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TITLE	Data on Research versus Administrative Staff in New Zealand Research Organisations		
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AUTHOR/S	Christine Viernes and Nic Scott		
PURPOSE	To provide an overview of the data on research versus administrative staff in New Zealand research organisations, focusing on universities and CRIs, including workforce dynamics over time and international comparisons.		

Contents

Introduction

We are testing the hypothesis that a significant or increasing proportion of staff in New Zealand Public Research Organisations (PROs) are dedicated to non-research activities. To investigate this, we analysed the workforce dynamics of both universities and Crown Research Institutes (CRIs).

In this paper, we provide an analysis of workforce dynamics within New Zealand universities and CRIs. We compare these dynamics with international counterparts focusing on universities in Australia and the USA, as well as CRI equivalents in Australia, France, and the USA. Our analysis includes both time-series data to illustrate trends over time and bar charts comparing the proportion of non-research staff across different countries.

A recent paper from the New Zealand Initiative found that from 1990 onwards, the number of part-time academic staff started to decline, which changed the proportion of academic and non-academic staff.[i] 1991 came near the end of a period of thoroughgoing reform of New Zealand universities (Education Act of 1989 and the Education Amendment Act of 1990). Although what might account for this decline is not clear, the New Zealand Initiative paper suggests possible reasons for this decline include: (1) some part-time academic staff were relabelled as full-time academic staff or non-academic staff, (2) the change was a response to the government's decision to gradually lower the tuition subsidies it was paying to universities from 1991, and (3) the changes in labour regulations. The New Zealand Initiative paper also notes that due to the compositional and methodology changes in the data collection, it makes it difficult for them to make definitive conclusions.

The New Zealand university data in this report dates from 2002 onwards. Similar to the New Zealand Initiative paper, the compositional and methodology changes in the data collection (in 2002) makes it difficult to make definitive conclusions. We note this as a limitation in this report.

Summary

- The New Zealand university workforce has grown significantly since 2002. This increase has occurred across all role types: research-only staff, research support staff (including technicians), academic staff, and general staff.
- There is an increase in the proportion of non-research staff in the New Zealand university workforce from around 43% in 2002 to around 49% in 2012. From 2013 onwards, the proportion of non-research staff is roughly constant, with some evidence of a small decline since 2019. While different datasets differ on the exact proportion of non-research staff, the trend is consistent across the different datasets.
- The New Zealand CRI general support staff and research support staff have grown significantly (since 2002). There has been a decline in the number of researchers and scientists. (We do not have complete data over the full period).
- The CRI workforce data indicates an overall rise in the proportion of non-research staff over time, though there is some variation across different organisations.
- Classification differences across the different datasets make direct comparisons between universities and CRIs challenging, however the trends within each organisation type are more robust.

Section 1: Summary of University Dataset Findings

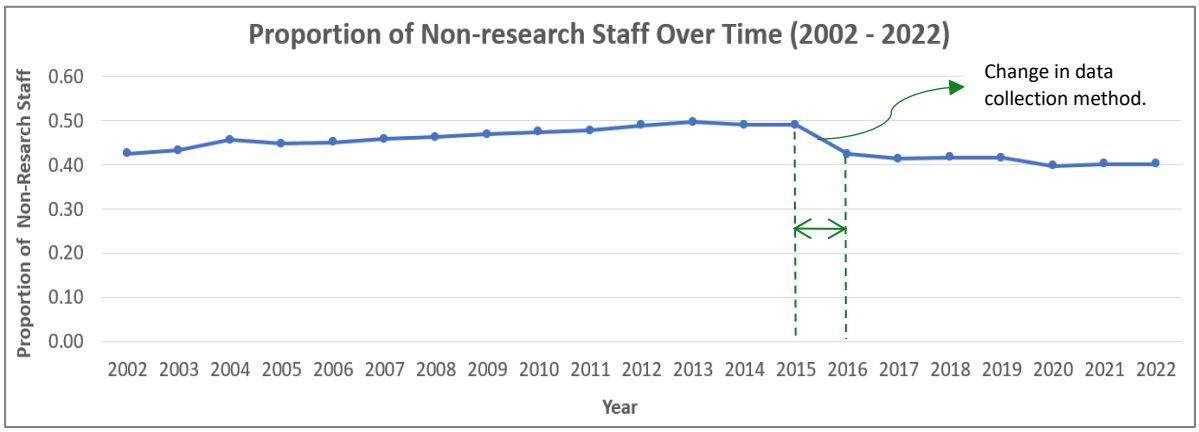

Figure 1: Proportion of Non-research Staff Over Time (2002 – 2022). This graph is based on University Dataset 1.

The data show a modest increase in the proportion of non-research staff from 43% in 2002 to around 49% in 2012, with a slightly declining proportion between 2013 (50%) and 2022 (40%). Interpretation of the long-term trend is complicated by changes in data collection methods in 2016, but the conclusion is also supported by the additional datasets that cover a shorter time period. Student researchers were not included in the data analysis.

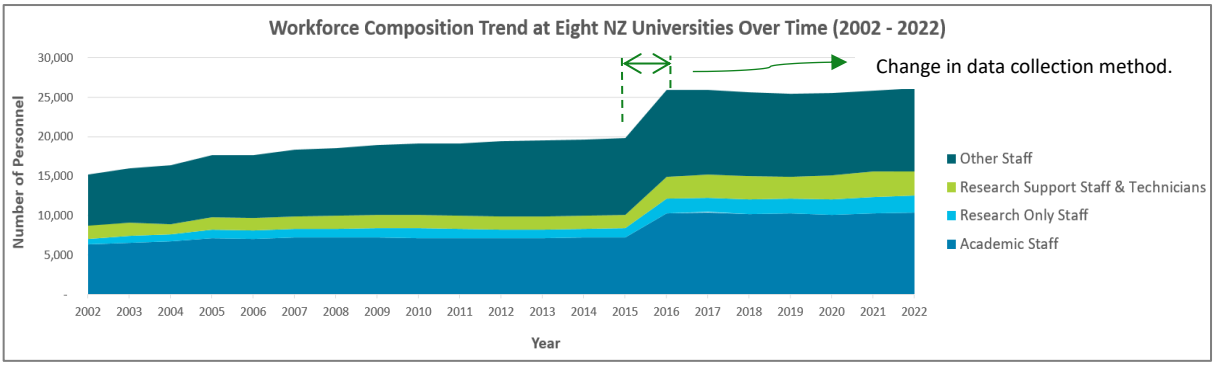

Figure 2: Workforce Composition Trend at Eight NZ Universities Over time (2002 – 2022). This graph is based on University Dataset 1.

More than 50% of university staff are non-academic (this encompasses research-only staff, research support staff, technicians, and general support staff). Some consider research support staff and technicians as invaluable. While these roles may not directly generate research, they still play significant roles within universities.

Comparing New Zealand University Dataset Findings to International Dataset Findings

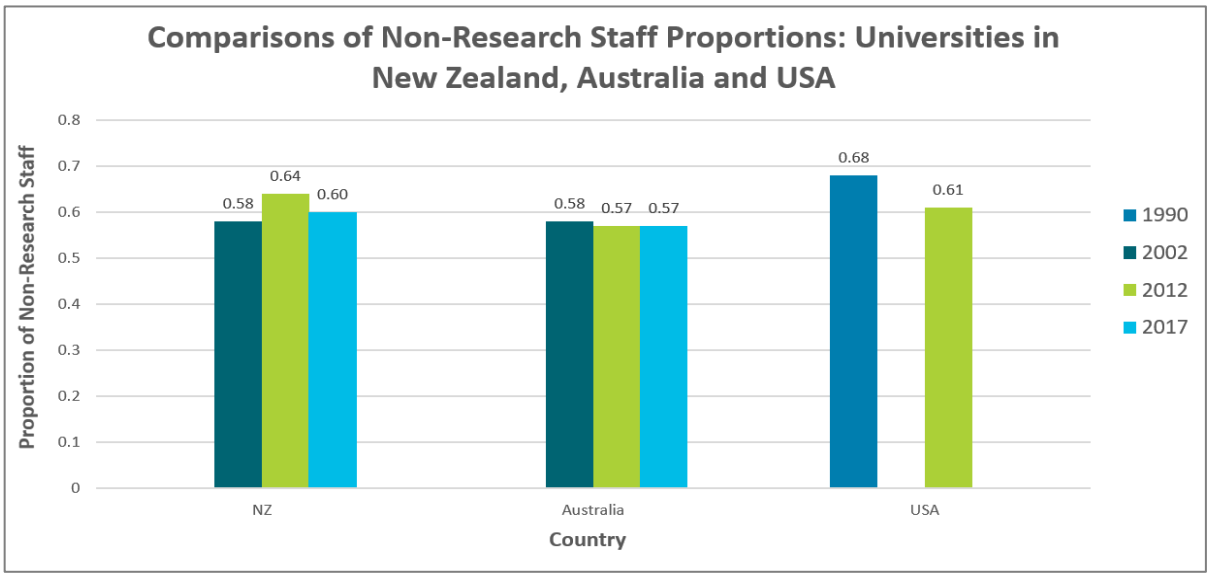

Figure 3: Comparison of the Proportion of Non-Research Staff from New Zealand, Australia and American Universities across different years. This graph is based on NZ Universities vs International Dataset.

The data indicates a gradual increase in the proportion of non-research staff at NZ universities, reaching 64% in 2012 before declining slightly to 60% in 2017. This trend mirrors that of Australian universities, where non-research staff remained stable at around 57% from 2002 to 2017[ii]. However, while Australian universities saw a significant increase in non-research staff numbers from 41,717 to 60,563, New Zealand universities experienced a smaller rise from 8,840 to 15,490.

Contrastingly, the American universities witnessed a substantial surge in non-academic staff from 937,165 in 1990 to 1,250,310 in 2012[iii]. However, direct comparisons between countries are challenging due to differences in data categorisation methods.

While caution is needed in interpreting the data, the observed patterns support the hypothesis of increasing administrative or managerial activities within NZ's PROs.

Section 2: Summary of Crown Research Institute Dataset Findings

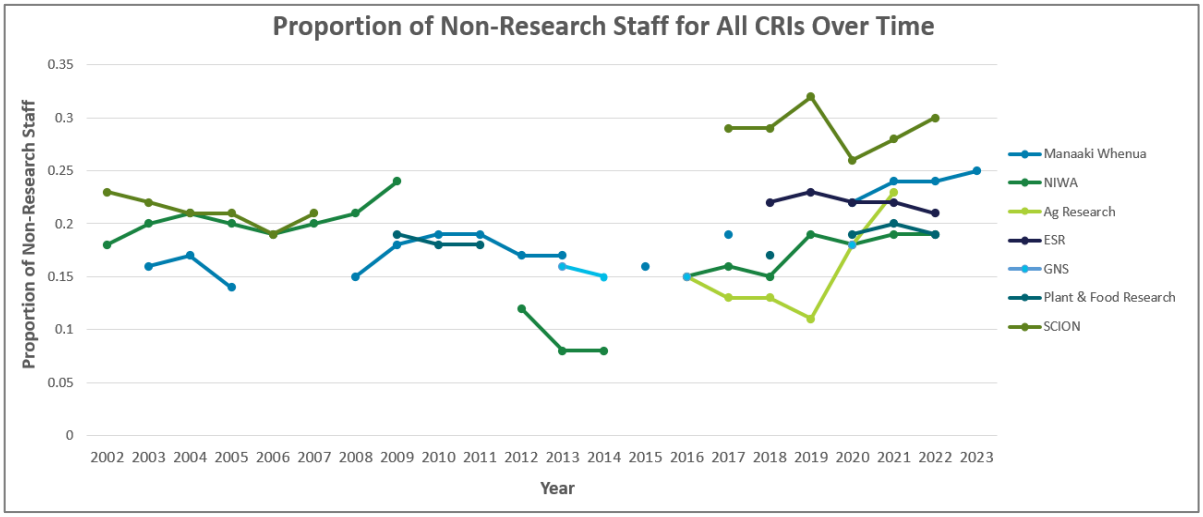

Figure 4: Proportion of Non-research Staff for all CRIs Over Time (2002 – 2023). This graph is based on each CRI's dataset.

These trends represent the current state of each of the seven CRIs. Since each CRI uses different methods for classifying staff roles, the total figures might not align perfectly. This makes it challenging to gather consistent data across all the CRIs over the entire time period (from 2002 to 2023). Despite this, the observed trends appear reasonably accurate.

It is not possible to combine the data due to lack of consistency in role classifications across the different CRIs. Nevertheless, from 2002 – 2023, most CRIs have reported an increase in administrative staff and a decrease in research staff.

The Ministry of Business, Innovation and Employment (MBIE), as the sole entity overseeing Crown corporations, does not have consistent data on these matters going back more than five years. This inconsistency should be addressed.

Comparing the New Zealand CRI Dataset Findings with International Equivalents

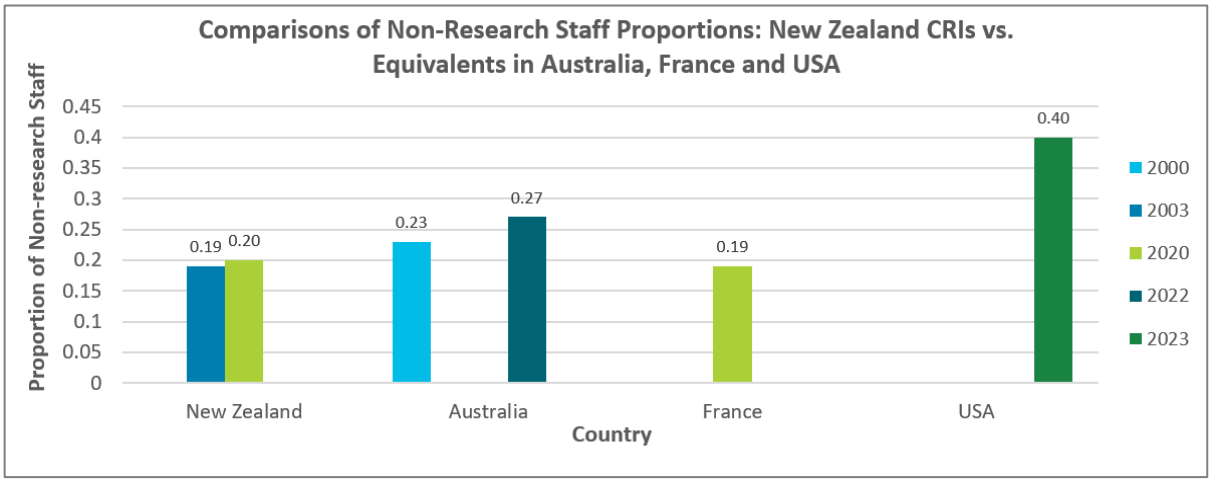

Figure 5: Comparison of the New Zealand CRI dataset findings with the international equivalents across different years. This graph is based on the NZ CRIs vs International Dataset.

The data indicates a slight increase in the proportion of non-research staff in NZ CRIs, from 19% in 2003 to 20% in 2020 (MBIE calculations of the average). Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO) saw an increase from 23% in 2000 to 27% in 2022.[iv] France's National Centre for Scientific Research (CNRS) had only one reliable data point from 2020, showing a proportion of non-research staff at 19%, aligning with New Zealand's data for the same year.[v] The USA's proportion of non-research staff stood at 40% in 2023 based on the sole available data point for that year.[vi]

These findings suggest a potential trend towards an increasing proportion of non-research staff across both New Zealand and Australia, although at different rates. The data from France and USA, although limited, also indicate a similar trend.

Section 3: Overall Conclusions

In summary, due to variations in staff role classifications and definitions between the university and CRI workforce data, direct comparisons become challenging. There is limited older workforce data available, especially for three specific CRIs (Ag Research, ESR and GNS Science), particularly before 2018. This lack of complete data throughout the years from 2002 to 2023 hinders a comprehensive analysis of staff role changes over time.

While a direct quantitative comparison is not possible with the available data, a general trend is visible. Generally, CRIs exhibit a lower proportion of non-research staff (15% to 30% across different datasets) compared to universities where the range is broader (26% to 54% across different datasets). Both sectors experienced slight increases in non-research staff proportions over time, varying based on specific roles and dataset timeframes.

Cawthron Institute, which is New Zealand's largest independent research organisation has workforce data from 2021 to 2023. This dataset reveals that the current proportion of non-research staff is 33%.

Section 4: Details from the University Datasets

For this paper, we have drawn on three different datasets. These datasets are broadly consistent in overall trends; however, they differ in the absolute values, likely due to exactly how they count different roles. We focus on results from dataset 1 because it covers the longest time period and provides the most detailed breakdown of staff. Below, we provide details of each of the datasets.

University Dataset 1 – Staff Employed, or Contracted, in Universities by Designation, 2002-2022 [vii]

- Since 2002, the number of research-only and research support staff, including technicians, has approximately doubled.
- The number of 'other staff', which I assume is 'general support' staff has also experienced a substantial increase over time.
- Before 2015, there is an increase in the proportion of non-research staff from 43% to 50%.
- From 2019, there is a very small decline in the proportion of non-research staff.
- Changes in how data was collected in 2016 affected comparisons. For instance, from 2002 to 2015, there was a slight increase in the proportion of non-research staff. However, the method change in 2016 significantly affected the proportion of research staff, making it hard to compare beyond that point. Since 2016, there has not been a significant increase in the proportion of non-research staff.
- Note that the staffing counts in the table up to 2015 were based on a snapshot collected in the first week of August. From 2016 onwards, staffing counts are for the full calendar year.
- The change in data collection method is indicated by an asterisk and arrow shown in the above graphs – figures 1 and 2.

University Dataset 2 – Personnel Involved in Research and Development by Industry and Occupation, 2010 – 2022 [viii]

- Findings from this dataset are fairly consistent with the previous dataset, despite covering a different timeframe, showing no significant changes since 2010.
- Roughly constant proportion of non-research staff from 2010 onwards with 26%.
- The dataset lacks the 2016 data collection method change, making it helpful for comparison.
- Note that this dataset only covers data from 2010 to 2022, while the previous dataset spans 2002 to 2022.

University Dataset 3 – Staff Employed, or Contracted, in Tertiary Education Organisations, by Sub-sector and Designation, 2013-2022 [ix]

- Consistent trends with previous datasets.
- Roughly constant proportion of non-research staff from 2013 – 2018, then a small decline (56% to 53%) in non-research staff from 2019 onwards.
- This dataset shows a higher proportion of non-research staff compared to the other university datasets.
- Note that the change in data collection method in 2016 is shown on excel by an asterisk.

Refer to the CRI Workforce Data Summary Table in the Annex

Section 5: Annexes

Annex One

CRI Workforce Data Table					
CRI and Years with Available Data	**Number of Researchers/ Scientists**	**Number of Research / Science Support Staff**	**Number of General Support Staff**	**Proportion of Non-Research Staff Over Time**	**Other Comments**
Manaaki Whenua[x] 2003 - 2023	Number of scientists decreased from 281 (in 2003) to 207 (in 2023).	Slight increase of research and science support staff (41 support staff in 2003 and 48 support staff in 2023). No data was collected for technicians before 2015.	General support staff has nearly doubled. In 2003, there was 63 general support staff and 111 general support staff in 2023.	Proportion of non-research staff increased from 16% to 25%.	Note that staff data for 2006, 2007, 2014, 2016, 2018 and 2019 could not be found.
NIWA[xi] 2002- 2023	Number of researchers and scientists have decreased from 424 (in 2002) to 311 (in 2023).	Slight decrease in research and Science support staff. 48 support staff in 2002 and 44 support staff in 2023. No data was collected for technicians before 2012.	General support staff and management has slightly increased from 107 (in 2002) to 141 (in 2023).	Proportion of non-research staff has slightly increased from 18% to 19% but remains relatively low.	Note that staff data for 2010, 2011 and 2015 could not be found.
Ag Research[xii] 2016 - 2022	Number of researchers has greatly decreased with 421 researchers	Research support staff has increased from 161 (in 2016) to 259 (in 2022).	Slight increase in General support staff from 682 (in 2016) to 688 (in 2021).	Non-research staff proportion increased from 15% to 23%.	Older data is needed to make a more comprehensive analysis.

	in 2016, and 274 researchers in 2022.				
SCION[xiii] 2002 - 2023	Number of researchers and scientists have decreased from 280 (in 2002) to 230 (in 2023).	Data for research support staff was collected from 2006 – 2008, where they remained unchanged with 10 research support staff.	No data was collected for management and support staff post 2006. It remains somewhat unchanged. There is a slight increase of management and corporate service staff from 66 (in 2006) to 99 (in 2023). No data has been collected for this role prior to 2006.	From 2002 to 2023, the non-research staff proportion has increased from 23% to 30%.	Compared to the other CRIs, SCION shows a higher proportion of non-research staff (e.g. 30% in 2022/23), attributed to the data table's split into research and corporate staff. Note that staff data from 2008 – 2016 could not be found.
ESR[xiv] 2018 - 2022	Number of research staff has increased from 279 (in 2018) and 347 (in 2022).	Number of research support staff has greatly increased from 40 (in 2018) and 99 (in 2022).	Number of 'other' staff (general support staff) has increased from 88 (in 2018) and 118 (in 2022).	Non-research staff proportion slightly declined from 22% to 21% over the 4 year period.	Older data is needed to make a more comprehensive analysis.
Plant & Food Research[xv] 2009 - 2022	Number of research staff has slightly decreased from 594 (in 2009) to 528 (in 2022).	Number of research support staff has slightly increased from 83 (in 2009) and 95 (in 2022).	Number of general support staff has slightly decreased from 163 (in 2009) and 147 (in 2022).	Proportion of non-research staff remains unchanged with 19% from 2009 – 2022.	Note that staff data from 2012 – 2017 and 2019 could not be found.

GNS Science[xvi] 2013 - 2020	Number of research staff has slightly increased from 252 (in 2013) to 279 (in 2020).	Number of research and science support staff has slightly increased from 51 (in 2013) and 68 (in 2020).	Number of general support staff has slightly increased from 57 (in 2013) to 69 (in 2020).	Proportion of non-research staff has slightly increased from 16% to 18% from 2013 – 2022.	More data (e.g. particularly before 2013) is needed to make a more comprehensive analysis. Note that staff data from 2015, 2017, 2018 and 2019 could not be found.

Section 6: Reference List

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[xiii] NZ Forest Research Limited (SCION). n.d. "Scion - Business Documents." Www.scionresearch.com. https://www.scionresearch.com/about-us/about-scion/corporate-publications/business-documents.

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[xv] Plant and Food Research. n.d. "Annual Reports · Plant & Food Research." Plant & Food Research. https://www.plantandfood.com/en-nz/annual-reports.

[xvi] Institute of Geological and Nuclear Sciences Limited (GNS Science). n.d. "Our Corporate Documents." GNS Science. https://www.gns.cri.nz/about-us/corporate-documents/.

Note: The CRI workforce data was collated from a variety of sources (like MAKO and their respective corporate documents). However, majority of the CRI workforce data was retrieved from each CRI's respective annual reports.