



# STANDARDS FOR STATISTICS ON AGE AND SEX



ABS Catalogue No.1285.0

EMBARGOED UNTIL 11.30 A.M. 22 DECEMBER 1993

NEW ISSUE

# STANDARDS FOR STATISTICS ON AGE AND SEX

IAN CASTLES  
Australian Statistician

AUSTRALIAN BUREAU OF STATISTICS

CATALOGUE NO. 1285.0

© Commonwealth of Australia 1993

Printed in Australia by ALAN LAW, Commonwealth Government Printer, Canberra

## CONTENTS

<i>Chapter</i>		<i>Page</i>
..	Preface .....	v
1.	<b>STANDARDS FOR STATISTICS ON AGE .....</b>	<b>1</b>
	Introduction .....	1
	Definition .....	1
	Classification and Code Structure .....	1
	Questionnaire Module .....	2
	Output Classifications .....	2
	Standard 5 Year Groupings .....	5
	Standard 10 Year Grouping .....	6
	References .....	6
2.	<b>STANDARDS FOR STATISTICS ON SEX .....</b>	<b>7</b>
	Introduction .....	7
	Definition .....	7
	Descriptive Title .....	7
	Classification and Code Structure .....	7
	Questionnaire Module .....	8
	Output Classification .....	9
	References .....	9
..	General Information .....	11

#### PUBLICATION ORDERS

This publication is a *free* introductory issue. Copies of this and other publications in the series can be ordered from ABS Bookshops located in each capital city. ABS offices are listed at the end of this publication.

#### FURTHER INFORMATION

For further information about these or other social, labour and demographic statistical standards write to "The Assistant Director, *Social Classifications and Standards*, ABS, PO Box 10, Belconnen, ACT 2616" or telephone Canberra (06) 252 5736.

## **Preface**

An important objective of the Australian Bureau of Statistics (ABS) is to develop and promote the use of statistical standards to help ensure the compatibility and comparability of data derived from different statistical sources and systems.

As part of its commitment to this objective the ABS is developing a series of papers which present standards for the collection, processing and dissemination of core variables in social, labour and demographic statistics. This paper presents standards for two of the most commonly used demographic variables – age and sex.

The paper includes recommended definitions of the concepts, questionnaire modules, classification and code structures, and standard output categories. Issues related to the standards are also discussed.

These standards are intended to aid the interpretation of ABS data on age and sex and to provide advice to agencies wishing to produce data that is comparable with that of the ABS. The ABS is implementing the standards for these variables in its own statistical work and encourages their use by other government agencies and private organisations.

To achieve the status of National Standards the recommended guidelines must be widely accepted and used. The ABS therefore seeks comments on all aspects of these standards from interested parties.

**IAN CASTLES**  
Australian Statistician

December 1993

# Standards for Statistics on Age

## Introduction

This chapter presents standards for the demographic variable *age*. The standards are intended for use wherever social, labour and demographic statistics on the age of persons are collected, processed and disseminated. They should also be used when other statistical data are cross-classified by age.

The meaning and description of the concept of age are generally standard in the ABS and other organisations. However, due to the broad usage of the age variable, there is considerable variation in the number and range of categories used in statistical output.

The following discussion and presentation of the ABS standards for *age* is designed to provide guidelines for the collection, processing and dissemination of the concept in the work of both the ABS and other organisations. In particular, various standard output presentation formats are outlined. These reflect the United Nations Provisional Guidelines on Standard International Age Classifications.

## Definition

The concept of *age* describes how old a person is at a particular point in time. It is a measure of the time elapsed from date of live birth to a reference point that is usually the date of collection of the data.

The time units used to measure age vary according to the population being surveyed. The standards presented in this paper are applicable to the general population and measure age in single complete years. These standards may not be suitable for some specific applications. These include perinatal or neonatal statistics (where age may be expressed in minutes, hours and days).

... other uses for 'age'

Although the primary purpose of the age standards is to facilitate the collection and classification of data which measure or indicate a person's age in years, it may also be applied to a variety of other variables such as *Age on Arrival in Australia*, *Age of Youngest Child*, *Age Left School*, etc.

## Classification and Code Structure

The standard age classification consists of 100 categories each relating to a particular number of completed years, except for the last category which represents the age range 99 years and over.

... benefits of storing data in number of completed years

The ABS recommends that age data be coded and stored at the most basic level possible for each respondent – the number of completed years. This allows for the greatest flexibility for output of data and accommodates more

complex analysis if required. It also facilitates the derivation of new variables and cross classification with other variables. It is not recommended to collect or store age data in ranges (such as 0-19 years, 11-20 years, etc.) as this practice limits the options for future analysis of the data.

The recommended standard code structure for the storage of age data is presented below:

<i>Code</i>	<i>Age</i>
0	0 years
1	1 year
2	2 years
.....	
98	98 years
99	99 years and over

Where the age of a person is not stated or inadequately described most ABS collections infer the age from other information known about the person (such as educational institution attending).

#### Questionnaire Module

In most instances each person's age can be derived from a single question. The recommended format for the collection of age data using a self enumerated questionnaire is:

Date of Birth: \_ / \_ / \_ \_ \_ \_

(Specify day, month, year)

This provides the greatest amount of detail and flexibility.

In circumstances where a person, usually a responsible adult, responds for another person it is preferable to use a question that only requires the person's age. This assumes that the respondent is more likely to know the age of another person than his/her exact date of birth. Under these circumstances one of the following questions is recommended:

Age last birthday?

What was ... age last birthday?

What is .... age in complete years?

#### Output Classifications

Due to the wide variety of uses of data on age it is not possible to have one standard set of output categories to satisfy all applications. Consequently, the ABS has developed several generally reliable sets of standard

... 5 or 10 year groups are recommended for most applications

output categories. These are based on international standard criteria for classifying age: group size (number of years grouped together), group boundaries (ages defining groups - the boundaries of the groups generally begin at multiples of 5 or 10 and end with numbers ending with the digits of '4' or '9') and age ranges (lowest and highest age of a survey population).

The standard output categories are aggregations of the input categories (the level at which age data are collected and stored). The ABS recommends 5 or 10 year age groups for most applications with cut off years varying according to the type of survey (total population or sample), the collection topic, and the user needs and objectives.

Categories that adopt 5 year, 10 year and 15 year groupings in the one output presentation are not generally included in the ABS standard classifications, although they are included in the United Nation's International Age Classification. In the majority of cases such combinations of categories appear to be unnecessary and have the disadvantage of distorting the data and impairing objective analysis.

In some instances it may be mandatory or highly desirable for output categories to vary from the recommended 5 and 10 year groupings. For example, standard 5 and 10 year groupings may not be suitable for statistical data relating specifically to children or the elderly, or applications where legal requirements such as school leaving age or legal age for marriage are a consideration. Also, general collections relating to deaths need to have their first grouping under 1 year. In such cases variations to the recommended standard output categories are appropriate if they adhere to the general guidelines for age output groupings (see below). However, it is important that such variations are kept to a minimum and are used only where there are compelling reasons for doing so.

... guidelines for output classifications

The following guidelines are recommended when developing output classifications for age:

- a) The recommended standard output classification to consist of 5 year groupings;
- b) Groupings with a range of more than 5 years to be in multiples of 5 years;
- c) Groupings with a range of less than 5 years, including single years, to be capable of aggregation to 5 year groupings as subtotals;
- d) Subtotals of groupings, and groupings with a range of 5 years or more, to start at numbers ending with the digits '0' or '5' and finish in numbers ending with the digits '4' or '9';

- e) The terminology used to describe the first group in any set of groupings to be a dash between two numbers (e.g. 0-4), not 'under' (e.g. under 5);
- f) The terminology used to describe the last group in any set of groupings to be the first number of the last age range followed by the words 'and over' (e.g. 75 and over), not the first number of the range followed by a '+' (e.g. 75+).

It should be noted that the above recommendations are guidelines rather than rules. For instance, it is not necessary to adhere to these guidelines if there are statistical or other reasons, such as legal age requirements, for deviating from the recommendations. However, as many of the guidelines as possible should be adhered to when developing output classifications or presenting age data. It is particularly important to ensure as many categories as possible are multiples of 5 years, or capable of aggregation to such groupings, to facilitate maximum comparability of age data from different sources.

*... determining number and range of age groups*

In addition, consideration must be given to the number and range of groups used in the output classification. While there are no strict statistical rules, the following principles should be used in determining the number and range of age groups:

- a) For statistical applications the maximum number of groups should be related to the sample size and the reliability of the data. For confidentiality and reliability reasons a minimum number of responses are required in any category or cell before data can be published. There is little merit in producing numerous cells with high sampling errors or cells with suppressed data.
- b) The number of categories should be manageable and meaningful. The number of groups used should be no more than required to satisfy the intended purpose.
- c) The groupings should not distort the data. Inappropriate groupings can give the impression of an even spread of ages within a group when this is not the case. For example, a 10 year grouping 10-19 years could give the impression that the data is evenly spread between 10 and 19 years when most of the data may be clustered between 10-14 years or 15-19 years.

## Standard 5 Year Groupings

The standard output classification using 5 year groupings consists of 20 categories as presented below:

0 - 4  
5 - 9  
10 - 14  
15 - 19  
20 - 24  
25 - 29  
30 - 34  
35 - 39  
40 - 44  
45 - 49  
50 - 54  
55 - 59  
60 - 64  
65 - 69  
70 - 74  
75 - 79  
80 - 84  
85 - 89  
90 - 94  
95 and over

### *... consideration of data reliability and confidentiality*

Where the use of 5 year groupings over a certain age leads to confidentiality problems or high sampling errors it may be necessary to combine the categories beyond that age. As an example, for ABS sample survey data, 5 year groupings are used to age 74 years and responses for people older than 74 years are included in the category *75 and over*. This cut off point has been selected because in ABS small sample surveys there is an increase of approximately 12 per cent in sampling error between the ranges 70-74 years and 75-79 years. For other applications a decision will need to be made as to which groupings should be aggregated in the upper ranges of the classification based on reliability of the output data, confidentiality considerations, etc.

As stated above the number of categories used should be no more than is required to satisfy the intended purpose of the data collection. For instance, the standard output classification using 5 year groupings for data relating to ABS labour force collections consists of 11 groupings commencing at 15 years and ending at 65 years and over. This range of categories is used as this population group only includes persons aged 15 years and older, while 65 years is the usual age of detachment from the labour force.

For many purposes, particularly those where data are compiled from administrative records, all categories of the classification should be used. Such a detailed breakdown of the total population is of assistance in demographic

### Standard 10 Year Groupings

statistical analyses. However, confidentiality issues and legal age requirements must be considered if all categories of the classification are used.

The standard output classification using 10 year groupings consists of 11 categories commencing with a 5 year grouping of 0-4 years followed by 10 year categories beginning at 5 years. Inclusion of the 5 year group (0-4) as the first category enables the identification of children of compulsory school age (5-14 years), and persons eligible for participation in the labour force (15 years and over). This is the only situation where a combination of 5 and 10 year groupings is recommended. The classification structure is presented below.

0 - 4  
5 - 14  
15 - 24  
25 - 34  
35 - 44  
45 - 54  
55 - 64  
65 - 74  
75 - 84  
85 - 94  
95 and over

For survey data the start and end point of the output classification used depends on the nature and purpose of the collection and the sample size employed. For instance, for statistical output relating to labour force participation the first 10 year grouping commences at 15 years and the last grouping at 65 years and over.

## References

United Nations, (1982). *Provisional Guidelines on Standard International Age Classifications*. Series M, No. 74, United Nations, New York.

# Standards for Statistics on Sex

## Introduction

This chapter presents standards for the demographic variable *sex*. The standards are intended for use wherever social, labour and demographic statistics on the sex of persons are collected, processed and disseminated. They should also be used whenever other statistical data are cross-classified by sex.

The meaning, description and use of *sex* is generally standard within the ABS and other organisations. However, there is some variation in the descriptive title and output categories used. The following discussion provides guidelines for the collection, processing and dissemination of statistics on *sex* and recommends standard terminology for the concept.

## Definition

The concept *sex* is defined as the biological distinction between male and female. In practice, however, *sex* is the biological sex people are reported as being in statistical collections. *Sex* has two categories – *male* and *female*. These terms are universally accepted and generally well understood.

## Descriptive Title

The standard title for this concept is *sex*. This term should be used in all tables, charts, ratios and discussions of statistics on sex.

... 'sex' not 'gender'

In common usage the term *gender* is increasingly being substituted for the term *sex*. The ABS encourages the use of the term *sex* rather than *gender* in the statistical context because it is well understood by people of all ages and those who do not speak English as a first language. Furthermore, the term *gender* is often technically used to describe the sociological distinction between masculinity and femininity as opposed to the biological distinction between males and females.

## Classification and Code Structure

The standard classification of *sex* has two categories – *male* and *female*. The code structure is as follows:

- 1 Male
- 2 Female
- 0 Not Stated/Inadequately Described

Some collections, particularly those dealing with perinatal data, may require a third category for persons whose biological sex cannot be determined. Such persons should be classified as *Indeterminate Sex*. The code '3' should be used in such cases.

## Questionnaire Module

To ensure that data are consistent and accurate across all statistical collections the ABS encourages the use of standard question sets. For the collection of data on sex the ABS standard questionnaire module is a tick box question as shown below. Due to tradition in the ABS and other collections, the category *male* is shown first.

Sex:             Male  
                   Female

Depending on the collection methodology and number of people each form covers, the introductory question or statement may need to vary slightly. For example, a slight variation may need to be made to the standard question for self enumerated collections. The standard question set for a self enumerated questionnaire which collects data for more than one person is as follows:

Sex: Mark one box for each person.

Person 1             Male  
                           Female

Person 2             Male  
                           Female

Person 3 (etc.)

*... it may be offensive to ask the sex of the respondent*

When collecting data on sex by personal interview, asking the sex of the respondent or other household members is usually unnecessary and may be inappropriate, or even offensive. It is usually a simple matter to infer the sex of the respondent or household member from other cues such as observation, relationship to respondent, or first name. If this is not possible, the interviewer should ask whether persons not present at the interview are male or female.

Any error introduced by interviewers' inference of a person's sex is relatively insignificant compared to the difficulties which may be created if respondents are offended by a question which may suggest some doubt about their sex.

## Output Classification

... 'Persons' is preferred to  
'Total'

There are three possible output categories. Traditionally *males* has been presented before *females* in ABS publications. For consistency, the ABS encourages that the categories be presented in the following order:

Males  
Females  
Not Stated/Inadequately Described (if applicable)

It should be noted that the term *Persons* is used in preference to *Total*. In some surveys (e.g. perinatal collections) it may also be appropriate to have an output category for *Unknown/Indeterminate Sex*.

The terms *men, women, boys, girls*, etc. are not recommended as labels for output categories because they do not have universally accepted or agreed upon definitions and may lead to confusion. The use of *males* and *females* with qualifiers of age (if required) clearly define the reference groups.

## References

- Gould, M. & Kern-Daniels, R., 1977 *Towards a Sociological Theory of Gender and Sex*, *The American Sociologist*, Vol. 12, November: 182-189
- Macquarie University, 1991. *Macquarie Dictionary*, 2nd Edition, The Macquarie Library Pty. Ltd., Sydney.
- Oakley, A., 1972. *Sex, Gender and Society*, Sun Books, Melbourne.
- Stoller, R.J., 1968. *Sex and Gender - On the development of Masculinity and Femininity*, Science House, New York.



## General Information

### Inquiries

- Inquiries about this and other ABS social, labour or demographic statistical standards should be addressed to The Assistant Director, *Social Classifications and Standards*, ABS, PO Box 10, Belconnen, ACT 2616 or telephone Canberra (06) 252 5736.
- Inquiries about other ABS statistics and services should be addressed to *Information Services*, ABS, PO Box 10, Belconnen, ACT 2616 or telephone Canberra (06) 252 6637, 252 5402, 252 6007 or any ABS State office.

### Comments

- Comments about these and other ABS standards are invited from all agencies and individuals. They should be addressed to The Director, *Classifications, Standards and Dissemination Section*, PO Box 10, Belconnen, ACT 2616.

### Standards for Social, Labour and Demographic Statistics

- Standards for social, labour and demographic statistics are developed by the *Classifications, Standards and Dissemination Section*. Other publications that will be available in the series include:
  - Standards for Statistics on Family Variables (Cat. No. 1286.0)
  - Standards for Statistics on Income (Cat. No. 1287.0)
  - Standards for Statistics on Core Labour Force Variables (Cat. No. 1288.0)

### Other ABS Publications and Services

- A complete list of ABS publications and products is contained in the *ABS Catalogue of Publications and Products* (1101.0), available from any ABS office. Clients who would like to receive publications on a regular basis should contact the ABS Subscription Service on 008 020 608 toll free from anywhere in Australia.
- In many cases, the ABS can also provide information that is not published or which is historical or compiled from a variety of published and unpublished sources. Information of this kind may be obtained through the Information Consultancy Service. This information may be made available in one or more of the following forms: consultancy reports, microfiche, floppy disk, magnetic tape, computer print-out or photocopy. Charges are generally made for such information. Inquiries may be made by contacting Information Services in the nearest ABS office.

## Information Services

*Please direct your inquiries regarding ABS publications, products and services to  
ABS Information Services in any of the following State Offices:*

### New South Wales

3rd Floor, St Andrews House  
Sydney Square  
SYDNEY 2000  
(GPO Box 796, SYDNEY 2001)

Inquiries: (02) 268 4611  
Bookshop: (02) 268 4620  
Facsimile: (02) 268 4668

### Victoria

Level 5  
Rialto North Tower  
525 Collins St  
MELBOURNE 3000  
(GPO Box 2796Y, MELBOURNE 3001)

Inquiries: (03) 615 7000  
Bookshop: (03) 615 7829  
Facsimile: (03) 615 7798

### Queensland

20th Floor  
313 Adelaide St  
BRISBANE 4000  
(GPO Box 9817, BRISBANE 4001)

Inquiries: (07) 222 6351  
Bookshop: (07) 222 6350  
Facsimile: (07) 229 6042

### Western Australia

Level 1  
Hyatt Centre  
30 Terrace Road  
PERTH 6000  
(GPO Box K881, PERTH 6001)

Inquiries: (09) 323 5140  
Bookshop: (09) 323 5143  
Facsimile: (09) 221 2374

### South Australia

Commonwealth Building  
55 Currie St  
ADELAIDE 5000  
(GPO Box 2272, ADELAIDE 5001)

Inquiries: (08) 237 7100  
Bookshop: (08) 237 7582  
Facsimile: (08) 237 7566

### Northern Territory

5th Floor  
MLC Building  
81 Smith St  
DARWIN 0800  
(GPO Box 3796, DARWIN 0801)

Inquiries: (089) 432 111  
Bookshop: (089) 432 111  
Facsimile: (089) 811 218

### Tasmania

1st Floor  
175 Collins St  
HOBART 7000  
(GPO Box 66A, HOBART 7001)

Inquiries: (002) 205 800  
Bookshop: (002) 205 800  
Facsimile: (002) 205 995

### Australian Capital Territory

Wing 5  
Cameron Offices  
Chandler St  
BELCONNEN 2617  
(PO Box 10, BELCONNEN 2616)

Inquiries: (06) 252 6627  
Bookshop: (06) 252 5249  
Facsimile: (06) 253 1404

## Mailing List

Standards for Statistics on Age and Sex is the first publication in a series presenting ABS standards for social, labour and demographic variables. Other publications in the series will be released progressively as development work is completed. These include:

- Standards for Statistics on Family Variables** - *ABS standards for statistics on family type, relationship in household, household type and marital status.* (Cat. No. 1286.0)
- Standards for Statistics on Income** - *ABS Standards for statistics on income, source of income, and income unit type.* (Cat. No. 1287.0)
- Standards for Statistics on Core Labour Force Variables** - *ABS standards for the labour force framework and statistics on labour force status, status in employment, hours worked, full-time/pari-time status and duration of unemployment.* (Cat. No. 1288.0)

If you wish to be informed about the release dates for these and other standards for social labour and demographic statistics please complete this form and return it to the address below.

- Please place me on your mailing list to receive further information about the release of standards for social, labour and demographics statistics.

### Details

Name: \_\_\_\_\_

Position: \_\_\_\_\_

Organisation: \_\_\_\_\_

Address: \_\_\_\_\_

Suburb: \_\_\_\_\_ Postcode: \_\_\_\_\_

Phone: (\_\_\_\_) \_\_\_\_\_ Facsimile: (\_\_\_\_) \_\_\_\_\_

### **Please return this form to:**

Reply Paid 4  
Social Classifications and Standards Section  
Australian Bureau of Statistics  
PO Box 10  
BELCONNEN ACT 2616  
or Facsimile: (06) 252 5281

STANDARDS FOR STATISTICS ON AGE AND SEX ABS Catalogue No. 1295.0



2012850012933  
ISBN 0 642 18163 2