Appendix 1

New Zealand Survey of Older People in 2000

This appendix contains the questionnaire materials used in the New Zealand Survey of Older People in 2000. The New Zealand Survey of Older People in 2000 was undertaken by Statistics New Zealand. The questionnaire materials comprise:

1. Questionnaire for the New Zealand Survey of Older People in 2000

Questionnaire and respondent sorting cards are given as separate files after the appendices.

2. Card Items

The survey made use of card-sorting activities, with colour-coded cards. A list of these cards is included here.

3. Household Labour Force Survey Questionnaire

The participants for the main survey – 3000 older people – were recruited from the Household Labour Force Survey (HLFS) conducted by Statistics New Zealand. Therefore, information collected from the respondents through the HLFS was not repeated in the questionnaire developed for the main survey of older people, but was taken directly from HLFS data.

The HLFS survey form is reproduced here.

CARD ITEMS

The survey made use of card-sorting activities, with colour-coded cards. A list of these cards is given here.

BLUE CARDS (Questions 139-141)

10 Telephone
11 Secure locks
12 Microwave
13 Washing machine
14 Clothes drier
15 Waste disposal unit
16 Dishwasher
17 Food processor
18 Heating in all main rooms
19 A good bed
20 Warm bedding in Winter
21 A warm Winter coat
22 A good pair of shoes
23 A best outfit for special occasions
24 Pay television
25 Video player
26 Stereo
27 Personal computer
28 Access to the internet
29 Home contents insurance
30 Boat
31 Car
32 Holiday home, bach or crib
33 Television
34 A Pet
35 An inside lavatory
36 Running water in the house
37 Mains electricity (not supplied from on-site battery or generator)
38 Hot running water in the house

YELLOW CARDS (Questions 142-144)

39 Participate in family (whanau) activities
40 Give presents to family or friends on birthdays, Christmas or other special occasions
41 Visit the hairdresser once every three months
42 Have a holiday away from home every year
43 Have a holiday overseas at least once every 3 years
44 Have a night out at least once a fortnight
45 Have a day out at least once a fortnight
46 Have family or friends over for a meal at least once a month
47 Have a special meal at home at least once a week
48 Have enough room for family to stay the night

LF/HQ/01

HOUSEHOLD LABOUR FORCE SURVEY

HOUSEHOLD QUESTIONNAIRE

THE INFORMATION RECORDED ON THIS QUESTIONNAIRE IS SUBJECT TO THE CONFIDENTIALITY PROVISIONS OF THE STATISTICS ACT, 1975.

REFERENCE NUMBER

SURVEY PERIOD

INTERVIEWER NUMBER

THIS QTR PARTICIPATION CODE LAST QTR

THIS QTR
NEXT QTR
INTERVIEW MODE

ADDRESS

QUARTER

WEEK

EXCHANGE

TELEPHONE NUMBER

BEST TIME TO CALL OR TELEPHONE

PERSON NO.	NAME	SCOPE LAST QTR	DATE OF BIRTH	SEX	ETHNIC GROUP	COUNTRY OF BIRTH	YEARS IN N.Z.	MARITAL STATUS	RELATIONSHIPS		SCOPE THIS QTR
A	B	C	D	E	F	G	H	I	J		K
			What was ...'s date of birth? DD | MM | YY		What is ...'s ethnic group?	In what country was ... born?	How many years has ... lived in N.Z?	What is ...'s present marital status?	What is ...'s relationship to REFERENCE PERSON? RELN	FAMILY	

CONTINUATION SHEET USED

CHECKLIST
ASK/CONFIRM TELEPHONE NO.

ASK/CONFIRM BEST TIME TO CALL OR TELEPHONE

Appendix 2

Analysis of non-response in the Survey of Older People 2000

Sections 1 to 3

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Date: May 2001

Contents

1. Summary

The Survey of Older People in 2000 (SOP) was conducted on two independent surveys. The main survey (SOP) was based on the Household Labour Force Survey (HLFS) sample. Eligibility for the SOP was based on the HLFS age variable. This approach, therefore, excluded any non-respondents to the HLFS ineligible for the SOP. It was conducted in the March quarter 2000, and had 3060 respondents. This report compares the data from the SOP respondents with the HLFS variables available for the eligible SOP non-respondents.

This report also compares the SOP respondents with the parallel population recorded in Census 96. All the demographic variables that were common to both the SOP and the Census were compared; in addition some other variables of particular relevance to the SOP, such as home ownership were included. The variables used in the analysis are listed in table 1.1.

The second survey , the Survey of Older People Sample (SOPMS) was of the Māori population aged 65-69. This survey used a frame based on data from the Department of Work and Income, and had 542 respondents. This report uses Census 96 data to give some contextual information relating to the SOPMS data.

Graphical displays have been used as the analytical tool. Standard statistical tests of significance have been avoided because they are inappropriate under the complex survey design in place.

The only evidence found of a potential non-response bias is in the higher non-response rate among recently arrived immigrants, people born overseas, and Pacific people and Asians. Comparison with Census counts indicates that the re-weighting for non-response compensated for under-representation of these groups.

1.1 Table: summary of findings

Key:

✓ little evidence of difference
× some evidence of difference
na not investigated because not available
nr not investigated because not relevant

	Main survey – respondents *cf* non-respondents (HLFS)	Main survey – estimates *cf* Census 96	Māori sample *cf* Census 96
Age	✓	✓	nr
Sex	✓	✓	✓
Ethnicity	×	✓	nr
Country of birth	×	✓	nr
Years in New Zealand	×	✓	nr
Marital status	✓	✓	✓
Labour force status	✓	✓	✓
Total income	na	✓	✓
Home ownership	na	✓	✓
Secondary qualifications	na	✓	✓
Household size	na	na	×

Overall, there is little difference between the characteristics of the Survey of Older People respondents and the 1996 Census of Population data over a wide range of variables. However there is some evidence that Pacific peoples and Asians are over-represented in the non-respondents in the HLFS data. Both these groups are too small to be analysed separately. They form a very small proportion of the total population, so the higher rate of non-response is unlikely to affect any analysis. The over-representation of the two ethnic groups, and the variables country of birth and years in New Zealand are probably attributable to the same set of individual non-respondents.

1.2 Methodology

Each characteristic was analysed independently. This is because some subgroups formed by cross-tabulating characteristics are too small to produce reliable estimates.

Bar graphs and cumulative frequency plots have been used to perform the comparisons. Time did not permit additional investigation of the non-response characteristics using logistic regression. This would identify the characteristics that are influential on response behaviour and quantify their effect for the selected sample. Results obtained from this type of analysis cannot be generalised to the population of New Zealand older people, because they would ignore the complex survey design.

All key demographic variables that were available in the data used for comparison have been included in the analysis.

1.3 Weighting issues in the main survey

The weight applied to individual responses in the main survey is the product of four main parts:

- household selection weight
- individual selection weight
- non-response adjustment
- post-stratification factor.

The individual selection weight rates up the single selected individual's response according to the number of older people in the household, irrespective of sex. It has the undesirable effect of overestimating the number of males aged 80 or more, and underestimating the females. This anomaly is countered by the post-stratification factor.

The non-response adjustment involves estimating the proportion of eligible households in households of unknown eligibility. This proportion was estimated at 0.233, which is close to the Census 96 proportion of 0.229.

The post-stratification factor ensures that the final estimates of counts for sex x 5-year age groups agree with current official population estimates. Therefore bias in the SOP estimate with respect to age and sex is non-existent. These factors are:

age	sex	psfact
65-69	male	1.03561
65-69	female	0.94929
70-74	male	0.97155
70-74	female	0.98512
75-79	male	1.05452
75-79	female	1.10686
80+	male	0.91914
80+	female	1.21146

It is desirable for the post-stratification factors to be close to 1. The "worst" factors are for the 80+ age group. This has arisen because of the method of deriving the individual selection weight described above.

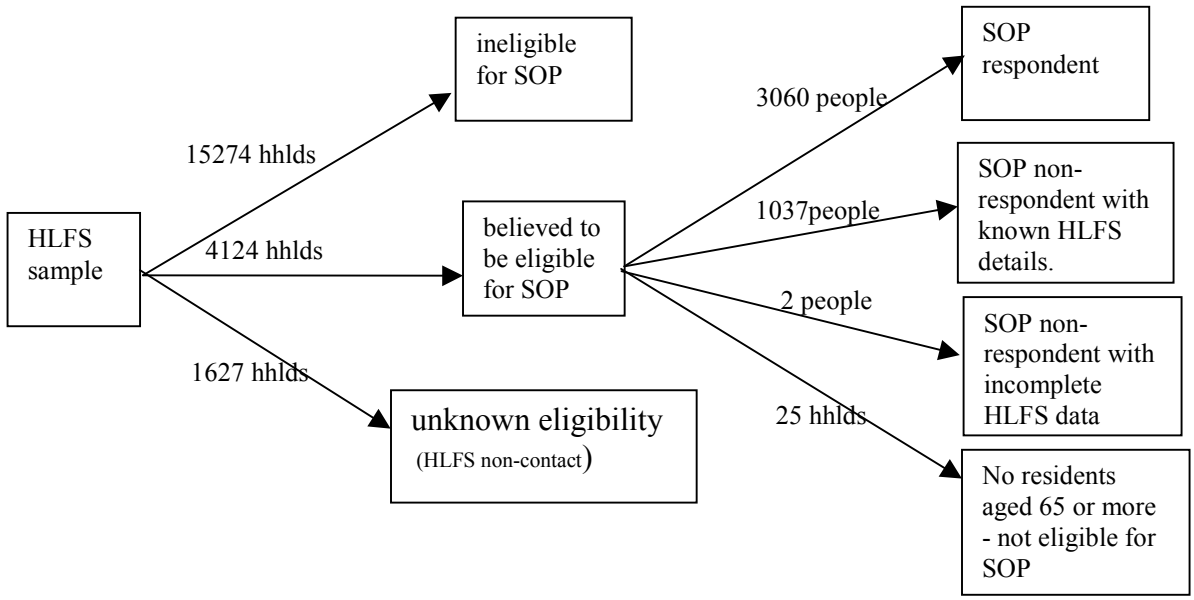
2. Comparison of the characteristics of the non-respondents and respondents in the main survey

This analysis found that Pacific peoples and Asians are over-represented in the non-respondents. Recent arrivals to New Zealand also have a slightly higher non-response rate. Response behaviour seems to be independent of age, sex, years in New Zealand, marital status, and labour force status

The SOP main sample is based on the Household Labour Force Survey (HLFS) sample for two quarters. Eligibility for SOPs is determined by the presence of at least one person aged 65 or more where every older person has responded to the HLFS. This cannot be determined for the 1627 households where there has been no contact for the HLFS.

Of the 4124 households believed to be eligible for the SOP, 3060 gave usable responses to the SOP survey , 1039 did not respond, and 25 were found to have no-one aged 65 or more. Age, sex, ethnicity, country of birth, years in NZ, family and labour force status were obtained from the HLFS data for the 3060 SOP respondents and 1037 of the SOP non-respondents. This is illustrated in Fig 1. Note that because only one individual is selected from each household the count of respondents/non-respondents is identical to the count of households.

Figure 1 – Eligibility and response counts from HLFS through to SOP



Comparisons of the distribution of these characteristics for respondents and non-respondents are shown in the graphs that follow.

The comparisons are made using unweighted data. They are a simple count of the number of individuals selected. Parallel comparisons with weighted counts were also investigated, using selection weights (inverse of the probability of selection), in preference to the final estimation weights. The two methods produced similar distributions. It was decided to use unweighted

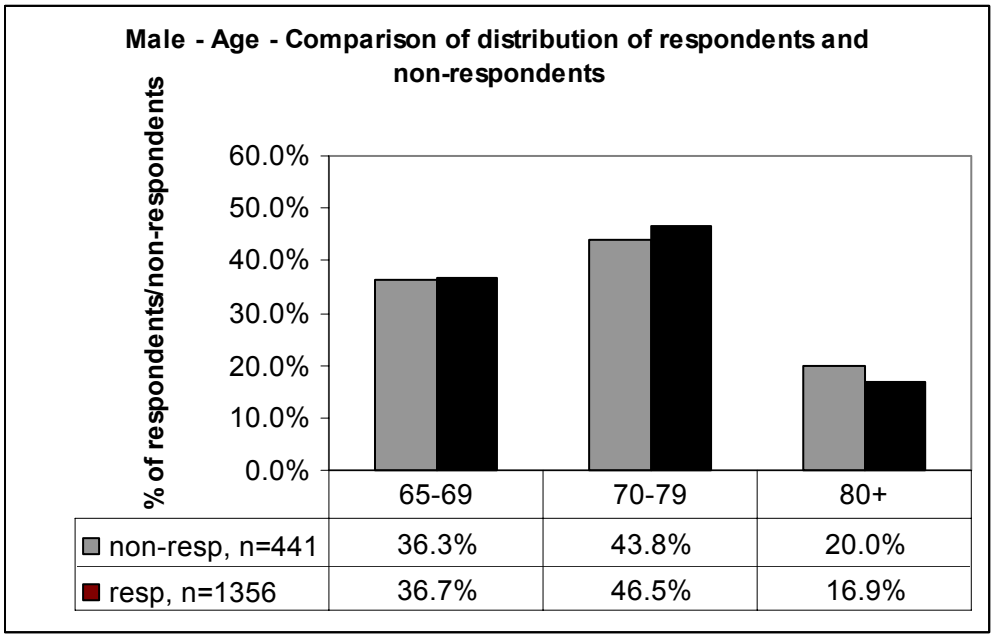
counts as this is simpler to understand, and the choice and appropriateness of weighting is debatable. The analysis is of the non-respondent population, not the respondent population, and therefore respondent weights are not appropriate. This meta data report on quality is an exception to the Statistics New Zealand output rules stating that unweighted data should not be presented.

All key demographic variables that were available in the data used for comparison have been included in the analysis. Each characteristic was analysed independently. This is because some subgroups formed by cross-tabulating characteristics are too small to produce reliable estimates. Any inferences made from the analyses have to allow for the unknown characteristics of older people living in the 1627 households of unknown eligibility.

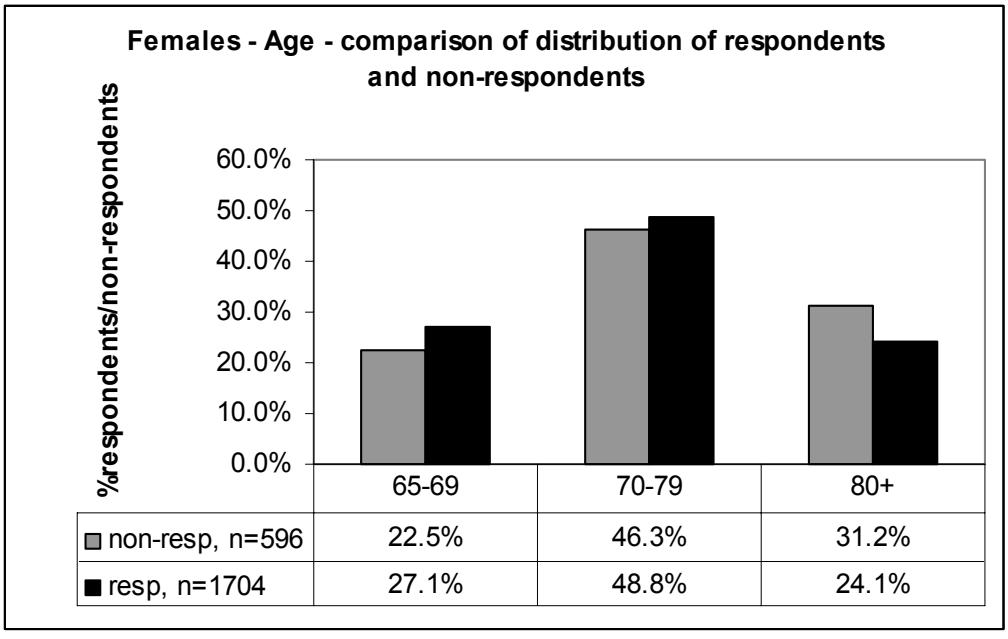
2.1 Age x Sex

The two graphs "Comparison of distribution of respondents and non-respondents" indicate that the age distribution for respondents and non-respondents are similar. This is true for both sexes.

Any inferences made from these graphs have to allow for the unknown characteristics of older people living in the 1627 households of unknown eligibility.

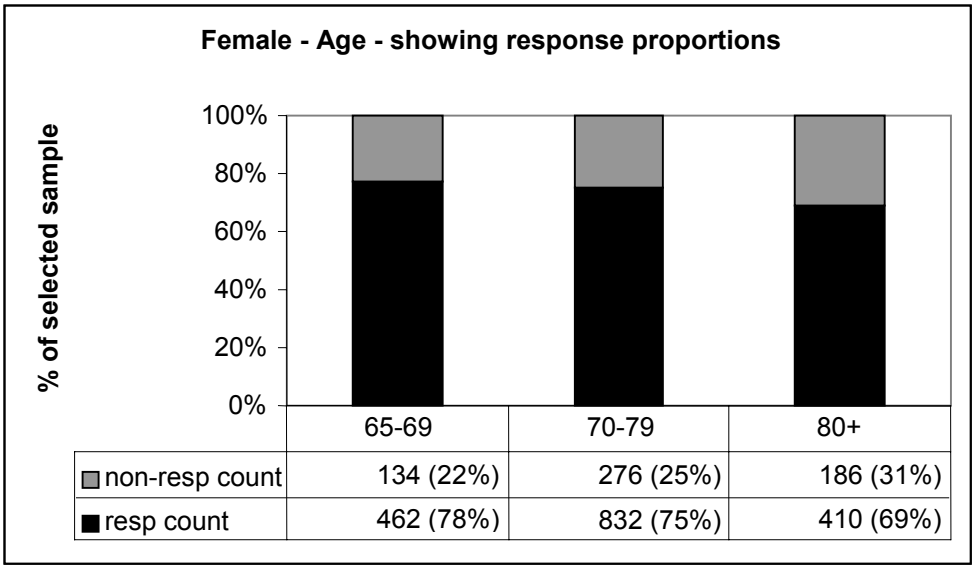


	65-69	70-79	80+
non-resp, n=441	36.3%	43.8%	20.0%
resp, n=1356	36.7%	46.5%	16.9%

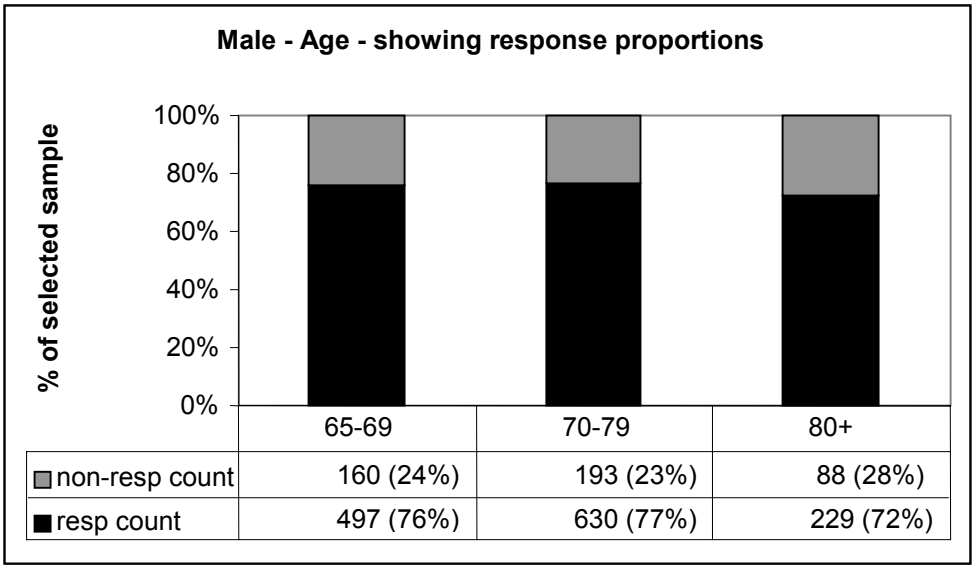


	65-69	70-79	80+
non-resp, n=596	22.5%	46.3%	31.2%
resp, n=1704	27.1%	48.8%	24.1%

The two graphs “Showing response proportions” indicate that the response pattern is independent of age and sex.



	65-69	70-79	80+
non-resp count	134 (22%)	276 (25%)	186 (31%)
resp count	462 (78%)	832 (75%)	410 (69%)



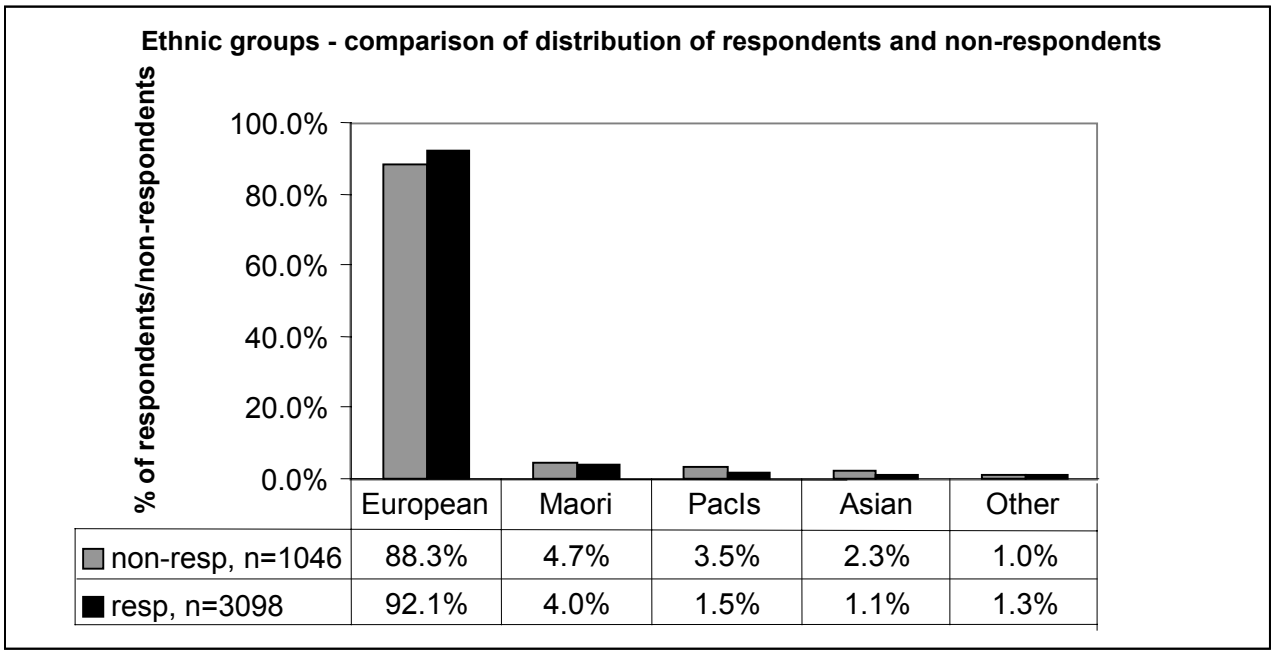
	65-69	70-79	80+
non-resp count	160 (24%)	193 (23%)	88 (28%)
resp count	497 (76%)	630 (77%)	229 (72%)

2.2 Ethnic group

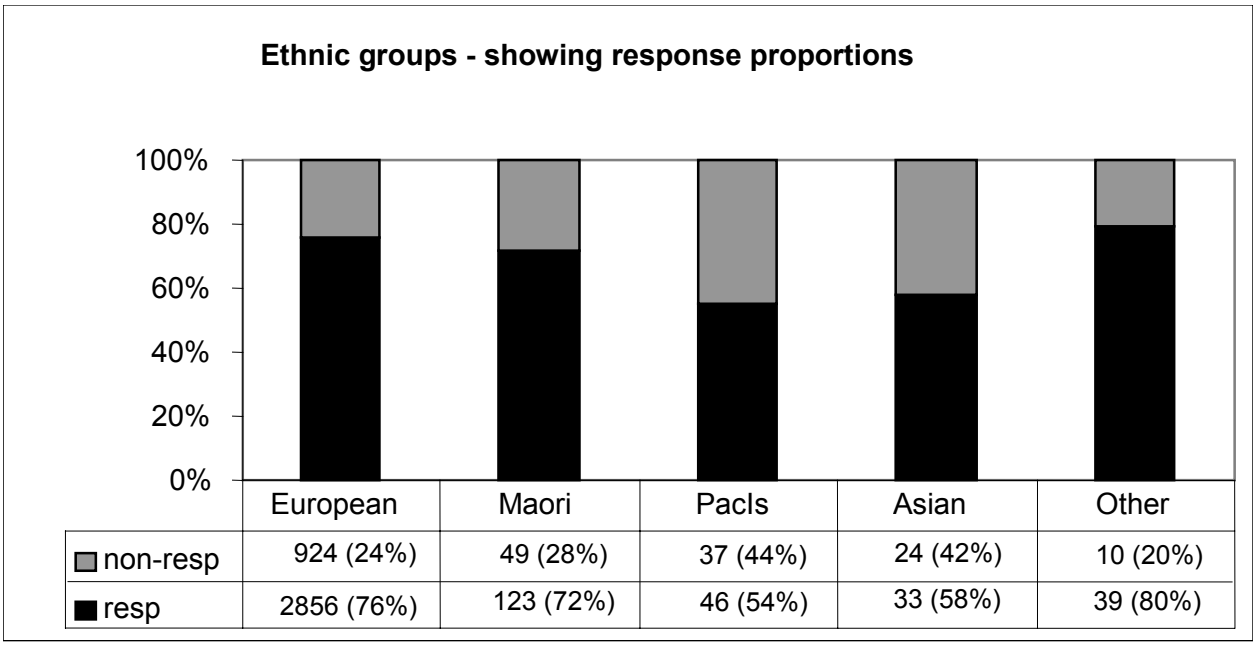
Each older person is assigned to all the ethnic groups indicated by the HLFS response. Because a few individuals indicate more than one ethnic group the count of ethnicities exceeds the count of individuals.

The two graphs indicate that while the distribution of ethnicities is similar for respondents and non-respondents, the Pacific peoples and Asians are over-represented in the non-respondents. Both these groups are too small to be analysed separately. They form a very small proportion of the total population, so the higher rate of non-response is unlikely to affect any analysis.

Any inferences made from these graphs have to allow for the unknown characteristics of older people living in the 1627 households of unknown eligibility. The count of those with "not specified" ethnicity is too small to be included in the displays.



	European	Maori	PacIs	Asian	Other
non-resp, n=1046	88.3%	4.7%	3.5%	2.3%	1.0%
resp, n=3098	92.1%	4.0%	1.5%	1.1%	1.3%

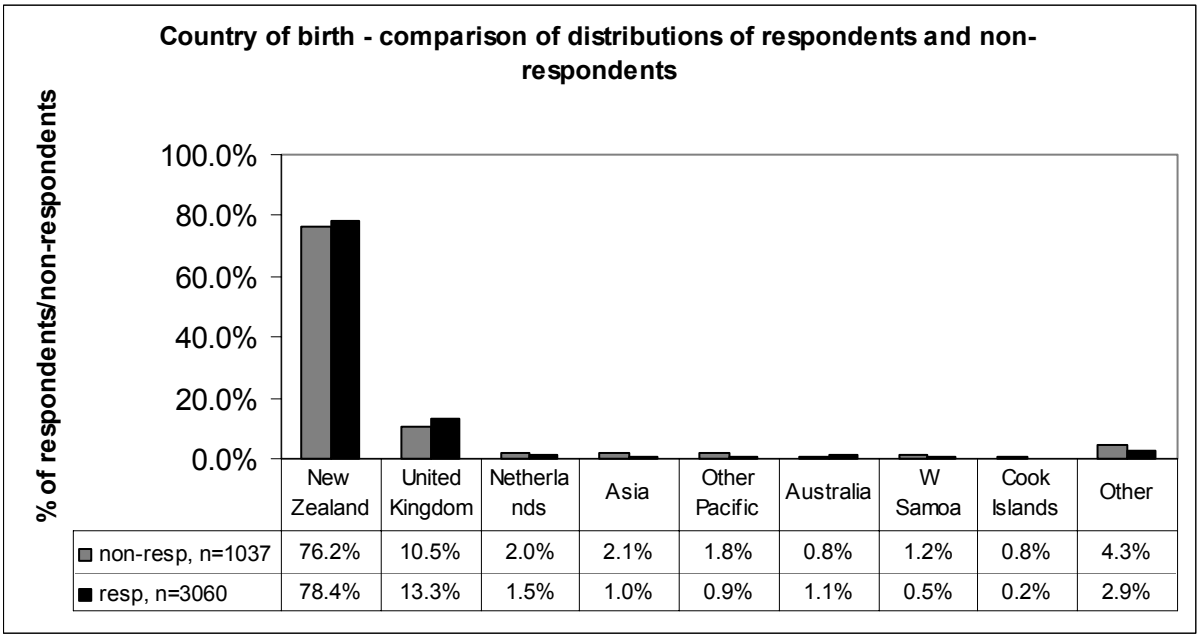


	European	Maori	PacIs	Asian	Other
non-resp	924 (24%)	49 (28%)	37 (44%)	24 (42%)	10 (20%)
resp	2856 (76%)	123 (72%)	46 (54%)	33 (58%)	39 (80%)

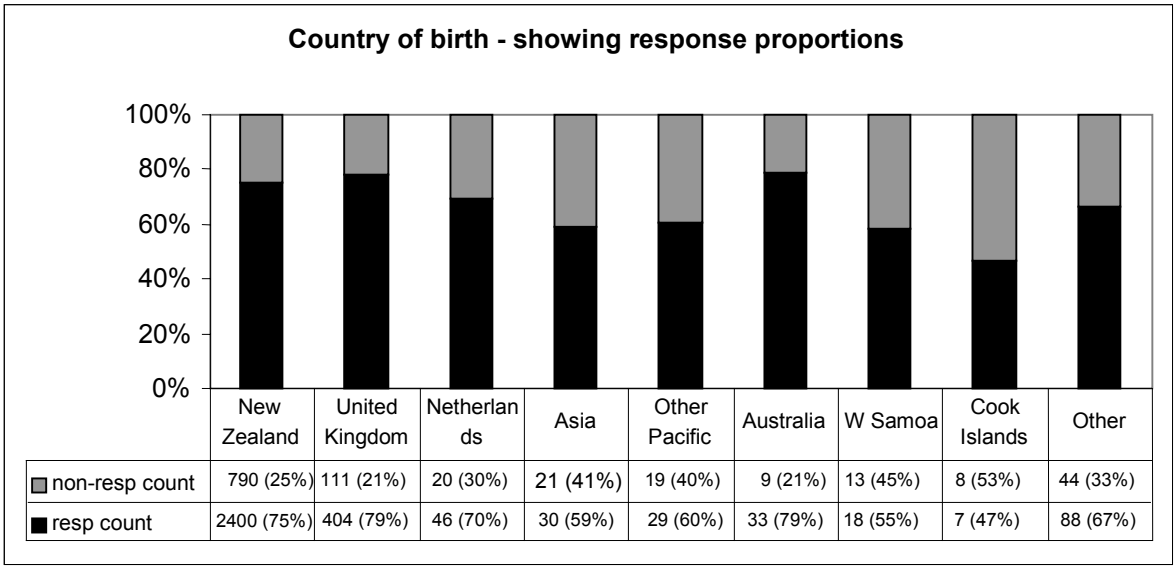
2.3 Country of birth

These two graphs indicate that while the distribution of Country of birth is similar for respondents and non-respondents, the Pacific peoples and Asians are over-represented in the non-respondents.

Any inferences made from these graphs have to allow for the unknown characteristics of older people living in the 1627 households of unknown eligibility. The count of those with "not specified" country of birth is too small to be included in the display.



	New Zealand	United Kingdom	Netherlands	Asia	Other Pacific	Australia	W Samoa	Cook Islands	Other
non-resp, n=1037	76.2%	10.5%	2.0%	2.1%	1.8%	0.8%	1.2%	0.8%	4.3%
resp, n=3060	78.4%	13.3%	1.5%	1.0%	0.9%	1.1%	0.5%	0.2%	2.9%

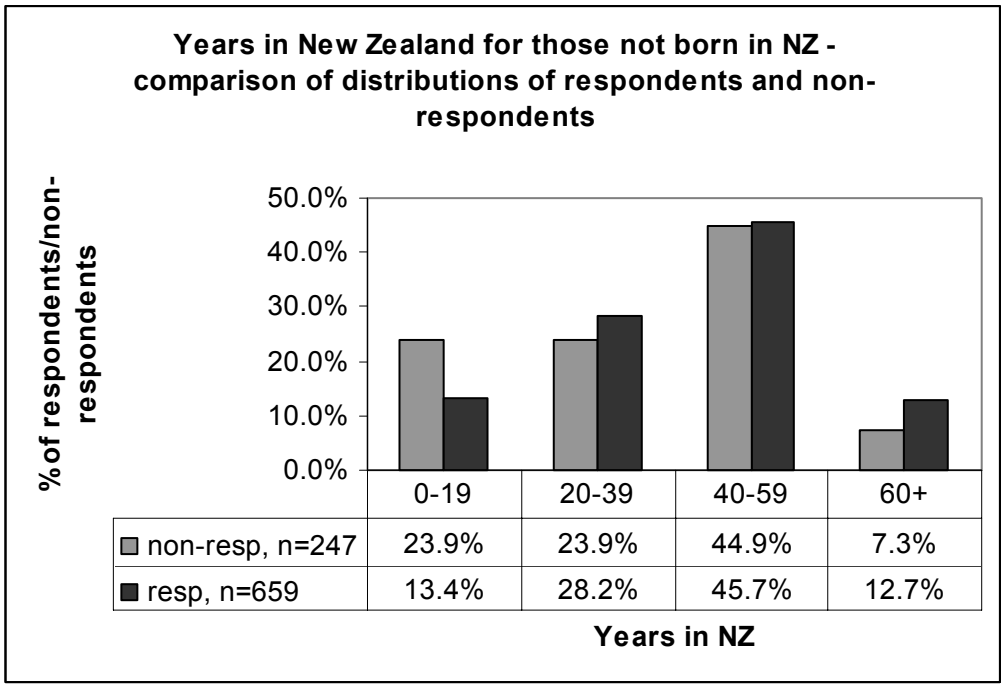


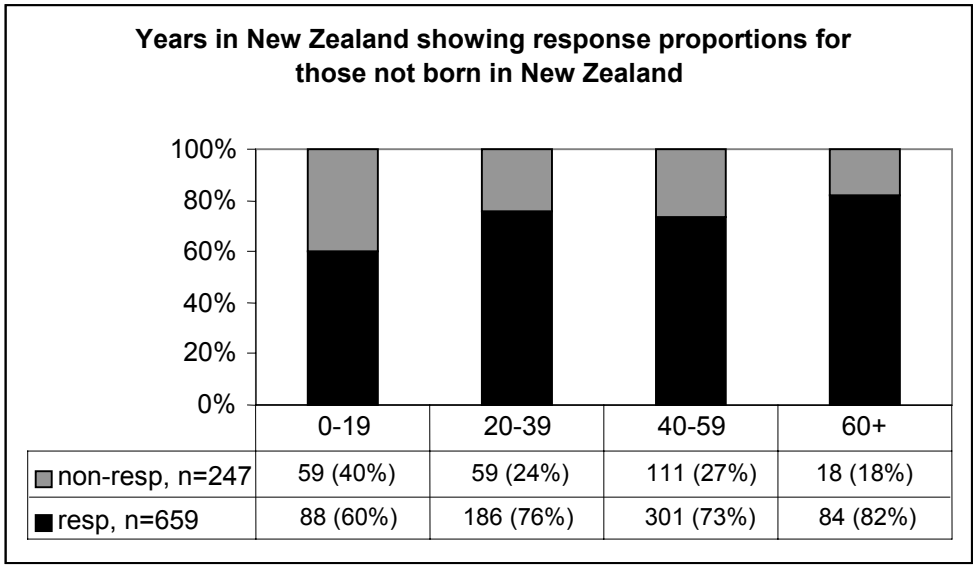
	New Zealand	United Kingdom	Netherlands	Asia	Other Pacific	Australia	W Samoa	Cook Islands	Other
non-resp count	790 (25%)	111 (21%)	20 (30%)	21 (41%)	19 (40%)	9 (21%)	13 (45%)	8 (53%)	44 (33%)
resp count	2400 (75%)	404 (79%)	46 (70%)	30 (59%)	29 (60%)	33 (79%)	18 (55%)	7 (47%)	88 (67%)

2.4 Years in New Zealand

These two graphs show the distribution of the number of years in New Zealand for the 906 people selected who were not born in New Zealand. There is a possible weak bias in the estimates away from the most recent arrivals to New Zealand. The bias is likely to be insignificant as this group forms only a small proportion of the survey population.

Any inferences made from these graphs have to allow for the unknown characteristics of older people living in the 1627 households of unknown eligibility.

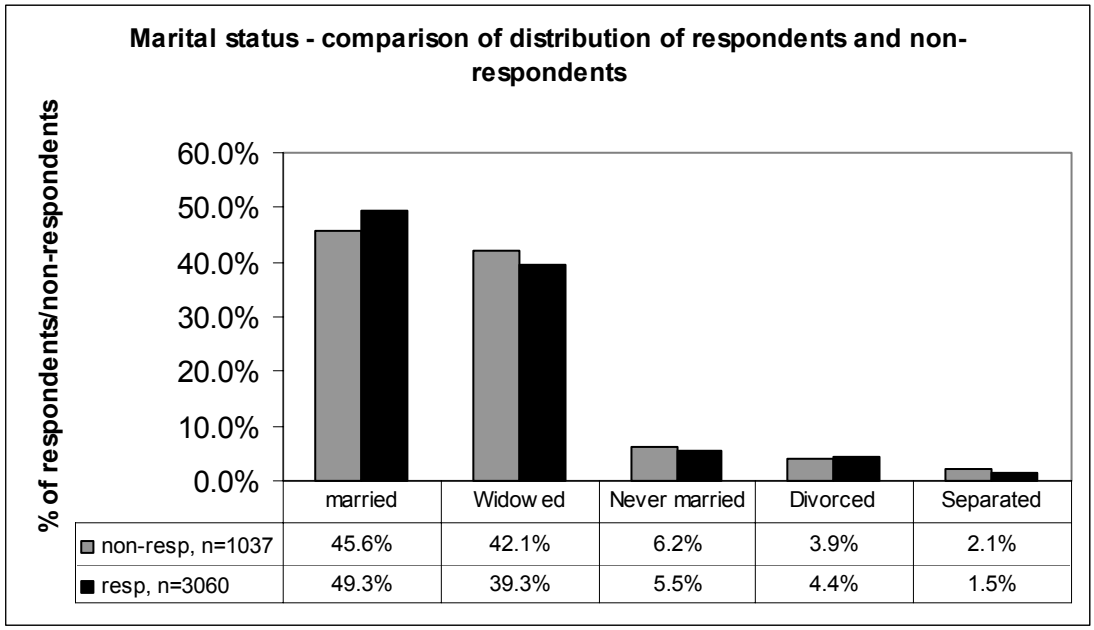




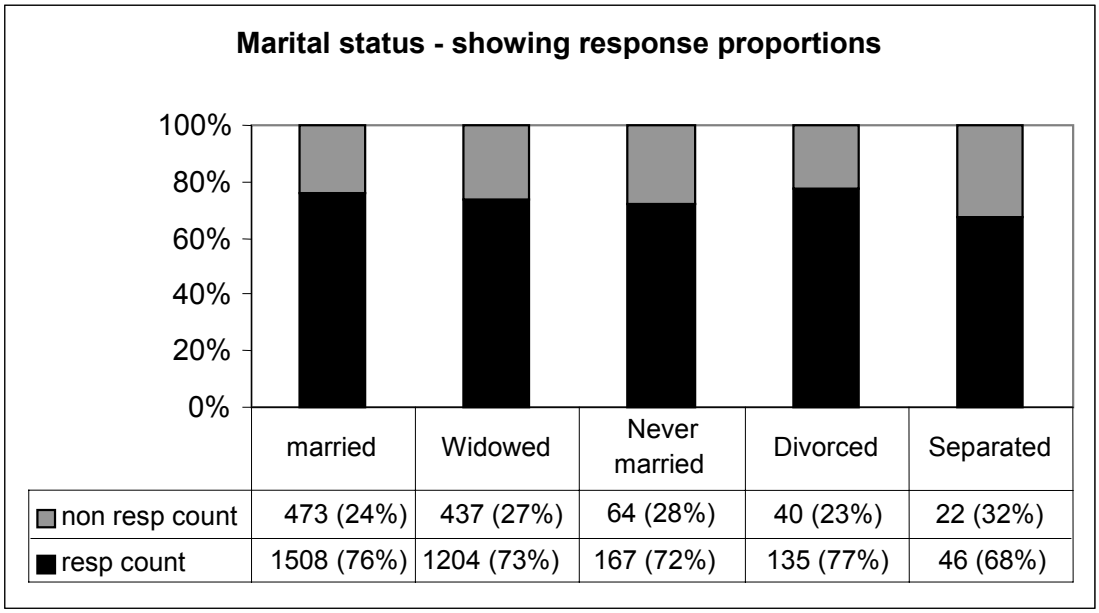
2.5 Marital status

These two graphs indicate that the distribution of marital status is similar for respondents and non-respondents, and that the response behaviour is independent of marital status.

Any inferences made from these graphs have to allow for the unknown characteristics of older people living in the 1627 households of unknown eligibility. The count of those with "not specified" marital status is too small to be included in the display.



	married	Widow ed	Never married	Divorced	Separated
non-resp, n=1037	45.6%	42.1%	6.2%	3.9%	2.1%
resp, n=3060	49.3%	39.3%	5.5%	4.4%	1.5%



	married	Widowed	Never married	Divorced	Separated
non resp count	473 (24%)	437 (27%)	64 (28%)	40 (23%)	22 (32%)
resp count	1508 (76%)	1204 (73%)	167 (72%)	135 (77%)	46 (68%)

2.6 Labour force status

These two graphs indicate that the distribution of labour force status is similar for respondents and non-respondents, and that the response behaviour is independent of labour force status.

Any inferences made from these graphs have to allow for the unknown characteristics of older people living in the 1627 households of unknown eligibility. The count of those with "not specified" labour force status is too small to be included in the display.

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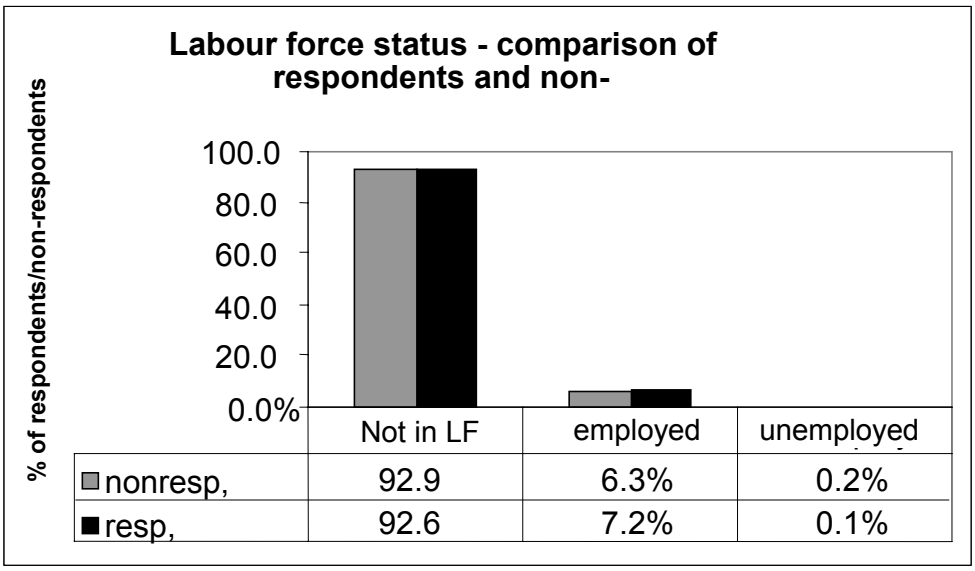
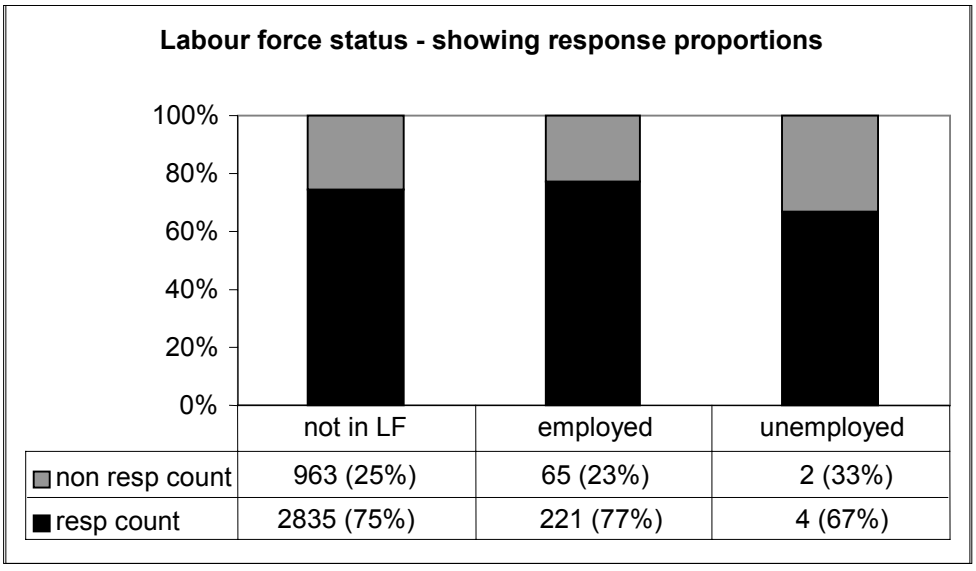




3. Comparison of the characteristics of the respondents in the main survey with the Census 96 population.

In this investigation the weighted counts of SOP respondents were used. This enables comparisons of frequency distributions based on counts rather than percentages. The weights used were the final weights used in the estimation system (*sfinwgt*). This weight is adjusted for non-response at sex × 5 year age-group level, to ensure these agree with the most recent projections of these sub-populations.

The Census counts were obtained from SuperStar, and were for New Zealand residents aged 65 and over living in private dwellings. Because of dynamic random rounding the population total varies slightly.

When comparing the two distributions we must allow for:

- the sampling error in the SOP estimate
- the count of "not-specified" in the Census data
- the 4 years that have elapsed since 1996. The two populations are different not only in individual characteristics, but in composition.

The Census "not specified" has initially been treated as a distinct category for each analysis. Where it may add insight percentages of respondents for comparison are also displayed. The latter are valid under the assumption that the distribution across non-respondents is the same as that of respondents.

We must also take into account the fact that the estimate of the population of interest from SOP is 421,100, compared with the Census 96 count of about 385,000. This increase is constrained by means of the post-stratification to agree with demographic estimates for this age group.

3.1 Ethnic groups

This investigation found no clear evidence of bias in the SOP estimate with respect to ethnicity.

For this analysis each older person is assigned to all the ethnic groups indicated by the HLFS or Census response. Because a few individuals indicate more than one ethnic group the count of ethnicities exceeds the count of individuals.

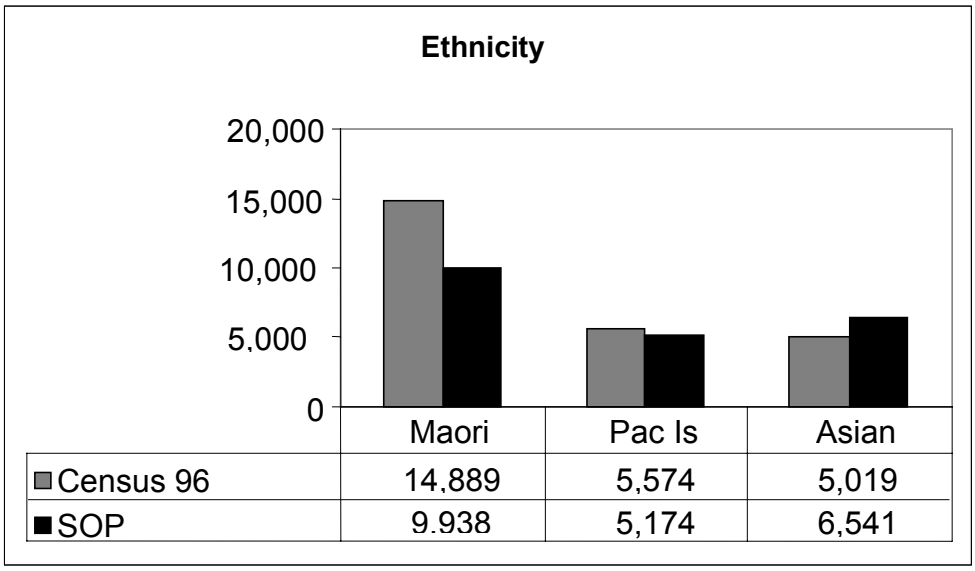
The sample had the following ethnic composition:

European	2856
Māori	123
Pacific peoples	48
Asian	33
other	39

The sample sizes for Pacific peoples, Asian and other, are too small for estimates by ethnic groups to be reliable.

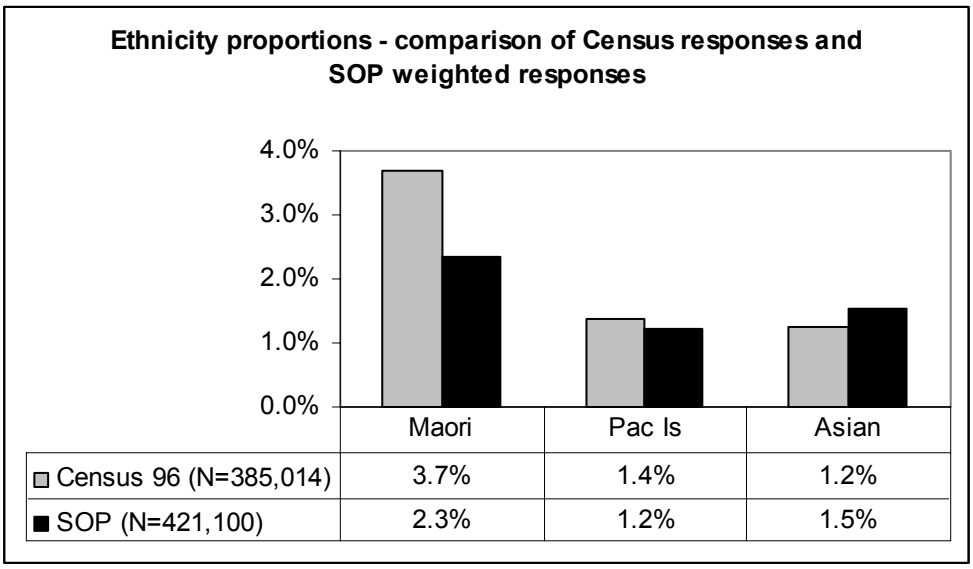
The Census96 and HLFS ethnicity questions are not identical. To overcome this broad categories Māori, Pacific peoples, Asian and Other have been used. This "Other" is predominately Pakeha and Europeans.

This graph compares the SOP weighted count with Census responses. The Other count and the not-specified are not included in this graph as they are of a larger order of magnitude.



	Other (inc Pakeha, European)	Not specified
Census 96	378,111	45,138
SOP	402,870	-

In the Census there were 45,138 older individuals who did not specify their ethnicity. This is about 12% of the population. If we assume that the distribution of ethnicity across Census non-respondents is the same as that across respondents, we can allow for the non-respondents in our analysis. This graph and the table underneath shows the ethnicity relative distribution under this assumption.



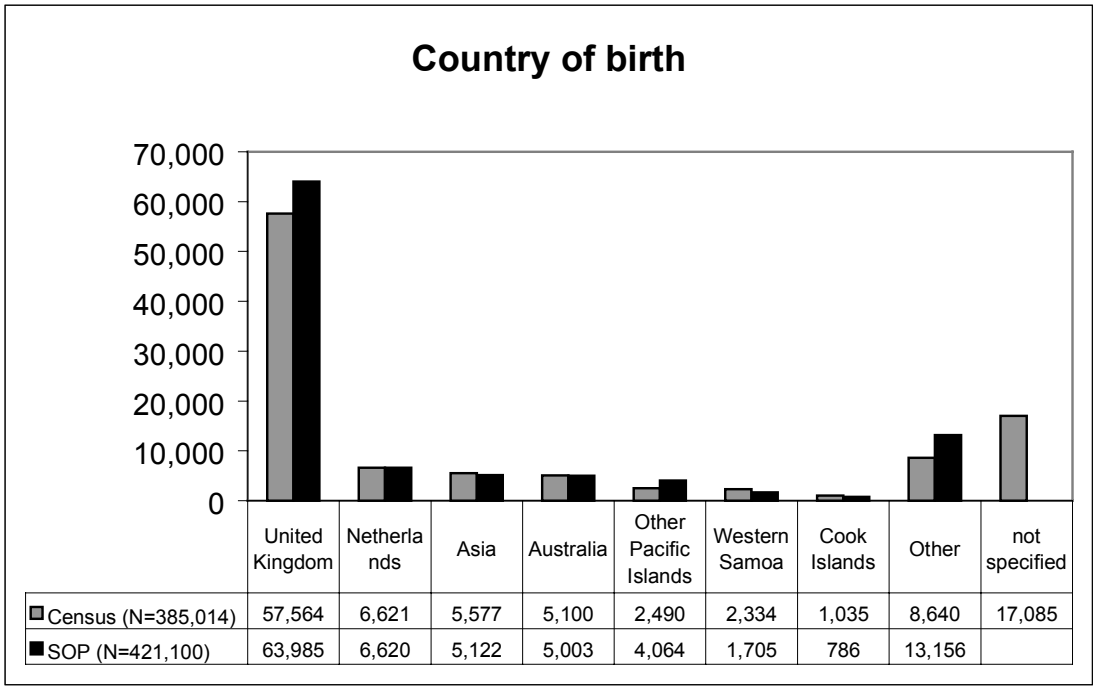
	Other (inc Pakeha, European)
Census 96	93.7%
SOP	94.9%

There is no clear evidence of any bias in the estimates with respect to ethnicity. It is possible that Māori are under-represented. However, the format of the Census and HLFS ethnicity questions are different enough to make comparisons difficult. The question difference, the uncertainty of the Census "not specified"s , together with the SOP sample error and the 4 years difference, probably account for most of the differences found in this analysis.

3.2 Country of birth

This investigation found no evidence of bias in the SOP estimate with respect to Country of birth.

This graph compares the Census counts with the SOP estimates.



	New Zealand born
Census	298,584
SOP	320,096

In Census96 there were 17,085 older individuals who did not specify Country of birth. This is about 4% of the population. These "not specified" dominate the difference in the distributions between the SOP estimate and Census 96.

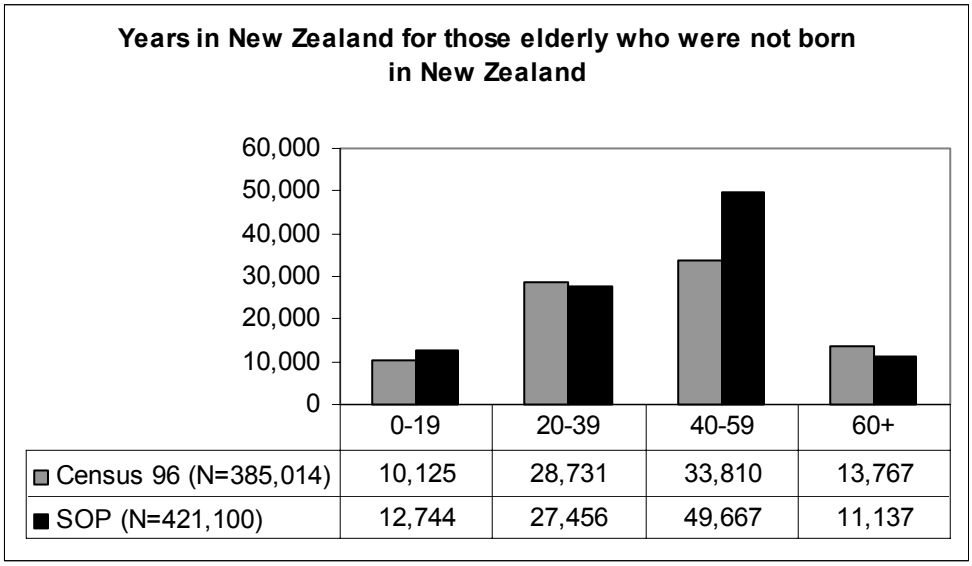
If we assume that the distribution of Country of birth across Census non-respondents is the same as that across respondents, we can allow for the non-respondents in our analysis. This table shows the Country of birth relative distribution under this assumption. It shows no evidence of a bias.

COB	Census (N=385,014)	SOP (N=421,100)
New Zealand	77.0%	76.1%
United Kingdom	14.8%	15.2%
Netherlands	1.7%	1.6%
Asia	1.4%	1.2%
Australia	1.3%	1.2%
Other Pacific Islands	0.6%	1.0%
Western Samoa	0.6%	0.4%
Cook Islands	0.3%	0.2%
Other	2.2%	3.1%

3.3 Years in New Zealand

This investigation found no evidence of bias in the SOP estimate with respect to years in New Zealand.

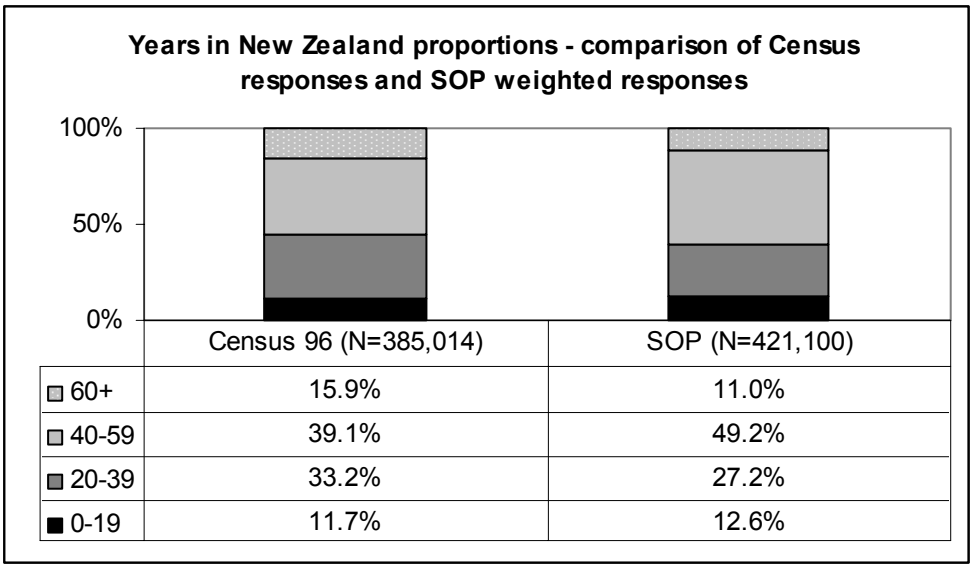
This graph compares the Census counts with the SOP estimates.



	0-19	20-39	40-59	60+
Census 96 (N=385,014)	10,125	28,731	33,810	13,767
SOP (N=421,100)	12,744	27,456	49,667	11,137

In Census96 there were 20,016 older individuals who did not specify their place of birth or their years in New Zealand. This is about 5% of the population. These "not specified" dominate the difference in the distributions between the SOP estimate and Census 96.

If we assume that the distribution of years in New Zealand across Census non-respondents is the same as that across respondents, we can allow for the non-respondents in our analysis. This graph and the table underneath shows the years in New Zealand relative distribution under this assumption.

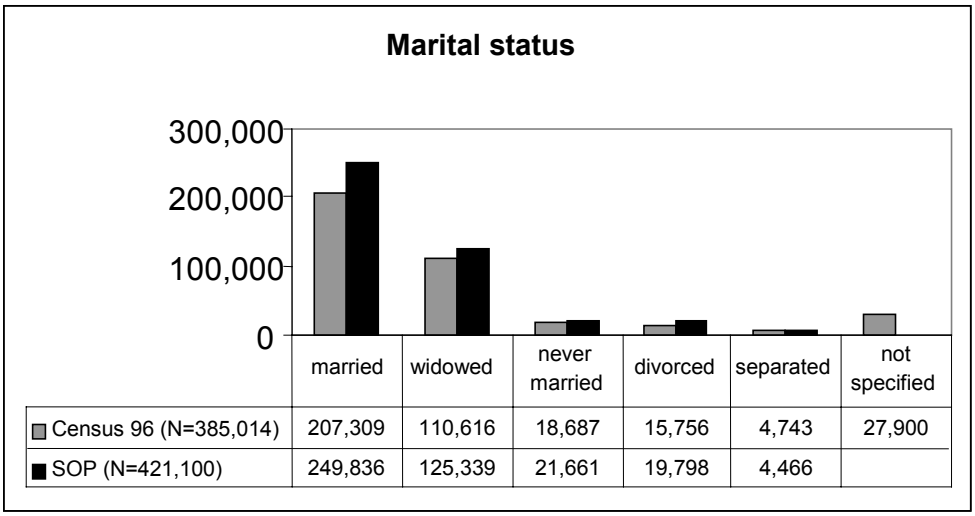


	Census 96 (N=385,014)	SOP (N=421,100)
60+	15.9%	11.0%
40-59	39.1%	49.2%
20-39	33.2%	27.2%
0-19	11.7%	12.6%

3.4 Marital status

This investigation found no evidence of bias in the SOP estimate with respect to marital status.

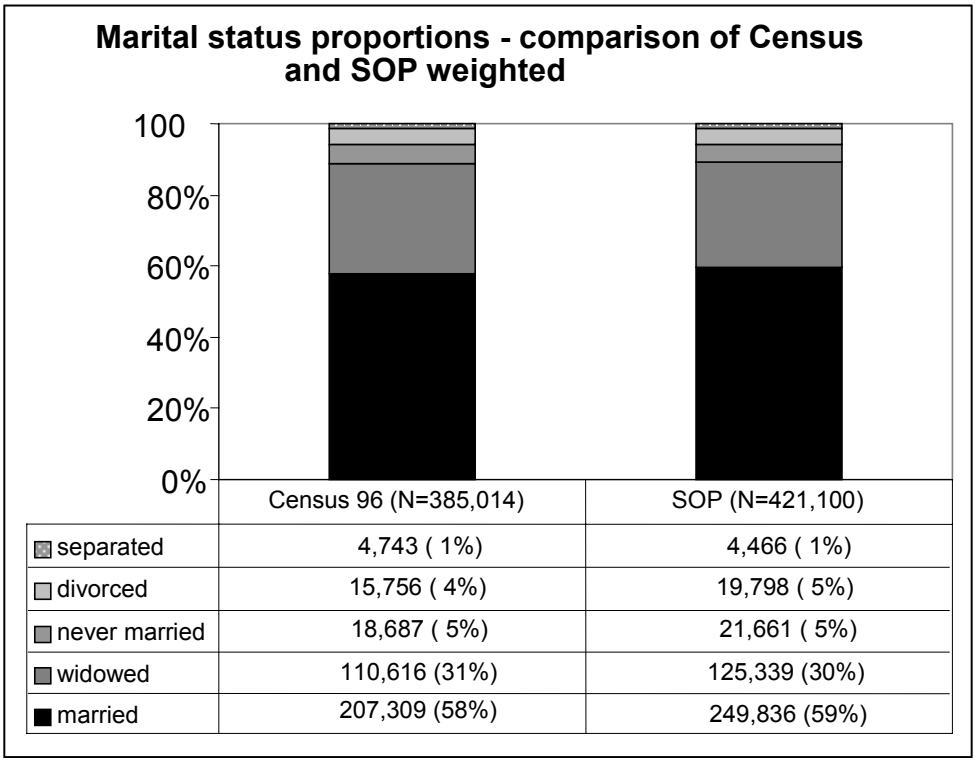
This graph compares the Census counts with the SOP estimates.



	married	widowed	never married	divorced	separated	not specified
Census 96 (N=385,014)	207,309	110,616	18,687	15,756	4,743	27,900
SOP (N=421,100)	249,836	125,339	21,661	19,798	4,466	

In Census96 there were 27,900 older individuals who did not specify marital status. This is about 7% of the population. These "not specified" dominate the difference in the distributions between the SOP estimate and Census 96.

If we assume that the distribution of marital status across Census non-respondents is the same as that across respondents, we can allow for the non-respondents in our analysis. This shows the marital status relative distribution under this assumption.



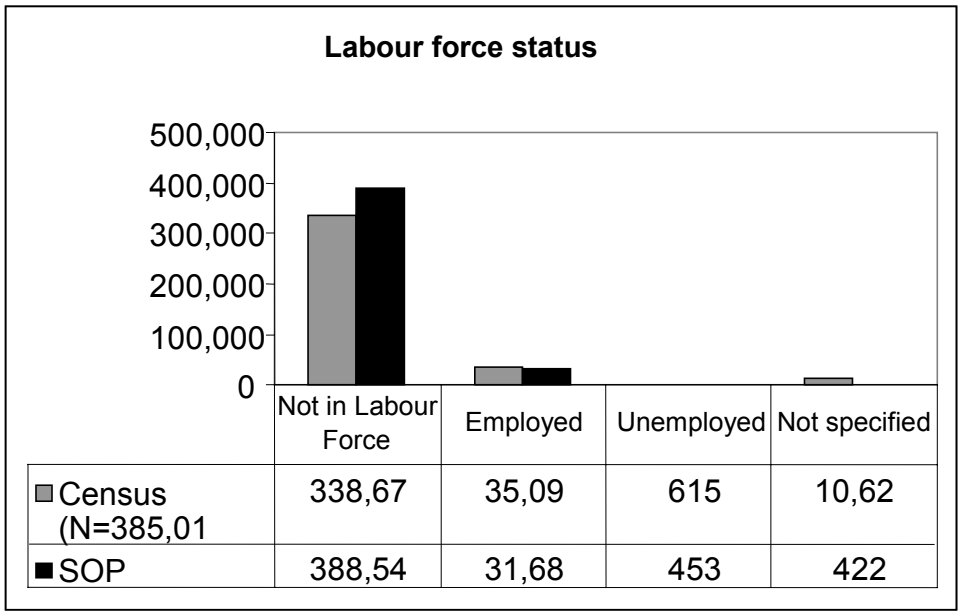
	Census 96 (N=385,014)	SOP (N=421,100)
separated	4,743 (1%)	4,466 (1%)
divorced	15,756 (4%)	19,798 (5%)
never married	18,687 (5%)	21,661 (5%)
widowed	110,616 (31%)	125,339 (30%)
married	207,309 (58%)	249,836 (59%)

There is no evidence of bias in the SOP estimates with respect to marital status.

3.5 Labour force status

This investigation found no evidence of bias in the SOP estimate with respect to labour force status.

This graph compares the Census counts with the SOP estimates



In Census96 missing labour force status was filled by an imputed value for all but "dummy" individuals – those who did not complete an individual form. There were 10,623 of these that had an age of at least 65 years imputed. This is about 3% of the older population. These "not specified" dominate the difference in the distributions between the SOP estimate and Census 96.

If we assume that the distribution of labour force status across Census non-respondents is the same as that across respondents, we can allow for the non-respondents in our analysis. This table shows the labour force status relative distribution under this assumption.

LFSTATUS	Census 96	SOP
Not in labour force	90.5%	92.4%
Employed	9.4%	7.5%
Unemployed	0.2%	0.1%

Allowing for sample error and the time between the two surveys there is no evidence of a bias in the SOP estimate with respect to labour force status.

3.6 Total income

This analysis compares the distribution of Total income for the SOP individuals and their partner (*totingrp*) with that of Census 96 65+ year olds. For the latter total income for the economic family to which they belong is used. Family type was used to ascertain whether the spouse of the elderly person was present.

There is a difference in the distribution of total income for elderly people between those living with their spouse is those not living with their spouse. The two groups have been analysed separately.

In Census96 there were 35,300 (11.9%) older people for whom we do not have income data for the economic family. In the SOP estimate there are 25,536 (6%) for whom we cannot estimate income data. These have been excluded from the analysis. The analysis is valid under the assumption that the distribution of income is the same for these non-respondents as it is for respondents.

A cumulative percentage frequency curve is the easiest way to compare the income distributions. These graphs show the percentage of the population that has an income less than or equal to the income shown on the horizontal axis. The distributions are also displayed as bar graphs.

The graphs show Census and SOP income distributions for both groups tend to track each other fairly closely. The most visible difference is in the $20,001 - $25,000 income group for elderly persons living with spouse. Here the Census distribution shows an unexpectedly low frequency, which is not reflected in the SOP distribution. The differences may be caused by the fact that in the SOP one person gave the combined total annual income for the couple, whereas in the census each individual's amount is added together, using the median of tick box categories. Caution should be taken in comparing the figures with the census for this reason.

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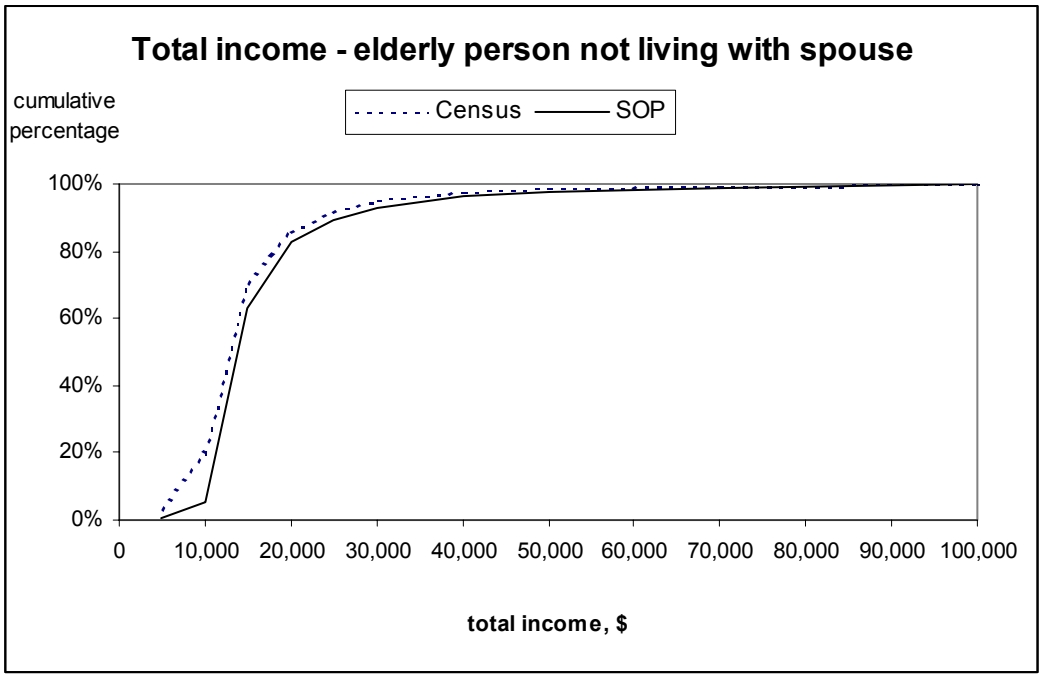
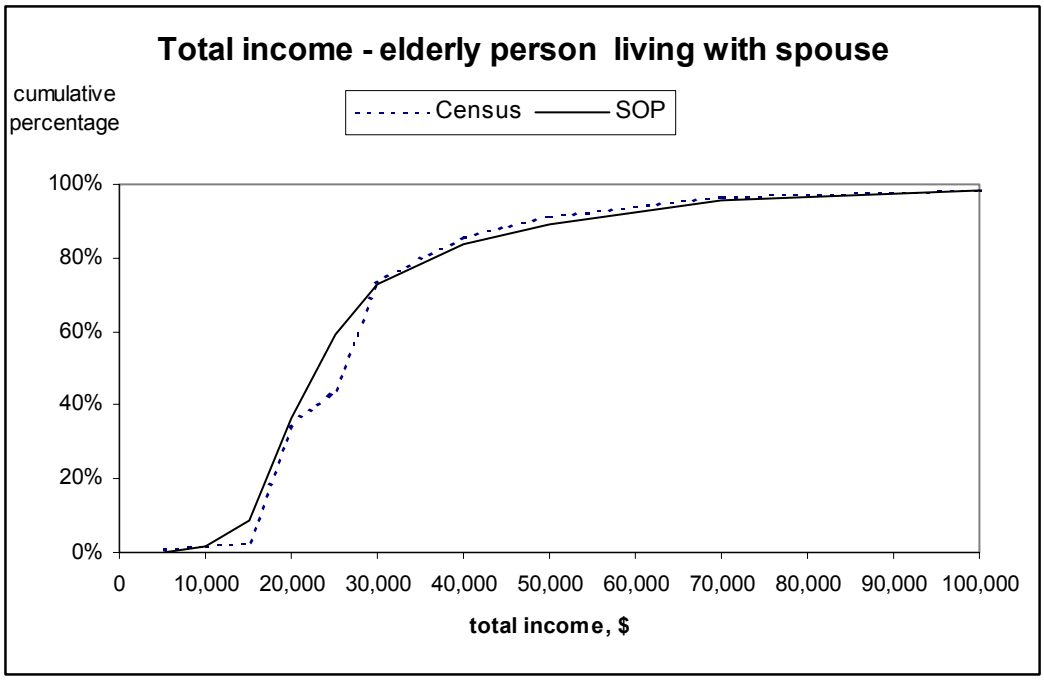
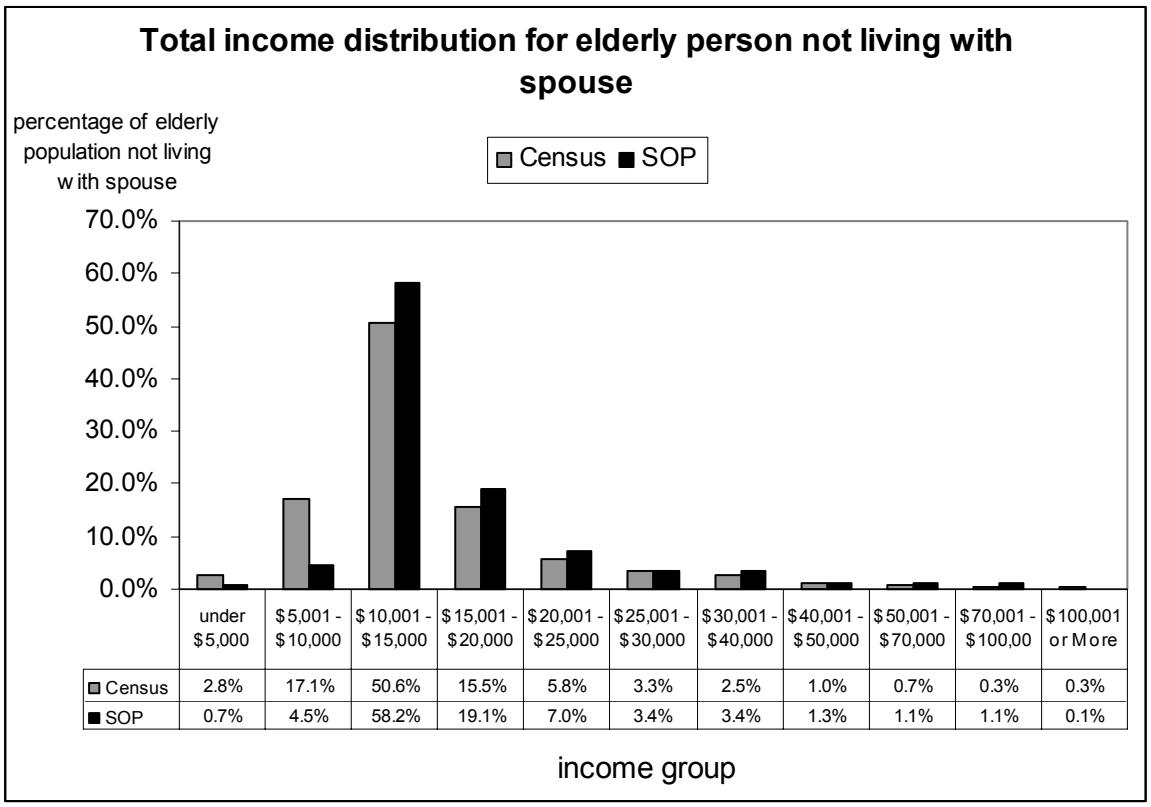
Cumulative percentage curves comparing total income for Census and SOP

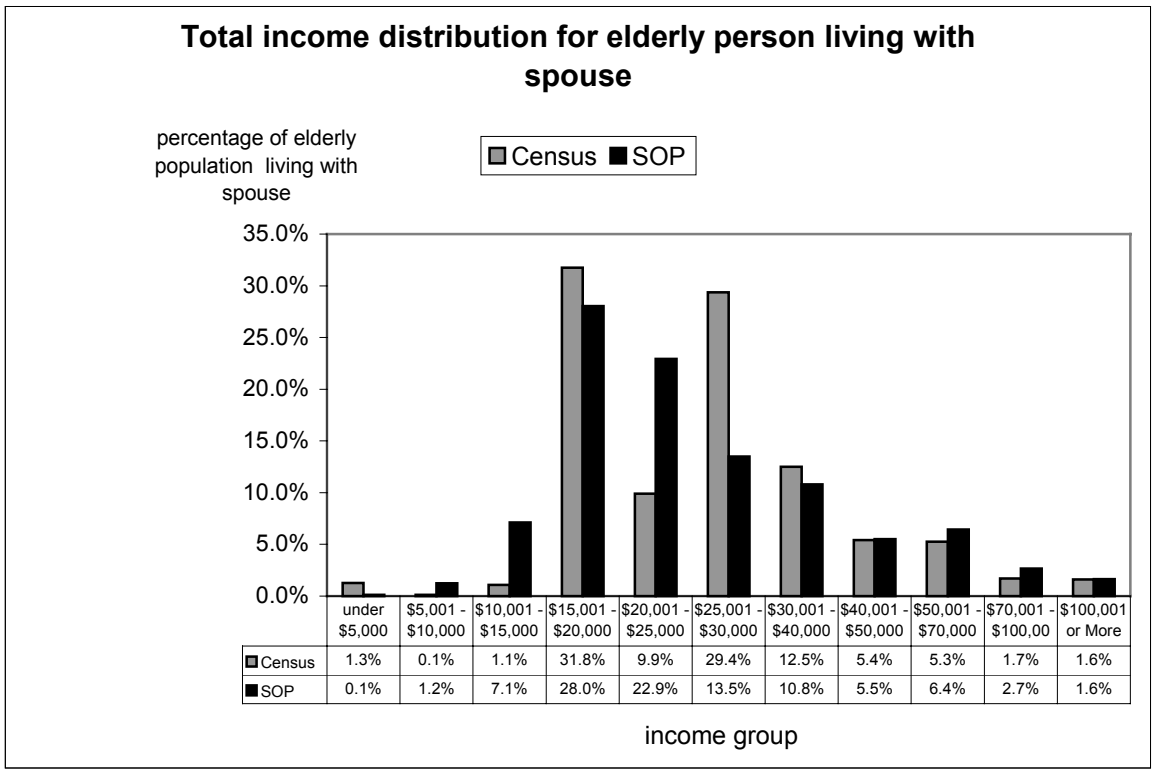




Details of the total income distribution for Census and Sop are shown in this graph:



	under $5,000	$5,001 - $10,000	$10,001 - $15,000	$15,001 - $20,000	$20,001 - $25,000	$25,001 - $30,000	$30,001 - $40,000	$40,001 - $50,000	$50,001 - $70,000	$70,001 - $100,00	$100,001 or More
Census	2.8%	17.1%	50.6%	15.5%	5.8%	3.3%	2.5%	1.0%	0.7%	0.3%	0.3%
SOP	0.7%	4.5%	58.2%	19.1%	7.0%	3.4%	3.4%	1.3%	1.1%	1.1%	0.1%

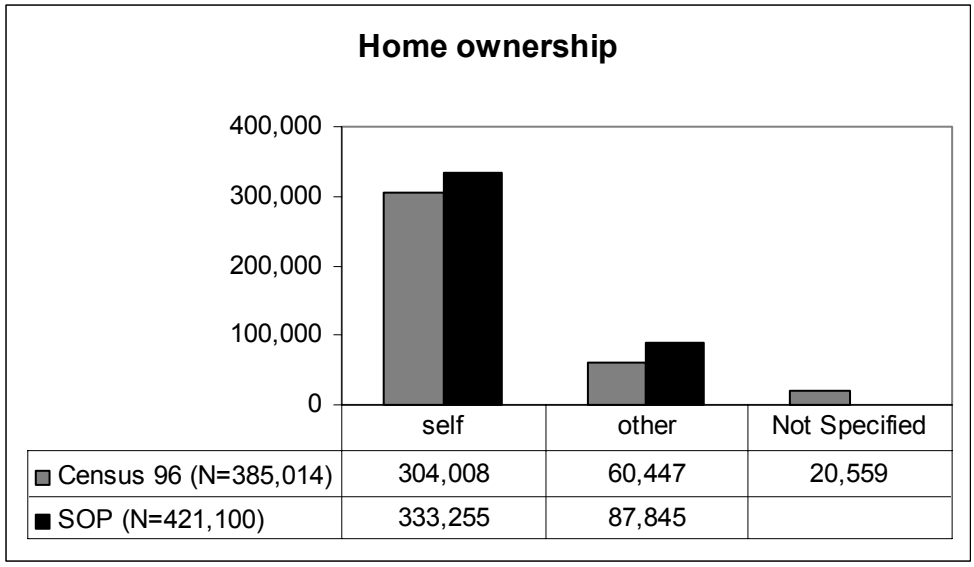


	under $5,000	$5,001 - $10,000	$10,001 - $15,000	$15,001 - $20,000	$20,001 - $25,000	$25,001 - $30,000	$30,001 - $40,000	$40,001 - $50,000	$50,001 - $70,000	$70,001 - $100,00	$100,001 or More
Census	1.3%	0.1%	1.1%	31.8%	9.9%	29.4%	12.5%	5.4%	5.3%	1.7%	1.6%
SOP	0.1%	1.2%	7.1%	28.0%	22.9%	13.5%	10.8%	5.5%	6.4%	2.7%	1.6%

3.7 Home ownership

This investigation found no evidence of bias in the SOP estimate with respect to home ownership.

This graph compares the Census counts with the SOP estimates



In Census96 there were 20,559 older individuals who did not specify home ownership. This is about 5% of the population. These "not specified" dominate the difference in the distributions between the SOP estimate and Census 96.

If we assume that the distribution of home ownership across Census non-respondents is the same as that across respondents, we can allow for the non-respondents in our analysis. This table shows the home ownership relative distribution under this assumption.

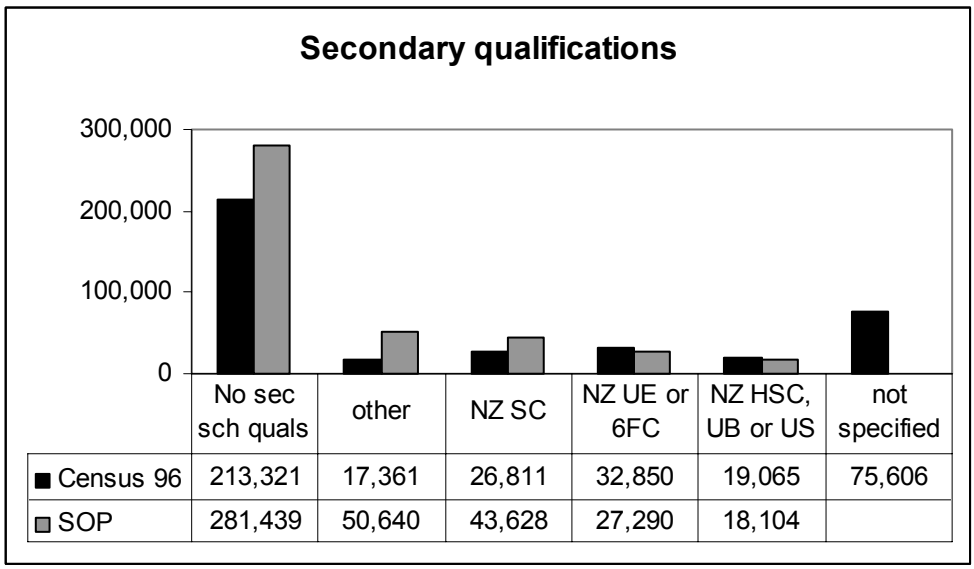
Home ownership	Census 96	SOP
self	83.4%	79.1%
other	16.6%	20.9%

Allowing for sample error and the time between the two surveys there is no evidence of a bias in the SOP estimate with respect to home ownership.

3.8 Secondary school qualifications

The SOP data is copied from the HLFS. There is a routing question which by-passes the question for people with no school qualifications. Therefore SOP non-responses to qualifications are interpreted as "No secondary qualification".

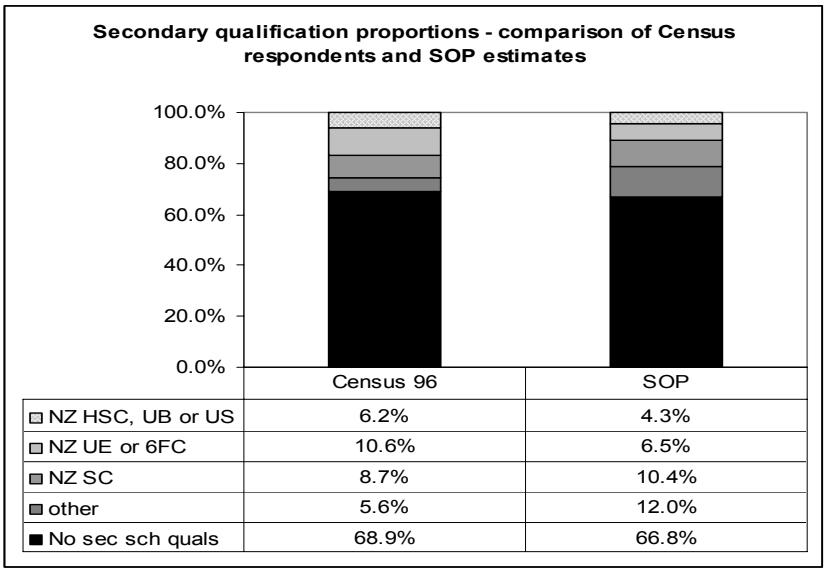
This graph compares the Census counts with the SOP estimate:



	No sec sch quals	other	NZ SC	NZ UE or 6FC	NZ HSC, UB or US	not specified
Census 96	213,321	17,361	26,811	32,850	19,065	75,606
SOP	281,439	50,640	43,628	27,290	18,104	

In Census96 there were 75,606 older individuals who did not respond to secondary school qualifications. This is about 20% of the population. These "not specified" dominate the difference in the distributions between the SOP estimate and Census 96.

If we assume that the distribution of secondary school qualifications across Census non-respondents is the same as that across respondents, we can allow for the non-respondents in our analysis. This graph shows the secondary school qualifications relative distribution under this assumption.



	Census 96	SOP
NZ HSC, UB or US	6.2%	4.3%
NZ UE or 6FC	10.6%	6.5%
NZ SC	8.7%	10.4%
other	5.6%	12.0%
No sec sch quals	68.9%	66.8%

Allowing for sample error and the time between the two surveys there is no evidence of a bias in the SOP estimate with respect to secondary qualifications.

Appendix 3

Method for Deriving the Estimated Net Annual Income Variable for the Survey of Older People

A re-estimation exercise was undertaken by the New Zealand Treasury because in many cases, the original income responses in the survey were inconsistent with other information given by the individuals. In addition, the resulting amounts were from survey responses about various sources of income that:

- were a mixture of gross and net of tax,
- had either been a combined estimate for a couple or kept separate,
- could apply to different periods, and
- could either be a range or an amount.

It was necessary, therefore, to use information given by individuals to derive 24 new annual income variables, each variable being either an individual or couple amount, and either a gross or net amount. The income variables involved were: NZS, wages, self-employment, other income, overseas pension, non-taxable allowances and non-taxable private superannuation.

New Zealand Superannuation (NZS)

Because of the nature of the survey, NZS was of particular interest. There were often inconsistencies between the standard entitlements, the amount reported, and individual circumstances. Typical sources of error were the reporting of weekly, rather than fortnightly amounts, the assigning of a couple's combined amount to each partner and the reporting gross amounts as net of tax. To address these problems a new variable was created representing the couple's estimated actual net fortnightly NZS entitlement. To do this the reported respondent and partner amounts were summed and then checked against 'plausible' amounts, including common errors. Where there was no close match, people were assigned the appropriate amount according to their family circumstances. In cases where a couple appeared to be receiving the income-tested non-qualified spouse rate of NZS, the amount of NZS they reported was retained, provided it was within credible limits. Finally, this amount was split equally between the respondent and partner (where one exists), and converted it into a net annual amount.

Wage and self-employment income

For wage income, respondent and partner responses were kept separate. However, responses could be provided as either an annual range or a specified annual amount and could be wither gross or net. If a range was selected, the earner was assigned the mid-point as the relevant amount, except in the case of the lowest or the highest range selection. If the range was the lowest or the highest, the earner was assigned the median for that range, based on an analysis of earnings of people aged 65 and over from the New Zealand Household Economic Survey. For those who reported a gross amount, this was converted to net for the purpose of comparing it with the net NZS variable to determine whether NZS represented the primary or secondary source of income. If net wage was more than 1.2 times net NZS, wages were taken to be

primary and were grossed up by a specified formula which included the ACC levy. Otherwise, NZS was taken to be primary and was grossed up by a specified formula excluding the ACC levy. The secondary income was grossed up at 21%.

For income from self-employment, the respondent was asked to specify a range for annual gross self-employment income keeping the partner amount separate. The ranges were treated similarly to wages, and the self-employment income was kept gross.

Other income sources

Income from other sources was reported as a combined amount for the respondent and partner. It could either be reported as an annual range or as a specified amount, and could be gross or net. Again, the ranges were treated similarly to wages. If the respondent had a partner, the amount was split evenly. If a net amount was reported, it was grossed up assuming a 21% incremental tax rate. This produced an annual gross "other income" variable for each individual.

Overseas pensions for the respondent and partner were reported together, and the amount could correspond to any one of 5 periods. The reported amount was converted to an annual equivalent. If the amount was net, it was grossed it up assuming a 21% incremental tax rate. Where there was a partner, the amount was split evenly. This method was also used for non-taxable private superannuation, but this was not grossed up, on the assumption that such a pension was exempt under the TTE regime.

Non-taxable allowances (for couples combined) were reported under several categories. They were combined to give a total allowance variable for the couple and converted to an annual equivalent based on the period specified. In some cases, the respondent appeared to have included a non-taxable allowance in the amount of NZS reported. If this was the case, the allowance was taken out of their NZS amount to avoid double counting. A couple's allowances were split equally between partners for the purposes of estimating each partner's net income.

Estimation of total combined net annual income

All these income components were added together to give total gross income for the respondent and partner separately. Non-taxable allowances and private super were removed before estimating tax. The remaining income amount was taxed, and then allowances and private superannuation were added back on to give total net income for each of the respondent and spouse. Finally, the estimated gross and net amounts for respondent and spouse were added to create combined gross and combined net income variables.

Appendix 4

Results of exploratory factor analysis relating to scale development for the living standards research

This appendix reports an exploratory factor analysis undertaken of the scale items. The factor model fitted used a principal factors solution with a promax rotation that permitted an oblique factor structure. The number of factors to be extracted was decided on the basis of a scree test. This suggested a four factor solution was the most appropriate.

Table A4-1 shows the standardised factor loadings for these four factors. It is evident that, with some minor exceptions, the four factors corresponded clearly to the various test item domains of: ownership restrictions, social participation restrictions, economising, severe financial problems.

The findings of the factor analysis reported in Table A4-1 provide a statistical justification for developing scale scores corresponding to levels of ownership restrictions, social participation restrictions, economising and serious financial problems. Using the test items, factor score estimates were constructed for each factor. In all cases, factor score estimates used an unweighted sum of test items.

Table A4-1: Summary of factor loadings[1] from exploratory factor analysis of test items

Item	Factor 1 (Economising)	Factor 2 (Social Participation Restrictions)	Factor 3 (Ownership Restrictions)	Factor 4 (Serious Financial Difficulty)
Economising				
Buy less/cheaper meat	.63			
Fresh fruit and vegetables	.43			
Second hand clothes	.55			
Wear old clothes	.48			
Put off buying new clothes	.71			
Rely on gifts of clothes	.51			
Worn out shoes	.51			
Put up with cold	.46			
Stayed in bed for warmth	.40			
No doctor	.57			
No dentist	.66			
No glasses	.70			
No or bad dentures	.65			
Not picked up prescription				.32

Item	Factor 1 (Economising)	Factor 2 (Social Participation Restrictions)	Factor 3 (Ownership Restrictions)	Factor 4 (Serious Financial Difficulty)
No insurance	.52			
No social visits	.60			
No shopping	.70			
Less hobbies	.66			
Not gone to funeral	.41			
Serious Financial Problems				
Electricity, gas, water				.60
Mortgage, rent				.43
HP, credit cards				.51
Borrowed from family, friends				.62
Help from community organisation				.40
Pawned, sold something				.28
Ownership Restrictions [2]				
Locks			.25	
Microwave			.46	
Washing machine				.27
Dryer			.57	
Waste disposal unit			.50	
Dishwasher			.66	
Food processor			.46	
Heating in main rooms			.29	
Warm bedding			.25	
Good, warm clothing[3]		.26		
Video			.41	
Stereo			.47	
Car			.28	
Television			.25	.31
Social Participation Restrictions				
Family/whanau activities		.31		
Presents to family/friends		.35		
Hairdresser every 3 months		.49		
Holiday every year		.43		
Overseas holiday every 3 years		.33		
Night out once a fortnight		.59		

Item	Factor 1 (Economising)	Factor 2 (Social Participation Restrictions)	Factor 3 (Ownership Restrictions)	Factor 4 (Serious Financial Difficulty)
Day out once a fortnight		.63		
Visitors for meal once a month		.57		
Special meal once a week		.70		
Space for family to stay		.40		
% of variance accounted for	18.8	4.0	3.9	3.2

Note1: Four factor solution chosen on basis of scree test. For ease of interpretation all factor loadings less than .25 have been suppressed.
Note 2: A number of items (phone, pet, inside toilet, running water, hot water, mains power) were omitted either because base rate too low or the item failed to load on any factor.
Note 3: A combined item relating to lack of one of the following: a warm coat, good shoes, or best clothes.

From the factor score estimates, it was also possible to obtain estimates of the reliability (internal consistency) of the factor scores by computing alpha coefficients (Cronbach, 1951) for each score. These coefficients are reported in Table A4-2 which shows that the factor score estimates for the ownership deficits, social participation deficit and economising scales were of moderate to good reliability with alpha coefficients ranging from .67 to .89. The reliability of the serious financial problems scale was lower (.59). This is possibly a reflection of the very low endorsement frequencies for the items comprising this scale.

Table A4-2: Factor score reliabilities

Factor	Reliability
Ownership deficits	.67
Social participation deficits	.73
Economising	.89
Serious financial problems	.59

In summary, the above analysis suggests that it was possible to reduce the test items to a series of four subscales representing levels of ownership restriction, social participation restriction, economising, and serious financial problems with these scale dimensions being factorially distinct and generally of moderate to good internal consistency.

Appendix 5

Tables Showing the Percentage of Older People (CEUs) Reporting Ownership Restrictions, Social Participation Restrictions, Economising Behaviours, and Serious Financial Problems

Table A5-1: Percentage of the sample reporting that they did not own items listed because of cost by material wellbeing scale category (N=3013)

	<80	*80-84*	*85-89*	*90-94*	*95-99*	*100-104*	*105-109*	*>109*
Item do not have	**4.5%**	**3%**	**4.6%**	**8.4%**	**16.2%**	**39.2%**	**15.1%**	**9.0%**
Warm, good clothing	42.9	32.4	12.7	10.0	4.3	0.3	-	-
Heating in main rooms	37.7	30.6	17.6	10.9	7.3	0.9	0.7	-
Dryer	35.7	12.8	9.0	9.0	1.8	0.3	0.2	-
Dishwasher	35.1	15.1	16.6	9.9	5.3	1.1	0.2	-
Locks	27.6	29.0	15.3	11.1	7.3	0.8	0.6	-
Stereo	26.9	12.2	5.5	5.6	2.5	0.3	0.4	-
Food processor	24.7	10.1	11.1	6.9	3.2	0.5	-	-
Waste disposal	21.9	11.6	13.7	8.4	2.9	0.7	-	-
Video	20.9	8.4	7.1	5.3	2.7	0.2	-	-
Microwave	17.5	9.6	2.6	3.3	1.8	0.1	-	-
Car	8.9	5.9	5.6	3.6	0.9	0.2	-	-
Warm bedding	6.8	0.4	-	-	-	-	-	-
Washing machine	2.9	6.5	1.0	0.1	-	-	-	-
Television	2.6	1.3	-	-	-	-	-	-
Mean ownership restrictions[1]	**22.3**	**13.3**	**8.4**	**6.0**	**2.9**	**0.4**	**0.2**	**-**

Note1: Refers to mean ownership restrictions as a percentage of total possible restrictions.

Table A5-2: Number of ownership restrictions reported by sample (percent) by material wellbeing scale category (from those listed in Table C.1 above) (N=3013)

Ownership Restrictions	*<80* 4.5%	*80-84* 3.0%	*85-89* 4.6%	*90-94* 8.4%	*95-99* 16.2%	*100-104* 39.2%	*105-109* 15.1%	*>109* 9.0%
0	10.9	16.5	30.5	48.6	69.9	95.1	98.0	100
1	12.7	28.1	36.2	26.9	22.0	4.5	2.0	
2	18.2	28.6	18.6	18.6	6.2	0.4		
3	18.1	13.1	12.0	4.4	1.9			
4	20.1	8.0	1.0	0.8	0.1			
5	6.9	4.2	1.6	0.3				
6	4.0	0.8		0.4				
7	4.3	0.7						
8	4.9							

Table A5-3: Percentage of sample reporting they did not engage in activity because of cost material wellbeing scale category (N= 3013)

Activity do not do	*<80* 4.5%	*80-84* 3%	*85-89* 4.6%	*90-94* 8.4%	*95-99* 16.2%	*100-104* 39.2%	*105-109* 15.1%	*>109* 9.0%
Holiday away from home every year	71.8	57.7	54.6	37.2	17.6	1.9	1.3	-
Overseas holiday once every 3 years	69.4	48.5	62.2	44.3	34.7	6.2	3.3	0.8
Night out once a fortnight	54.1	34.1	33.2	23.0	9.4	1.0	0.3	-
Day out once a fortnight	40.6	19.5	14.6	9.2	4.1	0.2	0.7	-
Special meal at home once a week	34.4	16.3	13.0	5.6	1.1	-	-	-
Visitors for a meal once a month	34.0	11.4	7.7	7.2	2.4	-	0.2	-
Visit hairdresser once every 3 months	24.7	13.8	14.3	3.8	2.6	0.1	0.6	-
Give presents to family/ friends on special occasions	21.3	11.3	7.1	3.7	2.0	0.1	-	-
Participate in family/whanau activities	11.4	9.7	3.6	3.4	0.6	0.2	0.4	-
Space for family to stay the night	11.0	4.7	2.3	2.0	0.6	0.1	-	-
Mean social participation restrictions[1]	**37.3**	**22.7**	**21.3**	**13.9**	**7.5**	**1.0**	**0.7**	**0.1**

Note1: Refers to mean social participation restrictions as a percentage of total possible restrictions.

Table A5-4: Number of social participation restrictions reported by sample (percent) by Material Wellbeing Scale Category (N=3013)

Participation	*<80*	*80-84*	*85-89*	*90-94*	*95-99*	*100-104*	*105-109*	*>109*
Restrictions	4.5%	3%	4.6%	8.4%	16.2%	39.2%	15.1%	9.0%
0	8.0	19.2	15.6	31.8	47.4	91.5	93.1	99.2
1	7.1	12.8	18.7	24.2	34.5	7.4	6.6	0.8
2	21.4	28.4	32.9	26.4	15.9	1.1	0.1	
3	19.7	19.8	16.6	12.1	1.9			
4	13.1	12.8	12.2	5.3	0.2			
5	11.5	6.4	1.9	0.2				
6	6.6	0.7	2.2					
7	8.2							
8	4.3							

Table A5-5: Percentage of sample reporting they economised 'a little' or 'a lot' on each item by material wellbeing scale Category (N=3013)

Economising behaviour	***<80*** **4.5%**	***80-84*** **3%**	***85-89*** **4.6%**	***90-94*** **8.4%**	***95-99*** **16.2%**	***100-104*** **39.2%**	***105-109*** **15.1%**	***>109*** **9.0%**
Buying cheaper/less meat	91.7	82.8	77.5	65.3	52.0	24.3	14.8	4.6
Put off buying new clothes	90.7	86.3	74.6	66.9	45.4	16.9	9.7	1.7
Second hand clothes	72.8	62.2	39.9	33.7	24.2	8.1	5.5	2.0
Wear old clothes	64.7	56.8	35.0	29.2	12.0	3.1	2.6	0.6
Cut back on social visits	62.9	44.1	35.5	25.0	10.7	2.5	0.9	-
Cut back on shopping	62.4	46.4	39.2	22.9	10.1	2.3	1.3	-
Worn out shoes	60.3	46.0	19.4	15.4	6.1	1.4	0.7	-
Postponed of put off visit doctor	56.8	34.8	19.5	20.5	5.8	1.3	0.8	-
Cut back on hobbies	55.8	45.1	35.0	20.5	11.1	1.8	1.1	-
No glasses	54.7	33.3	33.6	25.2	11.0	1.5	1.4	-
Put up with cold	53.8	41.4	25.0	16.3	9.0	3.0	0.6	-
Cut back or cancelled insurance	49.9	47.7	26.3	25.5	18.0	7.8	4.8	2.3
Fresh fruit and vegetables	49.9	31.4	22.3	14.9	5.7	1.4	0.5	-
Stayed in bed for warmth	46.7	41.9	19.6	19.6	9.1	3.0	0.8	-
No or bad dentures	44.7	31.1	39.4	26.1	13.8	3.0	0.4	-
Rely on gifts of clothes	42.3	35.2	16.3	16.8	5.2	1.1	0.5	-
Postponed or put off visit dentist	37.5	42.9	31.5	22.5	13.0	4.2	2.9	0.8
Not gone to funeral	35.4	17.0	12.2	9.6	3.9	0.6	0.5	0.8
Not picked up prescription	17.0	5.2	1.1	3.0	0.7	0.3	0.1	-
Mean economising score[1]	**55.3**	**43.8**	**31.7**	**25.2**	**14.0**	**4.6**	**2.6**	**0.7**

Note1: Refers to mean economising score as a percentage of total possible economising score.

Table A5-6: Percentage of sample reporting they economised 'a lot' on this number of items by material wellbeing scale score (N= 3013)

	<80	*80-84*	*85-89*	*90-94*	*95-99*	*100-104*	*105-109*	*>109*
Economising	**4.5%**	**3.0%**	**4.6%**	**8.4%**	**16.2%**	**39.2%**	**15.1%**	**9.0%**
0	11.2	19.6	27.0	36.3	61.0	87.9	91.8	98.8
1	5.0	8.6	12.6	23.2	21.3	9.5	6.5	1.2
2	10.9	9.0	14.0	17.9	12.0	1.4	1.4	
3	7.1	10.0	15.3	12.5	3.3	0.9	0.4	
4	9.1	14.8	7.1	3.4	1.6	0.2		
5	8.4	11.8	12.3	3.0	0.5			
6	11.5	7.0	4.3	1.4	0.3			
7	1.8	7.0	4.8	1.9				
8	7.1	3.7	1.7					
9	6.6	8.6	0.9					
10	4.4							
11	5.5			0.3				
12	0.9							
13	1.9							
14	2.4							
15	3.9							
16	0.8							
17	1.5							

Table A5-7: Percentage of sample reporting serious financial problem by material wellbeing scale score (N= 3013)

	<80	*80-84*	*85-89*	*90-94*	*95-99*	*100-104*	*105-109*	*>109*
Financial problem	4.5%	3%	4.6%	8.4%	16.2%	39.2%	15.1%	9.0%
Couldn't pay electricity, gas, water	25.2	3.5	3.7	1.8	0.1	0.3	-	-
Borrowed from family, friends	21.3	3.5	2.3	0.5	-	-	-	-
Pawned, sold something	12.1	4.2	1.6	1.8	-	0.1	-	-
Help from community organisation	9.5	-	1.2	0.6	-	-	-	-
Couldn't pay HP, credit cards	9.3	2.7	0.7	0.3	-	-	-	-
Couldn't pay mortgage, rent	9.1	0.5	5.6	1.4	0.2	-	-	-
Mean serious financial problems[1]	**14.4**	**2.4**	**2.5**	**1.1**	**0.1**	**0.1**	**0.0**	**0.0**

Note1: Refers to mean serious financial problems as a percentage of total possible problems.

Table A5-8: Number of serious financial problems reported by sample (Percent) by material wellbeing scale score (N=3013)

	<80	*80-84*	*85-89*	*90-94*	*95-99*	*100-104*	*105-109*	*>109*
Financial Problems	4.5%	3.0%	4.6%	8.4%	16.2%	39.2%	15.1%	9.0%
0	50.6	88.2	85.6	93.6	99.7	99.6	100	100
1	26.5	10.2	13.6	6.4	0.3	0.4		
2	14.7	1.1	0.8					
3	4.3							
4	2.2	0.5						
5	1.1							
6	0.5							

Appendix 6

Table A6-1: Economic and social profiles of 3013 respondents by Material Well-being Score category

	Material Well-being Score								
Measure	**<80**	**80-84**	**85-89**	**90-94**	**95-99**	**100-104**	**104-109**	**>109**	**For total sample**
% With income equal to or less than that provided by NZS	28	40	23	26	20	16	12	11	18
% Having no savings or investments	54	35	27	27	20	11	5	4	16
% Paying rent or mortgage	52	43	36	27	19	11	12	9	18
% Exposed to economic stress in past year	62	57	43	35	29	19	17	8	25
% Exposed to economic stress during the period from age 50-59 years	61	53	56	49	42	36	38	32	40
% Respondents aged less than 70 years	53	49	35	37	33	24	30	32	31
% Respondents Māori or Pacific peoples	27	13	7	7	4	1	3	0.6	4
% Respondents having no formal educational qualifications	69	75	70	71	66	64	53	40	62
% Having low SES occupation or not having full-time employment at age 50-59	47	50	40	38	32	34	24	23	33

Note: Values have been rounded up to whole numbers.