

Health, Work, and Retirement Survey

Summary report for the 2006 data wave.

- Characteristics of the Sample -

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Data wave one from the Health, Work & Retirement (HWR) Longitudinal Study presents information on the lives and retirement expectations of over 6,500 New Zealanders aged 55-70. What distinguishes this study from similar overseas studies is that the HWR has both a representative sample of the general public as well as a sample comprised solely of a key indigenous ethnic minority population; New Zealanders of Māori descent.

Providing a meaningful snapshot of the health, work and retirement attitudes of over 6,500 New Zealanders requires a sample that accurately reflects the population of mid-life to older New Zealanders as a whole. This chapter compares the distribution of demographic characteristics in the two sub-samples to the distribution in their target populations. These comparisons suggest that both samples accurately reflect the populations from which they were drawn. Unless otherwise stated, national comparison data was drawn from the recently completed *New Zealand 2006 Census of Population and Dwellings* and, for more specific age-related comparisons, from data on middle-aged to older adults from the *New Zealand 2001 Census of Population and Dwellings*.

Demographic Comparisons with National Benchmarks

Sex

Figures 1 and 2 show the sex proportions in both the HWR general and Māori sub-samples compared to their respective population proportions noted in the 2006 and 2001 census. Both the general and Māori samples in this study have a slight sex imbalance with slightly more females and less males than their target populations. However, both the nature and size of the sex balance in each sample approximates that of their reference populations.

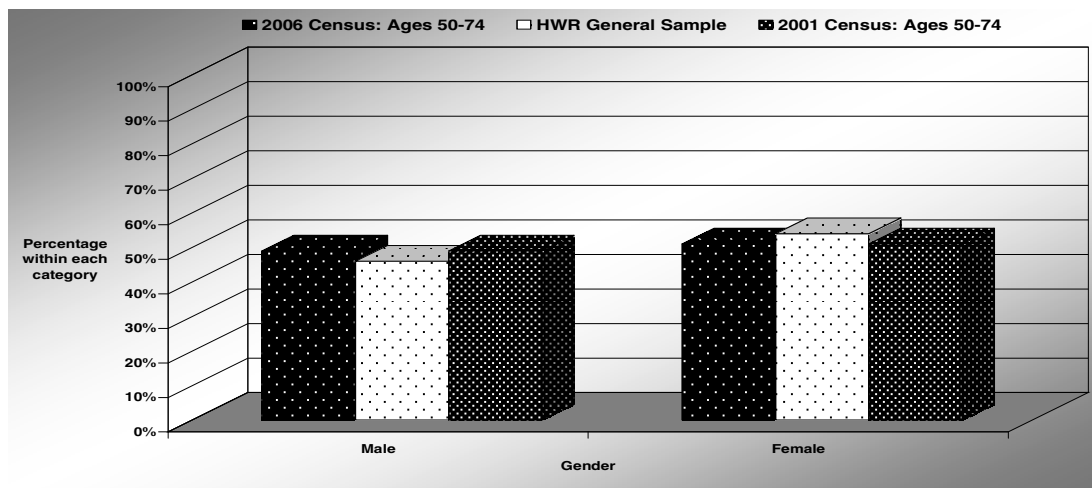


Figure 1. Proportion of males and females in the general sample compared to their New Zealand reference populations.

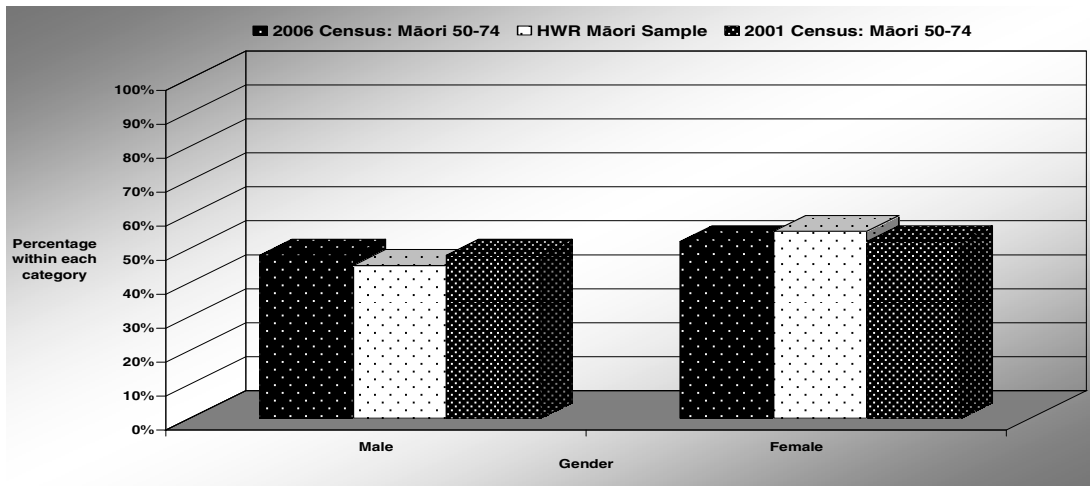


Figure 2. Proportion of males and females in the Māori sample compared to their New Zealand reference populations

Age

The proportion of participants across the three age bands in the HWR general sample (see figure 3) and the Māori sample (Figure 4) follow the same general trend evident in census data from the Māori (2001)¹ and general populations (2001 and 2006). This suggests that, at least on age-related analyses, the potential exists to examine differences between these two samples.

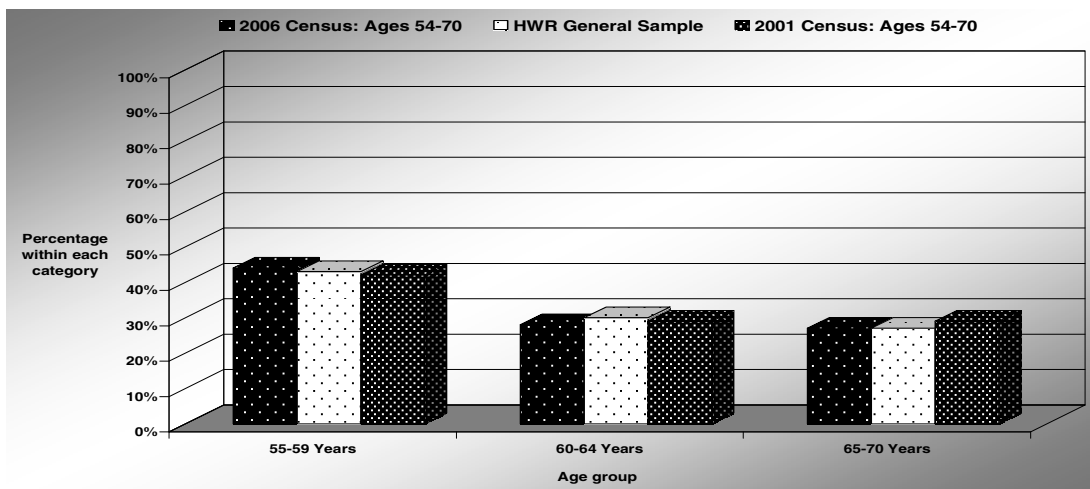


Figure 3. The proportion of participants by age group within the general sample.

¹ The 2006 Census Māori population proportions by age were not available at the time of printing.

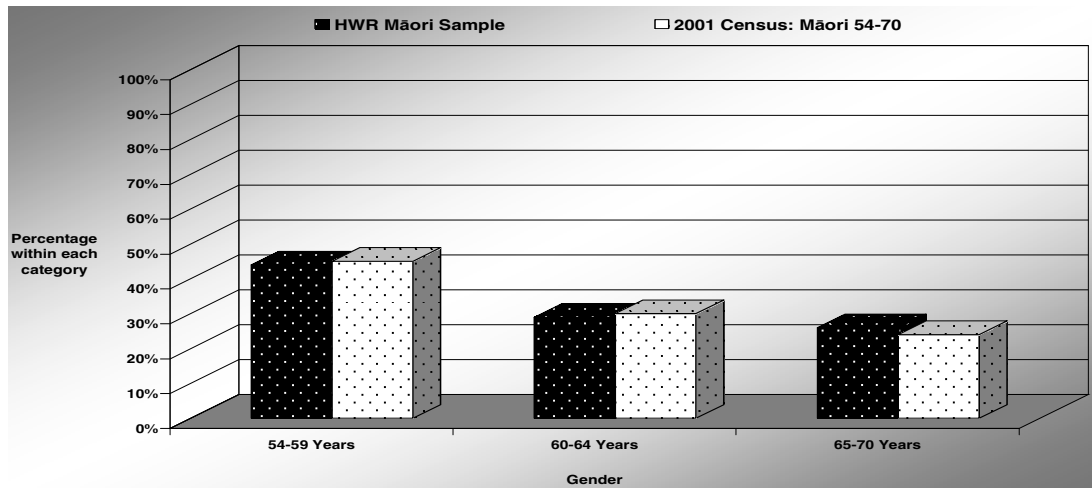


Figure 4. Proportion of participants by age group within the Māori sample.

Ethnicity

A 2006 census break down of ethnicity for the 55-70 year-old general population is not currently available. However, comparisons can be made between the ethnic makeup of our general sample to the 2006 usually resident New Zealand general population in total, and that of the 2001 census data for usually resident population in the 50-74 year age band.

Figure 5 shows that, compared to the New Zealand general population in 2006, the general sample has a higher proportion of New Zealanders of European descent, and lower numbers of all other ethnic groups excluding 'Other'. However, comparisons with the 2001 age-specific data show that the imbalance between the HWR sample and the current national trend may be a result of using general rather than age-specific data. The ethnic makeup of our general sample compares much more favourably with the ethnicity data from 2001 for residents in the 50-74 age group, which suggests that, other than the slight increase in the numbers of New Zealand European and low level of Pacific Peoples, ethnic trends in the HWR sample may indeed match the normal trends for the current 55-70 year old New Zealand population.

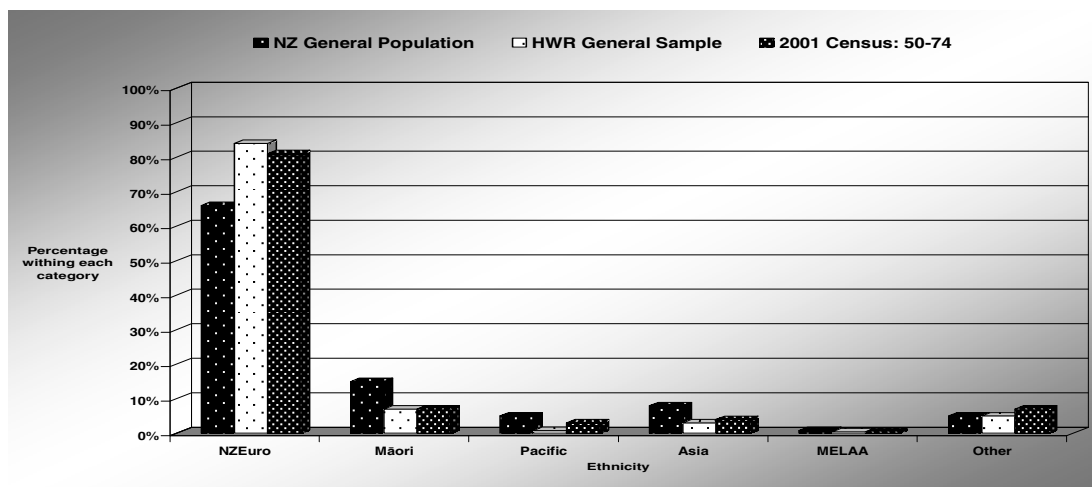


Figure 5. Proportion of general sample participants in each ethnic group in comparison to current and past population trends².

² The ethnic category MELAA stands for 'Middle Eastern/Latin American/African'.

Labour force participation

The HWR general sample has lower rates of full-time and higher rates of part-time employment than the New Zealand population at large (see Figure 6). The workers in this sample are a cross section of older workers transitioning from full-time employment to retirement, and part-time work is a logical step in this process. Furthermore, both the general sample and the Māori sample (see figure 7) have greater rates of overall employment than their 2001 census counterparts, most likely because the latter group ranges in age from 50 upwards so they also include a higher proportion of retirees than in our age restricted samples.

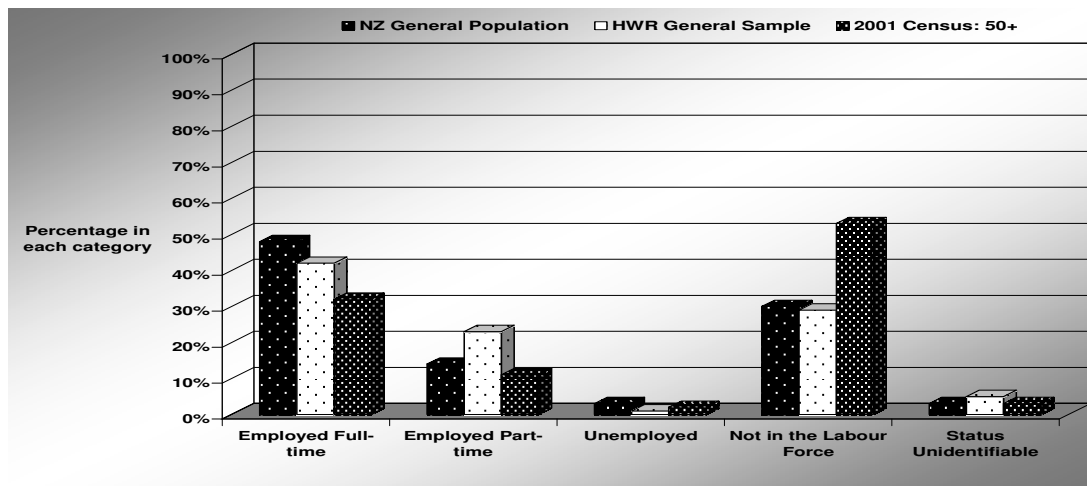


Figure 6. Labour force participation rates per sample and in comparison to past and current trends – general sample.

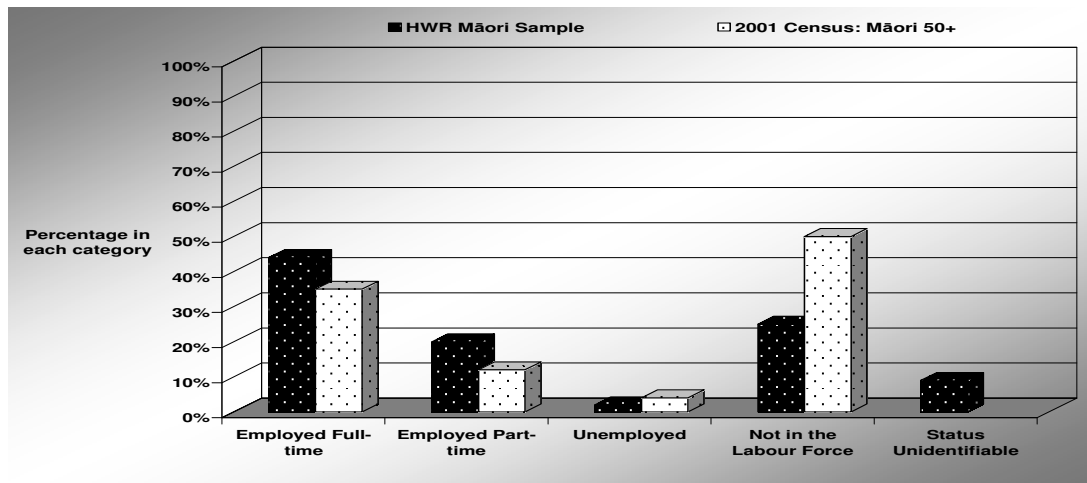


Figure 7. Labour force participation rates per sample and in comparison to past and current trends – Māori sample.

Occupation

Using the categories supplied by the Australian and New Zealand Standard Classification of Occupations (Australian Bureau of Statistics & Statistics New Zealand, 2006), Figure 8 compares types of occupation for workers in the study with the trends noted in the respective 2006 general population and the 2001 census figures for adults over 50.

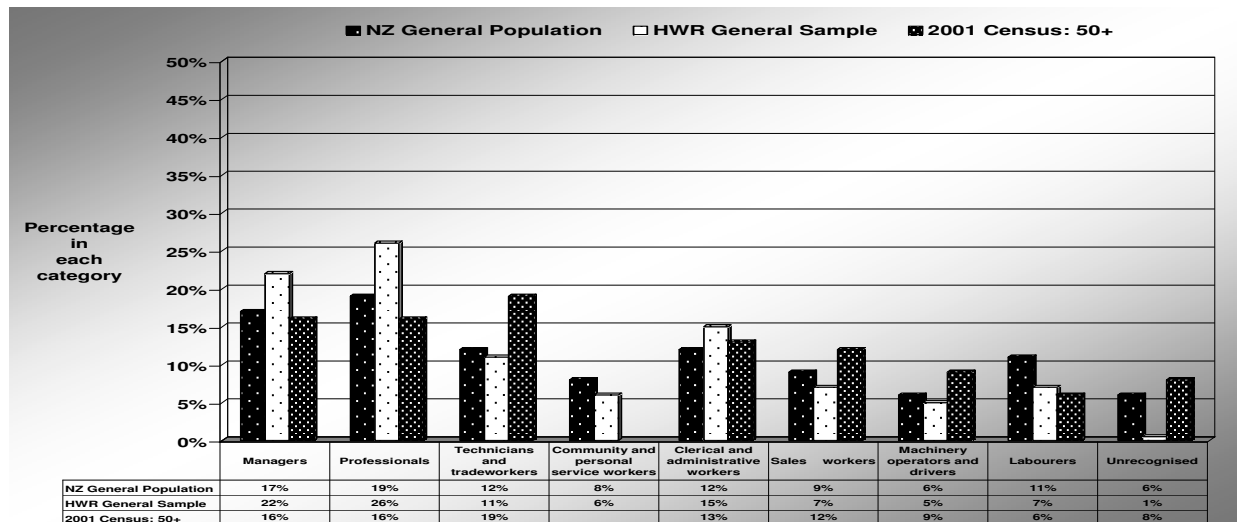


Figure 8. Occupation types per sample and in comparison to past and current trends – general sample.

The general sample participants are more likely than the NZ general population and the 2001 50+ cohort to be employed in managerial, professional occupations, or clerical positions and less likely to be in occupations such as sales, community work or machinery operators³. The Māori sample (see Figure 9) also have higher rates of managerial, professional, clerical workers and labourers than their 2001 50+ counterparts.

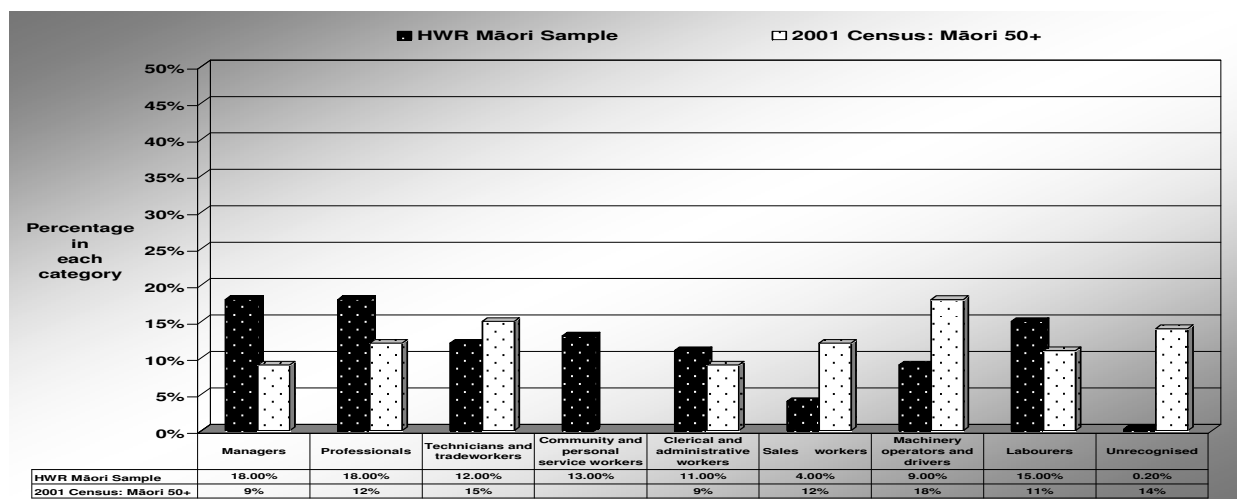


Figure 9. Occupation types per sample and in comparison to past and current trends – Māori sample.

³ The 2001 census used the 1999 *New Zealand Standard Classification of Occupations* (Statistics New Zealand, 2001) which did not recognise *Community and personal Service Workers* as a distinct group, so no data exist for this group. However, the lack of this category may explain the higher rate of *Unrecognised* occupations in the 2001 data. Furthermore, the category *Agriculture and Fishery Worker* used in the 2001 census is excluded in the current chart as it not recognised in the updated classification of occupations used in the 2006 census and HWR survey.

Income

The income distributions in Figure 10 (general population) and 11 (Māori population) are roughly bi-modal for both the census and HWR samples, with lower-income levels clustered the \$10,000 mark and high-income levels clustered around \$50,000.

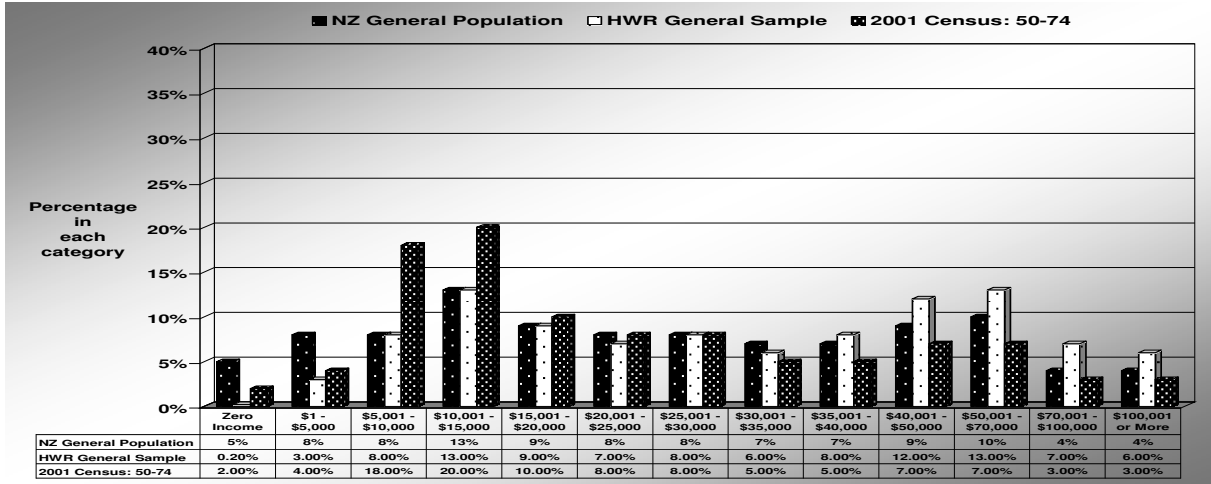


Figure 10. Income levels per sample and in comparison to past and current trends – general sample.

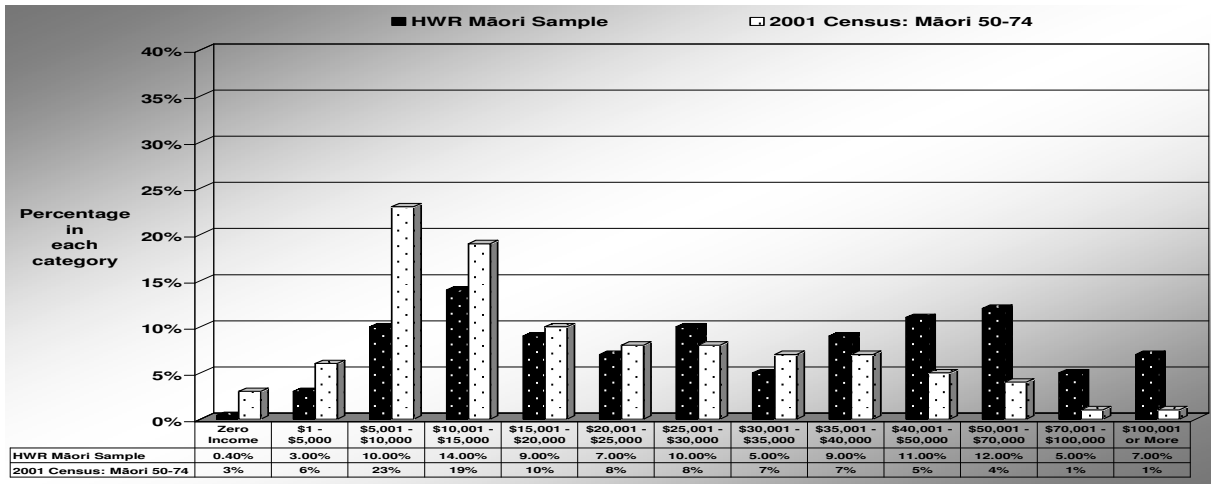


Figure 11. Income levels per sample and in comparison to past and current trends – Māori sample.

However, while incomes may look roughly bi-modal, it is clear that the HWR general and Māori samples are, on average, wealthier than would be expected from current and past population trends, with a higher than normal proportion earning more than \$40,000 per annum. This is perhaps not surprising given the disproportionate number of workers in both our samples who are in relatively well paying professions (i.e., managerial and professional occupations) compared to their reference populations. Furthermore, the age range of our two samples may also reflect individuals at senior levels in their respective professions who would likely be in higher income brackets as compared to the general population at large.

Education

Figure 12 compares levels of quality assured qualifications (see New Zealand Qualifications Authority, 2003)⁴ across the general population and the HWR general and Māori samples. Counts for the current Māori population are not currently available for the 2006 census, and qualification counts in previous years (e.g., 2001) do not conform to the current NZQA levels used for the HWR study. In this respect, qualification level counts for the HWR Māori sample have been compared directly with that of the HWR general sample and the 2006 New Zealand general population.

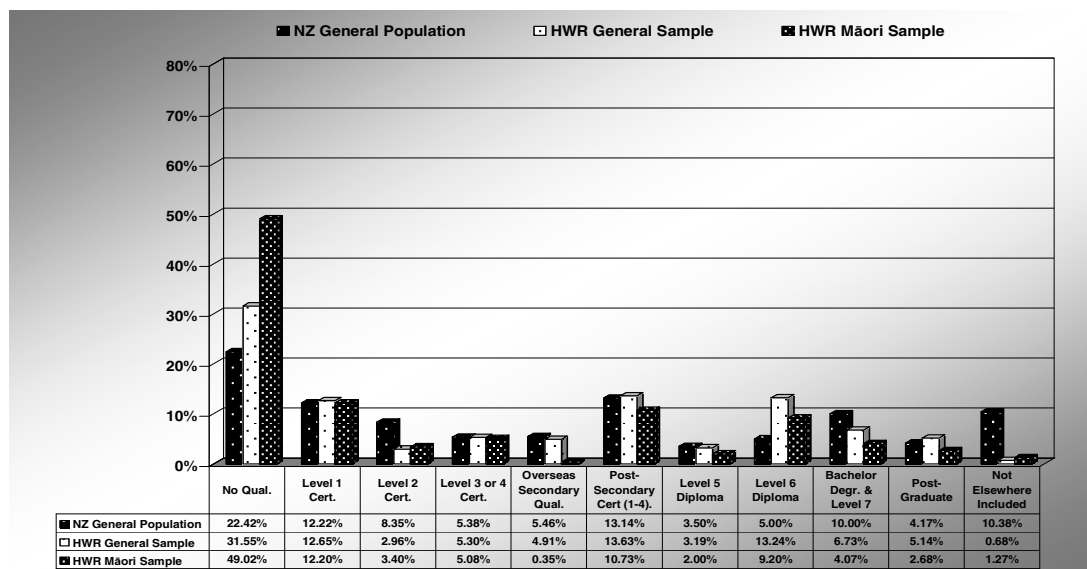


Figure 12. Qualification levels across the general population, HWR general sample, and HWR Māori sample.

Compared to the general population, the HWR general sample has a greater proportion of individuals with no qualifications, as does the HWR Māori sample. However, given the older age range of both HWR samples and the broad age range of the general sample, it is probable that this difference is a cohort effect. Education policy changes over the four decades since the youngest participants were school students (e.g., raising the legal leaving age to 16) have boosted school retention rates significantly. Furthermore, statistics now show that those currently leaving school early are doing so with more qualifications than ever before (Ministry of Education, 2006). The qualification comparison in figure 12 also shows that, compared to the general population, both HWR samples had higher proportions with Level 4 post-school skilled vocational training (e.g., engineering certificates, apprenticeships, enrolled nurse) and level 6 diplomas (e.g., technician certificate, registered midwife, advance teaching), which may reflect the greater proportion of managers and professionals in the HWR samples as compared to the general population. All three groups had similar levels of post-graduate levels qualifications.

⁴ Despite utilising the same qualification framework, there are subtle differences between the census qualification levels and the HWR qualifications that are due to measurement difficulties rather than expressing true variations. For example, we were unable to differentiate between level 1-4 certificates gained either at school *or* post-school, so the HWR sample levels of 'Level 4 Certificates gained post-school' comprise all skilled vocational qualifications as listed under 'Level 4' on the NZQA register.

Economic Living Standards

Figures 13 and 14 compare the self-rated living standards of our general and Māori samples with the standards available for their reference populations⁵. The living standards for our general population sample reflect the trends in the 2000 and 2004 general population aged 45 and above. However, the HWR sample does have slightly more people with a “very good” living standard than is normal in the broad 45+ age group, which may be indicative of the higher levels of income for our sample.

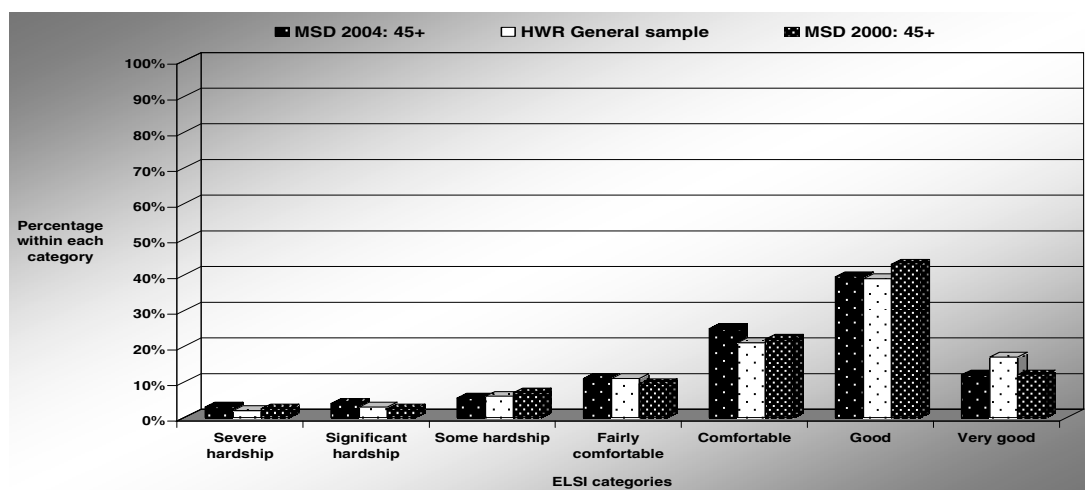


Figure 13. Living standard per sample and in comparison to past and current trends – general sample.

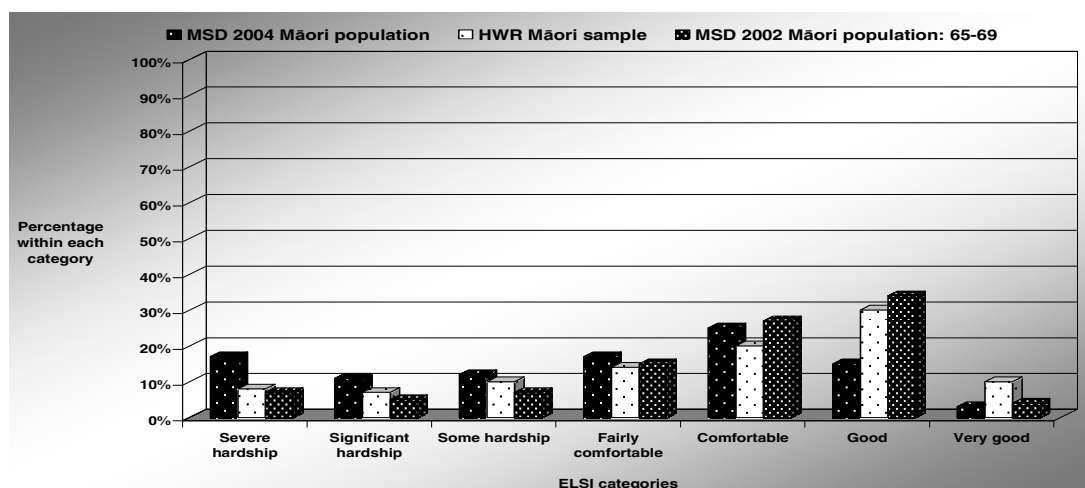


Figure 14. Living standard per sample and in comparison to past and current trends – Māori sample.

The dissimilarity in reference populations may somewhat explain the differences observed in the Māori living standards comparison. Our Māori sample has fewer individuals at the lower end and more at the higher end of the living standard spectrum than would be expected from the 2004 Māori population data. However, this

⁵ The General and Māori population data come from the Ministry of Social Development *New Zealand Living Standards* surveys from 2000 and 2004, and the 65-69 Māori population data comes from the document *Living Standards of Older Māori* (Ministry of Social Development, 2002).

may reflect the older age of our sample and the relative youth of the majority of the Māori population at large, as research shows that living standards increase with age (Ministry of Social Development, 2002). This imbalance in living standards is redressed somewhat when the HWR Māori sample is compared to a similar Māori cohort (i.e. aged 65-69). Although, the HWR Māori sample is still over-represented in the highest level of living standards, there are noticeably fewer participants with a *comfortable* or *good* standard of living in comparison with the 65-69 cohort (see figure 8). The HWR Māori sample also has a slightly higher proportion at the lower end of the living standard spectrum than this reference group. Ultimately, other than the disproportionate number of our Māori sample with a *very good* standard of living, this comparison shows that our Māori sample has a relatively normal distribution of living standards for the age range that it covers.

Post-Stratified Weighting

Over-sampling in the HWR study resulted in the over-representation of Māori and the under-representation of New Zealand Europeans, compared to their respective counts in the New Zealand general population. Accordingly, a post-stratified weighting variable was calculated to account for these known discrepancies between the sample and the population (Gelman & Carlin, 2000). The computation of the weighting variable was based on the population estimates provided by Statistics New Zealand for the 55 to 70-year-old age group. Each individual was then assigned a sample weight according to their primary ethnicity (see Table 1). Table 2 shows un-weighted and weighted frequencies, means, and standard deviations for the key demographic variables described above.

Table 1. Calculations for Post-Stratification Weights.

Ethnicity	2006 General Population 55-70 Yrs		2006 HWR General and Māori Sample combined		Sample Ethnicity weights (Pop proportion/ Sample proportion)
	Count	Proportion of total count	Count	Proportion of total count	
NZ					
European	424,713	0.697	3085	0.475	1.468
Māori	47,436	0.078	3117	0.479	0.162
Pacifika	19,383	0.032	52	0.008	3.974
Asian	31,257	0.051	83	0.013	4.015
MELAA	2,076	0.003	5	0.001	4.427
Other	84,855	0.139	159	0.024	5.690
Total	609,720	1	6501	1	

Note: 161 individuals did not affiliate with any ethnic group. These individuals were assigned a weighting value of 1 to ensure their inclusion in future analyses.

Table 2. Un-Weighted and Weighted Frequencies, Means, and Standard Deviations for Key Demographic Variables for the combined HWR sample.

Categorical-Level Variables	Combined HWR Sample			
	Un-weighted	Weighted		
Sex				
Male	2974	3108		
Female	3543	3411		
Paid employment status				
Full-time	2680	2775		
Part-time	1327	1383		
Retired	1302	1398		
Unemployed	105	94		
Not in labour force	837	695		
Not identified	411	316		
Occupation				
Managers	733	827		
Professionals	825	937		
Technicians / Trades	440	447		
Community / Personal	395	298		
Clerical and Administration	489	573		
Sales	209	253		
Machinery operators	279	213		
Labourers	445	326		
Unrecognised	17	21		
Education				
No qualification	2669	2141		
Level 1-4 / Overseas qualification	2314	2539		
Level 5-6 post-secondary diploma	893	1034		
Level 7 Bachelors and above	599	789		
Interval-Level Variables	Mean ^(sd)	Median	Mean ^(sd)	Median
Age	61 ^(4.7)	60	61 ^(4.5)	60
Income	\$43,436 ($\$128,518$)	\$30,000	\$48,162 ($\$152,509$)	\$32,000
Economic living standards	5.0 ^(1.6)	5.0	5.2 ^(1.5)	6.0

Note: Categorical-level variables report frequencies. Frequencies may not sum to sample totals due to missing data. Interval-level data report scale means (with standard deviation in parentheses) and medians.

Conclusions

Although age-appropriate comparison groups were not available for some of the demographic appraisals, the above comparisons indicate that the HWR general and Māori samples generally approximate their respective reference New Zealand populations. Both samples have similar sex and age proportions to the older general and Māori populations respectively, and while there are differences between the ethnic makeup of the general sample and the broad New Zealand general population, the general sample closely mirrors the ethnic makeup of the 50-74 year-old population from the 2001 census. This indicates that data from both the HWR general and Māori samples should accurately reflect any sex, gender and ethnicity trends inherent in the older New Zealand population. The contrasts in labour-force participation between the two HWR samples, the 2006 general population, and the 2001 census of those aged over 50, suggest that the transition from full-time work to retirement is bridged by part-time employment for many of the HWR participants. One concern with the

HWR sample is that they portray a more white-collar/professional population than the populations of interest. This is also reflected in greater proportions of sample participants on higher income levels in our samples. This same trend is evident in living standard comparisons, with both samples recording proportionally higher numbers with a 'very good' living standard, and this indicates that post-stratification income or living standard weighting may be required to address this imbalance when comparing our results to those of their respective New Zealand populations. Lastly, the two samples have relatively high proportions of vocational and advanced vocational/diploma training indicating a high level of educational attainment compared to the 2006 general population. However, a high proportion of both the general and Māori sample (the latter in particular) also lacked any formal qualifications, so without appropriately age-stratified comparison groups to compare our trends with it is difficult to say whether this somewhat bi-modal pattern is unique to our sample or reflective of the older New Zealand general and Māori populations. Post-stratified weighting has been employed to account for the over-representation of Māori, in the HWR sample, compared to the Māori population aged 55 to 70.

References

- Australian Bureau of Statistics & Statistics New Zealand. (2006). *The Australian and New Zealand Standard Classification of Occupations: ANZSCO* (1st ed). Canberra: Australian Bureau of Statistics.
- Gelman, A., & Carlin, J. B. (2000). Poststratification and weighting adjustments. In R. M. Groves, D. A. Dillman, J. L. Eltinge, & R. J. A. Little (Eds.), *Survey Non-Response*. New York: Wiley.
- Ministry of Education. (2006). *Report of the Ministry of Education for the year ended 30 June 2006*. Wellington: Ministry of Education.
- Ministry of Social Development. (2002). *Living Standards of Older Māori: Noho o te Hunga Pakeke Māori*. Wellington: Ministry of Social Development.
- Ministry of Social Development. (2002). *New Zealand Living Standards 2000: Ngā Āhuatanga Noho o Aotearoa*. Wellington: Ministry of Social Development.
- New Zealand Qualification Authority. (2003). *The New Zealand Register of Quality Assured Qualifications*. Wellington: New Zealand Qualification Authority.
- Statistics New Zealand. (2001). *New Zealand Standard Classification of Occupations 1999*. Wellington: Statistics New Zealand.