

# **PERSONS AGED FIFTY YEARS AND OVER** QUEENSLAND

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- For more information about these and related statistics, contact Tania Ponniah on Brisbane 07 3222 6305 or refer to the back cover of this publication.

## NOTES

### ABOUT THIS PUBLICATION

This publication contains results relating to the Survey of Persons Aged Fifty Years and Over conducted throughout Queensland in October 1998.

### ABOUT THIS SURVEY

Information was obtained about needs for assistance in personal care, mobility inside or outside the house, current drivers licence, whether drives or has been a passenger in a private motor vehicle, and access to and use of public transport. Sources of income and main source of income, involvement and frequency in unpaid assistance and voluntary work, selected physical and social activities and use of selected facilities and equipment was also collected.

This survey was conducted to coincide with the International Year of Older Persons (1999).

See Explanatory Notes on pages 11 and 12 for more information.

### SYMBOLS AND OTHER USAGES

RSE	Relative standard error
SE	Standard error
*	relative standard error between 25% and 50% — subject to sampling variability too high for most practical purposes
**	relative standard error greater than 50% — subject to sampling variability too high for practical purposes
..	not applicable
—	nil or rounded to zero

### ROUNDING

Where figures have been rounded, discrepancies may occur between sums of the component items and totals. Published percentages are calculated prior to rounding of the figures and therefore some discrepancy may occur between these percentages and percentages that could be calculated from the rounded figures.

Ian Marshall  
Acting Regional Director, Queensland

# MAIN FEATURES

## PERSONS AGED FIFTY YEARS AND OVER

### OVERVIEW

An estimated 864,000 persons aged fifty years and over live in Queensland (422,700 males and 441,300 females) of whom an estimated 371,400 (43.0%) live in the Brisbane Statistical Region and 210,200 (24.3%) in the Moreton Statistical Region. Approximately half are married couples living by themselves and 20% live in a single person household. Of those living in a single person household more are female (63.6%) than male.

### SOURCES OF INCOME

Of the 444,900 (51.5%) who reported 'Government pension or cash benefit (including family allowance)' as a source of income, an estimated 405,100 (46.9%) reported it as the main source of income. An estimated 242,600 (28.1%) reported 'Investment/interest' as a source of income, but only 74,300 (8.6%) reported it as the main source of income, whereas 'Wages or salary' was reported as a source of income by 217,900 (25.2%) and 200,500 (23.2%) reported it as the main source of income.

### UNPAID ASSISTANCE

An estimated 119,800 persons provided unpaid assistance through a voluntary organisation and 105,100 provided assistance with childminding to persons outside the household.

### MOBILITY

An estimated 55,500 (6.4%) persons needed help/supervision in going to or getting around a place away from home; 31,300 (3.6%) needed help/supervision in personal care and 23,400 (2.7%) in moving around the house.

Of the 716,400 (82.9%) who held a current drivers licence, 669,900 had driven a motor vehicle in the last four weeks. An estimated 782,400 persons were able to access public transport without assistance from others and 196,700 used public transport in the previous 4 weeks.

### ACTIVITIES

Of the selected physical activities reported, an estimated 607,000 (70.3%) persons did gardening, mowing, landscaping, etc. and an estimated 461,600 walked for exercise or recreation. Of the other selected activities, an estimated 779,200 persons read newspapers, 685,100 read books/magazines, 548,100 reported visits or outings with relatives or friends and 474,500 went to movies/theatre, restaurants, etc.

### USE OF TECHNOLOGY

Credit/debit cards were used by an estimated 425,900 (49.3%) persons, and 342,100 (39.6%) used an automatic teller machine. An estimated 723,700 persons (83.8%) had a microwave oven in the household and 629,100 (72.8 %) used a microwave oven. 710,900 persons (82.3%) had a video cassette player in the household and 542,900 (62.8%) used it.

	AGE GROUP.....				TOTAL.....	
	50-59 years	60-69 years	70-79 years	80 years and over	Number	Proportion
Particulars	'000	'000	'000	'000	'000	%
.....						
MALES						
Employment status						
Employed	147.9	40.3	4.5	**0.6	193.3	45.7
Full-time	135.3	30.2	*1.9	**0.3	167.8	39.7
Part-time	12.6	10.1	*2.6	**0.3	25.6	6.0
Unemployed	10.4	*2.4	—	—	12.8	3.0
Not in Labour Force	32.5	79.9	75.6	28.5	216.5	51.2
Household type						
Person living alone	22.8	14.8	16.1	9.2	62.8	14.9
Married couple only	78.9	80.0	53.7	14.0	226.6	53.6
Married couple/one person living only with unmarried children	69.9	19.1	5.2	*3.0	97.2	23.0
All other households	19.2	8.7	5.2	*3.0	36.1	8.5
Statistical region						
Brisbane	84.4	48.6	33.8	11.5	178.2	42.2
Moreton	45.6	26.3	22.9	7.9	102.7	24.3
Wide Bay-Burnett, Darling Downs and South-West	29.3	21.1	11.3	5.4	67.1	15.9
Mackay, Fitzroy and Central-West	13.6	14.5	4.9	*1.6	34.5	8.2
Northern, Far North and North-West	17.9	12.1	7.3	*2.8	40.2	9.5
Country of birth						
Born in Australia	130.5	85.2	58.6	22.5	296.8	70.2
Born overseas	60.3	37.4	21.5	6.7	125.9	29.8
<b>Total</b>	<b>190.8</b>	<b>122.6</b>	<b>80.1</b>	<b>29.2</b>	<b>422.7</b>	<b>100.0</b>
.....						
FEMALES						
Employment status						
Employed	105.0	15.8	*2.8	—	123.5	28.0
Full-time	54.9	7.5	*1.3	—	63.7	14.4
Part-time	50.0	8.2	*1.6	—	59.8	13.6
Unemployed	5.5	—	—	—	5.5	1.2
Not in Labour Force	74.5	105.5	90.9	41.3	312.3	70.8
Household type						
Person living alone	22.4	27.7	37.9	22.0	110.0	24.9
Married couple only	87.1	70.1	41.7	6.4	205.4	46.5
Married couple/one person living only with unmarried children	56.1	14.3	7.6	6.2	84.2	19.1
All other households	19.3	9.1	6.5	6.7	41.7	9.4
Statistical region						
Brisbane	83.8	49.5	39.4	20.5	193.2	43.8
Moreton	44.0	30.2	25.2	8.1	107.5	24.4
Wide Bay-Burnett, Darling Downs and South-West	27.4	18.6	14.7	6.6	67.4	15.3
Mackay, Fitzroy and Central-West	13.8	12.5	6.5	*2.3	35.1	8.0
Northern, Far North and North-West	15.9	10.5	7.9	*3.9	38.1	8.6
Country of birth						
Born in Australia	137.2	94.3	72.9	34.7	339.2	76.9
Born overseas	47.7	27.0	20.8	6.6	102.0	23.1
<b>Total</b>	<b>184.9</b>	<b>121.3</b>	<b>93.7</b>	<b>41.3</b>	<b>441.3</b>	<b>100.0</b>

Particulars	AGE GROUP.....				TOTAL.....	
	50-59 years	60-69 years	70-79 years	80 years and over	Number	Proportion
	'000	'000	'000	'000	'000	%
PERSONS						
Employment status						
Employed	252.9	56.1	7.3	**0.6	316.9	36.7
Full-time	190.3	37.8	*3.2	**0.3	231.5	26.8
Part-time	62.6	18.3	*4.1	**0.3	85.4	9.9
Unemployed	15.9	*2.4	—	—	18.3	2.1
Not in Labour Force	107.0	185.4	166.5	69.8	528.8	61.2
Household type						
Person living alone	45.2	42.4	54.0	31.2	172.8	20.0
Married couple only	166.0	150.1	95.4	20.4	432.0	50.0
Married couple/one person living only with unmarried children	126.0	33.5	12.7	9.2	181.3	21.0
All other households	38.5	17.8	11.7	9.7	77.8	9.0
Statistical region						
Brisbane	168.2	98.1	73.2	31.9	371.4	43.0
Moreton	89.6	56.5	48.1	16.0	210.2	24.3
Wide Bay-Burnett, Darling Downs and South-West	56.7	39.8	26.0	11.9	134.4	15.6
Mackay, Fitzroy and Central-West	27.4	27.0	11.4	*3.9	69.7	8.1
Northern, Far North and North-West	33.8	22.6	15.2	6.7	78.3	9.1
Country of birth						
Born in Australia	267.8	179.5	131.5	57.2	636.0	73.6
Born overseas	108.0	64.4	42.3	13.3	227.9	26.4
<b>Total</b>	<b>375.8</b>	<b>243.9</b>	<b>173.8</b>	<b>70.5</b>	<b>864.0</b>	<b>100.0</b>

## 2

### SOURCES OF INCOME

	AGE GROUP.....			TOTAL.....	
	50-59 years	60-69 years	70 years and over	Number	Proportion
Source	'000	'000	'000	'000	%
.....					
All sources					
Wages or salary	182.6	32.8	*2.5	217.9	25.2
Government pension or cash benefit	88.2	150.9	205.8	444.9	51.5
Own business or share in partnership	89.2	29.4	9.5	128.1	14.8
Superannuation	15.0	26.6	19.1	60.8	7.0
Investment/interest	83.1	76.2	83.3	242.6	28.1
Other sources	16.4	11.6	10.6	38.6	4.5
None of the above/don't know	20.2	8.8	**0.7	29.6	3.4
Main Source					
Wages or salary	170.3	29.6	**0.6	200.5	23.2
Government pension or cash benefit	74.8	139.0	191.4	405.1	46.9
Own business or share in partnership	72.6	22.1	7.3	102.0	11.8
Superannuation	7.6	15.6	13.3	36.4	4.2
Investment/interest	22.0	23.6	28.8	74.3	8.6
Other sources	8.1	5.2	*2.0	15.4	1.8
None of the above/don't know	20.6	8.8	**0.9	30.3	3.5
<b>Total</b>	<b>375.8</b>	<b>243.9</b>	<b>244.3</b>	<b>864.0</b>	<b>100.0</b>
.....					

## 3

### UNPAID ASSISTANCE PROVIDED AND FREQUENCY

	AGE GROUP.....			TOTAL.....	
	50-59 years	60-69 years	70 years and over	Number	Proportion
Particulars and frequency	'000	'000	'000	'000	%
.....					
Childminding	47.4	39.9	17.8	105.1	12.2
More than once a week	15.5	14.6	7.2	37.3	4.3
Once a week	15.5	10.6	*3.8	29.9	3.5
Less than once a week	16.4	14.7	6.8	37.9	4.4
Housekeeping/maintenance	22.4	11.8	6.9	41.1	4.8
More than once a week	5.3	*3.7	*1.9	10.9	1.3
Once a week	8.9	*3.3	*1.3	13.6	1.6
Less than once a week	8.2	4.8	*3.6	16.6	1.9
Voluntary organisations	52.3	37.8	29.8	119.8	13.9
More than once a week	11.3	8.6	9.9	29.8	3.4
Once a week	20.5	13.3	9.0	42.8	5.0
Less than once a week	20.4	(a)15.9	(a)11.0	(a)47.2	5.5
Other	20.0	13.1	10.4	43.4	5.0
More than once a week	5.3	6.0	4.3	15.6	1.8
Once a week	6.5	*2.4	*2.3	11.2	1.3
Less than once a week	8.2	4.7	*3.7	16.7	1.9
<b>Total</b>	<b>375.8</b>	<b>243.9</b>	<b>244.3</b>	<b>864.0</b>	<b>100.0</b>
.....					

(a) A small number of 'Don't know' responses are included.

## 4

## MOBILITY

Particulars	AGE GROUP.....				TOTAL.....	
	50-59 years	60-69 years	70-79 years	80 years and over	Number	Proportion
	'000	'000	'000	'000	'000	%
.....						
Need help/supervision in						
Personal care	4.9	7.7	6.1	12.6	31.3	3.6
Moving around the house	7.0	5.0	4.4	7.0	23.4	2.7
Going to/getting around a place away from home	10.0	13.1	12.3	20.0	55.5	6.4
Hold a current drivers licence	351.5	211.7	125.1	28.0	716.4	82.9
Driven a motor vehicle in last 4 weeks	338.0	194.9	112.9	24.1	669.9	77.5
Frequency of driving						
Daily	270.1	124.0	52.9	6.6	453.6	52.5
More than once a week	56.2	60.3	47.2	12.7	176.4	20.4
Once a week	7.6	8.6	8.5	*3.5	28.2	3.3
Less than once a week	*4.0	*2.0	4.3	*1.3	11.6	1.3
Drives at night	302.0	153.6	67.7	9.3	532.6	61.6
Drives outside local area	299.1	164.5	81.0	13.6	558.2	64.6
Does not hold a current drivers licence/ has not driven a motor vehicle in last 4 weeks	37.8	49.0	60.9	46.4	194.1	22.5
Been a passenger with driver from same household	25.3	29.8	27.5	17.7	100.4	11.6
Been a passenger with driver from some other household	22.4	21.6	34.1	27.1	105.2	12.2
Has not been a passenger	*2.3	4.7	6.8	7.4	21.2	2.4
Able to access public transport	357.9	226.0	155.3	43.1	782.4	90.6
Used public transport in the last 4 weeks	71.5	61.2	49.4	14.4	196.7	22.8
<b>Total</b>	<b>375.8</b>	<b>243.9</b>	<b>173.8</b>	<b>70.5</b>	<b>864.0</b>	<b>100.0</b>
.....						

	AGE GROUP.....			TOTAL.....	
	50-59 years	60-69 years	70 years and over	Number	Proportion
<i>Activity and frequency</i>	'000	'000	'000	'000	%
Sport	74.0	50.6	34.5	159.1	18.4
More than once a week	29.3	25.2	18.1	72.6	8.4
Once a week	25.1	17.9	11.7	54.7	6.3
Less than once a week	19.6	7.5	4.7	31.8	3.7
Walk for exercise or recreation	200.9	145.0	115.7	461.6	53.4
More than once a week	157.9	123.3	94.1	375.3	43.4
Once a week	25.6	11.0	11.1	47.6	5.5
Less than once a week	17.4	10.7	(a)10.5	(a)38.7	4.5
Run/jog	12.2	4.7	*1.6	18.5	2.1
More than once a week	8.7	*3.5	**0.7	12.9	1.5
Once a week	*1.8	**0.6	**0.9	*3.4	0.4
Less than once a week	*1.6	**0.6	—	*2.2	0.3
Other exercise	70.6	42.0	28.0	140.6	16.3
More than once a week	45.4	26.4	19.9	91.7	10.6
Once a week	13.5	8.3	4.2	26.1	3.0
Less than once a week	11.6	7.3	*3.9	22.8	2.6
Gardening/mowing etc.	277.4	180.4	149.2	607.0	70.3
More than once a week	110.4	98.4	93.5	302.4	35.0
Once a week	104.3	49.5	31.1	184.9	21.4
Less than once a week	62.7	32.5	24.6	119.8	13.9
Other physical activities(b)	16.2	12.5	5.1	33.8	3.9
More than once a week	4.4	5.3	*3.2	12.9	1.5
Once a week	*3.7	*3.2	*1.3	8.2	0.9
Less than once a week	8.1	*4.0	**0.7	12.8	1.5
<b>Total</b>	<b>375.8</b>	<b>243.9</b>	<b>244.3</b>	<b>864.0</b>	<b>100.0</b>

(a) A small number of 'Don't know' responses are included.

(b) Frequency of main 'Other' activity.



	AGE GROUP.....			TOTAL.....	
	50-59 years	60-69 years	70 years and over	Number	Proportion
<i>Activity and frequency</i>	'000	'000	'000	'000	%
.....					
Movies/theatre/restaurants etc.	234.0	131.6	108.9	474.5	54.9
More than once a week	39.1	23.3	12.3	74.7	8.6
Once a week	69.1	42.2	32.4	143.7	16.6
Less than once a week	(a)125.8	66.1	64.3	(a)256.1	29.6
Club/community/church activities	133.8	100.2	97.4	331.4	38.4
More than once a week	26.7	28.0	29.9	84.5	9.8
Once a week	60.3	46.3	44.3	150.9	17.5
Less than once a week	46.8	26.0	23.2	96.0	11.1
Other visits/outings with relatives or friends	249.8	156.4	141.8	548.1	63.4
More than once a week	57.2	36.9	27.4	121.5	14.1
Once a week	86.8	50.0	47.3	184.1	21.3
Less than once a week	(a)105.8	(a)69.5	67.2	(a)242.5	28.1
Read newspapers	344.2	224.2	210.8	779.2	90.2
More than once a week	287.4	185.1	172.6	645.1	74.7
Once a week	49.2	35.8	32.4	117.5	13.6
Less than once a week	(a)7.5	*3.4	5.7	(a)16.6	1.9
Read books/magazines	300.4	200.1	184.6	685.1	79.3
More than once a week	237.4	165.4	151.0	553.8	64.1
Once a week	38.7	20.3	18.0	77.0	8.9
Less than once a week	(a)24.3	(a)14.4	(a)15.6	(a)54.3	6.3
Arts/crafts activities	79.4	54.1	54.0	187.5	21.7
More than once a week	50.4	30.8	35.2	116.4	13.5
Once a week	14.6	15.0	10.4	39.9	4.6
Less than once a week	14.4	8.3	8.5	31.2	3.6
Other(b)	19.8	13.7	9.1	42.7	4.9
More than once a week	5.5	*1.8	*2.3	9.6	1.1
Once a week	4.3	*2.8	*2.7	9.8	1.1
Less than once a week	10.0	9.2	4.2	23.3	2.7
<b>Total</b>	<b>375.8</b>	<b>243.9</b>	<b>244.3</b>	<b>864.0</b>	<b>100.0</b>

(a) A small number of 'Don't know' responses are included.

(b) Frequency of main 'Other' activity.

# 7

## USE OF SELECTED TECHNOLOGY

	AGE GROUP.....			TOTAL.....	
	50-59 years	60-69 years	70 years and over	Number	Proportion
Particulars	'000	'000	'000	'000	%
Mobile phone	166.7	53.0	17.2	236.9	27.4
Credit/debit cards	238.1	115.7	72.1	425.9	49.3
Automatic teller machine	207.4	88.4	46.3	342.1	39.6
Telephone banking	62.0	18.9	10.2	91.1	10.5
None of the above/don't know	71.6	92.9	155.8	320.3	37.1
<b>Total</b>	<b>375.8</b>	<b>243.9</b>	<b>244.3</b>	<b>864.0</b>	<b>100.0</b>

# 8

## SELECTED ITEMS IN HOUSEHOLD AND USE

	AGE GROUP.....			TOTAL.....	
	50-59 years	60-69 years	70 years and over	Number	Proportion
Particulars	'000	'000	'000	'000	%
Video cassette player					
In household	342.1	208.0	160.8	710.9	82.3
Used by respondent	274.8	160.3	107.9	542.9	62.8
Microwave oven					
In household	341.8	208.8	173.1	723.7	83.8
Used by respondent	303.4	180.8	144.9	629.1	72.8
Answering machine					
In household	154.8	61.7	28.9	245.4	28.4
Used by respondent	137.8	53.8	18.8	210.3	24.3
Personal computer					
In household	169.8	62.1	22.8	254.7	29.5
Used by respondent	121.1	42.8	9.9	173.8	20.1
Internet access					
Available in household	54.7	18.3	*3.0	76.0	8.8
Used by respondent	40.5	15.1	*1.7	57.3	6.6
<b>Total</b>	<b>375.8</b>	<b>243.9</b>	<b>244.3</b>	<b>864.0</b>	<b>100.0</b>

## EXPLANATORY NOTES

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### INTRODUCTION

**1** This publication summarises the results of a survey of Persons Aged Fifty Years and Over. It was conducted throughout Queensland during October 1998 as a supplement to the Australia-wide Monthly Population Survey which is described in *Labour Force, Australia* (Cat. no. 6203.0).

**2** Information was obtained about needs for assistance in personal care, mobility inside or outside the house, current drivers licence, whether drives or has been a passenger in a private motor vehicle, and access to and use of public transport. Sources of income and main source of income, involvement and frequency in unpaid assistance and voluntary work, selected physical and social activities and use of selected facilities and equipment was also collected.

**3** Information about frequency of driving, whether drives at night and drives outside the local area was collected for persons who had a current drivers licence and had driven in the 'last four weeks'; whether a person had been a passenger in a private motor vehicle was collected for those who had no current drivers licence and/or who had not driven in the 'last four weeks'. Involvement and frequency in unpaid assistance and voluntary work, selected physical and social activities and use of selected technology was also for the 'last four weeks'.

### SURVEY METHODOLOGY

**4** The survey was conducted using a multi-stage area sample with information obtained from approximately 1,810 private dwellings, with usual residents aged fifty years and over. It was conducted during the two weeks commencing 5 October 1998.

### SCOPE

**5** The survey was conducted for persons aged 50 years and over who were usual residents of private dwellings except:

- members of permanent defence forces;
- certain diplomatic personnel of overseas governments, customarily excluded from censuses and surveys;
- overseas residents in Australia; and
- members of non-Australian defence forces (and their dependents) stationed in Australia.

Residents of non-private dwellings such as hospitals, motels and gaols were excluded from this survey.

### COVERAGE

**6** For the survey, coverage rules were applied which aimed to ensure that each person was associated with only one dwelling, and hence had only one chance of selection in the survey. Persons Aged Fifty Years and Over questionnaires were applied to all persons within the scope of the survey.

### DATA COLLECTION

**7** Information was obtained by interview of a responsible adult member of each selected household. Interviewers for the survey were obtained from a panel of trained interviewers who have extensive experience in conducting household surveys.

## EXPLANATORY NOTES *continued*

### ESTIMATION PROCEDURE

**8** Estimates obtained from the survey are derived using a complex ratio estimation procedure that ensures that the survey estimates conform to an independently estimated distribution of the total population by age, sex and area, rather than to the age-sex-area distribution within the sample itself. This procedure compensates for under-enumeration in the survey and leads to more reliable estimates.

### RELIABILITY OF THE ESTIMATES

**9** The estimates provided in this publication may be subject to two types of error.

#### Non-sampling Error

**10** Inaccuracies may occur because of imperfections in reporting by respondents, and errors made in the processing and coding of the data. These errors can occur whether the estimates are derived from a sample or a complete enumeration. Every effort is made to reduce non-sampling error to a minimum by careful design of questionnaires, intensive training and supervision of interviewers and effective operating procedures.

#### Sampling Error

**11** Since the estimates in this publication are based on information obtained from occupants of a sample of dwellings they are subject to sampling variability; that is, they may differ from the figures that would have been produced if all dwellings had been included in the survey. More information on this topic is given in the Technical Notes.

### RELATED PUBLICATIONS

**12** Other ABS publications which include information on persons aged fifty years and over include:

*Disability, Ageing, and Carers, Australia, 1998* (Cat. no. 4430.0)—due for release in 1999

*How Australians Use Their Time, 1997* (Cat. no. 4153.0)—released December 1998

*Retirement and Retirement Intentions, Australia, November 1997* (Cat. no. 6238.0)—released February 1998.

## TECHNICAL NOTES

### SAMPLING VARIABILITY

**1** The estimates in this publication are based on a sample survey of households throughout Queensland and are subject to sampling variability, that is, the estimates may differ from those that would have been produced if all dwellings in Queensland had been included in the survey.

**2** One measure of the likely difference is given by the standard error (SE), which indicates the extent to which an estimate might have varied by chance because only a sample of dwellings had been included. There are about two chances in three that the sample estimate will differ by less than one SE from the figure that would have been obtained if all dwellings had been included and about 19 chances in 20 that the difference will be less than two SEs.

**3** A SE expressed as a percentage of the estimate is known as the relative standard error (RSE). For example, if an estimate of 100,000 persons had a SE of 4,050, then the estimate has a RSE of  $4,050/100,000 \times 100 = 4.1\%$ .

**4** The following table gives SEs for general application to estimates of numbers of persons. These figures will not give a precise measure of the SE of a particular estimate, but they will provide an indication of its magnitude.

**5** The size of the SE increases with the level of the estimate, so that the larger the estimate the larger is the SE. However, it should be noted that the larger the sampling estimate, the smaller will be the SE in percentage terms. Thus, estimates derived from a larger sample will be relatively more reliable than estimates derived from a smaller sample.

**6** Estimates derived from very small sample sizes are subject to such high SEs (relative to the size of the estimate) as to detract seriously from their value for most reasonable uses. Only estimates with standard errors less than 25% are considered sufficiently reliable for most purposes. Estimates between 4,150 and 1,170 have a RSE between 25% and 50% and have been indicated with the symbol \*. Estimates with a RSE greater than 50% have been indicated with the symbol \*\*.

**7** An example of the calculation and use of standard errors is as follows:

From table 1 (see page 4), an estimated 296,800 males were born in Australia. An estimate of 296,800 has a SE of between 5,400 and 6,350. Using linear interpolation it can be seen that the estimate has a SE of about 6,320.

The SE of the estimate is determined as follows:

Firstly calculate

$$\begin{aligned} F &= \frac{X_e - X_l}{X_u - X_l} \\ &= \frac{296,800 - 200,000}{300,000 - 200,000} \\ &= 0.968 \end{aligned}$$

Secondly, calculate the SE of the estimate,  $SE(X_e)$  thus,

$$\begin{aligned} SE(X_e) &= SE(X_l) + F[SE(X_u) - SE(X_l)] \\ &= 5,400 + 0.968[6,350 - 5,400] \\ &= 6,320 \end{aligned}$$

## SAMPLING VARIABILITY *continued*

There are about two chances in three (66.7%) that the number that would have been estimated if all dwellings had been included in the survey lies in the range 290,480 and 303,120. There are about 19 chances in 20 (95%) that the number lies between 284,160 and 309,440.

**8** Particular care should be taken when comparing figures. It is not correct to assume that an apparent difference between figures is actually significant. Such an estimate is subject to sampling error. An approximate SE of the difference between two estimates ( $x-y$ ) may be calculated by the following formula:

$$SE(x-y) = \sqrt{[SE(x)]^2 + [SE(y)]^2}$$

While this formula will only be exact for differences between separate and uncorrelated characteristics of sub-populations, it is expected to provide a good approximation for all differences likely to be of interest in this publication.

**9** Percentages formed from the ratio of two estimates of the same type (such as proportions) are also subject to sampling error. The size of the error depends on the accuracy of both the numerator ( $x$ ) and the denominator ( $y$ ). The formula for the RSE of a percentage is given below.

$$RSE\left(\frac{x}{y}\right) = \sqrt{[RSE(x)]^2 + [RSE(y)]^2}$$

## STANDARD ERRORS OF ESTIMATES

<i>Size of estimate (persons)</i>	<i>Standard error of the estimate</i>	<i>Relative standard error</i>
no.	no.	%
1 000	550	54.5
2 000	750	37.4
3 000	900	29.9
4 000	1 000	25.5
5 000	1 150	22.5
7 000	1 300	18.7
10 000	1 550	15.3
20 000	2 050	10.3
30 000	2 450	8.2
40 000	2 750	6.9
50 000	3 050	6.1
100 000	4 050	4.1
200 000	5 400	2.7
300 000	6 350	2.1
500 000	7 750	1.6
1 000 000	10 200	1.0
2 000 000	13 300	0.7
5 000 000	18 750	0.4

## GLOSSARY

<b>Access public transport</b>	This is a combination of availability and the persons ability to get to and get on public transport without assistance, irrespective of whether there is a need to use it.
<b>Don't know</b>	On occasions when the 'any responsible adult' is unable to provide an answer to a question on behalf of another resident in the household 'don't know' is recorded.
<b>Employed persons</b>	Persons aged 50 years or over who had a job last week and have not been away from their job for four weeks or more.
<b>Housekeeping/maintenance</b>	Includes unpaid house work such as cooking, cleaning, washing, ironing, handy man jobs, etc.
<b>Local area</b>	The respondent's perception of their comfort zone and could differ with different respondents.
<b>Other exercise</b>	Includes aerobics, exercise bikes, gym, dancing, swimming, cycling, etc.
<b>Other visits/outings with relatives or friends</b>	Includes picnics, parties, shopping, etc.
<b>Public transport</b>	This includes private buses or mini buses.
<b>Sport</b>	Includes being a player, official or coach.
<b>Statistical region</b>	Refer <i>Labour Force, Queensland</i> (Cat. no. 6201.3) for details.
<b>Unpaid assistance</b>	This is unpaid assistance provided during the four weeks prior to the survey to persons living outside the household and voluntary work in any organisation. It does not include unpaid work in family and friends businesses.
<b>Voluntary organisations</b>	Includes Meals on Wheels, Lions Clubs, Apex Clubs, Neighbourhood Watch, School P&C activities (tuck shops, fetes, etc.), Red Cross, Ambulance, etc.
<b>Walk for exercise/recreation</b>	Includes walking machines.

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