The scope of population studies and demography

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The first Chapter of the second edition of this book (Lucas1994) is entitled 'The Scope of Demography' even though the book was mostly about population studies (See also Lucas 1980). This Chapter intends to clarify the differences by describing demography before examining the broader field of population studies, even though these differences are ignored by many writers.

Both demography and population studies focus on human populations, especially on births (fertility), deaths (mortality), and movements between territories (migration). Figure 1.1, which provides an arbitrary basis for discussion, shows the considerable overlap between demography and population studies; indeed, some writers use the terms interchangeably. Sociologist Susan Ziehl (2002:1) wrote that 'population studies, or demography, is the study of the size, shape, and distribution of populations and how these change.' Micklin and Poston (2005:1) commented that, 'The field of demography (also referred to as population studies) has evolved significantly since the mid-twentieth Century.' (See also Bogue 1969:4-5). However, Mencken, Blanc and Lloyd (2002:9) do not agree, considering that demography is contained within the larger discipline of population studies.

According to the authoritative International Union for the Scientific Study of Population or IUSSP (2017a), 'In its simplest definition, demography is the study of human populations'. This is almost identical to the Encyclopedia.com. (2020) definition of population studies in Box 1.1. The full title of the journal *Population Studies* when founded in 1947 was *Population Studies, a Quarterly Journal of Demography.*

The Greek word 'demos' means 'people', so demography means 'description of the people'. Its origin is obscure but the *Oxford English Dictionary* records its use in the 1830s. The French term 'demographie' was first used to define the scientific field by the Belgian statistician Achille Guillard *in 1855 in his Éléments de Statistique Humaine ou Démographie Comparée (Elements of Human Statistics and Comparative Demography).*

Thus, demography refers to humans and not to animals, birds or trees. *The Population Demography of Northern Spotted Owls* (Forsman et al. 2011) is not demography.

Demography has traditionally focused on the measurement of the three variables, fertility: mortality and migration, which determine the number of persons in a population and changes over time. A demographer might ask how many males and females there are in a population, how many births and deaths have occurred, and how quickly the population is growing.

John Graunt, who lived from 1620 to 1674, answered similar questions concerning 17th century London. For example, he estimated that London's population comprised 199,000 males and 185,000 females, and that slightly more males than females had been born between 1628 and 1662 (Graunt 1975:57). His data were presented in statistical tables with reliability estimates and adjustments (Kreager 1988). Because he calculated demographic rates, life expectancy and other statistics, Graunt is often called 'the father of demography'.

Graunt was a cloth seller, and his knowledge of 'shop arithmetic' was the basis for his 1662 *Natural and Political Observations*, a study of births and deaths. This is generally acknowledged to be the first published demographic study. Indeed, it could be argued that 27 February,1662, when Graunt's *Observations* were published, is the exact date of birth of demography (Urlanis cited in Pavlick, 2000; Harper 2018:14).

Appendix 1.1 provides various definitions of demography in chronological order. As observed by Rowland (2003:16), 'the core subject matter of demography is well established, but time brings new research frontiers and shifts in emphasis as evident in present attention to environmental issues, the status of women, the AIDS epidemic and applied demography.' Of these AIDS has been superseded by the COVID-19 pandemic. Approaches to the collection of population data, the subject of the Population Data Chapter have evolved over time, with qualitative analysis now supplementing statistical studies (See Edgar, Day, and McEachern 2019).

RATES AND RATIOS

Demographic rates are central to demography and usually derived from large populations and are expressed as a ratio showing what happens in a unit of time (often one year). Rates enable comparisons to be made between populations of different sizes, for example between the indigenous and non-indigenous populations of a country, and of the same population at different points in time.

Crude rates are the simplest and least informative and show the relationship between vital events, such as births and deaths, and the total population.

The *crude birth rate* (CBR) for a given year is the annual number of births (B) for that year divided by the total mid-year population (P). For convenience, births are expressed per thousand persons:

$$CBR = \frac{B}{P} \times 1{,}000$$

The *crude death rate* (CDR) is the annual number of deaths (D) per thousand persons:

$$CDR = \frac{D}{P} \times 1{,}000$$

The *crude rate of natural increase* is the difference between the crude birth rate and the crude death rate. Since births normally exceed deaths, natural increase is usually positive. While birth and death rates usually are shown per thousand of the population, the rate of natural increase is usually expressed as a percentage. A rate of natural increase of 12 per thousand is expressed as 1.2%.

The third component of population growth, migration, must be taken into account before the *growth rate* can be calculated. If international migration is zero, then the growth rate for a country or region will be the same as the crude rate of natural increase.

Overall, high income countries have higher birth rates than the other countries (see Table 1.1). As will be shown in the Chapter covering population growth the Africa region is growing the fastest while China's low birth and growth rates are an exception. The causes and effects of these differences are among the major concerns of demographers and other population scientists.

POPULATIONS AND POPULATION COMPOSITION

A population can be any collection of items, but to a demographer it means a collection or aggregate of people, since demography is concerned with human populations. Gould (2009:3) says that population is an aggregate which displays a range of characteristics including population size, growth, and structure. Populations are often subdivided by age and sex into sub-populations. For example, a study of the Australian labour force may consider males and females aged from 15 to 64 years, broken down by five-year age groups, or by single years of age.

Preston et al. (2001:1) have distinguished between a population of persons alive at a particular point in time, and a population that 'persists through time even though its members are continuously changing'.

Censuses provide examples of populations at particular point in time. the 2021 Australian Census collected information on all people in Australia on the night of 10 August 2021. Demographers may also be interested in persons who have lived in Australia in earlier periods or will do so in the future.

TABLE 1.1 Crude rates, 2010-15

	Crude birth rate (per 1000)	Crude death rate (per 1000)	Crude rate of natural increase (per cent)
World	18.5	7.5	11.0
Countries by income:			
High	10.8	8.8	2.0
Middle	18.1	7.3	10.8
Low	34.5	7.7	26.8

Source: United Nations 2019: Excel files FERT/3 and MORT/2

Censuses provide an example of populations at a particular point in time, for example, the 2021 Australian Census collected information on all people in Australia on the night of 10 August 2021. Demographers may also be interested in persons who have lived in Australia in earlier periods or will do so in the future.

Age is often considered the most important demographic variable, giving rise to the ‘life course’ (see below) and ‘transitions’ (Preston 1993:594). Age may be combined with sex to give an age-sex distribution (Lauro 1982:98). To avoid confusion, the term ‘population structure’ is used in this chapter to refer to the age-sex structure. This is often represented by an age-sex pyramid with an example of the world’s population shown in Figure1.2.

Lauro (1982:102) said that ‘the various elements of population composition – age-sex distributions; economic status; educational attainment; family and household type; race, ethnicity, and religion – are, most simply put, categories of

characteristics that demographers use to describe populations.' To a population geographer the distribution of a population may be its spatial distribution.

A population's size and structure depend on numbers of persons entering and leaving (Pressat 1985:176). For example, the size of any migrant group in Australia depends on the number of permanent arrivals from overseas, minus permanent departures and deaths. The size of the Australian Defence Force largely depends on the entry of recruits and on members exiting on resignation or retirement (Schindlmayr and Ong 2001).

FORMAL OR TECHNICAL DEMOGRAPHY

According to Gober and Tyner (2005): 'Formal demography is concerned with the collection, adjustment, presentation and projection of population data and has a strong empirical, statistical and mathematical bent.' It is synonymous with technical demography which is defined by Akinyemi and Adedini (2015) as 'the field of demography which deals with methods, techniques and measures used in demographic estimation and analysis.'

Petersen and Petersen (2005:186) observed that 'formal demography is based on the fact that within limits population growth is a self-contained process, with a more or less fixed interrelation among fertility, mortality and age structure'. Caldwell (1996:307-8) argued that 'This division into formal demography, a statistical discipline that contributes to the social, biological, and health sciences, and population studies, normally accepted as a social science, provides the usual way out of the definitional dilemma.'

Harper said that in the 19th century demography had developed from Graunt's primitive life table to complex statistical laws and that between 1860 and 1910 'demography emerged from statistics' (Harper 2018:26). Formal demographers are often mathematicians or statisticians who deal with demographic variables in a mathematical way. For example, if the number of women of childbearing age is changing, what are the possible effects on the birth rate in the future? A few formal demographers are interested in equations and algebra rather than in people. 'But this hard core of demography does not touch the surface of the real world directly, except through measurement and reconstruction.'(Schofield and Coleman 1986:5). However, all demographers require some quantitative skills. Bogue (1969:vii) argued that the learning of 'fundamental facts and principles' should precede a 'population problems' approach.

Much population data are collected by government agencies, adjusted and presented by their demographers and statisticians. Adjustments can include the use of indirect methods to make estimates from incomplete data.

Demographic analysis often focuses on changes in the size, growth rates and composition of populations. It may also examine the demographic circumstances faced by an average individual through indexes such as life expectancy and total fertility, as well as the consequences of changes in individual or micro-level behaviour on the aggregate or macro-level (Preston et al. 2001:1).

The term technical demography, as a synonym for formal demography may be going out of fashion, along with a decline in technical demography itself. In 2011 veteran Indian demographer Prem Saxema considered that technical demography is the backbone of population studies, which was dying as population studies became more multidisciplinary and technical courses were pushed out to accommodate other courses. In a study of articles published in 'six leading demographic journals' between 1994 and 2015 Akinyemi and Adedini (2015: Figure 1) showed that the percentage of technical studies had fallen from 13% to 6%.

POPULATION STUDIES

Population Studies is a highly interdisciplinary field which draws on the social and biological sciences. Contributors and readers of the core journal *Population Studies* journal include demographers, sociologists, economists, social statisticians, geographers, historians, epidemiologists, health scientists and policy analysts. Box 1.2 provides definitions of population studies. Preston (1993:594) identified the sub-field of social demography consisting of 'primarily descriptive studies of a diverse set of variables such as poverty, living arrangements, marital status, and occupation'.

Harper (2018:23) considered that Thomas Malthus (1766-1834) 'understood the dynamics of the population drivers of fertility and mortality and laid the basis for modern population studies'. Malthus was a professor of History and Political Economy, 'whose theory that population would outrun the growth of production was incorporated into theoretical systems of economics' (Harper 2018:22). It has been argued that Malthus, was the prototypical economic demographer who set the pattern in his *First Essay*, with a simple economic demographic model (Caldwell 1996:332).

In a list of demographers 'most important for demography as a science', Malthus was placed fourth by IUSSP members. Commenting on this high ranking in a table of Most Respected Demographers, where almost all others were significant in the 20th century, van Dalen and Henkens (2012: 392) wrote 'one can only admire the power of his ideas, which after 200 years still inspire scholars.' Ní Bhrolcháin and Dyson (2007:1) considered that 'Along with the demographic accounting tradition – with a pedigree extending back to Graunt – the other major intellectual strand in population science stems from Malthus and is largely causal in content and spirit'.

Many demographers adopt a population studies approach, looking at the relationships between demographic and non-demographic variables and the effects of non-demographic variables on demographic variables. They may consider, for example, how changes in income or education can affect fertility or mortality.

Some researchers are interested in the reverse process, where a demographic variable causes a change in a non-demographic variable. This is really a concern for people in other disciplines. For instance, rural voters may be more conservative than their urban counterparts. This is a topic to be studied by the political scientist, rather than the demographer.

Caldwell (1996) has argued that demography is a social science. This was markedly true for colleges in the USA where Demography is largely housed within Sociology programs (Caldwell 1996:307-9; Preston 1993:594). In contrast, 'In many countries demography is a freestanding field or is considered to be part of of a branch of applied statistics.' (Hirschman and Tolnay 2005:1).

Below are some other examples of how population studies is related to other disciplines and sub-disciplines.

Economic Demography. Political Economy was developed in the 18th century but in the 19th century the term was superseded by Economics. Thus economics had a historical start over newer social sciences such as sociology and psychology. In his book *Fifty Major Economists* Pressman (1999) shows that many economists have contributed to population studies. A significant example would be Nobel prizewinner Gary Becker (born 1930) who applied economic theory to fertility, to the functions of the family, and to human capital (University of Chicago 1992).

Family Demography. As an example of how demography and population studies are related to other disciplines, consider the study of the family. Demographers, working in the sub-field of family demography, are interested in the family because demographic events affect its size and composition. The historian, and especially the historical demographer, may be concerned with the family in the past, with the age of marriage and the composition and size of households in earlier times. Since the family is a basic unit of social activity, the sociologist and anthropologist are also interested: in the status, roles and decision making of family members (see Caldwell and Hill 1988; Hawthorn 1970; Nag 1973). In some societies, having many children gives prestige to the mother and to the family. Why people want children is a question that may concern the psychologist (see East West Population Institute 1976). Economists look at the family as an economic unit, and their studies cover items such as the financial costs of children,

Demography and Epidemiology. Both words are derived from the Greek demos (the people). An epidemic occurs when a disease attacks many people at the same time and is covered in the Epidemics Chapter. Epidemiology, however, is more than the study of epidemics, it now covers morbidity (the investigation of illness and disease) and one of its consequences, mortality which are discussed in the relevant Chapters.

Population Geography includes the incorporation of community studies, the use of 'territorially disaggregated data' and a greater appreciation of structural change (Jones 1990:7). A primary objective of population geography is to provide the spatial perspective to the wider field of population studies.

Population geographers may be concerned about the volume of work in their field being conducted by non-geographers (Gober and Tyner 2005:193). Yet Keyfitz, cited in Lesthaeghe (1998:1), was concerned that demography is being invaded by others, saying that demography 'has withdrawn from its frontiers and left a no-man's land which other disciplines have infiltrated.'

As shown in the Migration Chapters, mobility is a broader concept than migration since it includes short-term rural-to-rural labour migration and community (McNicoll 1982:522). Coulter, van Ham and Findlay (2019:352) argue that a growing interest in international migration in population geography should be accompanied by devoting 'similar energy to re-thinking short-term residential mobility and immobility.'

Spatial Demography. When defining the sub-field of spatial demography, Raymer, Willekens, and Rogers (2018:2) argue that population dynamics is at the core of demographic analysis.

> 'Central to the field of demography is population composition and the factors that cause the composition to change. Fertility, mortality, and migration are the mechanisms underlying demographic change. They have distinct age- and sex-specific patterns. Consequently, age and sex are key stratification variables that distinguish demography from other disciplines. Because age is determined by the date of birth and people born around the same time period share important collective experiences that influence their demographic behaviour, the birth cohort is also an important stratification variable in demography. Other stratification variables, such as education, marital status, and ethnicity, may be added to account for the effect of population heterogeneity on population dynamics. Therefore, spatial demography is the study of how populations and their compositional structures change and interact across space.'

Historical Demography. Self-described 'social historian and historical demographer' Fauve-Chamoux (2016:15, 28) considered Historical Demography to have been acknowledged in 1960 'as an independent discipline,

at the global level' within history. Fauve-Chamoux, Bolovan and Sogner (2016:5) conceded that the new concept of historical demography was narrower than that of population studies, but with a rigorous focus on demographic methodology, notably family reconstitution (See the Historical Demography Chapter) pioneered by statistician Louis Henri. They conclude that cooperation between demographers and historians has brought forth a vast scholarly output.

Political Demography. Trends in all three of the of the demographic drivers, fertility, mortality and migration, carry with them 'large political implications, both international and domestic. All three in turn are affected in substantial ways by political actions taken by governments.' (Teitelbaum 2015: S87).

Psychology. As individuals gain more control over different demographic variables, the study of individual decisions with demographic consequences has become important, and led to joint efforts by demographers and social psychologists (Back 1967; East-West Population Institute; Hobcraft 2006).

Genetics. 'Population genetics is the study of genetic patterns and change from the standpoint of populations rather than individuals.' (Ross 1982:293). According to Pressat and Wilson (1985:176) *population genetics* is concerned with 'the transmission of characteristics from one generation to another'. A related field is Eugenics which is 'The study of factors capable of improving the physiological and intellectual status of populations… '. Although eugenics had been 'a prominent intellectual force' of the late 19th and early 20th centuries it became 'associated in many minds with racism and sexism' (Pressat and Wilson 1985:72).

BOX 1.2 Defining population studies

- 'Population studies is broadly defined as the scientific study of human populations' (Encyclopedia.com, 2020)
- Population studies 'seeks to understand and explain the patterns, differentials and trends revealed by demographic analysis and to assess their implications' (Carmichael 2016:1).
- 'The term 'population studies' characterizes a broader interdisciplinary terrain that usually combines demography with another social or health science (Mencken, Blanc and Lloyd 2002:12).
- 'Population studies 'comprise analyses of how population interacts with social, economic, political, geographic and biological factors, all part of what is called 'Population studies, 'which also covers the social, economic, and cultural causes and consequences of demographic phenomena, is much more diffuse and difficult to compress…(than "pure demography")'(Freedman 1990:12).

- According to the journal *Comparative Population Studies* its articles 'should compare populations or components of change across one or more of the following dimensions: Geographies, Groups and Times. By population is meant usually resident or temporary human population, for which information is collected by official agencies or researchers. Studies are characterised by innovation and rigour in knowledge of the field, research questions, arguments, data collection, analysis, findings, presentation, discussion, and policy implications.'

ICPD Cairo 1994

According to Saxema (2011:1) the International Conference on Population and Development (ICPD), held in Cairo in September,1994, was a landmark in the history of population studies, concluding with a host of recommendations and research priorities. This resulted in a move 'to change the nomenclature from demography to population studies, apparently to enlarge the scope of research and to make the subject multidisciplinary.'

In 1995 the United Nations produced a detailed comparison of agreements reached by the international community at Cairo with those from the 1974 World Population Conference at Bucharest and the 1984 International Conference on Population at Mexico City. 1995 was considered more innovative and open: for example, paragraph 6, unlike 1974 or 1984 uses the word the word 'sexual'

The ICDP reflected many of the concepts of the past decade including sustainable development and investment in human resources. It advocated 'safe motherhood' and 'the empowerment of women', including the access of women to education beyond primary school (United Nations 1995: 1-7)

D E M O G R A P H E R S

'Demographer' is a neater term than 'population scientist', 'population expert' or 'population specialist'. Mencken, Blanc and Lloyd (2002:9) considered a demographer to be 'someone with formal training in the discipline of demography' but conceded that others use the word less precisely. Van Dalen and Henkens (2012:365) 'use the term "demographer" to denote all those who study population developments in the broad sense of the term.' This includes people working in social demography, family demography and behavioural demography. They have a commitment to 'data and empirical research' (Van Dalen and Henkens (2012:364).

In the 1950s the rapid growth of the world population was of concern, so the training of demographers expanded. An early initiative was the International Institute for Population Sciences (IIPS) in Mumbai started in 1956 under the joint sponsorship of Sir Dorabji Tata Trust, the Government of India and the United Nations, and which still serves as a Regional Institute for Training and Research in Population Studies for the Economic and Social Commission for Asia and the Pacific (ESCAP) region.

In Africa, 'the Regional Institute for Population Studies (RIPS).was established in 1972 by the United Nations in partnership with the Government of Ghana, as a regional center of excellence for teaching and research on population and related disciplines, including health and environment and their implications for development.' (Yaro 2019).

Because of the interdisciplinary nature of demography, demographers may have other skills and titles. One way of showing this is to add an adjective, as with social or economic demographer.

A demographer is a professional who would fit into the Demography category in Figure 1.1. Some demographers are multi-skilled in both Formal Demography and in Population Studies. According to McDonald (1982:170), 'It is generally no longer possible for demographers to be purely technicians; rather their reports are expected to reflect the social and economic context of their work.'

Important demographic work can be done by scholars who are identified with another discipline. French sociologist Emile Durkheim (1858-1917) used official statistics to study the association between social cohesion and suicide in Europe (Mitchell 1970:74-77). Angus Deaton, a Nobel Prize winner in Economics has a long-standing interest in the relationship between mortality and inequality. In 2015 Case and Deaton documented an increase in the all-cause mortality of middle-aged white non-Hispanic men and women in the United States between 1999 and 2013.

Joseph Stycos who died in 2018 was a described by Cornell University as a 'Population Studies pioneer' but his official title was 'Professor emeritus of development sociology' (Kelley 2016).

The Australian National University was founded in 1946, and appointed its first demographer, Wilfred 'Mick' Borrie in 1948. He was Head of the Demography Department from its foundation in 1952 until 1968 and appointed to the world's first chair with the title of Professor of in Demography in 1957 (ANU Department of Demography 1978:2) although the London School of Economics had made Robert Kuczynski a Reader in Demography around 1937 (Dahrendorf 1995:263).

In the Philippines Mercedes Concepcion, originally trained as a biostatistician, was seen as the 'Mother of Asian Demography' (Bote 2019). And as a trail blazer in the field of Asian population studies (Santos 2014). Two significant Indonesians

trained in the USA in economics and demography were Nathaniel Iskandar and Widjojo Nitisastro. In Africa early pioneers included John Caldwell from the ANU funded by the Population Council of New York at the University of Ghana and geographer Akin Mabogunje, author of *Urbanization in Nigeria* (1968) at the University of Ibadan.

Table 1.1 distinguishes between countries by income, with the low income countries having the highest birth rate. Some demographers work entirely within one country, while others, such as top demographers Caldwell, Bongaarts, and Coale, have wider interests (Van Dalen and Henkens 2012:391). For example, Caldwell's work included surveys in West Africa, India and Australia.

POPULATION ORGANISATIONS

International organisations largely consist of United Nations (UN) bodies and non-government organisations (NGOs). The most relevant of the former in the population field are:

- UNFPA, formally named the United Nations Population Fund, is the UN's sexual and reproductive health agency. Operational since 1969, its 'mission is to deliver a world where every pregnancy is wanted, every childbirth is safe and every young person's potential is fulfilled.' (UNFPA 2018).

- United Nations Population Division is a part of the UN's Department of Economic and Social Affairs. 'The Division was established in 1946 to serve as the secretariat of the Population Commission. Over the years, it has contributed to, and supported, the global dialogue on population and development at the United Nations, producing regularly updated demographic estimates and projections for all countries as well as providing data which are essential for monitoring the status of implementation of internationally agreed development goals in the area of population, including those contained in the Sustainable Development Goals (SDGs).' (UN no date).

- United Nations Development Programme (UNDP 2020) is 'the UN's leading agency on development, using the Sustainable Development Goals (SDGs) as its compass.

- World Health Organisation. 'WHO is the directing and coordinating authority for health within the United Nations system. It is responsible for providing leadership on global health matters, shaping the health research agenda, setting norms and standards, articulating evidence-based policy options, providing technical support to countries and monitoring and assessing health trends.' (WHO 2013)

POPULATION ASSOCIATIONS

There are many population associations throughout the world. Here are some examples, one international and three national.

The International Union for the Scientific Study of Population (IUSSP)

'The Union was officially founded in 1928, at a meeting in Paris, which followed the International Population Conference held in Geneva during the preceding year (August 29 - September 3, 1927). This was the first World Population Conference, it was organised by Margaret Sanger, stressing the crucial nature of the population problems and their influence on social, economic and political situations.' (IUSSP 2017b).

The IUSSP is important is defining the current state of knowledge through its conferences, seminars, workshops, publications One means of looking at the future of population studies is the IUSSP's Scientific Panels such as the IUSSP Scientific Panel on New and Emerging Family Forms around the Globe. Another is job advertisements for new research projects.

In 2009 van Dalen and Henkens (2012:363) conducted an internet survey of 970 IUSSP members They noted that 'Over the years the community has grown in numbers and research interests, and has become increasingly interdisciplinary. The question is whether this process of growth and diversity has led to a fragmented community of demographers.'

Some National Associations

'The Population Association of America (PAA) is a nonprofit, scientific, professional organization established to promote the improvement, advancement and progress of the human condition through research of problems related to human population.' (PAA 2021a). Key words here are 'scientific' and 'professional'. 'At the PAA's first official meeting in New York in 1931, Margaret Sanger was also in attendance, but she was not put forward as an officer of the organization because the PAA 'desired to have a scientific focus, rather than an activist orientation'. Sanger had founded the American Birth Control League in 1921.' (PAA 2021b). The current role of activists in population studies is discussed later in this

A list published by the Asian Population Association (2013) included regional associations for Africa, Europe, and Latin America, as well as national organisations. The Australian Population Association (APA 2019) is included perhaps because one of its aims is 'To promote population research and education particularly in Australia and the Asia-Pacific region'. The Population Association of New Zealand (PANZ) was excluded, but like the APA it provided a forum for the discussion of population issues (PANZ 2020).

POPULATION PUBLICATIONS

In his 1982 article Hankinson was concerned with 'the literature of demography and population studies' and identified six types of population journals:

(1) Core journals
(2) Regional and national journals
(3) Subdisciplinary core journals
(4) Journals in other fields
(5) Popular journals
(6) United Nations journals

Hankinson gave examples of each type as well as attempting to rank them. Core journals included by Hankinson were *Demography*, Population and the forerunner, *Population Studies* 'Nevertheless, when Population Studies first appeared in 1947, it virtually had the field to itself, and this continued to be the case for 16 critical years that moulded the nature of modern demography, until Demography joined it in 1963, and for another eleven years until Population and Development Review started publication in 1974 (Caldwell 1996:314). A 2020 ranking of 110 'Demography' journals, very broadly defined, is available from Scimago (2020). Since PAA membership has grown to 3,000 'reflecting professional interest in the population field' this journal has a substantial circulation (PAA 2019).

Since 1982, a significant change was that most journals became available online. Modifications included *Demography* removing from its cover this definition of demography, 'the statistical study of human populations', implying that it is more tolerant of non-statistical methods. The French content of *Population* was augmented by English issues.

The agencies of the United Nations, described above, play an important role in the dissemination of demographic information above, reflected in their Annual Reports and other publications. For example, the UN Population Division produced the *2019 Revision of World Population Prospects* (UN 2020).

Demography has its own jargon. Van Dalen and Henkens (2012:399) considered that demography has its own culture within the social sciences which 'erode when newcomers refuse to learn the language'. However, confusion about terminology can exist within languages, and between languages. In 1958 the United Nations produced a *Multilingual Demographic Dictionary*, initially in English and French, which was updated in 1982 by Demopædia.

DEMOGRAPHICS

Pol (1997:159-160) has noted that although the term *applied demography* was infrequently used until the late 1970s, demographers had been engaged in this type of work for decades. The term *business demography* is also used.

Petersen and Petersen (1986:219) considered that *demographics* are 'population data related, for example, to a market for a particular commodity.' Marketing was certainly a major focus of the magazine *American Demographics*, founded in 1980, but no longer having a separate existence, while the blog *Disruptive Demographics* focused on 'New thinking on the impacts of aging, social trends & technology on business innovation & public policy.'

Bryant divides demographics into three broad categories. 'Demographics is the term used to describe a wide variety of practical used of population data. Accurate population data is at the heart of local, state, provincial and government planning and budgeting processes.' Bryant (2015:24).

The book *Population Growth and Educational Planning* in Developing Nations is a pioneering example of applied demography (Jones 1975:5). School enrolments go beyond formal demography because apart from using the number of school age more sophisticated planning can consider variables such the location of schools, the types of residential housing and the income of parents. Schindlmayr and Ong (2001) examined Australian demographic and socio-economic trends and how they can affect human resource policies of the Australian Defence Forces.

Bryant (2015:25) then adds two non-government categories, the first being for election purposes and the second for market research, with demographics 'central in the marketing of products and services.'

Demographics are important in reflecting population change. For example, household composition in the USA meant that single-person households became a more significant demographic, at the expense of the family of four. Manufacturers responded by making smaller fridges and more single-serve food options (Bryon 2019).

Salt (2014) describes how demographics can help business, the first step being to map the catchment area of stores or business locations. Census data can then be used to tally up the population and households of the area, and to ascertain its community profile. Data on current population growth rates and projected growth can be used to estimate the potential of the area.

In the Australian media when it can often refer to an age group, an age-sex group, a birth cohort (such as the baby boomers), or a population defined by census characteristics such as income. For example:

> 'The Seven and Nine (TV) networks dominate lifestyle programming, given their broad focus on the 25- to 54-year-old viewing demographic' (Schultze 2004).
>
> 'The documentary also looks at the largest growing demographic in Australia: women over 45 who are at risk of homeless.' (Rockman 2021:29).
>
> 'And while *Cosmopolitan*'s target demographic is women in their 20s…' (Doherty 2004).

Some market researchers like the idea that 'demography is destiny' which is an expression probably first appeared in print in 1970 in a book about voting behaviour in the USA (Dorling and Gietel-Basten 2019:8). Martin (2016) wrongly ascribes the mantra to French sociologist Auguste Comte, but believed it 'is just as relevant to European real estate investors today as it was in the 19th century.'

Weeks (2013) noted that the term 'demography is destiny' is of unknown origin and is often repeated by him and many others, especially writers for *The Economist.* Poston and Bouvier (2010:13) issued the following qualification to this mantra: 'While there is some validity to it, there are far too many other variables that intervene in determining where an individual or a society stands at any given point in time.' Allen (2020:2) considers that the true wonder of demography is its ability to shape the future 'by identifying the challenges that lie ahead and harnessing its opportunities. In that sense demography goes beyond destiny.'

DEMOGRAPHERS AND JOBS

In writing about British demographers in the 1980s, Hobcraft and Joshi (1989:2) observed that they were a relatively small group, coming from a wide range of backgrounds in addition to training in demography, and mostly having a strong quantitative background. The situation in Australia is similar. In its 2019 Annual Report the British Society for Population Studies (2020:4) stated that 'BSPS members work in academia, local and central government, and industry, and includes postgraduate students of demography and population studies.'

Demographers are often multi-skilled, particularly if they gained their first degrees in subjects such as geography, statistics or health, and have then studied demography at the graduate level. Training in demography will generally provide them with skills in computing and statistical analysis as well as insights into population and health programs and policies.

Students of demography thus find employment in a wide range of professional settings. In the public sector, demographers are employed in:

- Government statistical offices, especially in the sections dealing with censuses, surveys, and registration data.
- National, state, and local planning bodies, especially in educational and health planning, housing, and social policy.
- Government research units in areas such as immigration and labour market analysis.
- Overseas development agencies. Many international agencies, such as the United Nations Population Division and United Nations Fund for Population, and non-government organisations also utilize the skills of demographers.

Demographers can also be found in university research units which undertake both academic and consultancy work. In the private sector consultancy firms collect demographic data and recognise demographic analysis a vital part of market research and investment planning. In Bangladesh, Mitra and Associates (no date) was founded by a demographer, S.N. Mitra in 1983, and is a pioneer private sector survey-research firm in Bangladesh, with a focus on quantitative and qualitative research, evaluation studies and surveys. In contrast, The Demographics Group in Melbourne, Australia, was founded by Bernard Salt and Simon Kuestenmacher, both trained in population geography. The Demographics Group states that 'We help business, government and the broader community by interpreting demographic and social change. We deliver data-driven journalism, corporate speaking and business advisory services.'

In discussing careers in demographics, Weeks (2021:87) writes that rather than being labelled 'demographer', most of these jobs have titles such as corporate planner, economist, information analyst, market analyst, market researcher, research analyst, survey analyst, researcher, research scientist, or social scientist..' Weeks also notes the usefulness of skills in geodemographics.

LIFE COURSE APPROACH

'The family life cycle is the term used to describe changes in the size, composition and its functions of the family over its lifetime. The family life cycle approach focuses on the timing and duration of various stages, defined by key demographic, social, or economic events' (Young 1994:128). A pioneer was Rowntree's 1902 study of poverty in 19th century London. He found that a male labourer passed though periods of relative prosperity before his children were born and again when the children started work, but during other periods of the family life cycle the family lived in poverty. (For more on the early historical material see (Young 1977 Chapter I; Grebenik et al. 1989)

Until the 1970s the study of the family and the family life cycle was largely the concern of sociologists. However, from the mid- I970s, these topics became recognised as an important field in population studies. Demographic interest in

the family life cycle gathered momentum during the 1980s, when some major collections of research were published, such as Grebenik et al.1989). The family life cycle developed into the life course approach, although the difference between the two concepts and other 'life' words is not always clear.

Falkingham, Evandrou and Vlachantoni (2020:1) state that, 'Over the past two decades, the life course perspective has become an indispensable tool in the study of demographic change, driven by – and reflected in – advances in both theory and data.'

Understanding how individuals make decisions and experience events within a range of contexts over the course of their lives is critical to understanding demographic processes such as birth, family formation, migration, and death. The life course approach is a dominant paradigm in understanding these demographic processes. As outlined by Elder, Johnson, and Crosnoe (2003:10-13), the life course approach comprises five dimensions:

- Lifelong human development and ageing. As individuals age and develop, humans experience biological, psychological and social processes that fundamentally alter their how their lives unfold over time. This process unfolds from birth till death.
- Human agency. Human beings are able to make choices and take actions on their own, within the context of the opportunities and constraints they face. While the range of choice and options are dependent on the historical, social, familial, and individual contexts in which they are place, human agency is fundamental to how life unfolds.
- Time and space. Individuals are situated within times and space in which they are embedded. Time for example, may encompass a chronological (age), biological (puberty), and historical periods (the 2000s). Space includes both social and physical locations.
- Timing of events. How and when an event occurs in time have important consequences for individuals. For example, the birth of a child at age 16 or 40, or as a result of a planned or unplanned pregnancy, has major implications for both the child and parent(s). A person graduating in a booming economy or major depression may face very different job and life prospected.
- Linked/Interrelated lives. Humans are social creatures, friends, families, and significant others play a significant role in choices made and the social conditions impacting development.

This Chapter has tried to show the overlap between demography and population studies, both of which depend on data (mostly quantitative data) which is covered in the Population Data Chapter. Subsequent Chapters cover Population Growth, and a general discussion of Population Policies although policies and data specific to the components of growth are given in the relevant Chapters. The next block of Chapters is informed by the life course, focusing on events such as birth,

partnering, health and death, and labour force participation. The penultimate Chapter will consider Population and Resources.

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Figure 1.1.

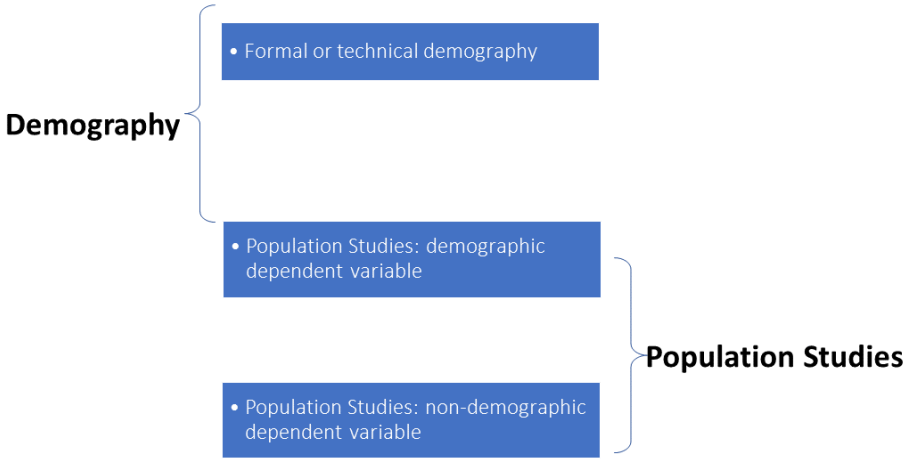
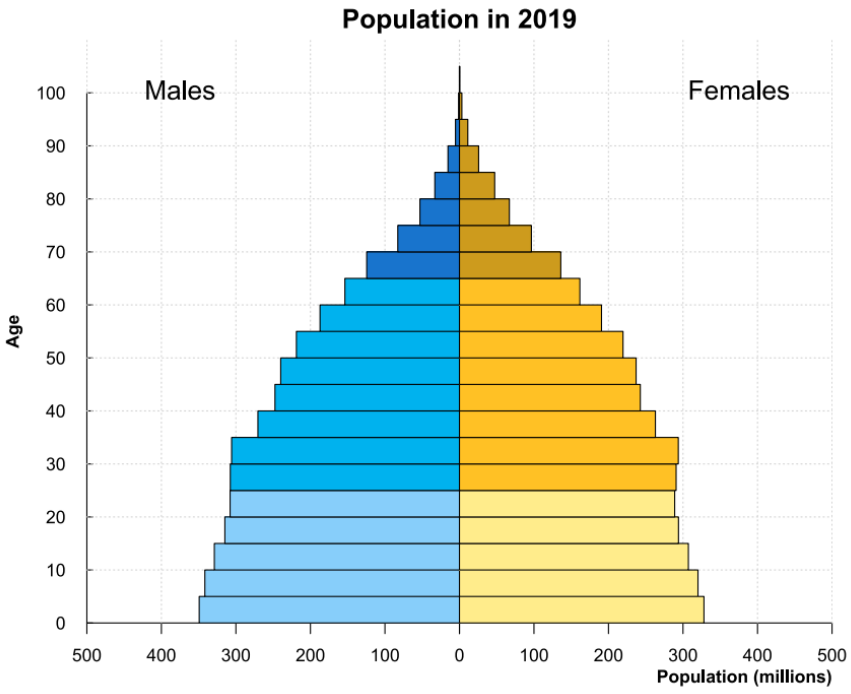


Figure 1. 2 World Population Pyramid 2019 (UN)



https://population.un.org/wpp/Graphs/DemographicProfiles/Pyramid/900

Appendix 1.1. Defining demography

- 'Demography is the scientific study of human populations, primarily with respect to their size, their structure, and their development' (United Nations 1953:3).

- 'Demography is the study of the size, territorial distribution, and the composition of population, changes therein, and the components of such changes, which may be identified as natality, mortality, territorial movement (migration), and social mobility (change of status)' (Hauser and Duncan 1959:2).

- 'Demography is the statistical and mathematical study of the size, composition, and spatial distribution of human populations, and of changes over time in these aspects through the operation of the five processes of fertility, mortality, marriage, migration, and social mobility. Although it maintains a continuous descriptive and comparative analysis of trends, in each of these processes and in their net result, its long-run goal is to develop a body of theory to explain the events that it charts and compares' (Bogue 1969:1-2).

- 'Demography is the study of human populations in relation to the changes brought about by the interplay of births, deaths, and migration. The term is also used to refer to the actual phenomena observed, as in phrases such as the demography of tropical Africa' (Pressat 1985:54).

- 'Demography is concerned with virtually everything that influences or can be influenced by population size, distribution, processes, structure, or characteristics' (Weeks 2015:4).

- 'Demography is the study of population processes and characteristics. The processes include growth, fertility, mortality, migration and population ageing, while the characteristics are as varied as age, sex, birthplace, family structure, health, education, and occupations (Rowland 2003:16).

- 'The scientific study of human populations, including their sizes, compositions, distributions, densities, growth and other characteristics, as well as the causes and consequences of changes in these factors (Population Reference Bureau 2013:9).

- 'Demography is, in essence, the calculation of population numbers and population changes, and brings to bear many perspectives on the causes, patterns and consequences of fertility, mortality and migration.' (Macbeth and Collinson 2002:2).

Note: Population composition refers not only to characteristics such as age, sex, and marital status but also to health and occupation. Social mobility involves changes in status, such as through marriage. The inclusion of social mobility in the field of demography can be disputed. Bogue (1969:28) includes it because 'there is very strong demographic component in this line of research'.