performing Arts, Humanities and Law, Mathematical and Information Sciences and Technology, and in Physical Sciences.

With the higher concentrations of Pacific Peoples researchers' EPs in the above areas, the implication was that a higher proportion of Pacific Peoples EPs, relative to the wider PBRF, were in areas that attracted lower subject weightings. Notably, the proportion of Pacific Peoples EPs in the 2.5 subject weighting category was comparable with overall figures, in both rounds. However, in 2006 for example, there was a much higher proportion in the '1' subject weighting category (70 percent of Pacific Peoples compared with 46 percent of all PBRF), than in the '2' subject weighting category (12 percent Pacific Peoples compared to 34 percent all PBRF). These comparisons are displayed in Figure 14.

Figure 14: Pacific Peoples and all PBRF researchers' EPs by subject weighting, 2003 and 2006

Source: PBRF census and EP data

4.5.2 Nominated research outputs (NROs)

Table 39 highlights the mean counts of NROs for Pacific Peoples researchers, with a whole of PBRF comparison. It shows that the mean number of NROs submitted across all Pacific Peoples EPs was higher in the second round, increasing from 2.02 in 2003 to 2.68 in 2006. This was somewhat lower in both years than the mean number submitted across the whole of the PBRF.

Table 39: Mean number of NROs submitted by Pacific Peoples and all PBRF researchers, 2003 and 2006

	Mean number of NROs 2003 (0-4)	Mean number of NROs 2006 (0-4)
Pacific Peoples	2.02	2.68
All PBRF	2.87	3.10

Source: PBRF census and EP data

The common NRO types among Pacific Peoples researchers' EPs were fairly similar in both 2003 and 2006, with Journal Article, Conference Contribution, Chapter in Book, and Report for External Body the top for across both years. All of these types of research output were similarly most common across the whole of the PBRF, with the exception of Report for External Body.[35] The latter, arguably a less traditional research output for a wider audience than academic communities, featured much further down in the list of most common PBRF NROs in 2003 and 2006. While there were no Pacific Peoples researchers' NROs identified as awarded theses in the first round, awarded Doctoral and Masters theses were common in the second round (see Tables 40 and 41).[36]

Table 40: The 10 most common* NRO types among Pacific Peoples researchers' EPs, 2003 and 2006

Order	2003	2006
1	Journal Article	Journal Article
2	Conference Contribution	Conference Contribution
3	Chapter in Book	Chapter in Book
4	Report for External Body	Report for External Body
5	Thesis	Authored Book
6	Performance	Awarded Doctoral Thesis
7	Authored Book	Awarded Research Masters Thesis
8	Composition	Edited Book
9	Edited Book	Exhibition
10	Confidential Report	Artefact/Object

Source: PBRF census and EP data

Note

* The unspecified category, 'Blank' also featured highly in both years. However, it is unclear what the category represents so it is excluded.

[36] It is possible, but unclear, whether this difference reflects changes in the use of data categories.

Table 41: The ten most common* NRO types among all PBRF EPs, 2003 and 2006

Order	2003	2006
1	Journal Article	Journal Article
2	Conference Contribution	Conference Contribution
3	Chapter in Book	Chapter in Book
4	Authored Book	Authored Book
5	Thesis	Awarded Doctoral Thesis
6	Report for External Body	Exhibition
7	Edited Book	Report for External Body
8	Exhibition	Edited Book
9	Performance	Performance
10	Oral Presentation	Awarded Research Masters Thesis

Source: PBRF census and EP data

Note

* Two unspecified categories, 'Blank' and 'Other' also featured in the top ten across all the three groups in the table. It is unclear what these categories represent therefore they are excluded.

Focusing on the 2006 figures (shown in Table 42), the proportions of the top four Pacific Peoples NROs stand in marked contrast to the relative proportions across the whole of the PBRF. Journal articles comprised a third (30.1 percent) of all Pacific Peoples, compared with half (50.1 percent) of all PBRF NROs. Conversely, the relative proportions of Conference Contribution, Chapter in Book, and Report for External Body all had considerably higher proportions among Pacific Peoples researchers' than among all PBRF EPs.

Table 42: Selected NRO types among Pacific Peoples and all PBRF researchers' EPs, 2006

NRO types	Proportion of Pacific Peoples researchers' NROs (%)	Proportion of All PBRF NROs (%)
Journal Article	30.1	50.1
Conference Contribution	15.6	11.4
Chapter in Book	15.2	6.8
Report for External Body	6.4	1.7
Authored Book	3.9	3.6

Source: PBRF census and EP data

Note

* Two unspecified categories, 'Blank' and 'Other' also featured in the top ten across all the three groups in the table. It is unclear what these categories represent therefore they are excluded.

4.6 Performance PBRF of Pacific Peoples researchers

EPs submitted to the PBRF were evaluated in a three stage process.

Researchers were allocated points (between 0 and 7) for each of the three components of the EO – Research Output (RO), Peer Esteem (PE) and Contribution to the Research Environment (CRE).

A Quality Score is then determined by using a weighting system (RO – 70, PE – 15, CRE – 15) and adding the resultant scores. This score is then used to provide an initial placement into a Quality Category. The relationship between weighted score and Quality Category is shown in Table 43.

Table 43: Relationship between Weighted Quality Score and Final Quality Category

Total Weighted Score	Quality Category
600 – 700	A
400 – 599	B
200 – 399	C and C(NE)
Less than 200	R and R(NE)

Panels then take into account any other factors to determine holistically the final Quality Categories. Quality Categories range from a high of A to the lowest R. Those who do not submit an EP are automatically given an R or R(NE). A category of C(NE) can be gained using completion of a doctoral degree or equivalent research in the assessment period as part of the research output. Additionally NE Researchers are not required to supply evidence of Peer Esteem or Contribution to the Research Environment.

4.6.1 Component scores

The quality scores discussed above are made up of the three component scores of between 0-7, namely Research Output (RO), Peer Esteem (PE) and Contribution to Research Environment (CRE). This section looks at the performance of Pacific Peoples researchers across these component areas, and maps the relationships of RO scores to PE and CRE scores.

Tables 44 and 45 show the mean component scores for Pacific Peoples and all PBRF researchers respectively, and the change in mean scores 2003-2006. Despite the upward shift in overall quality scores outlined previously, Pacific Peoples component mean scores remained fairly stable across the two years, whereas there were general decreases across the wider PBRF. Pacific Peoples researchers' mean PE score increased slightly from 2.3 in 2003 to 2.5 in 2006. Alternatively, the mean Pacific Peoples researchers' RO score was the same both years, while the PBRF mean decreased. The Pacific Peoples researchers' CRE score decreased slightly from 2003 to 2006.

Table 44: Mean component scores of Pacific Peoples researchers, 2003 - 2006

Component score measure	2003 Mean (0-7)	2006 Mean (0-7)	Change in mean 2003-2006
RO	2.8	2.8	0.0
PE	2.3	2.5	0.2
CRE	2.4	2.3	-0.1

Source: PBRF census and EP data

Table 45: Mean component scores of all PBRF researchers, 2003 - 2006

Component score measure	2003 Mean (0-7)	2006 Mean (0-7)	Change in mean 2003-2006
RO	3.6	3.4	-0.2
PE	3.1	2.9	-0.2
CRE	2.9	2.9	0.0

Source: PBRF census and EP data

Table 46 highlights the proportions of PE and CRE scores of Pacific Peoples researchers that were lower than the researchers' RO scores.

In the 2003 round, a higher number of Pacific Peoples researchers' EPs (50 percent) received a PE score that was lower than the adjunct RO score than in 2006 (34 percent). The same was true for CRE scores, where a slightly lower number of Pacific Peoples researchers' EPs in 2006 (37 percent) received a CRE score lower than the RO score in 2003 (46 percent).

As noted in the Māori researchers section, from 2003 to 2006 there were decreasing proportions of both PE and CRE scores (that were less than RO scores) for all PBRF researchers. This suggests that PE and CRE scores increased relative to RO scores across the Quality Evaluations. In the case of Pacific Peoples researchers this shift was most marked for PE scores.

Table 46: Relationship of Pacific Peoples researchers' RO scores to PE and CRE scores, 2003 and 2006

	Pacific Peoples		All PBRF	
	2003 Proportion (%) n = 50	2006 Proportion (%) n = 52	2003 Proportion (%) n = 5,770	2006 Proportion (%) n = 7,525*
RO > PE	50	34	51	41
RO >CRE	46	37	53	45

Source: PBRF census and EP data

Note

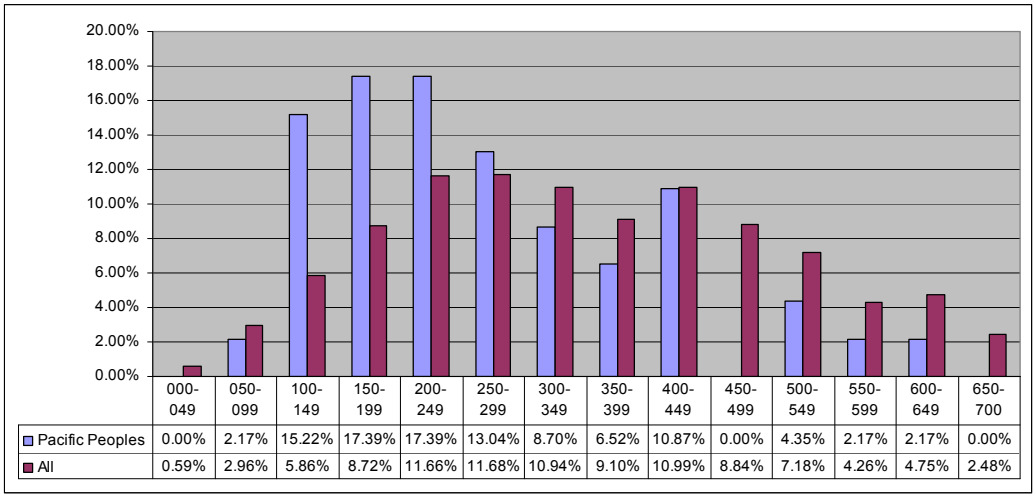
* The total number of researchers (n) in 2003 and 2006 excludes researchers who did not have EPs assessed. The 2006 figures include carry-overs from the 2003 Quality Evaluation.

4.6.2 Quality Scores

Figures 15 and 16 illustrate the distributions of quality scores among Pacific Peoples and all PBRF researchers in the 2003 and 2006 Quality Evaluations.

In 2003, the biggest concentrations of Pacific Peoples researchers' scores fell in the ranges less than 200 (provisional 'R' Funding Category) and 200-399 (provisional 'C' Funding Category), or about 35 and 46 percent of all Pacific Peoples scores respectively. A total of 35 percent of all scores were in the two ranges150-199 and 200-249 (each containing 17.5 percent). There were much smaller proportions of Pacific Peoples researchers' scores in the 400-599 range, and only 2 percent in the highest range (provisional 'A' Funding Category). This compares with much higher concentrations across the whole of the PBRF in the 200-399, and 400-599 ranges overall.

Figure 15: Distribution of Pacific Peoples and all PBRF researchers' quality scores, 2003*



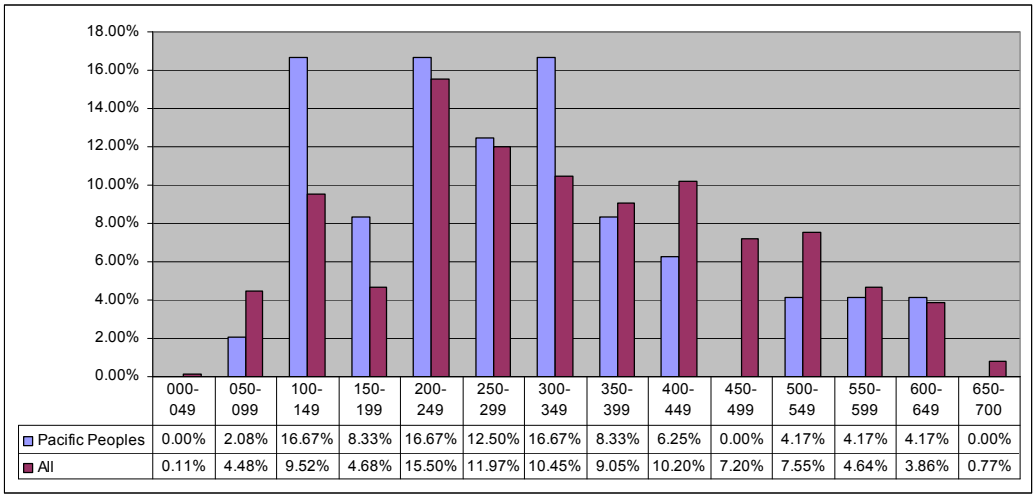
	000-049	050-099	100-149	150-199	200-249	250-299	300-349	350-399	400-449	450-499	500-549	550-599	600-649	650-700
Pacific Peoples	0.00%	2.17%	15.22%	17.39%	17.39%	13.04%	8.70%	6.52%	10.87%	0.00%	4.35%	2.17%	2.17%	0.00%
All	0.59%	2.96%	5.86%	8.72%	11.66%	11.68%	10.94%	9.10%	10.99%	8.84%	7.18%	4.26%	4.75%	2.48%

Source: PBRF census and EP data

Note
* Where no EP was submitted, researchers were given a nominal value of zero. These researchers are not included in this graph

As highlighted in Figure 16, the distribution of Pacific Peoples researchers' quality scores looked different in 2006 compared with the previous round, albeit the bulk of those scores remained in the same score ranges of less than 200 and 200-399. Over 54 percent of scores fell in the provisional 'C' category with peaks in the 200-249 and 300-349 ranges. Scores in the provisional 'R' category fell from 35 percent in 2003 to 27 percent in 2006. There was a small decrease in the percentage of scores in the provisional 'B' category and a small increase in the provisional 'A' category.

Figure 16: Distribution of Pacific Peoples and all PBRF researchers' quality scores, 2006*



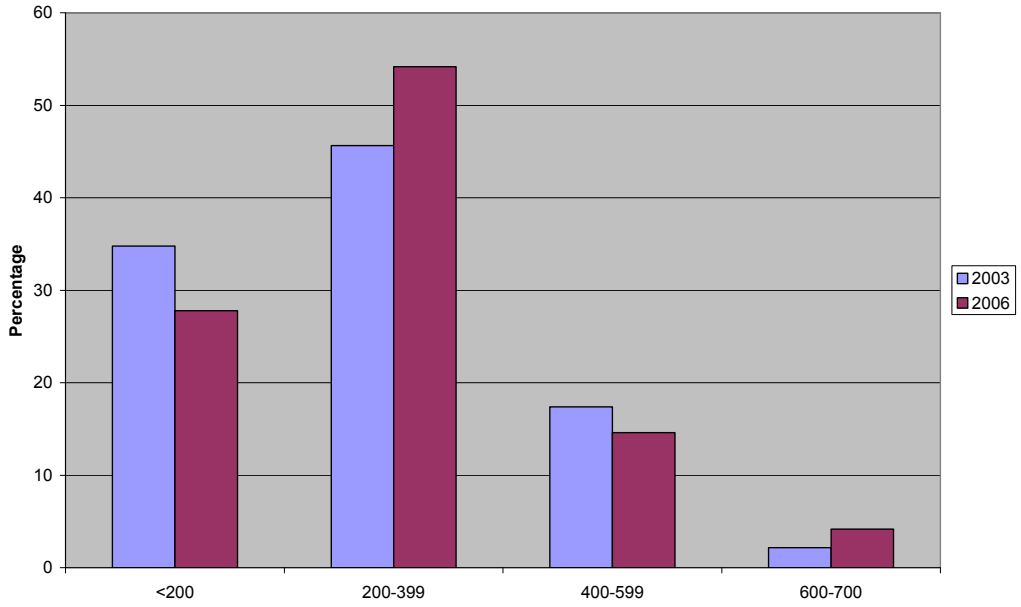
	000-049	050-099	100-149	150-199	200-249	250-299	300-349	350-399	400-449	450-499	500-549	550-599	600-649	650-700
Pacific Peoples	0.00%	2.08%	16.67%	8.33%	16.67%	12.50%	16.67%	8.33%	6.25%	0.00%	4.17%	4.17%	4.17%	0.00%
All	0.11%	4.48%	9.52%	4.68%	15.50%	11.97%	10.45%	9.05%	10.20%	7.20%	7.55%	4.64%	3.86%	0.77%

Source: PBRF census and EP data

* Where no EP was submitted, researchers were given a nominal value of zero. These researchers are not included in this graph. Researchers who carried over their score from 2003 are included in this graph.

The overall shift in provisional Pacific Peoples quality scores between 2003 and 2006 appears to have been towards higher proportions in the ranges 200-399 and 600-700. Still, there were much lower proportions of Pacific Peoples scores in the two higher quality score ranges relative to the whole of the PBRF. Figures 17 and 18, which aggregate the bands of scores into the four key groupings, illustrates that the shift in Pacific Peoples researchers' quality scores is characterised by a decrease in the proportion of scores in the lowest range (less than 200) while this category increased across the whole PBRF. Changes in the provisional 'C' and 'B' category ranges were similar to all PBRF while there was an increase in the provisional 'A' category for Pacific Peoples scores compared with a decrease overall. There are, however, much larger percentages of scores in the lower ranges – 'R' and 'C' – for among Pacific Peoples researchers' EPs than for all PBRF (with corresponding lower percentages in 'B' and 'A').

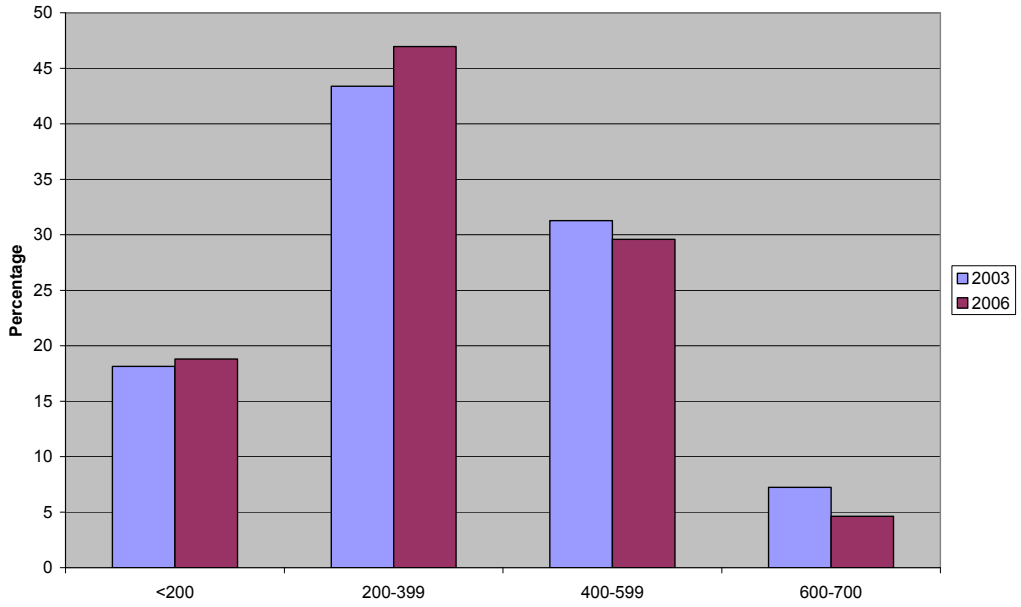
Figure 17: Distribution of Pacific Peoples researchers' quality scores*, 2003 and 2006**



Source: PBRF census and EP data

Note
* Grouped by provisional funding category ranges
** Where no EP was submitted, researchers were given a nominal value of zero. These researchers are not included in this graph. Researchers who carried over their score from 2003 are included in this graph.

Figure 18: Distribution of all PBRF quality scores*, 2003 and 2006**



Source: PBRF census and EP data
Note
* Grouped by provisional funding category ranges
** Where no EP was submitted, researchers were given a nominal value of zero. These researchers are not included in this graph. Researchers who carried over their score from 2003 are included in this graph.

4.6.3 Final Quality Categories

The final section describes the final quality categories assigned to Pacific Peoples researchers following the holistic assessment of the component scores previously discussed.

While overall the proportions in different quality categories remained stable across 2003 and 2006 overall, Table 47 highlights some shifts for Pacific Peoples researchers, particularly in the C/C(NE) and R/R(NE) categories.

Table 47: Final quality categories of Pacific Peoples researchers, 2003 and 2006

Quality Category	2003 number	2003 proportion (%)	2006 number	2006 proportion (%)
A	1	1.1	3	3.2
B	8	8.9	8	8.5
C	20	22.2	24	25.5
C (NE)*	-	-	12	12.8
R	61	67.8	33	35.1
R (NE)*	-	-	14	14.9
Total	90	100.0	94	100.0

Source: PBRF census and EP data

Note

* NE applied in 2006 only but did not affect the funding rate.

The majority of final funding categories for Pacific Peoples researchers were R in 2003 (67.8 percent), although the proportion dropped somewhat to 50 percent across R and R(NE) in 2006. Conversely, the proportion of researchers achieving C/C(NE) category increased from 22.2 percent in 2003 to 38.3 percent. The proportion in the B category was similar across the two rounds, and there was a small increase in the A category to 3.2 percent in 2006.

Table 48: Final Quality Categories of all PBRF researchers, 2003 and 2006

Quality Category	2003 number	2003 proportion (%)	2006 number	2006 proportion (%)
A	443	5.5	629	7.3
B	1,802	22.5	2,166	25.0
C	2,494	31.1	2,138	24.7
C (NE)*	-	-	825	9.5
R	3,273	40.9	1,964	22.7
R (NE)*	-	-	943	10.9
Total		100.0		100.0

Source: PBRF census and EP data

Note

* NE applied in 2006 only but did not affect the funding rate.

The above shifts mirror both an overall decrease in Rs across the whole of the PBRF from 2003 to 2006, a small increase in the proportion of Cs, and a small increase in the number of As (see Table 48). However, there was no corresponding increase in Bs among Pacific Peoples researchers as there was for all PBRF.

4.6.4 Quality Category changers among re-evaluated researchers' EPs

Possibly reflecting the high proportion of early career researchers among Pacific Peoples researchers, ten out of 13 researchers who improved funding category from 2003 to 2006 had achieved an R (unfunded) in the first Quality Evaluation. In 2006, another three researchers who achieved C and B in 2003 improved their scores, while two researchers dropped to lower categories (see Table 49).

Table 49: Pacific Peoples researchers who changed quality category, 2003 - 2006

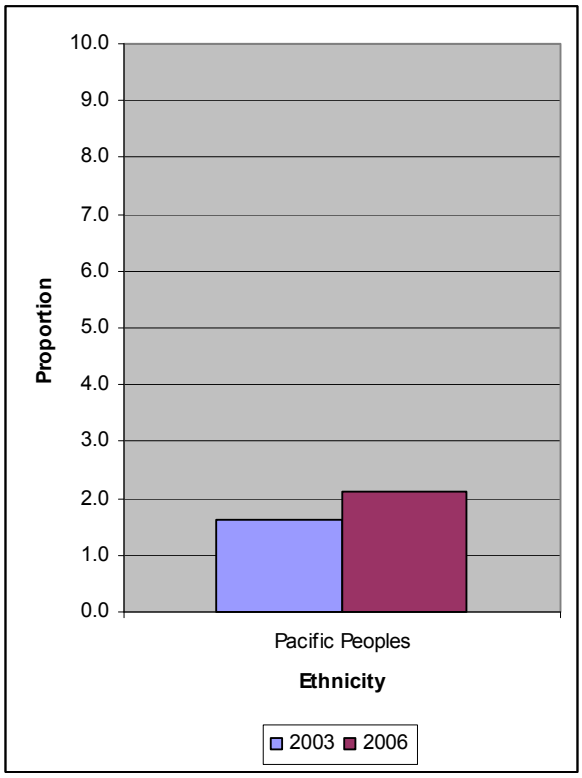
	Quality Category change	Number of Pacific Peoples researchers
Improvers	B to A	2
	C to B	
	C to A	1
	R to B	
	R to C	
	R to C(NE)	10
	Total	13
Decreasers	C to R	
	C to R(NE)	0
	B to C	2
	B to C(NE)	
	Total	2

Source: PBRF census and EP data

4.7 Pacific Peoples research degree completions

In 2003, Pacific Peoples researchers' RDCs comprised 1.6 percent of total RDCs. This proportion increased to 2.1 percent by 2006, which reflected an increase in the number of RDCs among people identifying themselves as Pacific Peoples.

Figure 19: Pacific Peoples RDCs as a proportion of all RDCs, 2003 and 2006



Source: eSDR and TFS, as at January 2008.

While the number of RDCs for Pacific Peoples was significantly smaller than for other ethnic groups, the proportion of Pacific Peoples researchers' RDCs increased at a higher rate than the RDCs for all other ethnicities between 2003 and 2006.

5 Discussion on the Profile of Māori and Pacific Peoples researchers in the PBRF 2003 - 2006

Exploring the participation and performance of Māori and Pacific Peoples researchers in the period in which the PBRF was introduced requires more than comparisons across two very different cohorts of researchers in 2003 and 2006. The transitions of researchers into, across, and out of the two Quality Evaluations are complex. These flows of researchers are reflected in changes in the PBRF data between 2003 and 2006, and therefore also reflected in the characteristics and results of participating researchers in each respective year.

Moreover, wider contextual factors, such as changes in the participation of wānanga and ITPs across the two years, and structural changes in the tertiary sector, have contributed to the dynamics of early PBRF data.

Altogether, this means it is difficult to explain the nature and shifts outlined in PBRF data in this paper, and almost impossible to attribute the cause or extent of that change to specific factors. Nevertheless, there are useful observations to be made from the preceding analysis, and these are now discussed for Māori and Pacific Peoples researchers in turn.

5.5 Māori in the PBRF

5.1.1 EP submissions by Māori researchers

The proportion of PBRF-eligible Māori researchers who submitted EPs in the PBRF was considerably larger in 2003 than it was in 2006. However, even in 2006, the proportion of Māori researchers for whom EPs were submitted was around ten percent lower than the figures for across the whole of the PBRF. It is possible that lower levels of EP submissions for Māori researchers reflects the distinctive demographic and academic profile of Māori within the PBRF, characteristics that are summarised next. This finding may also lend support to sector concerns about the difficulty for some Māori researchers of producing an EP for the PBRF process, yet how or why this might be so remains unclear. This might be explored through further consultation with the sector.

5.1.2 Demographic and academic characteristics of Māori researchers

In both 2003 and 2006, the number of Māori researchers that were female was considerably higher than the number of male Māori researchers in the PBRF. This gender ratio is very distinct compared to the wider PBRF population which has a gender ratio of almost exactly the reverse. This finding raises the question whether this gender profile is the continuation of trends in Māori researchers' RDCs. While the gender ratio in RDCs was unable to be addressed in this paper, this issue should be explored further. If further information reveals relative gender balance in Māori data on RDCs, the question to be addressed is, where are the Māori male researchers?

The findings of earlier PBRF analyses suggest that this gender ratio may have implications for Māori researchers in the PBRF and funding outcomes. Not only was gender correlated with lower component and quality scores, but lower RO component scores were noted in relation to female Māori researchers in particular.[37] The extent to which such gender effects would have a disproportionate effect on Māori researchers in the PBRF might be explored further.

---

[37] See Warren Smart, *What determines the research performance of staff in New Zealand's tertiary education sector? An analysis of the Performance-Based Research Fund Quality Evaluation.* (Wellington: Ministry of Education, 2005), pp. 16-17, and p. 36.

The average age of Māori researchers was similar to the average age across the PBRF in both Quality Evaluations. However, the spread of Māori researchers by age band proportions was quite distinctive when compared with the profile of all PBRF researchers. In both 2003 and 2006, the considerable majority of Māori researchers were located in age bands up to 54 years of age, with slightly more in the 35 – 44 age band. The majority of all PBRF researchers are spread across the 35 – 64 band, with slightly more in the 45 - 54 band. In the second round, Māori researchers featured less predominately in the youngest of age bands, and there were increased proportions of researchers in all other age bands, most notably in the 45-54 group. This shift is not easily explained by movements of 2003 Māori researchers into the next age bands up, therefore the flows of Māori researchers into and out of the PBRF across Quality Evaluations appear to have effected this shift. The reasons for this shift might be further investigated. Are newer Māori staff choosing non-research careers? Are Māori researchers being hired in the 34 or under age band?

Looking at academic positions[38], the profile of Māori PBRF researchers is also distinctive. Most PBRF researchers were in either Lecturer or Senior Lecturer positions, with even proportions in each. While most Māori researchers were also in these two groupings, more than twice as many were were Lecturers, than were Senior Lecturers. In addition, almost as many Māori researchers were Assistant Lecturers as Senior Lecturers, which compares markedly with the wider PBRF picture. Interestingly however, the proportion of Māori Assistant Lecturers who were identified as NE was markedly lower than the corresponding figure in the PBRF generally. Yet, the proportions of Māori NE researchers in more senior positions was generally higher than the figures across the whole of the PBRF. Perhaps this reflects the employment patterns specific to the Māori academic workforce, and any such patterns and implications may warrant further investigation.

This concentration of Māori researchers in new and early career positions raises a number of questions. We might ask how early career Māori researchers are being supported to participate and improve their performance in the PBRF? What is the effect of the much smaller proportion of more experienced academic Māori researchers available to support and mentor the much larger number of new and early career academic? And what are the implications of this demand on the more senior researchers for their own experiences in the PBRF?

The most striking shift 2003 -2006 among Māori researchers was that the proportion of Māori Assistant Lecturers was considerably smaller in the second Quality Evaluation, while the numbers of Lecturers and Professors increased. Despite a similar pattern across the wider PBRF from 2003 to 2006, the shift appears more pronounced among Māori researchers. Nearly eighty percent of Māori researchers in 2006 were in positions equivalent to Lecturer or Senior Lecturer, yet over a third of all Māori researchers were identified as NE. Given that Assistant Lecturer is the first step in an academic career, one might expect higher levels of NE researchers in such positions. Again, more information would be needed about the patterns of the Māori academic workforce to better understand the pattern of NE among Māori in the PBRF. Further analysis of data on Māori researchers by age, academic position, and the PBRF NE category would also be useful.

5.1.3 Characteristics of Māori researchers' EPs

Māori researchers' EPs were largely assessed by two PBRF Panels - Education and Māori Knowledge and Development. There were also considerable proportions in other areas including Creative and Performing Arts, Social Sciences and Other Cultural/Social Sciences, and in the second round, Medicine and Public Health. The quantity of EPs in these panels is reflected in a much higher proportion of Māori EPs attracting lower subject weightings, than is the case for all PBRF EPs.

[38] As grouped by equivalency, for the purposes of this paper.

The PBRF data does not provide a description of the research focuses of the considerable number of Māori researchers in the broad subject area of education; additional information would be needed in order to understand this more fully. Moreover, because EPs submitted to the MKD Panel likely reflect Māori research approaches and topics of interest to Māori communities rather than any particular disciplinary area, the PBRF data does not allow us to examine the range of research themes being undertaken by Māori researchers whose EPs were submitted to that Panel. This paper does, however, illustrate a diversity of disciplinary areas within MKD EP submissions, as there were cross-referrals from MKD in 2006 to all but two of the other panels. The subject coverage within Māori EPs assessed by MKD might be explored further through further analysis of the content of those EPs.

The analysis of cross-referral information relating to the MKD panel in 2006 also highlighted that while there were numerous transfers of EPs in to and out of the MKD panel in the first Quality Evaluation, there was little transfer in the second. The MKD Panel in 2006 suggested the content of EPs was more appropriately aligned with assessing panels in the latter round (MKD Panel Report, 2007, p.7). Yet, there were high numbers of cross-referrals to MKD of Māori EPs that were submitted to discipline based panels, even when they were eligible to be submitted to MKD, particularly among Māori researchers' EPs assessed in the subject areas of Public Health and Clinical Medicine in 2006. Where Māori researchers' EPs might be assessed by either MKD or another Panel, are TEOs' decisions on the primary panel the different subject being influenced by different subject weightings for panels, and by corollary, different funding outcomes? Further analysis of PBRF data would tell us the extent to which Māori researchers' EPs were submitted to different panels in the two rounds, such as a shift from MKD (with a subject weighting of 1) to Public Health (with a subject weighting of 2.5). What are the implications of such decisions for the researchers, and for the functioning of the MKD panel? How does access to the MKD Panel by cross-referral influence the final assessment of, for example, Public Health EPs which include research that takes Māori research approaches and focuses on Māori communities? Answering this question would require further consultation with the sector.

This paper highlights that Māori researchers' EPs tended to contain lower numbers of NROs in both Quality Evaluations, relative to figures for all PBRF researchers. Perhaps this reflects the fact that a higher proportion of Māori researchers were early career, as evidenced by the proportion of researchers identified as NE in 2006, however, further analysis is required to determine whether this is the case. The most common types of Nominated Research Outputs (NROs) submitted by Māori researchers appear to be by and large comparable to the kinds of NROs submitted across the whole of the PBRF. It may well be that the frequency of more traditional academic forms of research output reflects the fact that the majority of Māori researchers who participated in PBRF were located in the university sub-sector, where the prevalence of traditional types of output might be expected. On the other hand, this paper also suggests that Māori researchers, even more noticeably among wānanga-based researchers, submitted considerably lower proportions of the traditional published outputs such as journal articles and books, when compared with proportions across the whole of the PBRF. Subsequently, this paper indicates that Māori researchers tended to submit higher proportions of NROs that imply sharing research knowledge with communities beyond the academic sector, such as through conference contributions and reports to external bodies. Perhaps we might ask, what pressure is there on Māori researchers, particularly the smaller numbers of more advanced career researchers, to make their work visible through less-traditional forms of communication, to communities wider than the academic sector? What implications might this have for researchers, both in preparing EPs for PBRF, and for the assessment and success of those EPs? These questions might be raised with the sector.

5.1.4 Results of Māori researchers

The mean scores achieved by Māori researchers in the 2006 PBRF round were lower in 2006 than they were in 2003, across all three components – research output; peer esteem; and contribution to research area. In addition, the difference between Māori and all PBRF

scores was greater in the second round than in the first. The mean scores across the whole PBRF were comparatively stable across rounds.

The analysis of component scores also showed that CRE was more likely to be lower than PE among Māori researchers, and that both were generally lower than the RO scores than was the case for scores across all PBRF.

Because the mean component scores were lower in 2003 and 2006, the quality scores achieved among Māori researchers were also comparatively lower. The higher numbers of Māori researchers who achieved quality scores less than 200 in 2006 is reflected in lower mean scores in 2006. This is possibly a reflection of higher numbers of submissions by NE researchers, however, without NE data for 2003, it is difficult to confirm this. A similar increase in the proportion of researchers achieving a less than 200 quality score happened across the whole of the PBRF 2003-2006, but because the decreased proportions were less marked in the higher QS bands, the mean scores are more stable.

The composition of final quality categories for Māori researchers also reflects the changes outlined in component scores and quality scores. The slightly lower proportion of Māori quality scores in the less than 200 band, compared with the proportion of Māori EPs awarded an R, is explained by the fact that those researchers who did not submit an EP were automatically awarded an R. Further analysis would be interesting to explore what proportion of the Rs who were not R(NE) submitted an EP. In the higher result categories, the proportions of A and B results among Māori researchers were fairly stable proportionately across rounds, as against small increases in these categories across the whole of the PBRF.

There was, however, a noticeable increase in the both the number and proportion of Māori researchers 2003-2006 who achieved a C funding outcome overall. In 2006, over a quarter of the Cs achieved were C(NE). The proportional increase in Cs among Māori researchers 2003-2006 is also higher than the increase across the whole of the PBRF. This compares with the drop, proportionally, in the number of Rs achieved across the two rounds. We can perhaps infer from this that the introduction of the NE category is allowing more Māori researchers to achieve a C result.

5.6 Pacific Peoples researchers in the PBRF[39]

5.2.1 EP submissions of Pacific Peoples researchers

While the proportion of EP submissions by Pacific Peoples researchers in 2003 was lower than the figure for all PBRF researchers, the proportion for Pacific Peoples researchers was fairly comparable with all PBRF in 2006. The majority of Pacific Peoples entrants in 2006 were located in the university sub-sector, for whom the majority had EPs submitted.

5.2.2 Academic and demographic characteristics of Pacific Peoples researchers

In both Quality Evaluations, the mean age of Pacific Peoples researchers was close to the mean across all PBRF researchers; however, Pacific Peoples researchers were generally more prevalent in younger age bands than all PBRF researchers. There was a strong shift in the age spread of Pacific Peoples researchers from 2003 to 2006. In 2003, the majority of Pacific Peoples researchers who participated were up to 54 years of age, most of whom were in the 35-44 age band. In the following round, however, most Pacific Peoples

[39] Because of the much smaller numbers of Pacific Peoples in the PBRF in 2003 and 2006, it is only possible to provide a high level and superficial commentary on PBRF researchers within this group. Even basic statistical comparisons with the wider PBRF are tenuous, therefore discussion is largely prescribed to basic numeric information.

researchers were between 35 and 54 years of age. In addition, there were half as many researchers in the youngest age band and twice as many in the 55-64 band than in 2003. Some eighty percent of the Pacific Peoples researchers who were entrants in 2006 were aged 35 and above. This 'ageing' of researchers 2003 to 2006 mirrors the trend across the whole of the PBRF. Yet, this is in the context of steadily increasing RDCs by Pacific Peoples 2003-2006, at growth rates higher than those across other ethnic groups. More information about the age profile of Pacific Peoples RDCs may be useful to explore whether Pacific Peoples graduates are perhaps older.

In parallel with the age shift 2003-2006, the gender ratio of Pacific Peoples researchers also changed. Whereas the majority of Pacific Peoples researchers in 2003 were female, similar to the profile of Māori researchers, the ratio was reversed in the second round, and 2006 figures were similar to those for all PBRF researchers. This shift related to higher numbers of female Pacific Peoples exiters, and at the same time, higher numbers of male Pacific Peoples entrants in 2006. The majority of those male researchers were located in the university sub-sector, and for most of those researchers EPs were submitted. Whether this picture fits with the gender ratio in RDCs among Pacific Peoples is not addressed in this paper, and this issue might be explored further.

As was the case for Māori researchers, most Pacific Peoples researchers were located in early to mid career positions, with by far the majority in Lecturer and Senior Lecturer positions in both 2003 and 2006. As with all PBRF, there was a much smaller proportion of Pacific Peoples researchers in the Assistant Lecturer position in 2006, mirroring a general PBRF shift, albeit the change appears more marked among Pacific Peoples researchers. Nevertheless, even in 2006, the proportions of Senior Lecturers and Professors among Pacific Peoples were much smaller than the figures across the PBRF. Moreover, all participating Pacific Peoples researchers in Assistant Lecturer positions and a third of Lecturers in that round were identified as NE. Given these points, particularly the small numbers of Pacific Peoples researchers participating in the more experienced, senior – leadership levels, how are early career researchers finding support and mentors, and what are the implications of any demand on the few senior researchers themselves? What are the possible effects, if any, of both the smaller numbers, and the profile just discussed for Pacific Peoples researchers in compiling EPs, and on the PBRF results of Pacific Peoples researchers overall? These are questions that require further consultation with the sector.

5.2.3 Characteristics of Pacific Peoples researchers' EPs

Three key panels in assessing Pacific Peoples researchers' EPs in both Quality Evaluations were Education, Social Sciences and Other Cultural/ Social Sciences, and Medicine and Public Health. In 2003, there were also higher numbers assessed by the Business and Economics, and Engineering Technology and Architecture Panels. Overall, more Pacific Peoples researchers' EPs were in panel areas of lower subject weightings. More analysis of the transitions of this group of PBRF researchers from 2003 to 2006, such as changes in the proportions of Pacific Peoples researchers by sub-sector, is required to identify what factors contributed to the small shifts in proportions of panel assessment of Pacific Peoples researchers' EPs across the two years.

As was the case with Māori researchers, in both 2003 and 2006 the number of EPs submitted in education was noticeably higher than the proportion assessed in this subject area across the PBRF overall. As noted previously, it would be interesting to explore the reason for this concentration and the themes being researched within this broader disciplinary area. On the other hand, there were much lesser proportions of EPs in the Biological and Physical Sciences, and Engineering and Technology areas, relative to figures in the whole of the PBRF. It might be interesting to explore whether these subject concentrations reflect a continuation of trends in undergraduate and post-graduate tertiary

completions by Pacific Peoples students? This might be answered through further analysis of RDCs by subject area.

The numbers of NROs submitted for individual Pacific Peoples researchers increased considerably from 2003 to 2006, and perhaps this reflects the higher proportions of Pacific Peoples researchers in higher age bands and in more senior academic positions in the second round.

The most common NRO types submitted by Pacific Peoples researchers were fairly comparable to the profile across the whole of the PBRF. Again, this may reflect the high proportion of researchers in the university sub-sector. However, as was found in the analysis of Māori researchers' NROs, a higher proportion of conference contributions and reports to external bodies, and a much lower proportion of journal articles in both rounds may have implications for preparation of EPs and their assessment. More information would be needed to explore this idea further.

5.2.4 Results of Pacific Peoples researchers

Pacific Peoples researchers' mean scores remained stable between 2003 and 2006, although they remained comparatively lower than the mean PBRF scores. However, the analysis highlighted that component scores for Pacific Peoples researchers have improved across the two quality evaluations, when the mean scores for PE and CRE are compared against RO scores. The proportion of PE scores than were lower than RO scores decreased among Pacific Peoples researchers from 2003 to 2006. This appears to fit with the changes in the demographic and academic profile of Pacific Peoples researchers in 2006, which was generally older, male and more senior in career. And related perhaps, while still marginally higher than the proportion across the whole of the PBRF, the proportion of NE researchers among Pacific Peoples researchers was much lower than the proportion among Māori researchers. Similar to the changes in final quality category among Māori researchers, there was little change in the numbers of As and Bs achieved among Pacific Peoples researchers across rounds. Conversely, the proportion of Rs reduced from some 68 percent to 50 percent. At the same time, there was a marked increase in the number of Pacific Peoples researchers in the PBRF that achieved a funded C category, from 20 in 2003 to 36 in 2006. Again, the NE category appears to have facilitated this outcome, with more early career researchers moving into the C(NE) funding category.

6 Concluding thoughts

5.7 The significance of focusing on Māori and Pacific Peoples researchers in the PBRF

The number of Māori and Pacific Peoples researchers who participated in the PBRF increased from 2003 to 2006. Researchers belonging to these ethnic groups comprised fairly stable proportions across both Quality Evaluations; Māori comprised just under 6 percent of PBRF researchers; Pacific Peoples comprised just over 1 percent. These levels of participation reflect similar levels of RDCs in tertiary education among Māori and Pacific Peoples. Both the 2003 and 2006 proportions of RDCs for Māori (just under 6 percent) and Pacific Peoples (between 1 and 2 percent) were very close to the proportions of Māori and Pacific Peoples researchers in the PBRF.

The numbers of Māori and Pacific Peoples researchers in the PBRF appear disproportionately low, in the context of the numbers of people identifying with these communities in the wider population. Similarly, the 2006 proportions of RDCs for these ethnic groups were comparatively low. 2006 Census figures show considerably higher proportions of usual residents in the national population belonging to Māori and Pacific Peoples ethnic groups, with an inter-censal trend of high growth for Pacific Peoples ethnic groups in particular.[40]

At the same time, age-standardised figures show steady growth in the participation of Māori and Pacific Peoples in tertiary education overall, with the most rapid growth occurring at undergraduate levels, although this growth has levelled off since 2006.[41] The national goals, outlined in the Tertiary Education Strategy 2007 – 2012[42], on supporting Māori and Pacific Peoples student participation and achievement in tertiary education underscores how important it is to seek insights into the participation of Māori and Pacific Peoples researchers in the PBRF system.

5.8 Positive effects and unintended consequences of the PBRF on Māori and Pacific Peoples researchers

The core question this paper attempted to explore was whether there is any evidence in the PBRF data of positive effects or unintended outcomes for Māori and Pacific Peoples researchers, based on analysis of the data from the two Quality Evaluations in 2003 and 2006.

The analysis of rates of participation, and EP submissions, as a proportion of all PBRF-eligible researchers, showed two distinct patterns for Māori and Pacific Peoples researchers. The rate of submissions by Pacific Peoples researchers was comparable with the rate across the whole of the PBRF. Alternatively, the rate increased among Māori researchers over the two evaluation rounds, yet the Māori rate remained considerably lower relative to the wider PBRF. The question is, within the differing levels of participation among different TEOs, why – among those researchers who were PBRF eligible - were fewer Māori researchers' EPs

---

[40] See "Ethnic groups in New Zealand", in *2006 Census: Quickstats About Culture and Identity* (Wellington, 2007), accessed at http://www.stats.govt.nz/census/2006-census-data/quickstats-about-culture-identity/quickstats-about-culture-and-identity.htm

[41] See *Profile and Trends 2006: New Zealand's Tertiary Education Sector* (Ministry of Education, Wellington, 2007), p. 55.

[42] See for example, *Tertiary Education Strategy 2007 – 12: Incorporating Statement of Tertiary Education Priorities 2008-10* (Ministry of Education, Wellington, 2007), p. 22-23.

submitted? Is it the nature of the sub-sectors in which they are participating, or, is it perhaps the nature of the research that Māori researchers are undertaking?

The transitions of researchers in, across and out of the PBRF among both Māori and Pacific Peoples researchers appear to be generally comparable to the wider PBRF pattern. Yet, the results of Māori and Pacific Peoples researchers are concentrated in the lower end of component scores, quality scores and final quality categories relative to wider PBRF results. The analysis showed that Māori and Pacific Peoples researchers' PE and CRE scores were generally much lower than across the whole of the PBRF, although there appeared to be improvement in Pacific Peoples PE scores relative to RO scores between 2003 and 2006.

It is unclear why these ethnic group differences exist, but it is likely the contributing factors are complex. Further research would be required to investigate this. Looking at the demographic, academic and research area profiles of Māori and Pacific Peoples in the PBRF has revealed the distinct characteristics of these two groups. Are there links to be made between these profiles and the final quality category results? This paper has identified that Māori researchers in the PBRF are predominantly female. While the data discussed in this paper does not support addressing the question of whether females are disadvantaged in the PBRF, other research suggests this question may warrant further research.[43] Having said this, this paper also showed that the gender balance among Pacific Peoples researchers in 2006 reflected the overall PBRF pattern. The panels in which Māori and Pacific Peoples researchers' EPs were assessed were in areas of lower subject weightings, and this also has implications for the level of funding that these researchers can attract.

On the other hand, the higher proportions of NE researchers among Pacific Peoples, and particularly among Māori, researchers in the PBRF may be effecting a form of positive discrimination. It appears that the introduction of the NE category is assisting improvement in the overall results of Māori and Pacific Peoples researchers by allowing more early career researchers to achieve C funding outcomes through the C(NE) category.

Finally, the analysis has shown that around a third of Māori researchers in the PBRF in 2003 and 2006 accessed the MKD Panel as the primary panel. In addition, quite a number of Māori EPs in 2006 that were assessed by discipline-based panels, were cross-referred to MKD. The question is whether the MKD Panel is functioning as it was designed to function, noting that TEOs, not researchers themselves, generally make the final decision about which panel will assess which EP. The data discussed here does not support exploring the implications of panel decisions further; however, consultation with the sector may assist to this end.

[43] See Warren Smart, *What determines the research performance of staff in New Zealand's tertiary education sector? An analysis of the Performance-Based Research Fund Quality Evaluation.* (Wellington: Ministry of Education, 2005).

7 Further research

This paper has focused largely on PBRF researchers as 2003 and 2006 Quality Evaluation cohorts, and to a lesser extent on shifts that occurred between them. More detailed information on the transitions of Māori and Pacific Peoples researchers into and out of the PBRF between 2003 and 2006 would better help us to understand 'effects' of PBRF on researchers belonging to these ethnic groups. This paper gave limited attention to the transitions of researchers, largely due to time constraints. The focus on basic summary description was informed by an understanding that the fundamental requirement of the paper was that it needed to provide a base of information on these ethnic groups, in order to support further exploration of PBRF effects on Māori and Pacific Peoples researchers. The extent of changes, both within and external to the PBRF, between 2003 and 2006, particularly the changing landscape of researchers and TEOs in each Quality Evaluation, means the changing data described in this paper is best read as changes within the system, rather than effects on particular ethnic groups per se. The information discussed here provides a good foundation for further research however. The data generated in the next PBRF Quality Evaluation will provide an even more robust frame for longitudinal analysis.

It would be helpful to have a more definitive picture of the subject areas in which Māori and Pacific Peoples researchers are active. This paper highlights the high numbers of Māori and Pacific Peoples who submitted to the Education Panel. Why this concentration, does it reflect high numbers of MPP staff in education departments? Can we explore, for those PBRF researchers who submitted to the education panel, which departments and areas of research they work in their respective institutions? An alternative explanation to explore is anecdotal reports about researchers with a strong teaching focus who have undertaken research of a more pedagogical nature to enhance their research performance. Might this be a partial explanation for the strong concentrations in education? Moreover, this discussion highlights the difficulty of ascertaining the subject areas of Māori researchers, for those EPs assessed by the MKD Panel. The MKD Panel reported in 2007 that it considered itself to be Māori-focused, not subject focused. Perhaps one way of exploring this further might be a content analysis of a sample of EPs that went to the MKD Panel?

More detailed information is needed around RDCs to better link RDCs information, with information on Māori and Pacific Peoples academic staff, and Māori and Pacific Peoples PBRF- eligible researchers. On a high level the questions are, how does the gender and age profile of Māori and Pacific Peoples research degree completions impact on the profile of the Māori and Pacific Peoples tertiary workforce, and what are the implications for PBRF participation? While basic data on RDCs was sourced for this paper, it does not include analysis by NQF level (PhDs vs Masters), by gender, or by age – yet we know from other research on tertiary education completions that the Māori gender and age profile is distinct from that of other ethnic groups.[44] The Māori data shows that the proportion of Māori female to male PBRF researchers is heavy on the former, is this a natural corollary to more Māori females than males completing doctorates? If not, where are the Māori male researchers going when they complete Research Masters and Doctorate Theses?

One idea scoped for this paper was to profile 'Māori research' and 'Pacific research' within the PBRF in addition to profiling Māori and Pacific Peoples researchers. This idea was not pursued in the present paper, however, because the approach requires more conceptual thought to develop valid proxies for 'Māori research' and 'Pacific research', and this has broader time and consultation implications.

[44] See Ministry of Education, *Profile and Trends: New Zealand's Tertiary Education Sector*. (Wellington: Ministry of Education, 2007).

In the case of ‘Māori Research’ in the PBRF 2003 – 2006, there is no indicator variable in the PBRF data to identify research that is distinctly ‘Māori’. Perhaps we might look at proxies that are indicative in a general sense, for instance, of research most relevant to Māori well-being and communities (such as suggested by the PBRF Guidelines 2006 definition). Such proxies might include the characteristics of submissions to (and from) the MKD Panel and/or the characteristics of EPs submitted in the wānanga sector**.** However, the caveat here is that such an approach would not capture all PBRF researchers who might consider their research to be ‘Māori’, or all research using Kaupapa Māori methodology, or all research relating to Māori subject matter or interest. Any such analysis would need to indicate, for example, how much research by Māori researchers is happening outside of the participating wānanga, and the number of Māori researchers for whom the subject area was not MKD (if MKD is the focus). These limitations would have implications for the conclusions able to be drawn.

‘Pacific Research’ within the PBRF can be identified by a 2006 only variable, namely the ‘Pacific research’ indicator. The possible issue here, however, is that the validity of this indicator, in terms of the way this indicator is understood by the sector, and whether it truly captures the essence of what you would want to explore in the concept of ‘Pacific Research’, would need to be tested. The PBRF Guidelines 2006 definition of ‘Pacific Research’ appears to cover quite a broad range of research. Finally, there is no way to explore the development of ‘Pacific Research’ by this definition until the 2012 Quality Evaluation data is available.

8 Glossary

Term	Meaning
PBRF census	The PBRF census details all tertiary staff in New Zealand who were assessed for research quality.
entrants	Researchers appearing in the PBRF for the first time in the 2006 census.
EP	evidence portfolio
ERI	external research income
evidence portfolio (EP)	A collection of information on an eligible staff member's research outputs, contribution to the research environment, and indicators of peer esteem during the assessment period. The EP is reviewed by a peer review panel to assess the quality of the staff member's research and assigned to a quality category.
exiters	Researchers who appeared in the 2003 census but not in the 2006 census.
external research income (ERI)	A measure of the income for research purposes gained by a TEO from external sources. One of the three measures of the PBRF that determines funding to tertiary providers.
FTE	full-time equivalent
funded	Researchers assigned to the A, B, C and C(NE) quality categories whose research therefore earns funds through the PBRF for the TEOs employing them.
improvers	Researchers whose 2006 quality category was higher than their 2003 quality category.
ITP	Institute of technology and polytechnic
NE	New and Emerging
New and Emerging (NE)	A PBRF designation for researchers who are sufficiently new to a subject and/or to tertiary employment that their research is not yet well established.
NRO	Nominated Research Output
PBRF	Performance-Based Research Fund
PBRF-eligible	Tertiary academic staff who meet the criteria for taking part in the quality evaluation. PBRF-eligible staff are assigned a final quality category unless the tertiary education organisation employing them elects not to participate in the PBRF.
Performance-Based Research Fund (PBRF)	A contestable fund that has progressively replaced a bulk-funding model of non-specific research funding in the tertiary sector. The three components to the fund are: • research quality (60 percent) • research degree completions (RDCs) (25 percent), and • external research income (ERI) (15 percent).

Term	Meaning
quality category	A rating of researcher excellence, with A signifying the highest level and R representing research activity or quality at a level insufficient for recognition for research funding. The categories are A, B, C, C(NE), R, and R(NE).
RDC	research degree completion
decreasers	Researchers whose 2006 final quality category was lower than their 2003 quality category. This does not apply to researchers who went from C to C(NE).
research degree completion (RDC)	A measure of the number of research-based postgraduate degrees completed within a TEO. One of the three measures of the PBRF that determines funding to tertiary providers.
RO	Research output
QS	quality score
subject	One of the areas of research activity identified in the PBRF design for reporting purposes. Research activity is classified into 42 subject areas each of which embodies a recognised academic discipline or set of related disciplines.
subject weighting	A funding multiplier of 1, 2 or 2.5 that is applied to research in specific subjects according to the relative expense of research in the subject.
TEC	Tertiary Education Commission Te Amorangi Mātauranga Matua
TEO	tertiary education organisation
transfers	Researchers who appeared in different subjects in the 2003 and 2006 censuses.

9 References

Arini 'Commentary: Strip away the bark to make the tapa: Understanding performance in education research' In R. Smith J. Jesson, (eds.), *Punishing the discipline - the PBRF regime: Evaluating the position of Education - Where to from here?,* Auckland, The University of Auckland and AUT University, 84-89, 2005.

Bakker, L. Boston J., Campbell, L., and Smyth, R, *Evaluating the Performance Based Research Fund: Framing the Debate*, Wellington: Institute of Policy Studies, Victoria University of Wellington, 2006.

Boston, J. 'Rationale for the Performance-Based Research Fund', in Leon Bakker, Jonathan Boston, Lesley Campbell and Roger Smyth, *Evaluating the Performance Based Research Fund: Framing the Debate*, Wellington: Institute of Policy Studies, Victoria University of Wellington, 2006.

Duignan, P. *Performance Based Research Fund (PBRF) Intervention Logic, Evaluation and Monitoring Framework Discussion Paper*, Wellington: Parker Duignan Ltd., 2005.

McCurthy-Pilkington, C. 'Whakahi or whakama? Skiting or Shyness Either way we lose mana' In R. Smith J. Jesson, (eds.), *Punishing the discipline - the PBRF regime: Evaluating the position of Education - Where to from here?,* Auckland, The University of Auckland and AUT University, 73-80, 2005.

Ministry of Education, *Profiles and Trends 2006: New Zealand's tertiary education sector* (Wellington: Ministry of Education, 2007).

Ministry of Education*, Tertiary Education Strategy 2007 – 12: Incorporating Statement of Tertiary Education Priorities 2008-10* (Wellington: Ministry of Education, 2007),

Smart, W. 'What determines the research performance of staff in New Zealand's tertiary education sector? An analysis of the Performance-Based Research Fund Quality Evaluation', Wellington, Ministry of Education, November 2005.

Smith, A. and Bruce-Ferguson, P. 'Impact of the Performance-Based Research Fund on Māori Research and Researchers' In Bakker, Leon, Jonathan Boston, Lesley Campbell and Roger Smyth (eds), *Evaluating the Performance Based Research Fund: Framing the debate* Wellington, Institute of Policy Studies, Victoria University of Wellington, 387-407, 2006.

Statistics New Zealand, *2006 Census: Quickstats About Culture and Identity*, Wellington, 2007. Available from http://www.stats.govt.nz/census/2006-census-data/quickstats-about-culture-identity/quickstats-about-culture-and-identity.htm

Tanielu, L. 'Commentary: A Samoan body in a Palagi coat: A personal perspective: The impact of PBRF on Pasifika education' In R. Smith J. Jesson, (eds.), *Punishing the discipline - the PBRF regime: Evaluating the position of Education - Where to from here?,* Auckland, The University of Auckland and AUT University, 73-80, 2005.

Tawhai, V., Pihera, K., & Bruce-Ferguson, P. (2004, July). *Does the PBRF Need Reshaping? A New Māori Educational Institution's Perspective.* Paper presented at the HERDSA

2004 Conference: Transforming Knowledge into Wisdom, Miri, Malaysia. Available from http://herdsa2004.curtin.edu.my/Contributions/RefereedPapers.htm

Tertiary Education Commission, *Performance-Based Research Fund Quality Evaluation: Māori Knowledge and Development Panel – The 2003 Assessmen*t, Wellington, Tertiary Education Commission Te Amorangi Mātauranga Matua, April 2004.

Tertiary Education Commission, *Performance-Based Research Fund Quality Evaluation: Māori Knowledge and Development Panel – The 2006 Assessmen*t, Wellington, Tertiary Education Commission Te Amorangi Mātauranga Matua, Unpublished Report, 2007.

TEC, *Performance-Based Research Fund Guidelines 2006* (Wellington: Tertiary Education Commission Te Amorangi Mātauranga Matua, 2005).

WEB Research, *Phase 1 Evaluation of the Implementation of the PBRF and the Conduct of the 2003 Quality Evaluation*, Wellington: Centre for Research on Work, Education and Business, 2004. Available from http://www.tec.govt.nz/upload/downloads/eval-of-implementation-pbrf-and-2003-quality-eval-conduct.pdf

10 Appendix

10.2 Data approach and technical notes

Ethnicity of individual researchers
The unit of analysis was individual PBRF-eligible researchers (not all Staff), and the key variable was self-reported ethnic group or groups (up to three). Researchers who identified as belonging to one or more Pacific ethnic group is counted in the totals for Pacific Peoples. Section 1 provides an ethnic profile of all PBRF researchers counts ethnic group responses, unlike the remainder of the paper (sections 2 and 3) that reports the ethnic groups identified by distinct individuals researchers as either Māori, or, Pacific Peoples. Where RDCs data is provided in this paper, the count of completions is ethnic-prioritised data. The remainder of the report counts distinct ethnicity.

Limited attention was able to be given to the movements of researchers in, between and out of the PBRF (largely due to time constraints), that is, to understanding key aspects of the profile of researchers by ethnicity in 2003 only, as against the profile of researchers in both rounds by ethnicity, as against 2006 entrants by ethnicity. The focus on basic ethnic group description about the 2003 and 2006 cohorts was informed by an understanding that the fundamental requirement of the paper was that it needed to provide a 'baseline' of information on these groups to support further exploration of concerns raised in relation to 'effects' of the PBRF on Māori and Pacific Peoples researchers.

Sub-sector analysis
There was no analysis at the TEO level, and limited analysis at the sub-sector level. A limitation posed by this approach is that it ignores research being undertaken by researchers who worked for more than one TEO, or involved in projects across TEOs. It is difficult to know the extent to which this occurs among Māori and Pacific Peoples researchers but we might infer this is common, based on the small numbers of researchers and communalistic research undertaken within Māori and Pacific communities.

Age groups
Ages of distinct individuals are grouped into bands – less than 34; 35 – 44; 45 – 54; 55 – 64; 65+. However, mean ages were calculated from individual scores.

Gender
2006 column totals and percentages for gender exclude one participant for whom gender was unspecified.

Academic position
The full job titles sent to the TEC by TEOs were mapped into seven categories. Five are standard academic categories denoting rank / seniority. The final two "Other" categories can conceivably reflect work that does not map clearly into the five standard categories. The diversity of job titles reflects the careful construction of staff roles in the TEOs and the clear distinctions made between staff duties in different roles. For some positions, in order to

aggregate roles the pay rates available from AUS were used. This permitted the mapping of the Senior Tutor role onto the Lecturer category for a variety of universities, but also allowed the same role to be mapped to Assistant Lecturer for others.

Assistant Lecturer denotes an entry-level position that would be filled by a well-qualified subject-specialist who could be expected to progress eventually to other academic ranks. This includes postdoctoral fellows, residents, kaiwhakaako, some tutors, "Academic Staff Member" at two of the polytechnics, and a variety of assistant positions.

Lecturer includes a large number of staff whose actual title is Lecturer. It also includes Research Fellows, Research Officer, many Senior Tutors, Senior Teachers, Senior Kaiwhakaako, Senior Academic Staff member, and titles such as Scientist and Engineer. The grouping reflects expertise and similar pay rates. It does, however, conflate some roles that are more junior, like newer PhDs, for whom progress along the set of titles here is expected, and some senior roles, such as experienced teachers, from which individuals would be unlikely to progress without further achievement in one or more areas (such as research or administration).

Senior Lecturer includes Senior Research Fellow, Senior Researcher, Senior Associate, Principal Lecturer, and Principal Academic Staff Member. This is a role that can include many staff who do not expect to progress further.

Associate Professor has fewer other job titles in the general aggregation.

Most individuals with this Simplified Title in fact hold the specific title of Associate Professor. Other titles include Reader, Research Associate Professor, and Principal Research Officer. Named fellowships are included in the Associate Professor category, so that the Frances Hodgkins Fellow at Otago is grouped here.

Professor is the highest academic rank here. Included are Professorial Research Chair, named Chairs, Research Professor, and Emeritus Professor.

These five categories are presented above in order, so that moving from Assistant Lecturer to Lecturer is a promotion, etc.

Other Staff Position includes a large variety of roles that do not map clearly onto the above academic ranks. It includes roles that do not rise to the level of Assistant Lecturer because they do not sufficiently denote the likelihood of remaining in the tertiary workforce. Other roles are included here because they involve specific administrative duties that are likely to be fulfilled by someone at the Assistant Lecturer, Lecturer, or Senior Lecturer role, but the actual title does not allow confident assignment to one of those categories. Included, for example, are consultants, coordinators, fixed term academic, lab technician, research support, technologist, and some assistant roles.

Other Administrative / Leadership includes roles that might be fulfilled by Professors, Associate Professors, or occasionally by Senior Lecturers. These include roles with titles such as chair, head, director, manager, leader, pouhere, dean, VC, and registrar.

This mapping obscures some important distinctions between teaching-focused and research-focused job titles, and particularly at the first two ranks, does not distinguish well between entry-level positions such as post-doctoral fellows and positions such as Senior Tutor that can be held indefinitely. Nonetheless the mapping should allow tracking of tertiary staff development and career progress.

Component scores

When looking at component scores (RO/CRE/PE) in this paper, carry-over scores were included, while non-EP submitters were excluded, largely for reasons of small numbers outlined previously and how this would skew the results. (If you exclude carry-overs, the count is artificially reduced because you exclude almost all A researchers from 2003 and large portions of B and C researchers). However, there was no time to explore the difference that might result in mean scores if different approaches had been pursued. Note that in 2006, NE researchers were not required to provide evidence of CRE and PE, and therefore PE and CRE mean scores are likely to be influenced by numbers of NE researchers.

10.3 Data Processes

The following steps were taken to identify and resolve data issues, resulting in the final data used in this report.

Generate Microsoft Excel files for PBRF publications

2003 data

Remove ineligible records.

Delete two records that were duplicated in error.

Update FTE and E-FTE for one record.

Correct records for two people with the same name (records were transposed).

Ensure Final Quality Category is the same for records where a single researcher has worked for multiple tertiary education organisations (TEOs).

Remove records for TEOs that did not submit evidence portfolios (EPs).

Populate Final Quality Category where missing either by copying across the Indicative QC (the system only records the Final QC where the Indicative QC differs) or entering R for remaining records.

Correct minor issues: remove panels for EPs that were not assessed, correct Nominated Academic Units and Panels.

2006 data

Remove ineligible records.

Add records incorrectly flagged as ineligible.

Re-code staff of Auckland College of Education and Wellington College of Education to University of Auckland or Victoria University of Wellington as appropriate.

Remove records for one TEO confirmed as ineligible to participate.

Correct minor issues.

Microsoft Excel files imported into Microsoft Access

The following tables were output (without modifications) from the PBRF_2003 database:

census

The following tables were output (without modifications) from the PBRF_2006 database:

PBRF_CENSUS

Cognos 8 (previously ReportNet) was used to create a query to create a table containing selected staff information (TEO Code, name, salutation, sector identification number, ethnicities, provider staff ID and position title) which was imported into MS Access as '2006 – Staff Data'.

Current versions of the Microsoft Excel files used for the generation of figures used in the 2003 and 2006 publications were also imported into Microsoft Access.

Microsoft Access processing

Add new columns to 2003 and 2006 data – one column for each quality category (A, B, C and R – plus C(NE) and R(NE) for 2006). For each record in the tables, enter a 1 in the column correlating to the researchers' final quality category.

Join report, census and provider tables and output selected fields to delimited text files for importing and processing in SAS. Staff data (such as name, ethnicity, gender, date of birth (DOB) and so on) was selected from the census tables, TEO data was selected from the provider table, while the remaining data was selected from the report tables.

In addition, output the census tables to delimited text files.

SAS processing

In addition to the most recent 2003 and 2006 cleansed data files, the following files were also imported into SAS datasets:

Ethnicity.txt – A list of ethnicity codes and descriptions.

JobTitles.txt – A list of unedited job titles from 2003 and 2006 files;

Reformatted Job titles: First letter of each word is upper case, remaining text is lower case.

Research Group: Standardise job title groups – based on best guess approach.

Subjects.txt – A list of subject types and their PBRF weighting.

The importing process consists of importing the delimited text files with little modification (some field names were changed to use standard names in the 2003 and 2006 datasets). However, default (11/11/1915 and 11/11/2015) dates in the DOB fields were removed.

The most recently reported DOB, gender and ethnicity fields were extracted from the Single Data Return database for use in correcting and completing incorrect or incomplete records in the PBRF datasets.

Where a match between the PBRF datasets and SDR was not possible, a number of DOBs and genders were manually corrected using information sourced from the National Student Index (NSI) website. Table details the number of records that could not be corrected.

Table: Number of gender, date of birth and ethnicity records not able to be corrected

Records	2003	2006
Missing gender	0	1
Missing date of birth	160	256
Missing ethnicity	2,305	1,495

An Age field was created for each record, with the age being the number of whole years between DOB and 1 July 2003 and between DOB and 1 July 2006.

Eight 2006 records had their Submission Type (Carry Over, Resubmission, No EP, or New Submission) corrected.

Two SAS datasets were created during this importation process:

PBRF2003 – 8,018 records

PBRF2006 – 8,671 records

Identification of New Zealand Māori and Pacific Peoples PBRF-eligible researchers

For the purpose of this analysis, a researcher was considered to be New Zealand Māori if a value of "NZ Māori" was reported in any of the three self-reported ethnicity fields.

A researcher was identified as belonging to the Pacific Peoples group if any one of the following ethnicities was reported in any of the three self reported ethnicity fields:

Samoan
Cook Islands Māori
Tongan
Niuean
Tokelauan
Fijian
Other Pacific Island

This means that it is possible for a single researcher to be counted in both the New Zealand Māori and Pacific Peoples analysis.

Differences between summary data and the PBRF publications

Summary data compared with 2003 publication

After the publication of the 2003 PBRF report, amendments were made to the data. These changes included:

adjusting the subject area of a record as a result of the completion of complaints procedure

removing a record that was found to be ineligible after the report being published

adding a record that had been excluded in error, and

changing the final quality categories of 23 records.

Of the 23 records that had their final quality category changed, 3 were changed as a result of the completion of the complaints procedure while the remaining 20 were found to have been recorded incorrectly due to a data entry error.

As it was deemed appropriate to count “researchers” as opposed to staff members, an individual who was employed by more than one TEO has been counted once for the purposes of this paper – while the individual was counted once per TEO in the publication data. This approach has resulted in the exclusion of six records, meaning that 8,012 researchers were counted in this analysis – as opposed to the 8,018 staff members in the 2003 publication.

When a researcher is employed by multiple TEOs, the maximum of either the sum of the FTEs for all of the researchers’ records or 1 will be recorded as the FTE value.

As a result of amending the data, counting researchers and capping FTE values at 1, there are differences between the 2003 PBRF publication and figures used in this report. These differences can be found in 14 subject areas:

Agriculture and Other Applied Biological Sciences

Biomedical

Clinical Medicine

Ecology, Evolution and Behaviour

Education

English Language and Literature

Foreign Languages and Linguistics

Human Geography

Law

Management, Human Resources, International Business, Industrial Relations and Other Business

Molecular, Cellular and Whole Organism Biology

Music, Literary Arts and Other Arts

Public Health, and

Pure and Applied Mathematics.

In addition to the exclusion of six records as mentioned above, differences include:

a change in subject quality score (both weighted and unweighted) of between -0.5 and +0.26

changes in FTE totals of between +/- 1, and

a change in the number of As, Bs, Cs or Rs of between -5 and +4 (both weighted and unweighted).

Summary data compared with 2006 publication

As with the 2003 PBRF data, researchers rather than staff members have been counted. This approach has resulted in the exclusion of 6 records, meaning 8,665 researchers were counted in this analysis – as opposed to the 8,671 staff members in the 2006 publication.

Where a researcher is employed by multiple TEOs, the maximum of either the sum of the FTEs for all of the researchers’ records or 1 will be recorded as the FTE value. In addition,

four records were found to have FTE values greater than 1. These records also had their FTE values capped at 1.

As a result of counting researchers and capping FTE values at 1, there are differences between the 2006 PBRF publication and the results found in the analysis in this report. These differences can be found in nine subject areas:

Engineering and Technology;

Management, Human Resources, International Business, Industrial Relations and Other Business;

Māori Knowledge and Development;

Molecular, Cellular and Whole Organism Biology;

Music, Literary Arts and Other Arts;

Physics;

Political Science, International Relations and Public Policy;

Sociology, Social Policy, Social Work, Criminology and Gender Studies, and

Theatre and Dance, Film, Television and Multimedia.

In addition to the exclusion of six records as mentioned above (which reduced the number of As, Cs and R(NE)s by 1 and the number of Bs by 2), differences include:

a change in subject quality score (both weighted and unweighted) of between -0.05 and +0.01, and

changes in FTE totals of between +/- 1.