





POPULATION MAP OF PAPUA NEW GUINEA



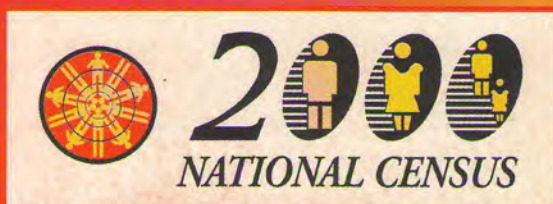
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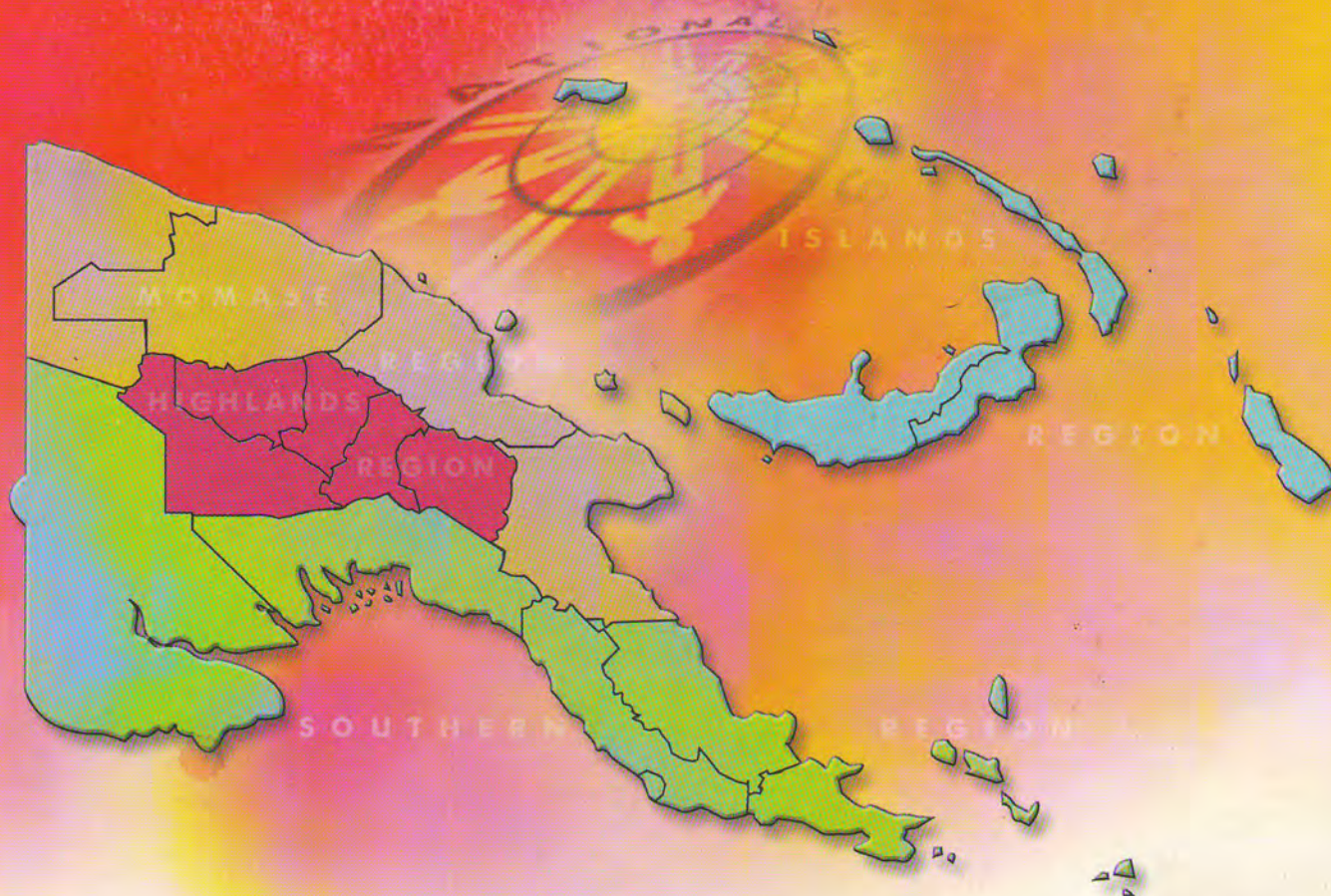
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NATIONAL STATISTICAL OFFICE



NATIONAL REPORT



PAPUA NEW GUINEA 2000 CENSUS

NATIONAL REPORT

JANUARY 2003

Foreword

The PNG 2000 Census of Population and Housing is the third full national census completed in the country. Previous full censuses were done in 1980 and 1990. The National Report, along with a series of 20 Provincial Reports, forms the major public release from the 2000 Census. All reports provide information based on the Basic Tables in the form of statistical tables and graphs with descriptive comments to assist users in interpreting and using the census data. The main focus is the citizen population who were enumerated in private dwellings. People enumerated in non-private dwellings such as hotels, motels, prisons, hospitals and work-type institutions were only asked a subset of the census questions.

The National Report provides information about the population of PNG and its social characteristics. There are 6 chapters focusing on: population growth, distribution and composition; population characteristics; migration; education and literacy, economic activity; and household activities and housing status.

The 2000 Census information in the form of the national and provincial reports is a direct response to the rapid growth in demand for social and economic data particularly at lower levels of planning. This has been reinforced by the passage of the Organic Law devolving specific responsibilities from the National Government to the Provinces, Districts and Local Level Governments. The information presented in this report is at the national and provincial level.

The NSO is indebted to the Governments of Papua New Guinea and Australia, through AusAID, for the funding of the 2000 Census Project.

Nick Suvulo
NATIONAL STATISTICIAN

Bernard Kiele
CENSUS DIRECTOR

Acknowledgements

The 2000 Census National Report is an important document and milestone signifying the overall in-house capacity of the National Statistical Office to carry out large scale statistical undertakings. It brings together all the elements and topics covered in the 2000 census. The publication supplements the information contained in each of the 20 Provincial Reports.

This national level publication provides a commentary on the 2000 census information and is written and formatted differently to past census books. The presentation is simple and users are able to quickly see the trends over the past decades easily. The needs of the general users especially have been taken on board during the design stage of the publication.

The National Report is a rich source of socio-economic information and other demographic characteristics at the national level. All the major topics of the 2000 census on population growth, distribution and composition, migration, education and literacy, economic activity and other supporting technical notes have been included for easy application and references.

The completion of National Report and the 20 Provincial Reports stems directly from the overall direction and efforts of the Acting Deputy Census Director, Esther Lavu and the combined efforts of Grace So-on, Leonora Cortez, Mark Sil, Sanalai Kautil, Mark Charope, Abraham Masu, Madeline Lemeki, Roko Koloma and Francisca Tinabar.

All users are encouraged to read the report and to fully utilize the findings of the 2000 census for a better Papua New Guinea.

Nick Suvulo
NATIONAL STATISTICIAN

Bernard Kiele
CENSUS DIRECTOR

CHAPTER 1

POPULATION GROWTH, DISTRIBUTION AND COMPOSITION



Summary indicators – PNG, 1980, 1990 and 2000 Censuses

Citizen population		PNG		
		2000	1990	1980
Population	Total	5,171,548	3,582,333	2,978,057
	Male	2,679,769	1,887,867	1,557,077
	Female	2,491,779	1,694,466	1,420,980
Population aged 18 years and over	Total	2,764,346	1,848,023	1,504,679
	Male	1,414,499	958,455	781,768
	Female	1,349,847	889,568	722,911
Population aged 0-4 years (% of population)	Total	14.0	15.0	15.7
	Male	14.1	15.0	15.7
	Female	14.0	15.0	15.8
Population aged 0-14 years (% of population)	Total	40.0	41.9	43.1
	Male	40.6	42.6	43.1
	Female	39.4	41.1	43.1
Population aged 65 years and over (% of population)	Total	2.4	2.4	1.6
	Male	2.6	2.6	1.6
	Female	2.2	2.1	1.5
Median age (years)	Total	19.7	na	na
	Male	19.3	18.3	14.4
	Female	20.1	19.1	15.4
Dependency ratio	Total	73.6	75.3	80.7

Non-citizen population		PNG		
		2000	1990	1980
Population	Total	19,235	25,621	32,670
	Male	11,975	14,716	18,595
	Female	7,260	10,905	14,075
Population aged 18 years and over	Total	13,726	16,971	22,062
	Male	9,013	10,160	13,166
	Female	4,713	6,811	8,896
Population aged 0-4 years (% of population)	Total	8.0	11.0	11.3
	Male	6.7	9.9	10.1
	Female	10.1	12.6	12.9
Population aged 0-14 years (% of population)	Total	24.8	29.8	30.6
	Male	21.1	27.3	27.4
	Female	31.0	33.2	34.8
Population aged 65 years and over (% of population)	Total	2.3	1.6	1.3
	Male	2.4	1.5	1.3
	Female	2.1	1.7	1.3
Median age (years)	Total	33.0	na	na
	Male	35.0	31.3	31.0
	Female	29.4	27.6	27.7
Dependency ratio	Total	37.2	43.4	46.8

Summary indicators – PNG, 1980, 1990 and 2000 Censuses (cont.)

Urban citizen population		PNG		
		2000	1990	1980
Population	Total	675,403	539,331	365,547
	Male	365,533	300,216	212,202
	Female	309,870	239,115	153,345
Population aged 18 years and over	Total	382,433	289,634	188,217
	Male	212,159	167,511	114,424
	Female	170,274	122,123	73,793
Population aged 0-4 years (% of population)	Total	12.9	14.8	17.0
	Male	12.5	13.9	15.4
	Female	13.4	15.9	19.2
Population aged 0-14 years (% of population)	Total	36.6	39.3	40.4
	Male	35.5	37.4	37.6
	Female	37.9	41.8	44.5
Population aged 65 years and over (% of population)	Total	1.0	0.8	0.5
	Male	1.1	0.8	0.5
	Female	1.0	0.8	0.5
Median age (years)	Total	20.8	na	na
	Male	21.4	20.0	19.1
	Female	19.1	17.7	17.1
Dependency ratio	Total	60.3	67.0	69.3

Rural citizen population		PNG		
		2000	1990	1980
Population	Total	4,496,145	3,043,002	2,612,510
	Male	2,314,236	1,587,651	1,344,875
	Female	2,181,909	1,455,351	1,267,635
Population aged 18 years and over	Total	2,381,913	1,558,389	1,316,462
	Male	1,202,340	790,944	667,344
	Female	1,179,573	767,445	649,118
Population aged 0-4 years (% of population)	Total	14.2	15.0	15.6
	Male	14.3	15.2	15.7
	Female	14.1	14.8	15.4
Population aged 0-14 years (% of population)	Total	40.5	42.4	43.5
	Male	41.4	43.6	44.0
	Female	39.6	41.0	42.9
Population aged 65 years and over (% of population)	Total	2.6	2.7	1.7
	Male	2.8	3.0	1.8
	Female	2.3	2.3	1.6
Median age (years)	Total	19.5	na	na
	Male	19.0	17.9	14.5
	Female	20.0	19.2	16.2
Dependency ratio	Total	75.8	81.9	82.4

Note: Rural median age, the 1980 data are for the rural village sector and not for the rural sector.

Summary indicators – Provinces, 2000 Census

Citizen population		Southern region					
		Western	Gulf	Central	NCD	Milne Bay	Northern
Population	Total	148,356	106,660	183,805	248,948	210,056	132,952
	Male	76,519	55,347	95,930	135,703	109,406	69,775
	Female	71,837	51,313	87,875	113,245	100,650	63,177
Population aged 18 years and over	Total	72,330	52,333	94,491	145,732	109,802	66,584
	Male	36,899	26,877	48,628	81,632	56,945	34,974
	Female	35,431	25,456	45,863	64,100	52,857	31,610
Population aged 0-4 years (% of population)	Total	16.8	15.8	14.7	12.4	15.3	16.3
	Male	16.8	15.8	14.8	12.0	15.4	16.3
	Female	16.8	15.9	14.6	12.9	15.1	16.2
Population aged 0-14 years (% of population)	Total	44.6	44.3	42.1	35.1	41.3	43.4
	Male	45.0	44.8	42.7	33.8	41.6	43.3
	Female	44.2	43.8	41.3	36.5	41.0	43.6
Population aged 65 years and over (% of population)	Total	1.9	1.9	3.1	1.0	2.8	2.4
	Male	1.7	1.9	3.2	1.1	2.9	2.5
	Female	2.1	1.9	3.0	1.0	2.7	2.2
Median age (years)	Total	17.6	17.7	18.8	21.6	19.3	18.2
	Male	17.4	17.4	18.5	22.2	19.1	18.2
	Female	17.8	17.9	19.3	20.8	19.4	18.1
Dependency ratio	Total	86.9	85.8	82.4	56.5	78.9	84.6

Citizen population		Highlands Region				
		SHP	Enga	WHP	Chimbu	EHP
Population	Total	546,001	294,727	439,336	259,536	431,799
	Male	278,139	152,927	224,230	134,829	222,211
	Female	267,862	141,800	215,106	124,707	209,588
Population aged 18 years and over	Total	300,501	169,042	253,483	155,374	239,169
	Male	149,056	85,478	126,587	79,256	119,674
	Female	151,445	83,564	126,896	76,118	119,495
Population aged 0-4 years (% of population)	Total	10.7	10.0	12.5	11.2	13.2
	Male	10.8	10.1	12.6	11.3	13.2
	Female	10.7	9.9	12.4	11.2	13.2
Population aged 0-14 years (% of population)	Total	37.2	35.6	36.3	34.4	38.8
	Male	38.3	36.7	37.4	35.3	40.1
	Female	36.1	34.4	35.1	33.4	37.5
Population aged 65 years and over (% of population)	Total	2.1	2.2	2.7	3.9	2.7
	Male	2.4	2.7	3.1	4.5	2.9
	Female	1.7	1.7	2.3	3.3	2.4
Median age (years)	Total	19.9	21.7	21.9	23.4	20.5
	Male	19.3	20.7	21.1	22.8	19.7
	Female	20.9	22.7	22.6	23.9	21.5
Dependency ratio	Total	64.7	60.8	64.0	62.1	70.8

Summary indicators – Provinces, 2000 Census (cont.)

Citizen population		Momase Region			
		Morobe	Madang	ESP	WSP
Population	Total	537,415	364,407	342,741	185,193
	Male	279,444	189,875	171,706	95,174
	Female	257,971	174,532	171,035	90,019
Population aged 18 years and over	Total	287,749	181,107	170,623	92,253
	Male	148,449	93,778	82,631	46,462
	Female	139,300	87,329	87,992	45,791
Population aged 0-4 years (% of population)	Total	14.7	16.4	16.5	43.8
	Male	14.8	16.3	17.0	16.4
	Female	14.7	16.4	16.0	16.0
Population aged 0-14 years (% of population)	Total	40.2	43.9	43.7	43.8
	Male	40.5	44.1	45.1	44.5
	Female	39.8	43.6	42.3	43.0
Population aged 65 years and over (% of population)	Total	2.1	1.8	2.8	1.8
	Male	2.1	2.0	2.8	1.9
	Female	2.0	1.6	2.7	1.8
Median age (years)	Total	19.8	18.0	18.1	18.1
	Male	19.5	17.8	17.3	17.6
	Female	20.0	18.1	19.0	18.6
Dependency ratio	Total	73.2	84.2	86.8	83.8

Citizen population		Islands Region				
		Manus	NIP	ENB	WNB	NSP
Population	Total	43,294	117,994	219,298	183,977	175,053
	Male	22,335	62,496	115,135	98,642	89,946
	Female	20,959	55,498	104,163	85,335	85,107
Population aged 18 years and over	Total	22,409	60,076	112,209	92,540	86,539
	Male	11,347	32,345	58,995	50,560	43,926
	Female	11,062	27,731	53,214	41,980	42,613
Population aged 0-4 years (% of population)	Total	14.9	16.3	15.4	16.7	15.5
	Male	14.8	16.0	15.5	16.4	15.7
	Female	14.9	16.7	15.2	17.2	15.4
Population aged 0-14 years (% of population)	Total	41.8	43.0	42.0	43.2	43.5
	Male	42.5	42.3	42.0	42.3	44.3
	Female	41.1	43.8	42.1	44.3	42.8
Population aged 65 years and over (% of population)	Total	2.9	2.9	2.7	1.9	2.5
	Male	3.0	3.3	2.7	1.9	2.6
	Female	2.8	2.6	2.6	1.8	2.5
Median age (years)	Total	19.0	18.7	18.7	18.1	17.9
	Male	18.5	19.1	18.7	18.5	17.6
	Female	19.5	18.2	18.7	17.7	18.3
Dependency ratio	Total	80.9	85.0	80.9	82.2	85.5

Glossary

Child-woman ratio	The number of children (of both sexes) under the age of 5 years divided by the number of females in the reproductive ages (15–44 years) multiplied by 100.
Citizenship	The legal nationality of each person.
Crude population density	Citizen population divided by the total land area multiplied by 100.
Dependency ratio	The population aged 0–14 years and the population aged 65 years and over (the dependent population) divided by the population aged 15–64 years (working age population) multiplied by 100.
Median age	The age at which half the population is younger and half is older.
Physiological population density	Citizen population divided by the total arable land area multiplied by 100.
Sex ratio	The number of males per 100 females.
Total population	Total population consists of all persons falling within the scope of the census. This includes usual residents and all other persons present at the time of census.

Information about the population plays an important role in identifying issues concerning the well-being of the people and the environment they live in. Various aspects of demographic and social characteristics, essential for development planning and policy making, are clarified through census data.

Population size

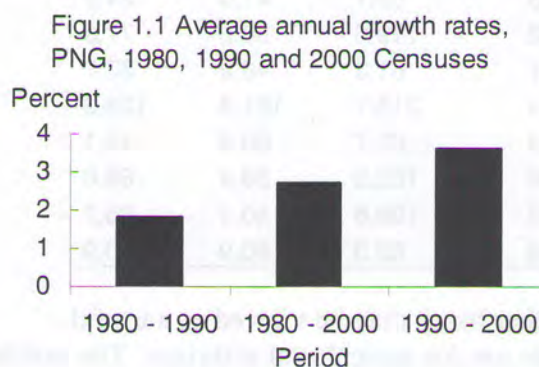
The total population of PNG according to the 2000 Census was 5,190,786, as shown in Table 1.1. Of this, 2,691,744 were males and 2,499,042 were females. Only 19,238 persons were non-citizens. The majority (87%) of the population lived in rural areas.

Table 1.1 Population by sector, sex and citizenship, PNG, 2000 Census

Area	Total	Citizen	Non-citizen
All sectors			
Persons	5,190,786	5,171,548	19,238
Males	2,691,744	2,679,769	11,975
Females	2,499,042	2,491,779	7,263
Urban sector			
Persons	686,301	675,403	10,898
Males	372,453	365,533	6,920
Females	313,848	309,870	3,978
Rural sector			
Persons	4,504,485	4,496,145	8,340
Males	2,319,291	2,314,236	5,055
Females	2,185,194	2,181,909	3,285

Population growth

PNG has been experiencing population change. The change between censuses can be measured by the average annual growth rate. Average annual growth rates are influenced by births, deaths and net migration as well as by non-demographic factors such as different operational strategies and under-enumeration rates.



This is particularly evident in the average annual growth rate for 1990-2000, which was 3.2%. Between the 1980 and 1990 Censuses, the average annual growth was 2.3%, while for the 20-year period 1980-2000, it was 2.7%, as shown in Figure 1.1.

Results from the three full national censuses conducted so far have indicated a continual increase in population size. The highest change was recorded between the 1990 and 2000 Censuses. In this period, the total population of PNG increased by 38%.

Population density

Population density is an important indicator of population concentration and dispersion. It is an index showing the relationship between a population and the land area in which they live. Crude and physiological measures of the population density based on the total and arable land area of the provinces are presented in Table 1.2. The total land area of PNG is 462,840 square kilometers. This gives a crude population density of 11 persons per square kilometer while the 1990 Census indicated a population density of 8 persons per square kilometer.

Table 1.2 Crude and physiological population density by province, PNG, 1980, 1990 and 2000 Censuses

Province	Crude			Physiological		
	2000	1990	1980	2000	1990	1980
PNG	11.2	8.1	6.5	86.2	62.5	50.0
Western	1.5	1.1	0.8	55.6	40.1	28.5
Gulf	3.1	2.0	1.9	121.2	77.9	72.7
Central	6.2	4.8	4.0	37.8	29.0	24.0
NCD	1,059.0	814.9	515.1	..	..	..
Milne Bay	15.0	11.3	9.1	52.9	39.9	32.2
Northern	5.8	4.2	3.4	65.3	47.3	38.0
SHP	23.0	13.3	9.9	89.1	51.8	38.5
Enga	24.9	19.9	13.9	89.9	71.8	50.2
WHP	51.8	39.6	31.3	106.4	81.3	64.2
Chimbu	42.6	30.1	29.2	116.5	82.5	80.0
EHP	38.7	26.8	24.7	100.5	69.8	64.2
Morobe	16.1	11.3	9.3	85.5	60.3	49.3
Madang	12.6	8.7	7.3	59.1	41.0	34.2
ESP	8.0	5.9	5.2	119.6	88.6	77.3
WSP	5.1	3.9	3.1	61.3	46.2	37.7
Manus	20.7	15.6	12.4	213.7	161.8	128.3
NIP	12.3	9.1	6.9	82.7	60.8	46.1
ENB	14.2	12.0	8.6	102.5	86.4	62.0
WNB	8.8	6.2	4.2	198.6	140.1	95.7
NSP	18.8	16.6	13.8	69.3	60.9	50.9

The physiological population density, on the other hand, may be viewed as a useful relationship in that it is based on the land people use for agricultural activities. The arable land area of PNG is about 60,235 square kilometers giving a physiological population density of 86, an increase of 23 from the 1990 census. The 1980 Census population density based on the arable land was 50 persons per square kilometer, an increase of 36 persons per square kilometer over 20 years.

Population distribution

In 2000, the largest provinces in terms of population were Southern Highlands, followed by Morobe, each with about 10% of the total population. The smallest province was Manus with less than 1%, as shown in Table 1.3

Table 1.3 Ranking of provincial populations, PNG, 1980, 1990 and 2000 Censuses

Province	Per cent of population, 2000	Ranking		
		2000	1990	1980
SHP	10.5	1	3	4
Morobe	10.4	2	1	1
WHP	8.5	3	2	3
EHP	8.3	4	4	2
Madang	7.0	5	6	6
ESP	6.6	6	5	5
Enga	5.7	7	7	8
Chimbu	5.0	8	10	7
NCD	4.9	9	8	12
ENB	4.2	10	9	9
Milne Bay	4.1	11	11	11
WSP	3.6	12	14	14
WNB	3.6	13	15	15
Central	3.5	14	13	13
NSP	3.4	15	12	10
Western	3.0	16	16	16
Northern	2.6	17	17	17
NIP	2.3	18	18	18
Gulf	2.1	19	19	19
Manus	0.8	20	20	20

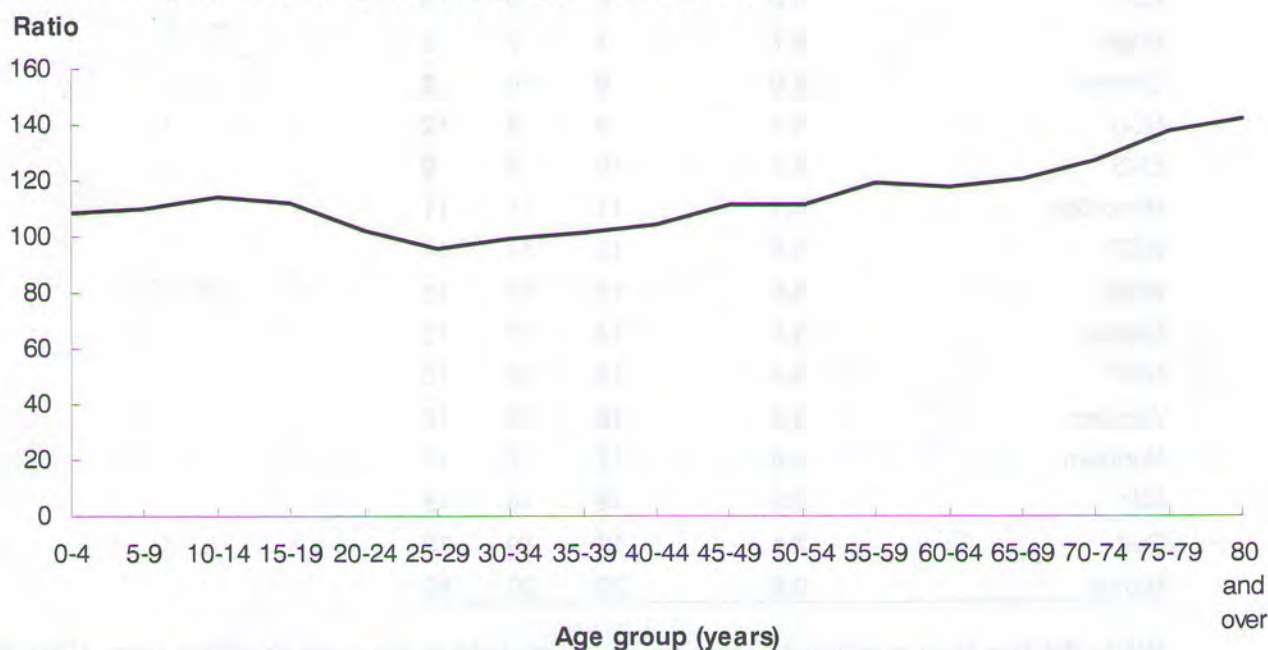
While the five least populated provinces have remained in the same positions since 1980, the six most populated provinces have changed order. Southern Highlands has risen in rank from fourth in 1980 to third in 1990 and first in 2000, while Morobe dropped from first in 1980 and 1990 to second in 2000. Eastern Highlands dropped from second in 1980 to fourth in 1990 and 2000, and Madang and East Sepik changed places between 1990 and 2000.

Population composition

A population's age and sex structure can be considered as a map of its demographic history. Persons in the same age group have been exposed to similar historical events and conditions. The age structure of the population at a given moment may be viewed as an aggregation of groupings born in different years. Age and sex are therefore central variables in all demographic and socio-economic analysis.

There were more males than females in PNG at the 2000 Census. About 52% of the citizen population was male representing 108 males to every 100 females. The sex ratios by age, presented in Figure 1.2, indicate that the ratios were fairly standard, however, age-specific variations were obvious. The sex ratio of the 10–19 years age groups were high compared to surrounding age groups. High sex ratios were also evident at ages 55–59 years and older.

Figure 1.2 Sex ratio of citizen population by age, PNG, 2000 Census



Population pyramids are one method of representing the age-sex structure of a population graphically. The population pyramids for PNG in 2000 and 1990 are presented in Figures 1.3a and 1.3b, respectively. Both age-sex pyramids are very broad at the base indicating a young population. About 40% of the population was under the age of 15 years at both censuses but the median age rose from 18.7 years in 1990 to 19.7 years in 2000. In both censuses, the percentage of the population aged 65 years and over was about 2%. The age-sex distributions conform to the pattern of a high fertility population. As a result, the PNG population has a high potential for further growth.

Because of its young population, PNG has a very high dependency ratio. It is important to note that a decline in the youth dependency burden can only be realised by a future decline in fertility. Policy makers and planners in the country should take this into account in their plans for the future.

Figure 1.3a Citizen population by age and sex, PNG, 2000 Census

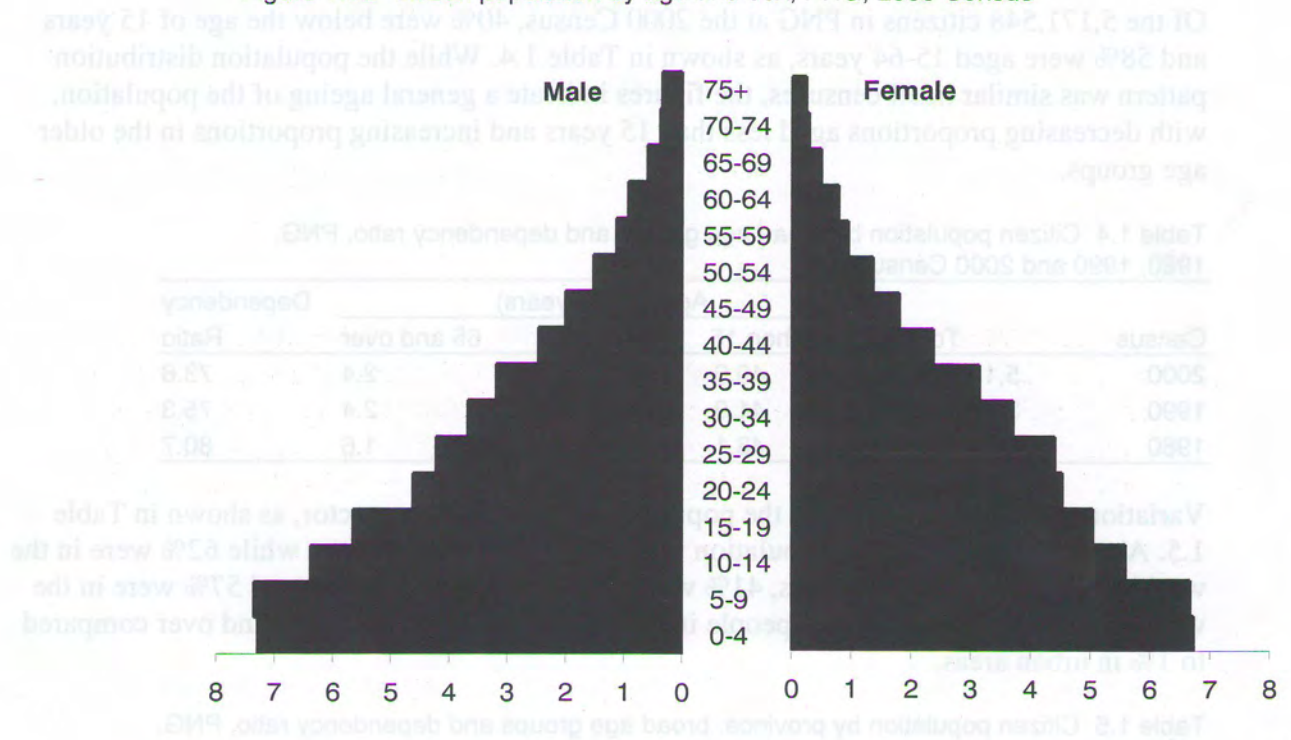
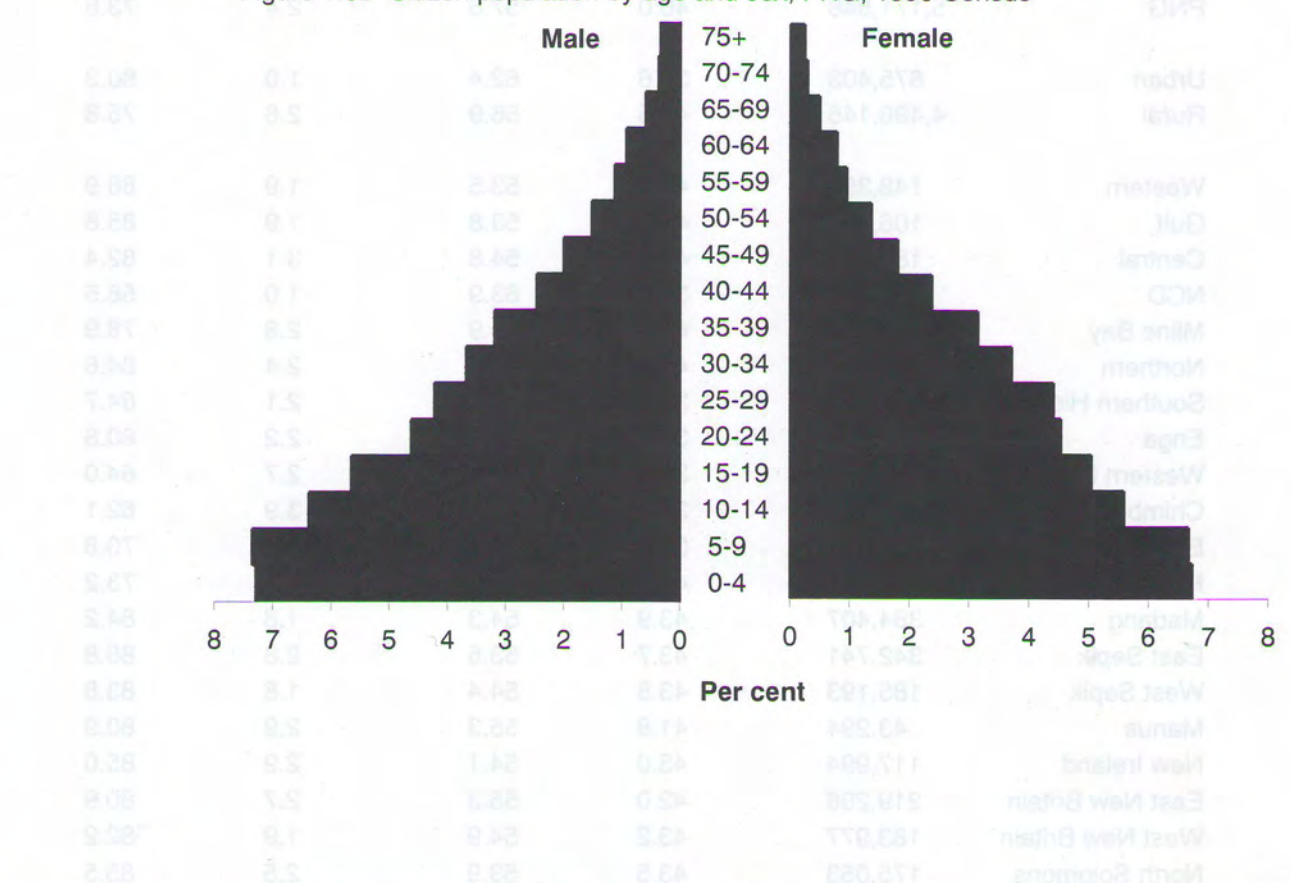


Figure 1.3b Citizen population by age and sex, PNG, 1990 Census



Of the 5,171,548 citizens in PNG at the 2000 Census, 40% were below the age of 15 years and 58% were aged 15-64 years, as shown in Table 1.4. While the population distribution pattern was similar in all censuses, the figures indicate a general ageing of the population, with decreasing proportions aged less than 15 years and increasing proportions in the older age groups.

Table 1.4 Citizen population by broad age groups and dependency ratio, PNG, 1980, 1990 and 2000 Censuses

Census	Total	Age group (years)			Dependency
		Less than 15	15-64	65 and over	Ratio
2000	5,171,548	40.0	57.6	2.4	73.6
1990	3,582,333	41.9	55.7	2.4	75.3
1980	2,978,047	43.1	55.3	1.6	80.7

Variations in the composition of the population can be noted by sector, as shown in Table 1.5. About 37% of the urban population was in the younger age group while 62% were in the working age group. In rural areas, 41% were in the younger age group and 57% were in the working ages. More than 2% of people in rural areas were aged 65 years and over compared to 1% in urban areas.

Table 1.5 Citizen population by province, broad age groups and dependency ratio, PNG, 2000 Census

Area	Total	Age group (years)			Dependency
		Less than 15	15-64	65 and over	ratio
PNG	5,171,548	40.0	57.6	2.4	73.6
Urban	675,403	36.6	62.4	1.0	60.3
Rural	4,496,145	40.5	56.9	2.6	75.8
Western	148,356	44.6	53.5	1.9	86.9
Gulf	106,660	44.3	53.8	1.9	85.8
Central	183,805	42.1	54.8	3.1	82.4
NCD	248,948	35.1	63.9	1.0	56.5
Milne Bay	210,056	41.3	55.9	2.8	78.9
Northern	132,952	43.4	54.2	2.4	84.6
Southern Highlands	546,001	37.2	60.7	2.1	64.7
Enga	294,727	35.6	62.2	2.2	60.8
Western Highlands	439,336	36.3	61.0	2.7	64.0
Chimbu	259,536	34.4	61.7	3.9	62.1
Eastern Highlands	431,799	38.8	58.5	2.7	70.8
Morobe	537,415	40.2	57.8	2.1	73.2
Madang	364,407	43.9	54.3	1.8	84.2
East Sepik	342,741	43.7	53.5	2.8	86.8
West Sepik	185,193	43.8	54.4	1.8	83.8
Manus	43,294	41.8	55.3	2.9	80.9
New Ireland	117,994	43.0	54.1	2.9	85.0
East New Britain	219,298	42.0	55.3	2.7	80.9
West New Britain	183,977	43.2	54.9	1.9	82.2
North Solomons	175,053	43.5	53.9	2.5	85.5

Population composition varied across provinces. As can be seen in Table 1.5, Chimbu, Western Province and NCD showed the extremes of the variation. Just over 34% of the people in Chimbu were less than 15 years old compared to 45% in Western Province. Of the working age population, Western Province had the lowest proportion (53%) while NCD had the highest (64%). NCD also had the lowest proportion of people aged 65 years and over while Chimbu had the highest.

Dependency ratio

In every population, some depend on others for their daily living. This can be approximated by the dependency ratio but in this context it represents more a feature of the age structure of the population than a true measure of dependency. The dependent population is defined as those aged less than 15 years and those aged 65 years and over. The working age group is those aged 15–64 years.

The dependency ratio for PNG decreased from 75 in 1990 to 74 in 2000, as shown in Table 1.4. This means that in 2000, there were 74 people in the dependent ages for every 100 people of working age. The decrease was mainly due to a slight shift from the younger age group to the working age group.

There were differences between the urban and the rural sector. The dependency ratio in 2000 was high (76) in the rural sector compared to the urban sector (60). This is due to the relatively high proportion of population in rural areas who were aged less than 15 years. The dependency ratio also varied between provinces, from a high of 87 in Western Province to a low of 57 in NCD, as shown in Table 1.5.

Median age

The median age of the citizen population of PNG at the 2000 Census was 20 years, an increase of one year compared to the 1990 Census (Table 1.6). The median age of the urban population was 20.8 years, more than one year older than the median age of the rural population, as shown in Table 1.7. The median age fluctuated at the provincial level, from a low of 17.6 years in Western Province to a high of 23.4 years in Chimbu.

Table 1.6 Median age, sex ratio and child-woman ratio of citizen population, PNG, 1980, 1990 and 2000 Censuses

Census	Median age	Sex ratio	Child-woman ratio
2000	19.7	107.5	60.4
1990	18.7	111.4	68.5
1980	18.4	109.6	77.2

Sex ratio

The sex ratio has fluctuated a little over the census years, as shown in Table 1.6. The sex ratio was highest in 1990 at 111, but reverted to 108 in 2000. There was a difference by sector with the rural sex ratio at 106 and the urban sex ratio at 118.

The sex ratios by province varied from 100 in East Sepik, indicating approximately equal numbers of males and females, to 120 in NCD ie there were 12 males for every 10 females. High sex ratios (over 110) were also recorded in West New Britain, New Ireland, East New Britain and Northern Province.

Table 1.7 Median age, sex ratio and child-woman ratio of citizen population, PNG, 2000 Census

Area	Median age	Child-woman	
		Sex ratio	Ratio
Total	19.7	107.5	60.4
Urban	20.8	118.0	51.8
Rural	19.5	106.1	61.8
Western	17.6	106.5	77.1
Gulf	17.7	107.9	71.8
Central	18.8	109.2	67.8
NCD	21.6	119.8	48.8
Milne Bay	19.3	108.7	68.9
Northern	18.2	110.4	75.6
Southern Highlands	19.9	103.8	42.6
Enga	21.7	107.8	39.7
Western Highlands	21.9	104.2	50.7
Chimbu	23.4	108.1	47.0
Eastern Highlands	20.6	106.0	56.1
Morobe	19.8	108.3	63.6
Madang	18.0	108.8	74.3
East Sepik	18.1	100.4	73.8
West Sepik	18.1	105.7	73.9
Manus	19.0	106.6	67.7
New Ireland	18.7	112.6	77.3
East New Britain	18.7	110.5	69.5
West New Britain	18.1	115.6	78.2
North Solomons	17.9	105.7	69.0

Child woman ratio

The child-woman ratio implies indirectly the incidence of child bearing among women aged 15-44 years, the childbearing ages. Although, it can be used as a fertility measure, it is not precise but is a useful indicator of a certain aspect of the age structure.

According to the 2000 Census, the child-woman ratio was 60, a decline from 69 in 1990 and 77 in 1980, as shown in Table 1.6. This decline is an indication of a downward trend in fertility. The child-woman ratio was higher in the rural areas (62) compared to the urban areas (52). At the provincial level, the ratio varied from a high of 78 in West New Britain to a low of 40 in Enga.

Non-citizens

There were 19,238 non-citizens counted in PNG at the 2000 Census, more than 6,000 fewer than were counted in 1990, and more than 13,000 fewer than in 1980 (see Table 1.8). In all censuses, the working age group (15-64 years) predominated, but the proportion increased markedly between 1990 and 2000 (from 69% to 73%) offsetting a reduction in the proportion aged less than 15 years. Consistent with the age distribution and the changes in it, the dependency ratio was relatively low, and showed a decrease between 1990 and 2000, while the median age increased.

Table 1.8 Non-citizen population by broad age groups, dependency, median age and sex ratio, PNG, 1980, 1990 and 2000 Censuses

Census	Total	Age group (years)			Dependency ratio	Median age	Sex ratio
		Less than 15	15-64	65 and over			
2000	19,238	24.8	72.9	2.3	37.2	33.0	164.9
1990	25,621	29.8	68.6	1.6	43.4	30.0	134.9
1980	32,670	30.6	68.1	1.3	46.8	29.6	132.1

The sex ratio of the non-citizen population increased by 30 points between 1990 and 2000, indicating that the reduction in population was greater for females than for males.

CHAPTER 2

POPULATION CHARACTERISTICS



Summary indicators – PNG, 1980, 1990 and 2000 Censuses

		PNG		
Citizen population		2000	1990	1980
Married (% of population aged 15 years and over)	Total	61.6	62.2	na
	Male	57.9	59.2	na
	Female	65.5	65.5	na
Never married (% of population aged 15 years and over)	Total	29.9	29.2	na
	Male	37.6	36.1	na
	Female	23.9	21.8	na
Singulate mean age at marriage (years)	Total	23.8	na	na
	Male	25.8	24.6	na
	Female	21.8	20.8	na
Household heads (% of population aged 15 years and over)	Total	30.7	na	na
	Male	51.9	na	na
	Female	8.4	na	na
Female heads of households (% of household heads)	Total	13.4	na	na
		R.Catholic	R.Catholic	
Main religion (% of population)	Total	27.6	28.4	na
	Male	27.8	28.5	na
	Female	27.4	28.4	na
		PNG		
Non citizen population		2000	1990	1980
Married (% of population aged 15 years and over)	Total	na	na	na
	Male	65.8	65.4	na
	Female	71.6	71.7	na
Never married (% of population aged 15 years and over)	Total	na	na	na
	Male	30.1	31.0	na
	Female	22.1	22.9	na
Singulate mean age at marriage (years)	Total	na	na	na
	Male	27.9	26.3	na
	Female	22.1	19.6	na
Household heads (% of population aged 15 years and over)	Total	na	na	na
	Male	65.3	na	na
	Female	11.5	na	na
Female heads of households (% of household heads)	Total	9.2	na	na
		R. Catholic	R. Catholic	
Main religion (% of population)	Total	44.9	40.7	na
	Male	44.9	40.7	na
	Female	48.2	47.6	na

Summary indicators – PNG, 1980, 1990 and 2000 Censuses (cont.)

		PNG		
Urban citizen population		2000	1990	1980
Married (% of population aged 15 years and over)	Total	59.6	60.9	na
	Male	55.3	54.8	na
	Female	64.8	69.1	na
Never married (% of population aged 15 years and over)	Total	35.6	35.4	na
	Male	41.5	42.5	na
	Female	28.5	25.8	na
Singulate mean age at marriage (years)	Total	24.3	na	na
	Male	26.3	24.5	23.5
	Female	22.2	20.7	18.9
Household heads (% of population aged 15 years and over)	Total	24.5	na	na
	Male	40.1	na	na
	Female	5.7	na	na
Female heads of households (% of household heads)	Total	10.7	na	na
		R.Catholic	R.Catholic	na
Main religion (% of population)	Total	25.0	27.4	na
	Male	25.3	27.5	na
	Female	24.7	27.2	na
		PNG		
Rural citizen population		2000	1990	1980
Married (% of population aged 15 years and over)	Total	61.9	64.3	na
	Male	58.4	60.1	na
	Female	76.0	68.6	na
Never married (% of population aged 15 years and over)	Total	30.2	28.1	na
	Male	37.0	34.7	na
	Female	10.8	21.1	na
Singulate mean age at marriage (years)	Total	23.7	na	na
	Male	25.8	24.6	na
	Female	21.8	20.9	na
Household heads (% of population aged 15 years and over)	Total	31.6	na	na
	Male	53.9	na	na
	Female	8.8	na	na
Female heads of households (% of household heads)	Total	13.7	na	na
		R.Catholic	R.Catholic	
Main religion (% of population)	Total	28.0	28.6	na
	Male	28.2	28.7	na
	Female	27.8	28.5	na

Summary indicators – Provinces, 2000 Census

Citizen population		Southern Region					
		Western	Gulf	Central	NCD	Milne Bay	Northern
Married (% of population aged 15 years and over)	Total	63.0	62.2	61.8	59.8	61.1	60.1
	Male	60.5	58.1	57.8	55.1	58.1	56.5
	Female	65.6	66.5	66.0	65.5	64.3	64.1
Never married (% of population aged 15 years and over)	Total	29.9	30.3	30.1	35.3	29.5	32.8
	Male	36.3	37.7	36.4	41.3	35.7	39.2
	Female	23.4	22.4	23.5	28.0	22.9	25.8
Singulate mean age at marriage (years)	Total	23.1	23.1	23.4	24.3	23.4	23.9
	Male	24.9	25.4	25.4	26.3	25.2	25.9
	Female	21.2	20.9	21.4	22.2	21.5	22.0
Household heads (% of population aged 15 years and over)	Total	27.9	29.0	28.1	22.5	31.9	29.2
	Male	49.2	49.9	47.6	37.1	52.0	50.7
	Female	6.2	7.0	7.3	4.7	10.3	5.5
Female heads of households (% of household heads)	Total	10.9	11.8	12.7	9.3	15.6	9.0
Main religion (% of population)		Evan.Alli	U.Church	U.Church	U.Church	U.Church	Anglican
	Total	37.5	37.8	42.7	30.4	60.9	61.5
	Male	37.0	37.8	42.7	29.7	61.3	61.3
	Female	38.1	37.8	42.8	31.2	60.5	61.6

Citizen population		Highlands Region				
		SHP	Enga	WHP	Chimbu	EHP
Married (% of population aged 15 years and over)	Total	55.6	60.4	67.5	67.3	68.5
	Male	51.0	55.9	63.5	63.4	65.4
	Female	60.3	65.0	71.4	71.4	71.7
Never married (% of population aged 15 years and over)	Total	37.7	31.6	25.0	22.5	22.8
	Male	45.3	38.5	31.8	29.3	29.2
	Female	30.1	24.4	18.3	15.3	16.3
Singulate mean age at marriage (years)	Total	25.7	24.8	22.7	22.5	22.1
	Male	27.9	27.1	24.8	25.0	24.1
	Female	23.7	22.7	20.8	20.1	20.2
Household heads (% of population aged 15 years and over)	Total	27.5	26.8	34.3	32.0	37.9
	Male	46.6	47.4	58.1	56.3	65.0
	Female	8.3	5.3	10.3	6.4	10.4
Female heads of households (% of household heads)	Total	15.1	9.8	15.1	9.8	13.7
Main religion (% of population)		O.Christ	Luth.Evan	R.Catholic	R.Catholic	SDA
	Total	22.3	30.1	31.6	35.9	36.6
	Male	22.3	30.4	31.9	36.3	29.4
	Female	22.4	29.8	31.4	35.5	28.3

Summary indicators – Provinces, 2000 Census (cont.)

Citizen population		Momase Region			
		Morobe	Madang	ESP	WSP
Married	Total	60.6	59.4	62.2	61.7
(% of population aged 15 years and over)	Male	57.3	56.0	60.4	58.2
	Female	64.1	63.0	64.0	65.2
Never married	Total	32.5	33.5	29.9	31.2
(% of population aged 15 years and over)	Male	39.2	40.0	35.9	37.8
	Female	25.4	26.6	24.3	24.4
Singulate mean age at marriage (years)	Total	23.9	24.1	23.6	23.7
	Male	26.1	26.1	25.1	25.6
	Female	21.6	22.1	22.2	21.9
Household heads	Total	30.0	29.9	33.9	30.5
(% of population aged 15 years and over)	Male	50.6	51.1	57.8	52.6
	Female	8.0	7.3	11.3	7.8
Female heads of households	Total	13.0	11.8	17.1	12.7
(% of household heads)					
		Evan.Luth	Evan.Luth	R.Catholic	R.Catholic
Main religion	Total	71.6	38.2	44.8	47.4
(% of population)	Male	71.3	38.3	45.1	47.7
	Female	72.0	38.0	44.6	47.1

Citizen population		New Guinea Islands Region				
		Manus	NIP	ENB	WNB	NSP
Married	Total	56.3	59.2	58.3	61.4	57.0
(% of population aged 15 years and over)	Male	53.5	54.8	54.4	55.8	55.2
	Female	59.2	64.3	62.7	67.9	58.8
Never married	Total	35.4	32.8	34.5	33.2	36.3
(% of population aged 15 years and over)	Male	41.4	39.8	41.6	40.9	41.9
	Female	29.2	24.9	26.7	24.0	30.5
Singulate mean age at marriage (years)	Total	24.9	23.4	23.8	23.3	25.2
	Male	27.1	25.2	25.7	25.3	27.0
	Female	22.8	22.0	22.2	21.2	23.4
Household heads	Total	31.7	33.4	31.7	29.8	31.5
(% of population aged 15 years and over)	Male	49.9	52.8	50.7	49.2	53.0
	Female	12.8	11.5	10.8	6.7	9.4
Female heads of households	Total	19.9	16.2	16.4	10.3	14.7
(% of household heads)						
		R.Catholic	United	R.Catholic	R.Catholic	R.Catholic
Main religion	Total	45.7	40.3	51.1	56.5	69.5
(% of population)	Male	45.9	40.3	51.2	56.0	69.7
	Female	45.5	40.3	51.0	57.0	69.2

Glossary

Head of household	A person regarded as head by members of the household.
Marital status	Personal status of individuals in relation to the marriage laws or customs of PNG. Indicates whether a person is married, never married, separated, divorced or widowed.
Non-relative	A person not related to the head of household but present at the time of census enumeration.
Other relative	A person, other than a spouse or child, related to the head of household by blood or marriage.
Own child	Natural child of the head of household.
Relationship in household	A person's relationship to the head of household during census enumeration.
Religion	Religious or spiritual beliefs or preferences. The following abbreviations are used in the summary indicators: EA – Evangelical Alliance EL – Evangelical Lutheran OC – Other Christian RC – Roman Catholic UC – United Church
Singulate mean age at marriage	A measure of average age at marriage derived from the proportion of population never married by age and sex.
Spouse	A person married to, or in a marriage-like relationship with, the head of household.
Step/adopted child	Any child looked after by the head of household that is not his/her natural child.

A person's marital status and their relationship in a household are important indicators of family structures, support and responsibilities. These issues are of interest to planners and policy makers in relation to family and social welfare. Affiliations to religious groupings indicate the type of contributions individuals may make to society and the type of external support they may be able to call on in time of need.

Marital status

Marital status plays a role in identifying the composition of the household and has a bearing on the fertility behaviour of the population. The results of what the heads of households reported about each individual's marital status are presented in Table 2.1. The information here relates to people who were aged 15 years or more.

Table 2.1 Proportion of citizen population aged 15 years and over in private dwellings by marital status, sex and sector, PNG, 2000 Census

Area	Total	Never married	Married	Separated/ divorced	Widowed
All sector					
Total	3,052,602	30.9	61.6	3.0	4.5
Males	1,561,522	37.6	57.9	2.1	2.4
Females	1,491,080	23.9	65.5	3.9	6.7
Urban					
Total	404,208	35.6	59.6	2.5	2.2
Males	220,210	41.5	55.3	1.9	1.3
Females	183,998	28.5	64.8	3.4	3.3
Rural					
Total	2,648,394	30.2	61.9	3.0	4.8
Males	1,341,312	37.0	58.4	2.1	2.5
Females	1,307,082	23.2	65.6	4.0	7.2

Being married was a common status for both men and women according to the 2000 Census. At the national level, 62% of the populations were married. Proportionately, more women were married than men (66% compared to 58%). More than 10% of women were separated, divorced or widowed compared to 5% of men. Consistently, 38% of men compared to 24% of women had never been married.

It can be seen that the proportions by marital status varied between the urban and rural sectors, although marriage was the most common status in both sectors. Urban people were more likely than rural people to have never been married. This pattern held for both sexes. In rural areas, 11% of women were separated, divorced or widowed compared to 7% in the urban sector.

In the provinces, the proportion of men who were married varied between 51% in Southern Highlands and 65% in Eastern Highlands, while for women it varied between 59% in North Solomons and 72% in Eastern Highlands (see Summary indicators). Consistently, the highest and lowest proportions of men who had never been married were recorded in Southern Highlands (45%) and Eastern Highlands (29%). Similarly, the highest proportion of women

who had never been married occurred in North Solomons (31%). The lowest proportion, 15%, occurred in Chimbu, with Eastern Highlands next at 16%.

Singulate mean age at marriage

Singulate mean age at marriage (SMAM) is a measure of average age at marriage derived from data on the never married population for each sex by age. According to the 2000 Census, the SMAM for men was 26 years compared to 22 years for women, as shown in Table 2.2. This is an indication that men marry at older ages than women.

By sector, the SMAM for both men and women was similar. However, in the rural sector, people married at slightly younger ages than people in the urban sector. By censuses, the SMAM has increased slightly since 1980.

Table 2.2 Singulate mean age at marriage by sex and sector, PNG, 1980, 1990 and 2000 Censuses

Census	Sex	Total	Urban	Rural
2000	Male	25.8	26.3	25.8
	Female	21.8	22.2	21.8
1990	Male	24.6	24.5	24.6
	Female	20.8	20.7	20.9
1980	Males	na	23.5	na
	Female	na	18.9	na

There was a variation of about four years in the SMAM by province. It was lowest in Eastern Highlands for men (24 years) and Chimbu for women (20 years), the provinces with the lowest proportion of population never married, and highest in Southern Highlands (28 years for men and 24 years for women, the province with the highest proportion of never married men and the second highest proportion of never married women (see Summary indicators).

Relationship status

The relationship of each household member to the head of the household provides a picture of the structure and composition of a household. At the national level, 18% of persons were heads of households and 15% were spouses to the head of the household. In total, 49% of household members were either own, step or adopted children, as shown in Table 2.3.

As might be expected, the younger age group (0–14 years) were mainly own, step or adopted children (85%). A further 15% were other relatives of the head of household. The proportions were the same for both male and female children. Over half of the working age population (15–64 years) were heads of households or spouses and a quarter were own, step or adopted children. As might be expected, men dominated the position of head of household and women the position of spouse, about 50% of each.

For those aged 65 years and over about half were heads of households, three-quarters of men and a quarter of women. A further 31% of women were spouses. In this age group 43% of the women and 22% of the men were other relatives of the head of household, most likely parents or parents-in-law.

Table 2.3 Citizen population in private dwellings by relationship status, sex and age, PNG, 2000 Census

Age group (years)	Total	Relationship to head of household					
		Head of household	Spouse	Own child	Step/adopted child	Other relative	Non-relative
Total	5,140,476	18.4	14.6	45.3	3.3	17.0	1.4
0-14	2,066,953	0.0	0.0	79.4	5.3	14.6	0.7
15-64	2,950,948	29.7	24.8	23.4	2.1	18.1	1.9
65 and over	122,575	53.4	13.5	0.0	0.3	31.0	1.7
Male	2,659,394	30.7	0.2	47.0	3.5	16.9	1.7
0-14	1,085,913	0.0	0.0	79.4	5.2	14.6	0.7
15-64	1,504,875	50.8	0.3	25.8	2.4	18.3	2.3
65 and over	68,606	76.0	0.2	0.0	0.3	21.9	1.6
Female	2,481,082	5.1	30.0	43.5	3.1	17.1	1.2
0-14	981,040	0.0	0.1	79.3	5.3	14.6	0.7
15-64	1,446,073	7.8	50.3	20.9	1.7	17.8	1.5
65 and over	53,969	24.8	30.5	0.1	0.4	42.6	1.7

Overall, the proportion of men aged 15 years and over who were heads of households was 51%, and the equivalent proportion of women was 8%. Women represented 13% of household heads (see Summary indicators). In the urban sector, 40% of men aged 15 years and over and 6% of women aged 15 years and over were household heads, compared to 54% and 9%, respectively, in the rural sector.

Reflecting the urban/rural variation, the lowest proportions of male and female household heads were recorded in NCD (37% and 5%, respectively). In all other provinces more than 45% of men and more than 5% of women were household heads. Manus had the highest proportion of household heads who were female (20%) and Northern province had the lowest (9%).

Religion

Information on religious affiliation is important as an indicator of social awareness as well as for policy and planning by religious and other non-government organizations.

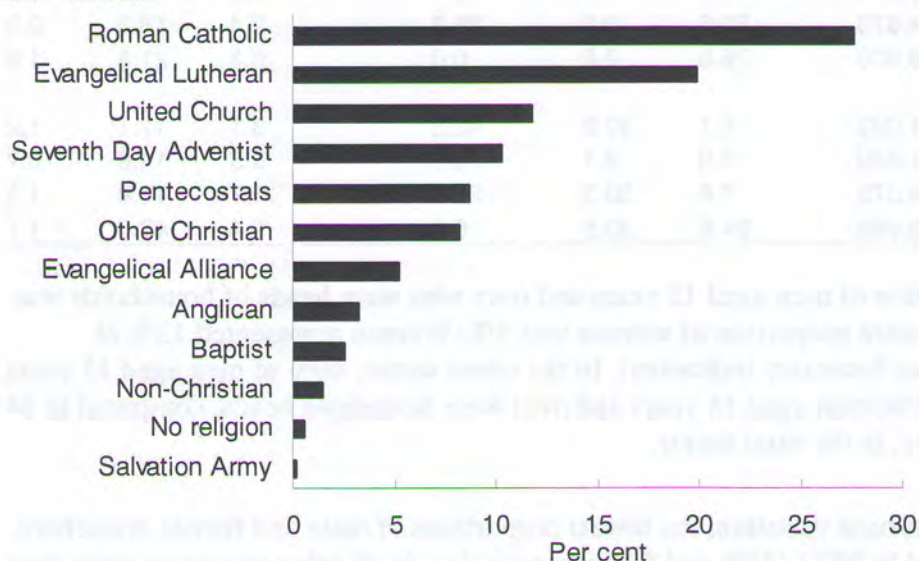
The majority (96%) of citizens in PNG in 2000 were Christians, as shown in Table 2.4. Less than 2% reported as non-Christians and almost 2% did not indicate a religion. Compared to the 1990 Census, there was a slight decrease in the proportion of Christians and an increase in the proportion of those who did not indicate a religion, and non-Christians. There was little difference by sex in either year.

The Roman Catholic Church was the major religious denomination in PNG in 2000, accounting for 28% of the population. A further 20% were Evangelical Lutherans, 12% belonged to the United Church and 10% were Seventh Day Adventists, as shown in Figure 2.1.

Table 2.4 Citizen population in private dwellings by religious affiliation, PNG, 1990 and 2000 Censuses

Religious affiliation	2000			1990		
	Total	Males	Females	Total	Males	Females
Total	5,140,476	2,659,394	2,481,082	3,582,333	1,887,867	1,694,466
Christian	96.0	95.9	96.1	96.0	96.3	96.8
Non-Christian	1.4	1.4	1.4	0.3	0.3	0.3
No religion	0.6	0.7	0.5	2.6	2.8	2.3
Not stated	2.0	2.0	2.0	0.6	0.6	0.6

Figure 2.1 Citizen population in private dwellings by religion, PNG, 2000 Census



In some provinces there were major concentrations of particular religions (more than 50% of the population), possibly reflecting missionary activity in the past. Such concentrations were found in Morobe (Evangelical Lutheran), North Solomons, West New Britain and East New Britain (Roman Catholic), Northern Province (Anglican) and Milne Bay (United Church) (see Summary indicators).

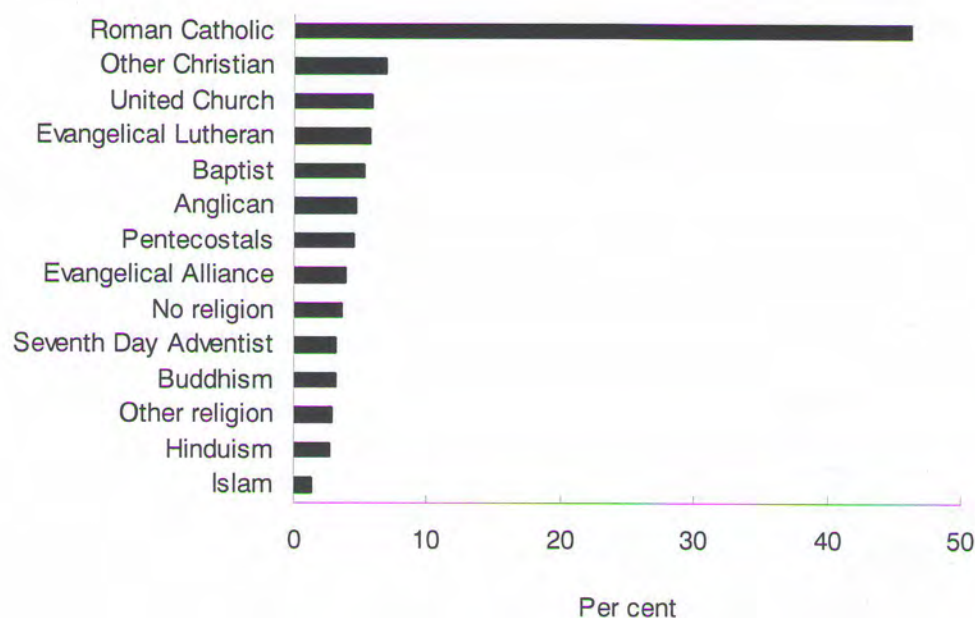
Non-citizens

In 2000, the non-citizen population aged 15 years and over were more likely than the citizen population to have been married (66% of men and 72% of women compared to 58% and 66%, respectively) and less likely to never have been married. Their singulate mean age at marriage was, however, higher, by 2 years for men and 0.3 years for women. This apparent discrepancy is because of the age distribution of the non-citizen population which is skewed towards the prime working ages due to the nature of their residence in PNG (see Chapter 1).

Consistently, proportionally more non-citizens than citizens were heads of households, and proportionally fewer heads of households were women.

About 46% of the non-citizen population were Roman Catholics, and a further 40% were spread fairly evenly between other Christian denominations, as shown in Figure 2.2. Almost 10% belonged to non-Christian religions, mainly Buddhism and Hinduism, and 4% stated that they had no religion.

Figure 2.2 Non-citizen population in private dwellings by religion, PNG, 2000 Census



CHAPTER 3

MIGRATION



Summary indicators – PNG, 1980, 1990 and 2000 Censuses

Citizen population		PNG		
		2000	1990	1980
Migrants (% of population)	Total	20.3	na	na
	Male	20.6	12.9	11.2
	Female	19.9	11.2	6.9
Migrated less than 10 years ago (% of migrants)	Total	59.7	na	na
	Male	60.1	na	na
	Female	59.3	na	na
Interprovincial migrants (% of migrants born in PNG)	Total	46.0	..	..
	Male	48.5	..	..
	Female	43.3	..	..
Main gaining province (net internal migration)	Prov	NCD	..	..
	Total	77,124	..	..
	Prov	NCD	NCD	NCD
	Male	45,120	62,437	40,516
	Prov	NCD	NCD	NCD
	Female	32,004	45,607	25,411
Main losing province (net internal migration)	Prov	Chimbu	na	na
	Total	-39,511	na	na
	Prov	SHP	Chimbu	ESP
	Male	-22,520	-25,659	-16,964
	Prov	Chimbu	Chimbu	Chimbu
	Female	-18,695	-21,179	-13,081
Non-citizen population		PNG		
		2000	1990	1980
Migrants (% of population)	Total	84.1	na	na
	Male	83.6	na	na
	Female	84.9	na	na
Migrated less than 10 years ago (% of migrants)	Total	63.5	na	na
	Male	64.6	na	na
	Female	61.8	na	na
International migrants (% of migrants)	Total	91.6	na	na
	Male	91.4	na	na
	Female	91.9	na	na
Main destination province (% of international migration)	Prov	NCD	na	na
	Total	32.0	na	na
	Prov	NCD	na	na
	Male	33.1	na	na
	Prov	NCD	na	na
	Female	30.3	na	na
Main source country (% of international migration)	Country	Indonesia	na	na
	Total	48.4	na	na
	Country	Australia	Australia	Australia
	Male	21.1	24.9	43.0
	Country	Indonesia	Indonesia	Australia
	Female	28.0	31.8	43.8

Summary indicators – PNG, 1980, 1990 and 2000 Censuses (cont.)

Urban citizen population		PNG		
		2000	1990	1980
Migrants (% of population)	Total	59.9		na
	Male	61.3	49.1	na
	Female	58.2	42.9	na
Migrated less than 10 years ago (% of migrants)	Total	60.2	na	na
	Male	59.9	na	na
	Female	60.6	na	na
Interprovincial migrants (% of migrants born in PNG)	Total	70.0	..	..
	Male	71.2	..	..
	Female	68.5	..	..
Main gaining province (net internal migration)	Prov	NCD	na	na
	Total	107,445	na	na
	Prov	NCD	NCD	na
	Male	60,876	62,930	na
	Prov	NCD	NCD	na
	Female	46,569	45,919	na
	Prov	Central	na	na
Main losing province (net internal migration)	Total	-23,404	na	na
	Prov	Central	Central	na
	Male	-12,489	-16,258	na
	Prov	Central	Central	na
	Female	-10,915	-13,067	na

Rural citizen population		PNG		
		2000	1990	1980
Migrants (% of population)	Total	14.6	na	na
	Male	14.6	6.1	na
	Female	14.7	4.8	na
Migrated less than 10 years ago (% of migrants)	Total	59.4	na	na
	Male	60.2	na	na
	Female	58.5	na	na
Interprovincial migrants (% of migrants born in PNG)	Total	32.1	na	na
	Male	34.4	..	..
	Female	29.8	..	..
Main gaining province (net internal migration)	Prov	WHP	na	na
	Total	33,530	na	na
	Prov	WHP	WHP	na
	Male	17,060	19,819	na
	Prov	WHP	WHP	na
	Female	16,470	16,870	na
	Prov	NCD	na	na
Main losing province (net internal migration)	Total	-30,321	na	na
	Prov	NCD	Chimbu	na
	Male	-15,756	-12,998	na
	Prov	NCD	Chimbu	na
	Female	-14,565	-11,707	na

Summary indicators – Provinces, 2000 Census

Citizen population		Southern Region					
		Western	Gulf	Central	NCD	Milne Bay	Northern
Migrants (% of population)	Total	19.7	13.9	25.1	58.3	17.6	16.6
	Male	20.6	14.7	25.6	59.9	19.0	17.2
	Female	18.7	13.0	24.5	56.5	16.1	16.0
Migrated less than 10 years ago (% of migrants)	Total	62.3	67.2	61.1	53.3	65.8	55.1
	Male	60.7	66.7	60.4	53.1	64.8	54.6
	Female	64.2	67.6	62.0	53.6	67.1	55.8
Interprovincial migrants (% of migrants born in PNG)	Total	31.7	41.4	63.9	90.2	21.7	41.1
	Male	31.6	43.1	64.3	91.0	21.3	44.1
	Female	31.9	39.2	63.4	89.2	22.2	37.5
Main gaining province (net internal migration)	Prov	NCD	NCD	NCD	..	NCD	NCD
	Total	-740	-9112	-2628	..	-2472	-2790
	Prov	NCD	NCD	NCD	..	NCD	NCD
	Male	-460	-4,733	-1,451	..	-1,441	-1,410
	Prov	NCD	NCD	NCD	..	NCD	NCD
	Female	-280	-4,379	-1,177	..	-1,031	1,110
Main losing province (net internal migration)	Prov	WSP	SHP	Gulf	EHP	Central	ESP
	Total	1,282	161	1,149	11,904	293	255
	Prov	WSP	SHP	Gulf	EHP	Central	ESP
	Male	743	188	615	6,890	149	224
	Prov	WSP	NSP	Gulf	EHP	Central	Central
	Female	544	2	534	5,014	144	96

Citizen population		Highlands Region				
		SHP	Enga	WHP	Chimbu	EHP
Migrants (% of population)	Total	8.4	8.4	22.6	16.2	16.3
	Male	7.5	7.4	19.5	14.1	15.9
	Female	9.3	9.4	25.9	18.4	16.7
Migrated less than 10 years ago (% of migrants)	Total	58.8	54.6	54.4	52.1	59.3
	Male	66.2	61.0	59.9	53.7	59.9
	Female	53.0	49.3	50.2	50.7	58.6
Interprovincial migrants (% of migrants born in PNG)	Total	12.6	15.6	57.3	18.3	28.6
	Male	12.9	18.7	67.5	19.5	30.0
	Female	12.3	12.9	49.3	17.4	27.3
Main gaining province (net internal migration)	Prov	WHP	WHP	NCD	WHP	WHP
	Total	-18470	-11329	-4775	13,035	6,197
	Prov	WHP	WHP	NCD	NCD	NCD
	Male	-10,454	-5,624	-2,993	-5,402	-6,890
	Prov	WHP	WHP	NCD	WHP	NCD
	Female	-8,016	-5,705	-1,782	-6,838	-5,014
Main losing province (net internal migration)	Prov	Northern	SHP	SHP	Enga	SHP
	Total	364	461	18,470	160	-1,321
	Prov	Northern	SHP	SHP	SHP	Chimbu
	Male	151	339	10,454	86	2,725
	Prov	Northern	SHP	SHP	Enga	Chimbu
	Female	213	122	8,016	83	2,459

Summary indicators – Provinces, 2000 Census (cont.)

Citizen population		Momase Region			
		Morobe	Madang	ESP	WSP
Migrants (% of population)	Total	30.2	17.0	16.2	11.2
	Male	32.0	18.0	17.0	12.1
	Female	28.4	15.9	15.3	10.1
Migrated less than 10 years ago (% of migrants)	Total	62.8	65.5	60.7	58.2
	Male	62.1	64.4	59.6	55.9
	Female	63.6	66.9	62.0	61.0
Interprovincial migrants (% of migrants born in PNG)	Total	44.1	43.4	23.8	32.1
	Male	45.3	43.5	22.9	29.4
	Female	42.7	43.2	24.7	35.6
Main gaining province (net internal migration)	Prov	NCD	Morobe	Morobe	Western
	Total	-5232	-2931	-8376	-1287
	Prov	NCD	Morobe	Morobe	Western
	Male	-3,166	-1,929	-5,314	-743
	Prov	NCD	Morobe	Morobe	Western
	Female	-2,066	-1,002	-3,062	-544
Main losing province (net internal migration)	Prov	ESP	ESP	NSP	ESP
	Total	8,376	4,588	354	876
	Prov	ESP	ESP	NSP	ESP
	Male	5,314	2,770	130	278
	Prov	Chimbu	ESP	NSP	ESP
	Female	3,323	1,818	224	598

Citizen population		New Guinea Islands Region				
		Manus	NIP	ENB	WNB	NSP
Migrants (% of population)	Total	25.0	21.8	32.2	30.5	8.3
	Male	26.3	24.1	34.0	33.0	8.7
	Female	23.5	19.3	30.2	27.6	7.8
Migrated less than 10 years ago (% of migrants)	Total	53.6	63.3	70.5	60.4	63.2
	Male	52.8	59.6	68.2	59.8	60.4
	Female	54.6	68.6	73.3	61.2	66.7
Interprovincial migrants (% of migrants born in PNG)	Total	45.5	51.0	32.0	72.9	15.7
	Male	45.6	54.2	35.7	74.9	17.5
	Female	45.4	46.6	27.4	70.2	13.6
Main gaining province (net internal migration)	Prov	NCD	NCD	NCD	NCD	NCD
	Total	-1852	-850	-3524	-360	-2684
	Prov	NCD	NCD	WNB	NCD	NCD
	Male	-1,006	-500	-3,604	-297	-1,524
	Prov	NCD	NCD	WNB	NCD	NCD
	Female	-846	-350	-3,041	-63	-1,160
Main losing province (net internal migration)	Prov	ESP	ENB	NSP	ESP	Gulf
	Total	538	1,628	1,791	7,465	1
	Prov	ESP	ESP	NSP	ESP	SHP
	Male	349	1,036	932	4,646	6
	Prov	ESP	ENB	NSP	ENB	..
	Female	189	839	859	3,041	..

Glossary

In-migrant	A person who was born in a province other than their province of enumeration. This includes persons born overseas.
Migrant	A person whose place of birth and place of enumeration were different, or, if they were the same, someone who had not lived at their place of enumeration continuously since birth. All persons born overseas were classified as migrants.
Natural increase	The excess of births over deaths.
Net internal migration	The difference between the number of in-migrants, excluding those born overseas, and the number of out-migrants.
Out-migrant	A person who was enumerated in a province other than their province of birth. This excludes persons born in PNG but living overseas at the time of the census.
Private dwelling	A structure occupied by a person or group of persons, related or unrelated, for private purposes. This excludes such accommodation as hotels, motels, guesthouses, barracks, workers' quarters, hostels, boarding schools, prisons and hospitals.
Type of migration	<p>Migrants were classified to a type of migration based on the comparison of place of birth and place of enumeration:</p> <ul style="list-style-type: none"> • interprovincial or between provinces migrants – people born in PNG whose province of birth and province of enumeration were different; • intraprovincial or within province migrants – people born in PNG whose province of birth and enumeration were the same but district of birth and enumeration were different, or district of birth was not stated; • intradistrict or within district migrants - all other migrants born in PNG. This category includes people who may have moved away from their place of birth but had since returned, regardless of where they had moved to; • overseas or international migrants – all persons born overseas.

As mentioned in Chapter 1, migration influences an area's population directly by adding to, or subtracting from, its size, and contributing to its structure. In addition, there is an indirect influence on population growth through natural increase as migrants are typically in high fertility age groups. These influences, however, are felt mainly at the sub-national level. At the national level, the only migration influence is movement to and from other countries, which is relatively small in PNG. Further, a census, which counts everybody in the country on a particular night, cannot capture information on people who were not in the country at that time, even though they may have only been absent temporarily. Nevertheless, knowledge of the number and characteristics of people who move within the country is important for planning purposes. The information collected in the 2000 Census allows only the examination of lifetime migration through comparing place of birth and place of enumeration, and duration of stay.

Migratory status

Of the nearly 5.1 million citizens counted in private dwellings in PNG at the 2000 Census, 1 million (20%) had not been born where they were enumerated and were therefore classified as migrants (see Table 3.1). Of these citizen migrants, 37% were counted in the urban sector, about three times the proportion of the total population counted in the urban sector. This suggests that urban areas are an attractive destination, possibly because of better work opportunities (see Chapter 5).

Table 3.1 Citizen population in private dwellings by migratory status, PNG, 2000 Census

Sector	Total	Migrants	Non-migrants	Not stated
All sectors				
Persons	5,140,476	1,014,317	3,991,805	134,354
Males	2,659,394	534,405	2,054,813	70,176
Females	2,481,082	479,912	1,936,992	64,178
Urban				
Persons	654,677	373,214	249,908	31,555
Males	352,114	205,556	129,549	17,009
Females	302,563	167,658	120,359	14,546
Rural				
Persons	4,485,799	641,103	3,741,897	102,799
Males	2,307,280	328,849	1,925,264	53,167
Females	2,178,519	312,254	1,816,633	49,632

Males were slightly more likely than females to be migrants in the urban sector, and the urban population was four times as likely to be migrants as the rural population. The sex ratio of migrants was 111 compared to 106 for non-migrants.

NCD and East New Britain had the highest proportions of migrants among their citizen populations, 58% and 32%, respectively. In NCD this can be attributed to its urban nature and status as the capital of PNG, which combine to offer better employment opportunities than most other areas. In East New Britain, it is likely that the disruption caused by the volcanic eruptions in 1994 is a contributing factor to its high proportion of migrants. Low

proportions of migrants (around 8%) were found in North Solomons, Southern Highlands and Enga (see Summary indicators).

While the age distribution of the non-migrant population showed the same pattern as that of the total population (see Chapter 1), the age distribution of migrants was quite different. As shown in Figure 3.1, the peak age groups for migrants in PNG were 20-24 and 25-29 years, accounting for almost a quarter of all migrants. A further quarter of migrants were aged less than 15 years suggesting that many people migrate as families.

Figure 3.1 Citizen population by age and migratory status, PNG, 2000 Census

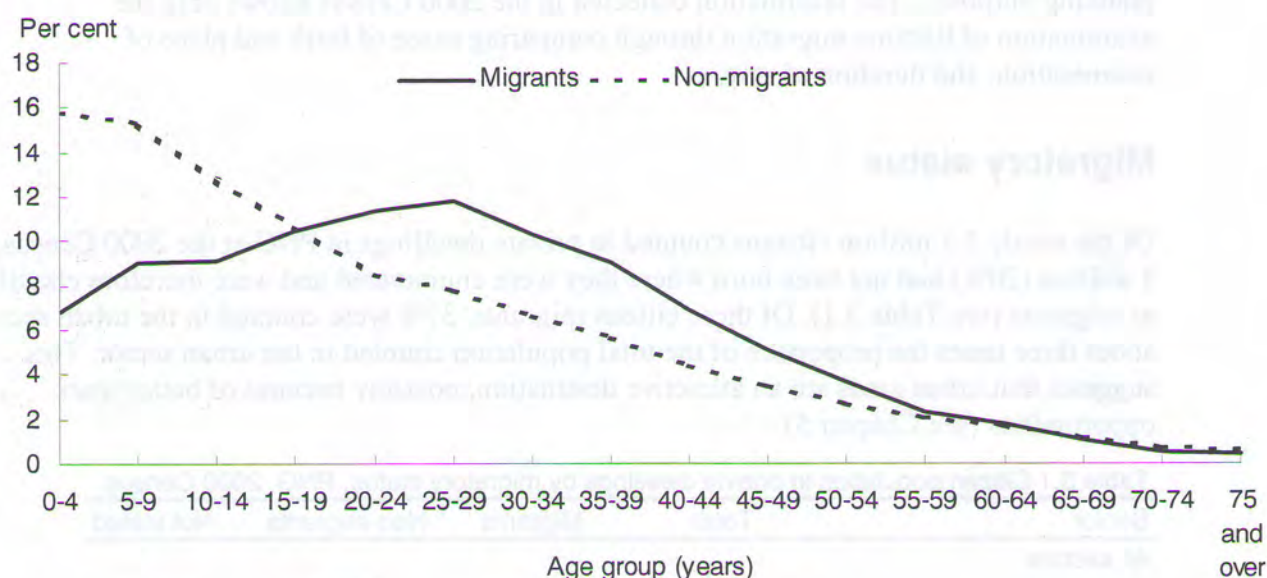
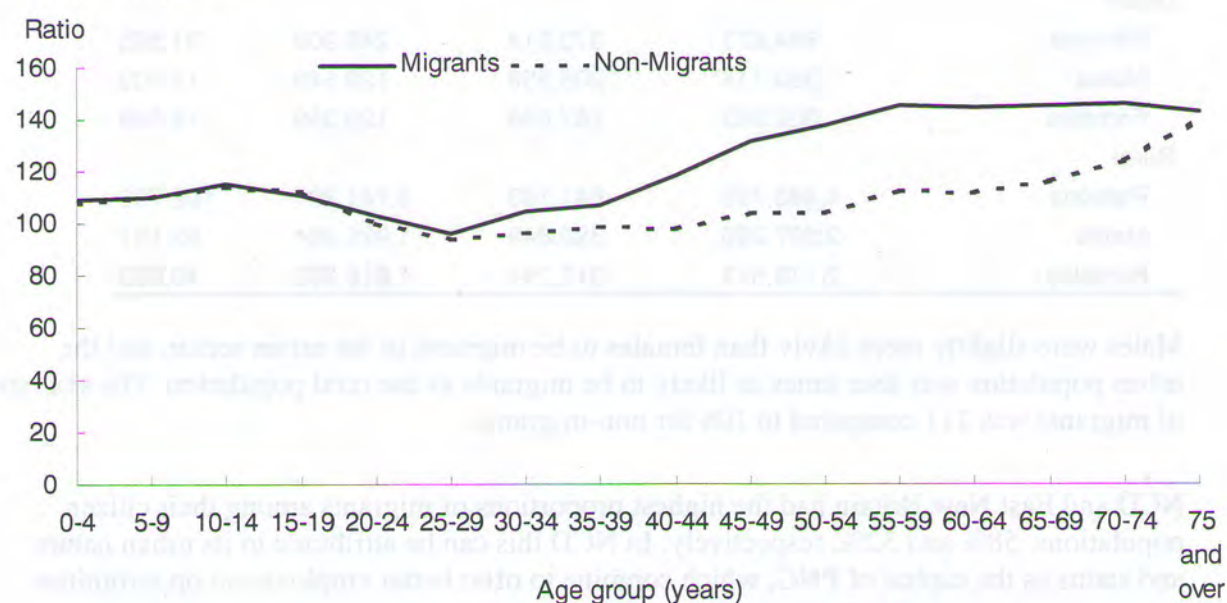


Figure 3.2 Sex ratio of citizen population in private dwellings by age and migratory status, PNG, 2000 Census



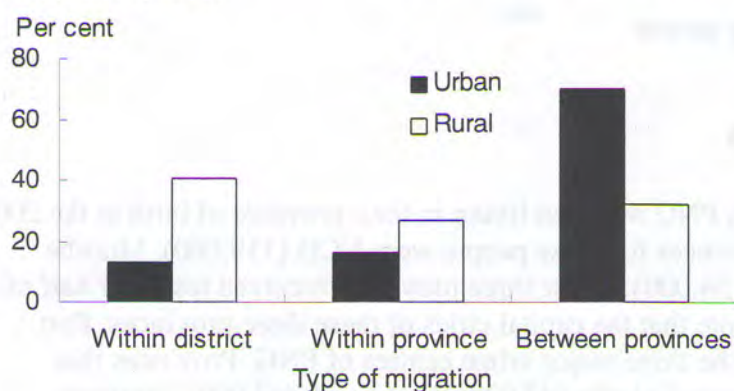
The sex ratio of migrants in the younger age groups was similar to that of non-migrants, as shown in Figure 3.2. This further supports the proposition suggested by the age distribution that many people migrate as families.

The proportions of migrants in the older age groups declined steadily but it was not until age 65-69 years that the proportion was smaller than the proportion of non-migrants. The sex ratio of migrants aged 45 years and over was more than 130. In contrast, the sex ratio of non-migrants was less than 105 for all age groups from 20-24 years to 50-54 years, and was well below that of migrants for age groups from 45-49 years to 70-74 years.

Type of migration

Of the citizen migrants counted in PNG at the 2000 Census, almost all (1,008,000) had been born in PNG. Of these, 46% had moved between provinces while 31% had only moved within their district of birth. This pattern was the same for males and females. Type of migration differed considerably by sector, however, as shown in Figure 3.3. Migrants in the urban sector were more likely than those in the rural sector to have moved long distances. For example, 70% of urban migrants had moved between provinces and 17% between districts within their province of birth. Of the rural migrants, 41% had moved within their district of birth and a further 27% had moved between districts within their province of birth.

Figure 3.3 Citizen migrants born in PNG by type of migration, PNG, 2000 Census



The proportions of migrants who had moved between provinces varied considerably in each province, from 13% in Southern Highlands to 90% in NCD. High proportions were also found in West New Britain (73%), probably related to the 1994 volcanic eruptions in East New Britain and plantation resettlement schemes, and Central (64%), related to its proximity to NCD (see Summary indicators).

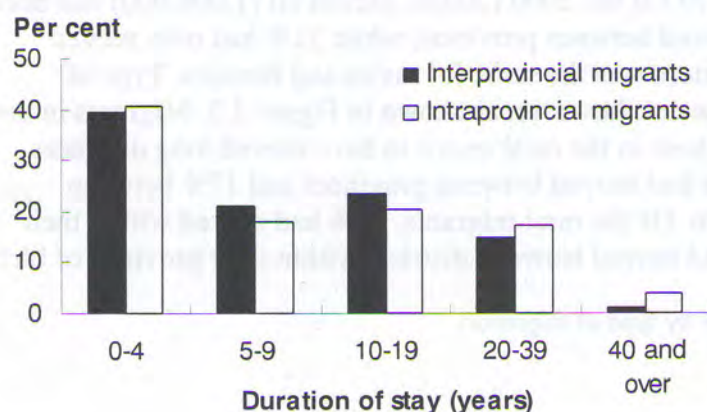
There were 3,005 citizens counted in PNG at the 2000 Census who had been born overseas. Of these, 33% had been born in Indonesia and 23% in Australia. A further 16% each had been born in other Pacific countries and other Asian countries.

Duration of stay

Overall, about 60% of migrants had moved during the ten years before the 2000 Census. The variation between provinces ranged from 49% of women in Enga to 73% of women in East New Britain (see Summary indicators).

In broad terms, there was little difference between the durations of stay of interprovincial migrants and intraprovincial migrants, as shown in Figure 3.4. About 40% of each had lived at their place of enumeration for less than five years. Interprovincial migrants were more likely than intraprovincial migrants to have been medium-term (5-19 years) migrants while the reverse was true for longer-term (20 years or more) migrants.

Figure 3.4 Citizen migrants born in PNG by duration of stay and type of migration, PNG, 2000 Census



Interprovincial migration

A total of 464,000 citizens born in PNG were not living in their province of birth at the 2000 Census. The main destination provinces for these people were NCD (119,000), Morobe (69,000) and Western Highlands (56,000). These three provinces received just over half of all interprovincial migrants. It is of note that the capital cities of these three provinces, Port Moresby, Lae and Mt Hagen, are the three major urban centres of PNG. Provinces that experienced large out-migration were Chimbu (47,000), East Sepik (42,000), Southern Highlands (42,000) and NCD (42,000) (see Table 3.2).

The difference between in-migration and out-migration is known as net migration and it is this factor which impacts on population size and structure. Despite its relatively large out-migration, NCD had the largest net gain of population of any province (77,000). This was followed by Western Highlands (37,000) and Morobe (33,000). Large net losses of population were experienced by Chimbu (40,000), Southern Highlands (36,000) and East Sepik (30,000). On a regional basis, the Highlands region had a net loss of 73,000 people while all other regions gained population.

Not surprisingly, the main gaining provinces from internal migration were either NCD or provinces geographically close to the province of origin. For example, Southern Highlands

and Enga had large outflows to Western Highlands, Madang and East Sepik to Morobe, West Sepik to Western and East New Britain to West New Britain (see Summary indicators).

Table 3.2 Interprovincial citizen migrants by province, PNG, 2000 Census

Province	In-migration	Out-migration	Net migration
Total	463,806	463,806	0
Western	8,673	6,187	2,486
Gulf	5,765	18,959	-13,194
Central	27,528	28,924	-1,396
National Capital District	118,680	41,556	77,124
Milne Bay	7,715	10,054	-2,339
Northern	8,705	11,133	-2,428
Southern Highlands	5,624	41,742	-36,118
Enga	3,750	23,843	-20,093
Western Highlands	55,776	18,512	37,264
Chimbu	7,573	47,084	-39,511
Eastern Highlands	19,577	34,422	-14,845
Morobe	69,070	35,975	33,095
Madang	25,878	23,735	2,143
East Sepik	12,795	42,379	-29,584
West Sepik	6,456	9,728	-3,272
Manus	4,708	8,094	-3,386
New Ireland	12,642	8,470	4,172
East New Britain	21,475	30,740	-9,265
West New Britain	39,260	10,023	29,237
North Solomons	2,156	12,246	-10,090

Non-citizen migrants

Of the 17,607 non-citizens counted in private dwellings at the 2000 Census, 84% were classed as migrants, 100% of the 13,366 born overseas and 31% of those born in PNG. In 1990, there were 22,451 overseas-born non-citizens in PNG. Between the two censuses, there was an increase in the number of migrants from Philippines and Malaysia but a decrease in numbers from all other major countries and regional groupings. In particular, the numbers of migrants from Europe and Australia more than halved over the period.

On a proportional basis, as shown in Figure 3.5, 23% of overseas-born, non-citizen migrants in PNG in 2000 had been born in Indonesia, 19% in Australia and 13% in Philippines. Equivalent figures in 1990 were 27%, 23% and 7%, respectively.

The overseas-born non-citizen migrants were mainly found in NCD (30%) and Western Province (28%), as shown in Figure 3.6. There were also 11% in Morobe and 9% in Eastern Highlands. The remaining 22% were distributed between all other provinces. Most migrants from Indonesia were found in Western province (86%), while those from Australia and Philippines were found mainly in NCD (41% and 46%, respectively) and Morobe (18% and 17%, respectively).

Figure 3.5 Non-citizens born overseas by country of birth, PNG, 1990 and 2000 Censuses

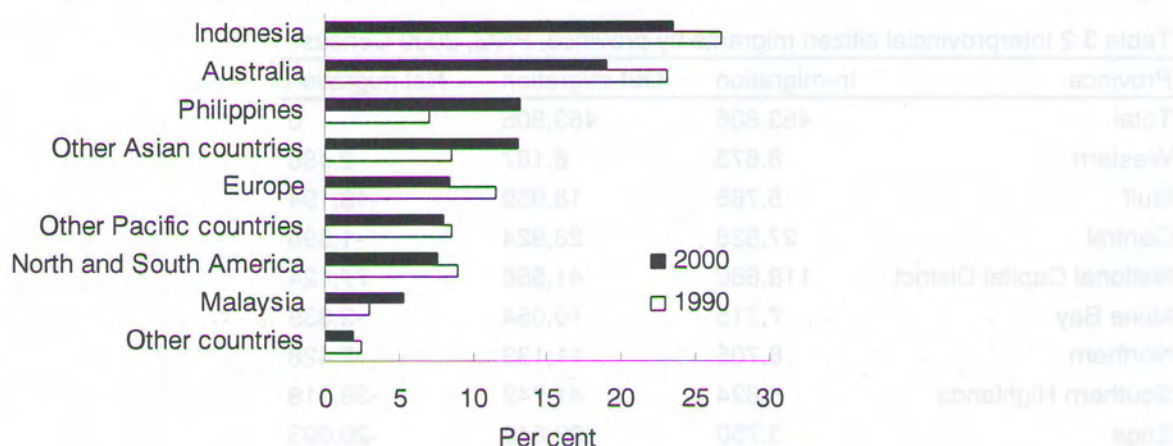
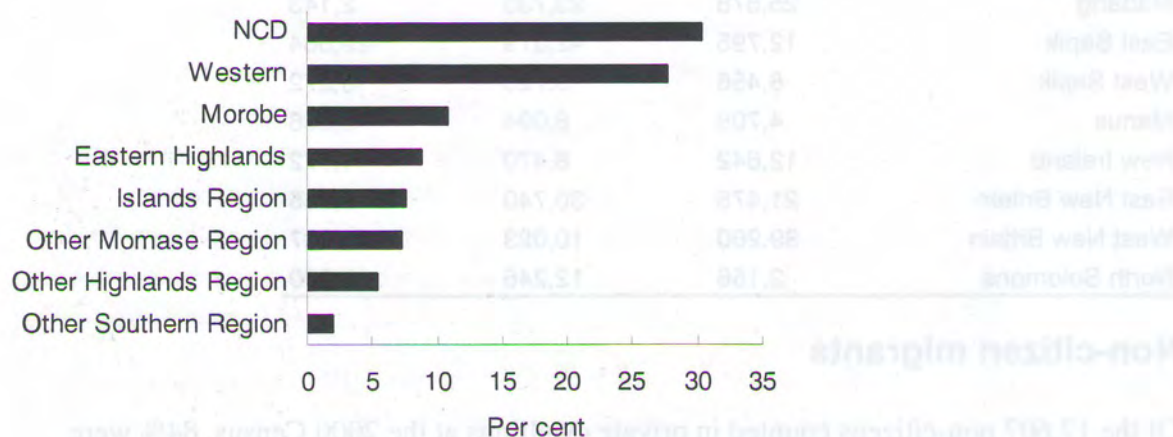


Figure 3.6 Non-citizens born overseas by province of enumeration, PNG, 2000 Census



CHAPTER 4

EDUCATION AND LITERACY



Summary indicators – PNG, 1980, 1990 and 2000 Censuses

Citizen population		PNG		
		2000	1990	1980
Attending school (% of population aged 5-29 years)	Total	26.4	20.3	20.6(a)
	Male	28.1	21.9	23.1(a)
	Female	24.7	18.4	17.8(a)
Ever been to school (% of population aged 5 years and over)	Total	50.9	..	..
	Male	55.4	na	na
	Female	46.2	na	na
Grade 10 highest completed (% of population aged 5 years and over who attended school in the past)	Total	17.7	..	..
	Male	20.0	na	na
	Female	14.8	na	na
Grade 12 highest completed (% of population aged 5 years and over who attended school in the past)	Total	2.4	..	..
	Male	3.2	na	na
	Female	1.4	na	na
With qualification (% of population aged 15 years and over)	Total	5.3	..	..
	Male	7.2	na	na
	Female	3.4	na	na
Literate (% of population aged 10 years and over)	Total	56.2	45.1	..
	Male	61.2	49.5	na
	Female	50.9	40.3	na

(a) Aged 5-24 years.

Non-citizen population		PNG		
		2000	1990	1980
Attending school (% of population aged 5-29 years)	Total	47.6	na	na
	Male	47.2	na	na
	Female	48.1	na	na
Ever been to school (% of population aged 5 years and over)	Total	86.7	na	na
	Male	88.3	na	na
	Female	84.1	na	na
Grade 10 highest completed (% of population aged 5 years and over who attended school in the past)	Total	17.3	na	na
	Male	17.2	na	na
	Female	17.4	na	na
Grade 12 highest completed (% of population aged 5 years and over who attended school in the past)	Total	55.9	na	na
	Male	58.0	na	na
	Female	52.3	na	na
With qualification (% of population aged 15 years and over)	Total	52.2	na	na
	Male	56.6	na	na
	Female	44.6	na	na
Literate (% of population aged 10 years and over)	Total	85.8	na	na
	Male	87.0	na	na
	Female	83.7	na	na

Summary indicators – PNG, 1980, 1990 and 2000 Censuses (cont.)

Urban citizen population		PNG		
		2000	1990	1980
Attending school (% of population aged 5-29 years)	Total	37.0	28.4	25.8(a)
	Male	37.5	29.0	26.9(a)
	Female	36.5	27.6	24.2(a)
Ever been to school (% of population aged 5 years and over)	Total	78.5	..	..
	Male	81.1	na	na
	Female	75.3	na	na
Grade 10 highest completed (% of population aged 5 years and over who attended school in the past)	Total	33.0	..	..
	Male	35.2	na	na
	Female	30.0	na	na
Grade 12 highest completed (% of population aged 5 years and over who attended school in the past)	Total	7.1	..	..
	Male	9.0	na	na
	Female	4.6	na	na
With qualification (% of population aged 15 years and over)	Total	17.0	..	..
	Male	20.3	na	na
	Female	13.0	na	na
Literate (% of population aged 10 years and over)	Total	86.2	71.2	..
	Male	88.6	74.6	na
	Female	83.3	66.6	na

Rural citizen population		PNG		
		2000	1990	1980
Attending school (% of population aged 5-29 years)	Total	24.8	18.7	19.8(a)
	Male	26.6	20.5	22.5(a)
	Female	22.9	16.7	16.8(a)
Ever been to school (% of population aged 5 years and over)	Total	46.9	..	..
	Male	51.4	na	na
	Female	42.2	na	na
Grade 10 highest completed (% of population aged 5 years and over who attended school in the past)	Total	13.8	..	..
	Male	16.0	na	na
	Female	11.0	na	na
Grade 12 highest completed (% of population aged 5 years and over who attended school in the past)	Total	1.2	..	..
	Male	1.7	na	na
	Female	0.5	na	na
With qualification (% of population aged 15 years and over)	Total	3.6	..	..
	Male	5.0	na	na
	Female	2.1	na	na
Literate (% of population aged 10 years and over)	Total	51.7	40.4	..
	Male	56.8	44.5	na
	Female	46.3	36.0	na

(a) Aged 5-24 years.

Summary indicators – Provinces, 2000 Census

Citizen population		Southern Region					
		Western	Gulf	Central	NCD	Milne Bay	Northern
Attending school (% of population aged 5-29 years)	Total	34.2	22.2	32.3	38.4	30.2	24.8
	Male	35.6	23.6	33.6	38.7	30.0	25.3
	Female	32.8	20.8	30.9	38.0	30.4	24.3
Ever been to school (% of population aged 5 years and over)	Total	67.1	53.5	67.0	82.4	66.3	63.3
	Male	71.0	58.5	70.3	84.6	68.2	66.4
	Female	63.1	48.1	63.5	79.7	64.1	59.8
Grade 10 highest completed (% of population aged 5 years and over who attended school in the past)	Total	14.2	13.4	17.8	35.4	11.3	12.1
	Male	17.2	15.9	21.1	37.5	11.7	13.2
	Female	10.5	10.0	13.8	32.5	10.9	10.8
Grade 12 highest completed (% of population aged 5 years and over who attended school in the past)	Total	1.3	0.8	1.7	9.8	1.2	0.9
	Male	1.9	1.1	2.4	12.1	1.6	1.2
	Female	0.4	0.4	0.8	6.8	0.8	0.5
With qualification (% of population aged 15 years and over)	Total	5.8	4.2	6.1	17.8	5.9	5.1
	Male	7.4	6.0	8.4	20.6	7.0	6.6
	Female	4.3	2.4	3.8	14.4	4.7	3.4
Literate (% of population aged 10 years and over)	Total	71.3	56.9	72.1	90.7	78.1	69.7
	Male	76.4	62.5	75.4	92.3	79.8	72.9
	Female	66.1	50.9	68.6	88.7	76.2	66.2

Citizen population		Highlands Region				
		SHP	Enga	WHP	Chimbu	EHP
Attending school (% of population aged 5-29 years)	Total	17.1	21.8	22.8	27.2	23.9
	Male	19.1	24.6	25.0	30.3	26.2
	Female	14.9	18.7	20.5	23.9	21.5
Ever been to school (% of population aged 5 years and over)	Total	26.1	28.9	36.7	39.0	39.4
	Male	30.2	33.8	41.9	45.3	45.2
	Female	21.9	23.6	31.4	32.1	33.2
Grade 10 highest completed (% of population aged 5 years and over who attended school in the past)	Total	23.6	26.2	20.4	20.5	17.5
	Male	25.3	29.2	22.8	23.3	19.7
	Female	21.2	21.2	17.0	15.9	14.2
Grade 12 highest completed (% of population aged 5 years and over who attended school in the past)	Total	2.7	2.9	2.5	2.3	2.2
	Male	3.7	3.9	3.3	3.1	2.7
	Female	1.2	1.3	1.2	0.9	1.3
With qualification (% of population aged 15 years and over)	Total	2.5	3.0	3.4	3.2	3.1
	Male	3.7	4.5	5.0	4.9	4.5
	Female	1.4	1.6	1.8	1.6	1.8
Literate (% of population aged 10 years and over)	Total	36.5	35.0	38.4	41.8	43.9
	Male	40.6	40.2	44.1	48.7	51.0
	Female	32.2	29.5	32.6	34.5	36.5

Summary indicators – Provinces, 2000 Census (cont.)

Citizen population		Momase Region			
		Morobe	Madang	ESP	WSP
Attending school (% of population aged 5-29 years)	Total	25.0	24.0	26.4	21.9
	Male	26.5	25.5	28.4	23.7
	Female	23.3	22.3	24.4	20.0
Ever been to school (% of population aged 5 years and over)	Total	54.6	52.3	51.1	47.3
	Male	59.9	57.0	56.9	53.3
	Female	48.8	47.2	45.5	40.9
Grade 10 highest completed (% of population aged 5 years and over who attended school in the past)	Total	16.8	14.3	10.6	10.7
	Male	19.6	16.6	11.9	12.4
	Female	12.9	11.2	9.0	8.4
Grade 12 highest completed (% of population aged 5 years and over who attended school in the past)	Total	2.3	1.6	0.9	1.1
	Male	2.9	2.2	1.3	1.5
	Female	1.4	0.8	0.5	0.5
With qualification (% of population aged 15 years and over)	Total	6.1	5.2	3.7	3.9
	Male	8.4	7.2	5.4	5.5
	Female	3.7	3.0	2.2	2.3
Literate (% of population aged 10 years and over)	Total	63.6	55.2	52.7	44.4
	Male	69.5	61.2	59.7	52.0
	Female	57.3	48.8	46.0	36.4

Citizen population		New Guinea Islands Region				
		Manus	NIP	ENB	WNB	NSP
Attending school (% of population aged 5-29 years)	Total	40.3	31.7	36.2	28.6	41.0
	Male	40.8	31.9	37.1	29.5	42.2
	Female	39.7	31.5	35.2	27.5	39.7
Ever been to school (% of population aged 5 years and over)	Total	81.7	72.2	75.1	67.4	74.2
	Male	83.1	73.2	75.9	69.9	75.3
	Female	80.1	71.1	74.2	64.5	73.1
Grade 10 highest completed (% of population aged 5 years and over who attended school in the past)	Total	21.2	18.1	19.1	14.4	11.1
	Male	24.2	19.3	20.5	16.8	13.2
	Female	17.9	16.8	17.6	11.3	9.0
Grade 12 highest completed (% of population aged 5 years and over who attended school in the past)	Total	2.2	1.7	2.0	1.4	1.1
	Male	3.2	2.2	2.8	2.0	1.7
	Female	1.1	1.0	1.0	0.6	0.4
With qualification (% of population aged 15 years and over)	Total	11.8	7.9	9.4	6.9	5.8
	Male	15.5	9.3	11.4	9.0	7.4
	Female	8.0	6.3	7.3	4.6	4.3
Literate (% of population aged 10 years and over)	Total	85.8	77.4	81.6	70.7	76.7
	Male	87.8	78.9	82.4	73.9	78.4
	Female	83.7	75.8	80.7	66.9	75.0

Glossary

Attended in the past	A person who was not attending school at the time of census but had attended in the past.
Current attendance rate	The percentage of the population who were attending school at the time of the census.
Ever attended school	A person who was either attending school at the time of the census or who had attended school in the past.
Formal schooling	Current or past participation in the formal school system of Papua New Guinea, at a recognised government or non-government school.
Literacy rate	The percentage of the population who could read and write with understanding at least one of English, Pidgin, Motu or Tokples.
Literate	A person who could read and write with understanding at least one of English, Pidgin, Motu or Tokples.
Past attendance rate	The percentage of the population who had attended school in the past but were not currently attending school.
Qualification	A degree, diploma, certificate or professional title acquired on successful completion of a course lasting 3 months or longer, by full-time, part-time or private study, from PNG or overseas.
Qualification rate	The percentage of the population who had acquired a qualification.
Tokples	Pidgin word meaning "language of my place". The local language of a traditional area belonging to a tribe or clan. Also includes non-English languages of persons born overseas.

The level of educational attainment of the population is an important determinant of its capacity to be economically independent. Increasing levels of education indicate development progress both at an individual and societal level.

The current school education system in PNG divides the population into several groupings. Elementary refers to the early years of education and covers Elementary Prep, Elementary Prep 1 and Elementary Prep 2. Primary is grades 3 to 6 and top-up refers to grades 7 and 8. Finally, secondary is grades 9 to 12. The system is designed to allow for school leavers from the top-up and secondary levels.

School attendance

Overall, 51% of PNG's citizen population aged 5 years and over counted at the 2000 Census (2.2 million people) had received some formal schooling, either in the past (1.5 million) or currently attending (740,000), as shown in Table 4.1. More males (1.2 million) than females (970,000) had ever attended school, but most of the difference was in past attendance. Of males aged 5 years and over, 18% were currently attending school compared to 16% of females, while 37% and 30% respectively had attended in the past.

While the pattern was similar in both the urban and rural sectors, the levels were quite different. Just over three-quarters of people counted in urban areas had received some schooling compared to less than half in the rural areas. The proportions of males and females currently attending school were the same in the urban sector (25%) but in the rural sector proportionally more males than females were currently in school, 17% and 15% respectively.

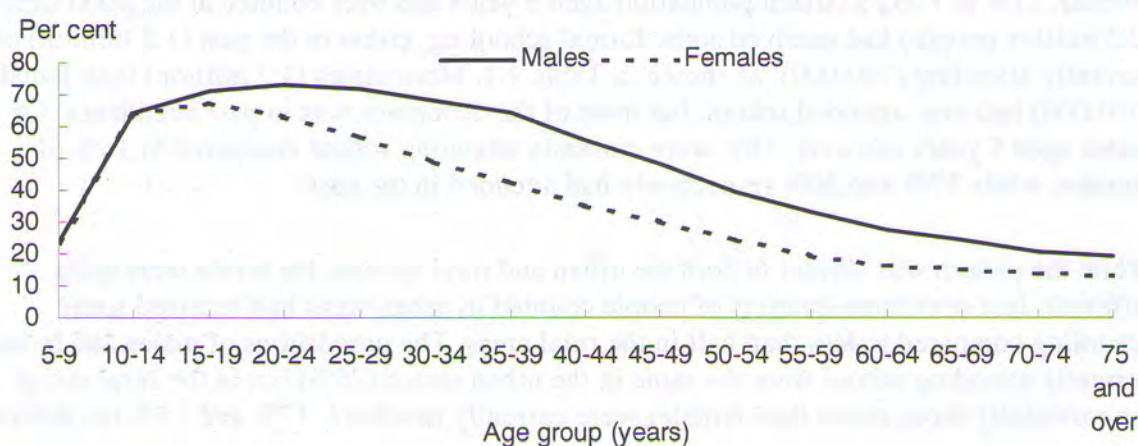
Table 4.1 Citizen population aged 5 years and over by school attendance, sex and sector, PNG, 2000 Census

Area	Total	School attendance			
		Attending now	Attended in the past	Never attended	Not stated
All sectors					
Total	4,416,823	740,936	1,479,354	2,139,065	57,468
Males	2,283,203	408,137	839,319	1,006,078	29,669
Females	2,133,620	332,799	640,035	1,132,987	27,799
Urban					
Total	568,251	138,557	300,091	120,354	9,249
Males	306,829	74,202	171,032	57,036	4,559
Females	261,422	64,355	129,059	63,318	4,690
Rural					
Total	3,848,572	602,379	1,179,263	2,018,711	48,219
Males	1,976,374	333,935	668,287	949,042	25,110
Females	1,872,198	268,444	510,976	1,069,669	23,109

By province in 2000, over 80% of males aged 5 years and over in Manus and NCD and females aged 5 years and over in Manus, and just under 80% of females in the same age group in NCD, had ever attended school. The next ranked province was East New Britain with 76% and 74% for males and females, respectively. In contrast, the lowest ranked province for both males and females was Southern Highlands. The five Highlands provinces had lower levels of school attendance than all other provinces with less than half of males and less than a third of females ever having attended school (see Summary indicators).

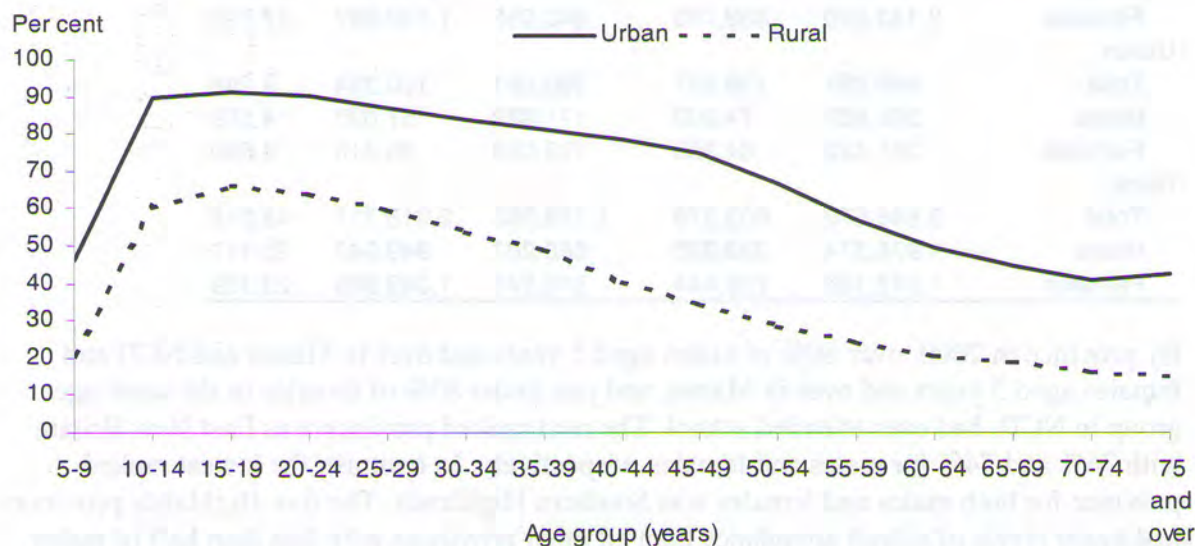
The pattern of schooling by age rose from a low of 24% in the 5-9 years age group, most of whom had not yet commenced school, to a peak of 69% in the 15-19 years age group and declined thereafter. While the pattern was similar for males and females, the peak age group for males was 20-24 years (73%) and for females 15-19 years (67%), possibly reflecting boys' greater likelihood of completing higher grades of schooling than girls (see Table 4.2). The peak age for current school attendance for both boys and girls was 10-14 years. In older age groups proportionally more men than women had received some schooling, as shown in Figure 4.1.

Figure 4.1 Proportion of the citizen population aged 5 years and over who had ever attended school by age and sex, PNG, 2000 Census



The patterns by age and sex were similar for both the urban and rural sectors but, as noted, the levels in the urban sector were consistently higher than the levels in the rural sector, as can be seen in Figure 4.2.

Figure 4.2 Proportion of the citizen population aged 5 years and over who had ever attended school by age and sector, PNG, 2000 Census



These age patterns illustrate the increasing levels of school attendance over time. Less than a quarter of PNG's citizens aged 55 years and over, and less than half aged 35 years and over, had ever attended school, reflecting low levels of educational opportunity in the past. More recently, however, the high levels of school attendance reflect the increasing emphasis placed on national education programs.

Of young people aged 5-29 years, 26% were attending school at the 2000 Census, 37% in the urban sector and 25% in the rural sector. These figures show a marked increase on those for 1990, by 9 percentage points in the urban sector and 6 percentage points in the rural sector (see Summary indicators). In both sectors, proportionally more young men were attending school than young women, although the difference was very small in the urban sector. By province, current school attendance rates by young people varied from less than 20% in Southern Highlands to around 40% in Manus and North Solomons.

Highest grade completed

About 7% of citizens aged 5-29 years attending school had not yet completed Grade 1. As shown in Table 4.2, most school students were clustered in the lower grades, particularly in the rural sector where about a third had completed grades 1 or 2, compared to a quarter in the urban sector. In the higher grades, almost twice as many urban students as rural students had completed grades 8-9, and about three times as many had completed grades 10-12, but this may be partly a result of the greater availability of top-up and secondary schools in the urban sector. Boys were more likely than girls to have completed grade 6 or higher in the rural sector, and more likely to have completed grade 8 or higher in the urban sector.

Table 4.2 Citizen population aged 5-29 years attending school by highest grade completed, sex and sector, PNG, 2000 Census

Highest grade completed	Total			Urban			Rural		
	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females
Total	727,888	399,814	328,074	136,229	72,719	63,510	591,659	327,095	264,564
Current attendance rate	26.4152	28.1	24.7	37.0	37.5	36.5	24.8	26.6	22.9
None	6.7	6.5	6.9	6.7	6.7	6.8	6.7	6.4	6.9
Grade 1	15.7	15.4	16.1	13.2	13.0	13.4	16.3	16.0	16.7
Grade 2	15.3	15.0	15.6	11.5	11.6	11.4	16.2	15.7	16.7
Grade 3	13.5	13.3	13.6	10.9	10.9	11.0	14.1	13.9	14.2
Grade 4	11.8	11.8	11.9	9.9	9.8	10.1	12.3	12.2	12.3
Grade 5	10.3	10.3	10.4	9.0	8.9	9.2	10.6	10.6	10.7
Grade 6-7	14.5	14.6	14.4	17.1	16.8	17.4	13.9	14.1	13.7
Grade 8-9	8.3	8.7	7.8	12.9	13.1	12.7	7.2	7.7	6.6
Grade 10-12	3.9	4.4	3.3	8.7	9.2	8.0	2.8	3.3	2.2

Overall, 34% of the population aged 5 years and over had attended school in the past. The equivalent figure in the urban sector was 54%, and in the rural sector, 31%. Among this population (those aged 5 years and over who had attended school in the past), the most common level of achievement was grades 6-7, that is, completion of primary school only. The level of schooling was higher for males than for females, and higher in the urban sector than in the rural sector, as shown in Table 4.3. Among urban males, 36% had completed grades 10 or 11 and 9% had received a full school education by completing grade 12. In contrast, 30% of urban females had completed grades 10 or 11 and 5% had completed grade 12. Equivalent figures in the rural sector were much lower.

With the exception of NCD, where 12% of males and 7% of females who had attended school in the past had completed grade 12, less than 4% of males and less than 2% of females in all provinces had completed grade 12 (see Summary indicators).

Table 4.3 Citizen population aged 5 years and over who had attended school in the past by highest grade completed, sex and sector, PNG, 2000 Census

Highest grade completed	Total			Urban			Rural		
	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females
Total	1,479,354	839,319	640,035	300,091	171,032	129,059	1,179,263	668,287	510,976
Past attendance rate	33.9	37.2	30.4	53.7	56.6	50.3	31.0	34.2	27.6
None	0.7	0.7	0.9	0.3	0.3	0.4	0.9	0.8	1.0
Grade 1-2	6.5	6.1	7.1	3.5	3.2	3.9	7.3	6.8	8.0
Grade 3-5	17.4	16.4	18.6	10.3	9.3	11.5	19.2	18.2	20.4
Grade 6-7	46.4	44.5	48.9	34.3	31.9	37.4	49.6	47.8	51.9
Grade 8-9	8.6	9.0	8.1	11.2	10.7	11.8	8.0	8.6	7.2
Grade 10-11	17.9	20.2	15.0	33.3	35.7	30.3	13.9	16.1	11.0
Grade 12	2.4	3.2	1.4	7.1	9.0	4.6	1.2	1.7	0.5

Qualifications

Apart from schooling, the education system in PNG allows for people to obtain other qualifications through training and/or study out of school. These qualifications range from basic training in protective services, such as police, security or fire fighting, through basic and skilled vocational training, to study at specialised colleges or university.

Table 4.4 Qualification rate of citizen population aged 15 years and over by age, sex and sector, PNG, 2000 Census

Age group (years)	Total			Urban			Rural		
	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females
Total with qualifications	147,328	100,709	46,619	60,631	39,494	21,137	86,697	61,215	25,482
Total	5.3	7.2	3.4	17.0	20.3	13.0	3.6	5.0	2.1
15-19	1.1	1.2	1.1	3.4	3.4	3.3	0.8	0.9	0.8
20-24	4.2	4.6	3.7	11.9	11.6	12.2	2.7	3.2	2.3
25-29	5.7	7.2	4.3	16.4	18.3	14.3	3.8	5.1	2.7
30-34	6.8	9.3	4.4	20.2	24.5	15.4	4.6	6.5	2.8
35-39	7.6	10.6	4.6	23.2	28.7	16.8	5.1	7.4	2.8
40-44	8.4	12.0	4.6	27.2	33.1	19.2	5.5	8.2	2.7
45-49	7.5	11.2	3.5	26.2	32.6	16.3	5.0	7.8	2.1
50-54	5.9	9.0	2.4	21.1	26.6	11.8	4.2	6.6	1.6
55-59	3.9	6.0	1.3	13.5	17.7	6.3	3.0	4.8	1.0
60-64	2.8	4.6	0.7	10.0	14.0	3.3	2.3	3.8	0.6
65-69	1.8	3.0	0.4	5.6	8.1	2.0	1.6	2.7	0.4
70-74	1.3	2.1	0.3	4.0	6.3	0.8	1.1	1.8	0.3
75 and over	1.0	1.5	0.3	3.6	5.0	1.6	0.9	1.3	0.3

At the 2000 Census, 7% of males and 3% of females aged 15 years and over reported having qualifications, as shown in Table 4.4. The qualification rate in the urban sector was more than four times that in the rural sector for both men and women. This reflects not only the greater educational opportunities in the urban sector but also the greater job opportunities for people with qualifications (see Chapter 5). The qualification rate by age shows that people in the middle working ages, 40-44 years, were the most likely to have obtained qualifications.

This was true for urban men and women as well as for rural men. For rural women, the highest qualification rate, 3%, was among those aged 30-39 years.

NCD had relatively high proportions of men and women with qualifications, 21% and 14% respectively. In all other provinces, except Manus and East New Britain, the male qualification rate was less than 10% and the female qualification rate was less than 7% (see Summary indicators).

The type of qualification held by PNG's qualified population varied considerably by both sex and sector. Overall, men were most likely to have held teaching (19%), vocational (12%) or technical (11%) qualifications, while women were strongly clustered in business and secretarial (31%), teaching (26%) and, to a lesser extent, health (17%), as shown in Table 4.5. This clustering was particularly marked in the urban sector where 41% of qualified women held business and secretarial qualifications. In the rural sector, although only a small proportion of women held qualifications, 33% of them held teaching qualifications, 21% business and secretarial and 19% health.

Table 4.5 Citizen population aged 15 years and over with a qualification by type of qualification, sex and sector, PNG, 2000 Census

Type of qualification	Total			Urban			Rural		
	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females
Total	17,801	12,542	5,259	10,730	7,231	3,499	7,071	5,311	1,760
Protective services	4.6	5.2	3.1	3.6	4.9	1.2	5.3	5.4	5.0
Vocational college	9.7	11.6	5.5	6.5	8.3	3.1	12.2	13.9	7.7
Technical college	8.9	11.4	3.2	10.2	14.0	3.0	7.8	9.6	3.3
Tradesman/ apprenticeship	4.5	6.3	0.3	4.9	7.3	0.4	4.1	5.7	0.2
Business and secretarial college	15.3	8.5	30.6	21.6	11.6	40.5	10.5	6.3	21.2
Teachers college	21.2	19.2	25.6	12.4	9.7	17.6	27.9	25.8	33.1
Health college	8.6	4.9	16.9	7.2	3.1	14.8	9.7	6.2	18.8
University/public admin. college	9.1	10.8	5.1	11.0	13.2	6.9	7.5	9.2	3.4
University degree	9.2	11.1	4.8	14.3	17.8	7.7	5.2	6.4	2.1
Other miscellaneous	9.1	10.9	4.9	8.2	10.0	4.6	9.7	11.5	5.1

While teaching, vocational, technical qualifications were predominant among qualified men, there was again a different pattern by sector. In urban areas, 18% of qualified men held university degrees and 14% held qualifications from technical colleges. In contrast, in the rural sector, 26% of qualified men held teaching qualifications and 14% had vocational qualifications.

Literacy

Literacy, or the ability to read and write a language with understanding, is an important prerequisite for the successful completion of education, for employment in many occupations, and for full participation in society. In PNG, over 800 different local languages have been identified. These are usually referred to as Tokples. The major Tokples language in PNG is Motu which is mainly spoken in the Southern coastal region of the country. Pidgin (Tok Pisin) is widely spoken throughout the country and English is considered the language of business and commerce. Consequently, many Papua New Guineans are multilingual.

At the 2000 Census, the overall literacy rate (literate in at least one language) for PNG was 56%, an increase of about 10 percentage points since 1990 (see Summary indicators). Pidgin had the highest literacy rate at 45%. Not surprisingly, given that less than 20% of the citizen population had been born in the Southern region (see Chapter 3), few people were literate in Motu. The literacy rate for Tokples was 42%, and for English, 40%. Males had a higher literacy rate than females in all languages.

In the urban sector, 80% of men and 72% of women were literate in Pidgin compared to 40% and 30% respectively in the rural sector. English literacy was high in the urban sector but low in the rural sector where literacy in Tokples was more common.

Table 4.6 Literacy rate of citizen population aged 10 years and over by language, sex and sector, PNG, 2000 Census

Literacy	Total			Urban			Rural		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
Total	56.2	61.2	50.9	86.2	88.6	83.3	51.7	56.8	46.3
Literate in English	40.4	45.4	35.0	74.6	78.3	70.2	35.2	40.1	30.0
Literate in Pidgin	45.2	51.0	38.9	76.6	80.5	72.0	40.4	46.3	34.2
Literate in Motu	5.0	6.0	4.0	17.0	18.2	15.7	3.2	4.0	2.4
Literate in Tokples	41.7	45.4	37.7	62.5	65.2	59.4	38.5	42.3	34.6

By province, literacy was highest in NCD at 92% for males and 89% for females, and lowest in Enga at 40% for males and 30% for females. Except for the five Highlands provinces and West Sepik, the literacy rate in all provinces was 60% or more for males and more than 40% for females (see Summary indicators).

Non-citizens

The educational attainment of the non-citizen population counted in private dwellings in PNG at the 2000 Census was far greater than that of the citizen population, which is to be expected given their employment profile (see Chapter 5). Over 80% of males and females aged 5 years and over had ever been to school, and over 50% of those who were no longer attending school had completed grade 12. Among young people, aged 5-29 years, almost half were currently attending school. About half of the non-citizens aged 15 years and over held qualifications (see Summary indicators).

Table 4.7 Literacy rate of non-citizen population aged 10 years and over by language, sex and sector, PNG, 2000 Census

Literacy	Total	Males	Females
Total	85.8	87.0	83.7
Literate in English	75.2	77.1	72.1
Literate in Pidgin	43.6	46.2	39.2
Literate in Motu	2.3	2.6	1.7
Literate in Tokples	50.4	50.7	50.0

The non-citizen population aged 10 years and over had a high literacy rate of 86%, 87% for males and 84% for females. Three-quarters of non-citizens were literate in English and half were literate in Tokples, which would mainly be non-English languages of people born overseas rather than Papua New Guinean languages. This is consistent with the fact that half of all non-citizens had been born in non-English speaking countries (other than PNG) (see Chapter 3). The literacy rate for Pidgin suggests that many non-citizens living in PNG have learned to communicate with their citizen counterparts, although a quarter of non-citizens reported having been born in PNG.

CHAPTER 5

ECONOMIC ACTIVITY



Summary indicators – PNG 1980, 1990 and 2000 Censuses

Citizen population		PNG		
		2000	1990	1980
Labour force participation rate (% of population aged 10 years and over)	Total	67.5	68.8	63.8
	Male	68.4	76.7	65.5
	Female	66.7	60.1	62.0
Unemployment rate (% of labour force)	Total	2.8	7.7	2.9
	Male	4.3	9.1	3.9
	Female	1.3	5.9	1.7
Subsistence employment (% of employed population)	Total	67.4	37.8	43.0
	Male	60.8	34.8	35.4
	Female	74.3	41.9	51.5
Wage job employment (% of employed population)	Total	10.4	14.7	15.1
	Male	15.2	20.9	24.8
	Female	5.3	6.2	4.1
Main activity studying (% of population not in the labour force)	Total	26.4	44.3	32.2
	Male	29.8	65.4	39.5
	Female	22.9	30.7	24.8
Main activity housework (% of population not in the labour force)	Total	29.4	35.1	15.8
	Male	20.0	7.0	1.0
	Female	38.9	53.3	30.5
Non-citizen population		PNG		
		2000	1990	1980
Labour force participation rate (% of population aged 10 years and over)	Total	65.5	65.2	67.1
	Male	75.3	78.0	84.7
	Female	48.9	46.8	42.3
Unemployment rate (% of labour force)	Total	1.7	6.2	0.3
	Male	1.7	4.1	0.2
	Female	1.6	11.1	0.6
Subsistence employment (% of employed population)	Total	24.0	16.8	0.0
	Male	19.2	11.6	0.0
	Female	36.5	30.4	0.0
Wage job employment (% of employed population)	Total	63.1	70.5	92.4
	Male	68.3	77.5	93.1
	Female	49.6	52.4	90.4
Main activity studying (% of population not in the labour force)	Total	25.5	43.9	39.9
	Male	32.2	68.1	78.5
	Female	20.0	29.6	25.3
Main activity housework (% of population not in the labour force)	Total	34.3	34.1	49.8
	Male	17.6	1.9	0.5
	Female	48.1	53.3	68.3

Summary indicators – PNG, 1980, 1990 and 2000 Censuses (cont.)

Urban citizen population		PNG		
		2000	1990	1980
Labour force participation rate (% of population aged 10 years and over)	Total	48.4	56.2	48.0
	Male	58.7	72.4	65.1
	Female	36.2	34.8	21.9
Unemployment rate (% of labour force)	Total	16.2	30.1	8.4
	Male	19.4	28.6	8.4
	Female	10.2	34.3	8.5
Subsistence employment (% of employed population)	Total	14.6	5.1	5.2
	Male	9.2	3.3	2.6
	Female	24.0	10.5	17.0
Wage job employment (% of employed population)	Total	64.2	80.8	85.5
	Male	74.7	86.4	89.5
	Female	46.2	64.2	67.2
Main activity studying (% of population not in the labour force)	Total	32.5	44.5	36.1
	Male	41.0	70.9	57.4
	Female	26.0	29.8	21.7
Main activity housework (% of population not in the labour force)	Total	43.7	40.2	36.2
	Male	25.5	5.4	0.9
	Female	57.6	59.7	60.1
Rural citizen population		PNG		
		2000	1990	1980
Labour force participation rate (% of population aged 10 years and over)	Total	70.4	71.1	66.0
	Male	69.9	77.5	65.5
	Female	70.9	64.3	66.6
Unemployment rate (% of labour force)	Total	1.5	4.5	2.3
	Male	2.3	5.4	3.1
	Female	0.7	3.4	1.4
Subsistence employment (% of employed population)	Total	72.0	41.3	46.5
	Male	66.4	39.3	40.5
	Female	77.5	43.8	52.7
Wage job employment (% of employed population)	Total	5.7	7.7	8.4
	Male	8.8	11.6	14.8
	Female	2.7	2.8	1.9
Main activity studying (% of population not in the labour force)	Total	24.8	44.3	31.4
	Male	27.3	64.1	36.6
	Female	22.0	30.9	25.7
Main activity housework (% of population not in the labour force)	Total	25.7	33.7	11.4
	Male	18.8	7.4	1.1
	Female	33.2	51.5	22.6

Summary indicators – Provinces, 2000 Census

Citizen population		Southern Region					
		Western	Gulf	Central	NCD	Milne Bay	Northern
Labour force participation rate (% of population aged 10 years and over)	Total	56.5	58.1	68.9	48.4	68.4	67.0
	Male	58.3	61.2	70.6	60.1	70.5	69.6
	Female	54.6	54.9	67.0	34.2	66.1	64.2
Unemployment rate (% of labour force)	Total	3.5	2.5	1.8	18.5	1.1	2.0
	Male	5.4	4.0	2.7	21.2	1.6	3.0
	Female	1.4	0.7	0.7	12.8	0.5	0.9
Subsistence employment (% of employed population)	Total	75.0	77.7	73.7	6.5	80.2	77.0
	Male	66.8	72.8	67.7	4.0	75.0	70.8
	Female	83.6	83.4	80.3	11.4	86.1	84.2
Wage job employment (% of employed population)	Total	12.9	7.1	8.5	74.2	9.1	8.8
	Male	20.1	10.7	12.2	81.5	12.8	12.8
	Female	5.3	3.0	4.4	60.4	4.9	4.1
Main activity studying (% of population not in the labour force)	Total	26.1	22.6	30.9	36.4	23.0	31.4
	Male	29.3	26.6	35.9	47.3	24.8	34.9
	Female	23.1	18.9	26.1	28.5	21.4	28.1
Main activity housework (% of population not in the labour force)	Total	38.7	33.8	31.9	42.1	33.6	28.6
	Male	31.6	21.4	20.3	21.6	23.1	18.4
	Female	45.4	45.2	42.9	57.2	43.4	38.0

Citizen population		Highlands Region				
		SHP	Enga	WHP	Chimbu	EH
Labour force participation rate (% of population aged 10 years and over)	Total	74.4	75.5	72.2	74.9	74.6
	Male	72.1	74.0	71.5	73.2	73.3
	Female	76.7	77.1	72.8	76.7	75.9
Unemployment rate (% of labour force)	Total	1.5	2.0	2.4	1.6	2.6
	Male	2.4	3.0	3.5	2.4	3.9
	Female	0.7	0.9	1.3	0.7	1.3
Subsistence employment (% of employed population)	Total	80.6	78.8	60.3	75.2	69.3
	Male	77.5	75.3	52.4	69.7	62.9
	Female	83.5	82.3	68.0	80.8	73.6
Wage job employment (% of employed population)	Total	3.2	4.5	10.2	3.7	5.6
	Male	5.1	7.3	15.2	5.9	8.6
	Female	1.4	1.7	5.4	1.4	2.7
Main activity studying (% of population not in the labour force)	Total	25.3	30.9	22.6	25.7	20.6
	Male	27.8	33.5	25.5	28.2	22.9
	Female	22.3	27.7	19.5	22.5	17.9
Main activity housework (% of population not in the labour force)	Total	20.8	23.8	26.5	18.5	23.0
	Male	17.5	19.4	19.0	13.3	15.9
	Female	24.9	29.1	34.5	24.8	31.1

Summary indicators – Provinces, 2000 Census (cont.)

Citizen population		Momase Region			
		Morobe	Madang	ESP	WSP
Labour force participation rate (% of population aged 10 years and over)	Total	66.1	64.8	62.2	62.0
	Male	67.9	66.0	61.5	62.7
	Female	64.0	63.4	62.9	61.4
Unemployment rate (% of labour force)	Total	4.0	2.9	2.2	1.7
	Male	6.1	4.3	3.6	2.7
	Female	1.7	1.4	0.8	0.6
Subsistence employment (% of employed population)	Total	60.5	68.5	65.0	79.1
	Male	52.7	60.5	60.5	75.5
	Female	69.0	77.2	69.0	82.7
Wage job employment (% of employed population)	Total	13.4	10.0	5.1	5.0
	Male	19.8	14.4	8.1	7.9
	Female	6.5	5.1	2.4	2.1
Main activity studying (% of population not in the labour force)	Total	24.8	21.0	19.1	15.6
	Male	28.9	23.6	21.6	17.8
	Female	20.8	18.5	16.6	13.5
Main activity housework (% of population not in the labour force)	Total	30.4	32.1	31.5	28.4
	Male	18.8	22.8	22.3	20.6
	Female	41.5	41.4	40.8	36.3

Citizen population		New Guinea Islands Region				
		Manus	NIP	ENB	WNB	NSP
Labour force participation rate (% of population aged 10 years and over)	Total	53.2	58.6	67.5	67.6	63.0
	Male	58.4	62.6	70.1	70.8	61.7
	Female	47.7	54.1	64.7	63.8	64.4
Unemployment rate (% of labour force)	Total	2.3	2.5	2.0	2.6	1.2
	Male	3.3	3.7	2.8	3.7	2.0
	Female	1.0	1.0	1.0	1.1	0.3
Subsistence employment (% of employed population)	Total	63.2	62.0	43.3	54.9	68.8
	Male	58.4	54.7	36.2	44.8	59.5
	Female	69.2	71.3	51.6	67.8	77.8
Wage job employment (% of employed population)	Total	13.3	17.7	18.2	19.3	7.1
	Male	16.9	23.2	24.8	27.4	10.0
	Female	8.9	10.7	10.5	8.9	4.4
Main activity studying (% of population not in the labour force)	Total	24.9	29.6	35.2	29.4	47.3
	Male	29.4	32.9	39.7	34.3	48.5
	Female	21.2	26.6	31.1	24.7	45.9
Main activity housework (% of population not in the labour force)	Total	40.0	35.6	29.8	32.0	19.2
	Male	25.6	25.7	21.0	18.9	14.2
	Female	52.0	44.8	37.9	44.3	24.7

Glossary

Economically active	See labour force.
Employed	Population aged 10 years and over in private dwellings who, during the reference period, worked in a job or business for pay or profit or who worked without pay in a family business or subsistence activity.
Labour force	Population aged 10 years and over in private dwellings who, during the reference period, were either employed or unemployed.
Labour force participation rate	The percentage of the population aged 10 years and over in private dwellings who were in the labour force (economically active).
Main activity	The activity people who were not in the labour force during the reference period spent most time on.
Monetary activity	Employment for pay or profit, comprising gardening/fishing for money, business with paid help, business without paid help, and wage job.
Non-monetary activity	Employment without pay comprising helping in a family business without pay, and gardening/fishing for own/family use only.
Not economically active	See not in the labour force.
Not in the labour force	People aged 10 years and over in private dwellings who were neither employed nor unemployed during the reference period.
Subsistence	Gardening/agricultural activity, hunting or fishing for own or family use only, and not for sale.
Unemployed	People aged 10 years and over in private dwellings who, during the reference period, were either actively looking for work or waiting to start a new job.
Unemployment rate	The percentage of the labour force who were unemployed.

A person's working status is an important indicator of individual and family well-being and, when considered on a population basis, of the economic health of the nation. Questions 15-19 on the 2000 Census form sought information about people's working status for all those of working age, defined for census purposes as 10 years or older. The questions were structured and sequenced so as to maximise the chance of a person being classified as working or employed in the reference period, the previous seven days. For example, a student who helped in the family trade store or worked in the family garden after school was classified as working even though they may have received no pay and they may have spent more time studying. Similarly, a person temporarily absent from a usual job was classified as employed even though they may have done no work during the reference period. For any person not classified as employed, information about their main activity was collected and used as the basis of classifying them as either unemployed (looking for work or waiting to start a new job) or not in the labour force. The labour force comprises people who were either employed or unemployed during the reference period.

Labour force status

Of the 3.7 million citizens aged 10 years and over counted in private dwellings in PNG at the 2000 Census, 2.4 million were classified as being in the labour force; 2.3 million employed and 69,000 unemployed. Reflecting the sex ratio of the population, there were more men than women in every labour force status category.

At the 1990 Census, the labour force numbered 1.7 million people, 1.6 million employed and 130,000 unemployed. Between the two censuses, the labour force became slightly more feminised. In 1990, 58% of the labour force was male but by 2000 this had reduced to 52%. However, this only occurred among employed people where the male proportion reduced from 58% to 51%. Among the unemployed, the proportion who were male increased from 68% to 78%.

Table 5.1 Citizen population aged 10 years and over in private dwellings by labour force status and sex, PNG, 1990 and 2000 Censuses

Labour force status	2000			1990		
	Total	Males	Females	Total	Males	Females
Total	3,691,933	1,903,119	1,788,814	2,514,924	1,320,417	1,194,507
In the labour force	2,413,357	1,256,887	1,156,470	1,715,330	1,002,891	712,439
Employed	2,344,734	1,203,233	1,141,501	1,582,518	912,124	670,394
Unemployed	68,623	53,654	14,969	132,812	90,767	42,045
Not in the labour force	1,160,229	581,704	578,525	777,241	305,131	472,110
Not stated	118,347	64,528	53,819	22,353	12,395	9,958

Labour force participation

The overall labour force participation rate for citizens aged 10 years or more, that is the proportion of the population who were economically active, was 68% in 2000. The rate was slightly higher for males, 68%, than for females, 67%. There was a marked difference in labour force participation between sectors. In urban areas, 48% of the citizen population aged 10 years and over were in the labour force while, in the rural sector, 70% were. Labour force participation was lowest for females in the urban sector (36%) and highest for females in the

rural sector (71%). This is partly because gardening/fishing for own or family use only, an activity undertaken by the majority of women in rural areas, is counted as employment even though it is a non-monetary activity.

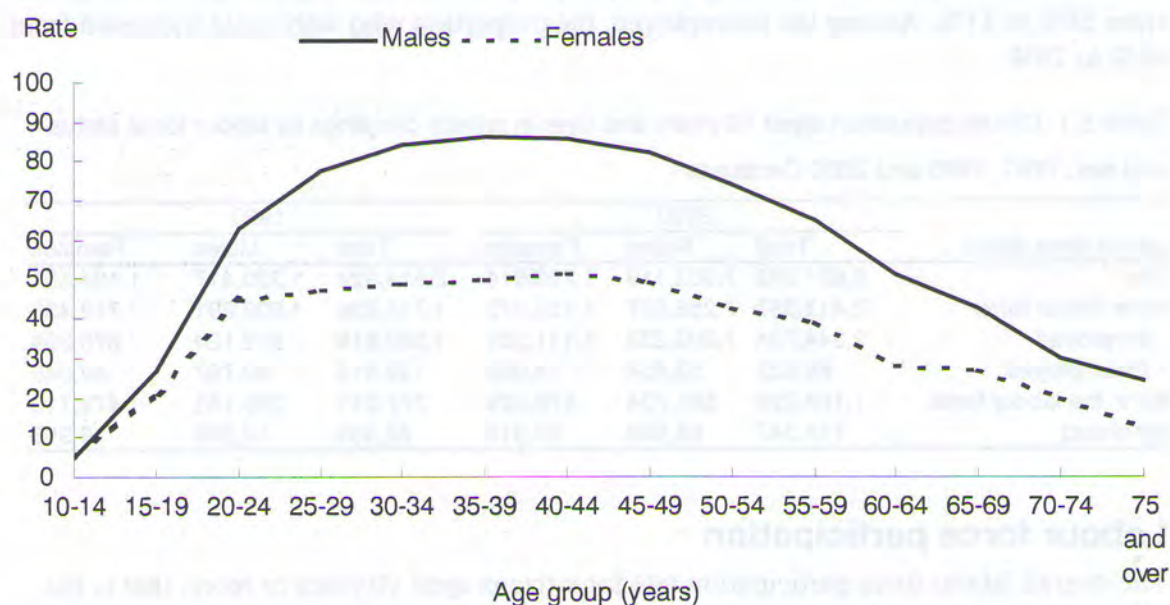
At the 1990 Census, the labour force participation rate was 69%, slightly higher than the figure recorded at the 2000 Census. There was, however, a major change in pattern between the two censuses with increasing labour force participation by females and a large reduction on the part of urban males, from 72% to 59%. This reduction is almost entirely attributable to a shift from being unemployed to not in the labour force, possibly caused by a perceived lack of employment opportunities.

Table 5.2 Citizen labour force participation rate by sector and sex, PNG, 1990 and 2000 Censuses

Sector	2000			1990		
	Total	Males	Females	Total	Males	Females
Total	67.5	68.4	66.7	68.8	76.7	60.1
Urban	48.4	58.7	36.2	56.2	72.4	34.8
Rural	70.4	69.9	70.9	71.1	77.5	64.3

By province, the male labour force participation rate varied from 58% in Western and Manus to 74% in Enga, and was over 71% in all Highlands provinces. For females, labour force participation was lowest in NCD, 34%, but this is mainly due to the fact that NCD is entirely urban and affords less opportunity to engage in subsistence activities. In the other provinces, female labour force participation varied from 48% in Manus to 77% in Enga, and was over 72% in all Highlands provinces (see Summary indicators).

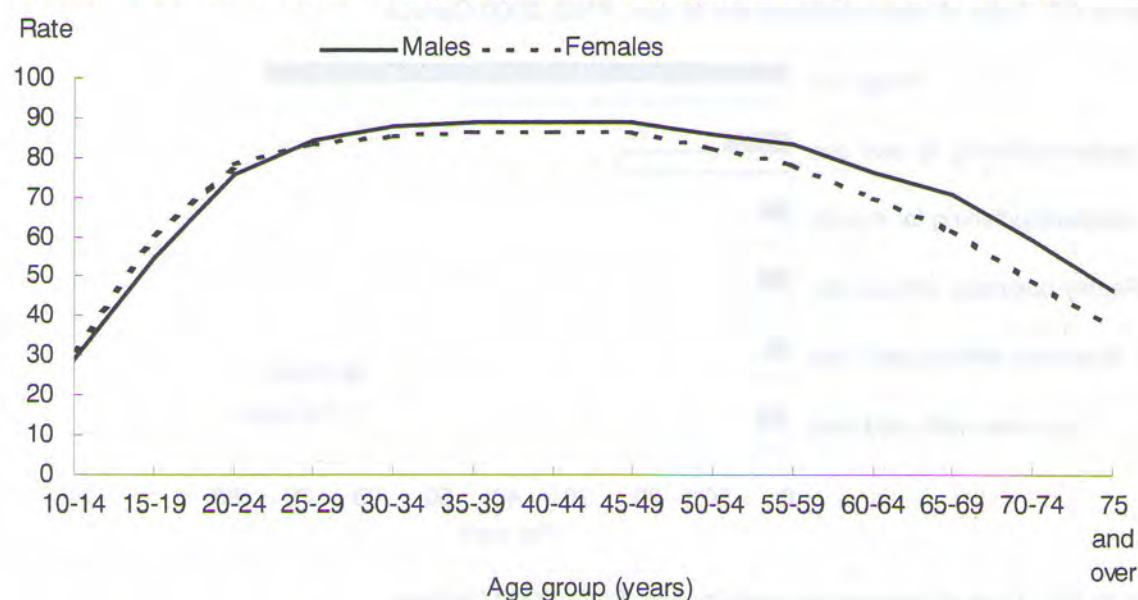
Figure 5.1 Urban citizen labour force participation rate by age and sex, PNG, 2000 Census



In both the urban and rural sectors, the pattern of labour force participation by age was similar for both sexes, increasing sharply from the lowest rate for 10-14 year olds to plateau for age groups 35-39 years to 45-49 years, and declining thereafter. Generally, male

labourforce participation was higher than female but it is of note that female labour force participation was slightly higher than male in the youngest age groups in the rural sector, partly related to higher male participation in education at these ages (see Chapter4) as well as to the greater likelihood of young women helping in a family business or garden after school. Despite this, there was very little difference between male and female labour force participation at any age in the rural sector. In the urban sector, however, males were at least 50% more likely than females to participate in the labour force between the ages of 25-29 years and 65-69 years.

Figure 5.2 Rural citizen labour force participation rate by age and sex, PNG, 2000 Census



Employment

Employment can take a number of forms which can be broadly defined as monetary and non-monetary. Monetary activities are those where the person receives some form of payment or profit in return for their labour while non-monetary activities do not involve payment but contribute to the economic well-being of the family.

Overall, three times as many employed citizens aged 10 years and over were in non-monetary work as were in monetary work. However, this is due mainly to the high proportion of the population in the rural sector where most non-monetary work is undertaken. In the urban sector, monetary employment was nearly four times as common as non-monetary employment. There were also differences between the sexes with females more likely than males to undertake non-monetary work, regardless of sector.

Table 5.3 Employed citizens by sector, type of employment activity and sex, PNG, 2000 Census

Sector	Total		Males		Females	
	Monetary	Non-monetary	Monetary	Non-monetary	Monetary	Non-monetary
Total	584,682	1,760,052	373,239	829,994	211,443	930,058
Urban	148,419	38,815	102,542	16,004	45,877	22,811
Rural	436,263	1,721,237	270,697	813,990	165,566	907,247

At the national level, subsistence employment was most common for both males and females, accounting for 61% and 74% of total employment, respectively. This was followed by wage jobs for males (15%) and gardening/fishing for money for females (10%). These aggregates, however, mask the markedly different activity patterns that exist in the urban and rural sectors. In urban areas, wage jobs were most common for both males and females, accounting for 75% and 46% of urban employment, respectively. Subsistence activity was also important for females (24%) but less so for males (9%). In the rural sector, 66% of male employment and 78% of female employment was subsistence activity. This was followed by gardening/fishing for money, 10% of employment for both sexes.

Figure 5.3 Type of urban employment by sex, PNG, 2000 Census

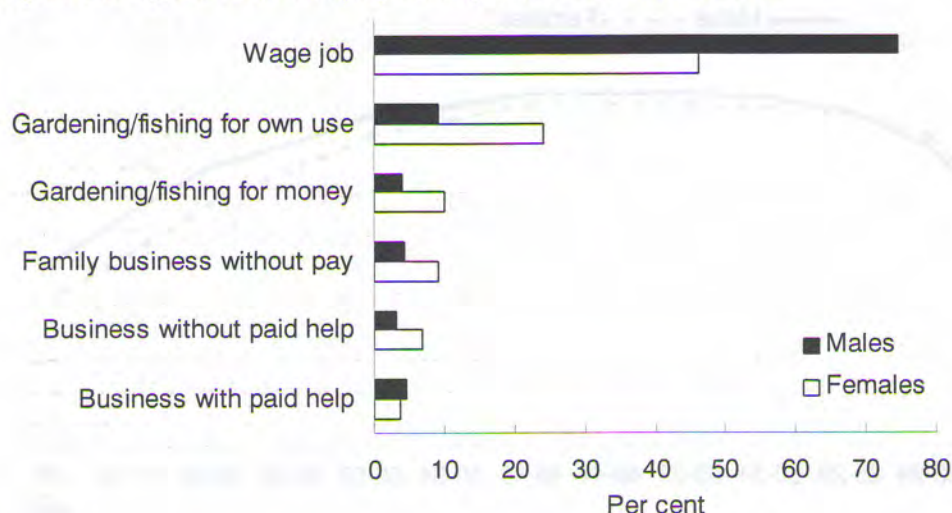
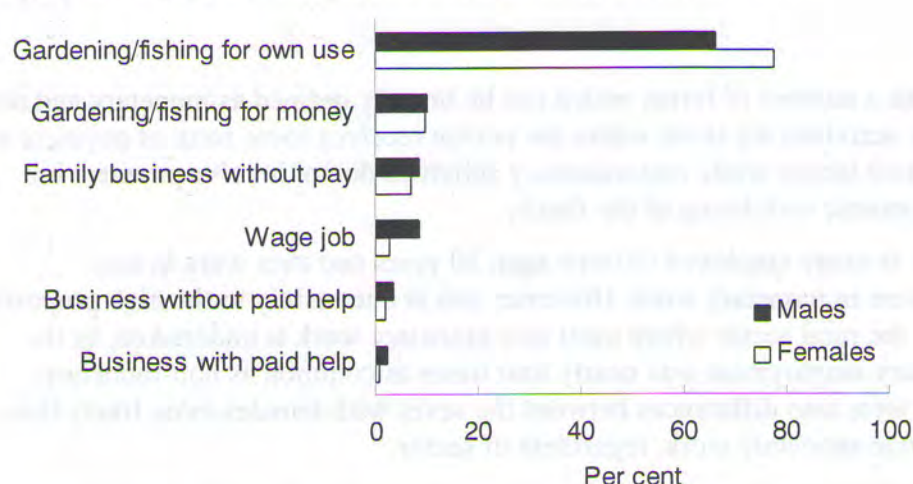


Figure 5.4 Type of rural employment by sex, PNG, 2000 Census



By province in 2000, the incidence of subsistence employment was lowest in NCD for both sexes due to its urban nature. In all other provinces, subsistence activity represented more than half of all female employment, peaking at 86% in Milne Bay. Among men, the proportion employed in subsistence activity varied from 36% in East New Britain to 78% in Southern Highlands (see Summary indicators). Conversely, wage job employment

represented 82% of male employment and 60% of female employment in NCD, but less than 30% of employment in all other provinces.

Consistent with the predominance of agricultural and fishing activities among type of employment, occupation was dominated by agricultural, animal and fishery workers (82% of all employed). This was even more pronounced in the rural sector where 88% of employed people were agricultural, animal and fishery workers. In the urban sector the range of occupations was more diverse, particularly for those who were wage earners. Overall, 21% of the urban employed were agricultural, animal and fishery workers, a further 20% were in elementary occupations and 12% were craft and building trade workers. These three occupation groups were also the most common among employed males but in a different order: elementary occupations, 19%; craft and building trade workers, 17%; and agricultural, animal and fishery workers, 15%. Among women, 33% were agricultural, animal and fishery workers, 20% were in elementary occupations and 14% were clerks. The pattern for people in wage jobs was quite different: 19% were in elementary occupations, 16% were teaching and associate professionals, and 15% were craft and building trade workers. Again the pattern varied between the sexes with males nearly eight times as likely as females to be craft and building trades workers and females four times as likely as males to be clerks.

Table 5.4 Percentage distribution of employed urban citizens by occupation, type of employment and sex, PNG, 2000 Census

Occupation	Total employed			Employed in wage job		
	Persons	Males	Females	Persons	Males	Females
Total	100.0	100.0	100.0	100.0	100.0	100.0
Legislators, senior officials & managers	4.3	5.6	2.1	5.1	5.8	3.3
Professionals	6.0	5.7	6.6	9.0	7.2	13.9
Teaching & associate professionals	10.8	11.8	9.1	15.7	14.6	18.6
Clerks	9.0	5.9	14.4	13.4	7.4	30.0
Service workers, shop & market sales workers	11.6	11.9	11.1	14.0	13.4	15.6
Agricultural, animal & fishery workers	21.3	14.5	33.1	1.2	1.4	0.8
Craft & building trade workers	11.8	17.2	2.6	15.3	19.8	2.5
Plant & machine operators & assemblers	5.5	8.2	0.8	7.6	9.7	1.7
Elementary occupations	19.6	19.2	20.3	18.8	20.7	13.7

A similar situation held with industry. Overall, the largest industrial grouping was agriculture, hunting and forestry accounting for 72% of all employed people. This was followed by wholesale and retail trade employing 15%. In the rural sector, 76% were in agriculture, hunting and forestry and 15% in wholesale and retail trade. Again, the range of industries was greater in the urban sector, particularly among wage earners. Wholesale and retail trade, public administration and defence, compulsory social services and real estate, renting and business service activities each accounted for more than 10% of wage job employment. With the addition of construction this held true for males. Among females, wholesale and retail trade, manufacturing, public administration and defence, compulsory social services, education and real estate, renting and business service activities were important sources of employment.

Table 5.5 Percentage distribution of employed urban citizens by industry, type of employment and sex, PNG, 2000 Census

Industry	Total employed			Employed in wage job		
	Persons	Males	Females	Persons	Males	Females
Total	100.0	100.0	100.0	100.0	100.0	100.0
Agriculture, hunting and forestry	19.0	13.3	28.8	2.8	3.2	1.8
Fishing	1.3	1.5	1.1	0.3	0.3	0.2
Mining and quarrying	0.8	1.1	0.2	1.0	1.2	0.4
Manufacturing	5.7	6.9	3.7	8.0	8.5	6.7
Electricity, gas, steam & hot water supply	0.9	1.3	0.3	1.4	1.7	0.5
Construction	6.5	9.8	0.6	8.8	11.5	1.1
Wholesale & retail trade	22.2	19.0	27.6	16.4	15.8	18.2
Hotels & restaurants	1.8	1.7	2.0	2.6	2.1	4.0
Transport, storage & communications	5.9	8.2	1.9	7.9	9.3	3.9
Financial intermediation	1.7	1.4	2.2	2.6	1.9	4.7
Real estate, renting & business service activities	9.9	12.7	5.0	14.5	15.9	10.4
Public administration & defence, compulsory social security	10.2	12.5	6.3	15.5	16.3	13.5
Education	4.6	3.9	5.9	7.1	5.1	12.7
Health & social work	2.7	1.8	4.3	4.1	2.3	9.3
Other community, social & personal service activities	4.7	3.7	6.3	4.9	3.9	7.9
Private households with employed persons	2.0	0.9	3.7	2.0	1.0	4.8
Extra-territorial organisations & bodies	0.1	0.1	0.1	0.1	0.1	0.1

Unemployment

At the 2000 Census, almost 69,000 citizens aged 10 years and over in PNG were classified as unemployed, either looking for work (77%) or waiting to start a new job. Of the total unemployed, 53% were in the urban sector, giving an urban unemployment rate of 16%. While this is about half the rate recorded at the 1990 Census, it represents a movement out of the labour force rather than an increase in employment. Unemployment in the rural sector was relatively rare but this is because of the high level of non-monetary subsistence activity. Over one-quarter of the unemployed in PNG at the 2000 Census were aged 20-24 years.

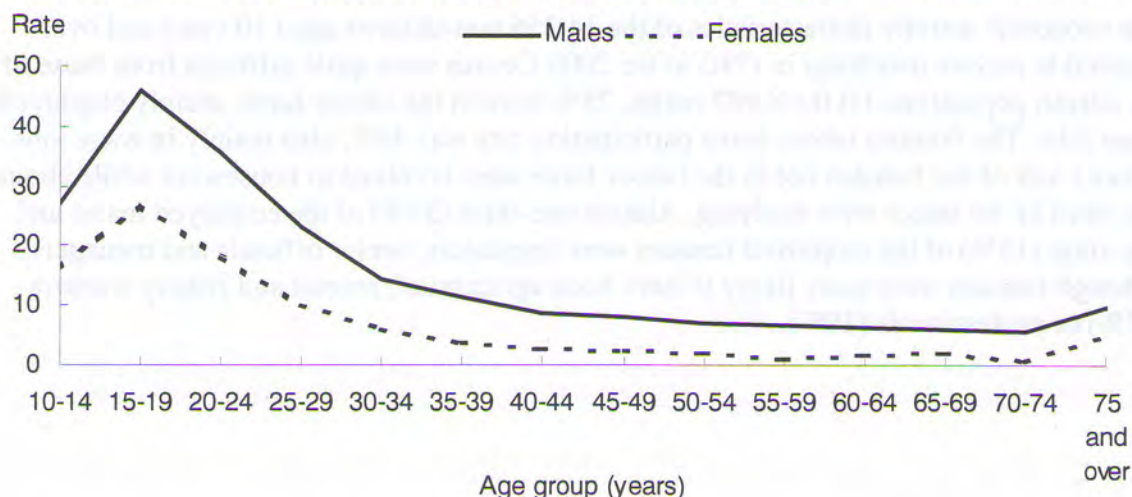
Table 5.6 Citizen unemployment rate by sector and sex, PNG, 1990 and 2000 Censuses

Sector	2000			1990		
	Total	Males	Females	Total	Males	Females
Total	2.8	4.3	1.3	7.7	9.1	5.9
Urban	16.2	19.4	10.2	30.1	28.6	34.3
Rural	1.5	2.3	0.7	4.5	5.4	3.4

By province in 2000, with the exception of NCD, the unemployment rate for males was 6% or less, and for females below 2%. The National Capital District, due to its urban nature, had unemployment rates of 21% and 13%, respectively (see Summary indicators).

The male urban unemployment rate in 2000 was higher than the female rate at all ages and was highest for people aged 15-19 years, 46% for males and 27% for females. While older age groups had lower unemployment rates it was only among age groups 40-44 years and older that male unemployment dropped below 10% and female below 3%.

Figure 5.5 Urban citizen unemployment rate by age and sex, PNG, 2000 Census



Not in the labour force

Of the 1.2 million people who were not in the labour force at the 2000 Census, 29% had spent most of their time in the reference period on housework and a further 26% had spent most time studying. This pattern varied by sex and age with 71% of females and 38% of males aged 30-39 years reporting their main activity as housework and 42% of males and 40% of females aged 10-19 years reporting studying.

Table 5.7 Percentage distribution of citizens not in the labour force by main activity, sex and age, PNG, 2000 Census

		Age group (years)						
		Total	10-19	20-29	30-39	40-49	50-59	60 +
Main activity	Total							
Total males	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Housework	20.0	14.4	34.0	37.8	31.4	22.2	8.9	
Student	29.8	41.8	22.0	5.1	2.4	1.0	0.6	
Too young	17.9	28.6	1.9	0.0	0.0	0.0	0.0	
Too old/retired	5.0	0.0	0.0	0.0	0.0	13.3	66.0	
Sick	7.5	3.5	10.2	16.0	20.2	20.8	12.3	
Permanently disabled	1.4	0.6	2.0	3.0	3.6	3.6	3.2	
Others	18.5	11.1	29.9	38.2	42.3	39.1	8.9	
Total females	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Housework	38.9	23.1	66.1	70.6	60.1	37.4	13.9	
Student	22.9	40.1	8.7	1.9	1.1	0.7	0.5	
Too young	12.9	24.3	0.7	0.0	0.0	0.0	0.0	
Too old/retired	5.3	0.0	0.0	0.0	0.0	14.2	69.0	
Sick	6.1	3.0	7.7	9.3	12.6	14.3	8.4	
Permanently disabled	0.9	0.5	1.0	1.3	1.7	1.9	1.8	
Others	13.1	9.1	15.9	16.9	24.6	31.6	6.4	

By province, the incidence of studying varied from 18% for males and 13% for females in West Sepik to 49% for males and 46% for females in North Solomons. On the other hand, housework ranged from 13% for males and 25% for females in Chimbu to 32% for males in Western and 57% for females in NCD (see Summary indicators).

Non-citizens

The economic activity characteristics of the 14,356 non-citizens aged 10 years and over counted in private dwellings in PNG at the 2000 Census were quite different from those of the citizen population. Of the 8,983 males, 75% were in the labour force, mainly employed in wage jobs. The females labour force participation rate was 49%, also mainly in wage jobs. Almost half of the females not in the labour force were involved in housework while about one-third of the males were studying. Almost one-third (31%) of the employed males and one-sixth (15%) of the employed females were legislators, senior officials and managers, although females were more likely to have been agricultural, animal and fishery workers (37%) or professionals (19%).

Not in the labour force

Of the 1.5 million people who were not in the labour force at the 2000 Census, 29% had spent most of their time in the reference period on housework and a further 36% had spent most time studying. This pattern varied by sex and age with 71% of females and 38% of males aged 30-39 years reporting their main activity as housework and 41% of males and 49% of females aged 10-19 years reporting studying.

Table 8.7 Percentage distribution of citizens not in the labour force by main activity, sex and age, PNG, 2000 Census

Main activity	Total	10-19	20-29	30-39	40-49	50-59	60+
Total males	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Housework	30.0	14.4	34.3	37.8	31.4	22.2	8.9
Studying	28.8	41.6	25.0	2.1	2.4	1.0	0.6
Too young	17.8	28.8	1.2	0.0	0.0	0.0	0.0
Too old/inactive	8.0	0.0	0.0	0.0	0.0	33.3	88.0
Sex	7.3	3.5	18.2	18.0	30.3	20.0	12.3
Permanently disabled	1.4	0.8	2.0	3.8	3.8	3.8	2.2
Others	14.2	11.1	22.2	28.2	42.2	38.4	6.8
Total females	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Housework	38.9	22.1	22.1	20.8	20.1	27.4	18.9
Studying	32.8	40.1	8.3	1.9	1.1	0.7	0.8
Too young	12.8	24.3	0.3	0.0	0.0	0.0	0.0
Too old/inactive	8.3	0.0	0.0	0.0	0.0	14.3	88.8
Sex	8.1	0.0	7.7	8.3	12.8	14.3	8.4
Permanently disabled	0.8	0.8	1.8	1.3	1.7	1.8	1.8
Others	18.7	2.1	12.9	18.2	24.8	31.8	8.4

By province, the incidence of studying varied from 18% for males and 13% for females in West Sepik to 49% for males and 48% for females in North Solomons. On the other hand, housework ranged from 12% for males and 22% for females in Chimbu to 32% for males in Western and 37% for females in MCT (see summary indicators).

CHAPTER 6

HOUSEHOLD ACTIVITIES AND HOUSING STATUS



Summary indicators – PNG, 1980, 1990 and 2000 Censuses

Citizen households	PNG		
	2000	1990	1980
Total households	943,767	na	na
Average household size (persons)	5.4	na	na
Home ownership (% of households)	90.9	na	na
Traditional dwellings (% of households)	75.5	na	na
Engaged in growing food crops, vegetables and root crops (% of households)	73.5	na	na
Engaged in growing betel nut (% of households)	38.6	na	na
Engaged in selling food crops/cooked food (% of households)	49.7	na	na
Engaged in selling betel nut/mustard (% of households)	32.8	na	na

Non-citizen households	PNG		
	2000	1990	1980
Total households	5,889	na	na
Average household size (persons)	3.7	na	na
Home ownership (% of households)	32.5	na	na
Traditional dwellings (% of households)	21.2	na	na
Engaged in growing food crops, vegetables and root crops (% of households)	15.7	na	na
Engaged in growing betel nut (% of households)	4.8	na	na
Engaged in selling food crops/cooked food (% of households)	9.5	na	na
Engaged in selling betel nut/mustard (% of households)	3.2	na	na

Summary indicators – PNG, 1980, 1990 and 2000 Censuses (cont.)

Urban citizen households	PNG		
	2000	1990	1980
Total households	100,392	85,555	56,919
Average household size (persons)	6.5	6.5	5.6
Home ownership (% of households)	59.8	42.2	35.6
Traditional dwellings (% of households)	10.1	7.1	10.8
Engaged in growing food crops, vegetables and root crops (% of households)	23.7	na	na
Engaged in growing betel nut (% of households)	18.8	na	na
Engaged in selling food crops/cooked food (% of households)	22.6	na	na
Engaged in selling betel nut/mustard (% of households)	25.0	na	na

Rural citizen households	PNG		
	2000	1990	1980
Total households	843,375	na	na
Average household size (persons)	5.3	na	na
Home ownership (% of households)	94.6	na	na
Traditional dwellings (% of households)	83.2	na	na
Engaged in growing food crops, vegetables and root crops (% of households)	79.4	49.2	na
Engaged in growing betel nut (% of households)	40.9	7.9	na
Engaged in selling food crops/cooked food (% of households)	52.9	na	na
Engaged in selling betel nut/mustard (% of households)	33.7	na	na

Summary indicators – Provinces, 2000 Census

Citizen households	Southern Region					
	Western	Gulf	Central	NCD	Milne Bay	Northern
Total households	22,564	17,043	29,742	35,188	38,942	21,840
Average household size (persons)	6.5	6.2	6.2	6.9	5.4	6.1
Home ownership (% of households)	85.6	92.0	90.2	62.3	89.5	87.4
Traditional dwellings (% of households)	75.6	82.1	32.1	0.4	84.3	76.4
Engaged in growing food crops, vegetables and root crops (% of households)	65.5	73.7	75.3	14.4	82.8	73.3
Engaged in growing betel nut (% of households)	7.6	70.0	57.0	8.1	80.7	75.7
Engaged in selling food crops/cooked food (% of households)	69.9	62.8	64.3	15.5	44.4	59.6
Engaged in selling betel nut/mustard (% of households)	6.4	55.4	50.0	21.4	64.9	52.1

Citizen households	Highlands Region				
	SHP	Enga	WHP	Chimbu	EHP
Total households	94,069	50,609	95,693	54,472	99,483
Average household size (persons)	5.8	5.8	4.6	4.8	4.3
Home ownership (% of households)	96.5	96.4	94.4	96.5	94.7
Traditional dwellings (% of households)	95.5	92.9	91.2	87.7	89.7
Engaged in growing food crops, vegetables and root crops (% of households)	78.0	79.8	77.7	81.2	76.7
Engaged in growing betel nut (% of households)	3.9	6.7	5.9	3.3	13.5
Engaged in selling food crops/cooked food (% of households)	37.5	43.2	35.9	35.9	35.8
Engaged in selling betel nut/mustard (% of households)	9.3	15.3	17.5	21.4	18.3

Summary indicators – Provinces, 2000 Census (cont.)

Citizen households	Momase Region			
	Morobe	Madang	ESP	WSP
Total households	95,774	60,709	65,231	31,589
Average household size (persons)	5.6	6.0	5.2	5.8
Home ownership (% of households)	89.2	90.0	93.2	94.3
Traditional dwellings (% of households)	68.8	83.0	90.1	88.2
Engaged in growing food crops, vegetables and root crops (% of households)	69.2	76.3	75.7	75.4
Engaged in growing betel nut (% of households)	59.4	70.7	72.3	71.1
Engaged in selling food crops/cooked food (% of households)	60.5	55.8	58.0	59.0
Engaged in selling betel nut/mustard (% of households)	46.7	53.5	45.2	39.0

Citizen households	New Guinea Islands Region				
	Manus	NIP	ENB	WNB	NSP
Total households	7,942	22,053	39,220	30,672	30,932
Average household size (persons)	5.4	5.3	5.5	5.9	5.6
Home ownership (% of households)	86.1	88.0	85.2	76.9	95.6
Traditional dwellings (% of households)	54.0	49.3	25.8	36.6	69.1
Engaged in growing food crops, vegetables and root crops (% of households)	68.1	75.2	74.4	69.5	76.7
Engaged in growing betel nut (% of households)	66.6	67.2	66.1	63.0	64.9
Engaged in selling food crops/cooked food (% of households)	43.2	63.6	47.6	63.5	60.7
Engaged in selling betel nut/mustard (% of households)	55.7	47.3	52.4	43.9	27.4

Glossary

Agricultural activity	Household involvement in growing or raising any of the following either for cash or own use: cocoa, coffee, rubber, oil palm, coconut, betel nut, livestock (cattle, pigs, goats, sheep), poultry, food crops/vegetables/root crops, fish (including crabs and seashells), any other major crops or livestock.
Average household size	Total population in households divided by total number of households.
Average number of persons per room	Total population in households divided by total number of rooms in dwellings.
Citizen household	A regular household where the head of household is a PNG citizen.
Dwelling	A place where people live which may be a private dwelling occupied by a household or a non-private dwelling.
Housing status	The ownership or rental status of a household in a private dwelling with respect to the home they occupy.
Income generating activity	Households who receive money from involvement in any of the following: selling food crops/cooked food at the market or roadside; selling fish, including crabs and shells; selling meat at the market or roadside; selling things they make eg carvings, bilums, mats; selling betel nut, mustard and lime; running a PMV (a public motor vehicle for transporting paying passengers); hiring boats; running a trade store; other major income generating activity.
Non-private dwelling	A dwelling such as a school, institution, barracks, hotel, prison or hospital with common cooking facilities.
Number of rooms	The number of rooms in a dwelling used for sleeping.
Private dwelling	A dwelling occupied by a regular household. There are a number of types of private dwelling: <ul style="list-style-type: none"> • high cost house – large house, often built on high posts, usually of fibro, timber, brick or weatherboard, with a metal roof and usually found in urban areas; • low cost house – similar to a high cost house but of lesser quality and usually built on low posts; • flat – a unit of not more than two living quarters in one block, usually found in urban areas;

- duplex – two houses joined together by a common wall;
- domestic or workers' quarters – flats, quarters or rooms, usually found behind shops or factories;
- dormitory – a large building with cubicles for sleeping in, usually found in a school or college;
- makeshift – a house made largely of scrap materials such as cardboard, metal sheets etc.;
- traditional – a house made of traditional materials such as grass, bamboo, pitpit or wood;
- self-help high cost – similar to a high cost house but usually built by an individual or group of individuals for personal use;
- self-help low cost – similar to self-help high cost but of lesser quality.

Regular household

People who live together in a private dwelling and who share cooking arrangements. Household members may, or may not, be related.

To help assess the socio-economic conditions under which people live, information about household activities and housing status is of value. Household socio-economic conditions can only be improved if the current situation is known and the information collected in the 2000 Census aimed to contribute to that knowledge to assist in facilitating the process of development and improvement.

Agricultural activities

Households may either be engaged or not engaged in various types of agricultural activities and may be engaged in more than one activity. In 2000, growing food crops, vegetables and root crops, and rearing livestock were the main activities that households were engaged in. Overall, as shown in Table 6.1, 74% of households were engaged in growing food crops, vegetables and root crops and 42% were engaged in rearing livestock. Crops such as coffee, betel nut and coconut were also important to households with 42%, 39% and 35%, respectively, of households engaged.

Table 6.1 Citizen households by type and purpose of agricultural activity, PNG, 2000, Census

Type of activity	Total			Urban			Rural		
	Engaged	Cash	Own use	Engaged	Cash	Own use	Engaged	Cash	Own use
Total activities (a)	2,748,088	38.5	61.5	86,108	41.0	59.0	2,661,980	38.4	61.6
Cocoa	16.0	96.1	3.9	2.9	88.2	11.8	17.6	96.2	3.8
Coffee	42.1	95.7	4.3	3.3	85.6	14.4	46.8	95.8	4.2
Rubber	1.2	71.3	28.7	0.7	53.3	46.7	1.3	72.3	27.7
Oil palm	2.1	76.5	23.5	1.1	60.2	39.8	2.2	77.4	22.6
Coconut	34.5	34.9	65.1	16.4	30.4	69.6	36.7	35.2	64.8
Betel nut	38.6	34.9	65.1	18.8	48.2	51.8	40.9	34.2	65.8
Livestock	42.5	17.3	82.7	5.7	36.8	63.2	46.8	17.0	83.0
Poultry	22.3	24.5	75.5	6.9	53.3	46.7	24.2	23.6	76.4
Food crops/ vegetables and root crops	73.5	15.3	84.7	23.7	28.7	71.3	79.4	14.8	85.2
Fishing	17.2	18.6	81.4	6.2	33.3	66.7	18.5	18.0	82.0
Other	1.0	97.5	2.5	0.1	81.9	22.1	1.1	97.7	2.3

(a) Households can have multiple activities.

For those households engaged in growing food crops, vegetables and root crops, the majority (85%) grew for their own consumption. Over 95% of households engaged in growing coffee or cocoa did so for cash.

The main agricultural activities in the urban and rural sectors were similar but at different levels. Food crops, vegetables and root crops, betel nut and coconut were the main crops grown by urban households and they were grown mainly for own consumption. In the rural sector, 79% of households grew food crops, vegetables and root crops, mainly for their own consumption. The other main activities were growing coffee (47%), mainly for cash and rearing livestock (47%) and growing betel nut (41%), mainly for own use.

Other crops such as fruits, nuts, vanilla, chilli, ginger, cardamom and sago were mostly grown for cash although only 1% of households were engaged in growing them.

By province, with the exception of NCD, the proportion of households engaged in growing food crops, vegetables and root crops ranged between 66% in Western and 83% in Milne Bay (see Summary indicators). The figure for NCD, 14%, reflects its urban nature, which provides limited opportunities for agricultural activity. The proportion of households engaged in growing betel nut showed much more variation, from 3% in Chimbu to 81% in Milne Bay. This variation is mainly related to climatic conditions.

Income generating activities

Selling food crops and cooked food, and selling betel nut, mustard and lime were common activities for generating income for all citizen households in PNG. About 50% of households were engaged in selling food crops or cooked food while 33% were engaged in selling betel nut, mustard and lime. Although, selling meat at the market or roadside was the third most common activity, less than 20% of households were involved in this.

The pattern was similar in both the urban and rural sectors, as shown in Figure 6.1. Of urban households, 25% were engaged in selling betel nut, mustard and lime and 23% were involved in selling food crops and cooked food as income generating activities. In rural households, 53% sold food crops and cooked food as an income generating activity. Selling betel nut, mustard and lime was also an income generating activity for 34% of households.

Figure 6.1 Proportion of citizen households engaged in income generating activities by type of activity and sector, PNG, 2000 Census



The overall relationship between the proportion of households engaged in growing and the proportion of households engaged in selling varied by sector. In rural areas, where there is a high proportion of subsistence employment (see Chapter 5), proportionally more households grew food crops and betel nut than sold them. In urban areas the reverse was true. This pattern is reflected in most provinces with the notable exception of betel nut in the Highlands provinces where the proportion engaged in selling was considerably higher than the proportion engaged in growing (see Summary indicators).

Housing status

Owning and renting houses are two different arrangements in property management. Owning refers to an arrangement whereby people may buy their own home, often with the aid of a mortgage, or build a home on their own land. Renting refers to an arrangement of paying rental fees to live in a house owned by another person. Some people are neither owners nor renters but may have their accommodation supplied as part of their employment or education attendance.

Owning a house was very common among the people of PNG. About 91% of citizen households in PNG owned their dwelling, as shown in Table 6.2. As might be expected, most traditional, makeshift, self-help high cost and self-help low cost houses were owned. In contrast, flats and duplexes tended to be rented. About 80% of households living in flats and 60% living in duplexes rented their homes.

Table 6.2 Citizen households by dwelling type, housing status and average household size, PNG, 2000 Census

Dwelling type	Persons	Households	Housing status			Average household size
			Owned	Rented	Not rented	
Total	5,136,031	943,767	90.9	6.3	2.8	5.4
High cost house	158,813	22,892	47.2	44.8	8.0	6.9
Low cost house	242,018	37,460	41.1	49.0	9.9	6.5
Flat	35,524	6,615	12.0	79.6	8.4	5.4
Duplex	34,159	5,938	24.9	60.0	15.1	5.8
Domestic quarters	80,674	15,113	31.2	42.5	26.3	5.3
Dormitory	7,629	1,552	36.9	42.1	21.0	4.9
Makeshift	305,621	54,000	93.9	3.3	2.9	5.7
Traditional	3,722,932	712,255	97.5	1.2	1.3	5.2
Self-help high cost	201,570	30,220	90.2	5.5	4.3	6.7
Self-help low cost	347,091	57,722	89.8	5.5	4.7	6.0

A total of 5.1 million persons were enumerated in 940,000 households in PNG at the 2000 Census. This gave an average household size of 5.4 persons per household. By dwelling type, average household sizes varied from 6.9 persons per household in high cost houses to 4.9 persons per household in dormitory type accommodation.

Table 6.3 Urban citizen households by dwelling type and housing status, PNG, 2000 Census

Dwelling type	Households	Owned	Rented	Not rented
Total	100,392	59.8	33.8	6.4
High cost house	15,983	38.3	54.0	7.7
Low cost house	21,943	37.0	54.3	8.8
Flat	5,542	8.3	85.2	6.5
Duplex	3,380	15.3	78.5	6.3
Domestic quarters	5,367	25.3	55.3	19.4
Dormitory	767	20.7	63.2	16.1
Makeshift	20,504	92.9	4.2	2.9
Traditional	10,156	91.1	5.6	3.3
Self-help high cost	6,398	89.8	7.2	3.0
Self-help low cost	10,352	89.6	6.9	3.5

By province, home ownership was over 85% in all provinces except West New Britain (77%) and NCD (62%). Average household size varied between 4.3 in Eastern Highlands and 6.9 in NCD (see Summary indicators).

In the urban sector problems of housing availability and adequacy, and overcrowding pose situations for attention, particularly among renting households. Table 6.3 presents information on housing status by dwelling type in the urban sector. Overall, in urban areas, just over a third of households rented their homes. However, this varied considerably by dwelling type, with over 78% of households in flats and duplexes renting.

Among urban citizen households who rented their dwellings, 44% rented from private agencies and 26% from government organisations, other than the Housing Corporation or semi-government agencies, as shown in Table 6.4. Apart from low cost houses, more than 40% of all homes in the urban sector were rented from private agencies, regardless of dwelling type. Only 11% of households rented from the Housing Corporation. Low cost houses were the most likely to be rented from the Housing Corporation (14%), and the least likely to be rented from private agencies.

Table 6.4 Urban citizen households renting private dwellings by dwelling type and rental agency, PNG, 2000 Census

Dwelling type	Renting households	Housing corporation	Semi-government	Other government	Other/private
Total	33,585	11.0	19.2	25.8	44.0
High cost house	8,527	8.4	20.7	30.6	40.3
Low cost house	11,761	14.3	18.5	29.8	37.4
Flat	4,690	14.0	23.0	14.5	48.5
Duplex	2,632	11.2	20.4	26.8	41.6
Other	5,975	5.5	14.7	19.6	60.1

Average number of persons per room

Large houses were uncommon among citizen households in PNG. Almost half of citizen households had one or two rooms, as can be seen in Table 6.5. It should be noted, however, that the relatively high proportion of households with one room (20%) is associated with the fact that a dwelling usually occupied by a member of a household may have been counted as a separate household even though it may not have qualified as such according to the strict interpretation of the census definition.

Table 6.5 Citizen households by number of rooms and average number of persons per room, PNG, 2000 Census

Number of rooms	Total		Average number of persons per room		
	Persons	Households	Total	Urban	Rural
Total	5,136,031	943,767	2.2	2.3	2.2
One room	987,895	214,504	4.6	4.4	4.6
Two rooms	1,453,480	292,876	2.5	2.8	2.4
Three rooms	1,296,481	224,966	1.9	2.3	1.9
Four rooms	944,447	144,587	1.6	1.9	1.6
Five rooms	216,331	30,205	1.4	1.7	1.4
Six rooms	81,396	9,932	1.4	1.5	1.3
Seven rooms	17,673	2,043	1.2	1.5	1.2
Eight or more rooms	13,469	1,530	1.1	1.2	1.1
Not stated	124,859	23,124	. .	. .	. .

Information on the number of rooms per household used for sleeping was collected as a measure of overcrowding. On average 2.2 persons slept in one room at the 2000 Census and there was little difference by sector. The average number of persons per room decreased as the number of rooms increased.

Non-citizen households

As can be seen in the Summary indicators, the household activity and housing characteristics of non-citizen households were quite different from those of citizen households. Few non-citizen households engaged either in agricultural activities (the most common was growing food crops, vegetables and root crops, 16%) or income generating activities (the most common was selling food crops/cooked food at the market or roadside, 10%). They were more likely to live in high cost houses than traditional dwellings, 33% and 21%, respectively, compared to 75% and 2% for citizen households, and had a smaller average household size.

Appendix 1 – General information on the 2000 Census

Introduction

The Papua New Guinea Census of Population and Housing is one of the most important national events in the calendar of the country every ten years. In July 2000, the 3rd full National Population Census of the country was held. The first full census for the country was in 1980, followed by the second one in 1990.

The importance of a national census cannot be over emphasised. The Government of PNG, through the National Executive Council (NEC) Decision No. 83/99 on 14 April, 1999, endorsed the need to conduct a National Census of Population and Housing in 2000 and declared the census as a National Event. The NEC gave appropriate directions to all ministries and departments to help NSO conduct the census.

Census questionnaire

The design of the 2000 Census questionnaire was extensively tested and evaluated in consultation with the Users Advisory Committee before the NEC finally approved it in April 2000. Apart from basic demographic and social information on age, sex, marital status, religion and education, additional data on economic activity, occupation, industry, fertility and household income activities were collected for the first time on the same questionnaire. A total of 28 questions were asked. Unlike all the previous censuses, the 2000 Census was conducted using a one-page census questionnaire, which was applied in all geographic sectors.

Census operations

The official census date was 9 July 2000, with counting in most parts of the country conducted from 10 July to 16 July. The field officers consisted of interviewers, supervisors and quality controllers. More than 35,000 field officers were used to do the 2000 Census. For the first time, a house-to-house interview method of counting was used nationwide. This method was made more effective through the household listing exercise, which was done in all provinces six months before the census was conducted.

For provincial census operations, 20 Provincial Census Co-ordinators (PCCs) were appointed in early 1999. They were trained to co-ordinate specific census activities as part of the preparation leading up to the main census. Their tasks included updating the Census Unit Registers and listing every household within their province. The Census Unit Registers and Household Listings were essential to ensure that every person in each Census Unit was covered in the census.

Census geography

A Local Level Government (LLG) area does not necessarily have official geographic boundaries. For this reason, a special census concept was created for both counting and producing results. This is referred to as a statistical LLG area.

Data limitations

This report contains population figures based on where people were counted at census time, which may not have been where they usually lived. Although census procedures and operations are designed to count each person, inevitably some people are missed and others are counted more than once. The information in this report is not adjusted for the possible net undercount. Preliminary assessment of the Post Enumeration Survey, however, indicates that a comparatively low undercount rate has been achieved. The final outcome is briefly discussed in Appendix 2.

Appendix 2 – 2000 Post Enumeration Survey

Introduction

A Post Enumeration Survey (PES) is a survey conducted to measure the accuracy of a census. A PES was conducted between 23 October and 11 November 2000 in all 20 provinces of PNG. The main emphasis of the PES was to determine the extent of undercount or overcount, if any, and to provide confidence in the census data.

A PES is done by taking a sample of households, selected at random, to represent the total population, and then interviewing the head of the household or other responsible person at the selected household. The sample size is capable of providing coverage errors by urban and rural sectors, at both the national and regional level.

PES questionnaire

The PES form was designed with most of the features of the 2000 Census form. Unlike the census form, which comprised 28 questions, the PES form had only 14 questions. The PES form was designed to be user-friendly and easy-to-follow. The questions related to coverage, publicity and personal characteristics.

PES operations

Provincial Census Co-ordinators (PCCs) were given the task of recruiting interviewers and supervisors for their respective provinces, in accordance with the manpower estimates produced by NSO on the basis of the number of workloads. Similar to the census, a house-to-house interview method of counting was used nationwide. This method was made more effective through the household listing exercise, which had been prepared six months before the census.

The selections for the PES were made proportionate to the population size of the province. The PES population was 31,365 about 0.6% of the total population. There were 654 urban census units and 370 rural census units included. Approximately 7,200 private households were enumerated.

Summary results

Matching and searching for the PES was done in February-March 2002. Data entry followed the matching and searching process and was completed at the end of March.

Preliminary findings included:

- 93% of the population stated that they were counted;
- 4% stated that they were not counted;
- 3% fell into the category of not known, not stated or baby born after census enumeration.

Appendix 3 – Technical notes

The exponential growth formula is

$$P_2 = P_1 e^{rn}$$

Where:

P_1 and P_2 are the size of the population at 2 points in time

r is the annual growth rate of the population between points 1 and 2

n is the length of the period between points 1 and 2 (intercensal period)

e is the base of the natural (Naperian) logarithm system.

The exponential growth formula is illustrated using the citizen population of PNG in 1980 and 2000.

The citizen population enumerated during the 1980 and 2000 censuses were 2,978,057 and 5,171,548 respectively. The weighted average census night in 1980 was August 26th whereas in 2000 it was July 9th.

The first step is to calculate the interval between the two censuses (n). This interval is obviously between 19 and 20 years but quite close to 20 years. The number of days between 26 August and 9 July is 317 days. These 317 days as part of a full year is:

$$317/365 = 0.87 \text{ year.}$$

The intercensal period is therefore 19.87 years.

The formula $P_2 = P_1 e^{rn}$ can be rewritten as:

$$P_2 / P_1 = e^{rn}$$

Where P_2 / P_1 can be considered as a growth ratio. In our example,

$$P_2 / P_1 = 5,171,548 / 2,978,057 = 1.73655$$

$$\text{Consequently, } e^{rn} = 1.73655$$

Next, the natural logarithm is taken on both sides of the equation:

$$\ln 1.73655 = \ln e^{rn}$$

A characteristic of the logarithm system is that rn can be brought before the \ln sign:

$$\ln 1.73655 = rn \ln e$$

However, $\ln e$ is the natural logarithm of e and equals 1

The equation can therefore be written as:

$$\ln 1.73655 = rn$$

Finally, r can be calculated from the above equation:

$$r = \ln 1.73655 / n$$

Since n is 19.87 years, the equation becomes:

$$r = \ln 1.73655 / 19.87$$

Since $\ln 1.73655 = 0.55190$,

$$r = 0.55190/19.87 = 0.02778$$

However, the annual growth rate is usually expressed as a percentage or per thousand. In the case of the citizen population of PNG, the average annual intercensal growth rate between 1980 and 2000 was therefore 2.8% or 27.8 per thousand.

2 Measurement of the accuracy of age reporting

A minimum evaluation of the age-sex data is necessary to establish some degree of confidence in the data presented. Age heaping and number preferences in reporting are likely errors that may occur in census data. In developing countries, there is a tendency to underreport young children. At the same time, there is a tendency to prefer figures ending with 0 and 5 when reporting. Findings from the past censuses in PNG indicate that there is a significant preference for ages ending in 0 and, to a lesser extent, 5. A preference for digit 8 is also considered as significant and this is the trend found in most Pacific countries. The United Nations Secretariat Index, Whipple's Index and Myer's Index are three known indices widely used for detecting possible errors and digital preferences. These indices have been applied to the data to provide some assessment of the data. Each of the methods is illustrated by way of calculations. Methods for the measurement of the accuracy of age reporting are explained in detail in *United Nations Manual II, 1950*.

The computational procedures for each of these indices are illustrated below using the citizen population of PNG in 2000.

UN Secretariat Index

The UN Secretariat Index, often referred to as the UN sex-age accuracy index, can be used to evaluate the quality of grouped data. This index consists of scoring sex ratios and age ratios for 5-year age groups over the range of 0-74 years. It measures the overall distribution of the age-sex structure supplied in the most commonly adopted form of 5-year age groups by sex. For analysis of sex ratios, successive differences between one age group and the next are computed and their average, ignoring sign, is used as the base sex ratio score.

The age ratio is defined as the ratio of the number of persons in an age group to the average of the number in the two adjoining age groups, as follows:

$$\text{Age ratio: } \frac{P_x}{(P_{x-1} + P_{x+1})/2} * 100 = \frac{2 P_x}{P_{x-1} + P_{x+1}} * 100$$

where P_x = Population of a given age group, eg 15-19

P_{x-1} = Population of the preceding age group, 10-14

P_{x+1} = Population of the subsequent age group, 20-24

Age ratios are expected to be very close to 100 in a non-distorted age distribution. Deviations from 100 are therefore calculated and their average is taken, irrespective of sign, as a base age ratio score for each sex separately. Joint scores are used to give greater weight to age. This is obtained by adding 3 times the base sex ratio score to the sum of the base male age ratio score and the base female age ratio score. A sex ratio score or age ratio score above 10 may empirically be regarded as in the high range, and the age-sex data should be suspected of being very much affected by some errors other than actual fluctuations in population trends. In terms of joint score, a borderline level of high range may be defined as

$$10 * 3 + 10 + 10 = 50$$

Table I UN Secretariat Method applied to the data for the citizen population of PNG
2000 Census

Age Group	Males	Females	Sex Ratio	Succ. Diff.	Age ratios			
					Males Ratio	Males Dev.100	Females Ratio	Females Dev.100
0 - 4	376,976	348,171	108.3	-	-	-	-	-
5 - 9	380,421	345,197	110.2	1.9	107.6	7.6	108.3	8.3
10 - 14	330,161	289,222	114.2	4.0	98.1	-1.9	95.5	-4.5
15 - 19	292,635	260,746	112.2	-1.9	102.8	2.8	99.6	-0.4
20 - 24	239,211	234,528	102.0	-10.2	93.6	-6.4	95.9	-4.1
25 - 29	218,677	228,154	95.8	-6.2	101.8	1.8	107.0	7.0
30 - 34	190,489	191,925	99.3	3.4	99.2	-0.8	98.2	-1.8
35 - 39	165,334	162,921	101.5	2.2	103.9	3.9	103.5	3.5
40 - 44	127,640	122,810	103.9	2.5	94.9	-5.1	95.8	-4.2
45 - 49	103,722	93,370	111.1	7.2	100.4	0.4	96.5	-3.5
50 - 54	78,915	70,702	111.6	0.5	97.2	-2.8	99.2	-0.8
55 - 59	58,702	49,147	119.4	7.8	92.4	-7.6	88.1	-11.9
60 - 64	48,162	40,829	118.0	-1.5	107.2	7.2	109.0	9.0
65 - 69	31,183	25,783	120.9	3.0	92.1	-7.9	91.6	-8.4
70 - 74	19,581	15,441	126.8	5.9	95.7	-4.3	94.0	-6.0
75 - 79	9,753	7,065	138.0	-	-	-	-	-
80 and over	8,207	5,768	142.3	-	-	-	-	-
Sum (a)	-	-	-	58.2	-	60.5	-	73.4
Mean (b)	-	-	-	4.2	-	4.3	-	5.2

(a) This is the sum of the successive differences or deviations from 100, irrespective of sign.

(b) This is the sum of the successive differences or deviations from 100, irrespective of sign, divided by the number of terms, in this case 14.

The UN Secretariat Index for this population = $(3 * 4.2) + 4.3 + 5.2 = 22.1$

This is below high range cut off point of 50. The age sex distribution of this population is therefore considered acceptable.

Whipple's Index

Whipple's Index is a way of evaluating the degree of age heaping or digit preference. It expresses total persons reporting ages ending in 0 and 5 in the age range of 23-62 years as a percentage of one-fifth of the total population in this range. Range 23-62 years is selected because age heaping is likely to occur in this range and data at younger and older ages are often subject to errors and irregularities of other types.

The value of Whipple's Index is very close to 100 when there is no particular concentration of digit preferences. In extreme cases, when only ages ending in 0 and 5 are reported, the index is 500, the theoretical maximum. When the index is more than 150, it is highly suspected that the age data are very much affected by age heaping.

Table II Whipple's Index applied to the data for the citizen population, PNG, 2000 Census

Age (years)	Number			Age (years)	Number		
	Persons	Males	Females		Persons	Males	Females
23	77,149	38,406	38,743	25	105,219	52,832	52,387
24	92,841	45,865	46,976	30	122,602	59,049	63,553
25-29	446,831	218,677	228,154	35	78,629	40,004	38,625
30-34	382,414	190,489	191,925	40	91,685	46,112	45,573
35-39	328,255	165,334	162,921	45	50,925	27,585	23,340
40-44	250,450	127,640	122,810	50	53,211	27,949	25,262
45-49	197,092	103,722	93,370	55	25,320	13,335	11,985
50-54	149,617	78,915	70,702	60	35,220	18,763	16,457
55-59	107,849	58,702	49,147				
60	35,220	18,763	16,457	Sum	562,811	285,629	277,182
61	14,082	7,706	6,376				
62	15,568	8,503	7,065				
Sum 23-62	2,097,368	1,062,722	1,034,646				

Whipple's Index for persons is: $\{(5 \times 562,811) : 2,097,368\} \times 100 = 134.2$

Whipple's Index for males is: $\{(5 \times 285,629) : 1,062,722\} \times 100 = 134.4$

Whipple's Index for females is: $\{(5 \times 277,182) : 1,034,646\} \times 100 = 134.0$

These values are below the cut off point of 150. The age-sex distribution of this population therefore shows no significant digit preference.

Myer's Index

Myer's Index is based on blended population figures in which almost equal numbers are expected at each terminal digit for a non-distorted age distribution. Hence each digit should be 10% of the total blended population. Deviation of the percentage for any digit from 10 indicates either a preference (more than 10) or avoidance (less than 10) for that specific digit. One-half the sum of the deviations from 10, without regard to sign, gives a summary index of digit preference, which is known as Myer's Index. If the value is greater than 10, the age data are suspected to be of questionable reliability in regard to age reporting.

The theoretical range of Myer's Index extends from a minimum of 0, when there is neither preference for, nor avoidance of, any particular digit, to a maximum of 90, when all ages are reported with one single terminal digit.

Table III Myer's Index applied to the data for the female citizen population, PNG, 2000 Census

Terminal digit	Numbers at ages specified					Sum	
	13-22	23-32	33-42	43-52	53-62	13-52	23-62
3	52,032	38,743	26,203	17,168	9,478	134,146	91,592
4	54,473	46,976	30,401	15,627	11,345	147,477	104,349
5	54,117	52,387	38,625	23,340	11,985	168,469	126,337
6	57,747	44,839	34,204	17,754	8,931	154,544	105,728
7	47,478	41,579	26,772	15,163	7,856	130,992	91,370
8	55,637	50,230	34,907	20,876	12,236	161,650	118,249
9	45,767	39,119	28,413	16,237	8,139	129,536	91,908
0	62,486	63,553	45,573	25,262	16,457	196,874	150,845
1	43,307	32,999	20,635	11,579	6,376	108,520	71,589
2	43,016	38,769	23,807	13,038	7,065	118,630	82,679
Sum	516,060	449,194	309,540	176,044	99,868	1,450,838	1,034,646

Terminal digit	Ages 13-52		Ages 23-62		Blended sum(a)	% dist.	Dev. 10%
	Sum	Factor	Sum	Factor			
3	134,146	1	91,592	9	958,474	7.62	-2.38
4	147,477	2	104,349	8	1,129,746	8.98	-1.02
5	168,469	3	126,337	7	1,389,766	11.05	1.05
6	154,544	4	105,728	6	1,252,544	9.96	-0.04
7	130,992	5	91,370	5	1,111,810	8.84	-1.16
8	161,650	6	118,249	4	1,442,896	11.47	1.47
9	129,536	7	91,908	3	1,182,476	9.40	-0.60
0	196,874	8	150,845	2	1,876,682	14.92	4.92
1	108,520	9	71,589	1	1,048,269	8.33	-1.67
2	118,630	10	82,679	0	1,186,300	9.43	-0.57
Sum	1,450,838	-	1,034,646	-	12,578,963	-	14.88

(a) Blended sum for the digit 3 is $(1 \times 134,146) + (9 \times 91,592) = 958,474$

Myers' Index is half the sum of the deviations from 10%, irrespective of sign = $14.4/2 = 7.2$

The minimum percentage which reported age with inaccurate terminal digits is 7.2%.

This is less than the cut off point of 10. The age distribution therefore shows no significant digit preference.

Digit preference sequence: 0 8 5 6 2 9 4 7 1 3

Digit 0 – 4: 6,199,471 49.3%

Digit 5 – 9: 6,379,492 50.7%

Summary explanations of the age–sex data

The UN Secretariat Index shown in Table IV suggests that the PNG age data are more adequate than they have been in the past. It can be seen that over the census years age reporting has improved with joint scores well below 50 in 2000.

Table IV UN Secretariat Index, Whipple's Index and Myer's Index, PNG, 1980, 1990 and 2000 Censuses

Census	Sector	UN Secretariat	Whipple's Index		Myer's Index	
		Index	Male	Female	Male	Female
2000	Total	22.0	134.4	134.0	7.2	7.4
	Urban	37.9	134.1	128.4	6.2	5.8
	Rural	25.5	134.4	134.7	7.4	7.7
1990	Total	29.8	140.5	137.9	8.6	8.8
	Urban	44.5	141.7	132.1	8.4	7.1
	Rural	32.7	140.2	138.8	8.7	9.2
1980	Total	38.4	121.9	125.1	4.1	5.1
	Urban	71.2	na	na	na	na
	Rural	41.2	na	na	na	na

Whipple's Index suggests that there is some concentration of ages ending in 0s and 5s in the PNG data. However, the index was less than 150 in 2000 and, therefore, the data are of acceptable quality. In all censuses, the values of Whipple's Index were below 150. A decline in Whipple's Index between the 1990 and 2000 Censuses occurred in all sectors.

Myer's Index was higher among the rural population than the urban population in 2000, but still less than 10. However, it is observed that Myer's Index declined between 1990 and 2000, implying that the quality of census age data had been somewhat improved in this period.

3 Computation of the median age

The computation of the median age is illustrated below, using data for the male citizen population of PNG in 5-year age groups as enumerated during the 2000 census.

The total male citizen population was 2,679,769. If it were possible to 'line up' these 2,679,769 males in order of increasing age, the age of the person standing exactly in the middle, that is number 1,339,885, would have the median age of this population; 50% of the population would be younger and 50% would be older than this person. This method is of course not feasible in practice. An approximation of the median age of this population can be made using grouped data.

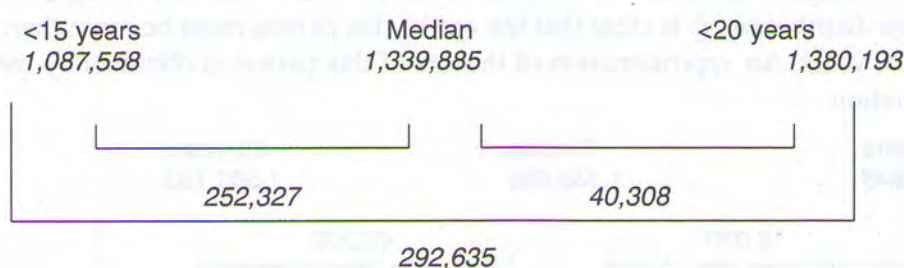
The age composition of the male citizen population of PNG at the 2000 Census was as follows:

Age group (years)	Number
0-4	376,976
5-9	380,421
10-14	330,161
15-19	292,635 etc

This can be expressed as a cumulative age distribution:

<u>Age less than (year):</u>	<u>Number</u>
5	376,976
10	757,397
15	1,087,558
20	1,380,193 etc

The person 'standing in the middle of the line' is number 1,339,885. Checking with the cumulative age distribution, it is clear that the age of this person must be more than 15 years, but less than 20 years. An approximation of the age of this person is obtained by means of linear interpolation.



The difference between 1,087,558 and 1,380,193 is 292,635. The difference between 1,087,558 and 1,339,885 is 252,327 and between 1,339,885 and 1,380,193 is 40,308.

Proportion 1 (between 1,087,558 and 1,339,885) is: $252,327/292,635 = 0.86226$

Proportion 2 (between 1,339,884.5 and 1,380,193) is: $40,308/292,635 = 0.13774$

The two proportion should of course add up to 1.

The median age is now determined through interpolation:

$$(0.86226 * 20) + (0.13774 * 15)$$

$$\text{or } 17.2452 + 2.0661$$

$$= 19.3113$$

or rounded to 19.3 years.

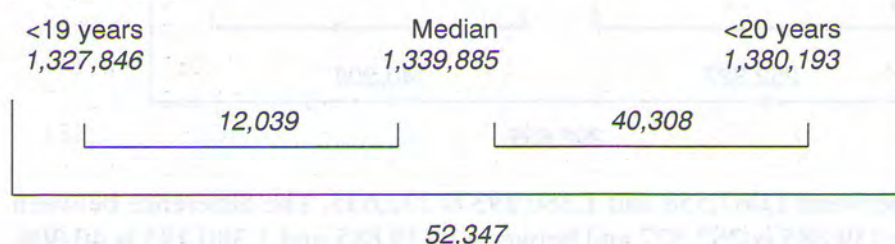
A similar process can be applied to data by single years of age, as follows:

<u>Age (years)</u>	<u>Number</u>
0-4	376,976
5-9	380,421
10-14	330,161
15	61,922
16	63,036
17	52,754
18	62,576
19	52,347

This can be expressed as a cumulative age distribution:

Age less than (year):	Number
5	376,976
10	757,397
15	1,087,558
16	1,149,480
17	1,212,516
18	1,265,270
19	1,327,846
20	1,380,193

The person 'standing in the middle of the line' is number 1,339,885. Checking with the cumulative age distribution, it is clear that the age of this person must be more than 19 years, but less than 20 years. An approximation of the age of this person is obtained by means of linear interpolation.



Proportion 1 (between 1,327,846 and 1,339,845) is: $12,039/52,347 = 0.22998$

Proportion 2 (between 1,339,885 and 1,380,193) is: $40,308/52,347 = 0.77001$

The median age is now determined through interpolation:

$$(0.22998 * 20) + (0.77001 * 19)$$

$$\text{or } 4.5996 + 14.63019$$

$$= 19.2315$$

or rounded to 19.2 years.

4 Computation of singulate mean age at marriage (SMAM)

Hajnal's method to calculate the singulate mean age at marriage (SMAM) is explained in detail in *United Nations Manual X, 1950*. The computational procedure is illustrated using data for the never married citizen population of PNG in 2000.

Table V Computation of the Singulate mean age at marriage for the citizen population PNG, 2000 Census

I	Age Group (years)	Males			Females		
		Number		Prop. Single U (i)	Number		Prop. Single U (i)
		(a)	Never Married		(a)	Never married	
1	10-14	329,638	327,713	0.9942	288,772	286,194	0.9911
2	15-19	286,929	278,076	0.9691	256,641	217,062	0.8458
3	20-24	230,575	169,549	0.7353	229,239	84,647	0.3693
4	25-29	212,913	75,659	0.3554	225,547	29,057	0.1288
5	30-34	186,813	28,324	0.1516	190,249	11,350	0.0597
6	35-39	163,079	12,893	0.0791	161,737	5,399	0.0334
7	40-44	126,109	7,044	0.0556	121,955	2,860	0.0235
8	45-49	102,753	4,532	0.0441	92,794	1,825	0.0197
9	50-54	78,256	3,501	0.0447	70,212	1,258	0.0179
Sum		-	-	3.3844	-	-	2.4711
(a) Total minus those whose marital status was not stated.							
(b) Total for i = 1 - 8							

$$SMAM = \frac{10 + 5 * \sum_{i=1}^8 U_i - 50 * (U_8 + U_9)/2}{1 - (U_8 + U_9)/2}$$

$$\text{For males, SMAM} = \frac{10 + 5 * 3.3844 - 50 * (0.0441 + 0.0447)/2}{1 - (0.0441 + 0.0447)/2} = 25.8 \text{ years}$$

$$\text{For females, SMAM} = \frac{10 + 5 * 2.4711 - 50 * (0.0197 + 0.0179)/2}{1 - (0.0197 + 0.0179)/2} = 21.8 \text{ years}$$

Appendix 4 – 2000 Census Form

2000 CENSUS FORM									
HOUSEHOLD INDICATIVE INFORMATION									
PROVINCE	DISTRICT	LLS	URBAN AREA / RURAL WARD	CENSUS UNIT	HOUSEHOLD NO.	HOUSE TYPE	RESPONSE CODE		
Collection Authority The information asked for is collected under the authority of the Statistical Services Act (1981). Your co-operation in completing this form is important to the success of the census.				Privacy The law protects your privacy. No one outside of the office can see your form or link your answers with your name and address.				Coverage All persons present on the Census Night must be counted whether they are family members or not. Check whether persons who spent Census night in the household but have since gone away are included.	
FOR ALL PERSONS									
PERSON NUMBER	Person 01	Person 02	Person 03	Person 04	Person 05	Person 06	Person 07		
1	What is the name of each person including visitors who slept here on the night of Sunday 9th July? (Start with the Head of Household.)								
2	What is the person's relationship to the head of household? 1. Head of household 2. Husband/wife 3. Own son/daughter 4. Step/adopted child 5. Other relative 6. Non-relative								
3	Is the person male or female? 1. Male 2. Female								
4	What is the person's date of birth or age in years? (Write date of birth in the six boxes provided. If not known, write age in completed years.) Age in Years								
5	What is the person's present marital status? 1. Never married 2. Married 3. Separated 4. Divorced 5. Widowed								
6	What church/religion does the person belong to?								
7	Is the person's own mother still alive? (If "Yes" and mother in this house, enter mother's person number in the boxes. Enter "00" if mother not in this house.) 1. Yes 2. No								
8	Where was the person born? (If not PNG, write country name.) District								
9	How long has the person lived in this district/town? (If "Other" give number of years lived here. If less than one year enter 00 in the boxes.) Number of years lived here								
10	What is the person's citizenship?								
CONTINUE ONLY FOR PERSONS AGED 5 YEARS OR MORE									
11	Is the person attending any formal schooling now? 1. Yes 2. No - Attended in the past 3. No - Never attended								
12	What is the highest formal educational grade completed?								
CONTINUE ONLY FOR PERSONS AGED 10 YEARS OR MORE									
13	Has the person completed a certificate, diploma or a university degree, or any other educational qualification since leaving school? (If yes specify level and subject of qualification in the space provided.) 1. Yes 2. No								
14	Which languages can the person read and write with understanding? English Pijin Motu Tokples 1. Yes 2. No								
15	In the last seven days, has the person done any of the following? (If more than one answer is given record main activity.) If code "7" None GO TO Q.18. 1. Gardening/fishing for money 2. Gardening/fishing for own use only 3. Business (any type) with paid help 4. Business (any type) without paid help 5. Helping in family business without pay 6. Wage job (incl. temporary absence) 7. None (GO TO Q.18)								
16	(a) What kind of work did the person do in the last seven days? (Describe kind of work or occupation, e.g. plumber, street seller, kaurau farmer, car mechanic.)								
17	(b) What are the main tasks/duties done in that work? (Describe kind of tasks or duties done in the work stated in Q.16(a), e.g. mending tap, selling betelnut, weeding garden, riding engine.)								
18	What kind of business is done at the place where the person works? (Describe business or activity, e.g. house building, air transport, selling betelnut.) GO TO Q.20								
19	Has the person actively sought any kind of work in the last four weeks? 1. Yes 2. No								
20	What was the person doing mostly in the last seven days? (If other describe in the space provided.) 1. Housework 2. Studying 3. Waiting to start a new job 4. Looking for work 5. Too young 6. Too old / Infirmed 7. Sick 8. Permanently Disabled 9. Other describe								
CONTINUE ONLY FOR ALL CITIZEN WOMEN AGED 15 YEARS OR MORE									
21	(For Q.20 to 23, write answer in boys or girls column.)								
22	How many children have you given birth to?								
23	How many of your own children are living in this house?								
24	How many of your own children are living elsewhere?								
25	How many of your own children are dead?								
FOR THE HOUSEHOLD ASK THE FOLLOWING QUESTIONS									
24	Does this household grow any of the following for 1. Cash 2. Own use 3. None? 01 Cocoa 02 Coffee 03 Rubber 04 Oil Palm 05 Coconut 06 Betel Nut 07 Livestock (Cattle, Pigs, Goats, Sheep) 08 Poultry 09 Food Crops/Vegetables/Root Crops 10 Fishing (e.g. Fish, Crabs, Seashells) Other (Any other major crop or livestock.)								
25	Does this household get any money from the following 1. Yes 2. No? 01 Selling food crops / cooked food at Market/Roadside. 02 Selling Fish (e.g. Crabs, Seashells) 03 Selling meat (e.g. pig, magan) at Market/Roadside 04 Selling things they make (e.g. carvings, bilums, mats). 05 Selling betelnut/Mustard 06 Running a PMV 07 Hiring Boats 08 Running a trade store Other (Any other major income generating activity)								
26	Do you own this house? 1. Yes > GO TO Q.28 2. No								
27	If rented, who does the person rent the house from? (Enter one code only) 1. National Housing Corporation 2. Semi government (e.g. PNGBC, ELKOM, TELKOM) 3. Other government (Provincial, L.G. District) 4. Other/Private (e.g. TST, STC, Real Estate, Waitoks) 5. Not rented								
28	How many rooms are there in this house? (Enter figure for the number of rooms. Excludes kitchen, bathroom or storeroom)								
<div> <div> THIS IS FORM NUMBER OF TOTAL FORMS FOR THIS HOUSEHOLD TOTALS FOR THIS FORM MALES FEMALES TOTAL PERSONS </div> <div> CHECKED (initial) (Interviewer) (Supervisor) Form Number </div> </div>									

PNG 2000 Census Products

PNG 2000 Census Final Figures – summary data for persons and households at national, provincial, district and statistical LLG area level.

Price: K 20.00

PNG 2000 Census Unit Register – a listing of all Census Units (villages) in a province along with the number of households and persons by sex.

Price: K20.00 per province

PNG 2000 Census Basic Tables – a set of 24 cross-classified tables covering the main census topics at national and provincial level for all sectors, urban sector and rural sector.

Price: K20 per set

PNG 2000 Census Table Retrieval System (TRS) – a CD-ROM containing the basic tables at national and provincial level and by urban/rural sector, and at district and statistical LLG area level, along with software which allows users to select, retrieve, display, print and copy the table(s) for geographic level(s) of their choice.

Price: K250

PNG Census 2000 Community Profile System (CPS) – a CD-ROM containing basic population counts by age and sex and a statistical profile for all geographic levels from Census Unit upwards, along with software which allows users to retrieve, display and print the profile for any geographic area or aggregation of areas.

Price: K250

PNG Census 2000 Provincial Report – an easy-to-read commentary with accompanying statistical tables and graphs, designed to inform users of the key findings of the census at provincial level, and to assist in the interpretation of the findings.

Price: K25 per province

PNG Census 2000 National Report – an easy-to-read commentary with accompanying statistical tables and graphs, designed to inform users of the key findings of the census at the national level, and to assist in the interpretation of the findings.

Price: K30

PNG Census 2000 Thematic Mapping Database (TMD) – a CD-ROM containing map layers and statistical indicators for all geographic levels, which allows users to create thematic maps from census data using their own mapping software.

Price: K500

PNG Census 2000 User Service – a data service whereby NSO will prepare specialised tables to a user's specifications.

Price: on application

For more information, or to purchase any of the products, contact:

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Symbols and usages

Throughout this report the following symbols and usages apply.

. . not applicable

na not available

Urban: an area comprising settlements known as either a city or a town with a minimum population of 500 persons and a minimum population density of 195 persons per square kilometer

Rural: all other areas

Provincial abbreviations

EHP	Eastern Highlands Province
ENB	East New Britain Province
ESP	East Sepik Province
NCD	National Capital District
NIP	New Ireland Province
NSP	North Solomons Province
SHP	Southern Highlands Province
WHP	Western Highlands Province
WNB	West New Britain Province

Other abbreviations

AusAID	Australian Agency for International Development
LLG	Local Level Government
NSO	National Statistical Office
PNG	Papua New Guinea
UN	United Nations

Where percentages are presented, the denominator excludes not stated responses.

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