Statistics New Zealand
TATAURANGA AOTEAROA

Considering population in policy:

Guide for policy analysts and planners

New Zealand Government

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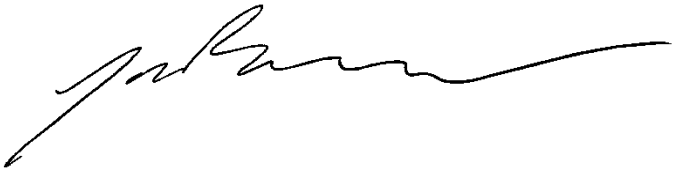
Preface

Considering population in policy: Guide for policy analysts and planners has been developed as a resource for policy practitioners considering how population structures and dynamics will influence policy. It is intended for those with little background in demography or population studies, but contains useful information for those more familiar with population concepts. It provides readers with an understanding of what 'population' is, what 'demography' is, population dynamics, structure, theory, and analysis, and other key concepts in the study of demography.

It details different issues that can affect population structure, composition, and dynamics, and provides information on Statistics New Zealand's population statistics. The guide includes tools and resources for policy developers, including an explanation of the policy development cycle and a framework for analysing population structure.



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1 Purpose and summary

Considering population in policy: Guide for policy analysts and planners has been developed as a quick reference guide for policy practitioners considering population dynamics in their policy development.

The guide:

- explains key population concepts
- provides readers with an understanding of population dynamics, structure, and theory
- highlights issues to be aware of when using Statistics New Zealand's population data
- identifies tools and frameworks for analysis
- provides advice on how to use population statistics appropriately.

The guide is divided into three main parts.

Chapters 2–5 introduce key population concepts, including population size, structure, and distribution. They also look at factors that affect population dynamics, structure and distribution, and how population statistics are used. Chapter 2 provides definitions of the population groups that we produce statistics about. Chapter 4 details the different population measures available.

Chapters 6–11 provide an overview of the relationships between population statistics and policy areas, such as health, education, welfare, and crime and justice.

Chapters 12–16 detail tools and resources that can help you with policy development or service-planning projects. These tools and resources are useful for anyone undertaking a project that needs to consider populations or population concepts. These chapters include tools such as the policy development cycle, and a framework for analysing population structure.

2 What is population?

This chapter describes and explains different population terms. While this resource has been developed for policy practitioners, this chapter is useful for anyone who wants to understand different population concepts.

Population is about people, and the dwellings, locations, and environments that people live in. A population can be defined in many ways, for example by age, ethnicity, family and household composition, birthplace, or location. This chapter outlines basic population concepts. These are the fundamental concepts that population statistics are based on. An appreciation of these will help you understand and use population statistics.

Analysis of many aspects of population can be beneficial to policy development.

- Population size
- Population structure
- Population distribution
- Population types.

Understanding the differences between these aspects of population will help you use population statistics appropriately.

Population size

Population size is the number of people within a population. People are often referring to population size when they talk about ‘population’.

Population size can refer to the total number of people living within a defined area, or it can refer to a group of people from a defined area who have similar characteristics (eg children aged 0 to 4 years, people of Asian ethnicities, people who live in two-bedroom houses).

Statistics that measure or estimate New Zealand’s population size include the Census of Population and Dwellings, population estimates, and population projections (future population size).

Population structure

The structure of a population describes the relative numbers of people with similar characteristics within a population. For example, people can be grouped by age, sex, or ethnicity. Statistics about the structure of a population show how the subgroups within it affect its composition and characteristics. For instance, the percentages of the population in different age groups.

The structure of populations changes over time because people are born, die, or migrate. Moreover, people’s circumstances change: they may move, change the ethnic groups they identify with, or change their living arrangements. Population structure is influenced by factors such as the timing of childbearing, or changes in the age structure of migration flows.

The interrelationship between the population, and society, politics, economics, and the environment determines a population’s future size and make-up.

Population distribution

Population distribution is the pattern of how a group of people are spread across a defined area.

Population distribution can be an important factor to consider in planning and analysis work. For example, clusters of families in particular suburbs of a city could influence planning for future school placements.

Population types

There a number of population types which are used (or have been used historically) in population statistics. These types are defined below.

De facto population

The de facto population consists of those present in a given area at a given time. For example, a de facto measure of births for New Zealand would include all births in New Zealand, including both New Zealand residents and international visitors who gave birth. It would exclude New Zealanders who gave birth while temporarily overseas.

There are two measures of the de facto population: the census night population count and the estimated de facto population (a demographic measure).

The census night population count and estimated de facto population both:

- include visitors from overseas in New Zealand on census night
- exclude residents who are temporarily overseas
- count people where they are on census night
- for a subnational area, exclude residents of that area who are temporarily elsewhere on census night.

The key difference is that the estimated de facto population makes adjustments to include births, deaths, and net migration (arrivals less departures) of New Zealand residents and visitors from overseas during the period between census night and the given date.

Statistics NZ produced national de facto population estimates annually from 1936 to 1950 and quarterly from March 1951 to June 1997; subnational population estimates were produced annually from 1986 to 1995. Statistics NZ no longer produces de facto population estimates.

Resident population (de jure population)

The resident population (de jure population) consists of those who usually live in a given area at a given time. For example, a de jure measure of births for New Zealand would include all New Zealand usual residents who gave birth during a specific period. This measure would exclude overseas visitors who gave birth in New Zealand.

There are two measures of the de jure population: the census usually resident count and the estimated resident population (a demographic measure).

While the census night population count is a de facto population count, the census usually resident population count is a de jure population count. This is a count of all people who usually live in a given area, and are present in New Zealand, on a given census night.

The census usually resident population count and estimated resident population both:

- include all residents present in New Zealand and counted by the census
- for a subnational area, exclude visitors from elsewhere in New Zealand but include residents of that area who are temporarily elsewhere on census night
- exclude visitors from overseas.

The key difference is that the estimated resident population makes adjustments for residents missed or counted more than once by the census (net census undercount), adjustments for residents temporarily overseas. It includes births, deaths, and net migration (arrivals less departures) of residents during the period between census night and the given date.

Statistics NZ has produced national population estimates quarterly since 1991 (reference dates at 31 March, 30 June, 30 September, and 31 December). Subnational population estimates have been produced annually since 1996 (reference date at 30 June).

Service population

A service population is a population concept that defines the population in terms of those accessing services in a given area at a given time. A service population can include residents and visitors including commuters, tourists, and seasonal workers. For example, on a weekday in Wellington the service population would include residents of Wellington who use services, but also people who commute into Wellington to work and any other worker, tourists, or visitors present in Wellington.

In practice, the service population is difficult to measure as it can vary significantly within short periods. It can also vary according to the service being provided. People may be counted multiple times, depending on their mobility and use of services. Furthermore, comprehensive information about different visitor groups (eg commuters, seasonal workers, day-trippers) in local areas is limited.

Information about service populations is used to plan and provide services, such as in emergency and transport planning.

What is demography?

Demography is the scientific study of human populations, including size, distribution, composition, and the factors that determine a population's future size, distribution and composition (ie fertility, mortality and migration). Demographers produce population estimates and projections about the future population's size, distribution, and characteristics, along with population indicators, including births, deaths, and net migration.

Measuring population

There are three main ways to measure population numbers:

- counts, typically from a census
- estimates, based on the components of population change (births, deaths, migration)
- projections, an indication of future change in population size and composition.

Statistics NZ usually runs the Census of Population and Dwellings every five years. The census provides population counts, counts of families, households, and dwellings. Between censuses, Statistics NZ produces regular estimates and projections of national and subnational populations. See the 'Statistics NZ's population statistics' chapter of this guide for more details about population estimates and projections.

Population statistics are produced about a number of groups of interest, including different ethnic groups and family and household types. Statistics are produced for both national and subnational populations.

Population groups

Population groups are groups of people who share a specific set of characteristics. Statistics about different population groups are used to count, estimate, and project the groups' size and the dwellings, locations, and environments where those groups live.

They are also used to describe the characteristics of the different groups (eg age, sex, educational qualifications), and to compare the groups with the total New Zealand population, and with other defined groups.

This section defines different population groups, including families and households, and different ethnic, sex, and age groups. It also provides information about how the statistics about these groups are used.

Families and households

How are families defined?

Traditionally, New Zealand families have been defined as though they are a nuclear family – one husband, one wife, and may include one or more children – living in a single household. The definition of family has been extended in recent decades to include other partnerships and, more recently still, same-sex partnerships. Despite this, it is still difficult to compile statistics about extended families and families that live in several different households.

How are households defined?

A household is defined as one or more people who usually live in the same dwelling and who share living facilities. A household can contain one or more families, or can contain no families at all. A household that does not contain a family nucleus could contain unrelated people (eg flatmates in a student flat), related people, or could simply be a person living alone.

What are family and household statistics used for?

Family and household statistics provide information on how New Zealand society is structured. The number of families and households, together with their size and composition, provides information on housing needs, requirements for social services, changing social relationships within New Zealand (at both national and the regional levels), and the relationship between social, environmental, and economic dynamics in New Zealand society.

Ethnicity

Ethnicity is the socio-cultural group or groups that people identify with or feel they belong to. People can identify with more than one ethnic group. An ethnic group is a group whose members have some or all of the following characteristics:

- a common proper name
- one or more elements of common culture, such as religion, customs, or language
- a unique community of interests, feelings, and actions
- a shared sense of common origins or ancestry
- a common geographic origin.

See Statistics NZ's Statistical Standard for Ethnicity 2005 for more information, or Statistics NZ's Ethnicity Papers for technical support papers on ethnicity data.

Ethnicity is self-perceived and people may change their ethnicities over time or in different social contexts. Ethnicity is not the same as ancestry or race. People frequently identify with ethnicities even though they may or may not be descended from ancestors or related to people with those ethnicities.

Ethnicity is a personal characteristic and cannot be ascribed to families, households, businesses or other social constructs. However, there is a widespread perception that considerations of fictional entities such as 'European families' or 'Pacific households' may add value to analysis.

How is ethnicity information used?

Information about ethnicity enables the needs and comparative outcomes of communities within a population to be measured. Services can then be tailored for specific groups. People of different ethnicities tend to have different characteristics and needs. Components of population growth such as births, deaths, and migration histories tend to differ among ethnic groups.

For example, people of European ethnicity have an older age structure than people of Asian ethnicity and have different social and cultural needs. Analysing information on ethnicity is one way of identifying these needs.

Interpreting ethnicity statistics

People can identify with more than one ethnic group. Until 2005, Statistics NZ prioritised multiple ethnicity responses to place people in only one ethnic group. This was done where it was deemed necessary that the count of responses for ethnic groups equalled the total population who specified their ethnicity.

Statistics NZ no longer prioritises ethnicity responses. Since 2005, people have been included in counts for each of the ethnicities that they identify with (total response count) or included in a category that identifies the combination of groups stated (single/combination counts). Total response count and single combination count data is available from the introduction of collection of ethnicity information in 1916.

However, some data from the mid-1980s to mid-1990s, and for some current collections for a decade longer, is only available in prioritised form. This data is not directly comparable with current or historic data.

In the past, it was common practice to assign ethnicity to families or households according to the ethnicities of the male parent (or single parent if appropriate). This approach may have involved prioritising ethnic responses to assign a family or household to just one ethnic group. This method of grouping families and households is now regarded as unacceptable because this does not fairly represent the characteristics of the household or any families it may contain.

The currently preferred method is to count a family within an ethnic group if any family member has identified themselves as belonging to the group. The advantage of this approach is that it does not arbitrarily exclude members based on their role (as coded) within the family.

Considerations when working with total response ethnicity data

When the total New Zealand population is grouped based on total response counts, the percentages of those who belong to different ethnic groups will add to more than 100 percent. Using total response counts has the advantage of including all those people who affiliate with a particular ethnicity, but may result in over-weighting respondents with more than one ethnic affiliation.

If you consider responses, rather than people, you can solve this over-weighting. Take the total number of responses (counting each ethnicity identified by each person as a separate response), then consider the percentage of responses for each ethnicity. These will then sum to 100 percent.

There has been a significant increase in the number of people identifying as 'New Zealanders'. This has complicated the process of grouping the total New Zealand population into ethnic groups. While there has been a trend of more people identifying as 'New Zealanders' for the last two decades, in the 2006 Census the 'New Zealander' population proportion was 11.1 percent, up from 2.5 percent in 2001 – making it the third largest response group.

Prior to the introduction of the Statistical Standard for Ethnicity 2005, a 'New Zealander' response was included in the New Zealand European category. Now a New Zealander response is classified in its own category in the 'other ethnicity' group. The 'other' ethnic group is sometimes grouped with 'European', for instance in population projections. This is because there is enough demographic data available to enable projection assumptions to be derived for the combined ethnic grouping, but not for the separate ethnic groups.

The five ethnic groups used to produce statistics are defined below.

Asian people

Asian people are people living in New Zealand who identify with or feel they belong to one or more Asian ethnic groups. The largest Asian ethnic group is Chinese, followed by Indian, Korean, Filipino, Japanese, Sri Lankan, Cambodian, and Thai. At 20 June 2006, 404,400 (9.7 percent) people identified as Asian. The Asian ethnic group is New Zealand's third-largest major ethnic group after European and other (this combined group includes people who identified as 'New Zealanders'), and Māori.

European

Europeans are people living in New Zealand who identify with or feel they belong to one or more European ethnic groups. The largest European ethnic group is New Zealand European, followed by English, Dutch, Australian, South African, Scottish, and Irish. At 30 June 2006, 76.8 percent of people identified as 'European or other'. The 'European' and 'other' ethnic groups are grouped together because the 'other' category includes those who identify as 'New Zealanders'.

Māori

Māori are people who identify with or feel they belong to the Māori ethnic group. In the 30 June 2006 National Ethnic Population Estimates, 15.1 percent of the New Zealand population was of Māori ethnicity.

MELAA ethnic group

The MELAA ethnic group includes people of Middle Eastern, Latin American, and African ethnicities. In 2006, 0.9 percent of New Zealand's population identified with Middle Eastern, Latin American, and African ethnicities.

Prior to 2005, these ethnic groups were included in the 'other' ethnic group. The name of the 'other' group was changed to better represent what was included in the grouping of ethnicities. The new group referred to as 'other ethnicities' contains 'New Zealanders' and other groups that do not fit into the five other groupings.

Pacific peoples

Pacific peoples are people living in New Zealand who identify with or feel they belong to one or more Pacific ethnic groups. The seven largest Pacific ethnic groups are Samoan, Cook Island Maori, Tongan, Niuean, Fijian, Tokelauan, and Tuvaluan peoples. In 2006, 265,974 people identified with the Pacific peoples ethnic group. This is 6.9 percent of the total New Zealand population.

Most population statistics group the New Zealand population by five-year age groups (eg 15–19 years, 20–24 years). However, children, older people, and women are sections of New Zealand's population that may be of particular interest to policy analysts and planners.

Age groups

Children

The definition of ‘children’ depends on the context of the situation being considered. In the census, children are people under 15 years of age. However, in families, children may be any age. They are members of the family who live with at least one parent. Particular legislation may specify an age when children become adults. For example, most offenders between 12 and 16 years are tried in the Youth Court, while those 17 and older are tried in District Courts.

Older people

Older New Zealanders are those aged 65 years and over. Statistics about older people are used to provide counts, estimates, and projections of how many New Zealanders are aged 65 and over, and the dwellings, locations, and environments that they live in. The statistics are also used to describe the characteristics of older New Zealanders (eg sex, ethnicity, family and community participation, health and disability status, participation in the labour market, and economic wellbeing). Statistics about these characteristics can be used to compare older people with the total New Zealand population, and with other age groups of New Zealanders.

New Zealand women

Many policies are developed to specifically address women’s needs. In New Zealand, women are defined as females aged 15 years and over. Women counted in the 2006 Census outnumbered men by 108 to 100. However, when you include those less than 15 years, females outnumbered males by 105 to 100.

Statistics about New Zealand women reflect the changing demographic characteristics of the female population, changes in the patterns of family formation and dissolution, changes in living arrangements, and increasing participation in education and paid employment.

Statistics are used to track women's changing social and economic position. This allows the status of women to be measured, in terms of both changes over time and in comparison with their male peers.

3 What factors affect population dynamics, structure, and distribution?

Population dynamics, structure, and distribution can be influenced by events and processes occurring within the population that have substantial demographic, social, cultural, economic, or environmental implications. These events and processes can affect a wide range of policy areas. For instance, population ageing or New Zealand's high levels of internal migration, and international travel and migration.

The *Population and Sustainable Development Report 2003* (Ministry of Economic Development, Ministry of Social Development & Department of Labour, 2003) provides a comprehensive appraisal of the various population dynamics occurring within New Zealand. The report identifies several key themes linked to important population issues. Major themes from the report are listed below.

- New Zealand will continue to have a small population, which represents both opportunities and limits for the economy, society, and environment.
- The workforce will take on an older profile in future, along with the older profile of the population.
- The opportunities, attitudes, skills, and knowledge of New Zealanders will be a key determinant of our development path and future prosperity.
- The proportion of the population made up of younger people will continue to decrease in the short- to medium-term, after which the population will take on a stable older profile.
- There was an increase in the number of births in the early 1990s. These children will reach late adolescence between 2005 and 2010.
- Skilled workers are becoming increasingly mobile internationally, which has the potential to become a serious constraint on New Zealand's economic development.
- By international standards, New Zealand has high levels of inward and outward migration relative to the size of its resident population.
- Growing population diversity will heighten the demand for customised services from both the private and public sectors.
- Patterns of settlement are changing.

Why is it important to consider population dynamics?

The size and composition of a country's population can have a powerful influence on a country's development. For instance, population size, composition, and distribution influence:

- the range of industries a country can support
- the pool of talent that can be called on
- the potential of communities
- the demand for and supply of government services.

Similarly, the effect people have on the social, economic, and physical environments depends on the composition, expectations, and distribution of the population.

The reverse is also true: government policies and services can greatly affect people and different population groups in different ways. Policies may influence people's choices on a wide range of issues, for example, whether and when to have children, where to live, and where to locate businesses.

How population dynamics can influence future development

Both the causes and the consequences of change in population dynamics or structure have major influences on New Zealand's development. For example, changes in population size and composition have significant effects on the demand for and supply of services throughout the economy, including government services.

Understanding how changes in New Zealand's population can affect policy is an important part of planning for sustainable development.

For example, the *Population and Sustainable Development Report 2003* (Ministry of Social Development, Ministry of Economic Development & Department of Labour, 2003) found that New Zealand would continue to have a small population, that is unlikely to reach 5 million in the next 50 years. New Zealand's population is currently over 4.4 million people. Projections indicate that the population will not exceed 6 million, without significant and historically unsustainable changes in migration or fertility. From about the middle of the 21st century, the population may begin to decline in size.

New Zealand's small population presents both opportunities and limits for the economy, society, and environment. Analysis of the effect of these opportunities and limits can inform government planning and policy.

How population information can be used

Population information is a valuable source of information about population characteristics. However, choosing appropriate population information to apply to policy and planning is a complex process.

Below are some of the more important ways that population information is used in policy analysis and service planning.

Identifying trends to provide a comprehensive overview of the various population trends occurring within New Zealand.

Creating frameworks to provide conceptual frameworks for analysis of public policy issues.

Informing financial decisions and policy. Population information can be used:

- as key inputs into major capital planning decisions
- in population-based funding formulae
- to forecast and project government revenue and expenditure.

Analysing, monitoring, and evaluating projects. Population information can be used to:

- identify the policy, expenditure, or service delivery implications of population changes over the short, medium, or long term
- explore the effects on the population of changing particular policies, such as immigration policies

- monitor social, economic, and environmental outcomes at both national and subnational levels. For example, calculating social indicators compiled in the Ministry of Social Development's annual Social Report
- evaluate the actual impacts of policies on particular groups.

Targeting service delivery to, and estimating policy impacts on particular groups.

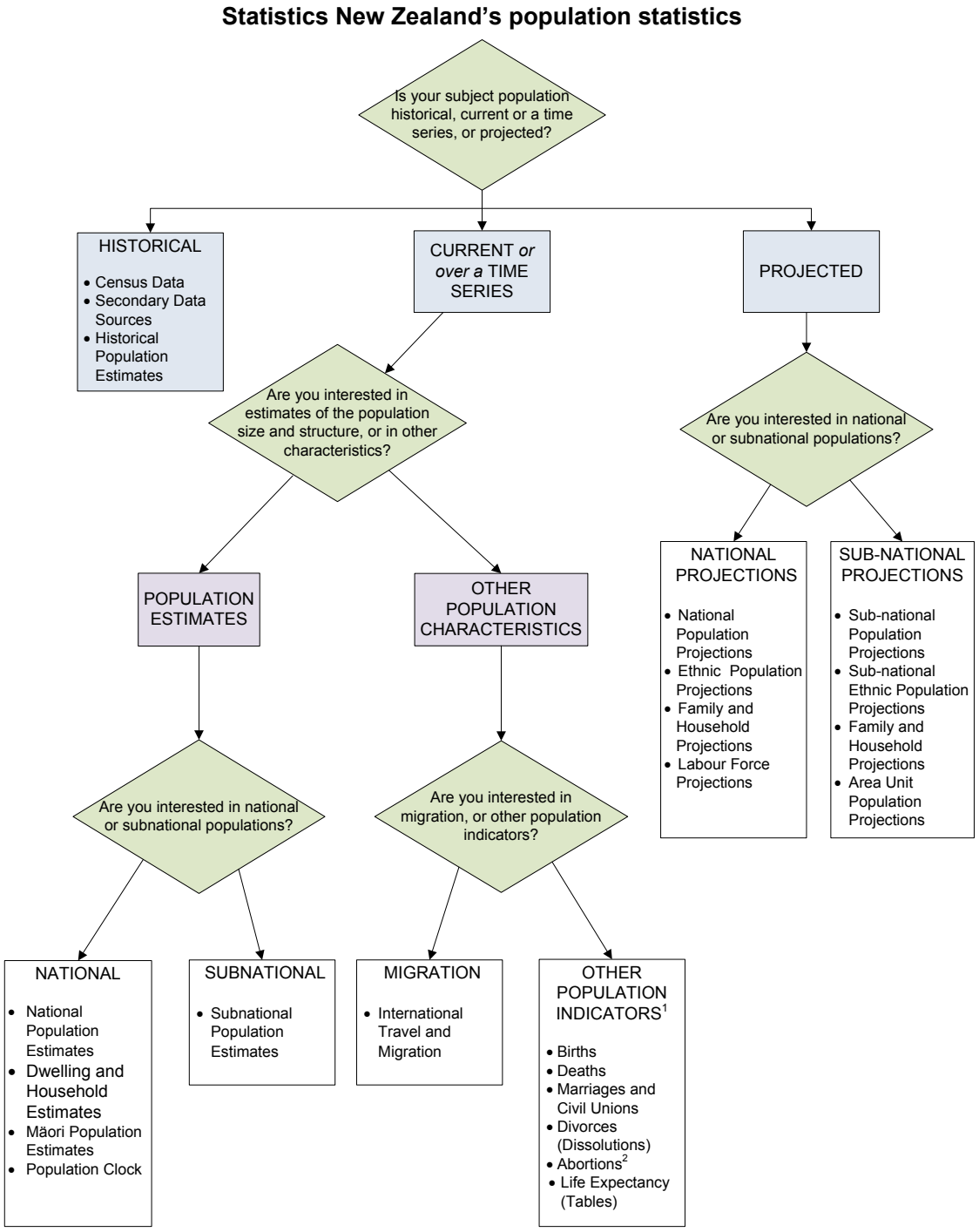
Making comparisons across population groups, using standardisation techniques.

4 Statistics NZ's population statistics

Statistics NZ measures many aspects of population. Use the following flowchart to identify which statistics to use in your analysis. See the following section for more detail on the statistics we regularly publish.

Figure 1

Statistics New Zealand's population statistics



1. 'Population indicators' refers to a suite of population statistics that provide us with information on population dynamics. These provide details about the future population, including births, deaths, and life expectancy.
2. Abortions are not strictly considered a 'population indicator' because they are never born into the population, but they have been included for completeness.

The following section explains the population information that Statistics NZ produces. It provides more detail about the statistics outlined in the chart on the previous page.

Population estimates

Population estimates are the estimates of the number of people and/or dwellings at a particular point in time. They are the primary source of information on the size and structure of the population at both national and subnational levels.

Estimates are derived from the latest census data with adjustments for net census undercount, residents temporarily overseas on census night, and births, deaths, and migration since the last census.

The statistics Statistics NZ produces are listed below. The following bullet list contains links to the Statistics NZ website.

National level estimates

- National population estimates
- National dwelling and household population estimates
- National Māori population estimates
- Population clock
  This online tool provides an indication of the estimated resident population at the time you view the population clock. New Zealand's exact population is not known at any given moment.

Subnational population estimates

- Subnational population estimates

Population projections

Population projections give an indication of the future size and composition of a population. Multiple projection series are produced using different combinations of assumptions about future fertility (births), mortality (deaths), and migration.

National level projections

- National population projections
- National ethnic population projections
- National family and household population projections
- National labour force population projections

Subnational-level projections

- Subnational population projections
- Subnational ethnic population projections
- Subnational family and household population projections
- Area unit population projections

Migration

Migration statistics provide information about where and how people move. Migration is the most volatile component of population change. It has the potential to have a significant effect on population composition at both national and subnational levels. New Zealand has historically achieved only small net gains from migration. The majority of growth over the last 25 years has come from natural increase (births exceeding deaths). Monthly statistics about migration are published in International travel and migration.

International and internal migration

Statistics NZ produces a monthly publication about international migration. However, there is a second type of migration – internal migration. Internal migration is the movement of people within New Zealand.

A key difference between international and internal migration in New Zealand is that administrative constraints apply to international migration.

The impact of migration on population composition (eg age, sex, ethnicity) partly depends on whether the people who leave have different demographic profiles from those who arrive. Internal migration is driven almost entirely by social and economic factors, which have implications for regional sustainability and planning.

Statistics NZ does not currently produce any regular publications about internal migration. For more information about internal migration, see the Statistics NZ Migration webpage.

Population Indicators

Statistics NZ produces many other statistics about population. For an overview, see the Population Indicators tables on the Statistics NZ website. Follow the links below for details about specific publications.

- Births and deaths
- Marriages, civil unions and divorces (dissolutions)
- Abortions[1]
- Life expectancy (tables)
  A life table provides a detailed description of the mortality and survival conditions prevailing at each age of life.
  - Period life tables
    Period (or current) life tables show the mortality experience of people in a specified time period (eg 1995–97 or 2005–07). Complete life tables are constructed from single year of age data, while abridged life tables are constructed from grouped age data.
- Complete period life tables – New Zealand
- Abridged period life tables – New Zealand
- Abridged period life tables – Subnational
  - Cohort life tables – New Zealand
    Cohort (or generation) life tables relate to the mortality experience of a designated group (eg persons born in a given year) over their lifetime. New Zealand is one of few countries with relatively complete and detailed historical births, deaths, and migration records. This has resulted in life tables for each birth cohort (people born in each year) from 1876.

1. Note that abortions are not strictly considered a ‘population indicator’ because they are never born into the population, but they have been included for completeness.

Secondary data sources

Secondary data sources are sources collected by someone other than the user. Secondary data sources can provide information that may not otherwise be available to the user. The data has already been compiled, although it may not always be in the format required. Secondary data sources include:

- New Zealand Official Yearbooks, published up to 2010. A Digital yearbook collection of historical yearbooks is available online. In 2012, Statistics NZ will be developing ways to make content that was included in yearbooks available online.
- Various annual or irregular reports from individual agencies, such as the Department of Labour or the Ministry of Social Development.
- Blue Books, parliamentary records, local survey data, parish records, and historical registration records.

Historical population estimates

Statistics NZ has produced Historical population estimates tables, which contain national population estimates by sex back to 1926.

Further historical statistics, on population change and structure, are included in Demographic Trends.

Limitations of historical data

While historical data is a valuable resource, the data has some limitations including:

- significant under-coverage of some groups (eg Māori were separately counted in early censuses)
- published tables are only available prior to 1976 (this limits Statistics NZ's ability to answer requests for specific information)
- changes to subnational boundaries (limiting the comparability of data for areas)
- changes to collection methods, questionnaires, and classification of data between collection (definitions change across time)
- most historical data is only available on a de facto (where counted) rather than de jure (where people usually live) basis.

5 Using population statistics

Before you decide which population data to use...

Define the subject population

Defining the population relevant to a particular situation is a fundamental first step in any policy development or planning exercise.

When defining the population you want to analyse think about your population of interest in terms of characteristics, such as:

- age
- sex (and/or gender if available)
- location/area(s)
- ethnicity
- patterns of movement and migration.

Also, consider the timeframe you want information for. For example, do you want information for a specific year, historic census populations, estimated populations over time, or projections of future populations?

Look for data that matches your population of analysis, as closely as possible. Does it:

- include all people who live in New Zealand?
- just those who live in a specific area?
- some subset or combination of either of these groups?
- only those who were counted in a survey or census?

See the ‘Statistics NZ’s population statistics’ chapter of this guide for links to all the population statistics that Statistics NZ produces. This may help you select appropriate datasets.

If you are using more than one piece of data to derive information, ensure that the sources are as compatible with each other as possible. Do they suit the problem that you are analysing?

For example, you may wish to calculate a birth rate, which is the number of births relative to the estimated number in women of childbearing age. If you wanted current information then you would use population estimates as the denominator to derive the birth rate. Although, if you were interested in the average number of children born to women in New Zealand, then it would be more appropriate to use census data that includes information on all live births for women aged 15 years and over.

Know what the data will be used for

It is important to match the subject population to the planning need. For instance, to analyse local social needs, the resident population may be the appropriate subject population. However, for other issues such as civil defence planning, it may be necessary to consider visitors to the area as well as residents.

Other considerations include where people live, where they lived in the past, and what time period is being considered. A policy may relate to a location or people born overseas. It may be informed by historical population change or to future population prospects.

Ensure the data is appropriate for your purpose

To know whether the data is appropriate for your purpose, you need to know how the data was collected, compiled, and disseminated.

How data is collected and processed affects the statistics that are produced. Each data source has its own features, which should be considered. This may involve looking at the source questionnaires and understanding how individual responses are collated to produce statistics.

See the Browse for Statistics section of the Statistics NZ website for more information about Statistics NZ's data, sorted by topics. Under Population you can find different sub-topics, such as Births and Deaths.

Census data from before 1976 is available from published volumes, accessed either through Statistics NZ or from major libraries.

Census data from 1976 to 1991 is available on request. Statistics NZ provides customised data tables electronically.

Census data from 1996 onwards is available online, on the Census webpage.

If appropriate data is not available…

If you are not able to find appropriate data for your purpose, you will need to make some assumptions. Identify these in your results, along with an analysis of the uncertainties.

For example, people can identify with multiple ethnic groups and this can complicate analysis of death statistics.

Prior to 1 September 1995, deaths were classified as NZ Māori, Pacific Islander, or non-NZ Māori/non-Pacific Islander, according to the combined ethnic fractions of the parents of the deceased. Since 1 September 1995, all the ethnic group or groups that a person identifies with were recorded in death registrations. Prior to June 1998, up to three ethnic groups were captured; after that June 1998 all responses have been captured.

Therefore, to calculate mortality by ethnicity you will need to make certain assumptions about all the ethnic groups a person may have identified with, to address the non-comparability of data over time – particularly prior to 1996.

Examples of when data may be misleading

Estimating crime rates in the inner city

Daytime and transient populations in the inner city are very much larger than the resident population of the inner city area, and the perpetrators of crime may live somewhere else. Therefore, neither resident population estimates nor usually resident census data for that area will enable you to estimate inner city crime rates.

In this particular example, crime rates could be estimated by using the number of people who usually work in the area together with people who live in the area, but are not employed. However, this only gives the population at risk of being affected by crime. Deriving rates of offending requires research into the dynamics of criminal activity.

Using 'people born overseas' as your population

Care is needed when using a subgroup such as 'people born overseas' as your population. This is because for any census or other data source, some people born

overseas do not supply information about how long they had lived in New Zealand. In addition, some people do not give their country of birth.

If you are interested in people born overseas, then the base population for your analysis should be those people who live in New Zealand and said they were born overseas. For more detailed analyses of migration patterns from particular birthplaces, the population should be restricted further to those who gave their country of birth and gave the year they arrived in New Zealand.

If you assumed that those who did not say they were born in New Zealand were born overseas, you would overestimate the proportion of the New Zealand population born overseas. This is because this population would include people who were born in New Zealand but failed to answer questions about their birthplace. As with all proportional analysis, non-responses should be excluded from calculations.

6 How population statistics influence health policy

This chapter details what population information can tell us about different health statistics, including abortions, alcohol consumption, health status, injury, and disability.

Health issues affect everybody as either patients or taxpayers. Different health issues affect particular groups. For example, maternity care relates to the number of women of childbearing age having children. Environmental health issues affect people in particular localities. Many disorders affect specific age groups more than others.

Information on the structure and distribution of the population of interest is required to measure and monitor these issues.

What can population information tell us about abortions?

There are two major categories of abortions – induced and spontaneous. Induced abortions are initiated voluntarily with the intention of terminating a pregnancy.

Spontaneous abortions are not initiated voluntarily. These abortions include those where an external cause is involved, such as an injury or high fever.

All current abortion statistics in New Zealand, and derived abortion rates, are based on the number of legal induced abortions. Statistics NZ produces annual statistics about the number of abortions, the abortion rate, age of mother at the time of abortion, mother's ethnicity, and previous number of abortions.

Statistics on legal abortions are used to monitor trends in abortion in New Zealand. An analysis of abortion statistics by age and ethnic groups may direct policy analysts to specific needs, such as groups requiring family planning education, enhanced access to abortion services, or greater access to contraceptive methods.

What can population information tell us about alcohol consumption?

Excessive or inappropriate alcohol consumption is recognised as a disease that affects health outcomes and has social, economic, and environmental costs. Incidence (frequency of occurrence) of alcoholism tends to differ across the population, according to age, sex, and educational and cultural background. General population characteristics can be compared with the characteristics of people in identified risk groups.

An understanding of the characteristics of the people in the identified risk groups can indicate pathways for policy intervention and facilitate monitoring programmes addressing issues related to the misuse of alcohol. Sufferers of alcoholism, and those treating this disease, also have a specific medical interest in these statistics.

What can population information tell us about health status?

Health status refers to all aspects of an individual's or population's health. Population information about health status includes measures of health status, mortality, and life expectancy, the use and perception of health services, and participation in behaviours such as smoking, alcohol consumption, and exercise.

Population statistics provide a base population to examine the population's health by, for example, comparing the number of hospital admissions to the population size and structure. In addition, population statistics can contribute to an understanding of the health needs of different population groups. Different population groups have different needs.

What can population information tell us about injury?

Injury statistics are available from Statistics NZ's Injury Information Portal. The statistics include data about the number and nature of injuries, work-related injuries, and compensation claims. These statistics are compiled from several government agencies and injury information is available by population characteristics such as age, sex, and ethnicity.

Injury statistics can be used to monitor the incidence and nature of injury, to achieve better outcomes for injury prevention, treatment, and rehabilitation, and to minimise the personal, social, and economic costs of injury.

What can population information tell us about disability?

Information about people with disabilities shows the number of people who are limited in their daily activities because of the long-term effects of a disability. Also available is detailed information about the nature, duration, severity and cause of activity limitations, and the barriers people with disabilities encounter in everyday life.

As with health status, population statistics can provide a base population to examine disability within. For example, how disability is spread across the different age groups and different household and family types. In order to understand disability within a population, you must have an understanding of the total population to compare your population of interest with.

For more information on any of the policy areas discussed in this chapter, see Statistics NZ's Browse for Statistics page, or the websites of other relevant government agencies. These can be accessed through www.newzealand.govt.nz.

7 How population statistics influence the economy

This chapter covers the relationships between population and government finance, industry, and tourism. Information on the number of people in New Zealand and their characteristics is central to analysing the effectiveness and extent of economic activity.

What can population information tell us about government finance?

Population data is used in government finance to derive key measures and to monitor economic performance. For example, dwelling estimates are used in national accounts, and population estimates are used to measure a variety of things such as per capita expenditure in the health and education sectors.

What can population information tell us about industry?

The census collects details about the number and sex of people working in the nine major industry divisions:

- agriculture, hunting, forestry, and fishing
- mining and quarrying
- manufacturing
- electricity, gas, and water
- construction
- wholesale and retail trade, restaurants and hotels
- transport, storage, and communication
- finance, property, and business services
- community, social, and personal services.

More detailed information about the number, sex, and employment status (eg full or part time) of people working in industry groups and subgroups, and for Māori, are also available.

This information can be used to understand how each industry contributes to the economy, particularly the labour market, and to examine changes in employment over time. For example, census information could show whether there were increased numbers of women, or men, working in certain industries over time.

What can population information tell us about tourism?

Tourism refers broadly to people moving and out of New Zealand for periods less than 12 months. This is also referred to as short-term migration. Statistics NZ collects information about the number and characteristics of travellers, the people and industries dependent on or affected by tourism, and the social, economic, and environmental outcomes.

Tourism flows are analysed by source and destination countries, travel purpose (holiday, visiting friends and relatives, business, education, conference) and duration of travel.

This information can be used to develop tourism initiatives or make reciprocal immigration agreements with other countries. Information about visitors to New Zealand can help government agencies and local authorities plan and provide services.

For more information on any of the policy areas discussed in this chapter, see Statistics NZ's Browse for Statistics page, or the websites of other relevant government agencies. These can be accessed through www.newzealand.govt.nz.

8 How population statistics influence employment, income, and welfare policy

This chapter outlines what population information can tell us about employment, income, and welfare policy.

Information on population provides the basis of analysis of income and employment patterns and trends. Changes in work and income are measured relative to changes in the size, composition, and location of the adult population.

The welfare of families and households is related to the availability of work and the distribution and level of income. Population information can also inform housing policy.

What can population information tell us about employment and unemployment?

Employed people are adults living in New Zealand who are in paid employment. Unemployed people are adults living in New Zealand who are not in paid employment, but are available for work and are actively seeking employment.

Population data is used to identify patterns of employment. Employment patterns can be analysed based on age, sex, ethnicity, educational status, family role, location, number of hours worked, industry, or occupation.

This analysis can identify areas where problems may exist. Analysis of population statistics can highlight opportunities for policy intervention to improve outcomes for communities in need. Similarly, analysis of trends in unemployment relative to other changes in the population can be used to monitor policy performance.

What can population information tell us about income?

Information about New Zealanders' income is used to show trends in the sources and distribution of personal, family, and household income. Analysis of these trends is vital for monitoring social change.

Data about New Zealanders' sources of income includes information about income levels and proportions earned from:

- wages and salaries
- self-employment
- government transfers (including benefits and superannuation)
- household savings.

Details about the characteristics of people (eg age, sex, ethnicity) and households (eg urban, rural, family type) are also available for sources of income data. Population data is used to understand income inequality across population groups and to calculate income per capita and income per person.

Information about distribution of income includes:

- median income by region
- proportions of people within five income bands (quintiles)
- changes in real disposable income (purchasing power) of individuals and households.

What can population information tell us about welfare benefits?

Information on the uptake of various welfare benefits by particular population groups is used to monitor social trends and the effectiveness of government income assistance. It is also used to analyse a range of issues such as inequalities, poverty, individual development, and economic performance.

What can population information tell us about housing?

Information about population and housing is very closely linked. The availability, affordability, quality, and suitability of housing have consequences for the economic and social well-being of individuals and families.

Housing needs relate to the characteristics of the population and population determines where new houses will be built and what type of houses they will need to be (eg five-bedroom family homes, or one-bedroom pensioner flats). Different ethnic or age groups have different housing requirements. Analysing population statistics will highlight group needs.

The demand for housing is based on population size and dynamics. Demand for housing and the design of buildings affects industries that supply materials. Building activity patterns have consequences in the labour market as well as in industries related to the financing and maintenance of dwellings.

For more information on any of the policy areas discussed in this chapter, see Statistics NZ's Browse for Statistics page, or the websites of other relevant government agencies. These can be accessed through www.newzealand.govt.nz.

9 How population statistics influence education policy

This chapter examines early childhood education; Māori, primary, secondary, and tertiary education; and skills training. Education is a primary mechanism for the development of skills within the population. The size and characteristics of different age groups influences the nature of resources required to facilitate this process.

Education is a lifetime activity for most people and a source of employment for many. Formal education affects everyone from under 5 years of age (for pre-schoolers) to 16 years of age (the school leaving age). Many go on to tertiary study.

What can population information tell us about early childhood education?

Early childhood education relates to children less than 5 years of age. Census data provides information on the characteristics and location of children in this age group.

Population estimates and projections of the numbers of children under 5 years of age can tell us how many children will need access to early childhood education either currently or in the future.

Information about children's participation in early childhood education can show how many children are taking part in early childhood education, and how many use particular education services (eg kōhanga reo).

What can population information tell us about Māori education?

Information is collected about Māori participation and achievement in early childhood education, school, and post-school education. Data is also collected about the characteristics of Māori using these services. This data can be sorted by characteristics such as age, sex, or location.

Information about services designed for and by Māori (eg kōhanga reo, kura kaupapa, wānanga) includes numbers of students using these services as well as distribution and location of facilities.

Analyses of population information about Māori education examine any inequalities between Māori and non-Māori in terms of educational achievement and can inform policy about Māori education.

What can population information tell us about primary and secondary school education?

Schooling is compulsory for 6-year-olds through to 16-year-olds, although most children start primary school at age 5. Census data provides information on the characteristics and location of people in this age group, as well as information on school qualifications achieved by people who have completed their secondary education.

Population estimates and projections can show how many primary and secondary school-aged children will need educational services in the future.

What can population information tell us about tertiary education?

Population information from the census includes details about New Zealanders' post-school educational qualifications and study course attendance, and student loans. Information about tertiary education can show participation levels and achievements in the different tertiary education services across different population groups (eg age, sex, ethnicity).

For more information on any of the policy areas discussed in this chapter, see Statistics NZ's Browse for Statistics page, or the websites of other relevant government agencies. These can be accessed through www.newzealand.govt.nz.

10 How population statistics influence crime and justice policy

This chapter outlines how the structure and distribution of a population affects the incidence of crime. People involved in various criminal activities tend to fall into well-defined age groups. Crime also tends to be more common in some areas than others.

An understanding of the age-sex composition of the population (including age standardisation) is required to analyse patterns of offending within particular sectors of society.

What can population information tell us about corrections and crime?

Information is collected from all prison inmates. This information shows the number of inmates and describes characteristics like age, sex, and ethnicity.

Other statistics about sentencing give details about the types of sentences imposed and the proportions of each type of sentence.

Information collected about crime includes details about crime by type of offence (eg violence, property, and traffic), convictions by type of offence, and sentencing for all offences. Statistics about type of offences and offending rates are available for each police district. These statistics include demographic characteristics, such as age, sex, and ethnicity.

For more information on any of the policy areas discussed in this chapter, see Statistics NZ's Browse for Statistics page, or the websites of other relevant government agencies. These can be accessed through www.newzealand.govt.nz.

11 Public policy can change demographics

Public policies can affect the demographics of a country in a number of ways. Demographics are the different characteristics of a population, for instance age, sex, and ethnicity. These impacts may be intentional, or may be an unanticipated consequence of policies that had no specific demographic objective. For example, immigration policies could be designed to attract people with skills that are in scarce supply, but a fiscal policy designed to address economic issues may result in people with scarce skills leaving.

Policy analysis and development often requires consideration of the potential demographic impact of policy options. This includes considering how and where these impacts may be mitigated or managed, in line with the government's desired policy outcomes.

Public policies commonly affect demographics in four broad areas. These are:

- population growth
- demographic structure
- population distribution
- population mobility.

However, there may also be many other, more subtle impacts – including longer term and/or cross-sectoral effects.

Population growth

Public policies that influence the rate of migration (inward and outward) are among the most important influences on population growth in New Zealand.

These policy impacts may be direct (immigration criteria) or more subtle (arrangements with other countries regarding recognition of educational and employment qualifications). Over longer periods, various social policies, such as pay equity, family law, child support assistance, and parental income testing of student allowances, may affect population growth rates by influencing parental work/family choices and incentives.

Demographic structure

Demographic structure relates primarily to the age, sex, and ethnic composition of the population. Policies that affect migration are likely to have some impact on population structure.

Economic and social policies may also influence family size and/or when couples decide to have children. For example, higher interest rates and/or reduced family support levels may incline couples to defer starting families until they are more economically secure.

Educational policies are an important factor affecting the numbers and origin of school/university age immigrants – many of whom may decide later to remain within the workforce or community.

Population distribution

Public policies can have a significant impact on where people choose to live and where they may move to in response to employment, education, and other opportunities. Historically, the biggest relative shifts in the distribution of New Zealand's population have been from rural to urban areas and from south to north. However, there can be important regional variations within these trends.

Economic policies, such as regional development initiatives, may influence both accelerating and slowing population distribution changes. However, economic policies generally have a smaller effect than socio-economic factors.

Educational policies relating to the viability of rural schools and government services may influence perceived opportunities and lifestyle issues in some areas.

Local government planning policies may be an important factor in residents moving into and out of urban centres. Regional variations in public policies may increase in future years in line with devolutions in policy-making authority from central to local government.

Population mobility

Population mobility describes how frequently, or readily, segments of the population may move in response to economic and social factors, or policy influences. It is different from population distribution, which is the pattern of how people are spread across an area.

Examples of how policy may affect mobility include the international portability of superannuation entitlements (eg to the Pacific Islands), or the regional significance of terms and conditions relating to employment or housing assistance.

Increased mobility may or may not have desirable social consequences in the short run. However, it may be necessary to take advantage of regional and structural shifts in economic or life-style opportunities.

12 Eight-step checklist for considering population in policy

Use this checklist as a planning tool for developing policy or planning services. It includes questions that you can use to evaluate your project or policy. This checklist can also be used to review a project towards (or after) completion. See the appendix for a printable summary of this checklist.

1. Consider population issues

What population issues may be relevant to this (actual or proposed) policy or service?

Potential issues include:

- the changing age structure of the population
- changing fertility levels
- internal and external migration
- increasing population diversity.

2. Identify affected population groups

Who are the people or groups likely to be affected, either directly or indirectly, by this policy or service?

Policies affect different people and population groups in different ways. When thinking about who is affected, think about:

- how they might be affected
- the extent to which they might be affected.

If you consider affected population groups, it may highlight subgroups that you can use to evaluate the impact of the policy or project.

3. Identify sub-groups for analysis

Do the identified affected population groups form coherent logical units for analysis, or are the groups internally diverse in significant ways?

If you ensure the correct subgroups are considered, it will have a significant influence on the policy development process. Ask the following questions about your subgroups, to help you determine whether you are considering the appropriate population:

- Why are the subgroups selected for analysis the relevant groups, and how do these sub-groups fit within the population as a whole?
- How do outcomes vary within these groups, compared with variation between groups?
- Can useful comparisons be drawn between subgroups and the total population, or with other times and places? Are you comparing like with like?
- How might different groups respond to the policy or service changes being considered?
- What are the possible impacts over the medium- to long-term, which might affect ways in which the outcomes of the change should be monitored and evaluated?

- What are the possible broader and unintended effects of the policy or service change on other sectors or other service recipients?

4. Source available information

What relevant population information is available and how can I access it?

Statistics NZ produces a range of population statistics. Information about statistical publications is available on the Statistics NZ website. A large amount of data is available through our regular publications, or from the online tools Table Builder and Infoshare. You can access Table Builder at www.stats.govt.nz/tablebuilder/ and Infoshare at www.stats.govt.nz/infoshare/

Contact info@stats.govt.nzfor help finding appropriate statistics.

5. Question data quality and relevance

Do the available population statistics present any quality or relevance issues?

Once you have sourced population information you need to ensure it is of adequate quality, that is, with minimal sampling error and the sample is of a reasonable size. Are there any data limitations? What are they? Perhaps most importantly, the data needs to be relevant to the subgroups you are examining.

Ask yourself these questions to determine whether the data is relevant and of adequate quality:

- Is the sample size or quality of the source data sufficient to support conclusions with respect to key subgroups?
- How have the statistics been compiled?
- Are definitions used consistently across different statistical collections, and within individual time-series?
- Have there been any recent changes in how the statistics have been collected or compiled?
- Do you have the expertise to assess the policy implications of population issues within your own agency, or do you need to consult externally?

6. Consider potential delivery issues

Do the population issues and related statistics highlight any aspects of the policy or the service delivery that might otherwise be overlooked?

Delivery issues need to be considered throughout the policy development process. Think about whether there are any short-term population trends that are likely to obscure longer-term population trends. These trends could affect policy delivery.

7. Information for decision making

What information actually matters for making a decision?

- Will population trends affect the cost of implementing the policy?
- How could population dynamics affect delivery?
- How can population statistics be used to evaluate or monitor the policy after implementation?

8. Present the analysis

What are the best ways to present the demographic data and analysis to decision-makers?

When presenting analysis think about what the main point is and whether you have clearly portrayed it. Present the required supporting information. Be careful not to unintentionally mislead your audience. Show decision-makers how the population information fits within a wider context.

13 Policy development cycle

The policy development cycle detailed below is intended for use in larger-scale policy development and service planning exercises.

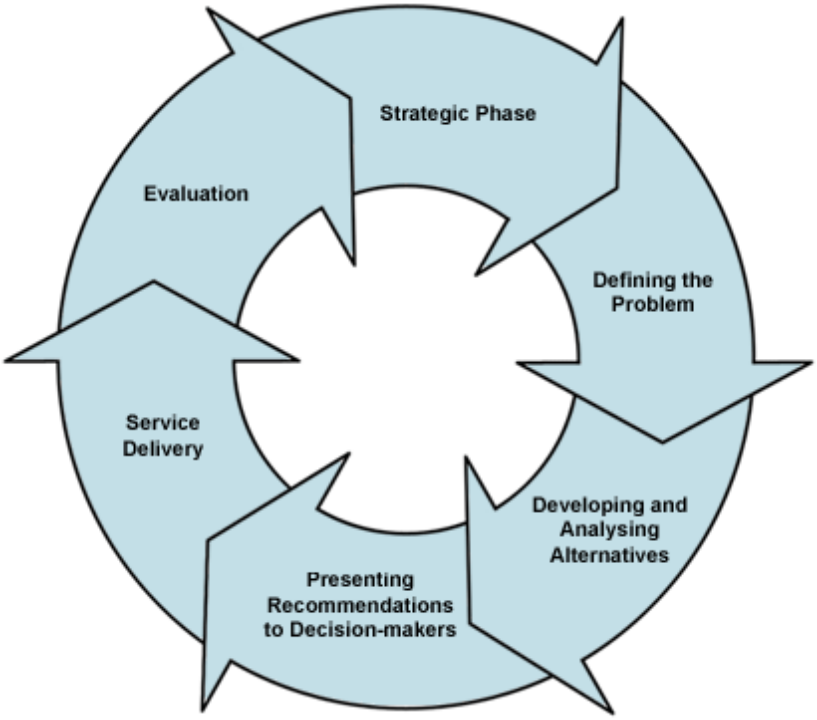
It can be used as a framework to help identify factors that affect population dynamics in their broader context, to suggest linkages across different stages of the cycle and different parts of organisations, and to provide checklists that are more comprehensive. Actual policy or service planning exercises may involve only some parts of this cycle.

Each stage of the policy development cycle is briefly outlined here. Links to detailed questions and prompts are provided for each stage. While the cycle suggests the policy cycle occurs in defined chronological steps, the actual process is more fluid (Burch and Wood, 1989).

For more information on policy development, see the Policy Development Toolkit, available on the Public Sector Intranet.

Figure 2

Policy development cycle



Phase 1 – Strategic phase

The strategic phase of the policy development cycle is about gaining an overall understanding of the situation. This involves thinking about the issues you are addressing, finding available information, and possibly doing some initial consultation. This helps define the problem that the policy will address, or the outcome(s) you hope to achieve by introducing a new policy.

Population statistics are one type of information that should be considered at this stage. Think about:

- what population information is needed, and what variables would be useful for your analysis
- any relevant short- and medium-term population trends or issues
- demographic features (eg lifecycle, cohort effects) that help clarify the nature and significance of the statistics
- what the key outcome indicators are for certain population subgroups
- existing policies that may be affecting the outcomes of interest
- any demographic features (eg lifecycle, cohort effects) that help explain the statistics
- the demographic impacts on the supply and demand of relevant services (eg teachers and pupil numbers)
- how New Zealand rates against other comparable countries, and how subnational data compares with other regions.

Phase 2 – Defining the problem

Defining the problem clearly will help ensure resources are efficiently used to address the problem. This involves establishing that there is a problem, which government policy can improve or address.

Official statistics and administrative data can help you define the problem and design appropriate policy to address the problem.

To define the problem, ask yourself the following questions:

- Are appropriate outcome targets set for key policy and service populations?
- Will available data enable you to measure what you want to measure? If not, what are the relative strengths and weaknesses of the data in the context of your analysis?
- Are you combining statistics from different sources? If so, ensure the definitions are consistent, or differences are allowed for. For instance, coverage, sampling errors, and definitions vary between various administrative statistical series.
- Have you developed a profile of the characteristics of different sub-groups to assist with targeting? If there is a serious lack of population data, what qualitative information is available?
- When comparing statistics for different groups, are you using specified cases only? For instance, a common error is to calculate statistics for the Māori population, and then to label the total population minus the Māori population as non-Māori, when a significant proportion of that population is actually not specified. Some of those who did not specify an ethnicity will be Māori.

Phase 3 – Developing and analysing alternatives

This phase is about identifying or developing a range of potential solutions. Analysing these alternatives involves understanding the effects of each option and the potential benefits or merits resulting from the option. Ideally, your chosen policy will solve the problem with minimal negative impacts.

At this stage, consider:

- whether the dataset is large enough to permit analysis when the data is divided into groups (eg by age, sex, ethnicity, labour force status)

- referring to any specific guidelines for developing policy for particular population groups (eg gender analysis, Pacific peoples' perspectives, and ethnic peoples' perspectives)
- how you are allowing for possible changes in behaviour and the incidence of specific problems
- how your estimates about behavioural and incidence changes affect how service groups and others will respond to policy changes
- whether you need to estimate the impacts of changes on both standard and relevant non-standard sub-groups of the population
- whether you need to think of ways of mitigating adverse impacts on subgroups by varying the policy or service delivery mode
- the possible system-wide, cross-sectoral, and long-term behavioural effects of policy changes
- how the impacts of the policy will be monitored and evaluated.

In terms of statistical analysis ensure, or consider:

- the nature of the policy conclusions statistical modelling will need to support (if undertaken)
- analysing trend data carefully to ensure the trends are real
- standardising the key measures, or underlying base populations being used
- analysing the data from different perspectives, for instance, using both cross-section and cohort analysis
- allowing for greater uncertainty when projecting small-area populations, or high growth populations
- checking modelling outputs against independent data
- ensuring any statistical models are flexible to easily vary key population parameters to test sensitivity
- conducting sensitivity analysis, to understand the statistical variation in the data, for different policy-relevant subgroups.

Phase 4 – Presenting recommendations to decision-makers

Policy developers need to decide what the most important pieces of information are and how can to convey them best. Consider:

- what diagrams or visual presentations of population statistics most simply and effectively convey the key points
- how you can best disclose the limitations of the data and model you have used
- whether you should identify and explain the separate impact of demographic variables on the overall results
- whether you need to present a sensitivity analysis of key results to changes in demographic parameters.

Phase 5 – Service delivery

Service delivery can be thought of in terms of policy implementation and monitoring. Changes in population size, structure, and dynamics can influence policy implementation.

When tailoring the policy implementation to target groups, consider:

- whether you need to allow for flexible delivery capacity over the short- to medium-term to cater for unforeseen changes in demand
- whether you need to allow for flexible delivery capacity over the medium term, due to population wave effects. For example, if the number of Year 9s beginning high school increases significantly, will there be enough teachers and support services to meet this demand?
- cross-checking projected service-area population and service demand against other sources of data
- allowing for possible changes in the mix of services demanded, due to differences in the characteristics of those migrating in and out of the service area
- what service delivery targets should be set for key policy groups
- whether current administrative data systems capture sufficient information on the demographic characteristics of service recipients
- whether current demographic definitions are consistent with other statistical series
- putting monitoring procedures in place to check the actual impacts on key service groups.

Phase 6 – Evaluation

After implementation, the effectiveness of the policy should be evaluated. Is the developed policy appropriate? Does the policy meet objectives, while being efficient? Are there any potential improvements? Evaluation can occur during implementation and afterwards.

Consider whether:

- the assumptions about the circumstances and responses of different policy and service target groups were valid
- additional demographic data needs to be collected from service recipients to enable the policy or programme to be more effectively evaluated
- a cohort analysis would help identify policy impacts
- additional research and evaluation should be undertaken, with respect to key policy and service delivery populations.

14 Dealing with population information

Interpreting demographic data

When interpreting demographic data, consider the following 10 factors.

1. Ranges

Examine the range of the data – from highest to lowest values. Is the population varied or fairly uniform in its characteristics?

2. Extremes

Note any extreme values; these may deserve special attention as exceptions or errors.

3. Clusters

Identify clusters of values. Are there natural groupings in the data? For example, are people with low incomes concentrated in particular suburbs, or occupational categories, or in groups with poor health or other social disadvantages?

4. Patterns

Identify patterns of variation, such as whether the data vary by age, ethnicity or education in some regular way. Rates of fertility, mortality and migration, for example, vary by age and other characteristics.

5. Processes

Consider processes of change:

- demographic processes – such as natural increase, net migration, cohort flow, and ageing. These are the immediate causes of population changes, whereas social, economic and political forces comprise the underlying causes
- non-demographic processes – such as globalisation, social mobility, social discrimination, changes in the status of women, technological innovation, amendments to laws and policies.

Marshalling evidence on the influence of demographic and non-demographic processes is important in developing explanations, or at least partial explanations, of changes.

6. Comparisons

- between sub-populations and the rest of the population, or the total population
- with other times and places.

7. Concepts

Place the discussion in the context of concepts and theories. These extend the comparative context, at the same time providing the most informative basis for generalisations and explanations.

8. Visualisation

Draw graphs and maps as appropriate to provide a visual impression of variations in the data. These can greatly assist data interpretation, although normally only a small selection of them need to be included in the final paper.

9. Implications

Discuss implications – for the future, for plans and policies, for further research.

10. Summary points

Describe the main findings, compared with conclusions from previous research. Identify anything new or unexpected. Highlight any insights into the question or problem investigated. Explain data needs for further inquiry.

(Rowland, 2003, table 5.2, p159)

Designing statistical tables

When designing tables using statistical data, consider including the following five elements.

1. Title

The title of the table indicates which population is under consideration, when the data were collected and which characteristics of the population are included.

2. Row and column headings

The headings define the categories into which the data are divided.

The number of categories depends on whether the table is intended as a summary or as a means of publishing detailed findings.

Broad categories may disguise significant internal variations, while many narrow categories may defeat the purpose of producing a summary.

Headings ought to be mutually exclusive, as instance income categories $10,000–19,999 and $20,000–29,999 rather than $10,000–20,000 and $20,000–30,000.

3. Data

Summary figures are usually presented in an immediately useable form, ready to be read in conjunction with the text. Percentages, rates and ratios facilitate comparisons.

Absolute numbers may be important in their own right, such as for planning and marketing applications.

Absolute numbers also serve to show sample sizes or the totals from which other figures derive.

4. Source

The source of the information is usually specified at the bottom of the table; it is an essential aid to readers in judging the reliability of the information and in following up further details for themselves.

5. Footnotes

Footnotes may be needed to define terms in the title or row and column headings, or to specify limitations in the scope or accuracy of the information.

(Rowland, 2003, table 5.3, p160)

15 Analysing population structure

This chapter provides a framework for analysing population structure. Before we can analyse the implications of a population's structure, we need to understand the population structure and the factors that will cause it to change. The following framework is a useful tool for describing population structure and change. It describes what causes population structure to change, and illustrates the age-sex pyramid.

Framework for analysing population structure

1. Define the population you want to analyse (eg number of people with the relevant characteristics in a set area).
2. Select relevant population information. This may include:

- age and sex structure of the population
- births data
- deaths data
- migration data
- information on families and households
- labour force information
- dependency ratios
- social and economic context
- expected trends in projected population change.

3. Describe how the elements of the structure interrelate (eg age-sex profile, ethnicity).
4. Analyse the problem in the context of the structure.

Framework components

The following section explains key components of the framework detailed above.

Population structure

Population structure can be described in terms of:

- the number of people involved
- their characteristics (especially their age, sex, and ethnicity)
- the processes that change the make-up of the population over time.

For some limited purposes, a description of these basic demographic features will suffice. However, a more sophisticated understanding of how populations change over time requires close attention to specific characteristics (like age and sex) of the different groups that make up the population. Once you have described these characteristics, you can examine how they change.

Causes of change to population structure

Three components change population structure over time. These are:

- births
- deaths
- migration.

Births

Births only add to the youngest cohort of a population. The number of women in the childbearing age groups affects the number of births. It is also affected by the timing of childbearing and the number of children women and their partners choose to have.

Deaths

Deaths tend to affect the youngest and the older cohorts more than other cohorts. Over recent decades, New Zealand's infant mortality has dropped to among the lowest levels internationally (3–6 deaths per 1,000 births), while life expectancy has increased at all ages. This affects both the number of babies surviving into childhood and the number of people in the oldest age groups. Changes in healthy life expectancy affect the level and nature of demand for care services among older age groups.

Migration

Migration affects people of all ages. Because the age and sex profile of out-migration from an area or from the country differs from the profile of in-migration, cohorts are affected in different ways. While net migration (the difference between the in- and out-migration of a population) affects population size, the difference between the inflow and outflow of migrants affects the population structure.

Describing population structure using an age-sex pyramid

An age-sex pyramid is a graphical representation of a population's age and sex structure. It is a snapshot of a population's structure at a particular time, which can be measured against historical snapshots of the population's structure. Age-sex pyramids can illustrate the process of change in the composition of the population over time.

Figure 3

Age-sex pyramids

Source: Statistics New Zealand

Source: Statistics New Zealand

Source: Statistics New Zealand

A series of age-sex pyramids can show how births, deaths, and migration change the composition of each cohort in the population over time. It can also inform projections of the likely future shape of that population.

Projecting change

It is possible to gain some appreciation of likely trends in the short-term by extrapolating from recent population growth. However, a far more informative analysis for cohorts already born can be developed by projecting forward the likely experience of each cohort as it ‘ages’, using age-specific rates of mortality and migration. The size of these cohorts, together with their fertility experience, is fundamental in determining the size of future cohorts.

16 Accessing and requesting data

This chapter explains some of the ways you can access Statistics NZ's population and tourism datasets:

- Infoshare
- Table Builder
- Microdata services
- Customised requests.

Infoshare

Infoshare is a free, online tool that provides you with access to a wide range of time-series data. This web-based tool can be used to access, view, and download the most up-to-date information from the largest directly accessible database of New Zealand official statistics. You can select data specific to your needs or interests. You can access Infoshare at www.stats.govt.nz/infoshare/.

What kind of data does Infoshare contain?

Infoshare contains data that Statistics NZ has collected over time, usually at sequential intervals. Infoshare contains a large number of datasets, covering both social and economic statistics.

The subjects most pertinent to population statistics are:

- Population
  - Births and Birth rates
  - Census of Population and Dwellings
  - Deaths and Death rates
  - Age Estimates
  - Dwelling and Household Estimates
  - Life Expectancy
  - National Family and Household Projections
  - National Labour Force Projections
  - Population Estimates
  - Subnational Life Expectancy
  - Subnational Net Migration Estimates
  - Marriage and Divorce Rates
  - Marriages, Civil Unions, and Divorces
- Tourism
  - International Travel and Migration.

How can I access data through Infoshare?

To access Infoshare, go to www.stats.govt.nz/infoshare/. To access data, simply select the subject you are interested in, and then select a dataset from drop-down lists that appear below the subject.

Select the variables and time points you want and click ‘Go’ to create a table. You can use the navigation menu to export the table you have created.

Where can I go for more information?

For help on how to use Infoshare, click on the ‘Help’ tab on the navigation menu.

If you have any other queries or feedback about Infoshare contact info@stats.govt.nz.

Table Builder

Table Builder is a free, online tool that enables you to extract the information you want from large tables of data. You can select your variables, and organise row and columns in the resulting table. To access Table Builder go to www.stats.govt.nz/tablebuilder/.

What kind of data does Table Builder contain?

Table Builder contains data in customisable tables. Table Builder contains a large amount of data, covering both social and economic statistics.

The subjects most pertinent to population statistics are

- 2006 Population Census
- 2001 Population Census
- Population estimates at 30 June 1996, 2001, and 2006
- Population estimates at 30 June 2006–10
- Population projections.

Other social surveys that may be of interest are:

- Household Economic Survey
- Longitudinal Immigration Survey: New Zealand
- New Zealand General Social Survey.

How can I access Table Builder?

To access Table Builder go to www.stats.govt.nz/tablebuilder/. To create a table, click on the subject link then select the subject you are interested in.

Select the table you are interested in viewing, and then the table viewer will open. You can use the ‘Actions’ menu to select which variables you would like to view and download the report data in different formats.

Where can I go for more information?

For help using Table Builder, click on the ‘Help’ tab in the table viewer.

There are videos demonstrating how to use Table Builder on the Table Builder page.

If you have any other queries or feedback about Table Builder contact info@stats.govt.nz.

Microdata access

Microdata refers to unit record and aggregate data that cannot be made publicly available, unless data is modified to protect respondent confidentiality.

Researchers can access microdata in Statistics NZ’s Data Lab. This reduces the cost of research and helps avoid the creation of duplicate data collections.

See the Data Lab page on the Statistics NZ website for more information on how to apply to use microdata.

Researchers can also access Confidentialised Unit Record Files (CURFs). These are unit record data that has been modified to protect the confidentiality of respondents, while also maintaining the integrity of the data. CURFs are delivered to researchers on CD-ROM. See the CURFs page for information on which CURFs are available and the application process.

Customised data requests

Statistics NZ can provide you with specific information about population groups or geographical areas. To find out if we have statistics appropriate for your purpose, contact the Information Centre at info@stats.govt.nz or call 0508 525 525. These data requests may incur a fee.

Glossary

These are definitions of a selection of terms used in population statistics.

Abortions

Foetal loss excluding stillbirths, usually during the first 20 weeks of gestation. *Induced* abortions are those initiated voluntarily with the intention of terminating a pregnancy. All other abortions are called *spontaneous*, even if an external cause is involved, such as injury or high fever.

All abortion statistics and derived abortion rates released by Statistics NZ are based on the number of legally induced abortions. No information is available on spontaneous or illegal abortion.

Age-sex pyramid

A bar chart graphically representing the age structure of males and females for a population. Age-sex pyramids are commonly constructed using five-year age groups, though these may not be as informative as single-year-of-age pyramids. As with all graphical representation, the aim should be to inform the user, so the exact format needs to reflect this aim.

The age structure of the population usually approximates the shape of a pyramid because mortality progressively reduces the number in each birth cohort as it ages. The age pyramid is useful to show the overall shape of the population, the relative sizes of individual cohorts within the population. Some inferences can be drawn from this about the past and the future of the population.

Area unit

Area units are aggregations of meshblocks with unique names. They are non-administrative areas intermediate between meshblocks and territorial authorities. Area units must either define or aggregate to define urban areas, rural centres, statistical areas, territorial authorities, and regional councils.

Area units of main or secondary urban areas generally coincide with suburbs or parts thereof. Area units within urban areas normally contain 3,000–5,000 population.

Base population

The starting population, usually distributed by age and sex, from which population estimates and projections are derived.

Birth

A birth is the birth of a child, either live or stillborn. Standard output of births data refers to live births unless otherwise specified.

Census night population count

A count of all people present in a given area on a given census night. The census night population count of New Zealand includes visitors from overseas who are counted on census night, but excludes residents who are temporarily overseas on census night.

For a subnational area, the count includes visitors from overseas and elsewhere in New Zealand (people who do not usually live in that area), but excludes residents of that area who are temporarily elsewhere on census night (people who usually live in that area but are absent).

Census usually resident population count

A count of all people who usually live in a given area, and are present in New Zealand, on a given census night. The census usually resident population count of New Zealand excludes visitors from overseas and excludes residents who are temporarily overseas on census night.

For a subnational area, this count excludes visitors from overseas and elsewhere in New Zealand (people who do not usually live in that area), but includes residents of that area who are temporarily elsewhere in New Zealand on census night (people who usually live in that area but are absent).

Civil union

The act, ceremony, or process by which the legal relationship of two people is constituted. A civil union may be entered into by couples of the same sex or by couples of different sexes. In New Zealand, a civil union may be solemnised either by a civil union celebrant or before a registrar of civil unions. A licence must be obtained from a registrar before a civil union can be solemnised, and notice must be given by one of the parties to a registrar.

The Civil Union Act 2004 came into force on 26 April 2005 and the first ceremonies were celebrated on 29 April 2005.

Cohort

A group of people sharing a common demographic experience. For example, the 1900 birth cohort refers to the people who were born in the year 1900. Cohort life tables are based on the actual mortality experience of a particular group of people born in the same year.

Cohort life table

A tabular numerical representation of mortality and survivorship of a cohort of births at each age of life. It comprises an array of measures, including probabilities of death, probabilities of survival, and life expectancies at various ages. It is based on the actual mortality experience of a particular cohort (eg all people born in the year 1900). These tables require data over many years, from infancy to the oldest age lived by the cohort (ie until the death of the last survivor).

Cohort analysis

Cohort analysis tracks the changing numbers and characteristics of a cohort over successive years. Comparison of different cohorts can reveal the impact of the particular circumstances in which they lived. Some differences between cohorts reflect gradual changes over time – such as changes in women's employment – while others reflect the concentrated effects of some events, such as wars, on particular cohorts.

Cohort analysis is contrasted with period analysis (or cross-section analysis). Period analysis entails working with data for different age groups at the same point in time (the same date or year). Both cohort and period analysis are useful, though one may be more appropriate than the other in particular situations.

Death

The permanent disappearance of all evidence of life at any time after live birth has taken place (post-natal cessation of vital functions without capability of resuscitation). This definition therefore excludes foetal deaths.

Demography

Demography is the scientific study of human population, including size, distribution, composition, and the factors that determine its future size, distribution and composition (ie fertility, mortality and migration).

Demographic projection

Indication of the future demographic characteristics of a population, families, households, or labour force based on an assessment of past trends and assumptions about the future course of demographic behaviour (eg fertility, mortality, migration, living arrangement type, labour force participation).

Demographic transition

The shift from high fertility and high mortality rates to low mortality and subsequently low fertility rates.

Divorce

The process by which the legal relationship of husband and wife is dissolved. An application for marriage dissolution can be made by either the husband or wife on the grounds that the marriage has broken down irreconcilably, provided a two-year separation requirement is satisfied. Orders for dissolution of marriage cannot be granted if both marriage partners live outside New Zealand. The Family Court grants dissolution orders.

Estimated resident population

An estimate of all people who usually live in a given area at a given date. The estimated resident population of New Zealand includes all residents present in New Zealand and counted by the census (census usually resident population count), residents who are temporarily overseas (who are not included in the census), and an adjustment for residents missed or counted more than once by the census (net census undercount). Visitors from overseas are excluded.

For a subnational area, the estimate excludes visitors from elsewhere in New Zealand (people who do not usually live in that area), but includes residents of that area who are temporarily elsewhere on census night (people who usually live in that area but are absent).

The estimated resident population at a given date after census includes births, deaths, and net migration (arrivals less departures) of residents during the period between census night and the given date.

National population estimates are produced quarterly (reference dates at 31 March, 30 June, 30 September, and 31 December) from 1991 and subnational population estimates are produced annually (reference date at 30 June) from 1996.

Ethnic group (Ethnicity)

An ethnic group is a group whose members have some or all of the following characteristics:

- a common proper name
- one of more elements of common culture, such as religion, customs or language
- a unique community of interests, feelings and actions
- a shared sense of common origins or ancestry
- a common geographic origin.

This definition is based on *The Ethnic Origins of Nations*, (Smith, 1986).

Ethnicity is self-perceived and people can belong to more than one ethnic group. People may choose to identify with an ethnicity even though they may not be descended from ancestors with that ethnicity. Conversely, people may choose not to identify with an ethnicity even though they are descended from ancestors with that ethnicity.

In the Census of Population and Dwellings, ethnicity is identified by the person completing the census form. In the case of births and deaths, ethnicity is identified by the person completing the registration form. For births, this is usually the parents, while for deaths this is most likely to be the funeral director (on the advice of a family member).

Labour force

The population aged 15 years and over who regularly work for one or more hours per week for financial gain, or work without pay in a family business, or are unemployed and actively seeking part-time or full-time work.

Life expectancy

The average length of life remaining at a given age. As derived from a period life table, it assumes that a person experiences the age-specific mortality rates of a given period from the given age onwards. It represents the average longevity of the whole population and does not necessarily reflect the longevity of an individual.

Life tables

A life table provides a detailed description of the mortality and survival conditions prevailing at each age of life. It comprises an array of measures, including probabilities of death, survival, and life expectancies at various ages. There are both period and cohort life tables.

Live birth

The birth of a child who breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached. All live born infants should be registered and counted as such, irrespective of length of gestation or whether alive or dead at the time of registration. If the child dies at any time following birth, their death should also be registered and counted as a death.

Marital status

A person's status with respect to the marriage laws or customs of the country. Legal marital status is a person's status with respect to registered marriage or civil union. Social marital status is a person's status with respect to consensual union (partnered or unpartnered).

Marriage (registered)

The act, ceremony, or process by which the legal relationship of husband and wife is constituted. In New Zealand, marriage may be solemnised either by a celebrant or before a registrar of marriages. A licence must be obtained from a registrar before a marriage by a celebrant can be solemnised, and notice must be given by one of the parties to a registrar.

Median age

Half the population is younger, and half older, than this age.

MELAA

Middle Eastern, Latin American, and African (MELAA) ethnic grouping. People who identify with Middle Eastern, Latin American, or African ethnicities with or without other ethnicities. Before 2006, these ethnicities were coded to the 'other' ethnic group.

Meshblock

A meshblock is a defined geographic area, varying in size from part of a city block to large areas of rural land. Each meshblock abuts against another to form a network covering all of New Zealand including coasts and inlets, and extending out to the two hundred mile economic zone. Meshblocks are added together to 'build up' larger

geographic areas such as area units and urban areas. They are also the principal unit used to draw-up and define electoral district and local authority boundaries.

Migration

The movement of people from one area to another. When the movement is between countries, it is called international migration; when it is within a country, it is called internal migration.

International travel and migration statistics are compiled from arrival and departure cards filled in by passengers. Passenger type (overseas visitor, New Zealand-resident traveller, or permanent and long-term migrant) is based on time spent in and out of New Zealand, past arrivals and departures of a person, and responses to questions on the arrival or departure card.

Natural increase

The excess of live births over deaths. When deaths exceed births, this is described as a natural decrease or a negative natural increase.

Net census undercount

The difference between undercount and overcount. It is usually expressed as a percentage of what should have been the complete count rather than as a percentage of what was counted.

Net migration

The difference between arrivals and departures.

Pacific peoples ethnic group

People who identify with a Pacific ethnicity (eg Samoan, Tongan, Fijian) with or without other ethnicities.

Permanent and long-term arrival

An overseas migrant who arrives in New Zealand intending to stay for a period of 12 months or more (or permanently), or a New Zealand resident returning after an absence of 12 months or more.

Permanent and long-term departure

A New Zealand resident departing for an intended period of 12 months or more (or permanently), or an overseas visitor departing New Zealand after a stay of 12 months or more.

Policy

In this guide, policy refers to those plans, positions, and guidelines of government that influence decisions by government.

Policy development

The process of researching, analysing, and consulting on a policy topic to produce policy recommendations and evaluations of policy options.

Population estimates

Population estimates are produced using data from the most recent Census of Population and Dwellings, updated for estimates of the components of demographic change (births, deaths, and net migration) since that last census.

Population projection

An estimate of the future demographic characteristics of a population, families, households, or labour force based on an assessment of past trends and assumptions

about the future course of demographic behaviour (eg fertility, mortality, net migration, living arrangement type, labour force participation).

Projection assumption

A statement about a future course of behaviour (eg fertility, mortality, net migration, living arrangement type, labour force participation) from which demographic projections (eg of population, families, households, labour force) are derived.

Region (regional councils)

The Local Government Commission established regional councils in 1989. Regional councils cover every territorial authority in New Zealand with the exception of the Chatham Islands Territory. The geographical boundaries of regions conform as far as possible to one or more water catchments. In determining regions, consideration was also given to regional communities of interest, natural resource management, land use planning, and environmental matters. There are 16 regions in New Zealand.

Sampling error

The extent to which an estimate from a survey might have varied by chance, because only a sample of the population (rather than the entire population) was included.

Standardisation

The removal or control of a factor (eg age, sex, marital status) to allow comparison of different population groups. For example, the age-sex structure of a chosen population may be used as the standard population to remove composition effects and derive summary measures for different groups.

Stillbirth

The Births, Deaths, Marriages, and Relationships Registration Act 1995, which took effect from 1 September 1995, redefined a stillbirth as a child who is born dead and weighs 400g or more, or is born dead after the 20th week of gestation. Before the new Act, a stillbirth was defined as a child born dead after 28 weeks of gestation. This change in definition means that stillbirths from September 1995 onwards are not directly comparable with earlier years.

Territorial authority

The smallest local government entities, created by the local government reorganisation that took effect on 1 November 1989. Based on 2006 boundaries, there are 16 cities, 56 districts, and one territory. Banks Peninsula district became part of Christchurch city on 6 March 2006.

Territorial authority boundaries are defined by aggregations of area units. When defining the boundaries of territorial authorities, the Local Government Commission placed considerable weight on the 'community of interest'.

Urban area

Non-administrative areas with urban characteristics and a high to moderate concentration of population. The classification of urban areas was revised for the 1991 Census of Population and Dwellings into three parts – main, secondary, and minor urban areas:

- Main urban areas – centres with populations of 30,000 or more. There are currently 16 main urban areas (12 in the North Island and four in the South). Auckland, Wellington, Hamilton, Napier-Hastings are further subdivided into zones.
- Secondary urban areas – centres with populations between 10,000 and 29,999. There are currently 14 secondary urban areas.
- Minor urban areas – centres with populations of 1,000 or more not already classified as urban (that is, not falling within a main or secondary urban area).

There are currently 99 minor urban areas and, together with the above two categories, they constitute the urban population of New Zealand.

- Urban areas are currently defined on the 1996 Census usually resident population count. As a result, Gore is still classified as a secondary urban area, even though the 2006 Census usually resident population count, and the estimated resident populations at 30 June 2005–10, fall below 10,000.

Workforce

The population aged 15 years and over who regularly work for one or more hours per week for financial gain, or work without pay in a family business.

References, further reading, and useful links

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Further reading

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Useful links

Below are some links that may be a useful starting point for population statistics research.

Government departments

Information about New Zealand government departments and policy is available from www.newzealand.govt.nz.

Policy Development Toolkit

Information on the Policy Development Toolkit is available from https://psi.govt.nz/pdtoolkit/default.aspx.

Statistics NZ web pages

Below are summaries of the Statistics NZ resources linked to in this guide. You can access all these web pages at www.stats.govt.nz.

Abortions: provides information about the number of abortions by: number of previous abortions, age of woman, number of previous children, duration of pregnancy, and ethnicity and international comparisons. The abortions information is sourced from the Abortion Supervisory Committee.

Area unit population projections: provide an indication of likely changes in the future size and age-sex structure of the population usually living in each area unit. You can use this information to see how particular areas will change in the future. These are available from our online Table Builder tool.

Births and deaths: includes statistics on the number of births and deaths registered in New Zealand, and selected fertility and mortality indices. The births and deaths information is sourced from the Department of Internal Affairs.

Browse for statistics: provides information about the statistics produced by Statistics NZ.

Demographic Trends: is an annual reference volume on population and related statistics. It provides historical data on births, deaths, marriages, migration, and other demographic information. It is released at the end of January each year.

Census forms and definitions: provides individual and dwelling forms definitions from previous censuses.

Cohort life tables – New Zealand: Cohort (or generation) life tables relate to the mortality experience of a designated group (eg persons born in a given year) over their lifetime. Cohort life tables are rarely constructed because of the difficulties in obtaining appropriate historical data over many years.

Data Lab: researchers can access detailed datasets in Statistics NZ's Data Lab. Eligibility criteria apply and researchers must apply to use the Data Lab.

Ethnicity papers: written to support users in collection and output of ethnicity data.

Historical population estimates: provide national population estimates by sex since 1926. The tables include as at and mean year estimates, as well as population change and sex ratio data.

Infoshare: free, online tool that contains historical statistics on many topics, including population. Infoshare contains time-series statistics on many topics, including population and migration. You can use the tool to access a variety of data, including birth rates, death rates, life expectancy, and population estimates and projections. More information about Infoshare is included in the 'Accessing data and requesting data' chapter of this guide.

Injury Information Portal: provides links to information about injury in New Zealand.

Life expectancy: provides information on life expectancy.

Marriages, civil unions and divorces (dissolutions): contains information on the number of marriages, civil unions, and divorces, and the marriage and divorce rates. The data for this publication is sourced from the Department of Internal Affairs and the Family Courts.

Migration: provides information about movements of people into and out of New Zealand (international migration), and within the country (internal migration).

National population estimates: includes information about the estimated resident population number, population change figures, and the estimated age composition.

National dwelling and household population estimates: include information such as the estimated number of households and private dwellings. The statistics are broken down by tenure type (owner-occupied, rented, provided free).The tables are produced and updated quarterly.

National Māori population estimates: provide information about the estimated resident Māori population. The statistics are broken down by age and gender. These tables are updated each year. Tables for the mean year ended on 31 December are updated in May. Estimates as at the 30 June are updated in November.

National population projections: provide a summary of New Zealand's projected population by age and sex, based on different fertility, mortality, and migration assumptions. Produced every two to three years.

National ethnic population projections: provide a summary of projected Māori, Pacific, Asian, and European and other (including New Zealander) ethnic populations by age and sex. These are based on different fertility, mortality and migration assumptions. These publications also provide information on projected Māori, Pacific, Asian, and European and other ethnic population change. Produced every two to three years.

National family and household population projections: provide a summary of the projected number of families and households by family type and household type. These are based on different fertility, mortality and migration assumptions. These publications also provide information on projected change in the number of families and households. Produced every two to three years.

National labour force population projections: provide a summary of the projected size of the labour force by age and sex, based on different fertility, mortality, migration, and labour force participation assumptions. These publications also provide information about projected change in the labour force. Produced every two to three years.

New Zealand Official Yearbook: has provided a comprehensive statistical picture of life in New Zealand since 1893.

Period life tables: show the mortality experience of people in a specified time period (eg 1995–97 or 2005–07). These life tables start with a hypothetical cohort of newborn babies and assume that they experience the observed age-specific mortality rates of a given period. Complete life tables are constructed from single year of age data, while abridged life tables are constructed from grouped age data.

Abridged period life tables – New Zealand: tables for the total New Zealand male and female populations provide an indication of the trends in life expectancy in the years between the construction of complete period life tables. Abridged life tables are available in February (provisional) and May (final) of each year.

Abridged period life tables – Subnational: are produced every five years for the male and female populations. They are available for all 16 regions in New Zealand and most territorial authority areas (where death and population numbers are sufficient to construct reliable life tables).

Complete period life tables – New Zealand: national complete period life tables are produced every five years for Māori, non-Māori, and total New Zealand male and female populations.

Population clock: is an online tool that provides an indication of the estimated resident population at the time you view the population clock. The population clock is based on the estimated resident population for the latest quarter (March, June, September, or December) and on expected births, deaths, and migration since that date.

New Zealand's exact population is not known at any given moment. The population clock merely provides an estimate of the population and an indication of population growth in New Zealand at that time.

Population estimates: provide information about population estimates and projections.

Population indicators: include statistics such as births, deaths, marriages, natural population increase. Downloadable Excel tables of population indicators are available from the Statistics NZ website.

Statistical Standard for Ethnicity 2005: describes the standard that Statistics NZ uses to classify ethnicity.

Subnational population estimates: include information about the estimated resident population and annual population change by region, territorial authority and urban area. The subnational population estimates are usually released in late October.

Subnational population projections: contain the projected population of regions and territorial authority areas within New Zealand, by age and sex. Information is based on different combinations of fertility, mortality, and migration assumptions. Produced every two to three years.

Subnational ethnic population projections: contain population projections by regional council and territorial authority for selected ethnic groups. These groups are Māori, Pacific, Asian, and European and other (including New Zealander). Produced every two to three years.

Subnational family and household population projections: contain the projected number of families and households in regions and territorial authority areas within New Zealand, by family type and household type. Information is based on different combinations of fertility, mortality, migration, and living arrangement assumptions.

Table Builder: is a free, online tool that enables you to extract the information you want from large tables of data. See the 'Accessing data and requesting data' chapter of this guide for more information about Table Builder.

Appendix: Eight-step checklist for considering population in policy

This is a printable version of the checklist outlined on page 35. Use it to help you to consider population issues throughout the policy development process.

1. Consider population issues ☐

What population issues may be relevant to this (actual or proposed) policy or service?

2. Identify affected population groups ☐

Who are the people or groups likely to be affected, either directly or indirectly, by this policy or service?

3. Identify sub-groups for analysis ☐

Do the identified affected population groups form coherent logical units for analysis, or are the groups internally diverse in significant ways?

4. Source available information ☐

What relevant population information is available and how can I access it?

5. Question data quality and relevance ☐

Do the available population statistics present any quality or relevance issues?

6. Consider potential delivery issues ☐

Do the population issues and related statistics highlight any aspects of the policy or the service delivery that might otherwise be overlooked?

7. Information for decision making ☐

What information actually matters for making a decision?

8. Present the analysis ☐

What are the best ways to present the demographic data and analysis to decision-makers?