

2006 NZIC Salary Survey Summary

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In the first quarter of 2006, 600 Salary Survey forms were posted out to waged members of NZIC. 224 replies were received. Not every respondent answered all the questions, thus the sample sizes shown in this summary may not add up to 224 in each case.

The median age group of respondents was 51–60. The median base salary was \$77,000 and the median remuneration package was \$83,910. The median base salary for full-time employed respondents was \$80,000 and the median remuneration package was \$87,500. The median salary increase over 2005 was 3.5%. This was in step with the Consumer Price Index (CPI) that rose 3.4% between the March 2005 and 2006 quarters.¹

The most common chemistry qualification was a PhD, which was held by 57% of respondents. The most common workplace was a university where 32% of respondents worked. The split between the islands was 70% North Island, 30% South Island, which was close to the overall New Zealand population split of 75%, 25%.²

The results of the survey were also compared with professionals throughout New Zealand and the results from a survey carried out by The Royal Australian Chemical Institute (RACI) in 2005. An attempt was made to do a comparison across several countries and professions, however comparative data was difficult to obtain and it was felt the results were so subjective as to be meaningless. The huge variance in job descriptions, qualifications, experience, and remuneration packages meant it was difficult at any kind of level to compare salaries across different countries.

Gender Variation

185 males and 39 females answered the gender question.

Table 1 shows the median and lower and upper quartile results for both salary and remuneration packages according to gender. The median base salary for males was \$80,330 and the median base salary for females was \$57,000.

While the sample size of females is small, this large difference in median salary warranted some further investigation. The highest salary received by a female was 45th overall. Looking at the status of the employment of women, it was found a much higher percentage worked part-time with 23% part-time female respondents and only 9% part-time male respondents.

Age Variation

57% of respondents were over fifty. The youngest chemists received the highest median salary increase over the previous twelve months. The group with the highest median base salary were the 51-60 year olds, see Table 2. The percentage increase between the groups was varied and showed a noticeable stabilising after fifty, see Table

3. Has a person in their fifties reached the pinnacle of their earning potential? It will be interesting if this changes in later surveys.

Table 3. Percentage increase in median salary by age group.

Age Group	Increase in median base salary over previous age group (%)	Increase in median remuneration over previous age group (%)
20-30		
31-40	20	22
41-50	32	31
51-60	6	5
>60	-2	1

Regional Variation

The regional variation produced some unexpected results with Christchurch the lowest ranked main centre, see Table 4. Dunedin had the highest median salary and the highest median salary increase over 2005. Auckland had the higher median remuneration package. Overall the main centres had higher median salaries and remuneration packages than the regional locations. A possible reason for the lower median in Christchurch could be the greater number of respondents from Christchurch who worked part-time. 32% of respondents in Christchurch were part-time, while the next highest percentage of part-time respondents in main centres was Auckland and Hamilton with 9% each.

Chemistry Qualification Variation

57% of respondents had a doctorate qualification. The respondents with Masters degrees or Master degrees with honours did not have a higher median salary than the Bachelor degree holders as expected, see Table 5. The median base salary and remuneration packages were around a similar amount for NZCS, Bachelor and Masters qualified respondents. There was substantial jump to that of doctorate holders. The qualification statistics correspond to the respondents' highest chemistry qualification. 4% of respondents had doctorates in other subjects.

Variation by Employment Sector

The group with the highest median salary were those that worked in universities, though the highest median remuneration package was with those who worked for the government either at a local or national level, see Table 6. Owner/Directors were well down the list in median salary indicating perhaps the reward for owning your own business was not a higher salary. 58% of this group were self-employed. Employees of universities, government, CRIs and the private sector all received a median salary increase above the CPI and this may reflect the tight labour market.

Table 1. Gender variation.

Gender	Sample Size	Median Salary	Lower Quartile Salary	Upper Quartile Salary	Median Remuneration	Lower Quartile Remun.	Upper Quartile Remun.
Female	36	\$57,000	\$49,375	\$64,703	\$59,000	\$51,875	\$69,752
Male	173	\$80,330	\$65,000	\$98,459	\$89,000	\$66,928	\$105,500

Table 2. Variation by age.

Age Group	Sample Size	Median Salary	Lower quartile salary	Upper quartile salary	Median remun.	Lower quartile remun.	Upper quartile remun.	Median salary increase
20-30	7	\$50,000	\$45,500	\$55,750	\$53,500	\$52,500	\$57,000	7%
31-40	27	\$60,000	\$51,850	\$75,500	\$65,000	\$53,600	\$79,250	4%
41-50	56	\$78,992	\$60,700	\$90,000	\$85,000	\$61,000	\$97,861	4%
51-60	69	\$84,000	\$66,928	\$101,927	\$89,000	\$69,850	\$107,500	3%
>60	51	\$82,000	\$59,500	\$103,500	\$89,500	\$59,500	\$109,000	3%
All ages	210	\$77,000	\$59,200	\$96,363	\$83,910	\$60,000	\$102,875	4%

Table 4. Variation by location.

Location	Sample Size	Median Salary	Lower Quartile Salary	Upper Quartile Salary	Median Remun.	Lower Quartile Remun.	Upper Quartile Remun.	Median Salary Increase
Main centres	159	\$80,000	\$60,000	\$97,650	\$84,466	\$62,500	\$104,750	3%
Regional centres	51	\$72,000	\$54,500	\$89,000	\$82,000	\$55,000	\$97,200	4%
Dunedin	18	\$83,733	\$71,576	\$95,250	\$85,742	\$76,576	\$99,750	5%
Auckland	44	\$81,500	\$60,000	\$100,000	\$90,750	\$64,250	\$111,250	4%
Hamilton	22	\$80,000	\$63,963	\$96,361	\$85,000	\$67,713	\$97,450	1%
Wellington	44	\$76,160	\$60,000	\$96,000	\$79,000	\$62,500	\$107,750	3%
Other South Island	13	\$77,000	\$54,000	\$84,000	\$82,000	\$59,000	\$104,000	5%
Christchurch	31	\$74,000	\$51,500	\$93,000	\$75,000	\$55,250	\$101,316	3%
Other North Island	38	\$71,000	\$55,000	\$92,250	\$80,000	\$55,000	\$96,050	3%

Table 5. Variation by qualification.

Qualification	Sample Size	Median Salary	Lower Quartile Salary	Upper Quartile Salary	Median Remun.	Lower Quartile Remun.	Upper Quartile Remun.	Median Salary Increase
NZCS	8	\$64,988	\$48,750	\$93,750	\$72,488	\$53,400	\$97,500	5%
BSc & BSc(hons)	40	\$62,085	\$55,000	\$87,000	\$68,335	\$55,000	\$101,375	3%
MSc & MSc(hons)	27	\$60,000	\$49,250	\$78,160	\$67,000	\$50,750	\$86,910	3%
PhD	121	\$84,000	\$69,800	\$100,000	\$90,000	\$70,000	\$105,000	4%

Table 6. Variation by employment sector.

Sector	Sample Size	Median Salary	Lower Quartile Salary	Upper Quartile Salary	Median Remun.	Lower Quartile Remun.	Upper Quartile Remun.	Median Salary Increase
University	67	\$90,000	\$66,000	\$101,214	\$92,000	\$67,250	\$105,480	4%
Central & Local Govt.	7	\$88,560	\$70,750	\$121,000	\$96,060	\$74,500	\$133,500	8%
Private employee	60	\$78,150	\$56,875	\$97,250	\$86,000	\$60,000	\$108,500	4%
CRI	39	\$75,000	\$59,000	\$84,000	\$80,000	\$64,000	\$89,250	4%
Owner/ Director	21	\$65,000	\$60,000	\$80,000	\$72,000	\$60,000	\$95,000	0%
Secondary	12	\$60,500	\$58,750	\$64,685	\$62,469	\$59,750	\$67,180	0%

The box and whisker plot (Fig. 1) illustrates the comparison between the main workplace groups with maximum, minimum, upper and lower quartiles and median results shown.

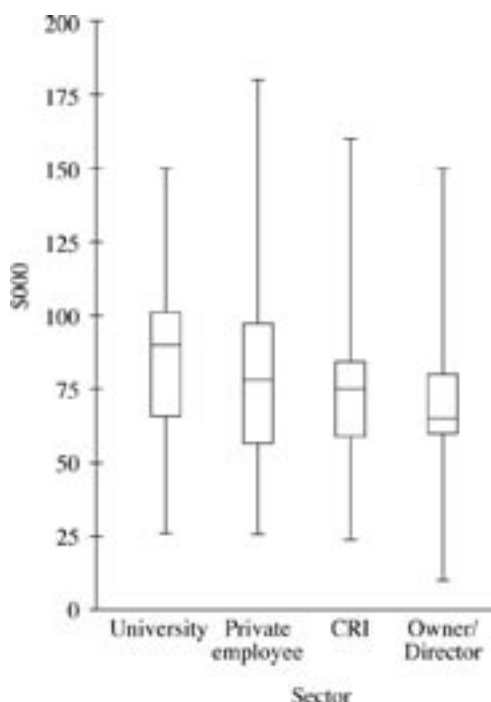


Fig. 1. Box and Whisker plot of base salaries by work-

Variation by Job Function

The job function categories were broadened to see if this had an impact on salary and remuneration. Jobs that involved administration, management, sales or marketing were broadly labelled as deskwork. Those involved in analysis, research and development were broadly labelled as bench work. Separate categories were maintained for those involved in both research and teaching because this was a substantial group and those involved only in teaching. The research and teaching category had the highest median salary and remuneration package, see Table 7.

Influence of Variables on Salary

To investigate what factor influenced base salary a data subset was taken of full-time respondents with chemistry qualifications that included Bachelors degree (including those obtained with honours), Masters degree (including those with honours) and PhD. The subset numbered 166 and the variables looked at were age, years of chemistry experience, place of work and chemistry qualification.

Linear regression was used with salary as the continuous variable. A backward selection type procedure was used with variables dropped that were not associated with the salary outcome once the other variables were controlled. It was found while age alone was strongly associated with salary once the other variables were taken into account, it no longer influenced the salary so was removed from the model.

Years of experience working chemistry, chemistry qualification, and workplace all independently had a statistically significant association with salary.

Five years increase in work experience in chemistry equated to approximately \$4,850 higher salary with a 95% confidence interval of \$3,020–\$6,670, $p < 0.01$.

Qualifications were ranked as Bachelors degree, Masters and Doctorate. Each qualification was associated with approximately \$7,290 higher salary, 95% confidence interval \$1,900–\$12,670 $p = 0.008$.

Workplaces were looked at individually. Crown Research Institutes (CRIs) were used as the baseline. Working in a university compared to a CRI meant approximately a \$9,680 higher salary, 95% confidence interval of -\$1,350–\$20,710. Working for a private company as an employee meant approximately \$10,390 higher salary than a CRI, 95% confidence interval of -\$1,610–\$22,400. Owner/Directors received approximately \$9,640 less salary than working for a CRI, 95% confidence interval of -\$25,870–\$6,590. $p = 0.002$ for each of the workplace variables.

Promotion

Less than a fifth of respondents had received a promotion in the last twelve months. 78% of these respondents had received a salary increase with their promotion and the median increase was 5%. Only 44% of respondents who had changed employers in the last twelve months had experienced a salary increase with the change. This possibly fits with other survey results on why people change jobs, with career progression the most common motivator rather than salary.^{3,4} 49% of respondents who had received a new job description in the last twelve months, received a salary increase with this change and the median increase was 7%.

Other Employee Benefits

57% of respondents who answered the questions in this section received a benefit. The benefits received were quite varied but 20% of those who did receive one, did not consider it part of their overall salary package. If additional benefits were to help keep employees happy, then this survey would indicate one in five employees did not perceive their value. The most common benefit was superannuation, with 60% of those receiving benefits having it. The median value of extra benefits was the under \$5,000 category.

65% of respondents had received funded training in the last twelve months with 58% of this training being conference attendance. Respondents that attended conferences, 29% also received some other form of training.

2000 NZIC Survey Comparison⁵

The last NZIC salary survey was completed in 2000 and reported in CINZ in November 2001. Figure 2 compares the overall remuneration results from the two surveys. The percentage change in the median base salary between 2000 and 2006 was 17%. The change in the consumer price index over this same time frame was 17%, while the decline in purchasing power over the time frame was 14.4%.⁶ This means the median base salary in 2006 provides the earner with a better ability to purchase than in 2000.

Table 7. Variation by job function.

Job Function	Sample Size	Median Salary	Lower Quartile Salary	Upper Quartile Salary	Median Remun.	Lower Quartile Remun.	Upper Quartile Remun.	Median Salary Increase
Research & Teaching	55	\$93,000	\$68,900	\$103,500	\$95,000	\$71,400	\$109,000	4%
Desk	50	\$84,250	\$73,500	\$102,000	\$93,500	\$76,049	\$114,500	3%
Bench	76	\$71,041	\$55,000	\$84,117	\$74,612	\$56,500	\$93,240	3%
Teaching	18	\$60,500	\$56,500	\$66,180	\$61,000	\$58,250	\$67,685	0%

Table 8. Comparison of results with Statistics New Zealand data (ref. 7)..

Survey	Year	Sample size	Median Salary	% change between years
NZIC survey	2000	261	\$66,000	
NZIC survey ⁵	2006	210	\$77,000	17%
Legislators, Administrators & Managers ⁷	2000	159,000	\$41,392	
Legislators, Administrators & Managers ⁷	2005	172,800	\$51,844	25%
Professionals (holding a university degree) ⁷	2000	206,100	\$36,920	
Professionals (holding a university degree) ⁷	2005	280,000	\$46,280	25%

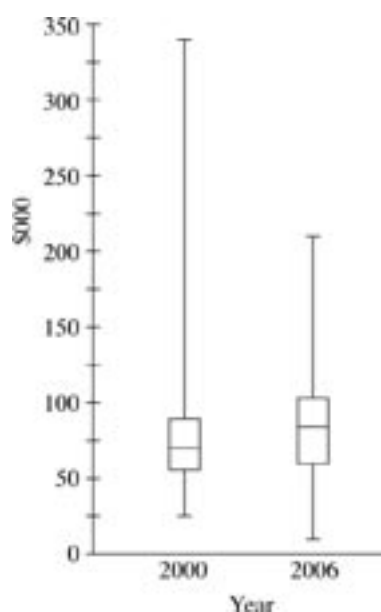
Compared to 2000, there was an 80% drop in respondents earning a remuneration package over \$200,000. Regional variation has also changed with Christchurch dropping to the bottom and Auckland leap-frogging Wellington. The main cause for this would appear to be Christchurch median base salary in 2000 was \$74,500 and in 2006 was \$74,000. This could be caused by the higher percentage of respondents in Christchurch who work part-time as described earlier in this summary. In both surveys education had the higher base salary over other sectors. Both surveys had a similar percentage of respondents with doctorate degrees.

Both found similar differences between median base salaries and remuneration packages by qualification. In 2000 the MSc and MSc(hons) respondents had higher median results than the Bachelor degree holders. The variation by age has changed slightly with 49% being over 50 in 2000 compared to 57% of respondents in 2006. The percentage of respondents under forty has declined between the two surveys with 22% in 2000 compared to 16% in 2006.

The box and whisker plot, Fig. 2, illustrates the remuneration comparison between the two surveys with maximum, minimum, upper and lower quartiles and median results shown.

Comparison with other professions in New Zealand

It is a commonly heard saying, that science is a poorly paid career in New Zealand. The data from the salary survey was compared with data from Statistics New Zealand and other salary surveys in Tables 8 and 9 to see if the facts matched this sentiment. Table 8 shows comparative median salary data to the two surveys carried out by the NZIC to see if chemists salaries were keeping pace with others in society. Table 9 compares average remuneration results with other surveys carried out in New Zealand.

**Fig. 2.** Box and whisker plot, fig 2, of comparison between NZIC salary survey remuneration.**Table 9.** Comparison of results with other salary survey data.

Survey	Year	Average Remuneration
NZIC survey	2006	\$85,512
Senior Qualified Accountant – Finance Manager (turnover up to \$50M) ⁸	2006	\$80,000
Senior Associate Lawyer ⁸	2006	\$95,000-\$140,000
GP ⁹	2005	\$93,000
Civil Structural Engineer ⁸	2006	\$55,000-\$100,000

Comparison with RACI Survey 2005 (ref. 10)

Table 10 shows the results from the RACI survey compared to the New Zealand results. The Australian fig-

Table 10. Comparison between RACI and NZIC survey results.

Survey	Median base salary	Median total package	Average salary increase over previous 12 mths	CPI increase over previous 12 mths	Big Mac price 2006 ¹¹
NZIC 2006	\$77,000	\$83,820	4.2%	3.3%	\$4.45
RACI 2005	AU\$81,000	AU\$94,019	4.6%	2.5%	AU\$3.25

ures have been left in Australian dollars. It is important to note the questions used to establish the total package figure was quite in depth in RACI survey resulting in a more accurate figure than the NZIC survey, which did not go into so much detail. This maybe something that needs to be considered for the next NZIC salary survey. The annual salary increase shown here is the average to give a comparison to the RACI result. One indicator of purchase-power parity is also given in this table with the MacDonald's Big Mac price in the two countries.

The job responsibility questions proved difficult to assess. The very helpful suggestions by many respondents have been noted for future surveys. Customized summary data information is available for NZIC members and can be requested via the NZIC administration. nzic.office@nzic.org.nz

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References

1. Wills, D. ASB *Economic Note*, Wednesday 19 April 2006
2. Pink, B. 2006 *Census of Population and Dwellings – Provisional Counts*, 29 May 2006
3. Hays Specialist Recruitment, *News, Save your Staff*, hays.com.au/news/newsdesc.aspx?id=141, April 2005
4. Employment Today, *News*, employmenttoday.co.nz/news.asp, August 2006
5. Boston, G; van Eyk, S. *Chem. In NZ*. 2001, 65(3), 18-20
6. Reserve Bank of New Zealand CPI Inflation Calculator. RBNZ.govt.nz
7. Statistics New Zealand *TableBuilder Income Statistics*, stats.govt.nz
8. Hays Specialist Recruitment 2006 Salary Survey
9. Mel Pande, M. *et. al 2005 RNZCGP Membership Survey, General Practice in New Zealand part II*, March 2006
10. Angerame, D., Eggleston, K., *The Royal Australian Chemical Institute 2005 Remuneration Survey Report*, 2005
11. *The Economist*, January 12 2006