

**Trends in Multiple Job Holding
in the New Zealand Economy
1991-2001**

by

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Multiple Job Holding in New Zealand

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EXECUTIVE SUMMARY

Between 1991 and 2001, New Zealand workforce numbers grew by 23%, from 1,400,400 to 1,727,271. During the same period, multiple job holding (MJH) became significantly more important as a labour market phenomenon in NZ. The numbers of workers with more than one job increased at three times the rate of increase in total workforce numbers (i.e.69%) from 98,823 in 1991 to 166,785 in 2001.

The change in MJH numbers has not been even across all occupational groups during the period 1991-2001. Much of the growth in MJH numbers has been concentrated in a relatively small number of occupations, although there has been some broadening of the occupational types exhibiting MJH. In 1991, seven out of 513 occupational groups (at the 5-digit level of classification) displayed exceptional MJH rates (i.e. z-scores >2) whereas, by 2001, sixteen out of 513 occupational groups displayed exceptional MJH rates. The largest contributions to overall growth in MJH numbers were not always from occupational groups with exceptionally high MJH rates (such as Crop & Livestock Farmers, or University and Higher Education Lecturers); some had average rates of MJH activity on a large worker population (such as Administration Managers, Care Givers or Sales Assistants). Only eight occupations exhibited declines in MJH numbers nationally; in every case, such decline was associated with substantial retrenchment of the associated labour force. In the period 1991 to 2001, there does not appear to be any association between high rates of MJH and extremes of growth or decline in occupational groups.

The difference between MJH rates for women and men has been narrowing. The MJH rate for women rose by 25% from 8.3% in 1991 to 10.4% in 2001, while the MJH rate for men rose by 49% from 6.1% in 1991 to 9.1% in 2001. By 2001, the actual number of men MJHers (83,703) had surpassed the number of women MJHers (83,082). When analysed by occupation and by sex, variations on this overall trend are evident. In some occupations the gap in MJH rates between women and men narrowed (e.g. General Clerks, General Managers, Dairy Farmers) and even closed completely (e.g. Administration Managers) or reversed (e.g. Accountants, Care Givers, University Lecturers). However, there are also a few occupations where the gap widened (e.g. Crop & Livestock Farmers).

MJH rates increased for all age groups; the largest increases having been in older age groups. There is some evidence of a cohort phenomenon amongst MJHers. When analysed by occupation and by age it is evident that for some occupations new MJH activity during the period 1991 to 2001 was narrowly focussed on certain age groups (e.g. Early Childhood Teachers, Information Clerks/ Receptionists, and Real Estate Consultants) while for other occupations it occurred over a broad range of age groups (e.g. Farmers, Sales Assistants, Care Givers, Clerks).

MJH rates have become strongly differentiated between different states of employment. The largest increases in MJH rates occurred for those in unpaid family work and self-employment (with no employees), while the largest increases in MJH numbers occurred in FT self-employed and FT waged/salaried workers.

1 INTRODUCTION

1.1 Research objectives

The purpose of this research programme¹ is to provide knowledge about the way individuals, families and communities are adapting to social and economic change through multiple job holding (MJH). The programme provides comprehensive information on multiple job holding across a range of sectors.

The research, which began in 2001 and is contracted through to 2007, has two main objectives. The objectives are focussed on:

- preparing an overview of research issues and interests amongst potential users of the research and reviewing approaches and definitions to develop the research framework; and developing a profile of multiple job holding in New Zealand over recent years. Data bases include the five-yearly Census, the NZ Household Labour Force Survey series, and the Time Use survey
- identifying factors which encourage or inhibit the adoption of multiple job holding as a change strategy, and determining the impacts of multiple job holding on individuals, families and communities through a survey of three sectors in 2003 - café and restaurant workers, farmers and health professionals - with a further three sectors later in the programme.

Initial profiling based on analysis of the 2001 census was reported in April 2003. This working paper provides further basic results from the profiling, and commentary on them. Additional commentary and interpretation of this material is provided in synthesis papers and publications from the research (see the website www.tba.co.nz).

1.2 Time Series analyses

Several strands of work have been identified for extending the profile to include an analysis of trends over time. As work progresses to harmonise classifications between different censi, time series analyses will be carried out. The first of these time series examines changes and trends between 1991 and 2001, as revealed by the census data. This will be followed by an examination of changes and trends between 1981 and 1991, and a subsequent consolidation of results and commentary covering the two decades from 1981 to 2001.

1.3 Links with other statistical data sets

The Household Labour Force Survey (HLFS) collects basic data on multiple job holding on a quarterly basis and has been running since 1985. Completion of the census-based time series analysis will enable comparisons to be made with the HLFS data series. Another statistical data set collected in recent years was the Time Use Survey which has been conducted once, between July 1998 and June 1999.

¹ The research is funded by the Foundation for Research, Science and Technology, contract TBAX0204.

1.4 Basis of this analysis

The Census as preferred data set

In the Census of Population and Dwellings, the question is asked “In the 7 days that ended on ..., did you have one job or more than one job?” Since the Census in effect covers the entire working-age population of the country, it provides by far the best basis for analysing the current patterns of multiple job holding in New Zealand. The working-age population (i.e. aged 15 years and above) at the time of the 2001 Census was 1,727,271. Other official statistical surveys involve relatively small samples by comparison - see Table 1.

Table 1 Comparison of census and survey sample sizes

Census/survey	Timing	Sample size
2001 Census of Population and Dwellings	Five-yearly intervals; most recently in March 2001	1,727,271 aged 15 years and above
Household Labour Force Survey	Quarterly since 1985	30,000 individuals in 16,000 households
Time Use Survey ²	Once only so far: July 1998 - June 1999	~8,500 individuals

The concept of multiple job holding

In this research programme, the concept of multiple job holding encompasses the practice of holding more than one job contemporaneously, as well as more than one job held sequentially in different seasons of the year. The Census is most likely to focus on contemporaneous multiple job holding, since the data relate to a single 7-day period in the month of March. The Census includes “any job(s) for pay, profit or income” as well as “any job(s) in a family business or family farm, without pay”.

The most discriminating demographic variables

Earlier profiling work on the 2001 Census data set enabled the research team to refine its focus of statistical demographic analysis. The computer-based data-handling algorithms allow the researchers to work with the census data in multi-dimensional matrices. However, it is impractical to incorporate more than five or six independent variables in each matrix. Even incorporating the entire nation’s workforce, multiple job holding numbers become too fragmented. As a result of this experience, the researchers specified a reduced core set of independent variables which were then combined with an additional independent variable in separate data matrices for analysis. The core variables were:

- occupation (or industry)
- sex
- age band
- employment status.

²

Carried out in conjunction with the Ministry for Women’s Affairs.

These were then combined with other variables individually including ethnicity, household composition, highest educational level, personal or household income, number of hours worked, etc.

1.5 Scope of this report

The first profiling report addressed the central question, who in New Zealand held more than one job at May 2001 and how many workers were engaged in more than one job. This report covers the analysis of changes and trends in multiple job holding over the period 1991 to 2001. It addresses the central question, how have patterns and levels of multiple job holding changed during the past decade?

2 RESULTS OF THE TWO-DIMENSIONAL TREND ANALYSIS

2.1 Approach to analysis

In examining the changes and trends in multiple job holding which have occurred between 1991 and 2001, it is relevant to put such changes into the wider context of overall workforce changes. Furthermore, changes in multiple job holding may show up as changes in the MJH rates for any particular demographic sub-category, reflecting an intensification or fading of MJH activity within the sub-category identified, or as exceptional increases or decreases in the absolute numbers of MJHers during the decade to 2001. The former tells us about the significance of multiple job holding within a particular sub-category of the workforce while the latter tells us about the significance of a particular sub-category's multiple job holding within the entire workforce.

Thus the analysis reported below summarises overall workforce trends, changes in absolute numbers of MJHers in particular sub-categories (e.g. males, 15-16 year olds, general clerks, self-employed), and changes in the concentration of MJHers within particular sub-categories.

2.2 Changes between 1991 and 2001 at the national aggregate level

Multiple job holding became increasingly significant as a workforce phenomenon

During this period, the total workforce grew by 23% from 1,400,400 in 1991 to 1,727,271 in 2001. However, over the same period, the total number of MJHers in the workforce grew at three times this rate - by 69% from 98,823 in 1991 to 166,785 in 2001. As a result, the rate of multiple job holding across the entire national workforce increased by 38% from 7.1% in 1991 to 9.7% in 2001.

Increasing numbers of occupations exhibited exceptional multiple job holding rates

As discussed in Baines and Newell (2003), exceptional levels of multiple job holding rate have been analysed using statistical z-scores³. In 1991, seven out of the 513 occupational groups (at the 5-digit level of classification) displayed MJH rates with z-scores greater than 2. These are listed in Table 2.

³

A z-score describes the difference above (+) or below (-) the population mean of any particular category's value of the percentage of the workforce holding more than one job. A value of +1 for a category would indicate that the 'mjh' percentage for that category is one standard deviation higher than the mean 'mjh' percentage for the whole of the country.

Table 2 Occupational groups with MJH rate z-scores >2 in 1991

Occupational group	# of MJH workers nationally	MJH rate (%)	z-score
Local Government Legislator	84	36	4.82
Surgeon	93	24	2.81
Gynaecologist and Obstetrician	18	23	2.68
Singing and Music Teacher	369	21	2.40
Goat Farmer, Goat Farm Worker	48	20	2.12
Anaesthetist	42	19	2.03
Psychologist	162	19	2.01

By 2001, sixteen out of the 513 occupational groups displayed MJH rates with z-scores greater than 2. These are listed in Table 3.

Table 3 Occupational groups with MJH rate z-scores >2 in 2001

Occupational group	# of MJH workers nationally	MJH rate (%)	z-score
Anaesthetist	129	38	4.09
Surgeon	213	38	4.08
Local Government Legislator	213	35	3.57
Goat Farmer, Goat Farm Worker	48	35	3.57
Gynaecologist and Obstetrician	36	32	3.12
Stock and Station Agent	84	31	3.00
Instrumentalist	303	30	2.91
Singing and Music Teacher	681	29	2.69
Physician	360	28	2.64
Livestock Buyer	156	28	2.60
Deer Farmer, Deer Farm Worker	246	27	2.43
Radiologist, Radiation Oncologist	78	26	2.28
Agricultural Consultant	291	25	2.24
General Practitioner	951	25	2.22
Cattle Farmer, Cattle Farm Worker	879	25	2.11
Other Livestock Farmer	630	24	2.07

Only one category (psychologist) in 1991 (Table 2) was not represented in 2001 (Table 3). In fact, it would be the next occupational group in Table 3 with a 2001 z-score of 1.94 and 405 MJH workers nationally. In other words, those occupational groups which stood out in 1991 as having exceptional MJH rates continued to do so ten years later. Practically all the occupations listed in Table 2 showed substantial increase in MJH numbers and MJH rates between 1991 and 2001. The exceptions are Local Government Legislators (whose MJH numbers increased by 154% over this period but whose MJH rate remained the same) and Goat Farmers (whose MJH numbers remained constant but whose MJH rate almost doubled over this period). This trend might suggest that multiple job holding has become a well-established and well-recognised mode of working for people in these occupational groups. Far from being a transient phenomenon or passing fad, these occupations appear to offer viable opportunities for individuals to adopt more flexible and varied working arrangements than was historically so. That these occupational groups are exceptional compared with other occupations is reflected explicitly in the fact that their z-scores have all increased between 1991 and 2001 (i.e. comparing Tables 2 and 3).

However, out of 513 occupational groups, the total number displaying above-average rates of MJHing (i.e.+ve z-scores) did not change between 1991 and 2001 (220 groups).

2.3 Changes by sex between 1991 and 2001

Many more women than men entered the workforce

Many more women than men entered the workforce during this period. The number of men in the workforce increased by 16% from 795,069 in 1991 to 922,959 in 2001. However, the number of women in the workforce increased by 33% from 605,331 in 1991 to 804,309 in 2001.

The MJH rate for men increased much faster than for women

These women new entrants to the workforce were far less likely than their men counterparts to engage in multiple job holding, reversing an historical pattern. The number of women MJHers increased by 66% from 50,061 in 1991 to 83,082 in 2001, while the number of men MJHers increased by 72% from 48,762 in 1991 to 83,703 in 2001. These changes are reflected in much higher growth in MJH rates for men over this period than for women. During this period, the MJH rate nationally for women increased by 25% from 8.3% in 1991 to 10.4% in 2001, while that for men increased by 49% from 6.1% in 1991 to 9.1% in 2001.

The gap between women and men in multiple job holding is closing

As a result of these varying trends, women in the 1991 workforce were 36% more likely than men to be MJHers but by 2001 they were only 14% more likely to be MJHers than men. Thus the gap between MJH rates for women and men has been closing.

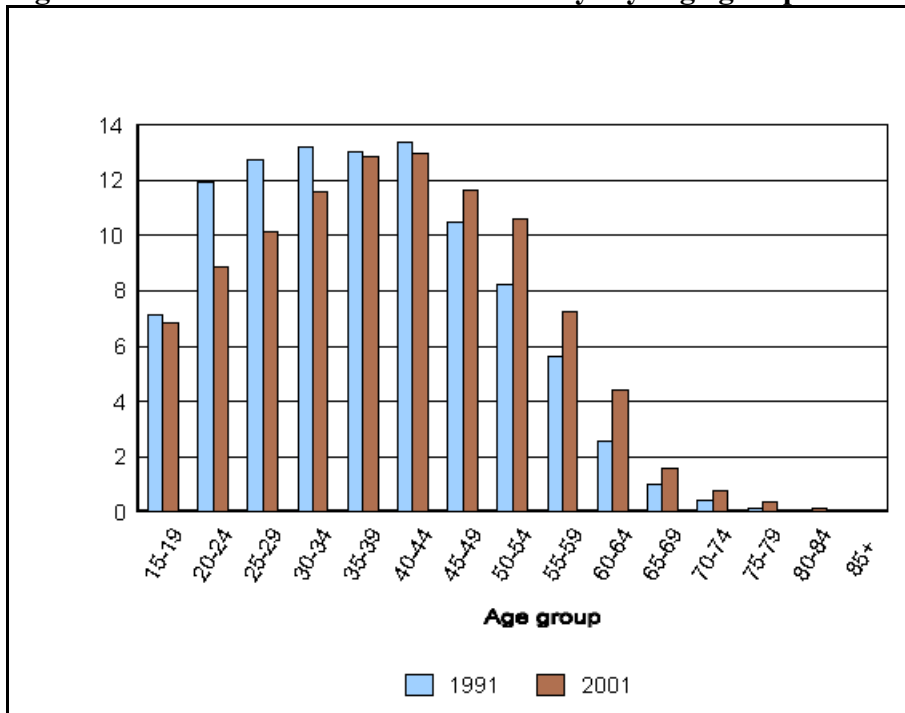
2.4 Changes by age between 1991 and 2001

The ageing of the workforce

During the period 1991 to 2001, the age distribution of the working population changed significantly (we might be tempted to say that the national workforce aged considerably - even by 10 years - but that would be something of a misleading truism!). These changes were unevenly distributed across age groups as is indicated in Figure 1 which shows the percentages of the workforce contributed by each age group in 1991 and in 2001. In 2001, the median age of the national workforce was just under 40 years.

Of the 326,871 additional workers in 2001 workforce, 84% (273,192) came from age groups 40yrs and older (in 2001) and only 16% (53,673) came from age groups 39yrs and younger. Indeed, the absolute numbers of the national workforce aged 20-29 (in 2001) actually contracted between 1991 and 2001 by 17,607. This probably reflects a trend towards increasing participation in post-secondary school education during this period.

Figure 1 Distribution of workforce by 5-yr age groups



As noted previously, the national workforce grew by 23% between 1991 and 2001. The age group 15-16yrs (in 2001) was the only younger age sub-group⁴ to exhibit above-average growth in workforce numbers between 1991 and 2001. All other age groups 44yrs and younger exhibited below-average growth in workforce numbers.

Multiple job holding rates increase in all age groups

As with total workforce trends, increases in the absolute numbers of MJHers between 1991 and 2001 were also unevenly distributed across age groups. Of the additional 67,962 MJHers nationally, 78% (53,202) came from age groups 40yrs and older (in 2001) and only 22% (14,772) came from age groups 39yrs and younger. Notwithstanding this pattern of change, no age groups exhibited decline in absolute numbers of MJHers between 1991 and 2001. The age group 15-16yrs (in 2001) was the only younger age sub-group to exhibit above average growth in MJH numbers between 1991 and 2001.

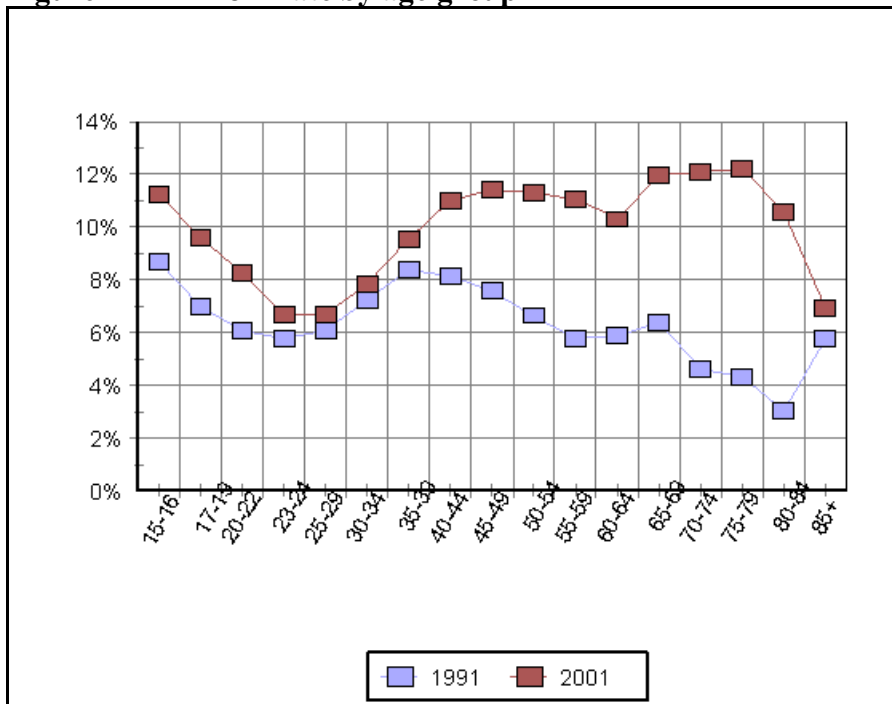
Some sign of cohort behaviour in multiple job holding

Figure 2 provides a comparison of MJH rates across the spectrum of age groups⁵.

⁴ The rate of growth between 1991 and 2001 for the 2-yr age group 15-16 yrs (in 2001) was 81% based on its 1991 level of workforce participation. However, if included in the 5-yr age group 15-19 yrs (in 2001), the overall growth rate at 18% is below the national average of 23%.

⁵ Note that the data for the first four age groups are for less than 5-yr groups: 15-16 yrs, 17-19 yrs, 20-22 yrs and 23-24 yrs. The remaining data are for 5-yr groups, ending with 85-yr plus.

Figure 2 MJH rate by age group



The highest MJH rate in 1991 was for the 35-39yr age group, at 8.4%, and this cohort exhibited the highest MJH rate amongst ‘pre-retirement’ age groups, at 11.4% in 2001⁶, when it was the 45-49yr age group.

2.5 Changes by employment status between 1991 and 2001

Casualisation of the workforce continues

Growth in part-time work outstripped the growth in full-time work over the past decade. Out of the increase in total workforce of 326,871 between 1991 and 2001, the largest component has been in PT waged/salaried workers (103,482 or 31.7%). This was followed by FT waged/salaried workers (97,533 or 29.8%), FT self-employed with no employees (64,068 or 19.6%) and PT self-employed with no employees (40,785 or 12.5%). The number of FT employers and PT employers actually declined between 1991 and 2001.

Multiple job holding has become strongly differentiated by employment status

The differences in MJH rates by employment status are much more pronounced in 2001 than they were in 1991, as shown by the comparative z-score ranges in Tables 4(a) and 4(b) below.

⁶ With the exception of workers aged 65 yrs and above, for whom absolute numbers comprise 3% of the total workforce and also 3% of all MJHers.

Table 4(a) Multiple job holding by employment status - 1991

Employment status	# of MJH workers nationally	MJH rate (%)	z-score
FT Unpaid Family Worker	1,410	11.9	0.82
PT Wage Salaries	17,406	8.9	0.3
FT Employer	10,176	7.9	0.15
PT Unpaid Family Worker	684	7.9	0.14
PT Employer	2,073	6.7	-0.07
FT Wage Salaries	59,361	6.6	-0.08
FT Self Empld (no employees)	6,489	6.6	-0.08
PT Self Empld (no employees)	528	5.5	-0.26

Table 4(b) Multiple job holding by employment status - 2001

Employment status	# of MJH workers nationally (2001)	Change in # of MJHers nationally '91-'01	% change in # of MJHers: '91-'01	MJH rate (%)	z-score
FT Unpaid Family Worker	6,219	4,809	341	32.8	3.28
PT Unpaid Family Worker	5,811	5,127	750	29.3	2.79
FT Self Empld (no employees)	27,732	21,243	327	17.2	1.06
PT Self Empld (no employees)	6,960	6,432	1,218	13.9	0.59
FT Employer	14,403	4,227	42	12.5	0.4
PT Employer	1,545	-528	-25	11.1	0.19
PT Wage Salaries	24,264	6,858	39	8.1	-0.23
FT Wage Salaries	78,177	18,816	32	7.9	-0.26

When we look at the rank ordering of MJH rate by employment status in 2001 (as shown in Table 4(b)), the progressive re-ordering of different types of employment status over the preceding decade may indicate how factors in a person's employment circumstances are critical to the opportunities they perceive for adopting MJH as a deliberate strategy. The four basic employment status types have become clearly ordered by 2001 (first column), with increasing MJH numbers (third column) strongly associated with increasing flexibility to initiate new employment opportunities. Furthermore, those people with the greatest flexibility to do so have clearly been much more active during the period 1991 to 2001 in pursuing this option, as indicated by the strong differentiation in MJH rates between the unpaid, the self employed, employers and wage/salary earners (fifth column), and also by the data on percentage changes in MJHers between 1991 and 2001 (fourth column).

Another way of describing this change is to say that between 1991 and 2001, the largest increases in MJH rates have occurred for those in unpaid family work and the self employed who have no employees. FT unpaid family workers continue to exhibit by far the highest MJH rates (this employment status ranked top in both 1991 and 2001). For ease of comparison, data on MJH rates in 1991 and 2001 for each employment status have been juxtaposed in Table 4(c).

Table 4(c) Change in MJH rates between 1991 and 2001 by employment status

Employment status	MJH rate (%) 2001	MJH rate (%) 2001	Change in MJH rate 1991-2001
FT Unpaid Family Worker	11.9	32.8	+20.9
PT Unpaid Family Worker	7.9	29.3	21.4
FT Self Empld (no employees)	6.6	17.2	10.6
PT Self Empld (no employees)	5.5	13.9	8.4
FT Employer	7.9	12.5	4.6
PT Employer	6.7	11.1	4.4
PT Wage Salaries	8.9	8.1	-0.8
FT Wage Salaries	6.6	7.9	1.3

In contrast, the only employment status for which MJH rates declined in absolute terms between 1991 and 2001 was PT waged/salaried workers (from 8.9% in 1991 to 8.1% in 2001). Thus, the employment status which experienced the highest rate of growth in the total workforce between 1991 and 2001 was the only one to experience a decline in MJH rate over the same period.

2.6 Changes by occupation - 1991 to 2001

Growth in MJH numbers concentrated in relatively few occupations

Nine occupations (Table 5) exhibited national increases in MJH numbers of more than 1,000 workers between 1991 and 2001. These nine occupations (or less than 2% of all occupations) accounted for 33% of the total increase in MJH numbers nationally during that period. Indeed, the top 10% of occupations accounted for 66% of the total increase, and the top 20% accounted for 81% of the total increase.

Table 5 Occupations exhibiting >1,000 increase in MJHers between 1991 and 2001

Occupation	Incr. MJH# 91-01	%incr. MJH# 91-01	MJHr (%) 2001
General clerks	3,957	118	11.3
Crop & Livestock farmer, worker	3,606	195	21.2
General Manager	3,546	148	11.3
Administration Manager	2,466	232	9.9
Care Giver	2,277	197	9.8
Sales Assistant	2,202	43	8.1
Accountant	2,133	178	12.7
University and Higher Education Lecturer and/or Tutor	1,251	74	20.9
Dairy Farmer, Dairy Farm Worker	1,164	41	15.4

From Table 5 it is evident that the largest contributions to overall growth in MJH numbers were not always from occupational groups with exceptionally high MJH rates; some had average rates of MJH activity on a large worker population. For comparison with the data in column 3 of Table 5 above (%increase in MJH numbers between 1991 and 2001) recall that the total workforce increase by 23% during this period and the total number of MJHers in the NZ workforce increase by 69%.

At the other end of the spectrum, eight occupations exhibited national decreases in MJH numbers of more than 100 between 1991 and 2001. As shown in Table 6, all these occupations also experienced substantial retrenchment of their total labour force over the same period.

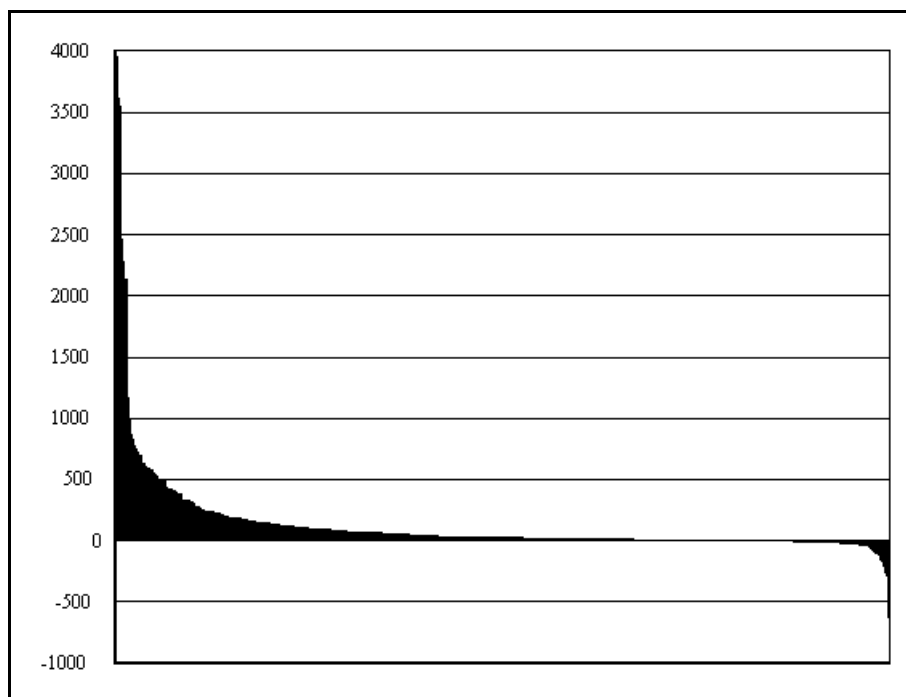
Table 6 Occupations exhibiting >100 decrease in MJHers between 1991 and 2001

Occupation	Decr. MJH# 91-01	#Decr. Workforce 91-01	MJHr (%) 2001
Mechanical Engineering Technician	-108	-2,199	6.5
Human Resources Clerk	-114	-1,839	8.9
Mixed Livestock Farmer, Mixed Livestock Farm Worker	-153	-5,622	20.4
Computer Operator	-162	-3,903	9.5
Slaughterer	-210	-1,014	6.4
Insurance Representative	-255	-3,102	6.9
Nurse Aide	-285	-2,616	7.3
Bank Officer	-621	-9,261	6.9

The decreases in national workforce numbers for the eight occupations shown in Table 6 average a 43% reduction. However, analysis across all occupational types does not suggest any association between high rates of MJH and extremes of growth or decline in occupational groups between 1991 and 2001. In other words, the fact that some occupational groups went through a period of upheaval and change - either exceptional growth or exceptional decline - does not appear to have engendered systematically situations where individuals are more inclined to seek several jobs, either because of increasing opportunity or because of necessity.

The extremely polarised pattern of change in the national MJH workforce indicated in the data just presented is shown graphically in Figure 3.

Figure 3 Distribution of absolute change in MJH worker numbers - 1991 to 2001



Out of 513 occupational groups at the 5-digit level, 5 exhibited national increases in MJH numbers between 1991 and 2001 of more than 1000% - see Table 7.

Table 7 Occupations exhibiting growth in MJH numbers of more than 1000% between 1991 and 2001

Occupation	%incr. MJH# 91-01	#MJH 2001	MJH rate (%) 2001	%incr. in MJHrate ⁷ 91-01
Automated Machine Operator	1,650	210	3.2	21
Quarantine and Agriculture Ports Officer	1,600	51	11.8	183
Other Livestock Farmer/Farm Worker	1,400	630	24.3	158
Computer Applications Engineer	1,177	843	10.4	111
Systems Analyst	1,074	1,092	9.6	121

All of these occupations had a very small base of numbers in 1991, but four out of five have witnessed extremely large increases in MJH rates during that period, suggesting the possibility that radical changes may have occurred in the associated labour markets, with the result that multiple job holding has become a more feasible option than it used to be prior to 1991. A further 12 occupations exhibited increases in MJH numbers nationally of between 500% and 1000% - see Table 8 - while 161 occupations exhibited increases between 100% and 500%.

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i.e. the % increase between 1991 and 2001 of the 1991 MJH rate; for example, for Automated Machine Operators the MJH rate in 1991 was 2.65% and in 2001 the MJH rate was 3.2%, so that the 2001 rate is 21% higher than the 1991 rate.

Table 8 Occupations exhibiting growth in MJH numbers of between 500% and 1000% between 1991 and 2001

Occupation	%incr. MJH# 91-01	#MJH 2001	MJHr rate (%) 2001	%incr. in MJHrate ⁸ 91-01
Clown, Magician, Acrobat	900	120	17.5	75
Microbiologist	833	84	14.7	195
Sound Recording Equipment Controller	800	54	16.8	295
Other Food Products Processing Mach. Op.	733	75	4.0	-35
Joiner's Benchhand	700	24	4.7	164
Other Legal Professional	620	216	16.0	140
Scaffolder	600	21	4.1	397
Meteorologist	600	21	11.1	278
Computer Support Technician	600	462	9.3	39
Education Reviewer	567	60	13.8	111
Policy Analyst	504	507	12.1	69
Shoe Repairer	500	18	10.9	640

As with the results in Table 7, all of these occupations had an extremely small base of numbers in 1991 and this remains the case in 2001. In some cases, the exceptionally large increases in MJH rates during the period 1991 to 2001 may point to a number of possible factors; that opportunities have been opening up for workers in those occupations to apply their skills in a variety of activities/industries, or that it was becoming increasingly difficult to sustain a livelihood with full-time work in those occupations. In the case of the 'Other food products processing machine operator' category, the decline in MJH rate between 1991 and 2001 (% change in MJH rate of -35%) exemplifies the situation where the total workforce of that occupation grew even faster than the number of MJHers involved⁹.

Focussing specifically on those occupations which have displayed substantial increases in the MJH rates of their workers (in contrast to significant increases in their numbers of MJH workers), 26 occupations (out of 513) exhibited increases in MJH rate of more than 10% in absolute terms (e.g. increase from a rate of 10% in 1991 to a rate 20% in 2001). Data are presented in Table 9.

⁸ Refer previous footnote.

⁹ In this occupational group, between 1991 and 2001, total worker numbers increased from 147 to 1,884 (i.e. +1,182%) while MJH numbers increased from 9 to 75 (i.e. +733%).

Table 9 Occupations exhibiting increases in MJH rates of more than 10% in absolute terms between 1991 and 2001

Occupation	Absolute Increase in MJHrate ¹⁰	MJH rate (%)	#MJH
	91-01	2001	2001
Anaesthetist	19.2	38.4	129
Stock and Station Agent	16.7	30.8	84
Zoologist	16.3	20.4	30
Agricultural Engineer	15.2	15.2	30
Goat Farmer, Goat Farm Worker	15.0	34.8	48
Other Livestock Farmer, Other Livestock Farm Worker	14.9	24.3	630
Surgeon	14.5	38.4	213
Cattle Farmer, Cattle Farm Worker	13.4	24.5	879
Judge	13.3	19.3	51
General Practitioner	12.6	25.3	951
Sound Recording Equipment Controller	12.6	16.8	54
Farm Machinery Operator, Including Contractor	12.4	22.3	657
Stud Race-Horse Breeder, Stud Worker	12.0	19.8	102
Physician	11.8	28.2	360
Field Crop Grower and Related Worker	11.7	19.6	294
Livestock Buyer	11.6	28.0	156
Instrumentalist	11.6	30.1	303
Fish Farmer, Worker	11.2	20.8	60
Sheep Farmer, Sheep Farm Worker	11.2	22.7	1,920
Crop and Livestock Farmer, Worker	10.9	21.2	5,457
Air Traffic Controller	10.9	17.9	75
Tool Grinder and Sharpener	10.3	10.3	9
Bookkeeper	10.2	23.2	417
Deer Farmer, Deer Farm Worker	10.2	26.8	246
Landscape Architect	10.1	18.6	120
Occupational Health Nurse	10.1	22.9	48

Some broadening of occupational types since 1991

The data presented in Section 2.2 previously (Tables 2 and 3) indicate some broadening of occupational types that have contributed to the growth in multiple job holding since 1991. The number of occupations displaying significantly above average rates of multiple job holding (z-scores >2) increased from 7 in 1991 to 16 in 2001. The 26 occupations listed in Table 9 further supports the proposition that the practice of multiple job holding has begun to spread more broadly across the economy.

¹⁰

Remember that data in this column are MJH % rates for the occupational groups; the % sign has been omitted from the column header to avoid confusion between absolute increase in MJH % rates and % increase in MJH % rates

Persistency of MJH activity in leading occupational groups over time

The researchers examined whether or not occupations which had shown relatively high MJH rates in 1991 still maintained this relative ranking in 2001. The data were analysed in two groups. Firstly, those occupations which had the highest MJH rates in 2001 (regardless of the absolute numbers of MJH workers in 2001) were compared with similarly ranked occupations in 1991 - see Table 10.

Table 10 MJH rankings of occupational group over time - (no restrictions on MJH group size)

Occupation	MJH Rank 2001	MJH Rank 1991	MJH rate (%) 2001	#MJH 2001
Anaesthetist	1	6	38.4	129
Surgeon	2	2	38.4	213
Local Government Legislator	3	1	34.8	213
Goat Farmer, Goat Farm Worker	4	5	34.8	48
Gynaecologist and Obstetrician	5	3	31.6	36
Stock and Station Agent	6	33	30.8	84
Instrumentalist	7	8	30.1	303
Singing and Music Teacher	8	4	28.6	681
Physician	9	19	28.2	360
Livestock Buyer	10	20	28.0	156

From Table 10 it is evident that seven of the top 10 MJH occupations (i.e. highest MJH rates) in 1991 still featured in the top 10 in 2001.

This analysis was repeated, applying a restriction that only occupations with at least 1,000 MJH workers in 2001 were included. Results are shown in Table 11.

Table 11 MJH rankings of occupational group over time - (minimum MJH group size of 1000 workers)

Occupation	MJH Rank 2001	MJH Rank 1991	MJH rate (%) 2001	#MJH 2001
Sheep Farmer, Sheep Farm Worker	1	5	22.7	1,920
Crop and Livestock Farmer, Worker	2	8	21.7	5,457
University and Higher Education Lecturer/Tutor	3	2	20.9	2,937
Survey Interviewer	4	1	20.4	1,086
Dairy Farmer, Dairy Farm Worker	5	10	15.4	4,032
Secondary School Teacher	6	3	15.3	2,814
Nursery Grower, Nursery Worker	7	11	14.4	1,269
Fruit Grower, Worker	8	14	12.9	1,605
Accountant	9	22	12.7	3,330
Real Estate Agent/Property Consultant	10	15	12.4	1,005
Office Manager	11	23	11.7	1,800
Waiter	12	4	11.4	1,332
General Clerk	13	16	11.3	7,299
General Manager	14	26	11.3	5,934
Registered Nurse	15	17	10.7	2,817
Social Worker	16	9	10.7	1,401
Primary School Teacher	17	13	10.7	2,937
Secretary	18	18	10.2	2,691
Early Childhood Teacher	19	6	10.0	1,029
Administration Manager	20	28	9.9	3,531
Care Giver	21	7	9.8	3,432
Systems Analyst	22	32	9.6	1,092
Builder (Including Contractor)	23	29	8.9	1,581
Accounts Clerk	24	19	8.7	2,457
Cleaner	25	12	8.7	2,823
Information Clerk and Other Receptionist	26	20	8.2	1863

Table 11 shows that the top 20 MJH occupations (i.e. highest MJH rates) in 1991 with more than 1000 MJHers in 2001 were still to be found in the top 26 occupations in 2001.

The results in Table 10 and 11 suggest that there is considerable persistence of MJH activity in occupational groups where it has become a relatively well established practice.

3 RESULTS OF MULTI-DIMENSIONAL TREND ANALYSES

3.1 Two questions

In exploring the interplay between various demographic and work variables, two general questions were asked:

- firstly, for those occupations which exhibited significant change in MJH activity (worker numbers or rates) during 1991-2001, were there substantial differences for men and women, for people of different ages, or for people of different employment status
- secondly, which occupations exhibited the highest rates of growth in MJH activity for specific groups of workers (e.g. for women, for men, for 15-16 year olds, for the self employed, and so on)?

3.2 Changes by occupation and by sex between 1991 and 2001

The analysis in Section 2.3 concluded that the MJH rates for men have increased more substantially than for women during the decade to 2001 across the economy as a whole, and as a consequence the gap between mens and womens MJH rates has been closing. The analysis in Section 2.6 revealed that much of the increase in MJH numbers nationally has occurred in a relatively small number of occupations, and that some occupations (see Table 9) have experienced very substantial increases in their MJH rates over this period (>10% in absolute terms).

A combined analysis reveals some distinct variations around these general patterns and trends. Taking the occupations listed in Table 5 (occupations exhibiting >1,000 increase in MJHers between 1991 and 2001), the trends for men and women have been separated out and presented in Table 12 in several characteristic groupings. For example, in three out the nine occupations (general clerk, general manager, dairy farmer/farm worker) the general trend of a reduced gap in MJH rates between women and men is evident. However, for administration managers, the gap has disappeared altogether by 2001, and for three other occupations (accountant, care giver, university/higher education lecturer) the gap has actually reversed and men now exhibit higher MJH rates than women. At the other end of the spectrum, the existing gap in MJH rates for crop and livestock farmers, which was already strongly skewed towards women in 1991¹¹, has widened so that women are now even more likely than men to be MJHers - 27.6% compared with 18.3%.

¹¹

In 1991 the MJH rate for women was 14.5% and for men was 8.6%

Table 12 Analysis of change in high MJH growth occupations, by sex

Occupation	Change in workforce #	Change in # MJH	Abs. Change in MJH%	Change in gap between women and men (in MJH rate) ¹²	
Crop & Livestock farmer, worker	All	7,932	3,606	10.9%	Gap widened 3.4%
	Women	3,009 (38%)	1,494 (41%)	13.1%	
	Men	4,923 (62%)	2,115 (59%)	9.7%	
Sales assistant	All	17,511	2,202	1.1%	Little/ No change in gap -0.1%
	Women	8,868 (51%)	1,230 (56%)	1.1%	
	Men	8,640 (49%)	975 (44%)	1.2%	
General clerk	All	23,886	3,957	3.2%	Gap narrowed -0.7%
	Women	21,318 (89%)	3,429 (87%)	3.0%	
	Men	2,574 (11%)	540 (13%)	3.8%	
General manager	All	13,227	3,546	5.3%	-0.6%
	Women	6,573 (50%)	1,125 (32%)	4.7%	
	Men	6,645 (50%)	2,424 (68%)	5.3%	
Dairy Farmer, Dairy Farm Worker	All	-1,809	1,164	5.2%	-1.6%
	Women	-126 (7%)	336 (28%)	4.0%	
	Men	-1,686 (93%)	834 (72%)	5.6%	
Administration Manager	All	17,157	2,466	4.2%	Gap disappeared -1.5%
	Women	9,423 (55%)	1,122 (45%)	3.2%	
	Men	7,740 (45%)	1,344 (55%)	4.7%	
Accountant	All	9,942	2,133	5.5%	Gap reversed -1.7%
	Women	6,852 (59%)	1,050 (49%)	4.5%	
	Men	3,096 (31%)	1,089 (51%)	6.1%	
Care Giver	All	24,174	2,277	-0.7%	-3.4%
	Women	22,275 (92%)	2,037 (89%)	-0.9%	
	Men	1,899 (8%)	240 (11%)	2.6%	
University/Higher Education	All	2,211	1,251	6.8%	-4.1%
	Women	1,641 (74%)	558 (45%)	4.7%	
	Men	573 (26%)	693 (55%)	8.8%	

Table 12 shows that, in terms of the absolute numbers of new MJHers between 1991 and 2001, in five of the occupations the increased adoption of this practice was relatively evenly shared between women and men. These data are summarised in Table 12(a).

¹²

Figures in this column represent the difference between corresponding data for women and men presented in the fourth column immediately to the left. Due to rounding, there may be some apparent discrepancies of 0.1%

Table 12(a) Occupations with balanced growth in MJH between men and women, 1991-2001

Occupation	Change in MJH# 91-01	% women	% men
Crop & Livestock farmer, worker	3,606	41%	59%
Sales assistant	2,202	56%	44%
Administration Manager	2,466	45%	55%
Accountant	2,133	49%	51%
University/Higher Education	1,251	45%	55%

For the other four occupations, adoption of multiple job holding by women and men was very uneven: for those whose first job was care giver or general clerk, far more women than men took up more than one job during this period; for those whose first job was dairy farmer or general manager, more men than women took up multiple jobs. Table 12(b) highlights these contrasts.

Table 12 (b) Occupations with uneven growth in MJH between men and women, 1991-2001

Occupation	Change in MJH# 91-01	% women	% men
General clerk	3,957	87%	13%
Care giver	2,277	89%	11%
General manager	3,546	32%	68%
Dairy farmer/farm worker	1,164	28%	72%

The differences evident in Table 12(b) point to contrasting employment circumstances in several ways. For example, care givers and general clerks are likely to be at the lower end of the income spectrum, wage workers, and in the case of care givers, part-time workers. In contrast, general managers are likely to be at the higher end of the income spectrum and full-time salary earners, while dairy farmers are likely to be self employed.

This type of analysis has been repeated for those occupations listed in Table 9 (if they had more than 100 MJH workers nationally in 2001). These are occupations whose MJH rates increased in absolute terms by more than 10% between 1991 and 2001.

Table 13 Analysis of change in high MJH rate occupations, by sex

Occupation	Change in workforce #	Change in # MJH	Abs. Change in MJH%	Change in gap between women and men (in MJH rate)	
Livestock buyer	All	120	87	11.6%	<u>Opp.gap reversed</u> 21.4%
	Women	15 (13%)	6 (7%)	33.3%	
	Men	105 (87%)	81 (93%)	11.9%	
Deer farmer, deer farm worker	All	-684	-21	10.2%	8.8%
	Women	-180 (26%)	15	16.5%	
	Men	-504 (74%)	-36	7.7%	
Stud race horse breeder, st.worker	All	-135	54	12.0%	<u>Gap widened</u> 3.5%
	Women	9	36 (67%)	13.9%	
	Men	-144	18 (33%)	10.4%	
Cattle farmer, cattle farm worker	All	-2,058	252	13.4%	1.9%
	Women	-420 (20%)	111 (46%)	14.5%	
	Men	-1,638 (80%)	141 (54%)	12.6%	
Sheep farmer, sheep farm worker	All	-7,776	48	11.2%	1.3%
	Women	-2,010 (26%)	-78	12.1%	
	Men	-5,763 (74%)	126	10.8%	
Landscape architect	All	324	87	10.1%	1.2%
	Women	216 (67%)	54 (62%)	8.7%	
	Men	108 (33%)	33 (38%)	7.5%	
Other livestock farmer	All	2,163	591	14.9%	<u>Little/ No change in gap</u> -0.1%
	Women	681 (32%)	210 (36%)	14.4%	
	Men	1,482 (68%)	381 (64%)	14.5%	
Field crop grower, related worker	All	294	195	11.7%	-0.3%
	Women	171 (58%)	66 (34%)	10.9%	
	Men	123 (42%)	129 (66%)	11.2%	
General practitioner	All	279	507	12.6%	<u>Gap narrowed</u> -0.8%
	Women	513	234 (46%)	12.0%	
	Men	-234	273 (54%)	12.8%	
Farm machinery operator/contract	All	1,389	495	12.4%	-7.9%
	Women	117 (8%)	33 (7%)	4.4%	
	Men	1,272 (92%)	462 (93%)	12.3%	

Table 13 (continued)

Occupation		Change in workforce #	Change in # MJH	Abs. Change in MJH%	Change in gap between women and men (in MJH rate)
Instrumentalist	All	-102	96	11.6%	Gap reversed -3.0%
	Women	-6 (6%)	27 (28%)	9.6%	
	Men	-96 (94%)	69 (72%)	12.6%	
Bookkeeper	All	756	279	10.2%	-5.6%
	Women	726 (96%)	258 (92%)	9.7%	
	Men	30 (4%)	21 (8%)	15.3%	
Anaesthetist	All	117	81	19.2%	-7.2%
	Women	27 (23%)	15 (19%)	12.4%	
	Men	90 (77%)	66 (81%)	19.6%	
Surgeon	All	168	120	14.5%	-13.7%
	Women	30 (18%)	9 (8%)	1.7%	
	Men	138 (82%)	111 (92%)	15.4%	

Attention is now turned to the question of which occupations exhibited the highest rates of growth in MJH activity for women and for men, when analysed separately. The kind of analysis reported for all workers in Table 5 is now repeated for women and men separately - see Tables 14 and 15.

Table 14 Occupations exhibiting the greatest increases in women MJHers between 1991 and 2001 (occupations in bold type are those listed also in Table 5)

Occupation	Incr. MJH# 91-01	%Incr. MJH# 91-01	MJH rate (%) 2001
General Clerk	3,429	120.4%	11.5%
Care Giver	2,037	183.0%	9.6%
Crop and Livestock Farmer, Worker	1,494	199.2%	27.6%
Sales Assistant	1,230	36.8%	8.4%
General Manager	1,125	210.7%	12.3%
Administration Manager	1,122	277.0%	9.9%
Accountant	1,050	267.2%	12.3%
Registered Nurse	792	41.7%	10.9%
Primary School Teacher	582	31.2%	10.7%
Office Manager	573	68.2%	11.4%
University and Higher Education Lecturer and/or Tutor	558	71.0%	19.3%
Social Worker	537	114.0%	10.2%
Early Childhood Teacher	534	117.9%	9.9%
Information Clerk and Other Receptionist	510	43.4%	8.3%
Secretary	489	23.3%	10.1%
Technical Representative	450	681.8%	6.1%
Catering Counter Assistant	444	123.3%	8.0%
Secondary School Teacher	384	34.4%	14.3%
Survey Interviewer	381	100.0%	20.8%
Waiter	369	50.8%	11.6%
Dairy Farmer, Dairy Farm Worker	336	23.0%	19.9%

Table 15 Occupations exhibiting the greatest increases in men MJHers between 1991 and 2001 (occupations in bold type are those listed also in Table 5)

Occupation	Incr. MJH# 91-01	%Incr. MJH# 91-01	MJH rate (%) 2001
General Manager	2,424	131%	11.0%
Crop and Livestock Farmer, Worker	2,115	193%	18.2%
Administration Manager	1,344	204%	9.9%
Accountant	1,089	135%	13.1%
Sales Assistant	975	54%	7.6%
Dairy Farmer, Dairy Farm Worker	834	59%	13.0%
University and Higher Education Lecturer and/or Tutor	693	77%	22.4%
Systems Analyst	681	987%	10.1%
Computer Applications Engineer	654	1090%	10.5%
Builder (Including Contractor)	606	65%	8.8%
Heavy Truck or Tanker Driver	540	80%	5.5%
General Clerk	540	110%	10.2%
Farm Machinery Operator, Including Contractor	462	314%	22.0%
Other Catering Services Manager	420	483%	9.7%
Other Livestock Farmer, Other Livestock Farm Worker	381	1411%	22.4%
Retail Manager	378	48%	7.5%
Management Consultant	375	130%	12.1%
Technical Representative	372	136%	8.4%
Computer Support Technician	303	505%	9.8%
Cleaner	294	51%	8.6%
General Practitioner	273	83%	25.3%
Grounds or Green Keeper	264	169%	10.2%
Real Estate Agent/Property Consultant	261	60%	14.2%
Production Manager (Manufacturing)	258	79%	7.1%
Machinery Mechanic	255	83%	7.3%
Barrister and Solicitor	252	93%	10.8%
Sports Coach or Trainer	249	268%	16.5%
Catering Counter Assistant	243	426%	8.5%
Care Giver	240	615%	12.3%

The kind of analysis reported for all workers in Table 9 is now repeated for women and men separately - see Tables 16 and 17. Data are presented only for occupations which had 50 or more workers (women or men) in 2001.

Table 16 Occupations for women exhibiting increases in MJH rates of more than 10% in absolute terms between 1991 and 2001 (occupations in bold type are those listed also in Table 9)

Occupation	Absolute increase in MJH rate ¹³	MJH rate (%)	#MJH
	91-01	2001	2001
Deer Farmer, Deer Farm Worker	16.5%	31.4%	81
Shepherd or Musterer	15.7%	27.6%	72
Ambulance Officer	14.5%	21.2%	75
Cattle Farmer, Cattle Farm Worker	14.5%	28.7%	339
Other Livestock Farmer, Other Livestock Farm Worker	14.4%	28.7%	225
Stud Race-Horse Breeder, Stud Worker	13.9%	23.8%	60
Crop and Livestock Farmer, Worker	13.1%	27.6%	2,244
Grounds or Green Keeper	13.0%	19.8%	75
Sheep Farmer, Sheep Farm Worker	12.1%	29.5%	672
General Practitioner	12.0%	25.5%	354
Agricultural Consultant	12.0%	29.4%	60
Veterinarian	11.7%	20.6%	102
Field Crop Grower and Related Worker	10.9%	22.7%	96
Mixed Livestock Farmer, Mixed Livestock Farm Worker	10.8%	28.1%	378
Horse Trainer, Groom or Stable Hand	10.5%	18.4%	159
Non-Ordained Religious Assistant	10.4%	20.3%	84
Landscape Gardener	10.1%	21.9%	69

¹³

Remember that data in this column are MJH % rates for the occupational groups; the % sign has been omitted from the column header to avoid confusion between absolute increase in MJH % rates and % increase in MJH % rates

Table 17 Occupations for men exhibiting increases in MJH rates of more than 10% in absolute terms between 1991 and 2001 (occupations in bold type are those listed also in Table 9)

Occupation	Absolute increase in MJH rate ¹⁴	MJH rate (%)	#MJH
	91-01	2001	2001
Anaesthetist	19.6%	39.3%	99
Radiologist, Radiation Oncologist	17.7%	35.8%	57
Stock and Station Agent	16.1%	29.9%	78
Surgeon	15.4%	39.2%	201
Other Livestock Farmer, Other Livestock Farm Worker	14.5%	22.4%	408
Agricultural Inspector	14.3%	21.8%	66
Physician	13.2%	30.1%	264
General Practitioner	12.8%	25.3%	600
Cattle Farmer, Cattle Farm Worker	12.6%	22.5%	543
Instrumentalist	12.6%	30.6%	213
Farm Machinery Operator, Including Contractor	12.3%	22.0%	609
Livestock Buyer	11.9%	28.3%	153
Field Crop Grower and Related Worker	11.2%	18.4%	198
Sheep Farmer, Sheep Farm Worker	10.8%	20.2%	1,251
Other Legal Professional	10.4%	16.0%	90
Air Traffic Controller	10.2%	18.0%	60
Special Education Teacher	10.0%	17.9%	123

3.3 Changes by occupation and by employment status between 1991 and 2001

The analysis in Section 2.5 concluded that MJH rates increased during this period for those in unpaid family work and self employment more so than they did for wages and salary earners and employers. The analysis in Section 2.6 revealed that much of the increase in MJH numbers nationally has occurred in a relatively small number of occupations, and that some occupations (see Table 9) have experienced very substantial increases in their MJH rates over this period (>10% in absolute terms).

A combined analysis reveals more variation than the above generalisations would suggest. Taking the nine occupations listed in Table 5 (occupations exhibiting >1,000 increase in MJHers between 1991 and 2001), the contributions from workers in different employment status types have been separated out in Table 18. While the largest contributions to MJH numbers tended to come from full-time wage and salary earners (six out of nine occupations), there is some variation in certain occupations. For example, the growth in MJH numbers in the major rural occupations of dairy farmers/farm workers and crop and livestock farmers/farm workers was dominated by the self employed and the unpaid family workers (see shaded cells in Table 18). For those who described themselves as accountants, administration managers and sales assistants, there were significant increases in MJH numbers among the self employed and employers. Amongst general managers with more than one job, the dominant employment status was as a full-time employer.

¹⁴

Remember that data in this column are MJH % rates for the occupational groups; the % sign has been omitted from the column header to avoid confusion between absolute increase in MJH % rates and % increase in MJH % rates

Focussing on currently high MJH rate occupations, as in Table 9, analysis by employment status type shows that the highest MJH rate increases during the 1991-2001 period tended to occur for those in unpaid work (book keepers, farmers/farm workers and farm machinery operators) and self employment (physicians, farmers and instrumentalists) with several examples of employers exhibiting high increases in MJH rate (some farmers and general practitioners) but no examples of wage and salary earners doing so (see Table 19).

Table 18 Analysis of change in high MJH growth occupations, by employment status - 1991 to 2001

Occupation	Change in workforce #	Change in # MJH	% contributions to increased MJHers							
			FT unpaid family wk	PT unpaid family wk	FT Self employed	PT Self employed	FT employer	PT employer	FT w/s	PT w/s
General clerks	23,886	3,957	2	8	10	7	5	2	41	25
Crop and livestock farmer	7,932	3,606	24	26	27	6	2		10	6
General manager	13,227	3,546	4	3	3	5	56	3	25	1
Administration manager	17,157	2,466	2	2	17	5	10	1	58	5
Care giver	24,174	2,277	2	3	9	6	1		46	33
Sales assistant	17,511	2,202	3	8	23	7	-1	-1	32	30
Accountant	9,942	2,133	1	2	22	10	15	-1	45	6
University/Higher Education	2,211	1,251			15	5			68	12
Dairy farmer	-1,809	1,164	15	19	62	9		5	-18	6

Table 19 Analysis of change in high MJH rate occupations, by employment status - 1991 to 2001

Occupation	Absolute increase in MJH rate 91-01	MJH rate (%) 2001	Net change in MJH# 91-01
Bookkeeper			279
FT unpaid	33.6%	55.0%	
PT unpaid	27.5%	34.2%	
Physician			240
FT employer	33.5%	46.0%	
FT self employed	23.8%	42.9%	
Sheep farmer/farm worker			48
FT unpaid	25.6%	39.6%	
PT unpaid	30.1%	37.9%	
FT self employed	15.5%	20.5%	
Cattle farmer/farm worker			252
FT unpaid	28.7%	40.2%	
PT unpaid	26.4%	35.8%	
Instrumentalist			96
FT self employed	28.7%	38.7%	
Farm machinery operator			501
FT unpaid	28.2%	44.8%	
PT unpaid	28.3%	48.3%	
FT self employed	22.9%	31.4%	
Crop and livestock farmer/farm worker			3,606
FT unpaid	24.9%	39.9%	
PT unpaid	26.0%	36.3%	
FT self employed	15.2%	24.6%	
PT employer	14.2%	21.4%	
Other livestock farmer/farm worker			588
FT unpaid	19.2%	39.2%	
PT unpaid	23.3%	40.0%	
FT self employed	13.3%	23.6%	
General practitioner			504
PT self employed	19.2%	24.2%	
FT employer	16.1%	25.5%	

Attention is now turned to the question of which occupations exhibited the highest rates of growth in MJH activity for people in different employment status types, when analysed separately. The kind of analysis reported for all workers in Table 5 is now repeated for each employment status type separately - see Tables 20 to 26. Data are presented only for occupations in which MJH numbers had increased by 50 workers or more nationally between 1991 and 2001.

Table 20 Occupations exhibiting the greatest increases between 1991 and 2001 in MJHers for those who nominated their first job as FT unpaid family work(occupations in bold type are those listed also in Table 5)

Occupation	Increase in MJH# 91-01	%Incr. in MJH# 91-01
Crop and Livestock Farmer, Worker	861	495
Dairy Farmer, Dairy Farm Worker	174	171
Sheep Farmer, Sheep Farm Worker	150	102
General Manager	135	346
Cattle Farmer, Cattle Farm Worker	123	410
Fruit Grower, Worker	105	167
General Labourer	105	438
General Clerk	96	291
Other Livestock Farmer, Other Livestock Farm Worker	87	1450
Nursery Grower, Nursery Worker	84	280
Mixed Livestock Farmer, Mixed Livestock Farm Worker	75	76
Retail Manager	66	157
Sales Assistant	66	116
Builder (Including Contractor)	60	667
Other Catering Services Manager	57	475
Administration Manager	54	900
Care Giver	54	900
Gardener	54	360
Cleaner	54	360

Table 21 Occupations exhibiting the greatest increases between 1991 and 2001 in MJHers for those who nominated their first job as PT unpaid family work(occupations in bold type are those listed also in Table 5)

Occupation	Increase in MJH# 91-01	%Incr. in MJH# 91-01
Crop and Livestock Farmer, Worker	921	1,137
General Clerk	312	1,040
Dairy Farmer, Dairy Farm Worker	216	480
Sales Assistant	186	689
General Labourer	147	1,225
Secretary	141	588
Cleaner	126	1,400
Sheep Farmer, Sheep Farm Worker	111	285
Bookkeeper	111	1,233
General Manager	102	850
Cattle Farmer, Cattle Farm Worker	93	443
Accounts Clerk	90	200
Fruit Grower, Worker	90	333
Gardener	72	800
Other Livestock Farmer, Other Livestock Farm Worker	69	2,300
Care Giver	66	2,200
Nursery Grower, Nursery Worker	66	440
Administration Manager	54	1,800
Information Clerk and Other Receptionist	51	850

Table 22 Occupations exhibiting the greatest increases between 1991 and 2001 in MJHers for those who nominated their first job as FT self employed (occupations in bold type are those listed also in Table 5)

Occupation	Increase in MJH# 91-01	%Incr. in MJH# 91-01
Crop and Livestock Farmer, Worker	960	542
Dairy Farmer, Dairy Farm Worker	726	123
Builder (Including Contractor)	606	293
Sheep Farmer, Sheep Farm Worker	594	225
Real Estate Agent/Property Consultant	573	616
Sales Assistant	501	464
Accountant	471	308
Administration Manager	417	818
General Clerk	387	921
Cattle Farmer, Cattle Farm Worker	333	694
Management Consultant	309	936
Carpenter and/or Joiner	264	1,257
Other Livestock Farmer, Other Livestock Farm Worker	261	2,900
Gardener	258	2,867
Nursery Grower, Nursery Worker	243	261
Heavy Truck or Tanker Driver	234	600
Sales Representative	228	1,086
Farm Machinery Operator, Including Contractor	228	1,086
Systems Analyst	228	7,600
General Labourer	219	2,433
Sculptor, Painter and Related Artist	210	1,750
Cleaner	207	575
Care Giver	195	3,250
Computer Applications Engineer	195	6,500
Other Lodging Services Manager	189	788
University and Higher Education Lecturer and/or Tutor	186	1,550
Technical Representative	186	1,550
Electrician	186	344
Painter, Decorator and/or Paperhanger	186	517
Mixed Livestock Farmer, Mixed Livestock Farm Worker	180	90
Singing and Music Teacher	159	5,300
Courier and Deliverer	153	850
Sports Coach or Trainer	147	1,633
Secondary School Teacher	144	*
Graphic Designer	141	2,350
Secretary	138	200
Accounts Clerk	135	346
Fruit Grower, Worker	135	79
Taxi Driver	129	717
Author and Critic	129	*

Note: In total, 53 occupational groups exhibited increases in MJH numbers of 100 or more during the period 1991 to 2001, and a further 48 exhibited increases of 50 or more.

Table 23 Occupations exhibiting the greatest increases between 1991 and 2001 in MJHers for those who nominated their first job as PT self employed (occupations in bold type are those listed also in Table 5)

Occupation	Increase in MJH# 91-01	%Incr. in MJH# 91-01
Singing and Music Teacher	285	9,500
General Clerk	264	1,257
Crop and Livestock Farmer, Worker	213	1,183
Cleaner	210	2,333
Accountant	204	2,267
General Manager	171	380
Sales Assistant	144	1,600
Gardener	138	*
Care Giver	138	*
Administration Manager	114	1,267
Dairy Farmer, Dairy Farm Worker	108	133
Sheep Farmer, Sheep Farm Worker	96	1,067
Cattle Farmer, Cattle Farm Worker	93	3,100
Secretary	87	322
Other Lodging Services Manager	84	2,800
Sports Coach or Trainer	84	1,400
Accounts Clerk	81	300
Instrumentalist	75	2,500
Fruit Grower, Worker	72	800
Management Consultant	72	*
Counsellor	72	*
General Practitioner	66	1,100
Sculptor, Painter and Related Artist	66	*
Sales Representative	66	2,200
University and Higher Education Lecturer and/or Tutor	63	*
Bookkeeper	63	700
Nursery Grower, Nursery Worker	60	1,000
General Labourer	57	1,900
Grounds or Green Keeper	57	*
Special Education Teacher	54	*
Other Health Associate Professional	51	*
Physiotherapist	51	*
Author and Critic	51	*

(*) means that no MJH workers were recorded in the occupation as part-time self employed in 1991.

Table 24 Occupations exhibiting the greatest increases between 1991 and 2001 in MJHers for those who nominated their first job as FT employer (occupations in bold type are those listed also in Table 5)

Occupation	Increase in MJH# 91-01	%Incr. in MJH# 91-01
General Manager	1,989	608
General Practitioner	393	1,310
Retail Manager	354	108
Accountant	318	294
Barrister and Solicitor	303	2,020
Administration Manager	240	800
General Clerk	195	361
Other Catering Services Manager	174	446
Restaurant or Tavern Manager	135	1,500
Hotel or Motel Manager	120	333
Office Manager	102	227
Veterinarian	90	1,000
Dentist and Dental Surgeon	90	600
Secretary	90	176
Production Manager (Manufacturing)	84	700
Retail Pharmacist	84	1,400
Surgeon	75	2,500
Other Livestock Farmer, Other Livestock Farm Worker	69	383
Physician	66	2,200
Sales and/or Marketing Manager	63	117
Crop and Livestock Farmer, Worker	57	16
Nursery Grower, Nursery Worker	51	43

No occupational groups were recorded as having 50 or more new MJHers between 1991 and 2001.

Table 25 Occupations exhibiting the greatest increases between 1991 and 2001 in MJHers for those who nominated their first job as FT wage/salary earner (occupations in bold type are those listed also in Table 5)

Occupation	Increase in MJH# 91-01	% Incr. in MJH# 91-01
General Clerk	1,629	77
Administration Manager	1,440	161
Care Giver	1,053	204
Accountant	960	122
General Manager	903	95
University and Higher Education Lecturer and/or Tutor	849	67
Sales Assistant	696	26
Systems Analyst	621	796
Technical Representative	531	219
Registered Nurse	531	39
Social Worker	504	98
Computer Applications Engineer	483	847
Survey Interviewer	423	145
Crop and Livestock Farmer, Worker	357	43
Early Childhood Teacher	315	119
Heavy Truck or Tanker Driver	312	63
Other Catering Services Manager	303	266
Senior Education Manager	297	198
Policy Analyst	291	485
Catering Counter Assistant	285	138
Secondary School Teacher	285	15
Waiter	240	65
Sales and/or Marketing Manager	234	44
Computer Support Technician	231	385
Special Education Teacher	213	245
Information Clerk and Other Receptionist	198	21
Office Manager	195	21
Production Manager (Manufacturing)	186	60
Management Consultant	177	104
Primary School Teacher	171	10
Sports Coach or Trainer	171	178
Checkout Operator	168	193
Grape Grower and/or Wine Maker, Worker	147	233
Barrister and Solicitor	147	100
Demonstrator	144	166
Advertising and Public Relations Manager	141	235
Information Technology Manager	141	157
Physician	138	153
Police Officer	135	45
Automated Machine Operator	135	1,125

Note: In total, 56 occupational groups exhibited increases in MJH numbers of 100 or more during the period 1991 to 2001, and a further 34 exhibited increases of 50 or more.

Table 26 Occupations exhibiting the greatest increases between 1991 and 2001 in MJHers for those who nominated their first job as PT wage/salary earner (occupations in bold type are those listed also in Table 5)

Occupation	Increase in MJH# 91-01	%Incr. in MJH# 91-01
General Clerk	978	98
Care Giver	747	131
Sales Assistant	666	34
Catering Counter Assistant	273	149
Waiter	216	51
Checkout Operator	210	100
Crop and Livestock Farmer, Worker	207	138
Information Clerk and Other Receptionist	180	65
Primary School Teacher	171	30
Early Childhood Teacher	165	93
University and Higher Education Lecturer and/or Tutor	147	42
Survey Interviewer	141	77
Special Education Teacher	138	219
Sports Coach or Trainer	138	164
Accountant	126	145
Registered Nurse	123	22
Administration Manager	120	222
Office Manager	105	109
Kitchenhand	99	34
Courier and Deliverer	99	27
Grounds or Green Keeper	99	660
Social Worker	96	68
Data Entry Operator	90	130
Technical Representative	87	725
Demonstrator	84	55
Systems Analyst	72	2,400
Dairy Farmer, Dairy Farm Worker	69	51
Library Assistant	69	88
Administration Officer	63	162
Computer Support Technician	54	0
Retail Manager	51	85
Professional Sportsperson	51	567
Librarian	51	63

(*) means that no MJH workers were recorded in the occupation as part-time self employed in 1991.

3.4 Changes by occupation and by age group between 1991 and 2001

The analysis in Section 2.4 concluded that MJH rates increased during this period for all age groups, but particularly for those aged 40 years and older (in 2001) and also for those in the youngest age group 15-16 year olds. The analysis in Section 2.6 revealed that much of the increase in MJH numbers nationally has occurred in a relatively small number of occupations, and that some occupations (see Table 9) have experienced very substantial increases in their MJH rates over this period (>10% in absolute terms).

A combined analysis reveals considerable variation in the age distributions of new MJHers during the period 1991 to 2001 - suggesting significantly different age group signatures for MJH adoption within different occupations. Taking the nine occupations listed in Table 5 (occupations exhibiting >1,000 increase in MJHers between 1991 and 2001), the contributions from workers in different age groups have been separated out in Table 27. While this analysis confirms the above generalisations, it also differentiates contrasting experience amongst different occupations. For example, five of the nine occupations exhibit uni-modal distributions of age group (general clerks, general managers, administration manager, accountants and tertiary lecturers). In other words, the age distribution of new MJHers during the period 1991-2001 is concentrated around a single peak age bracket. General clerks who became MJHers during this period were predominantly 35-54 years old. For general managers the single dominant age bracket for new MJHers was 40-59 years old. For university lecturers who became MJHers, the dominant age bracket was relatively narrow, between 45 and 59 years old, while for Administration Managers the dominant age bracket was very broad, between 30 and 59 years old, but peaking in the 45-49 year age group.

Amongst these occupations exhibiting unimodal distributions around higher age groups there was nevertheless considerable variation in terms of the age group which contributed the most to MJH numbers during the decade 1991 to 2001. Amongst accountants the greatest contribution came from 35-39 year olds; for general clerks from 40-44 years olds; for administration managers from 45-49 year olds; for general managers and tertiary lecturers from 50-54 year olds. As noted above, some of these uni-modal age group distributions were more tightly focussed than others; for example, amongst administration managers, double-digit contributions to new MJH numbers span six age groups (30-59 years olds) but amongst tertiary lecturers, such double-digit contributions span just three age groups (45-59 years olds).

In contrast to these five occupations, the other four (crop and livestock farmers, dairy farmers, care givers and sales assistants) exhibit bi-modal distributions of age group with a strong showing of new MJH workers in the 15-19 year age group as well as a higher age bracket. Indeed, in three of the occupations (crop and livestock farmers, dairy farmers and sales assistants) the largest contribution to MJH numbers during 1991 to 2001 came from this youngest age group.

Table 27 Analysis of change in high MJH growth occupations, by age group - 1991 to 2001

Occupation	Change in workforce #	Change in # MJH	% contributions to increased MJHers												
			15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+
General clerks	23,886	3,957	1	3	3	7	13	21	19	17	9	5	1	0	0
Crop and livestock farmer	7,932	3,606	17	3	3	5	8	9	10	11	11	9	6	4	3
General manager	13,227	3,546	0	0	2	5	9	14	18	22	15	8	3	1	1
Administration manager	17,157	2,466	0	1	5	10	14	16	18	16	12	5	2	1	0
Care giver	24,174	2,277	12	8	5	4	9	13	15	17	12	5	1	0	0
Sales assistant	17,511	2,202	24	22	3	1	4	7	12	12	8	7	1	1	0
Accountant	9,942	2,133	0	-1	4	12	19	17	15	14	11	5	3	1	0
University/Higher Education	2,211	1,251	1	6	2	4	7	7	18	25	19	9	2	1	0
Dairy farmer	-1,809	1,164	22	0	-5	-9	4	10	17	19	14	13	8	4	3

Focussing on currently high MJH rate occupations, as in Table 9, analysis by age group shows that the highest MJH rate increases during the 1991-2001 period tended to occur for those under 30 years and those over 50 years (see Table 28).

Table 28 Analysis of change in high MJH rate occupations, by age group - 1991 to 2001

Occupation		Absolute increase in MJH rate	MJH rate (%)	Net change in MJH#
		91-01	2001	91-01
Bookkeeper				279
	25-29 yrs	13.0%	22.5%	
	50-54 yrs	19.1%	25.8%	
Physician				240
	40-44 yrs	20.5%	33.7%	
	45-49 yrs	14.2%	31.3%	
	50-54 yrs	15.3%	35.3%	
	70-74 yrs	19.0%	33.3%	
Sheep farmer/farm worker				48
	15-19 yrs	22.3%	30.9%	
	60-64 yrs	16.9%	24.6%	
	65-69 yrs	17.7%	23.2%	
	70-74 yrs	19.7%	23.2%	
Cattle farmer/farm worker				252
	15-19 yrs	28.6%	35.3%	
	65-69 yrs	17.8%	23.6%	
	75-79 yrs	22.4%	27.5%	
Instrumentalist				96
	20-24 yrs	20.6%	33.3%	
	25-29 yrs	15.6%	31.7%	
	45-49 yrs	14.2%	34.2%	
	50-54 yrs	-11.5%	15.8%	
	55-59 yrs	15.9%	25.0%	
	60-64 yrs	-22.2%	11.1%	
Crop and livestock farmer/farm worker				3606
	15-19 yrs	13.7%	21.8%	
	60-64 yrs	16.2%	23.3%	
	65-69 yrs	17.5%	25.3%	
	70-74 yrs	18.4%	24.5%	
Other livestock farmer/farm worker				588
	15-19 yrs	30.0%	30.0%	
	25-29 yrs	18.5%	18.5%	
	55-59 yrs	17.1%	24.8%	
	65-69 yrs	20.0%	20.0%	
General practitioner				504
	50-54 yrs	18.5%	35.6%	
	55-59 yrs	15.5%	30.6%	

Attention is now turned to the question of which occupations exhibited the highest rates of growth in MJH activity for people in specified age groups, when analysed separately. The kind of analysis reported for all workers in Table 5 is now repeated for certain age groups - see Table 29. Data are presented for occupations which exhibited increases in MJH numbers between 1991 and 2001 of more than 100 in any particular age group.

Some occupations have very narrow age bands of MJH activity. For example, checkout operators, kitchen hands and greenkeepers who became MJHers during this period were predominantly in the 15 to 19 year age group. Sports coaches or trainers who became MJHers during this period were

predominantly in the 20 to 24 year age group, and early childhood teachers who became MJHers during this period were predominantly in the 40 to 44 year age group.

At the other extreme, crop and livestock farmers or farm workers who became MJHers during this period were spread across the entire range of age groups, with more than 100 new MJHers in every single age group between 15-19 years and 70-74 years.

Table 29 Analysis of change in high MJH growth occupations, by age group - 1991 to 2001

Occupation	Increased MJH numbers by age group												75+
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	
Crop & Livestock Farmer/Worker	600	126	114	198	273	330	357	381	387	342	231	159	
Sales Assistant	531	474				147	255	258	186	144			
Catering Counter Assistant	384	147											
Waiter	348	129											
Care Giver	264	180	114		204	303	339	378	282	111			
Dairy Farmer, Dairy Farm Worker	255					114	198	225	162	156			
Checkout Operator	234												
Kitchenhand	180												
Grounds or Green Keeper	129												
General Clerk		138	135	279	539	813	741	663	351	198			
Sports Coach or Trainer		138											
Computer Applications Engineer		123	129	132	117	108							
Technical Representative		105			108	123	105						
Administration manager			135	255	342	390	450	393	288	120			
Systems analyst			108	174	165	156	117						
Accountant				246	402	363	321	288	228	117			
General manager				171	315	504	654	777	537	294			
Registered nurse						288	294	216	144				
General practitioner						153	117	117					
Early childhood teacher						138							
Office manager						114	165	165					
Social worker						111	129	162					
Management consultant						102		123					
Primary school teacher							294	267	147				
Secondary school teacher							234	318	171				
University & Tertiary lecturer							222	309	243	114			
Secretary							204	285	189				
Builder (including contractor)							132	141					
Information clerk/other receptionist								153					
Retail manager								171	132				
Real Estate Agent/Property Cons.								117					
Survey Interviewer								111					
Nursery Grower, Nursery Worker								105					
Other Livestock Farmer/Worker								105					
Fruit Grower, Worker								105	135				
Sheep farmer, farm worker									123				

4 SIGNALS TO FUTURE ANALYSIS IN THIS SERIES

This Working Paper has laid out in some detail the taxonomy of the changing labour market for people with more than one job - from 1991 to 2001.

The statistical profiling will now turn its focus to longer-term trends in the labour market and multiple job holding, based on national statistical data from five consecutive censi - from 1981 to 2001. This analysis will form the basis for comparisons with other statistical data sources such as the one-off Time Use Survey carried out in 1998/1999 and the longitudinal Household Labour Force Survey carried out since 1985.

It is also intended that the statistical profiling supports other research initiatives in this research programme on multiple job holding. For example, more detailed analyses of Maori labour markets is envisaged.