THE STATE OF POPULATION IN PAKISTAN, 1987

ABDUL RAZZAQUE RUKANUDDIN
M. NASEEM IQBAL FAROOQUI

National Institute of Population Studies
P.O. BOX 2197, ISLAMABAD-PAKISTAN
NOVEMBER, 1988

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November 1988

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Publication Supervised By
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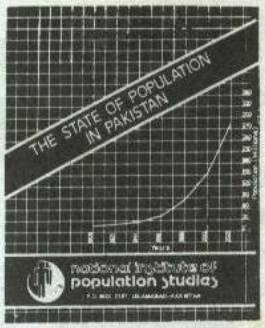
Graphics By
JAVED AHMED

Printed at
RAMNA PRINTERS ISLAMABAD
1988

Price: Soft Cover: Rs. 200.00
Hard Cover: Rs. 240.00



FOREWORD

Population Planning must be placed as the first item on the priority agenda of Pakistan. Since 1947, Pakistan's population has already increased from 32 million to over 100 million today. If population growth remains unchecked, it will increase to over 150 million by the year 2000, leading to an over-populated land, over-crowded cities and over-strained social services and basic utilities.

We shall require an additional investment of Rs. 800 billion in today's prices to provide for this additional population upto the year 2000 even at the present low level of per capita income.

We can only imagine how many more houses we can build, how many more children we can educate, how many more people we can rescue from abject poverty, if we only save some of this additional amount of Rs. 800 billion and spend it on the economic and social progress of the existing population.

And let us not forget the trauma and the tragedy of over-stretched families in an over-populated land:

- every day, 10,000 new infants are born and over 1,000 die;
- every year 26,000 young mothers confront the prospect of early death in child birth; and
- every decade, multiplying populations look for additional jobs which become even more scarce.

No economics can ever capture the trauma and the tragedy of wasted lives, of unfulfilled hopes, of frustrated aspirations.

That is why investment in family planning is a crucial investment for our nation and population welfare programmes must rank as the top priority item on the agenda of our development planning.

It was in recognition of this need that the National Institute of Population Studies (NIPS) was established in March 1986. The Institute was designed to focus on the study of population growth and its implications, evaluate independently the various population welfare programmes in the country and to guide the policy makers to control rapid population growth.

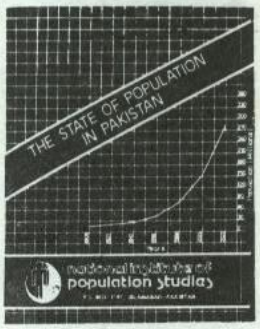
During the two years of its existence, NIPS (depending largely on local experts and consultants) has certainly made its presence felt by creating the necessary infrastructure and completing a number of studies in several vital areas. The studies conducted by NIPS so far pertain mostly to various aspects of population dynamics and the population welfare programmes in Pakistan. The further programme of NIPS will have to include those areas which need immediate attention to increase the effectiveness of the population welfare programme like communication strategy, level of acceptance of contraceptives and the methods accepted by large and small families.

NIPS has undertaken to bring out an annual publication giving the latest figures on population and other social and economic variables. The State of Population in Pakistan is the first edition which is intended to be published on annual basis and used as the basis of analysis of the statistics provided by the related organisations. However, a lot of data have not been included in this publication as they are currently being checked and sifted. Future editions will include these data and I hope that the 1989 edition will become a complete reference book about the population of Pakistan.

I am pleased at the great progress that NIPS has already made in a short period of two years. This new institution must be given full government support in the years ahead so that it can realize its enormous potential.

MAHBUB UL HAQ
Minister for Finance, Commerce and
Planning & Development
and
Minister-in-Charge Population Welfare

October 20, 1988.



ACKNOWLEDGEMENTS

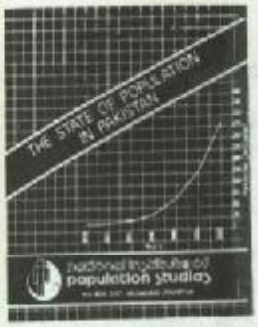
Dr. Mahbub ul Haq, the Minister for Commerce, Finance, Planning & Development and Population Welfare who is also the Chairman of the Board of Governors of the National Institute of Population Studies (NIPS) had desired that besides other work, NIPS should undertake compilation of a book on "The State of Population in Pakistan". But for his continuous encouragement and support, it could not have been possible for the Institute to complete such a gigantic work.

The present publication is the first effort of its kind to present facts about the population of Pakistan and their interrelationship with various social, economic and cultural variables in a comprehensive and consolidated form. An added feature of the present volume is the presentation of facts on disabled persons in Pakistan. This publication is aimed at serving as a benchmark and a reference book on population and development in the country. It is planned to bring out a similar volume every year containing updated figures together with reflection on changes in demographic, social and economic conditions in the country. The subsequent editions will be more concise and may be devoted to a selected aspect of the economy. The next issue of 'The State of Population in Pakistan' is proposed to concentrate mostly on health and educational aspects of the population of Pakistan. A lot of collective hard work and fact-searching has gone into the production of the present publication.

Special mention should, however, be made of the efforts and directions of Dr. M.S. Jillani, the first Chief Executive, NIPS under whose able guidance the work was accomplished. Dr. Yun Kim, US-AID Adviser to NIPS and Dr. Jillani meticulously worked with us over the manuscript and guided the authors during various phases of the publication process. The authors are also very grateful to Mr. Masood Nabi Nur, Secretary, Population Welfare Division, for his interest, encouragement and initiative which helped in speedy completion of this report.

The authors are grateful to Dr. Sabeeha Hafeez, Director General, Women's Division, for the help she extended on the chapter "The Status of Women". The authors are also thankful to Dr. Sultan S. Hashmi, Mr. M. Afzal, Dr. M. Arif Ghayur, Dr. Anwarul Haq and Dr. Zeba Sathar for their comments and suggestions for improving initial draft of the book. NIPS research, publication and other staff also deserve our special thanks for their untiring efforts.

Abdul Razzaque Rukanuddin
M. Naseem Iqbal Farooqui



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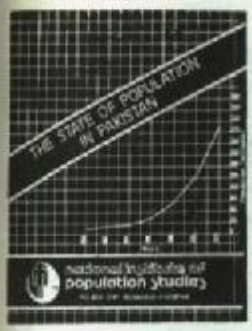

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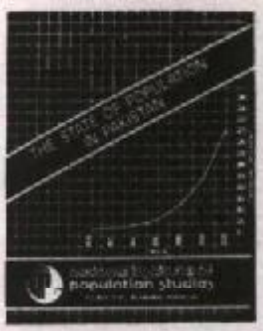


GLOSSARY

Acronyms

ASFR	Age Specific Fertility Rate.
CBR	Crude Birth Rate.
CDR	Crude Death Rate.
GDP	Gross Domestic Product.
GNP	Gross National Product.
GRR	Gross Reproduction Rate.
HED	Housing, Economic and Demographic Survey.
IMR	Infant Mortality Rate.
LR	Longitudinal Registration.
LPG	Liquid Petroleum Gas.
MASFR	Marital Age Specific Fertility Rate.
MCH	Maternal and Child Health Centre.
MGRR	Marital Gross Reproduction Rate.
MTFR	Marital Total Fertility Rate.
NGO	Non-Governmental Organisation.
NIPS	National Institute of Population Studies.
NIS	National Impact Survey.
PCPS	Pakistan Contraceptive Prevalence Survey.
PDS	Pakistan Demographic Survey.
PGE	Population Growth Estimation.
PFS	Pakistan Fertility Survey.
PGS	Population Growth Survey.
PLM	Population Labour Force & Migration Survey.
SCARP	Salinity control & Reclamation Project.
TBA	Traditional Birth Attendant.
TFR	Total Fertility Rate.
TOE	Tonnes of Oil Equivalent.
WAPDA	Water and Power Development Authority.

WFS	World Fertility Survey.
WHO	World Health Organisation.

Geographical

AK	Azad Kashmir.
FATA	Federally Administered Tribal Areas.
NA	Northern Areas
NWFP	North West Frontier Province.
UK	United Kingdom.
UNHCR	United Nations High Commissioner for Refugees.
USA	United States of America.
USSR	Union of Soviet Socialist Republic.

Education

BA	Bachelor of Arts.
BDS	Bachelor of Dental Surgery.
BEd	Bachelor of Education.
BSc	Bachelor of Science.
BSc (Eng)	Bachelor of Science (Engineering).
CTC	Commercial Training Centre.
GVI	Governmental Vocational Institute.
LLB	Bachelor of Law.
MBBS	Bachelor of Medicine, Bachelor of Surgery.
MA	Master of Arts.
MSc	Master of Science.
Matric	Matriculation (Class X passed)
Primary	(Class I—Class V)
Middle	(Class VI—Class VIII)
Secondary	(Class VI to X)
High	(Class IX & X)
Tertiary	(College & above)

Latin

de facto	*infact, or usual (members of the household by right)*
de jure	*only those present (of the household) whoever they are*
inter alia	*amongst other things*
per capita	*for each person*
per annum	*for each year*
per cent	*for each hundred*
percentage	*rate for each hundred*

Pakistani words

'Braderi'	*brotherhood, by family, name or trade*
'dai'	*local midwife*
'Hakeems'	*traditional medical practitioners*
'katcha'	*poor, unfinished*
'katchi abadi'	*poor dwelling area*
'pakka'	*good, strong*
'Muhajirs'	*refugees or displaced persons*

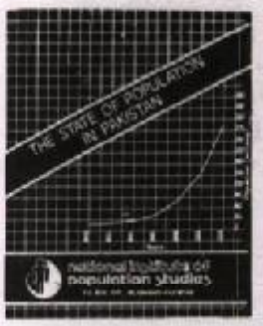
Crops

'bajra'	*coarse grains*
'jowar'	*coarse grains*
'gram'	*pulse*

Measurements

Ha	**hactare**
Km	**kilometre**
Kg	**kilogram**
Sq km	**square kilometre**

1 ha = 2.417 acres



INTRODUCTION

Population is one of the basic human resources of a country. This resource is essential for the overall socio-economic development of any country, particularly in relation to its natural resources, environment and development. While discussing the state of population, various factors have to be taken into account: the total number of persons, age and sex composition, geographical distribution, urbanisation, levels of fertility and mortality, labour force and manpower, youth population and females in the reproductive age groups.

This book on "The State of Population in Pakistan" describes the population size, its growth and composition by age and sex, levels and trends of fertility and mortality, population distribution and other socio-economic characteristics of the population of Pakistan and the changes which have occurred over time.

These variables have to be considered alongwith other socio-economic characteristics of the population including literacy and education, skill development, health, occupation, residence, income distribution, productivity, levels of nutrition and the status of women. "The State of Population in Pakistan", therefore, extends its scope beyond fertility, mortality and migration to include further discussion on demographic and other socio-economic characteristics of the population which makes the overall human resources of the country compatible and sustainable to the socio-economic development.

In the following chapters, various characteristics of the population, such as size, growth, distribution, sex and age composition, urbanisation, trends and levels of nuptiality, fertility and mortality, literacy and educational attainment, economic activity, health status, food supply and nutrition, housing and the status of women in the context of environment are discussed with a view to understand the policy issues involved in the complex interaction between population and the socio-economic development process.

According to the 1987 statistics, the population of Pakistan was two per cent of the world population, against only 0.6 per cent of its share in global-land mass. Pakistan at the global level is categorised among those countries which have the highest rate of population growth (around 3% per annum), with one of the lowest per capita income (US $380). It has high fertility (Crude Birth Rate estimated variously in the range of 39–42 per thousand population), infant mortality rate estimated between 90–120 per thousand live births, and life expectancy at birth in the range of 55–60 years, literacy rate of 26 per cent and enrolment in primary schools estimated to be around 50 per cent. The state of population is discussed in detail with respect to the basic needs of individuals, natural and physical resources and the productivity and development of the country.

The book has been drawn on the data

generated by different agencies which in many cases differ from each other. However, every effort has been made to give the most reliable data, yet the ranges of estimates are presented where such a decision was hazardous to make. Since, NIPS plans to bring out "The State of Population", periodically, efforts would be made to present the most reliable figures, as far as possible for subsequent editions.

PART 1

DEMOGRAPHIC FEATURES OF PAKISTAN

SIZE AND GROWTH OF POPULATION

1.1 Population Size

At the time of Independence in August 1947, the population of Pakistan was 32.5 million people. Today, the population of Pakistan is around 102 million, excluding three million Afghan refugees. It is the ninth most populous country of the world after China, India, USSR, USA, Indonesia, Brazil, Japan, Nigeria and Bangladesh (Table 1.1)

If the population trend in the past is studied, it can be seen that, at the outset of the 20th Century (1901), the population of the area which now constitutes Pakistan was inhabited by only 16.6 million people[2].

TABLE 1.1: Most Populated Countries of the World Ranked According to Population Size, Growth Rate and Area, 1986

	Countries in order of Size of Population	Population Mid–1987	Average Annual Growth	Area in Sq. Km.	Rank Order by Area of Country
		(Million)		(Thousand)	
1.	China	1062.0	1.3	9,561	3rd
2.	India	800.3	2.1	3,288	7th
3.	USSR	284.0	0.9	22,402	1st
4.	USA	243.8	0.7	9,363	4th
5.	Indonesia	174.9	2.1	1,919	14th
6.	Brazil	141.5	2.1	8,512	5th
7.	Japan	122.2	0.6	372	53th
8.	Nigeria	108.6	2.8	925	30th
9.	Bangladesh	107.1	2.7	144	82th
10.	Pakistan	104.6(101)	2.9 (2.9)	804	32th

Note:- (1) Figures in parentheses are estimates of the NIPS. These differ slightly from Government estimates of 102 million given in section 1.1 which is based on 3.1 per cent population growth rate per annum.

(2) There are other estimates which place the population of Pakistan at around 104 million and Growth Rate at above three per cent.

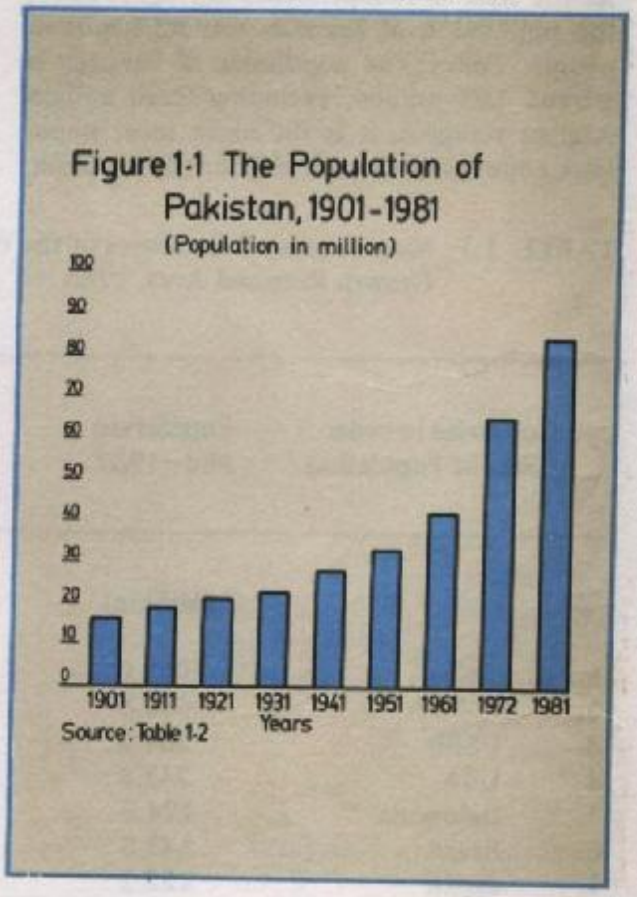
Source:- (1) Population Reference Bureau, *World Population Data Sheet*, 1986.
(2) World Bank, *World Development Report*, 1986.

TABLE 1.2: Population Size, Per cent Population Change and Rate of Population Growth, Pakistan, 1901–1986

Census Year	Total Population (Thousands)	Per cent Change	Per cent Average Growth Rate per annum
Before Independence			
1901	16,576[a]	–	–
1911	19,382	16.93	0.6
1921	21,109	8.91	0.7[b]
1931	23,542	11.53	0.9
1941	28,282	20.13	1.1
At Independence (14th August, 1947)	32,500	14.91	1.8
After Independence			
1951	33,740[c]	3.82	1.8
1961	42,880[d]	27.09	2.4
1972	65,309	52.31	3.6[e]
1981	84,254	29.01	3.1
Projected Estimates (August 1987)			
1987	101,336	20.27	2.9[f]

Notes: (a) Excluding population of frontier regions.
(b) Based on Population excluding 1922 thousand persons of Frontier regions in 1911.
(c) Including 13000 persons (estimated) of Gawadar not part of Pakistan in 1951 and 24000 persons (estimated) in Frontier regions who were not included in the 1951 Census Published data.
(d) The Planning Commission has estimated that there was under-enumeration in the 1961 Census to the tune of 7.5%. As such, the 1961 population figures used for various economic indicators is taken to be 46,200 thousand.
(e) The Intercensal population growth rate between 1961 and 1972 is 3.6% if the 1961 population is taken without adjustment and 3.0% after adjustment for 7.5% under enumeration in the 1961 Census.
(f) Estimates by National Institute of Population Studies.

Source: (1) Government of Pakistan, *Census of Pakistan 1961 Vol. 3*, Ministry of Home and Kashmir Affairs, Census Organisation, Karachi.
(2) Government of Pakistan, *Population Census of Pakistan, 1972* Provincial Table No. 1. Interior Division, Islamabad, 1973.
(3) Government of Pakistan, *Housing and Population Census of Pakistan 1980-81, Bulletin No. 1, 1981*. Population Census Organisation, Islamabad.
(4) Government of Pakistan, *Main Findings of 1981 Population Census*, Population Census Organisation, Islamabad, Dec., 1983.



According to the first Census after Independence in 1951, the population of Pakistan was recorded as 33.7 million, which shows that the population of the country doubled in 50 years from 1901 to 1951 (Table 1.2 and Figure 1.1). Since the turn of the century, the population has increased more than six-fold and since Independence, in a

Pakistan is the tenth most populous country in the world. It has a population of more than 102 million (excluding three million Afghan refugees). At the time of Independence, the population of Pakistan was recorded as 32.5 million showing that the population of the country has increased more than three-fold over a period of 40 years.

period of only 40 years, the increase has been more than three-fold. If population growth continues at the present rate, it will be about 150 million by the time the country enters the 21st century (Year 2000). This would mean a nine-fold increase over a period of a hundred years with approximately 4.6 fold increase in population since Independence[11].

1.2 Rate of Population Growth

The population growth rate of Pakistan is in the vicinity of three per cent per annum, which is the highest among the nine most populous countries of the world (Table 1.1). This growth rate is even higher than the overall average rate of other developing countries (2.1%), Asia (1.9%), South Asia (2.3%) and South East Asia (2.3%)[9, 10].

Since Independence, the population has grown at an average rate of 2.9 per cent per annum. If the pre-Independence growth rate is considered, it will be seen that, from less than one per cent in the early 1920s, the growth rate has increased to almost three per cent at the present time (Table 1.2). During the intercensal periods of 1951–1981 and 1972–1981, the population grew at an average annual rate of 3.09 per cent and 3.06 per cent respectively.

The first doubling of the population, therefore, took almost 50 years (1901–1951) and the next about 21 to 23 years (1951–1972). If the same trend of growth continues, the population will again double in less than 25 years. By comparison[9, 10], the populations of other regions will double at the following intervals:

Developed countries	128 years
Developing countries	34 years
Asia	39 years
South East Asia	32 years
South Asia	30 years

Efforts, therefore, must be made through appropriate policies and programmes, to reduce the rate of population growth and prolong the time before the population doubles itself.

If the current growth rate continues, the present population of the country will grow from the mid–1987 estimate of 102 million to 150 million in 2000. It would further increase to 194 million in 2010 and 392 million in 2035[11]. On the other hand, if the country does succeed in reducing its growth rate to two per cent per annum by the year 2000, the population will be around 131 million in the year 2000 and, in the next 50 years (by the year 2035), it will be around 261 million, some 131 million less than the population growing at the present rate. But if the present growth rate continues, the population will increase four-fold in the next 50 years and eight-fold in the next 70 years[11].

Pakistan has recently surpassed Nigeria in

During the intercensal period 1972–81, the population grew at an average annual rate of 3.06 per cent and today the growth rate of population is variously estimated at around 2.9 to 3.21 per cent. If the same trend of population growth continues, the population will double itself in less than 25 years and will exceed the population of Bangladesh, Nigeria and Japan by the year 2000. Thus efforts need to be made to reduce the growth rate and to prolong the doubling time of the population. If the country succeeds in reducing its current population growth rate from the current rate to two per cent by the year 2000, the population of Pakistan will be around 134 million instead of 150 million thus saving a burden of 16 million persons.

population size, and replaces it in the ninth position instead of tenth. If this trend continues, the population of Pakistan will exceed that of Nigeria, Bangladesh and Japan by the year 2000 and will become the seventh most populous country in the world[10]. Pakistan would then be in a very unenviable position and one can imagine the scenario and enormity of the population problem when resources, environment and social services would be under heavy strain in the years to come, particularly in the next century.

1.3 Reasons for High Growth Rate

If the net international migration of population is assumed to be negligible, then fertility and mortality are the two crucial factors underlying the growth of population. Table 1.3 and figure 1.2 show the average decennial birth and death rates and natural growth rates for British India prior to Independence and for selected years for Pakistan thereafter. The high birth rate, particularly prior to Independence, was characteristic of a typical

TABLE 1.3: Crude Birth Rate, Crude Death Rate and Rate of Natural Increase in British India 1901–1940 and Pakistan, 1962–86.

Period	Crude Birth Rate per 1000 Population	Crude Death Rate per 1000 Population	Annual Rate of Natural Increase (percentages)
British India[a]			
1901–1910	49.2	42.6	0.66
1911–1920	48.1	47.2	0.09
1921–1930	46.4	36.3	1.01
1931–1940	45.2	31.2	1.40
Pakistan			
1962–1965[b]	50.0	20.0	3.00
1962–1965[c]	42.0	15.0	2.70
1975[d]	40.5	—	—
1979–1980[e]	41.0	12.0	2.90
1985–1986[f]	40.5	12.0	2.85
1984–1986[g]	42.8	10.7	3.21

Note: Pakistan Demographic Survey (PDS) 1984–86 are indirect estimates.

Sources:–
1. [a]Kingsley Davis, *The Population of India and Pakistan*, New Jersey, Princeton University Press, 1951, P. 85.
2. [b]Government of Pakistan, *The Family Planning Scheme for Pakistan, during Third Five Year Plan, 1965–70*, Ministry of Health, 1965 (Based on Population Growth Estimate, Chandra Deming Formula, 1962–65).
3. [c]Farooqui M.N. I, and Ghazi Mumtaz Farooq, *Final Report of the Population Growth Estimation Experiment, 1962–65*, Pakistan Institute of Development Economics, Dacca, 1971.
4. [d]Government of Pakistan, *World Fertility Survey, Pakistan Fertility Survey*, First Report,

Population Planning Council, 1976.

5. [e]Government of Pakistan, *Population Welfare Plan 1980–83*, Population Welfare Division Islamabad.
6. [f]Estimates by the National Institute of Population Studies.
7. [g]Government of Pakistan, *Pakistan Demographic Surveys, 1984–86*, Federal Bureau of Statistics, Karachi, 1988.

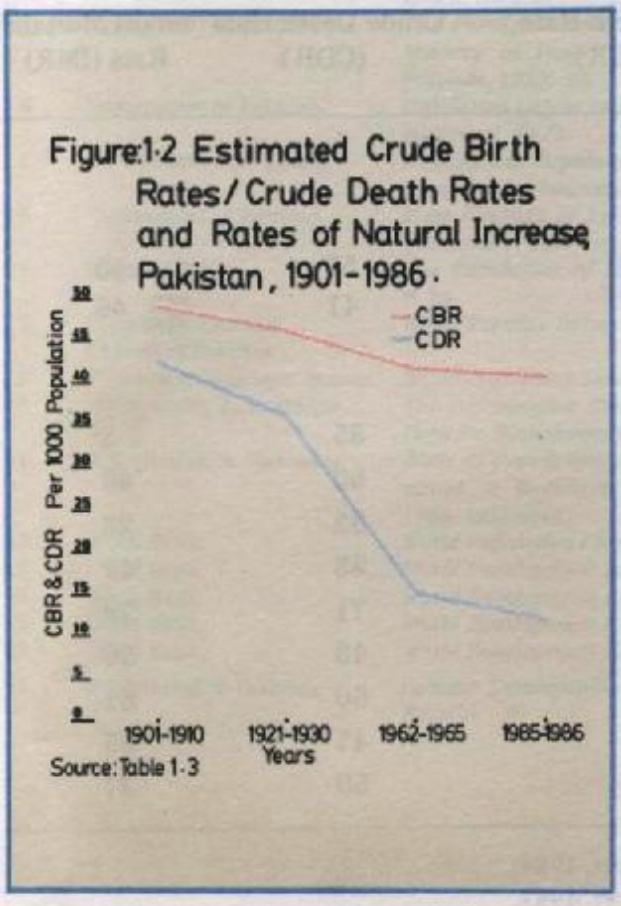


Figure 1.2 Estimated Crude Birth Rates/ Crude Death Rates and Rates of Natural Increase, Pakistan, 1901-1986.

agrarian-rural culture, where high fertility ensured the survival of sufficient number of male children in the face of high mortality. In the early part of this century, high mortality rates were largely due to famine and frequent epidemics of cholera, influenza, epidemics of the late 1920s and other scourges.

The acceleration of population growth in Pakistan during the past few decades has largely been due to a decline in mortality owing to the elimination of epidemic diseases through the adoption of modern medical services and expansion of public health measures. Moreover, progress has been achieved in the environment with better water supply, drainage and other social services.

While mortality has been decreasing, fertility has shown a modest decline over the recent years. However, the decline in mortality rate has been slow when compared with those of many other developing countries. For example, during the period 1960—85, the percentage decline in mortality in Pakistan was 35 per cent, in India it was 50 per cent; China 71 per cent; Indonesia 48 per cent; Malaysia 60 per cent and Egypt 50 per cent. In the low income countries, it was 58 per cent and in middle income countries it was 41 per cent (Table 1.4 and Figure 1.3) [12, 14]. The decline of infant mortality has been quite negligible

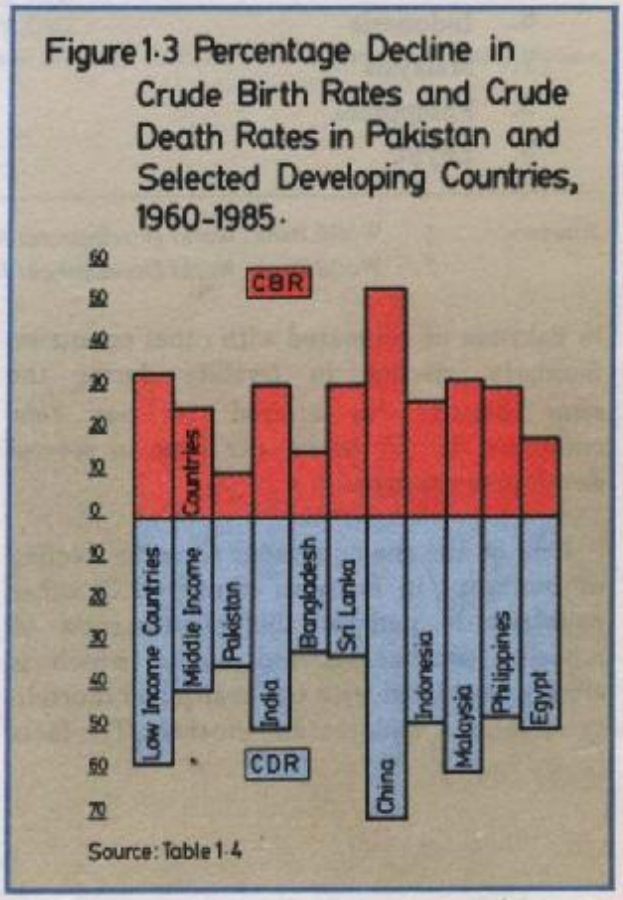


Figure 1.3 Percentage Decline in Crude Birth Rates and Crude Death Rates in Pakistan and Selected Developing Countries, 1960-1985.

TABLE 1.4: Percentage Decline in Crude Birth Rate, Crude Death Rate, and Infant Mortality Rate in Pakistan, and Selected Countries, 1960 – 1985

Regions–Countries	Percentage Decline (1960–85)		
	Crude Birth Rate (CBR)	Crude Death Rate (CDR)	Infant Mortality Rate (IMR)
World Regions			
Developing countries:			
a. Low Income Countries:	34	58	56
b. Middle Income Countries:	26	41	46
Countries			
1. Pakistan	10	35	29
2. India	31	50	46
3. Bangladesh	15	32	23
4. Sri Lanka	31	33	49
5. China	54	71	79
6. Indonesia	27	48	36
7. Malaysia	32	60	61
8. Philippines	30	47	55
9. Egypt	18	50	27

Source:-
1. World Bank, *World Development Report*, 1984.
2. World Bank, *World Development Report*, 1987.

in Pakistan as compared with other countries. Similarly, decline in fertility during the same period was around 10 per cent compared to 15 to 54 per cent in several developing countries.

One of the major reasons for slow decline of mortality in Pakistan compared to other countries is perhaps the phenomenon of repeated pregnancies and births, which is closely associated with the health and mortality of infants, children and mothers. The facts thus stated, present a sombre picture of the relationship between population and socio-economic development in Pakistan and the enormous pressures exerted by rapid population growth. The social, economic and political repercussions of the situation, particularly in the years to come, can at least be called explosive. This calls for determined efforts to reduce the growth rate by lowering the fertility rate and increasing the resources which can make development efforts really fruitful for all segments of the society.

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DISTRIBUTION OF POPULATION

2.1. Provincial Distribution

The population of Pakistan is unevenly distributed over its four provinces. Punjab being the largest province with about one-fourth (26%) of the total land area of the country, is inhabited by more than half (56%) of the total population. Sind, with less than one-fifth (18%) of the land area has 23 per cent of the total population. The North West Frontier Province (NWFP) and the Federally Administered Tribal Areas (FATA), with 13 per cent of the land area, constitute 16 per cent of the total population. Area-wise,

TABLE 2.1: Enumerated Population of Pakistan by Province, Land Area and Percentage Distribution, 1951–1981

Province	Area Sq. Km.	Population (in thousands)			
		1951	1961	1972	1981
PAKISTAN	796,095 (100.0)	33,816 (100.0)	42,978 (100.0)	65,321 (100.0)	84,253 (100.0)
NWFP	74,521 (9.4)	4,587 (13.6)	5,752 (13.4)	8,392 (12.8)	11,061 (13.1)
FATA	27,220 (3.4)	1,337 (3.9)	1,847 (4.3)	2,991 (3.8)	2,199 (2.6)
Punjab	20,5344 (25.8)	20,557 (60.8)	25,500 (59.3)	37,612 (57.6)	47,292 (56.1)
Sind	140,914 (17.7)	6,054 (17.9)	8,374 (19.5)	14,158 (21.7)	19,029 (22.6)
Baluchistan	347,190 (43.6)	1,187 (3.5)	1,385 (3.2)	2,433 (3.7)	4,332 (5.1)
Islamabad	906 (0.1)	94 (0.3)	120 (0.3)	235 (0.4)	340 (0.4)

Note: Percentage distribution is given in parentheses

Source: Government of Pakistan, *Hand Book of Population Census data*, Population Census Organisation, Statistics Division, December, 1985, Islamabad.

Baluchistan is the largest province, with 44 per cent of the total land area, but it has the lowest population (5%), (Table 2.1).

The share of population of the Punjab and NWFP has declined over the intercensal period 1951–81. The share of population in the Punjab in 1951 was 61 per cent which declined to 56 per cent in 1981. Similarly, the share of NWFP declined from 17 per cent in 1951 to 16 per cent in 1981. Sind's share was 18 per cent in 1951 which increased to 23 per cent by 1981. Baluchistan's share also increased from three per cent in 1951 to five per cent in 1981 (Table 2.1).

2.2. Density

Population density in the country has increased two-and-a-half times, from 43 persons per Square Kilometre (Sq. Km.) in 1951 to 106 persons per Sq. Km. in 1981. Punjab is the most densely populated province (230 persons per Sq. Km.), followed by NWFP (148 persons per Sq. Km.) and Sind (135 persons per Sq. Km.). Baluchistan is the least populated province with only 12 persons per Sq. Km. (Table 2.2).

As a result of the population growth, population density per Sq. Km. increased between 1951 and 1981 in all the provinces. The increase in persons per Sq. Km., however, varied in different provinces. The corresponding increase has been 2.3 times in the Punjab (from 100 persons to 230 persons per Sq. Km.), more than three times in Sind (from 43 persons to 135 persons per Sq. Km.), four times in Baluchistan (from three persons to 12 persons per Sq. Km.) and about two and half times in NWFP (from 62 persons to 148 persons per Sq. Km.

2.3. Urban–Rural Distribution

The distribution of the population, its percentage increase and the rate of growth by urban and rural areas of the country are given in tables 2.3, 2.4 and figure 2.1. As can be seen in table 2.3 and figure 2.1, the per cent of urban population increased considerably over the period while the per cent of rural population decreased. At the beginning of the century or in 1901 about one-tenth (9.8%) of the people lived in urban areas. Over the next three decades, the percentage share of the urban population to the total population of the country remained more or less constant, the real change started after the

TABLE 2.2: Population Density in Pakistan by Province in Census Year, 1951–1981

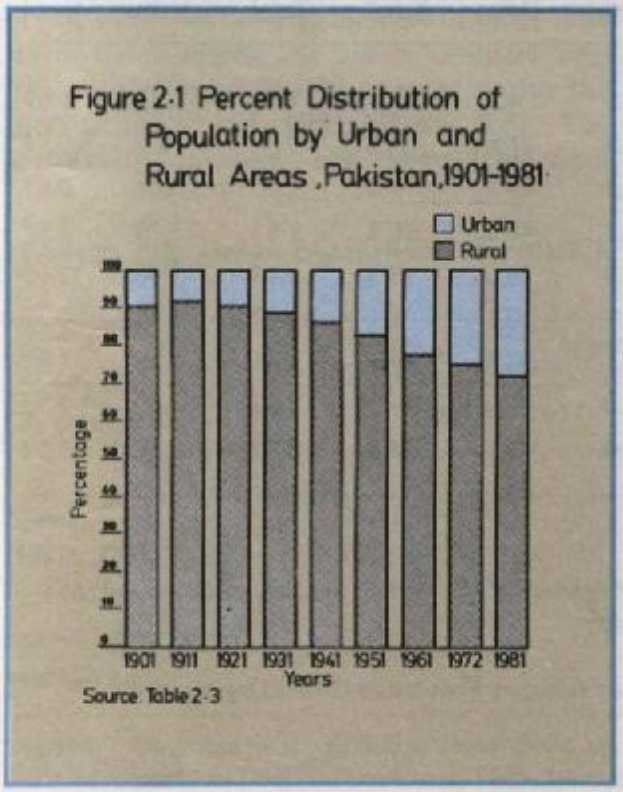
Region	Area Sq. Km.	Population (in thousands) 1951	1961	1972	1981	Population Density per Sq. Km. 1951	1961	1972	1981
PAKISTAN	796,095	33,816	42,978	65,320	84,253	43	54	82	106
NWFP	74,521	4,587	5,752	8,392	11,061	62	77	113	148
FATA	27,220	1,336	1,847	2,491	2,198	49	68	92	81
Punjab	205,344	20,556	25,499	37,611	47,292	100	124	183	230
Sind	140,914	6,054	8,374	14,158	19,028	43	59	101	135
Baluchistan	347,190	1,187	1,385	2,432	4,332	3	4	7	12
Islamabad	906	94	119	234	340	104	132	259	376

Source: Government of Pakistan, *Hand Book of Population Census data*, Population Census Organisation, Statistics Division, December, 1985, Islamabad.

TABLE 2.3: Distribution of Population in Pakistan by Urban and Rural Areas, 1901–1981

Census Year	Population (in thousands)			Percentage		
	Total	Urban	Rural	Total	Urban	Rural
1901	16,576	1,619	14,957	100.0	9.8	90.2
1911	19,382	1,689	17,693	100.0	8.7	91.3
1921	21,109	2,058	19,051	100.0	9.8	90.2
1931	23,542	2,769	20,773	100.0	11.8	88.2
1941	28,282	4,015	24,267	100.0	14.2	85.8
1947 (estimated)	32,500	5,003	27,497	100.0	15.4	84.6
1951	33,817	6,019	27,798	100.0	17.8	82.2
1961	42,978	9,655	33,324	100.0	22.5	77.5
1972	65,321	16,594	48,727	100.0	25.4	74.6
1981	84,254	23,841	60,412	100.0	28.3	71.7

Source: Government of Pakistan, *Hand Book of Population Census data,* Population Census Organisation, Statistics Division, December, 1985, Islamabad.



Independence.

The urban population at the time of Independence was about five million (15.4%). According to the 1981 Census, it was 24 million, which represented 28 per cent of the total population. During the period 1947–1981, the overall population increased slightly more than two and a half times (32.5 to 84.2 million). During the same period, although the urban proportion increased by only 13 percentage points (from 15% to 28%), in terms of absolute numbers the increase was 3 and 3/4 times.

The population of Pakistan is distributed unevenly among the various provinces. Punjab is the most populous province comprising more than half of the total population (56 per cent). On the other hand, Baluchistan has the lowest population, (5 per cent of the total population of the country) although it is the largest province area-wise, with 44 per cent of the total land area of the country.

During the intercensal period 1951–61 and 1961–72, the growth of urban population was particularly rapid, increasing 60 per cent and 72 per cent respectively. In the following intercensal period between 1972–81, the increase was slightly lower than the previous decades which was only 44 per cent (Table 2.4). This slow down of urban population growth may partly be attributable to changes in the definition of urban areas in the census and partly due to a decline in the flow of migration from Bangladesh and India as well as possible slow down of migration from the rural areas. Nevertheless, the urban population increased by about 4.8 per cent per annum since the Independence of the country.

Thus, the proportion of urban population in the country has increased from 18 per cent in 1951 to 22 per cent in 1961, to 25 per cent in 1972 and 28 per cent in 1981 (Table 2.5 and Figure 2.2). According to the 1981 Census, the proportion of the population living in urban areas was uneven among the provinces as shown in table 2.5.

Sind is the most urbanised province of Pakistan primarily due to the population of the metropolis Karachi (5.2 million) which comprised 27 per cent of the urban population of Sind. Similarly, the proportion of urban population in the Punjab was basically due to the population of Lahore and Faisalabad cities. [4]

The changes in the proportion of urban population between 1951 and 1981 varied

TABLE 2.4: Intercensal Population Change and Average Annual Growth Rate for Pakistan 1901–1981

Year	Intercensal Population Change (In thousands)			Intercensal Per cent Change			Average Annual Growth Rate		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
1901–1911	2,806	70	2,736	16.9	4.3	18.3	1.58	0.42	1.69
1911–1921	1,727	369	1,358	8.9	21.8	7.7	0.86	2.0	0.74
1921–1931	2,433	711	1,722	11.5	34.5	9.0	1.10	3.01	0.87
1931–1941	4,740	1,246	3,494	20.1	45.0	16.8	1.85	3.79	1.57
1941–1947*	4,218	988	3,230	14.9	24.6	13.3	2.17	3.46	1.95
1947–1951	1,317	1,016	301	4.1	20.3	1.1	1.12	5.35	0.31
1951–1961	9,161	3,636	5,526	27.1	60.4	19.9	2.45	4.88	1.84
1961–1972	22,343	6,939	15,403	52.0	71.9	46.2	3.67	4.77	3.32
1972–1981	18,933	7,247	11,685	29.0	43.7	24.0	3.06	4.38	2.58

*Estimated

Source: 1. Government of Pakistan, *Population Census of Pakistan, 1961, Vol. 3*, Ministry of Home and Kashmir Affairs, Home Affairs Division, Karachi.

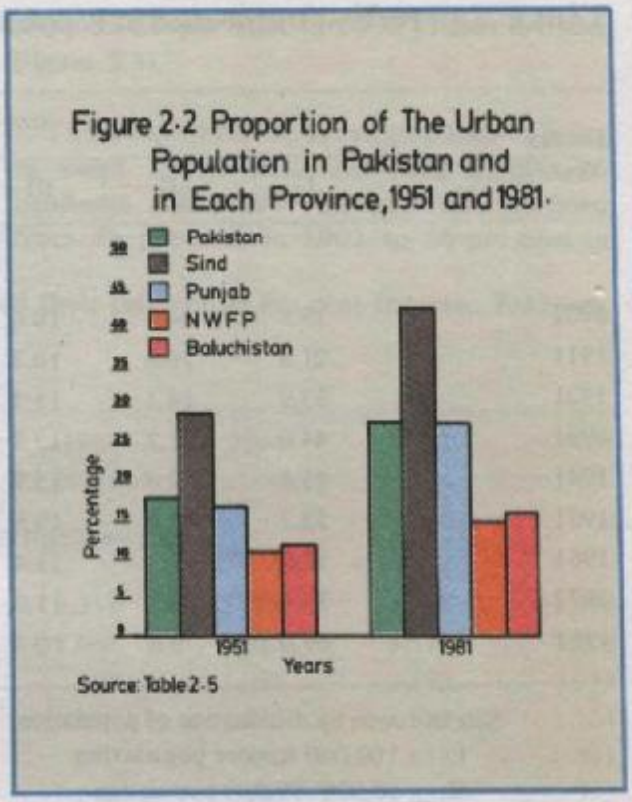
2. Government of Pakistan, *1981 Census Report of Pakistan*, Population Census Organisation, Statistics Division, Islamabad.

greatly in the provinces as is evident from the data in table 2.5.

TABLE 2.5: Proportion of Urban Population in Pakistan by Province, 1951–1981

Province	1951	1961	1972	1981
	Per cent			
PAKISTAN	18.0	22.0	25.0	28.0
Sind	29.0	38.0	40.0	43.0
Punjab	17.0	21.0	24.0	28.0
NWFP	11.0	13.0	14.0	15.0
Baluchistan	12.0	17.0	16.0	16.0

Source:- Government of Pakistan, *Hand Book of Population Census data*, Population Census Organisation, Statistics Division, December, 1985, Islamabad.



2.4 Pattern of Urban Growth.

The total number of urban localities in the country (by different population sizes) increased from 238 in 1951 to 415 in 1981. Thus, there has been an increase of more than three times among the urban localities with the population of 25,000 or more during the period 1951 and 1981 (Table 2.6). The significant increase has been for Sind province, particularly in urban localities with populations of less than 50,000. Punjab also experienced considerable increases in towns and cities of 25,000 or more, although, there was a reduction in the number of towns with populations of less than 25,000, (Table 2.6).

TABLE 2.6: Urban Localities by Population Size in Pakistan by Province, 1951–1981

Urban Population By Size	Pakistan		NWFP		Punjab		Sind		Baluchistan	
	1951	1981	1951	1981	1951	1981	1951	1981	1951	1981
Total	238	415	29	43	160	215	32	124	17	32
Under 25000	196	276	23	26	135	126	23	99	15	26
25000–49999	23	73	5	10	13	45	4	14	1	4
50000–99999	9	35	–	5	6	24	2	5	1	1
100000 & Over	10	31	1	2	6	20	3	7	–	1

Source:- Government of Pakistan, *Hand Book of Population Census data*, Population Census Organisation, Statistics Division, December, 1985, Islamabad.

TABLE 2.7: Per cent Distribution of Population by Size of Town, Pakistan, 1901–1981

Census Year	Size of Town / City							Total
	I	II	III	IV	V	VI	IV–VI	
	(Per cent)							
1901	19.8	24.4	10.6	18.9	20.1	6.3	45.3	100.0
1911	21.8	26.6	10.3	19.3	17.8	4.3	41.4	100.0
1921	33.9	14.1	15.1	15.6	17.1	4.2	36.9	100.0
1931	44.6	8.7	13.9	14.1	15.5	3.1	32.7	100.0
1941	45.1	12.4	13.7	14.4	12.2	2.1	28.7	100.0
1951	52.7	8.3	13.8	13.4	9.3	2.5	25.2	100.0
1961	58.9	7.3	11.4	11.9	8.2	2.3	22.4	100.0
1972	59.4	8.7	11.0	14.7	5.1	1.0	20.8	100.0
1981	65.0	9.8	10.4	11.6	2.8	0.3	14.7	100.0

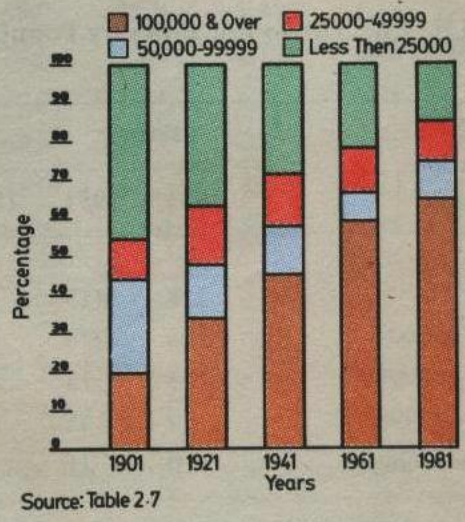
Size of towns by distribution of population

I. 100,000 & more population
II. 50,000–99,999 population
III. 25,000–49,999 population
IV. 10,000 – 24,999 population
V. 5,000–9,999 population
VI. Less than 5,000 population

Source:- 1. Government of Pakistan, *Population Census of Pakistan, 1961, Vol. 3,* Ministry of Home and Kashmir Affairs, Home Affairs Division, Karachi.
2. Government of Pakistan, *1981 Census report of Pakistan.* Population Census Organisation, Statistics Division, Islamabad.

Pakistan is an agricultural country where 80 per cent of the people depend on agriculture. In the 1981 Census, 72 per cent of the total population was living in rural areas and 28 per cent in urban areas. The total number of urban localities by different sizes was 415 in 1981. Sind is the most urbanised province with 43 per cent of the total urban population. The proportion of urban population in the country has increased from 18 per cent in 1951 to 28 per cent in 1981. Forty per cent of the total urban population lives in three largest cities i.e. Karachi, Lahore, Faisalabad. Most of it was due to migration from rural areas to urban areas. The trends show that the largest cities are going to experience an accelerated growth in the coming years as the rural migrants and the Pakistanis returning from abroad may prefer to settle in larger cities due to civic amenities and greater opportunities for employment.

Figure 2·3 Percent Distribution of Population by Size of Cities and Towns, Pakistan, 1901-1981



Source: Table 2·7

When the distribution of urban population by size and class of locality is considered, there has been a significant change in the population residing in big cities of 100,000 persons and above. The proportion of population living in big cities increased from 20 per cent of the total urban population in 1901 to 65 per cent in 1981 (Table 2.7 and Figure 2.3).

The proportion of urban population living in small towns with less than 25,000 inhabitants (class IV–VI), however, declined from 45 per cent in 1901 to 25 per cent in

TABLE 2.8: Population of Twelve Major Cities and their Intercensal Per cent Increase, Pakistan, 1931–1981

City	1931	1941	1951	1961	1972	1981
			POPULATION (in thousands)			
TOTAL	1,446	2,089	3,355	5,584	9,527	13,794
Karachi	264	387	1,068	1,913	3,515	5,208
Lahore	430	672	849	1,296	2,170	2,953
Faisalabad	43	70	179	425	823	1,104
Rawalpindi	119	185	237	340	615	795
Hyderabad	102	135	242	435	629	752
Multan	119	143	190	358	539	732
Gujranwala	59	85	121	196	324	601
Peshawar	122	173	151	218	273	566
Sialkot	101	139	156	167	204	302
Sargodha	27	36	78	129	200	291
Quetta	60	64	84	107	158	286
Islamabad	–	–	–	–	77	204
			PER CENT INCREASE			
TOTAL	–	44	61	66	71	45
Karachi	–	47	176	79	84	48
Lahore	–	66	26	53	67	36
Faisalabad	–	63	155	137	94	34
Rawalpindi	–	55	28	43	81	29
Hyderabad	–	32	79	80	55	20
Multan	–	20	33	88	51	36
Gujranwala	–	44	42	62	65	85
Peshawar	–	42	13	44	131	107
Sialkot	–	38	12	7	22	48
Sargodha	–	33	117	65	55	46
Quetta	–	7	31	27	48	81
Islamabad	–	–	–	–	–	165

Source: Government of Pakistan, *1981 Census report of Pakistan*. Population Census Organisation, Statistics Division, Islamabad.

1951 and again to 15 per cent in 1981, (Table 2.7 and Figure 2.3). In medium size towns i.e. class III (25,000 to 49,999 population) the urban proportion remained almost constant, while the urban localities with the population of 50,000 to 99,999 (Class II) declined between 1901—1961, probably due to the fact that about 22 towns in this category moved up to cities with a population of 100,000 and above.

In 1951, more than half of the total urban population (53%) was living in 10 cities with a population of over 100,000. By 1981, two-third (65%) of this urban population was living in 31 such cities. (Tables 2.6 and 2.7). In the provinces, in cities of 100,000 or more, 77 per cent of Sind's urban population and 63 per cent of Punjab's urban population were living in these cities. Table 2.8 indicates the population of 12 big cities with the population of 200,000 or more in 1981. As can be seen from the table, the population residing in these 12 cities constitute 58 per cent of the total urban population in 1981. Between 1931 and 1981, the population of these cities increased from 1.4 million to 13.8 million people, indicating a very rapid growth of the major cities. For example, in 1981 two-fifth (40%) of the total urban population was living in the three largest cities—Karachi (5.2 million), Lahore (3 million) and Faisalabad (1.1 million). If the current rate of growth in these cities continues to the year 2000, the population of Karachi will increase to 12 million, Lahore 6 million and Faisalabad 3 million[4].

Such growth rates exacerbate the major problems faced by urban centres, such as housing shortages, shortage of schools, overcrowding, traffic congestion, slums, shanty towns, inadequate sanitation and conservancy services resulting in the deterioration of the quality of life[5]. The growth of population brings an increasing pressure on agricultural land, with the result that urban migration is expected to continue. This will, in turn, continue to place increasing strains on resources required to improve and expand urban facilities[5].

Thus, this accelerated urbanisation brings the inevitable surplus of labour and calls for formulation of an effective policy on the industrialisation - urbanisation process and its attendant degradation of the environment. Although, agriculture is still the mainstay of life for about 70 per cent of the population, its productivity is exceedingly low compared to other countries with similar socio-economic backgrounds. The ratio of land to population (agricultural holding) is progressively being reduced by the increase in population, and cottage and small-scale industries are shrinking or dying out. This intensifies the need for alternative occupations, either in rural areas or small-sized towns, to prevent the growing population from moving to big cities. If this does not happen, the sprawling slums and squalor in urban areas and shanty towns will continue to grow with the increasing urbanisation in the years to come.

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MIGRATION

3.1. Transfer of Population between India and Pakistan

Internal migration in Pakistan and migration across the borders is an old phenomenon but was recorded for the first time in 1901 Census of population. However, the major stream of migration took place at the time of Independence, as a result of the partition of Birtish India into two independent countries, India, and Pakistan, and a large-scale population transfer was witnessed during the intercensal period 1941–1951.

According to the 1951 Census of Pakistan, the number of refugees (Muhajirs) "on account of partition or fear of disturbances connected therewith" numbered 6.5 million. The number of similarly displaced people counted in the 1951 Census of India was 4.7 million. Thus, as a direct result of partition, Pakistan had a net gain of 1.8 million immigrants from India.

Table 3.1 shows that majority (89%) of these displaced people who came from India to Pakistan were primarily from the North West Zone of India, i.e. from the Punjab, Occupied Kashmir, Delhi and Rajputana. Of the total 6.5 million displaced persons, four out of five, i.e. 81 per cent settled in the Punjab and 18 per cent in Sind. The impact of refugee migration was most prominent in Karachi, Hyderabad, Sukkur, Lahore, Faisal-abad, Gujranwala, Multan, Rawalpindi, Peshawar and Quetta. These cities were the major migration targets basically, because they were larger in size and were located on the main railway and road links. There is evidence to the effect that a considerable number of refugees who settled in the urban areas originally came from the rural areas of India.

3.2. Migration in Pakistan

According to the 1981 Census, there were almost 10 million domestic and international migrants constituting 11.8 per cent of the total population (Table 3.2). Of these, 5.2 million (6.1% of the total population) were internal migrants who moved either within the province, or between provinces and 4.0 million (4.8%) were immigrants from other countries, predominantly India and Bangladesh. Likewise, of the total 5.2 million internal migrants, two-third (3.4 million) moved within the same province, while one-third (1.8 million), moved in between the provinces.

Because of the disturbances that erupted at the time of Independence in 1947, Pakistan received about 6.5 million immigrants from India while 4.7 million persons emigrated to India indicating a net gain of 1.8 million persons through the population interchange. According to the 1981 Census, there were more than four million persons residing in Pakistan who moved from abroad, mostly from India and Bangladesh. It was estimated that there were about 1.7 million Pakistanis, about two per cent of the total population or 10 per cent of total labour force working abroad in 1981, mostly in the Middle Eastern countries.

TABLE 3.1: Displaced Persons (Muhajirs) Enumerated in 1951 Census by Province of Settlement by their Zone of Origin.

Place of Settlement	Zone and Place of Origin							
	Total	North	East	South	West	Central	North West	Others
PAKISTAN	6,527,505	443,445	30,582	17,028	158,519	92,484	5,783,087	2,360
Baluchistan	27,988	6,331	276	297	1,538	3,011	16,501	34
Sind	1,167,197	314,459	24,194	15,852	151,222	70,625	588,525	2,320
Punjab	5,281,194	105,541	5,566	822	5,404	17,175	5,146,686	–
NWFP	51,126	17,114	546	57	355	1,673	31,375	6

Zones	*Provinces*
East	Assam, Bihar, Bengal
South	Madras, Mysore
West	Bombay
Central	Madhya Pradesh, Madhya Bharat, Bhopal, Hyderabad
Northwest	Punjab, Delhi, Rajputana and Jammu & Kashmir.
Others	French India, Bhutan and any other Indian States.

Source: Government of Pakistan, *Census of Pakistan, 1951*, Ministry of Home and Kashmir Affairs, Census Organisation, Karachi.

Table 3.2 also indicates that four per cent of the country's total population moved within the provinces. As a proportion of the local population this was the highest in the Punjab (5.6%), followed by Baluchistan (2.7%), Sind (2.1%) and NWFP and FATA (1.9). However, the highest number of inter-provincial migrants was recorded in NWFP and FATA (4.8%), followed by Baluchistan, Islamabad, the Punjab and Sind. Within the provinces, the movement was the highest among the population of the Punjab, whereas in between the provinces the movement was the highest among the people of the Frontier region.

Table 3.3 shows the pattern of settlement of all migrants and their previous residence. According to the table, of the total migrants, 0.49 million (4.9%) settled in NWFP. Of these, more than one-third (36.5%) had moved within the province, while 20 per cent moved from the Punjab and 16 per cent from other countries. Almost two-third of the migrants (6.3 million) were settled in the Punjab. Of these, 42 per cent moved within the province and another 44 per cent moved from other countries. More than a quarter (28%) of the total migrants settled in Sind, of whom 42 per cent came from other countries, 23 per cent moved from the Punjab and 14 per cent came from NWFP and FATA. This explains the phenomenal rise in the city of Karachi. About three per cent of the total migrants were recorded in Baluchistan. Majority of the migrants, however, (44%) moved within the province while 21 per cent moved from the Punjab, 11 per cent from NWFP and 10 per cent from other countries. The movement from "other countries" was, in all cases, mostly from India and Bangladesh. (Table 3.3)

Migrants from India had mostly entered Pakistan at the time of Independence. Their number declined from 6.5 million reported

TABLE 3.2: Migration Status of Population, Pakistan by Province, 1981

Movement of immigrants	Total	NWFP & FATA	Punjab	Sind	Baluchistan	Islamabad
1. Total Population	84,253,644 (100.0)	13,259,875 (100.0)	47,292,441 (100.0)	19,028,666 (100.0)	4,332,376 (100.0)	340,286 (100.0)
2. Non-Migrants	74,294,393 (88.2)	12,256,437 (92.4)	40,483,592 (85.6)	17,199,605 (90.4)	4,051,497 (93.5)	303,260 (89.1)
3. Total Migrants	9,959,251 (11.8)	1,003,438 (7.6)	6,808,849 (14.4)	1,829,061 (9.6)	280,879 (6.5)	37,026 (10.9)
4. Migrants within Pakistan	5,159,743* (6.1)	877,342 (6.6)	3,516,239 (7.4)	527,219 (2.8)	230,732 (5.3)	8,211 (2.4)
a. Migrants within the Province	3,437,071 (4.1)	247,341 (1.9)	2,667,196 (5.6)	405,277 (2.1)	117,257 (2.7)	– –
b. Migrants from one Province to other Province*	1,790,637* (2.1)	630,001 (4.8)	849,043 (1.8)	121,942 (0.6)	113,475 (2.6)	8,211 (2.4)
5. Migrants from Azad Kashmir and Northern area	106,410 (0.1)	6,979 (0.1)	74,639 (0.2)	19,211 (0.1)	1,466 (0.03)	4,115 (1.2)
6. Migrants from other countries	4,041,121 (4.8)	78,410 (0.6)	2,756,298 (5.8)	1,173,008 (6.2)	26,737 (0.6)	6,668 (2.0)
7. Migrants who did not report place of origin	651,977 (0.8)	40,707 (0.3)	461,671 (1.0)	109,623 (0.6)	21,944 (0.5)	18,032 (5.3)

Note: (i) Figures in parentheses are the proportions of the respective populations.
(ii) Total Migrants refer to sum of row numbers 4, 5, 6 and 7.

* From FATA 67,965 persons moved to NWFP.

Source: Government of Pakistan, *1981 Census Report of Pakistan*, Population Census Organisation, Statistics Division, December, 1984.

in the 1951 Census to 4.7 million in 1981. The primary reason for this is attrition due to mortality as there were virtually no return migrants and their offsprings were born as natives[1].

The pattern of internal migration indicates that a significant number of migrants (88%) originated from rural areas. Half of them (51%) settled in urban areas and the rest in rural areas. Of the 12 per cent of the migrants who originated from the urban areas, about a quarter (27%) of them settled in rural areas and the rest in other urban areas, (Table 3.4).

The pattern of inter-provincial migration and its settlement is important as it is intimately related to social and economic development process of the country. Table 3.5 and figure 3.1 show that there were 1.79 million migrants across the provinces, or about one-third of the total internal migrants who moved from one province to another. Among the provinces, Sind received the highest number of migrants recorded at 1.07 million (60%) followed by the Punjab 0.36 million (20%), NWFP 0.19 million (10%), Baluchistan 0.1 million (5%) and Islamabad 0.08 million (5%).

It can further be seen from the table and the figure that slightly less than a half (47%)

TABLE 3.3: Migrant Population by Province of Present Residence and Place of Previous Residence, Pakistan, 1981

Present Residence	Previous Residence									
	Total	NWFP	FATA	Punjab	Sind	Baluchistan	Islamabad	AK & NA.	Other countries*	Not reported
Total	9,959,251	793,980	83,362	3,516,239	527,219	230,732	8,211	106,410	4,041,121	651,977
	(100)	(7.97)	(0.84)	(35.31)	(5.29)	(2.32)	(0.08)	(1.07)	(40.58)	(6.55)
NWFP	491,365	179,376	67,965	99,058	16,135	1,780	955	6,979	78,410	40,707
	(100)	(36.51)	(13.83)	(20.16)	(3.28)	(0.36)	(0.19)	(1.42)	(15.96)	(8.28)
Punjab	6,315,775	196,850	7,759	2,667,196	92,067	54,298	4,997	74,639	2,756,298	461,671
	(100)	(3.12)	(0.12)	(42.23)	(1.46)	(0.86)	(0.08)	(1.18)	(43.64)	(7.31)
Sind	2,774,516	369,676	6,998	631,578	405,277	56,988	2,157	19,211	1,173,008	109,623
	(100)	(13.32)	(0.25)	(22.76)	(14.61)	(2.05)	(0.08)	(0.69)	(42.28)	(3.95)
Baluchistan	264,451	29,490	452	56,424	10,579	117,257	102	1,466	26,737	21,944
	(100)	(11.15)	(0.17)	(21.34)	(4.0)	(44.34)	(0.04)	(0.55)	(10.11)	(8.30)
Islamabad	113,144	18,588	188	61,983	3,161	409	–	4,115	6,668	18,032
	(100)	(16.43)	(0.17)	(54.78)	(2.79)	(0.36)	–	(3.64)	(5.89)	(15.94)

*Mostly from India and Bangladesh

AK = Azad Kashmir

NA = Northern Areas

Source:- Government of Pakistan, *Hand Book of Population Census Data,* Statistics Division, Population Census Organisation December, 1985, Islamabad.

TABLE 3.4: In-Migrants in Urban and Rural Areas by Place of Previous Residence in Urban and Rural Areas, Pakistan, 1981

Place of Previous Residence	Place of Present Residence		
	Total	Urban	Rural
All Areas	5,159,743	2,766,203	2,393,540
	(100%)	(53.61)	(46.39)
Urban	642,741	470,782	171,959
	(12.45%)	(9.12)	(3.33)
	(100.00)	(73.2)	(26.6)
Rural	4,517,002	2,295,421	2,221,581
	(87.55%)	(44.49)	(43.06)
	(100%)	(50.80)	(49.20)

Source: Government of Pakistan, *1981 Census Report of Pakistan*, Population Census Organisation, Statistics Division Islamabad, December 1984.

of the inter-provincial migrants originated from the Punjab. Of these, three-quarters were settled in Sind while the rest in other provinces. The next highest number of inter-provincial migrants were from NWFP and FATA (0.7 million) which comprised (39%) of all inter-provincial migrants. Sixty one per cent of these settled in Sind and 34 per cent in the Punjab. The inter-provincial migrants from Sind comprised 0.12 million (7%) of which three-quarters of them settled in the Punjab. The inter-provincial migrants from Baluchistan comprised 0.11 million (6%) of the total inter-provincial migrants, half of whom settled in Sind and other 48 per cent in the Punjab.

Furthermore, as shown in table 3.5, in Sind 59 per cent of the migrants came from the Punjab, 35 per cent came from NWFP and FATA while five per cent came from Baluchistan. In the Punjab, 57 per cent of the migrants came from NWFP and FATA, about one-quarter (26 per cent) came from Sind and 15 per cent from Baluchistan. In NWFP, 53 per cent of the migrants came from the Punjab, 37 per cent from FATA and nine per cent from Sind. In Baluchistan, 58 per cent of the migrants came to settle there from the Punjab, 31 per cent from NWFP and FATA and 11 per cent from Sind.

The 1981 Census also provides information on migrants by their duration of settlement and this information is summarised in table 3.6. As can be seen from the table, two-third (65%) of the total migrants had moved in prior to 1971; 12 per cent moved between

The 1981 census revealed that there were about 5.2 million persons who have moved within the country-about 1.8 million persons between the provinces and 3.4 million persons within their respective provinces. Of the 5.2 million internal migrants, 2.8 million persons or 52 per cent have settled in urban areas while 2.4 million persons or 46 per cent settled in rural areas. Of the 2.8 million persons who settled in urban areas, about 2.3 million were of rural areas and 0.5 million came from other urban places. On the other hand, out of the 2.4 million persons, who have settled in rural areas, 2.2 million persons came from other rural areas and less than 0.2 million persons came from urban areas. This confirms the trend of an increasing rural-urban migration which sounds a warning of further pressures on urban facilities.

TABLE 3.5: Inter-Provincial Migrants' Settlement Pattern by Province of Previous Residence, Pakistan, 1981

Present Residence	Previous Residence						
	Pakistan	NWFP	FATA	Punjab	Sind	Baluchistan	Islamabad
PAKISTAN	1790,637 (100) (100)	613,604 (100) (34.4)	83,362 (100) (4.7)	849,043 (100) (47.4)	121,942 (100) (6.8)	113,475 (100) (6.3)	8,211 (100) (0.5)
NWFP	1858,93 (10.4) (100)	–	67,965 (81.5) (36.6)	99,058 (11.7) (53.3)	16,135 (13.2) (8.7)	1,780 (1.6) (1.0)	955 (11.6) (0.5)
Punjab	355,971 (19.9) (100)	196,850 (32.0) (55.3)	7,759 (9.3) (2.2)	–	92,067 (75.5) (25.9)	54,298 (47.9) (15.3)	4,997 (60.9) (1.4)
Sind	1,067,397 (59.6) (100)	369,676 (60.1) (34.6)	6,998 (8.4) (0.7)	631,578 (74.4) (59.2)	–	56,988 (50.2) (5.3)	2,157 (26.3) (0.2)
Baluchistan	97,047 (5.4) (100)	29,490 (4.8) (30.4)	452 (0.5) (0.5)	56,424 (6.6) (58.1)	10,579 (8.7) (10.9)		102 (1.2) (0.1)
Islamabad	84,239 (4.7) (100)	18,588 (3.0) (22.0)	188 (0.2) (0.2)	61,983 (7.3) (73.5)	3,161 (2.6) (3.7)	409 (0.4) (0.5)	–

Note: The percentages under absolute figures represent distribution according to previous and present residence respectively

Source:- Government of Pakistan, *Hand Book of Population Census Data*, Population Census Organisation, Statistics Division, Islamabad December, 1985.

Figure: 3.1 Interprovincial migrants, settlement pattern by Province of previous residence, Pakistan, 1981.

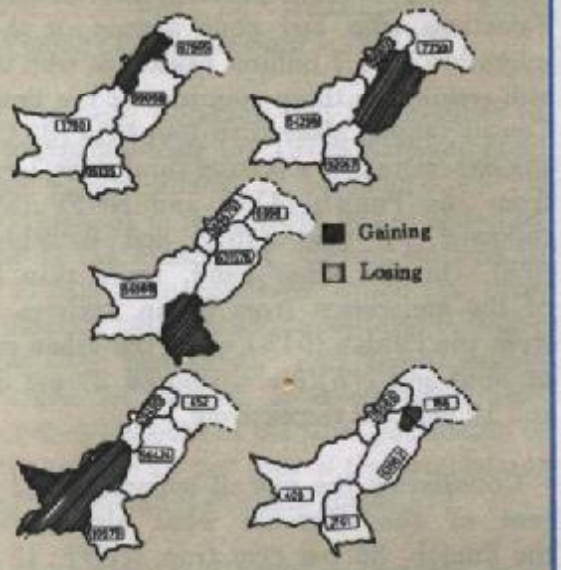

Table 3.5

1971–76 period and the remaining 23 per cent moved five years prior to 1981 Census (1976–81). In the Punjab and Sind, about 70 per cent and 65 per cent of the migrants came to these provinces prior to 1971 respectively. Most of these migrants were presumably from India and other countries. On the contrary, 56 per cent of the in-migrants in NWFP, 48 per cent in Baluchistan and 44 per cent in Islamabad moved within five years prior to 1981 Census. Of the in-migrants settled during the period 1971–76, about 30 per cent settled in Islamabad, while 10–16 per cent settled in other provinces.

As already mentioned, the 1981 Census provides information about the movement of people within and across the provinces. However, in-migration is usually of four distinct types namely: (i) rural to rural, (ii) rural to urban, (iii) urban to urban, and (iv) urban to rural. Every in-migration within

TABLE 3.6: Migrants in the Provinces by Duration of Continuous Residence, Pakistan, 1981

Place of Present Residence	In-migrants by Duration of Continuous Residence			
	Total	5 years (1976–1981)	5–10 years (1971–1976)	10 years & more (Prior to 1971)
PAKISTAN	9,959,251 (100)	2,303,362 (23.13)	1,211,441 (12.16)	6,444,448 (64.71)
NWFP	491,365 (100)	277,260 (56.43)	72,057 (14.66)	142,049 (28.91)
Punjab	6,315,775 (100)	1,268,285 (20.08)	658,182 (10.42)	4,389,308 (69.50)
Sind	2,774,516 (100)	581,144 (20.95)	404,583 (14.58)	1,788,789 (64.47)
Baluchistan	264,451 (100)	126,932 (48.00)	43,269 (16.36)	94,250 (35.64)
Islamabad	113,114 (100)	49,741 (43.96)	33,350 (29.48)	30.053 (26.56)

Source:- Government of Pakistan, *1981 Census Report of Pakistan*, Population Census Organisation, Statistics Division, Islamabad, December, 1984.

the boundary of Pakistan can involve either of the four types of these movements. Such data are only available from the Pakistan Labour-Force and Migration (PLM) Survey[6]. According to this survey, 42 per cent of the migrants moved within districts while 39 per cent changed their districts but remained within the province. The findings of the survey further indicate that 41 per cent of the internal migrants moved from rural to rural areas. Of these rural to rural migrants, almost two-third (62%) moved at short distances, whereas 30 per cent moved from rural to urban areas, 15 per cent moved from urban to urban areas and 14 per cent moved from urban to rural areas[6].

3.3. Migration out of Pakistan

International migration trends have changed considerably since the late 1970s, mainly due to the steep escalation in oil prices at that time with a resultant economic boom in the Middle East. This led to a large exodus of Pakistani workers to these countries.

The 1981 Census provides information on Pakistanis who had gone abroad. It shows migration of 1.7 million Pakistanis who were still residing in those countries at the time of Census taking. More than four-fifth (83%) of the out-migration was from rural areas, largely from the Punjab (41%) and NWFP (39%) followed by Sind (15%) and Baluchistan (5%). On the other hand, more than half of the emigration from urban Pakistan was from the Punjab (54%) while the urban areas of Sind and NWFP contributed 29 per cent and 12 per cent respectively.

Considering the overall emigration, 43 per cent of the migrants went abroad from the Punjab; 35 per cent from NWFP; 18 per cent from Sind and about five per cent from

TABLE 3.7: Number and Per cent of Pakistanis Migrated Abroad by Place of Residence During the Past Ten Years, 1981.

Area	Persons Migrated Abroad During the Past Ten Years by Place of Residence.		
	Total	Urban	Rural
PAKISTAN	1,708,608 (100) (100.0)	294,128 (17.2) (100.0)	1,414,480 (82.8) (100.0)
NWFP	591,405 (34.6)	35, 768 (12.2)	555,637 (39.3)
Punjab	735,285 (43.0)	158,763 (54.0)	576,522 (40.7)
Sind	300,354 (17.6)	87,335 (29.6)	213,019 (15.1)
Baluchistan	77,126 (4.5)	9,280 (3.2)	67,846 (4.8)
Islamabad	4,438 (0.3)	2,982 (1.0)	1,456 (0.1)

Source:- Government of Pakistan, *1981 Census Report of Pakistan*, Population Census Organisation Statistics Division, Islamabad, December, 1984.

Baluchistan (Table 3.7). When the emigration is taken in terms of percentage of the total population of that province, it is noted that NWFP had the highest of the total emigrants (5.3%) followed by Baluchistan (1.8%) the Punjab (1.8%) and Sind 1.7%)[3].

It has been observed that the number of out-migrants during the 1970s increased at an annual rate of almost 11 per cent[3, 4]. The major impetus in this growth was provided by a rise in the number of migrant workers to the Middle East countries which, in turn, significantly stimulated in-country mobility arising from high elasticity of labour supply to wages. At present, it is estimated that about 2—3 per cent of the total population or approximately 10 per cent of the total labour force of Pakistan is working abroad[7].

The emigration of Pakistani workers, however, is a temporary phenomenon. The oil glut, experienced by the world since 1982, has brought a decline in oil prices which may have a negative affect on future emigration levels. This will pose a labour retrenchment problem for those working abroad and will, in turn, create an alarming situation for the Government of Pakistan as it will have to face difficulties regarding the effective absorption of returning migrants[7].

The picture emerging from the migration trend is the source of major social and economic problems in the urban areas, especially large cities, both due to in-migration from rural areas, as well as, immigrants from abroad. The overseas Pakistani workers returning to the country will also have a tendency to settle in urban areas, adding to the existing pressures. It is, therefore apparent that vigorous efforts will have to be made to retain rural population in rural areas through the provision of social services and economic opportunities commensurate with those in urban areas. Likewise, policies will have to be formulated to discourage migration of non-Pakistanis who tend to settle in urban areas. The existing services and facilities in metropolitan and urban areas which already need urgent improvement require further expansion even if migration to cities is reduced to a trickle which seems impossible in the near future. Simultaneously, smaller cities should be provided with more facilities to absorb migrating population so that they do not rush to large metropolitan cities directly and may consider smaller and medium size cities as their first choice.

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SEX AND AGE COMPOSITION

The dynamics of age and sex composition of a population constitutes one of the important components of demographic analysis. At any given time, it is the outcome of past trends of fertility, mortality and migration. In a closed population which is not affected by international migration, the age distribution of a population is determined by the fertility and mortality levels[10]. It is also one of the important determinants of the future growth and structure of the population.

The age and sex composition of the population provides the basis for estimating the requirements for various essential goods and services. The potential school age population, females in the reproductive ages, and working age population are influenced by it. A country requires projections for schools, labour force, food and housing demand, etc. Therefore, many social and economic issues such as education, housing, health and employment are closely related to the current sex and age profile and to the future changes therein. Data on age and sex composition of the population were collected in all censuses since 1901 and is discussed below.

4.1 Sex Composition

The sex composition of a population is the basic demographic variable as it directly affects the incidence of births, deaths, marriages, migration and occupation and a host of other variables. The basic measure used in the study of sex composition is the sex ratio, which is usually defined as the number of males per hundred or per thousand females.

Table 4.1 shows the sex composition of the population for the census years between 1901—1981. It is noted that the proportion of males to the total population and the sex ratios increased upto the year 1921. They then remained more or less constant upto the year 1931 and, thereafter, declined gradually. The increasing proportion of males and sex ratio upto 1921 may be attributable to frequent occurrence of epidemics (such as influenza) and famines, in which millions of people were killed. The proportion of deaths were more amongst females than males, thus resulting in a high sex ratio[8]. The unusually high sex ratio in Pakistan may be attributable to a number of factors such as:

- a higher number of male to female births (a biological phenomenon common throughout the world);
- higher female than male deaths, particularly beyond infancy and adulthood,
- in censuses males are more completely enumerated than females due to cultural reasons[8].

Sex composition plays a vital role as it directly affects the incidence of births, deaths, marriages, migration, and occupation. Sex ratio, the number of males per 100 females, declined gradually in Pakistan from 116 in 1951 to 111 in 1981. It is expected to decline further with improved coverage and improvement in female mortality compared to that of males.

TABLE 4.1: Male and Female Population of Pakistan, Proportion of Males, and Sex Ratios, 1901–1981.

Census Year	Population (in thousands)			Proportion of Males	Sex Ratio
	Total	Males	Females		
1901	16,576	8,969	7,607	54.1	117.9
1911	19,382	10,632	8,750	54.9	121.5
1921	21,109	11,618	9,491	55.0	122.4
1931	23,542	1,252	10,590	50.0	122.3
1941	28,282	15,421	12,861	54.5	119.9
1951	33,740	18,147	15,593	53.8	116.4
1961	42,880	22,960	19,920	53.5	115.3
1972	65,309	34,833	30,476	53.3	114.3
1981	84,254	44,233	40,021	52.5	110.6

Source:
1. Government of Pakistan, *Population Census of Pakistan, 1951*, Ministry of Interior, Karachi.
2. Government of Pakistan, *Population Census of Pakistan, 1961 Vol. 3.* Ministry of Home and Kashmir Affairs, Home Affairs Division, Karachi.
3. Government of Pakistan, *Population Census of Pakistan 1972*, Population Census Organisation, Statistics Division, Islamabad.
4. Government of Pakistan, *1981 Census Report of Pakistan*, Population Census Organisation, Statistics Division, Islamabad.

The declining sex ratio shown in table 4.1 indicates a better coverage of females in the more recent censuses and that the female mortality in the country has improved as compared to males. This has resulted in a gradual reduction of the proportion of males and an improvement in the sex ratio in the country. It is quite possible that the sex ratio in the years to come will further decline and will be closer to the sex ratio of other developing countries which is lower than that of Pakistan.

The sex ratio, according to the provinces, like the overall sex ratio of the country, has also shown a gradual decline except for NWFP, where it has remained constant since 1961 (Table 4.2). The unusually high sex ratios in some of the provinces may, *inter alia*, be attributed to male selective internal migration within the country. The sex ratio, as expected, has been recorded higher in urban areas than in rural areas, which is again attributed to sex selective migration of males to the urban areas of the country[4, 8].

4.2 Age Composition

Distribution of population by age is an important feature of any population as in all cases, specific needs of the population are determined by the age distribution. The age structure of the population is determined by fertility, mortality as well as migration, but fertility is the major component which largely affects the age distribution of a population.

In a country like Pakistan, where literacy and educational attainment is low, it becomes difficult to collect accurate and reliable age statistics from the respondents. In most countries with low level of literacy, the data on age collected in censuses and surveys are subject to many errors arising from mis-statement of ages, tendency on part of the

TABLE 4.2: Sex Ratio of Population of Pakistan, by Province, 1951–1981.

Area	1951	1961	1972	1981
PAKISTAN	116.4	115.3	114.3	110.6
NWFP	112.4	108.8	108.4	108.7
FATA	112.0	110.4	103.3	110.8
Punjab	115.3	114.3	116.2	110.8
Sind	124.3	123.2	115.1	110.7
Baluchistan	121.2	121.7	113.2	111.5
Islamabad	–	–	123.6	118.9

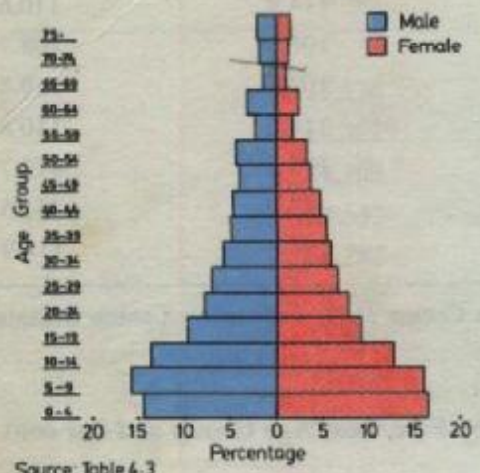
Source:- Government of Pakistan, *Hand Book of Population Census Data,* Population Census Organisation, Statistics Division, Islamabad, December, 1985.

TABLE 4.3: Male and Female Population of Pakistan, by Five Year Age Group and Per cent Distribution, 1981.

Age Group	Population (in thousands)			Per cent Distribution		
	Both Sexes	Male	Female	Both Sexes	Male	Female
Total	84,254	44,234	40,020	100.0	100.0	100.0
00–04	12,913	6,365	6,548	15.3	14.4	16.4
05–09	13,496	6,993	6,503	16.0	15.8	16.2
10–14	11,090	6,011	5,079	13.2	13.6	12.7
15–19	7,970	4,304	3,666	9.5	9.7	9.2
20–24	6,395	3,357	3,038	7.6	7.6	7.6
25–29	5,625	2,968	2,657	6.7	6.7	6.6
30–34	4,740	2,451	2,289	5.6	5.5	5.7
35–39	4,309	2,176	2,133	5.1	4.9	5.3
40–44	3,972	1,991	1,981	4.7	4.5	4.9
45–49	3,159	1,654	1,505	3.7	3.7	3.8
50–54	3,046	1,681	1,365	3.6	3.8	3.4
55–59	1,675	885	772	2.0	2.0	1.9
60–64	2,271	1,331	940	2.7	3.0	2.4
65–69	1,015	571	444	1.2	1.3	1.1
70–74	1,191	695	496	1.4	1.6	1.2
75 & above	1,405	801	604	1.7	1.8	1.5

Source:- Government of Pakistan, *Hand Book of Population Census Data,* Population Census Organisation, Statistics Division Islamabad, December, 1985.

Figure 4.1 Age Pyramid of the Population of Pakistan, 1981.



Source: Table 4.3

respondents to report ages ending in certain preferred digits such as 'zero' and 'five', and avoidance for certain digits, exaggeration of age in later years and carelessness in reporting, or simply ignorance of age. etc. Pakistan is no exception to these limitations.

The age distribution of population in Pakistan is shown in table 4.3 and the age pyramid is shown in figure 4.1. As can be seen from the table and the figure, the age distribution of males as well as females is heavily weighted towards the younger, economically unproductive ages. The same trend is observed for the provinces as shown in table 4.4.

4.2.1 *The Young Population*

(i) *Children under Five Years of Age*

The number of children under five years of age was 4.63 million as recorded in the 1951 Census. This number increased to 12.9 million in 1981, presenting a three-fold increase over the past 30 years. With persistent high fertility, the number of children is expected to grow rapidly and *continue to increase substantially in the* coming years. And if the present growth rate of population continues, then, by the year 2000, the number of children under five years of age will increase to about 23 million[6].

The proportion of children under five years of age comprised 15.3 per cent of the total population of the country in 1981 (Table 4.3). However, in the provinces, the proportion varies from 14.9 per cent in the Punjab to 16.1 per cent in Sind (Table 4.4). In contrast, proportion of children under five elsewhere in the world was 13 per cent for developing countries, 9 per cent for East Asian countries, 14 per cent each for South Asia and Latin American countries[9].

Children under five years of age are more sensitive to changes in the immediate environment than the rest of the population and in developing countries their mortality is one of the highest. For example, in Pakistan almost half of the total deaths are that of children under five years of age as will be discussed in subsequent sections. Improvement in mortality could be brought about *inter alia*, by preventative care and environmental improvements.

(ii) *School Age Population (6–16 years of age).*

According to the 1981 Census, there were 12.8 million (15.2%) children in the age group 6–10 years, which is the usual age bracket for primary school children. Also there were 11.9 million children (14.1%) who belonged to the secondary school-age population group 11–16 years. If the present growth rate of population continues, then, by the year 2000, the corresponding population of primary and secondary school-age children will increase to at least 23 and 22 million for the age groups 6–10 years and 11–16 years respectively[9].

With this growth rate, the objectives of both making the population literate and

TABLE 4.4: Male and Female Population of the Provinces of Pakistan by Five Year Age Group and Per cent Distribution, 1981

(Population in thousands)

Age Group/Sex	PUNJAB		NWFP		SIND		BALUCHISTAN	
	Population	%	Population	%	Population	%	Population	%
Both Sexes Total:	47,633	100.00	13,260	100.00	19,029	100.00	4,332	100.00
00–04	7,083	14.87	2,107	15.89	3,054	16.05	682	15.75
05–09	7,316	15.36	2,270	17.12	3,140	16.50	791	18.27
10–14	6,264	13.15	1,833	13.82	2,384	12.53	628	14.50
15–19	4,673	9.81	1,195	9.01	1,713	9.00	382	8.81
20–24	3,620	7.60	923	6.96	1,541	8.10	294	6.81
25–29	3,082	6.47	871	6.57	1,368	7.19	298	6.87
30–34	2,634	5.53	752	5.67	1,114	5.85	241	5.57
35–39	2,420	5.08	627	4.73	1,024	5.38	226	5.22
40–44	2,234	4.69	632	4.77	906	4.76	195	4.49
45–49	1,829	3.84	461	3.48	712	3.74	150	3.46
50–54	1,772	3.72	494	3.73	641	3.37	140	3.23
55–59	986	2.07	243	1.83	348	1.83	75	1.74
60–64	1,372	2.88	357	2.69	451	2.37	99	2.28
65–69	648	1.36	138	1.04	186	0.98	41	0.94
70–74	762	1.60	171	1.29	215	1.13	42	0.96
75 and above	938	1.97	186	1.40	232	1.22	48	1.10
Male : Total:	25,045	100.00	6,905	100.00	9,999	100.00	2,284	100.00
00–04	3,591	14.34	1,041	15.08	1,441	14.41	302	13.21
05–09	3,824	15.27	1,177	17.04	1,605	16.05	404	17.71
10–14	3,369	13.45	1,001	14.49	1,294	12.94	362	15.86
15–19	2,459	9.82	659	9.54	948	9.49	235	10.28
20–24	1,874	7.48	481	6.97	825	8.25	165	7.24
25–29	1,616	6.45	443	6.41	742	7.42	161	7.05
30–34	1,348	5.38	382	5.53	596	5.96	124	5.43
35–39	1,217	4.86	301	4.36	536	5.36	115	5.05
40–44	1,117	4.46	302	4.38	466	4.66	99	4.34
45–49	957	3.82	234	3.39	380	3.80	77	3.35
50–54	984	3.93	263	3.81	360	3.60	74	3.23
55–59	523	2.09	128	1.85	192	1.92	37	1.63
60–64	806	3.22	204	2.96	265	2.65	58	2.54
65–69	366	1.46	77	1.12	104	1.04	23	0.99
70–74	451	1.80	100	1.45	122	1.22	24	1.03
75 and over	543	2.17	112	1.62	123	1.23	24	1.06

Female : Total:	22,588	100.00	6,356	100.00	9,029	100.00	2,048	100.00
00–04	3,490	15.45	1,066	16.77	1,613	17.87	381	18.58
05–09	3,499	15.49	1,091	17.17	1,536	17.01	387	18.90
10–14	2,898	12.83	833	13.10	1,090	12.07	266	12.99
15–19	2,211	9.79	538	8.45	765	8.46	147	7.18
20–24	1,744	7.72	442	6.95	715	7.92	130	6.33
25–29	1,466	6.49	428	6.74	627	6.94	137	6.67
30–34	1,285	5.69	371	5.84	516	5.72	117	5.72
35–39	1,204	5.33	325	5.12	489	5.42	111	5.41
40–44	1,118	4.95	330	5.19	439	4.86	95	4.66
45–49	872	3.86	227	3.57	331	3.67	73	3.58
50–54	786	3.48	232	3.65	282	3.12	66	3.23
55–59	463	2.05	114	1.80	155	1.72	38	1.85
60–64	565	2.50	153	2.40	187	2.07	41	1.99
65–69	280	1.24	61	0.96	82	0.91	18	0.90
70–74	312	1.38	71	1.12	94	1.04	18	0.87
75 and over	395	1.75	74	1.17	108	1.20	23	1.14

Source:- Government of Pakistan, *Hand Book of Population Census Data*, Population Census Organisation, Statistics Division, Islamabad, December, 1985.

attaining universal primary education will become a colossal task for the Government in the years to come. With an increasing school age population, the number of children unable to go to school at all, will further increase if the enrolment ratio fails to increase faster than the momentum of the growing school age population. This, no doubt, presents a serious situation demanding urgent attention at all levels.

(iii) *College–University Age Population (17–23 years of age)*

According to the 1981 Census, 10.3 million people belonged to the 17–23 years age group, comprising 12 per cent of the total population. This is the segment which, it is hoped, will continue its low type education, or will enter the labour market. However, with a very low enrolment ratio of not more than two per cent bulk of these young people are more likely to enter the labour market. No doubt, in the coming years, the enrolment ratio at the college/university level will increase, but majority of the youth will still enter the labour market, instead of going to the colleges. It is therefore, essential to give particular attention to skill development and impart knowledge among this young population, so that efficiency and productivity is improved and increased. In the absence of careful planning, the already low productivity in the country could worsen, when the present 17–23 years age group increases from 10 to 19 million around the year 2000[9].

4.2.2 *Women in the Child-bearing Age (15–49 years)*

Like the overall growth of the population,

the female population of reproductive age (15–49 years) has also increased from 6.9 million in 1951 to 17.3 million in 1981. This represents an increase of two and a half times in 30 years period.

By 1987, the number according to National Institute of Population Studies, (NIPS) to 20 million estimates had further increased. By the same estimates, this section of the female population will have increased to 30 million by the year 2000[6]. With this momentum of growth in the reproductive ages, there would be a further increase in the birth rate. Hence, only through such means as by raising the age at marriage and the level of female education and skill development can there be any improvement in the status of women in the country. As changes occur, the population growth rate could start declining through a reduction in fertility.

4.2.3 *Working Age Population (15–64 years)*

Population of working ages, both males and females, usually from 15 to 64 years, comprised 51 per cent of the total population in 1981. This proportion declined from 53 per cent in 1951 to 51 per cent in 1981. (Table 4.5 and Figure 4.2). If the same trend continues, it will further decline to 47 per cent by the year 2000[9]. This figure is significantly low compared with groups of countries in Asia and the rest of the world (Table 4.6). For example, the proportion of working population is 57 per cent for developed countries, 59 per cent for developing countries, 55 per cent for Asia, 58 per cent for South East Asia, and 53 per cent for East Asia. This much higher proportion of working population is apparent in table 4.6 among certain developing countries compared to that of Pakistan. The proportions were considerably higher for China and Sri Lanka (61%), Malaysia (59%), India (58%), Indonesia and Egypt (57%) and the Philippines (56%).

With very low participation of females in the labour force in Pakistan, the male population in the working age groups has to carry the burden of the entire population. This calls

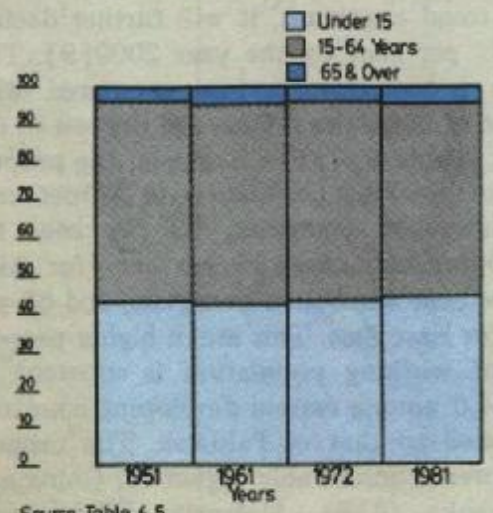
TABLE 4.5: Distribution of Population and its Percentage by Broad Age Group, Pakistan, 1951–1981

(Population in thousands)

Age Group	1951		1961		1972		1981	
	Population	%	Population	%	Population	%	Population	%
Total	33,707	100.0	42,880	100.0	65,309	100.0	84,254	100.0
00–14	14,528	43.1	18,224	42.5	28,605	43.8	37,493	44.5
15–59	17,258	51.2	21,697	50.6	32,132	49.2	40,863	48.5
15–64	17,831	52.9	22,598	52.7	34,026	52.1	43,138	51.2
60 and over	1,921	5.7	2,916	6.8	4,572	7.0	5,898	7.0
65 and over	1,348	4.0	2,058	4.8	2,678	4.1	3,623	4.3

Source:-
1. Government of Pakistan, *Population Census of Pakistan, 1951*, Ministry of Interior, Karachi.
2. Government of Pakistan, *Population Census of Pakistan, 1961, Vol. 3*, Ministry of Home Affairs, Home Affairs Division, Karachi.
3. Government of Pakistan, *Population Census of Pakistan, 1972*, Population Census Organisation, Statistics Division, Islamabad.
4. Government of Pakistan, *1981 Census Report of Pakistan*, Statistics Division, Islamabad.

Figure 4.2 Percent Distribution of Population by Broad Age Groups, Pakistan, 1951-1981



Source: Table 4.5

for a greater number of female participation in the labour force, as well as, a decline in fertility so that the dependency burden of this population is reduced.

4.2.4 *Old Age Population (65 years of age and above)*

Conventionally, population aged 65 years and above is considered economically inactive and is considered old-age dependent group. The proportion of the old age population has remained fairly stable in Pakistan, showing only a slight increase from 4 per cent in 1951 to 4.3 per cent in 1981, (Table 4.5). In developed countries, the proportion of old persons is 12 per cent as against 3—4 per cent in the developing countries, (Table 4.6).

In Pakistan, however, persons of 60 years and above are generally considered old. The proportion of this population was 5.7 per cent in 1951 which increased to 6.8 per cent in 1961 and 7.0 per cent in 1972. Thereafter, the proportion remained constant (Table 4.5). Although the changes in the overall age structure of the population take a long time, even with a decline in the growth rate of population, due to a decline in fertility, it is expected that the number of old age persons will increase in future with better medical facilities, thus increasing the life expectancy level. Special attention will have to be paid to this growing section of the population, especially because the younger age groups may be increasingly reluctant to look after the aged parents and other relatives with a growing tendency towards nuclear families.

4.2.5 *Dependent Population (under 15 and 65 years and older)*

Both, children under 15 years of age and persons of 65 years and above are considered to be dependents—either as 'young' dependents or 'old age' dependents. They are regarded as consumers and are not included in the productive age groups, while persons in the age group 15—64 years are considered to be the working age population.

In Pakistan, four out of nine persons are children under 15 years of age. The proportion of children of this age group in Pakistan increased from 43 per cent in 1951 to 44 per

Various specific needs of the population are determined by the age structure of the population which is mainly determined by fertility, mortality and migration. Age distribution of the country is heavily weighted towards younger, economically unproductive ages, whereas the proportion of economically productive population was reduced substantially thus, increasing the overall dependency burden in the country. Due to low female participation rate in the labour force, the dependency ratio is further affected, resulting in an increased aggravation of the dependency burden on the working male population. It indicates diversion of a huge amount of the national income to sustain a non-productive dependent population which, in turn, directs the investment funds to immediate consumption depriving the productive sectors.

TABLE 4.6: Percentage of Working Age Population (15–64 Years) and Young and Old Dependents in Pakistan, Selected Countries and World Regions, 1986

Regions/Country	Percentage of Population		
	Dependent Children (0–14)	Old Persons (65+)	Working Population (15–64)
WORLD	35	6	59
a. REGIONS			
Developed Countries	23	12	65
Developing Countries	39	4	57
a) Asian Countries	37	4	59
b) South Asian Countries	41	4	55
c) Southeast Asian Countries	39	3	58
d) East Asian Countries	32	5	53
b. COUNTRIES			
Pakistan	45	4	51
India	39	3	58
Bangladesh	47	3	50
Sri Lanka	35	4	61
China	34	4	61
Indonesia	40	3	57
Malaysia	37	4	59
Philippines	41	3	56
Egypt	39	4	57
Japan	22	10	68
UK	20	15	65
USA	22	12	66
USSR	25	10	65

Source: 1. Population Reference Bureau, *World Population Data Sheet*, Washington, DC. 1986.

cent in 1972 and nearly 45 per cent in 1981 (Table 4.5 and Figure 4.2). Pakistan's proportion of children under 15 years of age, therefore, is one of the highest in the world, even among developing countries.

For example, in developed countries the proportion of children under 15 years of age was 23 per cent, in developing countries it was 39 per cent, in Asian countries 37 per cent, in East Asian countries 32 per cent, in South East Asian countries 39 per cent and in South Asian countries 41 per cent. Among developing countries, the corresponding proportion was 41 per cent for the Philippines, 40 per cent for Indonesia, 39 per cent each for Egypt and India, 37 per cent for Malaysia, 35 per cent for Sri Lanka and 34 per cent for China. Among developed countries this proportion varies from 22 to 25. (Table 4.6).

This indicates that the age distribution in Pakistan is heavily weighted towards the

younger, unproductive ages. With the existing high percentage of children in the total population, a high fertility rate may still further increase this proportion, as shown in the age pyramid of the population of the 1981 Census, (Figure 4.1). This indicates that a huge amount of the national income will have to be spent on non-productive dependents which, in turn, implies the diversion of resources for immediate consumption rather than for productive investment.

Momentum of the population growth is high, particularly in the reproductive ages which would further increase the birth rate and the rate of population growth due to a very large young population entering the reproductive age groups. The high population growth could be avoided if the age at marriage and the level of female education is increased and the status of women ameliorated in the country at an accelerated rate alongwith concerted efforts at fertility control.

4.2.6 *Dependency Burden*

The dependency burden is a simple measure indicating the likely impact of the age composition on the economic potential of the population. Conventionally, the age group 15—64 years is assumed to be the economically productive segment of the population with younger and older groups (population under 15 and population 65 years and above) being dependent. This is a crude and an approximate measure of dependency burden, and within this limitation the dependency ratio is calculated thus:

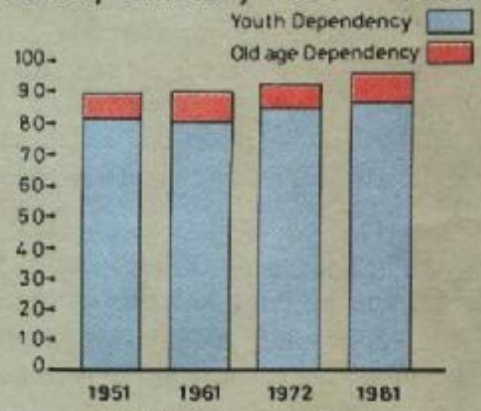
$$\text{Total or overall dependency ratio} = \frac{\text{Population (under 15 and 65 years \& over)}}{\text{Population 15–64 years}} \times 100$$

$$\text{Youth dependency ratio} = \frac{\text{Population under 15 years}}{\text{Population 15–64 years}} \times 100$$

$$\text{Old Age dependency ratio} = \frac{\text{Population 65 years \& above}}{\text{Population 15–64 years}} \times 100$$

Table 4.7 and figure 4.3 give the overall, as well as, youth and old age dependency ratios for Pakistan for the period 1951–1981, from which it can be seen that the dependency ratios in the country have increased. In 1951, the youth dependency ratio was 81.5 and old age dependency ratio was 7.6. In 1981, these ratios were 86.9 and 8.1 respectively. The overall dependency ratio in the country had increased from 89 in 1951 to 95 in 1981. Thus, on an average, one person in working age would have one dependent compared with the overall average of 0.5 for developed countries, 0.7 for Asian countries and 0.8 for developing countries. The ratio for Pakistan was even higher than India (0.9), Indonesia (0.9) and Nepal (0.8)[9]. Moreover, the low participation of females in the labour force in Pakistan further aggravates the dependency burden which is already high. If the present demographic conditions continue, the dependency ratio in Pakistan will increase further, making the overall ratio more than 100.

Figure:4.3 Economic Dependency Ratios, Pakistan, 1951 — 1981



Source : Table 4.7

TABLE 4.7: Distribution of Population of Pakistan by Broad Age Group and the Dependency Ratios, 1951–1981

(Population in thousands)

Census Year	Population in Broad Age Group				Dependency Ratios		
	Total	(0–14)	(15–64)	(65+)	Youth	Old Age	Overall
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1951	33,707	14,528	17,831	1,348	81.5	7.6	89.0
1961	42,880	18,224	22,598	2,058	80.6	9.1	89.8
1972	65,309	28,605	34,026	2,678	84.1	7.9	91.9
1981	84,254	37,493	43,138	3,623	86.9	8.4	95.3

Note: Col 6 = Col 3 ÷ Col 4 x 100
Col 7 = Col 5 ÷ Col 4 x 100
Col 8 = (Col 3 + Col 5) ÷ Col 4 x 100

Source:- 1. Government of Pakistan, *Population Census of Pakistan, 1951*, Ministry of Interior, Karachi.
2. Government of Pakistan, *Population Census of Pakistan, 1961, Vol. 3*, Ministry of Home Affairs, Home Affairs Division, Karachi.
3. Government of Pakistan, *Population Census of Pakistan, 1972*, Population Census Organisation, Statistics Division, Islamabad.
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4.2.7 *Median Age and Index of Ageing*

The most important single figure which summarises age structure of a population is its median age. This divides the population into two equal halves - the younger and older persons. The median age for Pakistan was only 16.1 years in 1981 largely due to high fertility and mortality rates.

The index of ageing which is defined as the ratio of the population aged 65 years or older to the population aged less than 15 years, shows how the population is growing younger or older. In 1951, the index of ageing in Pakistan was 9.28. This index increased to 11.3 per cent in 1961 and then decreased to 9.36 in 1972 and remained almost constant at 9.66 in 1981 (Table 4.8)

The discussion above makes three important points. First, a very high proportion of young dependents under the age group 15 years; second, high dependency ratio placing a very heavy burden on the working age population, which is aggravated by low participation of women in the labour force (to be discussed later). Third, prospects of growing number of population in the old age group with better health facilities and a rise in life expectancy. They underscore the urgent need for decline in fertility to reduce the number of young population, greater support to the working population by participation of women in economic activity through education and skill development. Equally important is the need to increase the productivity of the working population through the introduction of new technology, skill development and training. It is also high time that steps be taken to provide for senior citizens of the country before their number becomes unmanageable.

TABLE 4.8: Index of Ageing and Median Age Pakistan, 1951 – 1981.

Census Year	Index of ageing	Median age (years)
1951	9.28	16.09
1961	11.29	16.61
1972	9.36	17.40
1981	9.66	16.11

Source:-

1. Government of Pakistan, *Population Census of Pakistan, 1951*, Ministry of Interior, Karachi.
2. Government of Pakistan, *Population Census of Pakistan, 1961, Vol. 3*, Ministry of Home Affairs, Home Affairs Division, Karachi.
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FERTILITY

The interest and concern of the family about procreation besides the physiological factors is affected by the fact that children in a developing society play various supportive, economic, social and psychological roles. Every family, community and society is concerned with the fertility of its members, it being one of the important factors responsible for population growth. The survival and growth of any family primarily depends on the level of fertility in relation to mortality. Analysis of fertility levels and trends is, therefore, vital for explaining and understanding demographic change.

Since Independence in 1947, several attempts have been made in Pakistan to estimate fertility indices through direct as well as indirect measures. However, no agreed levels have emerged. As such, a number of different estimates have been made based on different sets of data, methods, and assumptions, making demographic analysis a subjective exercise of various agencies. An attempt is made, therefore, to present a range of fertility levels, trends and differentials based on the data and information available from various sources.

5.1 Sources of Data

Sources of data and information available on fertility in Pakistan mainly include:

- Four population censuses taken after Independence in 1951, 1961, 1972 and 1981;
- Population Growth Estimation (PGE) Experiment 1962–1965;
- National Impact Survey (NIS) 1968;
- Population Growth Surveys (PGS) undertaken in 1968, 1969, 1971 and 1976–1979;
- Pakistan Fertility Survey (PFS) 1975;
- Population, Labour Force & Migration (PLM) Survey of 1979 – 80.
- Pakistan Contraceptive Prevalence Survey (PCPS) 1984–85;
- Pakistan Demographic Surveys (PDS), 1984, 1985 and 1986.

These surveys provide information on fertility indices alongwith other indirect methods of estimation. Civil registration system which dates back to 1873 also provides vital statistics data on annual basis.

The completeness and accuracy of the data are inadequate and do not provide reliable information on fertility, but the sources and information available have made it possible to compile time series fertility indices. Since the indices have been obtained from different sets of data collected under different conditions, some part of the observed differences, besides the sampling variation, must be attributed to non-sampling errors which might be of a different magnitude among different sets of data.

5.2 Levels and Trends in Fertility.

5.2.1 Crude Birth Rates (CBRs)

Pioneering efforts to estimate Crude Birth Rates in the Sub-continent before Independence were made by Kingsley Davis[20]. Table 1.3 presents CBRs for the period 1901–1986, based on data for pre-1947 period from Kingsley Davis and various surveys conducted by different agencies for the years after 1947.

After Independence, the CBRs obtained from data sources mentioned have been consolidated into: (i) direct estimates, and (ii) indirect estimates which are given in table 5.1. As can be seen from the table, the CBRs vary between 62.4 per thousand population for 1951 estimated from the 1951 Census by using Stable Model technique to 36.1 per thousand population PGS (defacto) for 1969.

TABLE 5.1: Crude Birth Rates of Pakistan Based on Censuses and Surveys, 1951 – 1986

Source	Year/Period	Crude Birth Rates Per 1000 Population	
		Direct Estimates	Indirect Estimates
CENSUSES*			
	1951	–	62.4
	1961	–	51.0
	1961	–	52.0
	1972	–	52.2
	1981	–	37.1
SURVEYS*			
	1951–1952	–	43.1
	1950–1955 (UN)	–	47.9
	1955–1958	–	44.5
PGE	1962 (CS)	–	48.0
,,	1962 (CS)	37.1	–
,,	1963 (CS)	38.4	–
,,	1964 (CS)	42.0	–
,,	1962–1964 (CS)	39.2	–
,,	1965 (CS)	36.5	–
,,	1962 (LR)	41.9	–
,,	1962 (LR) Adjusted	–	43.6
,,	1962 (LR)	44.8	–
,,	1963 (LR)	42.2	–
,,	1964 (LR)	40.5	–
,,	1962–1964 (LR)	42.5	–
,,	1965 (LR)	38.8	–
,,	1962 (CD)	–	51.7
,,	1963 (CD)	–	52.7
,,	1964 (CD)	–	55.0
,,	1962–1964 (CD)	–	53.2

„	1965 (CD)	–		49.4
„	1961–1966 (CD)	–		46.3
NIS	1967–1968	39.0		–
PGS	1968	36.4		–
„	1969	36.1		–
„	1971	36.9		–
„	1968–1971	36.5		–
„	1968	36.8		–
„	1969	38.1		–
„	1971	38.4		–
„	1968–1971	37.8		–
PFS	1974 (Calender Year)	38.4		–
„	1974–1975	40.5		–
„	1974–1975	39.4		–
PGS	1976	–		42.8
„	1977	–		40.6
„	1978	–		40.9
„	1976–1978	–		41.4
„	1979	–		41.6
PLM	1979–1980	38.4	Unpublished	–
PCPS	1984–85	36.6		–
PDS	1984 – 86	–		42.8

Note:– PGE = Population Growth Estimation.
NIS = National Impact Survey.
PGS = Population Growth Survey.
PFS = Pakistan Fertility Survey.
PLM = Population, Labour Force & Migration.
PCPS = Pakistan Contraceptive Prevalence Survey.
PDS = Pakistan Demographic Survey.

Source:

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21. Shaw David C., *"An Analysis of the Age structure of Pakistan"* Document No. 3 US Bureau of the Census, International Demographic Centre, Washington, 1970.
22. Training, Research and Education Centre (TREC), *National Impact Survey (1968) Report*, Lahore.
23. United Nations, *Report of the United Nations world Population Conference 1974*, New York, 1975.

The variation is between 36.1 per thousand population according to PGS (de facto) for 1969 and 44.8 per thousand population based on PGE (LR) for 1962 within the directly estimated category and between 43.1 per thousand population (obtained by adjusting registered births for under-registration) for 1951–52 and 62.4 per thousand population for 1951 within the indirectly estimated category. The 1981 Census also gives a CBR of 37.1 per thousand population for the country measured by the indirect technique. The PDS (1984–86) gives a CBR of 42.8 which is also based on indirect technique.

Within the constraints and limitations of the data, it may be inferred that the average CBR based on direct estimates from PGE (LR) was 42.5 per thousand population for the period 1962–64. However, the CBR estimated indirectly from the 1981 Census data indicated 37.1 per thousand population while the directly estimated CBR based on PLM was 38.4 per thousand population for the period 1979–80. It, therefore, seems that the level of CBR had somewhat stabilised by 1981. This stabilisation might have continued even beyond 1981 as the estimated CBR based on PCPS was 36.6 per thousand population for 1984–85. This then means a very modest decline of 5.9 points (42.5–36.6) or 13.9 per cent decline in the CBR during a period of about two decades from early 1960's to early 1980's. Somewhat similar decline in CBR of 10.0 per cent was reported by the World Bank as quoted earlier in Chapter 1 (Table 1.4).

In view of the increasing high proportion of population under 15 years of age reported in the four censuses (Table 4.5), it can be argued that the level of fertility in Pakistan is higher than is being reported by various surveys. On the other hand, the counter argument is that the ages themselves are misreported. This is an issue which requires

careful investigation [19, 29, 24]. However, the current CBR of Pakistan is estimated between 38.5 per thousand population according to Population Welfare Division to 42 per thousand population by the Federal Bureau of Statistics. The estimated CBR for Pakistan is even higher when compared with selected regions and developing countries of the world. For example: the CBR was 15 per thousand population for developed countries, 31 for developing countries, 28 for Asian countries, 37 for South Asian countries, 33 for South East Asian countries and 17 for East Asian countries. Thirty five in India, 26 in Sri Lanka, 34 in Indonesia, 31 in Malaysia, 33 in the Philippines, 28 in Thailand, 18 in China, 37 in Egypt, 33 in Tunisia and 35 in Turkey[27].

The inevitability of fertility as an important part of population studies cannot be over-emphasised. The problem in Pakistan has been that although several attempts have been made to estimate fertility rates, yet there is no agreed level of even crude birth rates because of a wide variation in fertility measures derived from different sets of data. Fertility analysis has been made through different measures i.e. Crude Birth Rates (CBRs), Age Specific Fertility Rates (ASFRs), Total Fertility Rates (TFRs), Gross Reproduction Rates (GRRS) and Marital Total Fertility Rates (MTFRs). The results of the foregoing analyses are some-what confusing. They show that while CBR declines, TFR has a mild rising trend. On the other hand, MTFR shows a modest decline followed by a mild rising trend.

5.2.2 *Age–Specific Fertility Rates (ASFR) Total Fertility Rates (TFR) and Gross Reproduction Rates (GRR).*

The ASFRs, TFRs and GRRs are better and more refined indices of fertility than the Crude Birth Rates, particularly for comparative analysis, because they take account of the age composition of the population. The ASFRs, TFRs and GRRs derived from various surveys for the period 1963–1985 are given in table 5.2 and the ASFRs are plotted in figure 5.1. From this table and the figure it can be seen that fertility in the younger age group 15–19 years declined during the 20-year period, mainly due to an increase in age at marriage as discussed in a later section. Fertility then increases over the age of 19 years until a peak is attained in the 25–29 years age group. It then remains almost stable, forming a plateau, with some decline in the age group 30–34 years, thereafter, showing a steep fall.

The pattern of Marital Age Specific Fertility Rates (MASFRs) is similar to that of the ASFR presented in table 5.2. According to the PCPS of 1984–85, ASFR of "ever married" females exhibit a similar pattern but the peak for the country and for all the provinces except for NWFP is in the age group 20–24 years (Table 5.3). A plateau therefore, is maintained, followed by a steep fall.

Table 5.4 gives TFRs and GRRs obtained from the available data for the period, 1962–85. These have again been presented in two categories: (i) direct estimates, and (ii) indirect estimates, The TFRs obtained directly vary between 5.49 (PGE–CS) for 1971. The corresponding range for the indirectly estimated TFRs is 6.53 (PGE–LR) for 1962 and 8.23 (PGE–CD) for 1964. Again, as in case of the CBRs, where dispersion in the indirectly estimated TFRs and GRRs is wider and does not conform to a trend, the directly estimated TFRs and GRRs become more appropriate for analysis. The table indicates a dip in TFRs for the period 1968–1969, with a mild rising trend in 1971–79 and then a decline in 1984–85.

Although the fall in the CBR (Table 5.1) and rise in TFR are negligible, the different directions of trends require an explanation. While CBR is an overall measure affected by variation in the age-sex composition of the population, TFR is an age-sex adjusted measure and is a more refined index to be used in time trends. Thus TFR or GRR are more effective measures than

TABLE 5.2: Age-Specific Fertility Rates, Total Fertility Rates and Gross Reproduction Rates of Pakistan Obtained from Various Surveys, 1963 – 1986

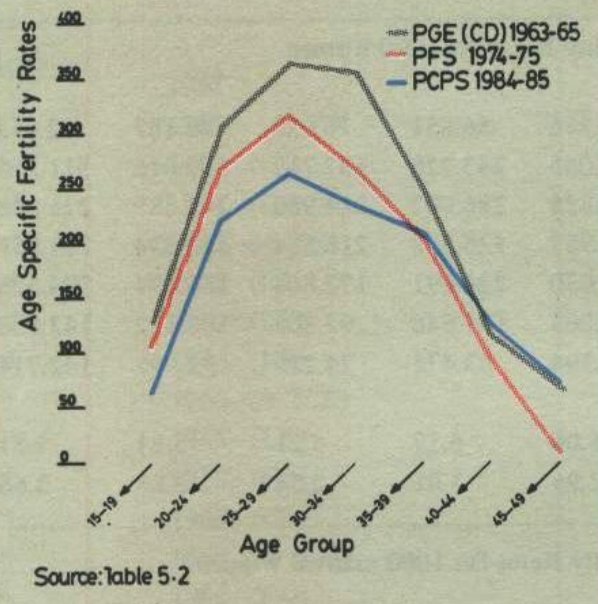
Age Group	Age-Specific Fertility Rates (ASFR) per 1000 Women							
	PGE 1963–65			PGS	PFS	PGS	PCPS	PDS
	CD	LR	CS	1968–71	1974–75	1976–79	1984–85	1984–86
15–19	127.5	108.0	74.1	54.0	104.0	51.8	63.5	59.2
20–24	306.2	228.2	244.4	219.2	266.0	261.5	222.6	267.2
25–29	364.9	285.2	262.0	258.1	314.0	336.1	263.4	357.6
30–34	353.6	284.1	254.5	247.7	264.0	294.0	234.2	311.7
35–39	248.0	185.8	186.4	193.4	204.0	226.2	208.9	225.8
40–44	114.4	78.8	101.1	121.4	93.0	132.8	126.8	110.8
45–49	66.7	42.3	71.2	93.7	8.0	77.4	71.0	56.0
TFR per woman	7.9	6.1	6.0	5.9	6.3	6.9	5.9	6.9
GRR per woman	3.9	3.0	2.9	2.9	3.1	3.4	2.9	3.4

Note: PGE (CD), PGS (1976–79) and PDS (1984–86), are indirect estimates while others are estimated directly.

Source:-

1. Alam, Iqbal and Betzy Dinesen, *"Fertility in Pakistan:* A review of findings from the Pakistan Fertility Survey, International Statistical Institute, Voorburg, Netherlands, 1984
2. Alam, Iqbal, "Fertility Levels and Trends" *Fertility in Pakistan.*
3. Farooqui, M.N.I. and Ghazi M. Farooq, *Final Report of the Population Growth Estimation Experiment,* 1962–76, Pakistan Institute of Development Economics, 1971.
4. Government of Pakistan, *Population Growth Survey, 1968,* Central Statistical Office, Karachi, 1973.
5. Government of Pakistan, *Population Growth Survey, 1969,* Central Statistical Office, Karachi, 1974.
6. Government of Pakistan, *Population Growth Survey, 1970,* Federal Bureau of Statistics, Karachi, 1984.
7. Government of Pakistan, *Population Growth Survey, 1971,* Central Statistical Office, Karachi, 1974.
8. Government of Pakistan, *Population Growth Survey, 1976,* Federal Bureau of Statistics, Karachi, December, 1981.
9. Government of Pakistan, *Population Growth Survey, 1977,* Federal Bureau of Statistics, Karachi, January, 1983.
10. Government of Pakistan, *Population Growth Survey, 1978,* Federal Bureau of Statistics, Karachi, July, 1983.
11. Government of Pakistan, *Population Growth Survey, 1979,* Federal Bureau of Statistics, Karachi, July, 1984.
12. Government of Pakistan, *Handbook of Population Census Data,* Population Census Organisation, Islamabad, December, 1985.
13. Government of Pakistan, *Pakistan Contraceptive Prevalence Survey, 1984–85,* Population Welfare Division, Islamabad, October, 1986.
14. Government of Pakistan, *Pakistan Demographic Surveys, 1984–1986,* Federal Bureau of Statistics, Statistics Division, Karachi, 1988.

Figure 5.1 Age Specific Fertility Rates of Pakistani Women, 1963-65, 1974-75 and 1984-85.



Source: Table 5.2

CBR, showing a mild rise in the level of fertility followed by a decline in the most recent years. This, however, does not minimise the utility of CBR nor does it negate the earlier finding that CBR has declined, though mildly, as it might have offset some of the effect of reduction in CBR on the rate of population growth.

In order to probe further into this quandary, Marital Total Fertility Rates (MTFRs), and age and marital adjusted measure have been examined (Table 5.5). Since almost all births occur within marriage in Pakistan, MTFR can be used as another measure of fertility trends. Thus, the findings of table 5.5 are somewhat different from the previous TFRs. There was a gradual decline from 1963–1964 to 1968–1971 and then the MTFR tends to rise and exceed its initial value by four per cent in the last period of 1975–1979 followed by a decline by about nine per cent between 1975–79 to 1984–85.

Total Fertility Rates presented in this section are the sum of Age-Specific Fertility Rates of all women of the reproductive age, (15–49 years) whereas, MTFR refers to the fertility of married women. They show the total number of children a woman is likely to reproduce during her child-bearing age on the assumption that she survives to the end of this period. These birth rates are for hypothetical groups and give estimates of hypothetical fertility rates for the entire population.

The Gross Reproduction Rates (GRR) presented in table 5.2 and 5.3 measure the number of female births only. This is obtained simply by adjusting the TFR or MTFR. For example, the MTFR of 8.06 reported in the PLM survey for the period 1975–1979 indicates that on an average a married woman in Pakistan experiences a total of at least eight children if she survives and completes her reproductive period. This level of MTFR is one of the highest in Asia and the Pacific. A comparison of this region on the basis of World Fertility Survey (WFS) data for ten countries (Bangladesh, Fiji, Indonesia, Republic of Korea, Malaysia, Nepal, Pakistan, the Philippines, Sri Lanka and Thailand) show that the level of MTFR of Pakistan is exceeded only by the Philippines[36].

The corresponding marital GRR (3.93) shows that, on an average, by the time the Pakistani married woman completes her reproductive period, she would be replaced by four daughters, subject to her survival through the reproductive period–probability of which is high.

5.3 Factors Affecting Levels and Trends

The results of the foregoing analysis are somewhat puzzling. They show that during the period 1962–1985, while the CBR had declined, TFR shows a mild rising trend upto 1979. On the other hand, MTFR shows a modest decline followed by a mild rising trend and then a decline. Thus, it could

TABLE 5.3: Age Specific Fertility Rates, Total Fertility Rates and Gross Reproduction Rates, by Urban–Rural and Province of Residence, PCPS, 1984 – 1985

Current Age	Pakistan				Province			
	Total	Major Urban	Other Urban	Rural	Punjab	Sind	NWFP	Baluchistan
	Age Specific Fertility Rates Per 1000 Women							
15–19	63.524	38.764	61.871	70.256	56.851	76.028	78.187	52.643
20–24	222.630	184.074	232.757	230.085	243.228	187.712	159.816	311.508
25–29	263.394	255.673	286.097	260.825	286.902	214.980	243.585	275.648
30–34	234.196	210.854	251.227	236.987	226.392	218.534	272.334	281.059
35–39	208.912	142.398	189.961	229.030	224.691	177.865	166.694	294.528
40–44	126.789	146.481	145.502	119.063	131.648	92.305	148.812	143.808
45–49	71.030	77.060	86.940	66.394	63.471	74.219	92.995	142.714
TFR Per Woman	5.95	5.28	6.27	6.06	6.17	5.21	5.81	7.51
GRR Per Woman	2.9	2.57	3.06	2.96	3.01	2.54	2.83	3.66
	Marital Age Specific Fertility Rates Per 1000 married Women							
15–19	249.861	311.744	268.040	239.840	243.418	289.622	227.740	193.095
20–24	316.002	355.882	359.526	303.547	359.188	266.993	198.273	369.759
25–29	293.174	288.246	323.248	288.627	322.404	240.782	264.251	290.793
30–34	248.025	227.434	268.224	249.450	241.800	233.349	279.670	285.190
35–39	221.890	152.853	200.693	242.885	241.337	187.953	171.864	306.270
40–44	136.251	156.264	159.900	128.077	142.827	99.097	154.833	150.027
45–49	80.025	85.585	94.594	75.599	73.707	80.835	95.774	134.954
MTFR per Woman	7.73	7.79	8.35	7.64	8.12	6.99	6.96	8.65
MGRR per Woman	3.77	3.79	4.08	3.73	3.96	3.41	3.39	4.22

Source:- Government of Pakistan, *Pakistan Contraceptive Prevalence Survey 1984-85,* Population Welfare Division, Islamabad.

tentatively be inferred that the level of fertility in the country has shown only a slight decline during the past two decades. Of course, when the fertility level remains high, or rises, the proportion of younger population (0 – 4) increases. Correspondingly, the proportion of females in the reproductive ages shrinks which, in turn, could bring some reduction in the CBR (other things being equal) without any decline in the TFR.

In addition, some authors argue that the fertility level in some developing countries, is rising due to modernisation. This modernisation includes changes such as:

- a decrease in breast-feeding;
- reduction in abstinence following child-bearing;
- decline in polygamous marriages;
- improvement in the quality of health services and nutrition;
- advances in age at marriage;

TABLE 5.4: Total Fertility Rates and Gross Reproduction Rates Obtained from Census and Various Surveys, Pakistan, 1962–1986

(Rate per Woman)

Source	Year/period	Direct Estimates		Indirect Estimates	
		TFR	GRR	TFR	GRR
PGE	1962	–	–	6.53	3.19
"	1962	–	–	6.92	3.37
"	1963 (CS)	5.75	2.80	–	–
"	1964 (CS)	6.46	3.15	–	–
"	1963–64 (CS)	6.13	2.99	–	–
"	1965 (CS)	5.49	2.68	–	–
"	1963 (LR)	6.21	3.03	–	–
"	1964 (LR)	6.03	–	–	–
"	1963–64 (LR)	6.12	2.99	–	–
"	1965 (LR)	5.86	2.86	–	–
"	1963 (CD)	–	–	7.82	3.81
"	1964 (CD)	–	–	8.23	4.02
"	1963–64 (CD)	–	–	8.03	3.92
"	1965 (CD)	–	–	7.45	3.63
PGS	1968	5.65	2.76	–	–
"	1969	5.70	2.76	–	–
"	1971	6.25	3.05	–	–
"	1968–71	5.86	2.86	–	–
"	1968	5.72	2.79	–	–
"	1969	6.01	2.93	–	–
"	1971	6.38	3.11	–	–
"	1968–71	6.03	2.94	–	–
PFS	1970–75	–	–	6.28	3.06
PGS	1976	–	–	7.05	3.44
"	1977	–	–	6.78	3.30
"	1978	–	–	6.83	3.33
"	1976–78	–	–	6.89	3.36
"	1979	–	–	6.94	3.38
PLM	1975–79	–	–	6.48	3.16
CENSUS	1981	–	–	6.50	3.17
PCPS	1984–85	5.95	2.90	–	–
PDS	1984–86	–	–	6.94	3.39

Note: PGE = Population Growth Estimation.
PGS = Population Growth Survey.
PFS = Pakistan Fertility Survey.
PLM = Population Labour Force & Migration.
PCPS = Pakistan Contraceptive Prevalence Survey.
PDS = Pakistan Demographic Survey.

Source:

1. Alam, Iqbal., Muhammad Irfan, and Naseem Iqbal Farooqui, "Fertility Levels, Trends and Differentials in Pakistan" *Population Labour Force and Migration Survey, 1979-80*, Pakistan Institute of Development Economics, Islamabad, 1983.
2. Alam, Iqbal, "Fertility Levels and Trends' *Fertility in Pakistan.*
3. Alam, Iqbal., and Betzy Dinesen, *"Fertility in Pakistan:* A review of findings from the Pakistan Fertility Survey", International Statistical Institute, Voorburg, Netherlands, 1984.
4. Farooqui, M.N.I., and Ghazi M. Farooqi, *Final Report of the Population Growth Estimation Experiment*, 1962–76, Pakistan Institute of Development Economics, 1971.
5. Government of Pakistan, *Population Growth Survey, 1968*, Central Statistical Office, Karachi, 1973.
6. Government of Pakistan, *Population Growth Survey, 1969*, Central Statistical Office, Karachi, 1974.
7. Government of Pakistan, *Population Growth Survey, 1970*, Federal Bureau of Statistics, Karachi, 1984.
8. Government of Pakistan, *Population Growth Survey, 1971*, Central Statistical Office, Karachi, 1974.
9. Government of Pakistan, *Population Growth Survey, 1976*, Federal Bureau of Statistics, Karachi, December, 1981.
10. Government of Pakistan, *Population Growth Survey, 1977*, Federal Bureau of Statistics, Karachi, January, 1983.
11. Government of Pakistan, *Population Growth Survey, 1978, Federal Bureau of Statistics, Karachi, July, 1983.*
12. Government of Pakistan, *Population Growth Survey, 1979*, Federal Bureau of Statistics, Karachi, July, 1984.
13. Government of Pakistan, *Handbook of Population Census Data*, Population Census Organisation, Islamabad, December, 1985.
14. Government of Pakistan, *Pakistan Contraceptive Prevalence Survey, 1984-85*, Population Welfare Division, Islamabad, October, 1986.
15. Government of Pakistan, *Pakistan Demographic Surveys, 1984–86*, Federal Bureau of Statistics, Statistics Division, Karachi, 1988.
16. Hashmi, Sultan S., *Main Features of the Demographic Conditions in Pakistan*, Central Statistical Organisation, Karachi, 1963.

TABLE 5.5: Marital Total Fertility Rates and Marital Gross Reproduction Rates of Pakistan Obtained from Census and Various Surveys, 1963–1986

(Rate per Woman)

Source	Year/Period	Direct Estimates		Indirect Estimates	
		MTFR	MGRR	MTFR	MGRR
PGE	1963–1964 (LR)	8.06	3.93	–	–
PGE	1963–1964 (CS)	7.73	3.77	–	–
NIS	1968–1969	7.28	3.53	–	–
PGS	1968	6.78	3.31	–	–
PGS	1969	7.08	3.45	–	–
PGS	1971	7.60	3.71	–	–
PGS	1968–1971	7.16	3.49	–	–
PGS	1968	7.14	3.48	–	–
PGS	1969	7.48	3.65	–	–
PGS	1971	7.81	3.81	–	–
PGS	1968–1971	7.47	3.64	–	–
PFS	1970–1975	–	–	7.57	3.69
PFS	1965–1970	–	–	8.10	3.95
PGS	1976	–	–	8.59	4.19
PGS	1977	–	–	8.39	4.09
PGS	1978	–	–	8.66	4.22
PGS	1976–1978	–	–	8.51	4.15
PGS	1979	–	–	8.58	4.19
PLM	1975–1979	–	–	8.06	3.93
PLM	1970–1975	–	–	7.94	3.87
Census	1981	–	–	5.90	2.90
PCPS	1984–85	7.73	3.77		
PDS	1984–86	–		8.71	4.25

Note:- PGE = Population Growth Estimation.
NIS = National Impact Survey.
PGS = Population Growth Survey.
PFS = Pakistan Fertility Survey.
PLM = Population Labour Force & Migration.
PDS = Pakistan Demographic Survey.

Source:
1. Alam, Iqbal., Muhammad Irfan., and Naseem Iqbal Farooqui, "Fertility Levels, Trends and Differentials in Pakistan" *Population Labour Force and Migration Survey, 1979-80,* Pakistan Institute of Development Economics Islamabad, 1983.
2. Alam, Iqbal., "Fertility Levels and Trends' *Fertility in Pakistan.*
3. Alam, Iqbal, and Betzy Dinesen, *"Fertility in Pakistan:* A review of findings from the Pakistan Fertility Survey, International Statistical Institute, Voorburg, Netherland, 1984.
4. Government of Pakistan, *Population Growth Survey, 1968,* Central Statistical Office, Karachi, 1973.;
5. Government of Pakistan, *Population Growth Survey, 1969,* Central Statistical Office, Karachi, 1974.

6. Government of Pakistan, *Population Growth Survey, 1971*, Central Statistics Office, Karachi, 1974.
7. Government of Pakistan, *Population Growth Survey, 1976*, Federal Bureau of Statistics, Karachi, December, 1981.
8. Government of Pakistan, *Population Growth Survey, 1977*, Federal Bureau of Statistics, Karachi, January, 1983.
9. Government of Pakistan, *Population Growth Survey, 1978*, Federal Bureau of Statistics, Karachi, July, 1983.
10. Government of Pakistan, *Population Growth Survey, 1979*, Federal Bureau of Statistics, Karachi, July, 1984.
11. Government of Pakistan, *Handbook of Population Census Data*, Population Census Organisation, Islamabad, December, 1985.
12. Government of Pakistan, *Pakistan Contraceptive Prevalence Survey, 1984-85*, Population Welfare Division, Islamabad, October, 1986.
13. Government of Pakistan, *Pakistan Demographic Surveys*, 1984–86, Federal Bureau of Statistics, Statistics Division, Karachi, 1988.
14. Pakistan Population Planning Council, *Pakistan Fertility Survey: First Report*, Islamabad, October 1976.

- lower adult mortality and decrease in the prevalence of widowhood;
- expansion of education, and
- the changing status and role of women[33]

However, the above list does not exhaust all the factors affecting fertility. There are other factors which may be called "fertility dynamics" which include sex-age composition, nuptiality (including family formation and dissolution, age at marriage, etc), fecundity (physiological capacity of conceiving), miscarriages, unintentional fetal loss and stillbirths[33]. Each factor consists of several components which provide a complex mechanism for the study of fertility dynamics. It is aimed at investigating changes in the level of different components in the time perspective, which in turn influences the level of fertility.

Available data suggest that the level of fertility in the country is high with a slight decline during the past few years. This decline has been observed in the younger age group 15–19 years mainly due to an increase in age at marriage. Fertility-related variables in Pakistan are also not conducive to lowering of fertility which need to be moved in a direction so that they contribute to lower fertility levels.

Modernisation, which brings changes in social, economic, cultural, ecological and psychological conditions, operates through this complex mechanism of the level of fertility. It would require construction of a dynamic model to provide a comprehensive explanation of the fertility change and its direction. Some of the factors affecting fertility are discussed in subsequent sections. However, a special study must be undertaken for proper testing of these hypotheses within the Pakistani socio-cultural milieu.

5.4 Fertility Differentials

Fertility differentials are an important aspect of fertility study. Differentials among groups such as urban-rural residence, social and economic class, education and occupation, indicate the crucial variables influencing fertility differentials. Therefore, fertility differentials are discussed with reference to urban-rural residence, provinces, literacy and the education and employment of women.

5.4.1 Urban–Rural Differentials

The CBRs estimated from various survey data for urban and rural areas are given in table 5.6. It shows that the CBRs for rural areas are higher than those of urban areas of the country. The difference is more marked for the year 1977 than for other years. On

TABLE 5.6: Crude Birth Rates of Pakistan Estimated from Survey Data by Urban and Rural Areas, 1976–1986

Source	Year	Crude Birth Rate (Per 1000 Population)		
		Total Pakistan	Urban	Rural
PGS	1976	42.8	40.3	43.8
PGS	1977	40.6	35.4	42.6
PGS	1978	40.9	38.9	41.8
PGS	1979	41.6	39.2	42.6
PGS	(1976–79 average)	41.5	38.4	42.7
PGS	(1968–69 & 1971 average)*	37.3	33.3	39.3
PCPS	1984–85	36.6	35.3	37.1
PDS	1984–86	42.8	40.3	45.0

Note: De Jure basis : LR
PGS = Population Growth Survey. (1976–79 are indirect estimates)
PCPS = Pakistan Contraceptive Prevalence Survey.
PDS = Pakistan Demographic Survey (indirect Estimates)

Source- 1. Government of Pakistan, *Population Growth Survey, 1968*, Central Statistical Office, Karachi, 1973.
2. Government of Pakistan, *Population Growth Survey, 1969*, Central Statistical Office, Karachi, 1974.
3. Government of Pakistan, *Population Growth Survey, 1970*, Federal Bureau of Statistics, Karachi, 1984.
4. Government of Pakistan, *Population Growth Survey, 1971*, Central Statistics Office, Karachi, 1974.
5. Government of Pakistan, *Population Growth Survey, 1976*, Federal Bureau of Statistics, Karachi, December, 1981.
6. Government of Pakistan, *Population Growth Survey, 1977*, Federal Bureau of Statistics, Karachi, January, 1983.
7. Government of Pakistan, *Population Growth Survey, 1978*, Federal Bureau of Statistics, Karachi, July, 1983.
8. Government of Pakistan, *Population Growth Survey, 1979*, Federal Bureau of Statistics, Karachi, July, 1984.
9. Government of Pakistan, *Pakistan Contraceptive Prevalence Survey, 1984-85*, Population Welfare Division, Islamabad, October, 1986.
10. Government of Pakistan, *Pakistan Demographic Surveys, 1984–86*, Federal Bureau of Statistics, Statistics Division, Karachi, 1988.

an average, the birth rate was 10 to 15 per cent higher in the rural areas as compared to urban areas (Table 5.6).

Various estimates of TFRs and GRRs based on all survey data PGS 1968–1971 (both *de facto* and *de jure)*, PFS, PLM and PGS,. 1976–1979, PCPS, and PDS (1984–86) suggest a higher fertility for the rural areas than the urban areas by about 10 per cent (Table 5.7 and Figure 5.2). It may be further noted that fertility differential (TFR) over the period 1970–86 has tended to increase from 2.5 per cent to 10 per cent.

TABLE 5.7: Total Fertility Rates and Gross Reproduction Rates of Total Women and Married Women of Pakistan by Urban and Rural Residence, 1958–1986

(Rate per Woman)

Source	Year/Period	Urban				Rural			
		TFR	GRR	MTFR	MGRR	TFR	GRR	MTFR	MGRR
KARACHI									
,,	1958	6.380	3.210	7.820	3.810	–	–	–	–
PGS	1968 (De facto)	4.237	2.067	5.684	2.773	6.232	3.040	7.514	3.665
,,	1969 (De facto)	5.004	2.441	6.244	3.046	6.147	2.998	7.326	3.574
,,	1971 (De facto)	5.271	2.571	6.624	3.231	6.821	3.327	8.154	3.977
,,	1968–71 (De facto)	4.847	2.364	6.656	3.247	6.385	3.115	7.573	3.694
,,	1968 (De jure)	4.853	2.368	6.381	3.113	6.145	2.997	7.422	3.620
,,	1969 (De jure)	5.741	2.801	7.228	3.526	6.315	3.081	7.547	3.681
,,	1971 (De jure)	5.829	2.844	7.469	3.644	6.812	2.323	7.915	3.861
,,	1968–71 (De jure)	5.464	2.666	7.010	3.420	6.467	3.155	7.670	3.741
PFS	1970–1975	6.240	3.040	8.090	3.950	6.400	3.120	7.620	3.720
PLM	1975–1979	6.200	3.020	8.100	3.950	6.600	3.220	7.800	3.800
PGS	1976	6.646	3.242	8.796	4.291	7.210	3.517	8.529	4.160
,,	1977	6.010	2.932	7.939	3.873	7.133	3.480	8.656	4.223
,,	1978	6.469	3.156	8.791	4.288	6.974	3.402	8.486	4.140
,,	1976–1978	6.380	3.112	8.054	4.151	7.088	3.457	8.566	4.179
,,	1979	6.580	3.210	8.910	4.350	7.080	3.450	8.480	4.140
PCPS	1984–85	5.730	2.790	8.480	4.140	6.060	2.96	7.640	3.730
PDS	1984–86	6.456	3.149	8.670	4.229	7.357	3.589	8.803	4.294

Note: PGS (1976–1979) and PDS (1984–86) rates are indirectly estimated.

PGS = Population Growth Survey.
PFS = Pakistan Fertility Survey.
PLM = Population Labour Force and Migration.
PCPS= Pakistan Contraceptive Prevalence Survey.
PDS = Pakistan Demographic Survey.

Source-

1. Alam, Iqbal., Muhammad Irfan, and Naseem Iqbal Farooqui, "Fertility Levels, Trends and Differentials in Pakistan" *Population Labour Force and Migration Survey, 1979-80*, Pakistan Institute of Development Economics Islamabad, 1983.
2. Government of Pakistan, *Population Growth Survey, 1968*, Central Statistical Office, Karachi, 1973.

3. Government of Pakistan, *Population Growth Survey, 1969*, Central Statistical Office, Karachi, 1974.
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9. Government of Pakistan, *Pakistan Contraceptive Prevalence Survey, 1984-85*, Population Welfare Division, Islamabad, October, 1986.
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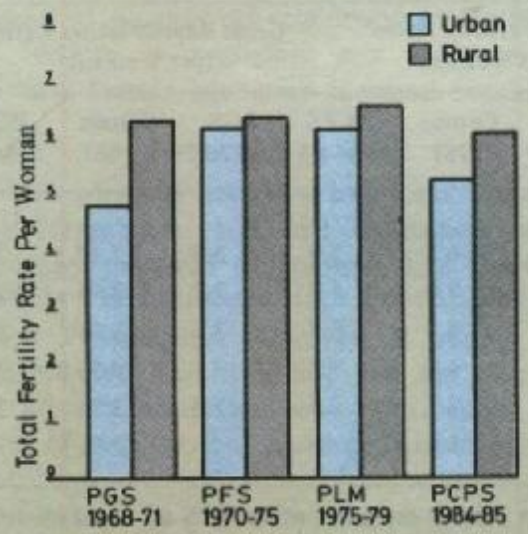
11. Pakistan Population Planning Council, *Pakistan Fertility Survey: First Report*, Islamabad. October, 1976.
12. Government of Pakistan, *Pakistan Demographic Surveys, 1984–86*, Federal Bureau of Statistics, Statistics Division, Karachi, 1988.

Figure 5-2 Total Fertility Rates of Urban and Rural Women, Pakistan, 1968-71, 1970-75, 1975-79, and 1984-85.



Source: Table 5-7

However, according to Pakistan Fertility Survey (1975), higher current fertility rates were found in metropolitan areas among women of less than 15 years' marriage duration and lower fertility was observed if the duration of marriage was 15 years or more. The same study on the basis of the mean number of children ever born consistently shows lower rates in rural areas than in urban areas, irrespective of the duration of marriage. Probably, the main reason is that the number of children ever born, which is based on cumulative lifetime fertility experience, is less affected by recent developments compared with current fertility[5].

Also in this context, it is appropriate to mention that it is not the proportion of population living in defined boundaries of urban areas which matters, but the urbanised characteristics of that population. For example, in 1981, more than half of the total population and about two-third of females living in urban centres were illiterate. Thus, the proportion of population living in urban centres alone is not sufficient to influence the birth rate. However, according to the PCPS of 1984--85 presented in table 5.3, fertility of the major urban area was the lowest and the highest level of fertility rate was observed in other urban areas while fertility of the rural areas was recorded in between the two. A rather high MTFR among women in major urban and other urban areas may be due to late age marriage

and shorter-interval births among these women[16].

5.4.2 Provincial Differentials.

The fertility rates (CBRs, TFRs and GRRs) for the provinces are given in table 5.8. These rates pertain to PGS (1976–1979) and the 1981 Census which were estimated by indirect methods while those of PCPS 1984–85 were estimated directly. However, the comparison of PGS *versus* census figures may have its own limitations. According to PGS estimates, CBR is the highest in NWFP followed by the Punjab, Sind and Baluchistan, while the 1981 Census gives the highest CBR for Islamabad followed by the Punjab, NWFP, Sind and Baluchistan. PGS gives the highest TFR and GRR for the Punjab followed by NWFP, Sind and Baluchistan, while the Census gives the highest TFR and GRR for Baluchistan, followed by NWFP, Sind, the Punjab and Islamabad. On the contrary, PCPS data indicate that Baluchistan which is the least developed had a high CBR (45.4) and a high TFR (7.5), whereas Sind, which is highly urbanised had the lowest CBR (32.0) and the lowest TFR (5.2). In between these extremes the Punjab had a higher rate than NWFP (Table 5.8).

5.4.3 Literacy and Education.

The inverse association of fertility with the level of education is well established. The level of education exerts its influence both directly and indirectly by raising the age at marriage[33].

Analysis of PFS (1975), as expected, showed a negative relationship of education of a wife, as well as that of a husband with the level of fertility. This is shown by both current and cumulative fertility measures.

TABLE 5.8: Crude Birth Rates, Total Fertility Rates and Gross Reproduction Rates of Pakistan and Provinces Obtained from Census and Surveys, 1976–1985

PROVINCE	Crude Birth Rates (per 1000 Women)			Total Fertility Rates (per Woman)			Gross Reproduction Rates (per Woman)		
	PGS 1976-79	Census 1981	PCPS 1984-85	PGS 1976-79	Census 1981	PCPS 1984-85	PGS 1976-79	Census 1981	PCPS 1984-85
PAKISTAN	41.5	37.1	36.6	6.7	6.5	5.9	3.3	3.17	2.90
NWFP	43.2	37.6	36.4	6.7	7.0	5.8	3.2	3.41	2.83
Punjab	42.2	37.9	37.6	7.0	6.3	6.2	3.4	3.05	3.01
Sind	39.5	35.2	32.0	6.4	6.8	5.2	3.1	3.30	2.54
Baluchistan	36.4	31.7	45.4	5.7	7.7	7.5	2.8	3.75	3.66
Islamabad	–	38.6	–	–	5.6	–	–	2.71	–

Note: The PGS (1976–79) and 1981 Census rates are based on indirect estimates while PCPS are based on direct estimates.

Source:

1. Government of Pakistan, *Hand Book of Population Census Data, 1985,* Population Census Organisation, Statistics Division, Islamabad.
2. Government of Pakistan, *Population Growth Survey 1979,* Federal Bureau of Statistics, Islamabad, July 1984.
3. Government of Pakistan, *Pakistan Contraceptive Prevalence Survey 1981–85* Population Welfare Division, Islamabad.

The negative association is more significant beyond primary education [5,37].

The analysis based on ASFRs, averaged over five years preceding the PLM survey (1979–1980) also showed a highly significant difference between the fertility of mothers with no education and mothers with some education[4]. The TFR for women with no education is reported as 6.8 compared with 5.1 for those with some education. Without exception, the rates of educated women are lower in all age groups[31].

It is also well established that education of females is more important than that of males in influencing fertility rates[31]. However, the fact that education, particularly in case of women is neglected in Pakistan is a major problem discussed in detail in subsequent chapters. In Islam, receiving education is a right, as well as, the duty of every male and female in the society. Since, this right has been denied to most of the females along with many males in the country, the overall impact of educational attainment on the level of fertility is negligible and will remain so until female education is raised considerably.

This obstacle could be overcome through the formulation and implementation of a carefully prepared programme, like the one included in Pakistan's High Priority Development Programme. However, it should be remembered that it is not just the literacy or primary education which influences the level of fertility, but more so, higher education.

5.4.4 Employment of Women

Gainful employment of women is an important factor in improving the status of women. Several studies have indicated a negative relationship between the level of fertility and employment of women, particularly if they are employed in the modern sector[33].

The PFS data show a somewhat smaller mean number of children ever born to women who never worked than women who were working or had worked previously. However, women who were doing paid work showed a slightly lower level of fertility if the duration of their marriage varied between 5 to 24 years[5]. The PLM study also showed a negative association of female labour force participation and cumulative fertility, particularly for the age group 25–34 years. The question is, to what extent is the factor of female labour force participation in the country relevant in influencing the level of fertility?

The reported female labour force participation rates in the past population Censuses (1951–1981) varied between two to three per cent for all females, as well as, for females 10 years old and above. It could be said without doubt that there is under-reporting of the female labour force participation due to cultural reasons and definitional problems, particularly in the rural areas. But, even if it is correctly reported, and the actual indicator is much higher than two to three per cent, it will not make much difference to the level of fertility mainly because the participation of females in the modern sector is extremely low. However, improved opportunities for women in the traditional sector, including cottage industries might have a modest influence on the level of fertility. On the other hand, improving employment opportunities for women in the modern sector would also mean enhancing opportunities for their education and vocational training beyond the primary school level.

5.4.5 Breast-feeding

The almost universal breast-feeding of babies, which is also emphasised in Islam, has been the major factor in moderating the level of fertility and infant and child mortality. The influence on fertility lies in lengthening of the post-partum amenorrhea which widens the birth interval.

The mean duration of breast-feeding in the country as estimated through World Fertility Survey (WFS, 1975) was 20 months, and 95.5 per cent of babies were breast-fed.. These levels were only exceeded by: Bangladesh (27 months and 97.5 per cent), Nepal (25 months and 97.6 per cent) and Indonesia (24 months and 98.0 per cent). These were among the ten countries from the Asian and Pacific region as reported by the World Fertility Survey[36].

The PLM (1979—1980) survey shows a decline in both the indicators compared with PFS (1975). It shows the percentage of breast-fed babies as 93 and the mean duration of breast-feeding as 17 months. It has also used slightly different figures for PFS (94 per cent for breast-feeding and 19 months for the mean duration). The decline, particularly in the mean duration of breast feeding in a period of 4—5 years, however, seems too big. According to 1984—85 PCPS survey, about 98 per cent of women reported to have had breast-fed their last child. This proportion declines from 98.5 per cent for women with no schooling to 87.4 per cent for women with more than higher secondary education. Moreover, the mean duration of breast feeding of the last child is observed as 16 months. However, this proportion may decline in future due to migration of rural women to urban areas or adoption of urban values. One can only expect higher fertility as breast feeding is replaced by formula and bottle feeding unless there is a concomitant increase in female education beyond the lower secondary level.

5.4.6 Economic Value of Children

In almost all the South Asian countries and traditional societies, large number of children are a rational proposition to the parents because of the economic role they play, starting from childhood.

The poorer the family, especially among landless labourers with no education and skill, the more important it becomes for the family to look for diversified ways of earning money and adding to farm hands. Therefore, it becomes essential to have as many family members as possible to supplement the meagre family income. Male children are preferred and are highly valued. The value of children in Pakistan is, therefore, viewed within the socio-cultural framework of the traditional rural agrarian society.

In many families, children, particularly males, are regarded as means of producing both economic, social and emotional gains. In adulthood they strengthen the family's standing in the community. In the old age they are supposed to provide social and economic security to the ageing population. They are, therefore, considered an asset, particularly in rural societies, while females are often considered a financial burden, as due to socio-cultural norms, females remain dependent on males.

Although, the CBR and other fertility measures differ for different sources of estimates, there is no dispute about it being too high to be sustained by resources of the country. About half of the economic growth of an average year is consumed by high growth rate. Provision of economic and social services is seriously hampered by expenditure on ever-growing young dependent population. By stages, high fertility builds pressure on infant and child care, education and ultimately the employment opportunities, besides the need for expanding housing, potable water, sewerage, health and other social services.

The situation already is so serious, as it will be evident by the discussions in subsequent chapters, that all efforts need to be made by the public and private sectors and the entire population as such, to establish small family norm. Policies will have to be pursued vigorously to make programmes for promoting small families, female education and the provision of family planning services through health outlets and other points available through Non-Governmental

Organisations (NGOs) and special groups. The programmes now pursued by the Government will have to be strengthened if the resources are to be diverted to productive channels.

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MORTALITY

In Pakistan, a systematic study of trends, levels and differentials in mortality is unfortunately impeded due to lack of reliable data for any prolonged period of time. Although a system of civil registration has been in existence in the country since the last quarter of the 19th century, the recorded data have been far from accurate in quantity and quality. Like the fertility data, the sources of mortality data are also available from the four censuses and from various surveys mentioned in Chapter 5.

6.1 Levels and Trends

6.1.1 Crude Death Rates (CDRs)

Crude Death Rate provides a generalised and convenient picture of the level of mortality in the country. Table 1.3 indicates that, until 1921, the Crude Death Rate was very high. Since 1921, there has been a progressive decline in mortality. The CDRs in Pakistan for the period 1947–1986 are presented in table 6.1. The source of information for computing CDRs is mainly from various surveys.

It is estimated that, at the time of Independence, the CDR had been around 25–30 per thousand population. The decline in mortality during the post-Second World War period had been very rapid. The CDR declined from about 25–30 per thousand population in 1947 to about 11 in the late 1970s. This had been *inter alia* due to the elimination of the frequent occurrence of famines through higher food production and more effective control of procurement and distribution of food grains and increasing pace of socio-economic development[2].

Epidemics were also eliminated and diseases were brought under control with the development of effective public health measures and medical services, inoculation and vaccination, environmental conditions and sanitation, as well as through international collaboration in the control of several diseases. Plague has been completely eradicated over the past 40 years. Smallpox which, until recently, used to flare up in epidemic proportions, has also been exterminated. Malaria has been brought under effective control and there has been a considerable reduction in mortality from enteritic and diarrhoeal diseases through improvements in the supply of safe drinking water, sanitation, environmental conditions and better personal hygiene. The application of prophylactic and therapeutic innovations has further helped considerably in the reduction of mortality from infective and parasitic diseases.

It is a known fact, however, that deaths are usually more under-reported compared with births, not only in the registration system, but also in censuses and surveys. In the case of Pakistan, both infant and child as well as adult deaths are also found to be under-reported in surveys. The under-enumeration varies around 30 per cent and is estimated to be more for females than males. Table 6.1 presents the CDR's estimated from various survey data. As can be seen from the table, PGE (LR) 1962–1965 gives a CDR of 15.0 per thousand population., whereas the PGS (1976–1979) gives

TABLE 6.1: Crude Death Rates of Pakistan, Estimated from Survey Data, 1947–86

Year	Source	Crude Death Rates (Per 1000 population)
1947	Estimated	25–30
1962	PGE (CD)	19.0
1962	PGE (LR)	17.0
1962	PGE (CS)	12.0
1963	PGE (CD)	19.0
1963	PGE (LR)	16.0
1963	PGE (CS)	11.0
1964	PGE (CD)	20.0
1964	PGE (LR)	15.0
1964	PGE (CS)	13.0
1965	PGE (CD)	16.0
1965	PGE (LR)	12.0
1965	PGE (CS)	9.0
1962–65	PGE (CD)	18.0
1962–65	PGE (LR)	15.0
1962–65	PGE (CS)	11.0
1968	PGS–I (CS)	12.0
1969	PGS–I (CS)	11.5
1970	PGS–I (CS)	10.5
1971	PGS–I (CS)	10.6
1968–71	PGS–I (CS)	11.4
1976	PGS–II (CS)	11.5
1977	PGS–II (CS)	10.7
1978	PGS–II (CS)	10.0
1979	PGS–II (CS)	9.6
1976–79	PGS–II (CS)	10.5
1984–86	PDS	10.7
1986	Sixth Five Year Plan	10.0

Note: PGE (CD), PGS-II (1976–79) and PDS (1984–86) are indirect estimates.

Source:-

1. Farooqui, M.N.I., and Ghazi Mumtaz Farooq, *Final Report of the Population Growth Estimation 1962–65"*. Pakistan Institute of Development Economics, Dacca, July 1971.
2. Government of Pakistan, *Population Growth Survey, 1968*, Central Statistical Office, Karachi, 1973.
3. Government of Pakistan, *Population Growth Survey, 1969*, Central Statistical Office, Karachi, 1974.
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a CDR of 10.5 per thousand population. These figures indicate a reduction in mortality of about 30 per cent during the periods 1962–1965 and 1976 -1979. If these rates are adjusted for possible under-enumeration or under-reporting, then the corresponding rates increase to 17.5 and 14.6 per thousand population for the periods 1962–1965 and 1976–1979 respectively, implying a reduction of only 16 per cent in mortality compared with 30 per cent of the unadjusted figures. It is, therefore, possible that the CDR may not have declined to 10.5 per thousand population in 1976–1979, and, perhaps, was much higher. It is estimated that the present CDR in the country is estimated to be around 10 per thousand population whereas the international organisations quote it as high as 15 per thousand population. It must be pointed out that the CDR in Pakistan is still one of the highest among several developing countries. For example, the CDR was only 6 per thousand population in Sri Lanka and Tunisia, 7 for Malaysia, 8 for the Philippines, China and Thailand and 11 for Egypt[3].

6.1.2 *Infant Mortality, Neonatal and Post-neonatal Mortality*

(a) *Infant mortality*

This is a sensitive index of health conditions of a community or a country. Unfortunately, not much reliable data are available to permit a systematic study of infant mortality levels and trends in the country. Available evidences suggest that slightly more than one-third (36%) of all deaths occur during infancy in Pakistan[9]. Moreover, of all the infant deaths, one-third (33%) occur within one week of birth. Twenty-two per cent of deaths occur in the second to fourth week (neonatal deaths). In other words, more than half of the infant deaths occur within four weeks of birth. The remainder of infant deaths occur during the fifth to 52nd week (post-neonatal death)[3]. Infant mortality was estimated to be around 90 to 120 per thousand live births in 1986 according to different surveys. However, a rate of 100 infant deaths per thousand live births can be taken as more probable. This level is still very high compared with other developing countries. For example, infant mortality was only 30 per thousand live births in Malaysia, 34 in Sri Lanka, 48 in Thailand, 51 in the Philippines, 59 in Vietnam and Syria, 50 in China, 77 in Iraq and 85 in Tunisia in comparison to 100 in Pakistan[6]. Moreover, since infant death occurs early,

Mortality like fertility also plays a very important role in affecting policy matters regarding population. As a sound population policy, one who has been born in this world should be saved and one who is expected to come into existence must be delayed or discouraged until there are facilities available for proper sustenance. Best of efforts have been made to curtail mortality level since independence but it is still high even when compared to several other developing countries. The main obstacle in the way of this effort is the data available on mortality which, in fact, is inadequate in quantity and quality for better planning for health services.

it influences the general outlook of the people towards life, because of their apprehensions about the chances of survival of their already born babies. This, in turn, makes people hesitant to accept the effective methods of family planning[7]. Hence, expectation of life is greatly reduced by high levels of infant mortality.

It is estimated that, at the time of Indepen-

TABLE 6.2: Infant Mortality Rates of Pakistan, Estimated from Various Surveys by Sex, 1947–1986

Year	Source	Infant mortality rates		
		Both Sexes	Male	Female
1947	Estimated	150–180	–	–
1962	PGE (CD)	152	160	143
1962	PGE (LR)	159	161	156
1962	PGE (CS)	122	141	99
1963	PGE (CD)	137	146	138
1963	PGE (LR)	152	158	145
1963	PGE (CS)	103	116	89
1964	PGE (CD)	136	124	149
1964	PGE (LR)	141	127	157
1964	PGE (CS)	115	101	129
1965	PGE (CD)	118	119	117
1965	PGE (LR)	117	110	126
1965	PGE (CS)	80	86	73
1962–65	PGE (CD)	136	137	135
1962–65	PGE (LR)	143	140	146
1962–65	PGE (CS)	105	111	98
1968	PGS–I	124	131	116
1969	PGS–I	111	115	108
1970	PGS–I	109	115	102
1971	PGS–I	106	114	96
1968–71	PGS–I	113	119	106
1976	PGS–II	87	94	80
1977	PGS–II	100	110	89
1978	PGS–II	95	103	87
1979	PGS–II	95	101	88
1976–79	PGS–II	94	102	86
1984–85	PCPS	106	–	–
1984–86	PDS	112		

Note: PGE (CD), PGS-II (1976–79) PDS (1984–86) are indirect Estimates

Source:–

1. Farooqui, M.N.I., and Ghazi Mumtaz Farooq, *Final Report of the Population Growth Estimation Experiment, 1962–65".* Pakistan Institute of Development Economics, Dacca, July 1971.

2. Government of Pakistan, *Population Growth Survey, 1968*, Central Statistical Office, Karachi, 1973.
3. Government of Pakistan, *Population Growth Survey, 1969*, Central Statistical Office, Karachi, 1974.
4. Government of Pakistan, *Population Growth Survey, 1970*, Central Statistical Office, Karachi.
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dence, infant mortality was around 150–180 per thousand live births. Table 6.2 shows the infant mortality rate recorded in various surveys since 1947. Although the data are considered deficient in coverage, as already discussed above, they clearly exhibit a declining trend in infant mortality during the period. The decline in infant mortality, however, has been quite small in Pakistan compared with other developing countries. Available evidences indicate that in Pakistan, infant mortality declined by around 37 per cent during 1901–1965 [3] . This figure is quite low when compared with Taiwan and Singapore, which attained about 80 per cent decline in 25 years between 1935–39 to 1960–64[11]. Similarly, Sri Lanka, Malaysia, Jamaica and Mauritius attained about 60 per cent or more decline in infant mortality during the same period of 25 years, whereas in Pakistan the reduction in infant mortality was only about 11 per cent during the same period. In other words the pace of decline in infant mortality in Pakistan was less than one-sixth of the achievement in other developing countries. However, during the period 1962–65 to 1984–86, infant mortality in Pakistan declined from 136 (PGE–CD) per thousand live births to 112 (PDS) per thousand live births respectively, showing about 18 per cent decline over the corresponding period.

(b) *Neonatal and Post-neonatal Mortality*

The special feature of infant mortality is the marked variation in cause and intensity from the very early period of birth to the latter part of the first year of life. For this reason, infant mortality is subdivided into neonatal mortality, which occurs within the first four weeks after birth, and the post-neonatal mortality, which occurs in the remainder of the first year after birth, i.e. from the 5th week to the 52nd week or 29 days to 364 days. Neonatal mortality is largely attributed to endogenous factors such as genetics which influence the growth of an organism, damage during gestation, birth injuries and conditions arising from delivery hazards.

Post-neonatal mortality, on the other hand, is widely attributable to exogenous factors such as infection, respiratory and digestive disorders and neglect in care of the infant and, therefore, depends on environmental factors. Poor and insanitary conditions contribute substantially to a high post-neonatal mortality.

With improvement in preventive medicines and environmental controls, post-neonatal mortality tends to decline faster than neonatal mortality; thus the ratio of neonatal to post-neonatal mortality tends to increase

overtime.. Table 6.3 indicates the distribution of neonatal and post-neonatal deaths over the period 1962–65 and 1976–79. It is noted that neonatal mortality declined from 78 per thousand live births in 1962–65 to 48 per thousand live births in 1976–79, indicating about 38 per cent decline during a period of 14 years (1962–65 to 1976–79). However, the decline in post-neonatal mortality was from 58 to 46 during the same period. It seems that decline in neonatal mortality was quite high (38 per cent) while the decline in post-neonatal mortality was 21 per cent which appeared low, keeping in view the improvement in environmental conditions in the country. It, therefore, does not present an accurate picture of infant mortality but may indicate *inter alia*, the result of the product of the data collected with different definitions or changes in

TABLE 6.3: Infant Mortality, Neonatal and Post-Neonatal Mortality in Months and their Per cent Distribution, Pakistan, 1962–1979

Age Group	Infant Mortality Per 1000 Live Births			Percentage Distribution		
	PGE (1962-65)	PGS (1968-71)	PGS (1976-79)	PGE (1962-65)	PGS (1968-71)	PGS (1976-79)
INFANT MORTALITY	136	113	94	100.0	100.0	100.0
Neonatal Mortality						
Under 1 month	78	56	48	57.3	49.6	51.1
Post-Neonatal Mortality						
1–11 months	58	57	46	42.7	50.4	48.9
1– 5 months	32	33	31	23.6	28.8	33.0
6–11 months	26	24	15	19.1	21.6	15.9

Source:-

1. Farooqui, M.N.I., and Ghazi Mumtaz Farooq, *Final Report of the Population Growth Estimation Experiment, 1962–65"*, Pakistan Institute of Development Economics, Dacca, July, 1971.
2. Government of Pakistan, *Population Growth Survey, 1968*, Central Statistical Office, Karachi, 1973.
3. Government of Pakistan, *Population Growth Survey, 1969*, Central Statistical Office, Karachi, 1974.
4. Government of Pakistan, *Population Growth Survey, 1970*, Central Statistical Office, Karachi.
5. Government of Pakistan, *Population Growth Survey, 1971*, Central Statistical Office, Karachi, 1974.
6. Government of Pakistan, *Population Growth Survey, 1976*, Federal Bureau of Statistics, Karachi December, 1981.
7. Government of Pakistan, *Population Growth Survey, 1977*, Federal Bureau of Statistics, Karachi, January, 1983.
8. Government of Pakistan, *Population Growth Survey, 1978*, Federal Bureau of Statistics, Karachi, July, 1983.
9. Government of Pakistan, *Population Growth Survey, 1979*, Federal Bureau of Statistics, Karachi, July, 1984.

TABLE 6.4: Age-Specific Mortality Rates in Pakistan by Sex, 1950–1979

Age	Males				Females			
	1950-52	1962-65	1968-71	1976-79	1950-62	1962-65	1968-71	1976-79
0	218.5	140.0	120.5	123.3	196.4	146.0	107.0	110.8
1–4	162.1	65.7	62.5	37.6	144.6	95.5	72.3	44.8
5–9	47.4	14.9	15.0	22.9	42.0	25.7	22.0	16.5
10–14	36.1	10.3	14.9	10.2	36.9	17.8	31.6	14.2
15–19	49.2	15.0	15.0	11.9	50.7	26.9	32.3	16.2
20–24	51.5	15.3	15.1	14.2	50.2	28.5	33.4	17.9
25–29	54.3	20.1	15.2	17.1	64.0	30.7	34.9	20.1
30–34	70.8	24.9	19.8	21.0	80.7	33.5	37.1	22.9
35–39	76.3	30.0	20.1	26.2	87.8	37.3	40.5	26.8
40–44	87.3	39.5	25.0	33.3	89.6	42.7	45.9	32.3
45–49	95.7	49.3	34.6	43.3	98.4	50.3	54.6	39.5
50–54	138.7	67.9	49.3	57.3	122.4	61.6	69.6	50.2
55–59	161.1	91.0	86.7	77.6	139.5	78.8	97.7	66.2
60–64	262.6	122.6	131.3	107.6	214.9	106.5	150.6	90.9
65–69	356.6	170.1	187.5	152.5	273.8	153.1	218.8	130.5
70–74	497.5	239.0	269.9	220.4	403.0	236.0	316.1	196.2
75–79	616.9	340.8	344.1	322.2	674.9	386.8	439.3	307.0
80–84	727.3	481.4	427.7	469.5	810.9	643.3	559.9	489.3

Note: Figures for 1950–52 relate to the Punjab.

Source:–

1. Farooqui, M.N.I. and Ghazi Mumtaz Farooq. *Final Report of the Population Growth Estimation Experiment, 1962–65"*, Pakistan Institute of Development Economics, Dacca, July 1971.
2. Government of Pakistan, *Population Growth Survey, 1968*, Central Statistical Office, Karachi, 1973.
3. Government of Pakistan, *Population Growth Survey, 1969*, Central Statistical Office, Karachi, 1974.
4. Government of Pakistan, *Population Growth Survey, 1970*, Central Statistical Office, Karachi.
5. Government of Pakistan, *Population Growth Survey, 1971*, Central Statistical Office, Karachi, 1974.
6. Government of Pakistan, *Population Growth Survey, 1976*, Federal Bureau of Statistics Karachi December, 1981.
7. Government of Pakistan, *Population Growth Survey, 1977*, Federal Bureau of Statistics, Karachi, January, 1983.
8. Government of Pakistan, *Population Growth Survey, 1978*, Federal Bureau of Statistics, Karachi, July, 1983.
9. Government of Pakistan, *Population Growth Survey, 1979*, Federal Bureau of Statistics, Karachi, July, 1984.
10. Khan, M.K.H., Abridge life Table for Males and Females in Former Provinces of the Punjab. *Journal of Medical Research*, 1(1) July, 1958.

methodology.

(c) *Age and Sex patterns of Mortality*

Pakistan's Age-Specific Mortality Rates (ASMRs) by sex given in table 6.4 follow the classical U-shape pattern with mortality declining steeply from its high level at age less than one year to a minimum around the age of 10—14 years, thereafter, rising steadily from age 15 to 30 years, then sharply increasing until it reaches a maximum at old age. As can be seen from the table, females experience a lower level of mortality than males during infancy and at the ages of 40 years and above. For the remaining ages, males have lower mortality than females.

Table 6.5 indicates the ratio of male to female mortality by age for the periods 1950—52, 1962—65, 1968—71 and 1975—79. It is interesting to note that females in 1962 - 65 experienced higher mortality than their male counterparts, even during infancy, until the end of their reproductive period and then at the terminal ages of 75 years and over. For the period 1968—71, except during infancy, females again experienced higher mortality than males, which is an unusual pattern. During the period 1976—79, females experienced a higher mortality than males in the age groups 1 to 4 years and 10 to 39 years; thereafter, the mortality rate for males was higher than females. Again, in the age group 80—84 years, female death rate was higher than for the males.

The overall pattern of age-sex differentials

TABLE 6.5: Ratios of Male to Female Mortality Rates by Age, Pakistan, 1950—79.

Age	1950—52	1962—65	1968—71	1976—79
0	111.3	95.9	112.7	111.3
1—4	112.1	68.8	86.4	83.9
5—9	112.9	58.3	68.4	138.8
10—14	97.8	57.9	47.1	71.8
15—19	97.0	55.8	46.4	73.5
20—24	102.6	53.7	45.2	79.3
25—29	84.8	65.5	43.6	85.1
30—34	87.7	74.3	53.4	91.7
35—39	86.9	80.4	49.6	97.8
40—44	97.4	92.5	54.5	103.7
45—49	97.2	98.0	63.4	109.6
50—54	113.3	110.2	70.8	114.1
55—59	115.5	115.5	88.7	117.2
60—64	122.3	115.1	87.2	118.4
65—69	130.2	111.1	122.9	116.8
70—74	123.4	101.3	108.9	112.3
75—79	91.4	88.1	97.3	104.9
80—84	89.7	74.8	76.4	95.9

Note: Figures for 1950—52 relate to the Punjab

Source:- Table 6.4

in mortality in Pakistan differs from the pattern of developed and many of the developing countries, with the exception of India, Nepal and Bangladesh [3]. This may be attributed to deep-rooted cultural norms and attitudes towards female discrimination in childhood, leading to their neglect and under-nourishment [3]. For example, one peculiar and interesting phenomenon which can be observed from tables 6.4 and 6.5 is that although both male and female mortality in reproductive ages had declined during the 1950—1971 period, the rate of decline was much faster for males than for females. Because of this faster decline in male mortality in reproductive ages (15 -49 years) the female mortality in these age groups was about twice as high in 1968—71. Since 1968—71, however, the decline in female mortality in the reproductive ages was faster than that for the males.

d) Maternal mortality

Maternal deaths are female deaths, associated with complications of pregnancies, childbirth and the puerperium. Such deaths in developed countries are very few whereas, in developing countries like Pakistan, maternal mortality continues to be of great concern. In Pakistan about four out of five deliveries (80%) are attended by untrained traditional birth attendants (midwives or "dais", or elderly women relatives in the house, or neighbours)[4]. Very little data on maternal mortality is available in the country, but it is estimated to be 6—8 per thousand live births, which is one of the highest in the world[5]. In comparison, maternal mortality was only 3.1 per thousand live births in Thailand, 2.1 in the Philippines, 1.2 in Sri Lanka and 0.2—0.8 in North America and Europe[5].

If the maternal mortality rate is assumed to be seven per 1000 live births, about 28,000 mothers die in childbirth in Pakistan every year. This means that every day about 78 children are born alive who lose their mothers at the time of birth. In other words, slightly less than one-third of all deaths of females, aged 15—49 years are directly or indirectly related to maternity. It is believed that majority of the maternal deaths are due to anaemia, toxaemia, bleeding and puerperium, and about 60 per cent women in reproductive ages suffer from anaemia. [9].

6.2 Causes of Death

In a country where reliability of mortality statistics are not entirely satisfactory, it becomes rather difficult to get information on the causes of death, particularly on national basis. Limited data, however, based on hospitals and institutions are available, but they also suffer in quality and coverage. Furthermore, these data relate mostly to selected areas, representing a particular segment of the society, so that the findings may not be applicable to the country as a whole.

The only available data on the cause of deaths for Pakistan are from the Population Growth Survey-PGS (1971) and the discussions presented below are based on these data. Table 6.6 shows the main causes of deaths in Pakistan and also in urban-rural areas of the country. According to the table, about 64 per cent of all deaths in Pakistan were due to infective and parasitic diseases and the per cent was higher in urban areas (68%), compared with rural areas (62%). The next major cause of death was malaria, accounting for 10 per cent of deaths in the country, 11 per cent in rural and eight per cent in urban areas. Congenital anomalies, injuries at birth and pre-natal causes were the next most important causes of death followed by tuberculosis, and other diseases.

6.2.1 Causes of Infant and Child Mortality

Table 6.7 shows the causes of infant deaths by urban-rural areas and for the country as a whole. According to the table, infective and parasitic diseases were responsible for

TABLE 6.6: Main Causes of Deaths in Pakistan by Urban and Rural Areas, 1971

Name of Disease	Pakistan	Urban	Rural
All causes	100.00	100.00	100.00
Infective and parasitic diseases	63.84	67.64	62.05
Malaria	10.41	7.86	10.96
Congenital anomalies, birth-injury, and pre-natal causes	7.36	5.64	7.71
Tuberculosis of all forms	5.55	2.86	6.09
Bacillary dysentery and amoebiasis	2.51	2.88	2.44
Accidents, poisoning and violence	1.88	1.05	3.03
Diseases of heart and circulatory system	1.79	3.92	1.35
Peptic ulcer, appendicitis, obstruction and hernia	1.20	1.09	1.22
Diabetes mellitus	1.14	0.75	1.22
Complications of pregnancy and child birth	1.13	1.39	1.08
Tumours	0.34	0.0C	0.41
Unknown causes	2.85	4.92	2.44

Source: Government of Pakistan, *Population Growth Survey 1971*, Central Statistical Office, Karachi, 1974.

about 60 per cent of all infant deaths in the country and 67 per cent and 58 per cent of all infant deaths in urban and rural areas respectively. Congenital anomalies and injuries at birth accounted for 20 per cent of all infant deaths in the country. In Pakistan, high neonatal mortality (deaths of infants within four weeks after birth) was largely thought to be the result of neonatal tetanus due to inadequate and primitive conditions of delivery. The proportion of pre-natal mortality was higher in rural areas (21.4%)

TABLE 6.7: Causes of Infant Deaths in Pakistan by Urban and Rural Areas, 1971

Name of disease	Pakistan	Urban	Rural
All causes	100.00	100.00	100.00
Infective and parasitic diseases	59.68	67.09	58.05
Congenital anomalies, birth-injury, difficult labour and causes of pre-natal mortality.	20.13	15.53	21.35
Malaria	8.66	7.42	8.99
Tuberculosis of all forms	3.08	0.00	3.75
Bacillary dysentery and amoebiasis	2.06	2.55	1.50
Accidents, poisoning and violence	0.47	0.88	0.37
Diseases of heart and circulatory system	0.31	0.00	0.37
Peptic ulcer, appendicitis, intestinal obstruction and hernia	0.31	0.00	0.37
Unknown causes	5.30	6.53	5.25

Source:- Government of Pakistan, *Population Growth Survey, 1971*, Central Statistical Office, Karachi, 1974.

than the urban areas (15.5%). Malaria accounted for 8.7 per cent infant deaths in the country, nine per cent in rural areas and 7.4 per cent in urban areas followed by tuberculosis and dysentery.

No data on the causes of childhood mortality (1—4) years) are available in the country. However, it is presumed that most of childhood mortality was due to environmental conditions, similar to that of infant mortality. Therefore, diarrhoea, tetanus, measles, respiratory diseases and gastrointestinal diseases were perhaps the major causes of childhood mortality, particularly in rural areas.

6.3 Life Expectancy by Age and Sex

Expectation of life at birth is often regarded as the best indicator of mortality as it gives a precise summary of mortality in the country. Because no separate mortality data for Pakistan are available before 1947, the values of expectation of life at birth for the Indo-Pakistan Sub-Continent have been used for analysis.

As can be seen from table 6.8, there was no addition in longevity of life during the period, 1881—1921; rather, the expectation of life at birth declined. There was an improvement in the overall life expectancy of 6 to 7 years during the decade 1921—1931, which was the first decade free of famine and

TABLE 6.8: Life Expectancy at Birth for Males and Females in British India and Pakistan, 1881–1979

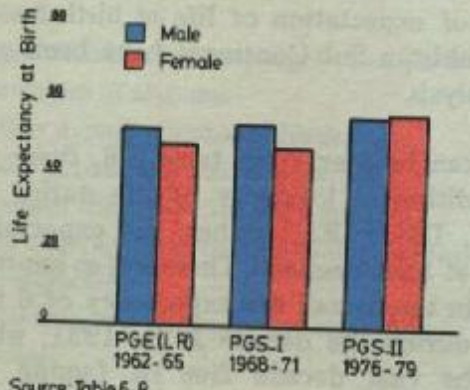
Region	Source	Year	Life Expectancy at Birth	
			Male	Female
British India	Census	1881	23.7	25.6
,,	Census	1891	24.6	25.5
,,	Census	1901	23.6	24.0
,,	Census	1911	22.6	23.3
,,	Census	1921	19.4	20.9
,,	Census	1931	26.9	26.6
,,	Census	1941	32.1	31.4
Pakistan (Punjab)		1950–52	32.9	34.4
Pakistan	PGE (LR)	1962–65	52.4	48.7
,,	PGS–I	1968–71	53.6	47.6
,,	PGS–II	1976–79	56.1	57.0
Pakistan Urban	PGS–II	1976–79	60.5	58.4
Pakistan Rural	PGS–II	1976–79	55.1	54.8

Note: Figures relate to British India upto 1941 and to the Punjab for 1950–52. The figures for 1962–65 to 1967–79 are based on various surveys.

Source:- 1. Kingsley Davis, *The Population of India and Pakistan*, New Jersey. Princeton University Press, 1951.

2. Government of Pakistan, Population Growth Surveys, 1968, 1969, 1970, 1971, 1976, 1977 1978, 1979. Federal Bureau of Statistics, Karachi.

Figure 6.1 Life Expectancy at Birth for Males and Females, Pakistan, 1962-79.



Source: Table 6.8

epidemics. Further, additions to longevity of 4 to 5 years and 2 years were achieved during the intercensal periods 1931–41 and 1941–51 respectively. The single largest increase in longevity of 14 to 19 years occurred during the period 1950–52 to 1962–65, followed by a gain of about four to eight years during the period 1962–65 to 1976–79.

The increase in longevity of 14 to 19 years during a period of about 12 years from 1950–52 to 1962–65 seems quite spectacular, and it does not appear to present a true picture, rather it seems to indicate that mortality data used for the construction of life tables from the period 1950–52 might have been over-adjusted compared with the base population resulting in a higher mortality than it really was. Another peculiarity of the 1950–52 life tables is that it gives a higher life expectancy for females (34.4 years) than males (32.9 years), which is unique, considering the socio-cultural milieu of the Pakistani society which has already been discussed. It is also noted that, prior to 1931, females seem to have experienced a longer expectation of life than males. It is not clear whether this is a byproduct of using a favourable mortality pattern for females or whether it is due to differential enumeration of the sexes in the census of the same period. In this case therefore, it needs thorough investigation. Since 1962, the expectation of life at birth was higher for males than females, for the subsequent periods (except 1950–52). There is a reversal of differentials in the expectation of life at birth by sex which continues to the present.

Although gradual decline in mortality has been taking place in the country due to better public health measures through elimination and control of diseases, supply of safe drinking water, better sanitation and environmental conditions, the health care services are still very insufficient and require significant augmentation in order to reduce mortality further especially in the rural areas.

Males have, on the whole, enjoyed a longer life as compared with females during the period 1931–79. This phenomenon, as stated earlier, is the consequence of higher female mortality at young and reproductive ages. This trend is also prevalent in India, Bangladesh and Nepal [11].

TABLE 6.9: Crude Death Rates and Life Expectancy at Birth in the Provinces of Pakistan, by Sex, 1976–1979.

Region	CDR Per 1000 Population 1976–79	Life Expectancy at Birth	
		Male	Female
Punjab	11.2	56.4	57.5
Sind	10.7	56.0	57.3
NWFP	9.1	56.5	54.4
Baluchistan	7.2	52.5	52.0

Source:- Government of Pakistan, *Population Growth Survey, 1979*, Federal Bureau of Statistics, Karachi.

Table 6.9 depicts the expectation of life at birth for males and females by province for the period 1976–79. It is noted that the Punjab and Sind have a greater longevity, followed by NWFP and Baluchistan. This is perhaps due to the fact that the Punjab and Sind, being more socially and economically developed, enjoy lower mortality compared with Baluchistan which is the least developed province and, as such, has a higher mortality rate.

6.4 Differentials in Mortality

6.4.1 Crude Death Rates by sex, Urban–Rural Areas and Provinces

The data collected from various surveys indicate that crude death rates are higher in rural areas compared with urban areas (Table 6.10). The table further indicates that the death rates in rural areas have shown a gradual decline, whereas in urban areas, the rates have

TABLE 6.10: Crude Death Rates by Urban and Rural Areas in Pakistan, 1968 – 1986

Year	Source	Crude Death Rate	
		Urban	Rural
1968	PGS I	9.7	12.9
1969	PGS I	7.8	12.8
1970	PGS I	7.0	12.0
1971	PGS I	7.0	12.0
1968–71	PGS I	8.2	12.4
1976	PGS II	8.8	12.6
1977	PGS II	8.2	11.7
1978	PGS II	8.0	10.8
1979	PGS II	7.7	10.4
1976–79	PGS II	8.2	11.4
1984–86	PDS	8.8	12.2

Source:–

1. Farooqui, M.N.I., and Ghazi Mumtaz Farooq, *Final Report of the Population Growth Estimation Experiment, 1962–65.* Pakistan Institute of Development Economics, Dacca, July 1971.
2. Government of Pakistan, *Population Growth Survey, 1968,* Central Statistical Office, Karachi, 1973.
3. Government of Pakistan, *Population Growth Survey, 1969,* Central Statistical Office, Karachi, 1974.
4. Government of Pakistan, *Population Growth Survey, 1970,* Central Statistical Office, Karachi.
5. Government of Pakistan, *Population Growth Survey, 1971,* Central Statistical Office, Karachi, 1974.
6. Government of Pakistan, *Population Growth Survey, 1976,* Federal Bureau of Statistics, Karachi, December, 1981.
7. Government of Pakistan, *Population Growth Survey, 1977,* Federal Bureau of Statistics, Karachi, January, 1983.
8. Government of Pakistan, *Population Growth Survey, 1978,* Federal Bureau of Statistics, Karachi, July, 1983.
9. Government of Pakistan, *Population Growth Survey, 1979,* Federal Bureau of Statistics, Karachi, July, 1984.
10. Government of Pakistan, *Pakistan Demographic Surveys, 1984–86,* Federal Bureau of Statistics, Statistics Division, 1988.
11. Khan M.K.H., Abridge life Table for Males and Females in Former Provinces of the Punjab. *Journal of Medical Research,* 1(1) July, 1985.

remained more or less constant since 1969. The same trend has also been observed in all the provinces of the country. It is noted from table 6.9 that crude death rates have been recorded as highest in the Punjab (11.2) which is the most developed province followed by NWFP (10.7), Sind (9.1) and Baluchistan (7.2) the least developed province.

However, when life expectancy is considered by provinces, the Punjab has the highest longevity and Baluchistan the lowest. This contrast is perhaps due to an anomaly in reporting of death statistics. As for the differences in age composition, Baluchistan has the youngest population than the rest of the provinces. When these rates are adjusted for possible under-enumeration of deaths, then the pattern of deaths in the provinces changes altogether. For example, Baluchistan and NWFP record the highest CDRs (17.6), followed by the Punjab (15.6). Sind, being highly urbanised due to Karachi city, is more likely to have greater medical facilities and hence the lowest CDR (13.5) [3].

6.4.2 *Infant Mortality by Urban–Rural Areas and Provinces*

Table 6.11 shows the sex differentials in infant mortality in urban and rural areas for the period 1968–79. The table indicates that the infant mortality rate was higher for females than males in both urban and rural areas with a noticeable exception for urban areas in 1969 and 1970. The gap between sex differentials in mortality has remained in both urban and rural areas over the period 1968–79. Similar differences in infant mortality have been noted in all the provinces of the country[3].

6.5 Association of Demographic Factors and Infant and Child Mortality

6.5.1 *Infant Mortality and Age of Mother at Birth*

It has been observed from various studies conducted at different times in several countries, that demographic factors, such as age of the mother at the time of birth, parity-birth order of the child and preceding birth intervals are some of the important factors which are closely associated with infant mortality, particularly neonatal and post-neonatal mortality.

The risk of infant mortality and age of the mother at birth form a U-shape relationship as is evident from table 6.12. It shows that the risk of death is higher at younger and older ages than in the middle age groups. For example, infant mortality rate of the mothers aged less than 20 years and 40 years or more (for the babies born less than 5 years prior to the survey) were 154 and 175 per thousand live births repectively compared with only 110 and 130 per thousand live births for mothers aged 20–29 years and 30–39 years respectively. The same trend is observed for babies born 5–9 and 10–14 years prior to the survey.

The neonatal mortality rates are higher for women of less than 20 years of age at birth. Thereafter, the rates decline in the age group 20–29 years for births prior to 0–4 years of survey and then increase in the age group 40 years and above. For those births which took place 5–9 years prior to the survey, the neonatal mortality declines from 119 per thousand live births for women less than 20 years to 58 per thousand live births for women of 30–39 years. Then it increases to 77 per thousand live births for women of 40 years and above. Although the changes were smaller, a similar trend had been observed in post-neonatal mortality rates.

6.5.2 *Infant Mortality and Birth Order of the Child*

The relationship between birth order and infant mortality risk also forms a classical U-shape curve. Table 6.13 and figure 6.2 show that infant mortality rates are the highest for the first birth order child. In-

TABLE 6.11: Infant Mortality Rates in Urban and Rural Areas of Pakistan by Sex, 1968 – 1986

Year	Source	Infant Mortality Rate Per 1000 Live Births		
		Both Sexes	Male	Female
Urban Areas				
1968	PGS–I	138	163	112
1969		85	82	88
1970		85	84	87
1971		88	100	76
1968–71		103	113	92
1976	PGS–II	73	82	63
1977		78	87	68
1978		84	101	73
1979		62	65	59
1976–79		74	89	66
1984–85	PCPS	107–117		—
1984–86	PDS	93		
Rural Areas				
1968	PGS–I	121	124	119
1969		118	143	113
1970		116	124	106
1971		110	118	101
1968–71		116	122	110
1976	PGS–II	92	98	86
1977		108	118	96
1978		101	106	92
1979		106	114	98
1976–79		101	109	93
1984–85	PCPS	104	–	–
1984–86	PDS	127		

Source:–

1. Farooqui, M.N.I., and Ghazi Mumtaz Farooq, *Final Report of the Population Growth Estimation Experiment, 1962–65*, Pakistan Institute of Development Economics, Dacca, July 1971.
2. Government of Pakistan, *Population Growth Survey, 1968*, Central Statistical Office, Karachi, 1973.
3. Government of Pakistan, *Population Growth Survey, 1969*, Central Statistical Office, Karachi, 1974.
4. Government of Pakistan, *Population Growth Survey, 1970*, Central Statistical Office, Karachi.

5 Government of Pakistan, *Population Growth Survey, 1971*, Central Statistical Office, Karachi, 1974.
6 Government of Pakistan, *Population Growth Survey, 1976*, Federal Bureau of Statistics, Karachi, December, 1981.
7. Government of Pakistan, *Population Growth Survey, 1977*, Federal Bureau of Statistics, Karachi, January, 1983.
8. Government of Pakistan, *Population Growth Survey, 1978*, Federal Bureau of Statistics, Karachi, July, 1983.
9. Government of Pakistan, *Population Growth Survey, 1979*, Federal Bureau of Statistics, Karachi, July, 1984.
10. Government of Pakistan, Contraceptive Prevalence Survey, 1984-85, Population Welfare Division, Islamabad, October, 1986.
11. Government of Pakistan, Pakistan *Demographic Survey, 1984–86, Federal Bureau of Statistics*, Statistics Division, Karachi, 1988.

TABLE 6.12: Infant Mortality, Neonatal and Post-Neonatal Deaths by Age of Mother at Birth by Years of Birth Prior to Survey, Pakistan 1979

(Rate per 1000 live births)

Mother's Age at Birth	Years of Birth Prior to Survey		
	0–4	5–9	10–14
Less than 20 years			
Neonatal mortality rate	103.0	118.6	105.4
Post-Neonatal mortality rate	51.0	58.1	46.7
Infant mortality rate	154.0	176.7	152.0
20–29 Years			
Neonatal mortality rate	68.6	63.4	66.9
Post-Neonatal mortality rate	41.6	43.2	50.0
Infant mortality rate	110.2	106.7	116.9
30to 39 Years			
Neonatal mortality rate	83.8	58.4	62.1
Post-Neonatal mortality rate	46.6	44.9	32.4
Infant mortality rate	130.3	103.3	94.5
40 or more Year			
Neonatal mortality rate	112.5	77.4	—
Post-Neonatal mortality rate	62.6	56.7	—
Infant mortality rate	175.1	134.1	—

Source:- Pakistan Institute of Development Economics, *Population Labour Force and Migration Survey, 1979-80*, Islamabad, 1983.

fant mortality declines for the second and subsequent birth order and again picks up at higher birth orders. Such a pattern is observed from both PLM and PSF data. As can be seen from the table, the neonatal mortality rate also exhibits a similar pattern.

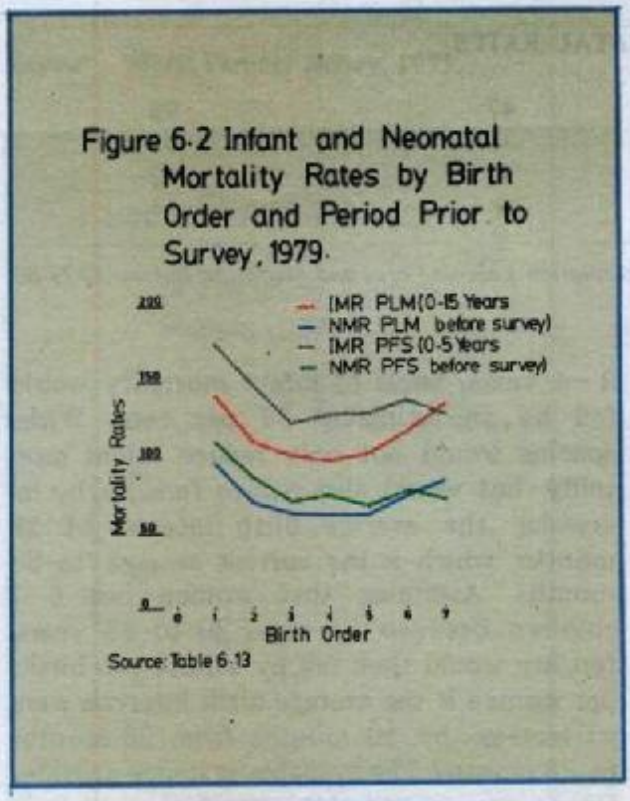
The differences observed in the two sets of data may be attributed to the duration of births prior to the survey. PLM data gives rates of upto 15 years prior to the survey, while PFS gives rates of upto five years prior to the survey.

TABLE 6.13: Infant and Neonatal Mortality Rates by Birth Order and Period Prior to Survey, Pakistan, 1979

(Rate per 1000 live births)

Birth Order	PLM (0–15 Years Before Survey)		PFS (0–5 Years Before Survey)	
	IMR	MNR	IMR	MNR
1	142	96	175	110
2	109	70	146	86
3	102	63	123	70
4	99	61	128	74
5	104	61	129	67
6	118	74	136	76
7+	136	83	129	71

Source: Pakistan Institute of Development Economics, *Population Labour Force and Migration Survey, 1979-80*, Islamabad, 1983.



6.5.3 *Infant and Child Mortality and Length of Preceding Birth Interval.*

It has been observed throughout the world that the length of the preceding birth interval is a major determinant of infant and child mortality [8]. Table 6.14 shows the association between length of previous birth interval and the infant mortality rate controlling the survival status of the older sibling. It is apparent that, there is a negative association between infant mortality rate and the length of the preceding birth interval regardless of the survival status of the previous child. Longer birth intervals result in lower infant mortality.

The relationship of birth spacing and infant and child mortality in Pakistan is also clearly demonstrated from the World Fertility Survey controlling for the age of the mother, parity, education of the mother, residence and survival status of the previous child.

Table 6.15 and figure 6.3 show the infant and child mortality rates by birth intervals. There is a consistent negative relation between birth order and infant mortality. The highest infant mortality has been recorded in such cases where the preceding birth interval was less than a year. Infant mortality declines as the preceding birth interval increases upto 41 months. It was also found that in some cases, though in minority, where a woman bore a child within

TABLE 6.14: Infant Mortality, Neonatal and Post-Neonatal Rates in Length of Previous Interval by Survival Status of Previous Child, Pakistan, 1979

(Rate per 1000 live births)

Length of Previous Interval (in years)	Survival Status of Previous Child	
	Survived 2 years	Did not Survive 2 years
INFANT MORTALITY		
Under 2 years	113	315
2–3	78	220
3–4	57	215
4 +	50	111
NEONATAL RATES		
Under 2 years	66	217
2–3	47	135
3–4	30	153
4+	32	77
POST-NEONATAL RATES		
Under 2 years	47	98
2–3	31	85
3–4	27	62
4 +	18	34

Source:- Pakistan Institute of Development Economics, *Population Labour Force and Migration Survey 1979-80*, Islamabad, 1983.

12 months, the older child faced double the risk of death than if there was a longer gap between the two siblings. Much of this was thought to be due to involuntary weaning of the older child when the mother became pregnant again. However, some of the affect is thought to be due to spacing.

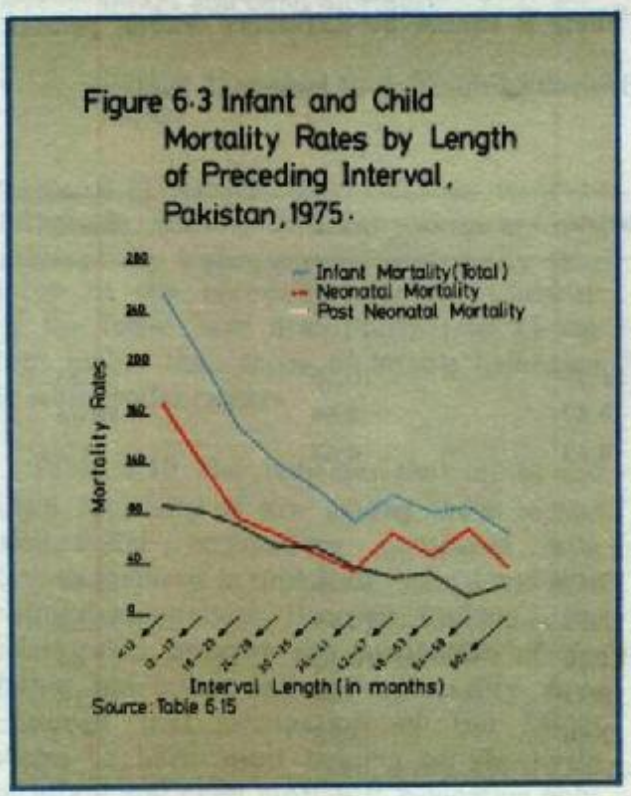
The policy implications of this study are quite dramatic and are fortuitous as they meet the objectives of the population programme for lowering fertility and the health programme for lowering mortality. If all children now born within two years of an older sibling were spaced by a longer period of between 2—3 years, infant mortality would drop by 16 per cent according to the mortality patterns presented in table 6.15. Similarly, if their interval was increased to 3—4 years, levels of infant mortality would fall by an estimated 37 per cent. Wider spacing would not only reduce infant mortality but would also reduce fertility by increasing the average birth interval of 28 months, which is the current average, to 38 months. Assuming that women bear 6—7 children between the ages 20 to 35 years, fertility would then fall by almost two births per woman if the average birth intervals were to increase by 10 months from 28 months to 38 months. The available evidence provides strong reasons for the Population Welfare Programme to reinforce its integrated services of maternal child health with family planning service.

According to the figures presented in table 6.15, the lowest infant mortality of 64 per

TABLE 6.15: Infant (Neonatal and Post-Neonatal) Mortality Rates and Early and Later Childhood Mortality Rates by Length of Previous Interval, Pakistan, 1975

Preceding birth Interval Length (in months)	Infant Mortality (per 1000 Live Births)			Childhood Mortality	
	Total	Neonatal	Post-Neonatal	Early childhood (between 1-2 years)	Later childhood between 2-5 years)
Under 12	258	171	87	57	5
12–17	206	123	83	48	52
18–23	151	78	73	46	58
24–29	120	65	55	37	36
30–35	101	50	51	32	45
36–41	75	36	39	31	42
42–47	95	65	30	26	44
48–53	81	48	33	18	38
54–59	85	69	16	7	15
60 +	64	39	25	13	20

Source: World Fertility Survey, 1975.



thousand live births is recorded for those women who had a previous birth interval of five years and above. It seems that in the neonatal period, there is a threshold period of 41 months exhibiting a steady decline in mortality, after which there is no added advantage of spacing. On the other hand, in the post-neonatal mortality and mortality between the ages of one and two years, advantages in survival accrue as the preceding interval length continues to increase.

In the case of neonatal mortality, children born after a space of two years are twice as likely to survive as those who are born within an interval of less than two years. This beneficial effect of spacing is found to apply both in urban and rural areas and for educated and uneducated mothers, for girls and boys and for large and small families [1]. This relationship continues into later childhood mortality, i.e. from ages 2–5 years but it is not as strong.

Some efforts were made, despite lack of medical data, to investigate the possible mechanism behind the association. Competition between successive children for parental attention and / or food, health care, was not strongly supported by the data [10]. The spa-

cing effect was most probably acting through the health of the mother, where closer pregnancies meant that she was unable to recover nutritionally and suffered from depletion. In consequence, this led to a greater likelihood of her bearing a baby with low birth weight. The phenomenon has been referred to as the "maternal depletion syndrome" [4]. More adequate spacing between children for health reasons should be the major focus of health and population welfare programmes.

6.6 Social and Economic Factors, and Infant and Child Mortality

6.6.1 Parental Education and Infant and Child Mortality

It has been found that the proportion of infants who died appeared to be inversely related to the level of their mothers' education, as can be observed from table 6.16. Similarly, the relation between infant mortality and education of the father also reflects a negative association. The difference between illiterates and the educated category of those who have passed 10—14 classes is also substantial. But the category 1—9 classes passed, shows only a slight gain over illiterates in survival probability. Infant mortality differentials by father's educational level exhibit a similar pattern for rural and urban areas (Table 6.16).

From the World Fertility Survey (WFS) data, it has been observed that neonatal and post-neonatal mortality and also mortality of children up to five years of age is negatively related with the education of the parents, either separately or jointly, (Table 6.18). In case of the father's education, differences are quite marked between eight years or more of schooling and less than seven years' of schooling or no schooling at all, particularly for infants and children of 1—2 years of age.

As regards the education of parents, there is almost no difference among parents

TABLE 6.16: Per cent of Infant Deaths to all Births by Education of Parents in Pakistan by Urban and Rural Areas, 1979

Educational Level	Pakistan	Urban	Rural
(1) *Mothers Educational Level*			
No schooling	11.93	10.56	12.33
1–9 classes	9.47	8.69	10.64
10+ classes	4.63	4.63	*
(ii) *Fathers Educational Level*			
No Schooling	12.47	10.70	12.87
1–4 Classes	11.98	10.79	12.53
5–9 Classes	11.10	10.10	11.64
10–14 Classes	8.31	7.43	10.19
14+ Classes	3.86	3.86	*

* Few Observations

Source: Pakistan Institute of Development Economics, *Population Labour Force and Migration Survey 1979-80*, Islamabad 1983.

TABLE 6.17: Per cent of Infant Mortality to All Births in Relation to Occupation and Status of Head of Household, Pakistan, 1979

Occupation of Head of Household	Employer	Self-Employed	Employee	Total
Professional, Administrative	1.8	12.44	8.69	8.69
Clerical, Sales and Services	11.29	10.07	10.39	10.30
Production Worker and others	9.51	12.18	1.38	11.48

Source:- Pakistan Institute of Development Economics, *Population Labour Force and Migration Survey 1979-80*, Islamabad, 1983.

with no schooling or husbands having 1—7 years of schooling and the wife with no schooling at all. The next category where the husband has 1—7 years of schooling with the spouse having some schooling, differences in mortality reduction are noticeable. It can be deduced from table 6.18 that the wife's education has more influence in affecting the level of infant and child mortality.

6.6.2 *Infant Mortality and Occupation of Father*

Table 6.17 reveals that children born to fathers in white-collar occupations enjoy a substantially higher survival probability than those of the blue-collar workers. Children of the latter have a mortality rate 24 per cent higher than those of infants belonging to white-collar fathers.

Table 6.18 also indicates that infant and child mortality is low among those in the white-collar occupations compared with fathers involved in unskilled, manual and agricultural occupations. However, looking at the relationship between the occupation of the father and infant and child mortality, it is observed that occupation of the father seems to have lesser bearing on the levels of infant and child mortality. Education only has shown itself to be an important variable in reducing infant and child mortality in the country.

The crude death rate in Pakistan has declined from 25—23 per thousand population at the time of Independence to a level in the vicinity of 10 per thousand population. This does not seem to be a small achievement but when compared with the developed countries, the rate for Pakistan is still very high. An important cause of high mortality rate in the country is the still very high infant mortality rate which is around 100 per 1000 lives births depending on which agency is making the estimate—though this rate declined to the present level from about 150 to 180 per thousand live births estimated in 1947. The mass immunisation programme of the Government and other health care measures are bound to bring down infant mortality still further. This will not only cause a decline in the crude death rate but also a considerable jump in the overall population growth unless fertility decline is as rapid as mortality decline. This will cause a diversion of resources towards the infants and children who survived and get prepared to plan for a population growing at a rate higher than estimated now which will be the net result of decline in mortality.

TABLE 6.18: Infant and Child Mortality from Births 15 Years Prior to Survey by Father's Occupation and Parents' Joint Education, Pakistan, 1975

Education / Occupation	Mortality Measure						
	Neonatal	Post-neonatal	< 1 Yr	1–2 Yrs.	2–4 Yrs.	0–4 Yrs.	No. of Births
(a) Occupation:							
Father's:							
White collar	80	51	131	23	40	188	997
Sales & Service	73	62	135	34	37	205	2508
Agriculture	84	59	143	31	41	198	5875
Skilled manual	73	60	133	37	46	198	2529
Unskilled manual	86	58	144	46	49	226	1617
(b) Education:							
Father's:							
None	83	61	143	38	49	216	8439
1–7 years	82	61	144	35	32	100	2304
8 + years	71	53	124	24	30	167	2611
Mother's:							
None	61	60	141	37	44	209	12384
Some	63	48	111	14	20	133	1181
Jointly							
Both none	83	61	144	38	48	214	8458
Husband 1–7 Years–							
Wife none*	86	62	148	34	33	203	2061
Husband 1–7 Years–							
Wife some	64	53	117	21	35	150	337
Husband 8+ Years–							
Wife none	75	53	128	29	38	181	1864
Husband 8+ Years–							
Wife some	60	45	105	12	12	122	806

* Includes a few cases where husband has no education.

Source: World Fertility Survey, 1975.

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NUPTIALITY

Marital status of the population is considered to be an important factor which, to a great extent, affects the family formation and the level and pattern of fertility in a country. In recent years, the analysis of nuptiality has gained great importance as a branch of demographic study. It is realised that the high rate of population growth in most developing countries like Pakistan is, *inter alia*, due to low age at marriage. The marriage rates at each age and proportion of the population married in every age category are, therefore, vital in the analysis of fertility, particularly in a low contraceptive use society like Pakistan where the births out of wedlocks are rare and family planning has not taken roots to the desired level.

7.1. Marital Status of the Population

The 1981 Census data indicate that, out of the total population 15 years of age and above, 69 per cent were currently married, 6 per cent were ever married (5.9 per cent widowed, 0.3 per cent divorced and separated) and 25 per cent were never married. Among males, 31.5 per cent were never married and among females, this proportion was 17.8 per cent. The proportion of currently married males and females was 65 per cent and 73 per cent respectively. The proportion of the widowed was about three times higher (9%) than widowers (3%) indicating a tendency of more widowers getting remarried than the widowed (Table 7.1).

The social and cultural norms prevalent in Pakistan favour universal and early marriage for females. According to the 1981 Census, about 95 per cent of women were married before reaching 40 years of age and 94 per cent of males were married by the age of 50 years. Table 7.1 indicates that in 1981, 71 per cent of females in the age group 15—19 years were single and 73 per cent got married by the time they attained the age of 20—24 years.

An important factor which affects the family formation and level of fertility is the marital status of the population. Low age at marriage is the main cause of high growth rate in most of the developing countries like Pakistan, where early marriage of females is a social and cultural norm. However, the average age at marriage for females and males has risen from 17.9 and 23.4 years to 20.8 and 25.4 years respectively, over the period 1951–81, an encouraging sign of lowering the level of fertility in Pakistan.

While comparing the distribution of currently married women by urban and rural areas, it is noted that the proportion of females who were currently married was low (68%) in urban areas than that of rural areas (75%) (Table 7.2). It is further noted from the table that the proportion of currently married females in the age groups 15—19 years and 20—24 years was quite low in the urban areas compared to the corresponding proportion of currently married females of the same age groups in rural areas. This gap narrows down with the increase in age and again in the older ages, the proportion of currently married females was considerably

TABLE 7.1: Marital Status of Population Aged 15 Years and Above by Sex and Age, Pakistan, 1981

Age Group	Never Married	Currently Married	EVER MARRIED		
			Widowed	Divorced	Total
ALL AGES	25.11	68.75	5.87	0.28	6.15
15–19	82.39	17.37	0.15	0.09	0.24
20–24	46.50	52.60	0.59	0.31	0.90
25–29	20.63	78.02	1.01	0.34	1.35
30–34	9.06	88.77	1.79	0.38	2.17
35–39	4.01	93.13	2.52	0.34	2.86
40–44	3.02	92.33	4.32	0.34	4.66
45–49	1.79	92.01	5.91	0.29	6.20
50–54	2.66	86.62	10.42	0.30	10.72
55–59	1.38	86.92	11.46	0.24	11.70
60 years and above	2.62	70.32	27.81	0.25	27.06
MALE					
ALL AGES	31.51	65.24	3.06	0.19	3.25
15–19	92.47	7.39	0.11	0.03	0.14
20–24	64.56	34.71	0.51	0.21	0.73
25–29	31.27	67.67	0.84	0.21	1.05
30–34	13.86	84.46	1.43	0.26	1.69
35–39	6.23	91.65	1.87	0.24	2.11
40–44	4.42	92.60	2.74	0.24	2.98
45–49	2.51	93.93	3.34	0.22	3.56
50–54	2.98	92.03	4.76	0.23	4.99
55–59	1.73	92.47	5.59	0.21	5.80
60 years and above	2.61	85.45	11.72	0.22	11.94
FEMALE					
ALL AGES	17.83	72.74	9.06	0.37	9.43
15–19	70.56	29.09	0.20	0.15	0.35
20–24	26.54	72.39	0.67	0.41	1.08
25–29	8.73	89.58	1.20	0.49	1.69
30–34	3.92	93.38	2.18	0.52	2.70
35–39	1.74	94.65	3.18	0.43	3.61
40–44	1.62	92.05	5.90	0.43	6.33
45–49	1.01	89.90	8.73	0.37	9.10
50–54	2.27	79.95	17.40	0.38	17.78
55–59	0.97	80.57	18.18	0.28	18.46
60 years and above	2.63	49.59	47.48	0.30	47.78

Source:- Government of Pakistan, *1981 Census Report of Pakistan*, Population Census Organisation, Statistics Division, Islamabad, December, 1984.

TABLE 7.2: Percent of Currently Married Population (15 Years and above) by Sex, Age and Urban – Rural Areas, Pakistan, 1981

Age Group	URBAN		RURAL	
	Male	Female	Male	Female
All ages	61.36	68.23	66.97	74.56
15–19	4.85	22.11	8.61	32.52
20–24	29.27	65.59	37.69	75.61
25–29	65.17	87.70	68.89	90.38
30–34	84.99	93.02	84.21	93.52
35–39	92.09	94.40	91.45	94.75
40–44	92.97	91.05	92.43	92.43
45–49	93.85	87.51	93.97	90.77
50–54	91.12	75.66	92.39	81.40
55–59	91.51	74.92	92.85	82.38
60 years & above.	82.43	44.02	86.37	51.23

Source:- Government of Pakistan, *1981 Census Report of Pakistan*, Population Census Organisation, Statistics Division, Islamabad, December, 1984.

low in urban areas as compared to rural areas.

Table 7.3 indicates that the proportion of currently married females was the highest in Baluchistan (76%), followed by NWFP (74%), Sind (74%) and the Punjab (72%). The proportion of currently married females in the age group 15—19 years was the highest, in Sind (33%), followed by NWFP (32%), Baluchistan (29%), and the Punjab (27%).

The proportion of females being single in the age group 15—19 years increased from 47 per cent in 1961 to 71 per cent in 1981. Similarly in the age group 20—24 years, the proportion of females being single also increased from 12 per cent in 1961 to 27 per cent in 1981 (Table 7.4). There has also been a slight increase (of about 3.6 percentage points) in the proportion of single females in the age group 25—29 years.

Between 1961 and 1981, increase in the proportion of single females in the corresponding age groups indicate an increase in the age at marriage during the same period. The age at marriage is a crucial variable which influences the fertility pattern of a population. Table 7.5 and figure 7.1 indicate that there was a progressive increase in the age at marriage between 1951 and 1981. The average age at marriage of females has risen from 17.9 years in 1951 to 20.8 years in 1981, whereas the corresponding rise for males has been from 23.4 to 25.4 years. The Pakistan Fertility Survey (PFS) data also show a gradual rise of the female age at marriage from 14.3 years in 1945—1950 to 16.5 years in 1970—1975[1]. It also shows a rising trend in the age at marriage in both urban and rural areas. The Population, Labour Force, Migration (PLM) Survey also indicates female mean age at marriage as 17.5 years[2]. Moreover, the proportion of all women married before the age of 15 years has substantially declined from 29 per cent in 1975 to 12 per cent in 1979—80[3]. It appears that the socio-economic changes which are taking place in the country, particularly, expansion of female education and the changing status of women, will serve as a factor in further

TABLE 7.3: Per cent of Currently Married Population (15 Years and above) by Sex, Age and Province, Pakistan, 1981

Age Group	PUNJAB		NWFP		SIND		BALUCHISTAN	
	Male	Female	Male	Female	Male	Female	Male	Female
All Ages	65.27	71.87	65.82	73.85	65.25	73.74	63.49	76.11
15–19	7.34	27.11	6.21	32.43	8.56	33.08	6.19	29.03
20–24	34.98	71.00	31.99	73.80	36.08	74.71	31.94	74.80
25–29	67.80	89.36	67.16	88.71	67.88	90.30	66.86	91.04
30–34	84.39	93.47	86.18	92.11	83.89	93.70	83.19	94.36
35–39	91.90	94.62	93.64	93.99	91.16	94.83	92.07	95.75
40–44	92.24	92.38	94.49	91.32	92.28	91.47	93.05	93.12
45–49	93.45	90.39	95.88	89.03	93.75	88.72	95.72	91.83
50–54	91.47	81.13	94.27	78.80	91.81	76.91	93.87	82.57
55–59	91.80	82.41	94.86	78.62	92.35	75.98	95.67	82.52
60 years & above	84.14	51.55	89.79	50.70	85.99	42.70	91.08	49.14

Source:- 1. Government of Pakistan, *1981 Census Report of Punjab Province*, Population Census Organisation, Statistics Division, Islamabad.
2. Government of Pakistan, *1981 Census Report of North West Frontier Province*, Population Census Organisation, Statistics Division, Islamabad.
3. Government of Pakistan, *1981 Census Report of Sind Province*, Population Census Organisation, Statistics Division, Islamabad.
4. Government of Pakistan, *1981 Census Report of Baluchistan Province*, Population Census Organisation, Statistics Division, Islamabad.

increasing the age at marriage of females. It is not only indicative of the changes in social norms but also a sign which could lead to lower fertility.

The proportion of females being single in the age group 15–19 years increased from 47 per cent in 1972 to 71 per cent in 1981. The proportion of females married before the age of 15 years has declined from 29 per cent in 1975 to 12 per cent in 1979–80. With a higher proportion of educated women and an improvement in the status of women, the female mean age at marriage will further increase which will not only lead to lower fertility but also to better health for women.

Although the data presented above have shown a rise in female age at marriage, yet surprisingly, its impact on the overall fertility level measured by TFR and GRR appears to be minimal. A more thorough study is required to probe and identify the inter-relationship of age at marriage and fertility within the socio-cultural environment of our society.

Concluding, it is established by various studies that the age at marriage of both males and females has risen during the last two decades, yet its exact cause and relationship with fertility are not carefully examined and therefore, need to be studied in detail. Another important area requiring further study, is the change in family structure as a result of changing marriage patterns and population mobility i.e., the change between joint families and the emergence of nuclear families. The changing family structure does reflect the freedom of decision-making, in favour of nuclear families but it also points out future problems of ageing popula-

TABLE 7.4: Per cent of Never Married Population (15 years and above) by Sex and Age, Pakistan, 1961 and 1981

Age Group	MALES		FEMALES	
	1961	1981	1961	1981
All ages	57.45	31.51	48.30	17.83
15–19	83.67	92.47	46.59	70.56
20–24	52.92	64.56	12.03	26.54
25–29	27.86	31.27	5.11	8.73
30–34	14.17	13.86	2.98	3.92
35–39	8.85	6.23	2.65	1.74
40–44	6.40	4.42	2.17	1.62
45–49	5.14	2.51	1.95	1.01
50–54	3.91	2.98	1.39	2.27
55–59	3.98	1.73	1.72	0.97
60 years and above.	2.75	2.61	1.10	2.63

Source:- 1. Government of Pakistan, *Census of Pakistan 1961, Vol. 3*, Ministry of Home and Kashmir Affairs, Home Affairs Division, Karachi.

2. Government of Pakistan, *1981 Census Report of Pakistan*, Population Census Organisation, Statistics Division, Islamabad, December, 1984.

tion, who traditionally were members of joint families.

As nuptiality is a very important variable affecting the levels and patterns of fertility, particularly in a society where contraceptive practice is very low, its indepth analysis focussing on levels and trends of nuptiality patterns and the overall impact of nuptiality on fertility etc, should be taken up as an important component in future research studies.

TABLE 7.5: Mean Age at Marriage by Sex, 1951–1985

Year	Source	Male	Female	Difference (Male)–(Female)
1951	Census	23.4	17.9	5.5
1961	Census	24.5	17.6	6.9
1964	PGE	25.4	19.4	6.0
1968–71	PGS	25.8	19.5	6.3
1972	Census	26.2	20.0	6.2
1975	PFS	25.4	19.8	5.6
1976	PGS	26.0	20.0	6.0
1979	PLM	25.6	20.2	5.4
1981	Census	25.4	20.8	4.6
1984	PCPS	25.3	20.7	4.6

Source:-

1. Government of Pakistan, *Population Census of Pakistan, 1951*, Ministry of Interior, Karachi.
2. Government of Pakistan, *Population Census of Pakistan, 1961, Vol. 3*, Ministry of Home and Kashmir Affairs, Home Affairs Division, Karachi.
3. Government of Pakistan, *Population Census of Pakistan, 1972*, Population Census Organisation, Statistics Division, Islamabad.
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SOCIO–CULTURAL PROFILE AND STATUS OF WOMEN*

In Pakistan strong ties of kinship (Bradari), joint family system, strong peer influence and fatalistic outlook have been changing slowly due to the expansion of education, modernisation and economic development. The change in these values have had a positive impact on the differentiated sex roles and status in the country. In general, Pakistani society accords superiority of the status of men as compared to that of women. The status accorded to Pakistani women is normally through ascription. Traditionally, she has been given an inferior and subordinate status than a man, which has resulted in a differential role performance and structural development of distinctive attitudinal and behaviour patterns. In a traditional family in Pakistan, men are engaged in bread earning and other activities outside home, while women are largely assigned the role of home-making and rearing of children. Majority of the women accept the fact that their most important task is to take care of their husbands, children and house etc, although education, especially in urban areas, is making a dent in this thinking.

In Pakistan, the status accorded to women in all spheres of life is not only inferior but is rather depressing. As compared to men, they have been given a subordinate role which has resulted in a differential role performance and structural development of distinctive attitudinal and behavioural patterns. The social structure on the other hand, has harnessed women folk to accept the fact that their utmost task is to take care of their husbands, children and house etc. Education, especially in urban areas, is making some dent in this thinking.

In 1981, Pakistan had a population of 84 million. Of this, the total female population was 38 million with 27 million in rural areas and 11 million in urban areas. It is these 27 million women and the least privileged amongst the 11 million urban women towards whom the development programmes are mostly directed, although the broad-based policies are directed towards all target groups.

8.1. Literacy and Education

In Pakistan, the profile of women in every aspect of life is quite depressing as compared to males, for example, female literacy is only 16 per cent as compared to 35 per cent for males. In the urban areas, female literacy rate is 37.3 per cent as against 55.3 per cent for males. In the rural areas, female literacy rate is 7.3 per cent as against 26.2 per cent for males. (Table 8.1) However, the literacy rate among females increased faster in the rural areas than in the urban areas from 1972 to 1981. It has increased by 55 per cent in rural areas compared with only 21 per cent increase in urban areas.

Currently, literacy programmes are being implemented by several non-governmental, government and semi-government organisations. The President of Pakistan proposed 10 strategies while inaugurating the National Workshop on Female Literacy. These strategies are being implemented by the National

*This Chapter was written with the assistance of Dr. Sabeeha Hafeez.

TABLE 8.1: Literacy Rates by Sex, Urban and Rural Areas of Pakistan, 1951–1981

(in percentages)

Years	ALL AREAS			URBAN			RURAL		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
1951	17.9	21.3	13.9	–	–	–	–	–	–
1961	16.7	25.1	6.7	34.8	44.9	21.3	10.6	18.0	2.2
1972	21.7	30.2	11.6	41.5	49.9	30.9	14.3	22.6	4.7
1981	26.2	35.1	16.0	47.1	55.3	37.3	17.3	26.2	7.3

Source: Government of Pakistan, *1981 Census Report of Pakistan*, Population Census Organisation, Statistics Division, Islamabad.

In Pakistan, female literacy rate in rural areas is 7.3 per cent as against 26.2 per cent for males. In urban areas, it is 37.3 per cent against 55.3 per cent for males. An encouraging factor is that during the period 1972 to 1981, female literacy rate increased by 55 per cent in the rural areas compared with only 21 per cent increase in urban areas. Inspite of these changes, female literacy has to go a long way to achieve respectable levels.

Commission for Literacy and Mass Education.

8.1.1 *Non-formal Education*

So far, nearly 7,636 mosque schools have been established. The curriculum setting is the same as for other schools in addition to the study of the Holy Quran. The teaching programme is of shorter duration (about 4 hours) in order to give children free time to help their parents which is customary in the village society.

Women of respected families, who can read and write but do not go out, teach the Holy Quran, Islamiyat (religious instruction) and some selected skills of home management to young girls in the *mohullah* (neighbourhood community), particularly in rural areas where such schools function in each village. The *mohullah* schools will be integrated into the formal education system by vertical movement of girls wishing to continue their education. These schools may also develop into centres of functional education and skills training for adult women.

8.1.2 *Primary Education*

Literacy rate for the population 10 years and above has risen in the country from 16.7 per cent in 1961 to 26.2 per cent in 1981. Male literacy rate during the corresponding period increased from 25.1 per cent to 35.1 per cent, while female literacy increased from 6.7 per cent to 16 per cent. Large variations in the literacy rates of male and female and of rural and urban areas continue to exist, but these variations have been narrowed down over the period 1961–1981. The lowest literacy rate in the country is observed for females of rural Baluchistan where it was recorded as only 1.7 per cent.

According to the 1981 Census, there were 13 million people who had reported some level of educational attainment[3]. Of these, 5.9 million (45 per cent) had passed primary education (69 per cent males, 31 per cent females).

The female primary enrolment ratio in Pakistan expanded significantly over the

period 1951–1986, but it was still quite low as compared to males (5.8 per cent for females in 1951 to 32.8 per cent in 1986– from 32.5 per cent for males in 1951 to 65.9 per cent in 1986). There has been an increase in the number of female primary schools from 15,829 in 1975–76 to 22,050 in 1984–85 and 24,091 by 1986–87[6].

In 1982–83, 32.5 per cent of female population aged 5–9 years attended primary school. Almost 50 per cent of the students dropped out before completing the primary stage, of which female drop-out rate is more pronounced (Table 8.2). The reasons include walking distance, social norms preventing females from going to school, teacher absenteeism, poor physical facilities, poor teaching and lack of relevance of curricula to the work expected.

8.1.3 *Middle Level Education.*

The middle level education comprises grade six to grade eight. The enrolment level for males in middle school increased from 17 per cent in 1951 to 34 per cent in 1986, whereas, for females the increase has been from 2.5 per cent in 1951 to 12.5 per cent in 1986. Male education during the period 1951–1986 doubled (105 per cent and for females it increased five-fold), yet the actual levels of female education remained far behind male education. There has been an increase in middle schools for females from 1,307 in 1975–76 to 1,656 in 1984–85 which is extremely low as compared to the requirements[6].

8.1.4 *High School Level Education.*

The high school level enrolment comprises grades nine and ten. The enrolment ratio for males and females has been from 7.4 per cent and 1.3 per cent to 20 per cent and 8.1 per cent, respectively. There has been an increase in high schools for females from 806 in 1975–76 to 1,474 in 1984–85[6].

8.1.5 *Tertiary Level Education*

The tertiary level education includes enrolment of students studying in secondary schools, vocational institutions, science and arts colleges, professional colleges and universities. The tertiary level education in

TABLE 8.2: Percentage Drop-out by Sex and Level of Education, Pakistan, 1975–76 to 1982–83

Year	PRIMARY		MIDDLE		SECONDARY	
	Boys	Girls	Boys	Girls	Boys	Girls
1975-76	–	–	–	–	14	14
1976-77	–	–	22	22	16	10
1977-78	55	58	25	22	21	12
1978-79	56	61	29	25	25	16
1979-80	57	63	25	25	19	14
1980-81	58	62	30	28	11	11
1981-82	54	61	32	33	9	13
1982-83	53	62	32	35	7	15

Source: Calculated from the data obtained from the Ministry of Education, December, 1984.

Pakistan increased from 0.9 per cent to 4.3 per cent for males and from 0.2 per cent to 1.8 per cent for females, showing a nine time increase over the years 1951 to 1986.

8.1.6 *Vocational and Technical Education*

Soon after 1947, with rapidly changed conditions, it became necessary that women should be trained in such handicrafts which were commercially profitable to supplement their family incomes. Accordingly, a number of training institutes were created, both in public and private sectors. In 1964, these institutes were transferred to the Education Department, and since then, they are functioning under the administrative control of Directorate of Technical Education. In Pakistan, there are six polytechnics for women with the student enrolment of 400, 34 commercial training centres with 1,600 students and 99 government vocational institutes with 9,938 students. (Table 8.3).

The polytechnics which have been setup by the Women's Division of the Government of Pakistan in collaboration with the Directorate of Technical Education of the provinces, provide training in the fields of electronics, textile, designing and architectural draftsmanship. The training lasts for three years and awards an associate engineer's diploma. Recently, a technical training centre in Karachi has been setup by the Women's Division in collaboration with the Labour Directorate, where females are trained for a certificate course in repairing of domestic appliances, electronics and architectural draftsmanship.

8.2 Teachers and Training.

There are 70 institutions for the training of primary and under-graduate secondary school teachers. Graduate teachers are trained in 12 colleges and three universities. To meet the shortage of trained primary school teachers, untrained matriculates are being recruited as teachers who will be trained in three instalments of five, three and two months' duration. Gradually; the entire training programme will be structured on this pattern which has the advantage of increasing the annual output by 100 per cent.

The Institute of Education, established in 1973 as a part of the Federal Ministry of Education, was taken over by the Allama Iqbal Open University in June, 1975. It was upgraded as a faculty in 1983 with one

TABLE 8.3: Total Number of Formal Training Institutes for Women by Provinces, Category and Enrolment (run by Departments of Education) 1987

	Polytechnic Centres		Commercial Trg. Centres (CTCs)		Govt. Vocational Institutes (GVIs)		Total	
	No.	Enrol-ment	No.	Enrol-ment	No.	Enrol-ment	No.	Enrol-ment
PAKISTAN	6	400	34	1,600	99	9,938	139	11,938
Punjab	3	175	15	375	28	4,512	46	5,062
Sind	2	180	11	1,025	61	4,700	74	5,905
NWFP	1	45	5	125	8	626	14	796
Baluchistan	–	–	3	75	2	100	5	175

Source: Government of Pakistan, Ministry of Education, 1987.

department of Teachers Education. The main purpose of the department is to improve the quality of school education, particularly, at the primary and middle level. However, the department is arriving at high level training programmes—(B.Ed. and above) under the distance learning system. These developments have resulted in an increase in the number of female teachers at all levels between 1975–76 and 1984–85 as shown in the table 8.4.

TABLE 8.4: Increase in the Number of Female Teachers at Various Levels Between 1974 – 75 and 1984 – 85, Pakistan

LEVEL	NUMBERS	
	1974-75	1984-85
Primary	46,600	56,600
Middle	13,600	19,400
High School	16,600	15,000
College (Arts & Science)	3,087	4,869
College (Professionals)	472	544
Universities	296	407

Source: Government of Pakistan, *Economic Survey 1986-87* Economic Adviser's Wing, Finance Division, Islamabad.

8.3 Employment

The main statistical sources in Pakistan which provide information about labour force participation and work participation among the males and females aged 10 years and above are the population censuses and the labour force surveys. The labour force related data in the population censuses give unbelievably low levels of female participation rates but their utility is probably more to give some idea about the trends of participation rates over a number of years. The labour force surveys also do not realistically reflect the proportion of females who are involved in different kinds of economic activities. Such is not the case for males, for whom the majority of those involved in economic activity are covered both in census and labour force surveys. These sex differentials in reporting and coverage are clearly reflected for both urban and rural areas.

The labour force participation rates, in the 1981 Population Census gave the female rate for urban areas as 3.2 per cent and that for rural areas as 2.8 per cent, while for males the corresponding rates were 70.6 per cent and 76.5 per cent for urban and rural areas, respectively. The 2.8 per cent rate for rural areas is impossible due to the much higher involvement of females in different types of economic activities, especially in agriculture-related work as a predominant phenomenon in the village society. Poor coverage in rural areas also strengthens the inference of under coverage in urban areas. The estimate of female labour force participation rate from the Labour Force Survey for 1973–79 was 14.3 per cent for rural areas and 5.3 per cent for urban areas. The corresponding male rates were 80 per cent and 70.3 per cent for the two areas, respectively, which indicates that labour force surveys provided higher estimates not only for females but also for males, though the margin in the latter case was relatively smaller.

Apart from the population census and the labour force surveys, sufficient statistical evidence exists to demonstrate clearly that the female participation rates, even from the labour force surveys were lower than the actual. One evidence is from the sample surveys which were conducted to get the fertility related data from rural and urban areas. These surveys also collected data about their work participation. By definition the work participation rate should be lower than labour force participation rate, because it does not include the segment of females who are seeking work. However, this is a much more realistic measure than the concept of labour force, as it also counts those seeking work. The 1975 Pakistan Fertility Survey gave the estimated work participation of females for urban areas as 15.6 per cent and

With regard to the involvement of females in productive work activities, it has been observed that there is gross under-reporting in the more commonly referred sources of population census and labour force survey. In all, the statistics indicate that a lower number of the female population are involved in various occupations as compared to the male population e.g. it is a well-known fact that a large number of female agricultural workers are not counted in the labour force.

for rural areas as 18.1 per cent. Similarly, the 1984–85 Pakistan Contraceptive Prevalence Survey yields the corresponding estimates for urban and rural areas as 7.9 per cent and 24.6 per cent, respectively. These two surveys clearly show that in rural areas the percentage of females' productive work is much higher than that shown by the labour force surveys. It also shows that the estimates from urban areas, though also higher, are not consistently reflected by similar type of surveys. The urban-rural differentials are, however, clearly shown by both labour force surveys and fertility related surveys.

A further evidence from the Agricultural Censuses of 1972 and 1980 provide a much more realistic reflection of the female labour force participation in the rural-agricultural sector in Pakistan. The 1972 Census of Agriculture gave the work participation rate for females as 39 per cent and for males as 65.5 per cent. The corresponding estimates from the 1980 Agricultural Census were 54.4 per cent for females and 65.4 per cent for males. The male estimates are more or less close to the corresponding estimates from the Labour Force Survey. Whereas, female rates from this source, which have unfortunately not been used or even referred to, for research or planning purposes, are nearer to the expected level. In comparison to these estimates in the rural agricultural sector, the female involvement in productive work activities are grossly under-reported in the more commonly referred sources of population census and labour force surveys. The

TABLE 8.5: Female Work Participation Rates of Pakistan for Urban and Rural Areas Obtained from Censuses and Surveys, 1971–1985

	Source/Year/Period	Urban	Rural
I.	1973 HED	3.6	4.8
	1981 Population Census	3.2	2.8
II.	1971–72 Labour Force Survey	3.7	9.3
	1978–79 -do-	4.6	13.4
	1982–83 -do-	4.1	13.2
	1984–85 -do-	4.0	10.6
III.	1975 Pakistan Fertility Survey	15.6	18.1
	1984–85 Pakistan Contraceptive Prevalence Survey.	7.9	24.6
IV.	1972 Agricultural Census of Pakistan	–	39.0
	1980 -do-	–	54.4

Source: 1. Government of Pakistan, *Pakistan Contraceptive Prevalence Survey 1984-85*, Population Welfare Division, Islamabad.
2. Government of Pakistan, Agricultural Census of Pakistan, 1972, and 1980, Islamabad.
3. Government of Pakistan, Labour Force Surveys, 1971-72, 1978-79, 1982-83, 1984-85, Statistics Division, Islamabad.

highest estimates of female work participation rates from the labour force survey were less than 14 per cent for rural areas which is much below the 1980 estimate of 54.4 per cent given by the Agricultural Census. The female participation rates from different sources are given in table 8.5.

8.3.1 Women in Professions

Data on the number of women in the modern or non-conventional professions are available from the 1981 Census and they are presented in table 8.6. Although a small proportion of Pakistani women participate in the work force, a high percentage of women, particularly in urban areas, are engaged in professional productions, sales and clinical occupations. For example, in urban areas, nearly one-third of working women were engaged in professional jobs. Even in rural areas more than eight per cent of working women were found in professional categories. Women in various professions in Pakistan are as follows:

(a) *Teachers* [5]

Women are:

- 32.11% of the Primary school teachers;
- 32.11% of the Middle school teachers;
- 30.41% of High school teachers;
- 30.41% of Inter-college teachers;
- 30.98% of Degree college teachers;
- 10% of the University teachers.

(b) *Lady Doctors, Dental Surgeons and Nurses* [7]

The number of doctors and dental surgeons reported by the Pakistan Medical and Dental Council in June, 1987, was:

— Total number of lady doctors	8,574
— Total number of Dental Surgeons	277

Province-wise, Number of Lady Doctors.

— Punjab	3,494
— Sind	3,944

TABLE 8.6: Distribution of Female Work Force by Major Occupation Groups by Urban–Rural areas, Pakistan, 1981

Occupational groups	TOTAL		URBAN		RURAL	
	No.	Percentage	No.	Percentage	No.	Percentage
Professional Workers	131,558	15.96	85,041	31.80	46,517	8.36
Administrative Workers	6,580	0.80	4,089	1.53	2,491	0.45
Clerical Workers	28,789	3.49	17,023	6.36	11,766	2.11
Sales Workers	37,287	4.52	19,407	7.25	17,880	3.21
Service Workers	65,474	7.95	41,249	15.42	24,255	4.35
Agriculture Workers	294,891	35.79	8,362	3.13	286,619	51.48
Production Workers	203,033	24.64	65,655	24.55	137,378	14.68
Others	56,459	6.85	26,626	9.96	29,823	5.36

Source: Government of Pakistan, *1981 Census Report of Pakistan*, Population Census Organisation, Statistics Division, Islamabad.

—	NWFP	651
—	Baluchistan	208
	Nurses [9]	5530

(c) *Women in Research & Development:*

There were 2.4 per cent of the existing manpower involved in research and development. There were also 95 female engineers in the country[5]

(d) *Women in Media* [11]

—	Pakistan Broadcasting Corporation	53
—	Pakistan Television Corporation	77
—	Information and Broadcasting	11

(e) *Women in the Government* [12]

	Number	Percent
Federal Government		
Civil Servants	9,152	4.87
Grade 16—22	1,188	0.63
Grade 1—15	7,964	4.24

(f) *Women in Banks*[13]

—	In various positions in banks	1,847
—	The Agricultural Development Bank of Pakistan	60
—	Regional Development Finance Corporation	5

(g) *Women in Police*[12]

—	In various ranks from Inspectors to Constables	382
—	Constables	271
—	Inspectors	20
—	Sub-Inspectors	18

(h) *Women in Social Welfare Sector*[8]

—	Number of women employed in Government sponsored Social Welfare Programmes.	4,000
—	Number of self-employed women.	60,258
	Trainees of industrial homes	2,573

(i) *Women Lawyers*[14]

—	Women lawyers at the Bar in Sind	300
—	Women lawyers in the Punjab	60
—	Lower Courts	40

The above statistics indicate the low profile of the female population involved in various professions and institutions as compared to the male population. Although statistics are not available, but a large number of female graduates merely turn into housewives after their marriage and the knowledge or skills obtained during their education go awaste.

8.4 Health

Improvements in health services are discussed in Chapter 11. However, it is worth mentioning that inspite of increase in the health facilities and trained staff, Pakistan still faces major problems in this sector particularly services relating to women.

The salient health problems of women in Pakistan are as follows:

(i) Infant and children aged under five years due to high fertility and increasing survival rate exert high pressure on women. Pregnant and lactating women are the most vulnerable groups in terms of health and nutrition problems.

(ii) A sex ratio of 111 males per 100 females in Pakistan implies a higher female mortality even if allowance is made for a greater share of male out-migrants. According to the World Bank Development Report, 1984, life expectancy of females at birth in Pakistan is 49 years, while that of

males is 51 years. Although more recent evidence points to an increase in life expectancy, it is expected to be more in favour of males rather than females.

(iii) When the entire population of Pakistan is broken down by sex and age, it is discovered that except for that 0—4 age group, there are more males than females in all other age groups. If taken on face value, this suggests that while there are more female infants to begin with, they suffer higher mortality risks as they grow older.

(iv) According to the Micro-Nutrient Survey of 1978, 17 per cent of pregnant and 20 per cent of lactating mothers suffer from anaemia. Another 37.4 per cent of pregnant and 20.7 per cent of lactating mothers suffer from marginal anaemia.

(v) Accurate statistics on maternal mortality are not available, but it is estimated that there are 6—8 deaths per thousand live births computed largely from hospitals in urban areas. Invariably, the natural death rate in rural areas is considerably higher, the most frequent cause of death being sepsis, haemorrhage and toxaemia of pregnancy. Four out of five deliveries (80 per cent) are attended by untrained traditional birth attendants (midwives—Dais etc.) or elderly women relatives in house or neighbours. Every year, approximately 28,000 mothers die in child birth, meaning, every day about 78 children born alive lose their mothers. Of all deaths of females aged 15—49 years, slightly less than one-third of all deaths are directly or indirectly related to some maternity problem.

Referring to the health sector, there are some improvements in the health services but it seems that todate, pregnant and lactating women are the most vulnerable groups in terms of health and nutrition problems. Every year, approximately 28,000 mothers die in child-birth. Of all female deaths aged 15—49 years, slightly less than one-third of all deaths are directly or indirectly related to some maternity problem.

(vi) Only five per cent of deliveries take place in hospitals and under medical supervision. The most obvious reason seems to be dearth of ready health facilities in rural areas, where only 32 per cent of the population lives within a two-mile radius of any health centre.

(vii) Postnatal care services are negligible, especially in the rural areas. The situation is further aggravated by lack of desire for postnatal care on the part of families.

(viii) Services for advice and assistance in health and antinatal care are only 26 per cent of the total health facilities.

(ix) About one-third of the doctors in the country are women; however, there is an inverse nurse-doctor ratio of 1:4 instead of the other way round as in most developed countries. Only 5,530 nurses were available, while the basic minimum requirement according to the Sixth Five Year Plan was 7,000 nurses, excluding public nurses or those qualified in specialised fields like cardiothoracic surgery, psychiatry etc.

8.5 Policy Implications.

The additional inflow of female labour force during 1983—88 is given in table 8.7. This will add valuable human resources provided they are used. The expansion of women's access to varied means of development involve funds, policy making machinery, infra-structure and above all management of projects.

TABLE 8.7: Additional in-flow of Female Labour Force in the Labour Market during the Sixth Five Year Plan period, 1983–88.

Province	Female Labour Force in 1983 (in 000s)	Female Labour Force in 1988 (in 000's)	Additional inflow of Labour Force during 1983–1988 (in 000's)
PAKISTAN	3,340	3,740	400
Punjab*	2,211	2,476	265
Sind*	587	658	71
NWFP*	405	453	48
Baluchistan*	137	153	16

*The provincial break down has been prepared on the basis of the provincial share of 1981 Census report

Source: Government of Pakistan, Planning & Development Division, Islamabad.

In Pakistan some progress has been made in all these areas needed for expanding women's accessibility to benefits of development in various sectors. The management of projects, however, involving immediate correction of the problems based on continuing assessment of realisation of project objectives of realities leading to re-definition of project objectives, needs greater attention. It is non-effective or poor management of projects which explains slower implementation of even the most viable projects for women's development. Efforts made in other areas for expanding women's accessibility to means of development are mentioned below:

(i) *The Women's Division came into existence in 1979 as a result of the request made at the international seminar held by Pakistan Federation* of Business and Professional Women in October, 1978. The Division, thereafter, was placed in the Cabinet Secretariat.

(ii) Rs. 93.41 million for the Women's Division's development programme, Rs. 153.44 million for the Women's Special Action Programme and Rs. 0.7 million for research on women had been allocated to the Women's Division of the Government of Pakistan during the financial year 1986–87.

With the funds made available for women's programmes by the Government, a change is coming about in the private sector by way of expansion of programmes (training, education, income generation, social welfare, rural uplift, health, employment and introduction of innovative schemes) which are directed to prepare women as beneficiaries and agents for change. Under these areas, more than 5,553 different development *projects are being financed by Women's Division during 1986–87 (Table 8.8).*

The funds have made it possible for the Non-Governmental Organisations (NGOs) to introduce new schemes under the sponsorship of the Special Women Action Programme for which, as stated earlier, Rs. 153.744 million have been provided todate as stated earlier. However, 184 schemes have been approved for the following sectors:

TABLE 8.8: Development Projects of Women's Divisions, 1986 – 87

No.	Projects	Total
1.	Adult literacy	1,478
2.	Health	105
3.	Income Generation	1,972
4.	Technical Education	137
5.	Agro-Based Training	67
6.	Rural Uplift	1,356
7.	Social Welfare	210
8.	Physical Planning	215
9.	Miscellaneous.	13
		5,553

Source: Government of Pakistan, Women's Division, Islamabad.

Mobile dispensaries, Training in income generating skills, Vocational training, Maternity centres female wards, Rural uplift, Women's hostels, Legal Aid for women etc.

Institutionalisation of research on women has brought them into focus of scientific inquiry. Research Wing of the Women's Division has generated a cadre of 42 social scientists, both men and women interested in research on the conditions and problems of women. About 100 field investigators have been trained by them during the execution of the studies. This is emergence of the discipline of women's studies. These studies and workshops have made a large number of important and far-reaching recommendations for increasing women's participation in development. Results of research have been utilised in the preparation of policy documents and projects for women and key papers for national and international conferences.

In addition, several national conferences are organised on the subjects of education, health, local government, Muslim women, Non-Governmental Organisations, science and technology and development of media to create greater awareness of women's problems. Besides this, women's committees at various levels have been constituted for providing advisory services.

Protection of women's rights is the chief concern of the Women's Division for which it has to make persistent efforts to influence administrative policies and legislative measures. The Division also receives petitions from women related to diverse problems which show the absence of satisfactory apparatus at the local level prompting them to approach the Federal Government. This is an important gap which needs to be filled. Planning and Development Division, Government of Pakistan, had setup a working group comprising a cross-section of women from all the provinces and regions to discuss and recommend inputs for the Sixth Five Year Plan. These recommendations to a large extent had formed the basis of an exclusive chapter on women and development in the Sixth Five Year Plan, which was added for the first time in the Government Plan. A similar committee has been setup to suggest programmes for women which should be included in the Seventh Five Year Plan.

The Pakistan Commission on the Status

Some progress has been made in various areas and efforts are being made for expanding women's accessibility to benefits of development in various sectors. The Government has given due recognition to the funds, policy-making machinery, infrastructure and above all management of projects needed for such expansion through the establishment of Women's Division and activising NGOs. With the funds made available for women's programmes by the Government, a change is expected to come about gradually by way of expansion of programmes in training, education, income generation, social welfare, rural uplift, health employment and introduction of innovative schemes—all directed to prepare women as beneficiaries and agents of change.

of Women was setup in January 1984 to investigate the present status of women in all the sectors and to recommend for equality of women in legal, political, economic, social and cultural spheres. The Commission which deliberated for a year, had prepared a report containing more than 300 recommendations which are being examined by various ministries/divisions/departments in terms of administrative and financial implications for implementation.

Since the Women's Division alone could not undertake all the work required for women's uplift, the Division has been involving other ministries and departments to accelerate its programmes. Setting up of committees on women in various aspects of development in various national commissions has also become quite common which augurs well for women's uplift.

The Sixth Five Year Plan for the first time included a chapter on Women's Welfare. The plan provided for accelerated opportunities for women's education at all levels, especially primary education, taking education to the door steps of the masses, especially in the rural areas through a network of primary and mosque schools and an expansion and improvement in secondary education giving it a more scientific basis. Stress was also laid on vocational and technical education. Proposals had also been made to involve local bodies in the expansion of primary education thus, ultimately leading to eradication of illiteracy.

The Sixth Plan, in fact included measures related to women not only to increase their employment in traditional women's occupations like nursing and teaching but also open opportunities in other areas like small industries, electronics, government and the corporate sector, provision of daycare for children of working women, welfare of working women through the provision of facilities at the place of work and agricultural fields.

As a result of the proposal in the plan, instructions have been given to all Research and Development (R & D) organisations working under the umbrella of Ministry of Science and Technology to recruit more and more women scientists in their establishment.

Effort is being made to appoint qualified and talented women scientists in the country on standing Advisory Committees, working groups, discussion panels and consultative teams on various disciplines of the science and technology sector to give them a sense of participation and involvement in the national development effort.

Also, a plan is being prepared to provide women with opportunities to work on part time basis in some of the production facilities which are being setup in technological areas in major scientific, Research and Development organisations and industry.

To bring the benefits of modern science and technology to rural women, a number of appropriate technologies are being developed to improve their domestic environment and also provide them with some work for their livelihood.

There is no doubt that women's development is being stressed in all the government plans. But it seems the efforts to formulate policy measures are not matched by the thrust of implementation. At present, the issues before the experts and policy-makers are analysis, prioritisation and tenacity.

There is a definite need to find out at what pace the policy measures are considered for implementation. What factors retard implementation? What new priorities have been added in the annual plans? To what extent priorities were redefined on the basis of research and needs assessment, and as a result what policies have been formulated? What difference the ongoing plans have made on the literacy rate for women? What has been the impact of health measures in reducing maternal mortality and infant-child

mortality? Have the measures for employment and career development increased the employment rate for women or opened new avenues for women's careers? These questions and their answers is the key to development of women in Pakistan and raise their status to equal partners in progress.

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THE DISABLED POPULATION

Disabled persons are those who suffer from physical or mental defects whether congenital or acquired which keep them away from ready participation in normal routine day-to-day activities. Typical of these are the blind, deaf and dumb, crippled, mentally retarded, insane and others like multi-handicapped.

Paucity of reliable data, particularly in social sectors, is a problem commonly shared by the developing countries. In Pakistan, lack of comprehensive data on the prevalence and magnitude of impairment and disability, and an effective system of information collection and retrieval, continue to be a major lacuna. The importance of reliable data cannot be over-emphasised because unless the magnitude of the problem is determined, no large scale, effective measures can be evolved to deal with the problems in the long-run.

Global estimates indicate that at least one child in ten is likely to be born with, or acquire a serious physical or mental impairment. In Pakistan, data on disabled persons were collected in 1961, 1973, 1981 Censuses and 1986 Survey. Though the data collected through these censuses and survey provided some information, but it could not be fully relied upon for developing a comprehensive plan for the welfare and rehabilitation of disabled persons. This may be due to misreporting or hesitation to disclose correct information on disabled persons by the respondents. Strenuous attempts, however, are being made to correctly interpret the data available on the disabled as the Government now is taking a keen interest in the subject which had been ignored for a long time.

The 1961 Census, for the first time revealed, that 0.136 million people constituting 0.3 per cent of the total population were disabled[1]. The information was collected only on the blind, crippled, and deaf and dumb persons. In 1973, the number of disabled persons increased to 1.257 million constituting 1.9 per cent of the total population[2]. On the basis of this information, it was observed that 67 per cent of males and 33 per cent of females were disabled. Seventy three per cent of the total disabled belonged to the rural areas of the country. In 1981, the number of disabled persons declined considerably to 0.37 million, or 0.4 per cent of the total population[2]. The proportion for males and females significantly changed to 45 per cent and 55 per cent respectively. Almost the same ratio was observed in the provinces. Percentage of the disabled, living in rural areas of the country, increased to 79[2].

These sharp differences from census to census show either fluctuations in coverage or changes in definitions from time to time. The observed discrepancies, nevertheless, indicate the need for standardising the definitions and carrying out national surveys on the basis of these definitions within the international framework of definitions of various types of disabilities. These inconsistencies, however, need to be removed before the 1991 census is conducted, so as

to collect the correct information on the disabled population. In any case, the enormity of the problem remains and measures need to be taken to solve them. The detailed description of the disabled population by nature of disability is discussed in this section on the basis of the available data.

9.1 The Blind

Table 9.1 and figure 9.1 indicate that in the 1961 Census, 44 per cent of the total disabled population was reported as blind. The proportion of males and females was observed to be 53 and 47 per cent respectively. In the 1973 Census, the proportion of blind persons declined from 44 per cent to 21 per cent but with a significant increase in blind males, estimated to be around 65 per cent. According to the 1981 Census, the proportion of the blind persons increased to 30 per cent with 33 per cent males and 67 per cent females. As is evident from table 9.2, the proportion for urban and rural areas was observed to be 72 and 28 per cent respectively, in 1973. About 81 per cent of the total blind belonged to rural areas and 19 per cent to urban areas in 1981.

TABLE 9.1: Percentage Distribution of Disabled Persons by Nature of Disability and Sex, Pakistan, 1961, 1973, and 1981

Nature of Disability	1961	1973	1981
All Disabled	(100)	(100)	(100)
1. Blind			
Both Sexes	44 (100)	21 (100)	30 (100)
Male	53	65	33
Female	47	35	67
2. Deaf & Dumb			
Both Sexes	26 (100)	37 (100)	13 (100)
Male	62	68	39
Female	38	32	61
3. Crippled			
Both Sexes	30 (100)	21 (100)	18 (100)
Male	65	71	51
Female	35	29	49
4. Mentally Retarded			
Both Sexes	–	–	10 (100)
Male	–	–	54
Female	–	–	46
5. Insane			
Both Sexes	–	–	6(100)
Male	–	–	55
Female	–	–	45
6. Others			
Both Sexes	–	21 (100)	23 (100)
Male	–	65	50
Female	–	35	50

Source:

1. Government of Pakistan, *Population Census of Pakistan 1961, Vol. 3*, Ministry of Home and Kashmir Affairs, Home Affairs Division, Karachi.
2. Government of Pakistan, *Hand Book of Pakistan Census data*, Population Census Organisation, Statistics Division, December 1985, Islamabad.

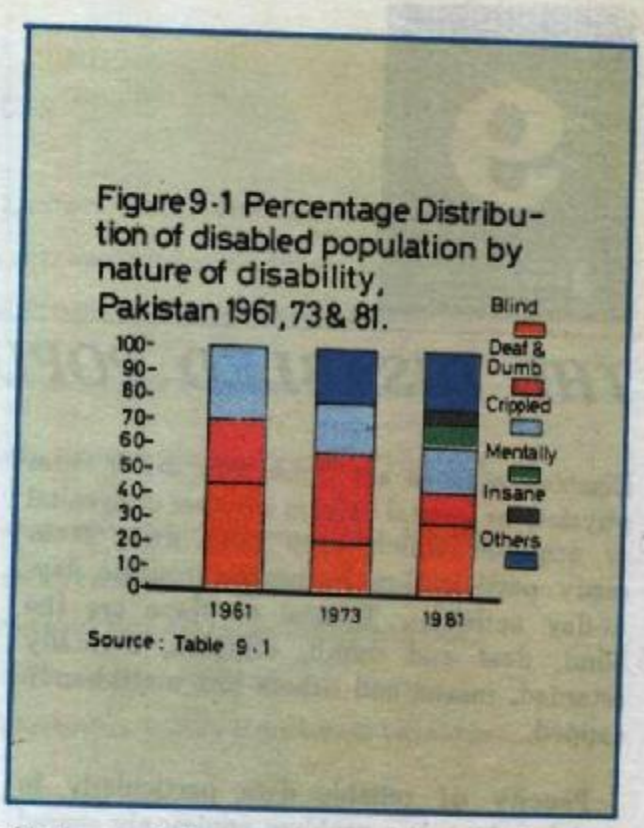

Figure 9.1 Percentage Distribution of disabled population by nature of disability, Pakistan 1961, 73 & 81.
Source: Table 9.1

Table 9.3 shows the per cent distribution of the disabled population by province in the 1973 and 1981 Censuses. The table indicates that the population of blind persons was higher in the Punjab (63%), followed by Sind (21%), NWFP (11%) and Baluchistan (5%) in 1973, while in the 1981 Census, it was noted that 58 per cent of the total blind were living in the Punjab followed by Sind (23%), NWFP (13%), and Baluchistan (6%).

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Male	62	68	39
Female	38	32	61
3. Crippled			
Both Sexes	30 (100)	21 (100)	18 (100)
Male	65	71	51
Female	35	29	49
4. Mentally Retarded			
Both Sexes	–	–	10 (100)
Male	–	–	54
Female	–	–	46
5. Insane			
Both Sexes	–	–	6(100)
Male	–	–	55
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6. Others			
Both Sexes	–	21 (100)	23 (100)
Male	–	65	50
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Source:-

1. Government of Pakistan, *Population Census of Pakistan 1961, Vol. 3*, Ministry of Home and Kashmir Affairs, Home Affairs Division, Karachi.
2. Government of Pakistan, *Hand Book of Pakistan Census data*, Population Census Organisation, Statistics Division, December 1985, Islamabad.

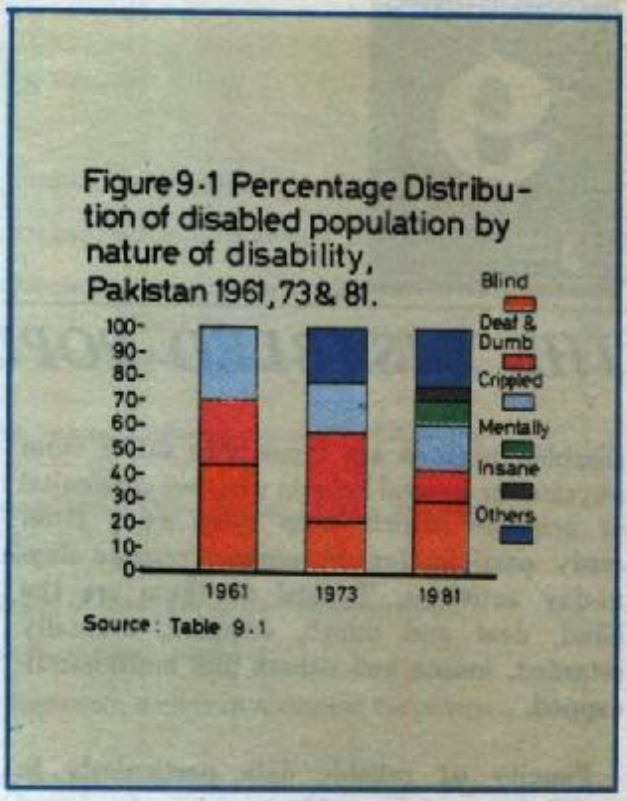

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TABLE 9.2: Percentage Distribution of Disabled by Nature of Disability and Urban–Rural Areas, Pakistan 1973 and 1981

Nature of Disability	1973			1981		
	Total	Urban	Rural	Total	Urban	Rural
All Disabled	100	27	73	100	21	79
1. Blind	100	28	72	100	19	81
2. Deaf & Dumb	100	25	75	100	21	79
3. Crippled	100	29	71	100	21	79
4. Mentally	–	–	–	100	31	69
5. Insane	–	–	–	100	24	76
6. Others	100	29	71	100	17	83

Source: Government of Pakistan, *Hand Book of Population Census Data*, Population Census Organisation, Statistics Division, December 1985, Islamabad.

9.2 Deaf & Dumb

Information about deaf and dumb persons was collected for the first time in the 1961 Census and was recorded as 26 per cent of the total disabled population in the country. Out of the total deaf and dumb persons, 62 per cent were males and 38 per cent females. In the 1973 Census, the proportion of deaf and dumb persons increased to 37 per cent with a ratio of 68 and 32 per cent for males and females respectively. The proportion of deaf and dumb persons significantly declined from 37 to 13 per cent of the total disabled population in 1981 with a noticeable increase in the proportion of female deaf and dumb from 32 to 61 per cent over the period 1973–81 (Table 9.1).

While considering the percentage distribution of deaf and dumb persons by urban-rural areas, it was observed that 75 per cent of the total deaf and dumb were living in rural areas in 1973, where as, their proportion rose to 79 per cent in 1981 (Table 9.2).

With respect to the provincial distribution of deaf and dumb persons in 1973, it was observed that the proportion was the highest in the Punjab (76%) followed by Sind (13%), NWFP (7%), and Baluchistan (4%). In 1981, the proportion was the highest in the Punjab (61%) followed by NWFP (19%), Sind (15%), and Baluchistan (5%) (Table 9.3).

9.3 Crippled

The proportion of the crippled was recorded to be 30 per cent of the total disabled persons in 1961, which gradually declined to 21 per cent in 1973 and 18 per cent in 1981. The proportion of crippled males remained higher than females over the period 1961–81 (Table 9.1). Seventy one per cent of the crippled persons had been living in the rural areas in 1973 while this proportion rose to 79 per cent in 1981. On the other hand, in the urban areas, their proportion declined from 29 per cent to 21 per cent over the period 1973–81 (Table 9.2).

Considering the provincial distribution, it was observed that the highest per cent of crippled persons was residing in the Punjab (80%) followed by Sind (10%), NWFP (8%), and Baluchistan (2%) in 1973. In 1981, the per cent of crippled persons living in the Punjab declined to 62 per cent while the per cent increased in all other provinces: NWFP (20%), Sind (14%) and Baluchistan (4%) (Table 9.3).

9.4 Mentally Retarded

Information on mentally retarded persons was neither collected in the 1961 Census nor in 1973. However, data on mentally retarded persons were collected for the first time in 1981 and it was observed that 10 per cent of the total disabled were mentally retarded. Fifty four per cent of these were males and 46 per cent females (Table 9.1). Sixty nine per cent of the total mentally retarded were living in rural areas, whereas their proportion in urban areas was recorded as 31 per cent (Table 9.2). The proportion was observed to be the highest in the Punjab (63%) followed by Sind (18%), NWFP (15%) and Baluchistan (4%) (Table 9.3). In this regard, it should be remembered that respondents are reluctant to report mentally retarded persons, and as such, under-enumeration would always give a distorted picture.

9.5 Insane

In 1981, the number of insane persons was recorded as 23,808 persons, constituting six per cent of the total disabled persons. The information on this kind of disability was never collected before. It was observed that out of the total insane persons, the proportion of males was higher than females with a ratio of 55 to 45 respectively (Table 9.1). Seventy six per cent of the total insanes were living in rural areas whereas their proportion in urban areas was recorded as 24 per cent (Table 9.2). With regard to the provincial distribution, it was observed that 52 per cent of the total insanes belonged to the Punjab followed by Sind (22%), NWFP (19%), and Baluchistan (7%) (Table 9.3). These figures, again may be on the lower side as households prefer not to report insane persons in the family.

9.6 Others

The disabled, like the multi-handicapped or those who are not physically fit for active participation in day-to-day routine activities or suffering from any nature of disability other than those discussed before were placed under the category of "others". It was observed that such like persons constituted 21 per cent of the total disabled persons in 1973, while their proportion increased to 23 per cent in 1981 (Table 9.1). The per cent of the disabled residing in rural areas increased from 71 to 83 per cent over the period

TABLE 9.3: Percentage Distribution of Disabled Persons by Nature of Disability and Provinces, Pakistan, 1973 and 1981

Year	1973					1981				
	Total	NWFP	Punjab	Sind	Balu-chistan	Total	NWFP	Punjab	Sind	Balu-chistan
1. Blind	100	11	63	21	5	100	13	58	23	6
2. Deaf & Dumb	100	7	76	13	4	100	19	61	15	5
3. Crippled	100	8	80	10	2	100	20	62	14	4
4. Mentally Retarded	–	–	–	–	–	100	15	63	18	4
5. Insane	–	–	–	–	–	100	19	52	22	7
6. Others	100	15	55	27	3	100	21	50	18	11

Source: Government of Pakistan, *Hand Book of Population Census Data*, Population Census Organisation, Statistics Division Islamabad.

1973–81 (Table 9.2). Their per cent, however, was the highest in the Punjab (50%) followed by NWFP (21%), Sind (18%) and Baluchistan (11%) in 1981 (Table 9.3).

In 1986, a pilot project for the "Census of All Categories of Disabled Persons" was undertaken by the Directorate General of Special Education in Rawalpindi and Islamabad cities. According to this survey, a prevalence rate of 2.6 per cent has been estimated from the surveyed population of almost two million persons.

Table 9.4 indicates that the physically handicapped persons constituted the largest category at 33 per cent, followed by mentally retarded at 21 per cent. This was closely followed by multiple handicapped at 19 per cent and visually handicapped at 15 per cent. Victims of hearing impairment were about nine per cent of the sample. Table 9.4 further indicates that the proportion of the disabled was higher in urban areas, estimated to be 67 per cent as compared to 33 per cent in the rural areas. It is further observed that children below the age of 14 years, constituted an extremely high proportion of 43 per cent of the total identified disabled persons. However, the percentage distribution of disabled persons by sex demonstrates the proportion of males at 61 per cent which was higher than females at 39 per cent [3]. Although this survey was limited to only two cities, it does reflect the magnitude of the problem.

9.7 Causes of Disability

The causes of disability are numerous and complex. Some of these are congenital, while others are due to inadequate health care, malnutrition, illiteracy, poverty and an environment rampant with infections. Some common causes of various disabilities are as follows:—

a. Vitamin deficiency in mothers and children due to malnutrition.
b. Prenatal or perinatal abnormalities.
c. Infectious diseases.
d. Accidents occurrence.
e. Certain environmental pollution.

Beside the above listed causes, in certain areas, mineral deficiency is a major cause of disability as well. On the basis of the results of a recent WHO report on Iodine

TABLE 9.4: Percentage Distribution of Disabled by Nature of Disability and Urban–Rural Areas of Rawalpindi and Islamabad Cities, 1986

Nature of Disability	Total	Urban	Rural
All Disabled	100	67	33
1. Visually Handicapped	15	15	15
2. Hearing Impaired	9	7	12
3. Mental Retardation	21	21	20
4. Physically Handicapped	33	34	32
5. Multiple Handicapped	19	19	18
6. Not Reported	3	4	3
Total:	100	100	100

Source: Government of Pakistan, *Census of Disabled Persons*, Directorate General of Special Education, 1986, Islamabad.

Deficiency in Pakistan, it has been estimated that seven million people are affected by iodine deficiency including five per cent moderately or severely handicapped persons with endemic cretinism. Fourteen thousand still births in addition to children who die within the first month of life are mostly due to iodine deficiency. A high prevalence rate of iron deficiency in women is estimated to be over 60 per cent of all pregnant women, leading to further complications of low-birth weight, infection, malnutrition, diarrhoea and death.

Accidents and polio are two subsequent causes of physical disability. While polio is being significantly controlled by the National Immunisation Programme, accident prevention requires a more complex and intersectoral intervention. Occurrence of day to day accidents on roads, in industrial units, farms and homes due to increased mechanisation is a major contributory factor in the increase of physically handicapped persons. Majority of these victims fail to receive sufficient medical and orthopaedic treatment, partly due to inadequate health facilities and lack of information about treatment, which leads to the development of various disabling deformities.

9.8 Prevention of Disability

There are effective and low-cost methods and strategies to overcome preventable disabilities. Immunisation against the six communicable diseases can reduce blindness and deafness. Training of Traditional Birth Attendants (TBAs) in safe and hygienic delivery, can significantly reduce cerebral palsy and mental handicaps. Maternal nutrition, probably the most important cause of disability, if removed, can have a significant impact on the reduction of preventable disability, like mental retardation. Alongwith this is the control of ruebella in pregnant women, which leads to deafness and mental disabilities. Control of iodine deficiency would ensure the eradication of irreversible cretinism currently affecting more than 600,000 persons mostly prevalent in northern areas of the country.

9.9 Government Policy and Targets

A very comprehensive policy for detection, rehabilitation and prevention of the disabled has been recently issued by the Government of Pakistan.

The National Health Policy of the country has ensured that priority will be given to the most vulnerable groups stated below:—

a. Expecting and lactating mothers and the children.
b. Universal childhood Immunisation.
c. Training of Traditional Birth Attendents (TBAs).
d. Prevention of nutritional deficiencies, like iron and iodine.
e. Minimisation of low-birth weight babies.
f. Establishment of comprehensive school health services.
g. Maternal and child health services.
h. Training of Traditional Birth Attendants (TBAs).
i. Provision of services for mental health care.

It is a matter of fact that the issue of nutritional improvement has not yet been fully addressed and requires serious attention as the nutritional status of mothers and children is the fundamental cause of most disabilities.

9.9.1. *Detection*

For early detection of disability, National Policy refers the establishment of the National Institute for the Handicapped and school health programmes. The Institute will concentrate on research, training and identification of low-cost appropriate detection techniques and their applications.

The establishment of a National Trust for the Disabled has also been recommended in

the Government Policy, which will be totally independent, both in programme and financial control.

It would receive funds from special government endowments, Zakat Foundation and international agencies, as well as from the public sector.

9.9.2. *Rehabilitation*

In recent years, the Government has been taking keen interest in the rehabilitation of the disabled, the ever neglected sector, realising the fact that a handicapped child is not an isolated being, but part of an important unit of the society which is a family. Families who have handicapped children are struggling under a burden which nobody is willing to share beyond a limit, and under this burden, the effectiveness of the family as a constructive unit of the society is reduced considerably.

For rehabilitation of the disabled, the Ministry of Health, Special Education and Social Welfare reorganised the wing of Special Education in 1985 and designated a director general to head the department. This has led to a significant administrative progress.

9.9.3. *Prevention*

Preventive measures stated above are called direct preventive methods which are being implemented by the Government in different areas concerned. The indirect measures, however, are dependent on the increase in literacy, income and promotion of knowledge on health and hygiene amongst the public.

Thus, for prevention of disability, national policy lays special emphasis on immunisation, the control of diarrhoeal diseases, maternal nutrition and community health, and hygienic practices through improved information and advocacy.

9.9.4. *Targets*

It has been estimated that there will be 4.6 million children by the year 1992, who would be considered disabled in the age group 5—14 years. A target has been established to enrol at least 917,000 children into "normal" primary schools, while 90,000 children shall be provided with special education facilities by the year 1992, noting that in 1986, only 7,000 children had access to such facilities.

In the area of training, the targets are even more ambitious, both for early detection and rehabilitation. The number of trained teachers required by 1992 is 9,000 for special schools and 45,000 for integrated schools. To meet this requirement, the policy suggests that all B.Ed and M.Ed degree courses must include a course on Special Education for handicapped children.

9.10 Conclusion

The problem of handicapped persons cannot be tackled without a comprehensive plan, covering both the preventive and rehabilitative aspects of disabled persons. The policy of the Government is in the right direction, but it is felt that it will affect more the younger population than the older disabled persons. There is a growing realisation that the attitude of the society towards the disabled not only needs to be changed but also conscious efforts be made to provide them with opportunities of becoming useful citizens. For this purpose, the Non-Governmental Organisations (NGOs) should be encouraged to convince the members of the society that the disabled persons deserve to become useful citizens and their presence in the family is not a matter of shame. It is understandable that such a calamity can befall any member of the family and such as, a compassionate attitude should be developed, accommodating the disabled persons as equal members of the society.

As mentioned earlier, thorough surveys

on the disabled with standardised definitions are required so that the fluctuating figures derived from various censuses and surveys could be reconciled. The census can be a one time effort by an agency like the Census Organisation.

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PART 2

POPULATION GROWTH AND THE PERFORMANCE OF THE SOCIAL AND ECONOMIC SECTORS

POPULATION GROWTH AND EDUCATIONAL DEVELOPMENT

10.1 Education and Development

Education has long been recognised as the central element in development. It is vital investment for any human resource development and for upgrading the quality of manpower. It is therefore, considered to be the most powerful factor for any socio-economic development and welfare of a society and the country as a whole.

Education is a basic human need and Islam particularly lays great emphasis on acquiring education. It is essential for people to acquire a broad base of knowledge, attitudes, values and skills on which they can build a sound future for their country. Education provides people with the potential to learn, respond to new opportunities, adjust to social and cultural changes occurring round the world and participate in the political, cultural, and social activities within the cultural milieu of an Islamic society.

Education is used as a means of meeting other basic needs in the society, such as, adequate nutrition, safe drinking water, health and housing and in reducing the incidence of disease. Improvement in nutrition, infant and child mortality, productivity and income also depends on the level of attainment of education.

Education prepares and trains skilled workers at all levels to manage capital, technology, services and administration in every sector of the economy. Development programmes are also successfully implemented if they are accompanied by adequate human knowledge and skills.

It has been empirically observed that education encourages rapid socio-economic advancement of a country. Here, the examples of Japan and Republic of Korea are worth mentioning. Japan, inspite of having a population larger than that of Pakistan, made advancement in all fields of socio-economic and scientific development through the skill development of its labour and overall educational attainment of its population. Republic of Korea, in recent years, has also accelerated its advance in all spheres of development, mainly due to high and universal educational attainment and human resource development. It is because of this strategy that Korea could raise its per capita income from US $82 in 1952 to more than US $ 2,500 as of todate.

Education in Pakistan is one of the neglected sectors as compared to many other countries which needs immediate attention for quick development and better future of its people. The country's literacy ratio and school enrolment rates are among the lowest in the world. With 26.2 per cent literacy ratio in 1981, Pakistan is placed at 111th position among 125 countries of the world. To increase the literacy rate in the country, emphasis will have to be placed on both the improvement in quality and expansion of the education system at the primary and lower secondary levels. For the improvement of quality, serious efforts are needed to be focussed on the provision of teaching materials, teachers' training and more flexible curricula.

In contrast to this, Pakistan during the corresponding period, could only raise its per capita income from US $79 in 1952 to not more than US $380 todate. This has been *inter alia*, mainly due to the low level of literacy and educational attainment in the country beside other factors [4].

It is basically education which changes the attitude and behaviour of the people towards modernisation and the quality of life in general. Education helps to overcome poverty, increase income, improve health and nutrition and reduce family size. Therefore, its relationship to population growth cannot be underestimated[4].

The educational base in Pakistan has been quite weak since British days and has remained consistently so for most part of the past four decades. The education sector has been severely neglected which is evident from the fact that literacy and school enrolment rates in the country are among the lowest in the world, even when compared with other developing countries. Little progress has been made in this sector, particularly during the period 1970—82, as educational expansion has barely kept pace with the rapidly increasing school-age population. The accelerating population coupled with this very low educational attainment, particularly of females, if not checked immediately, will become a serious constraint to the country's socio-economic development in future.

10.2 Literacy Level

With a 26 per cent literacy rate recorded in the 1981 Census, Pakistan ranked 111th among 125 countries of the world. Table 10.1 and figure 10.1 indicate that Pakistan ranks almost at the bottom alongwith Bangladesh, even among the developing countries of the world and the nine countries listed in the table. Several countries like Tanzania, Somalia and Zimbabwe, which were far behind Pakistan in literacy a few year ago have now excelled in this field, their literacy rates have increased

TABLE 10.1: Literacy Rates in Low and Middle Income Countries and Selected Developing Countries, 1980

Countries	Literacy Rates
DEVELOPING COUNTRIES	
Low Income	52
Middle Income	65
SELECTED COUNTRIES	
Pakistan	24 (26)
India	36
Bangladesh	26
Sri Lanka	85
China	69
Indonesia	62
Malaysia	60
Philippines	75
Egypt	44

Note:-Figure in parenthesis relate to 1981 Census.

Source: World Bank, *World Development Report, 1983*, Washington D.C., U.S.A.

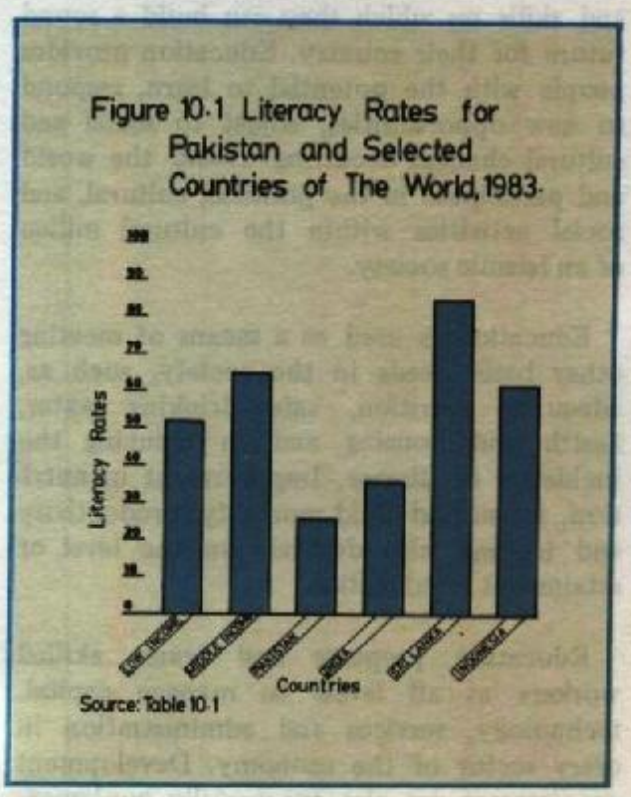


TABLE 10.2: Total Population and Population 10 Years and Above, Number of Illiterates, Literates (10 years and above) Literacy Rates, Per cent Intercensal Increase and Average Annual Growth Rates by Sex, Pakistan, 1951–1981

(Population in thousands)

Year	Total Population	Population 10 years and above	Number of Illiterates (10+)			Number of Literates (10+)			Literacy Rates (10+)		
			Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
									%	%	%
1951	33,740	22,712	20,259	10,588	9,671	4,417	2,861	1,556	17.9	21.3	13.9
1961	42,880	26,513	22,084	10,794	11,290	4,428	3,617	811	16.7	25.1	6.7
1972	65,309	42,379	33,598	16,307	17,291	9,319	7,045	2,274	21.7	30.2	11.6
1981	84,254	56,339	42,690	20,038	22,652	15,155	10,838	4,317	26.2	35.1	16.0
			Intercensal Increase and Average Annual Growth Rate (in parenthesis)								
1961–72	52.3 (3.7)	59.8 (4.1)	52.1 (3.7)	51.1 (3.6)	53.2 (3.7)	110.5 (6.6)	94.8 (5.9)	180.4 (9.3)	(2.3)	(1.6)	(4.8)
1972–81	29.0 (3.1)	32.9 (3.4)	27.1 (2.9)	22.9 (2.5)	31.0 (3.2)	62.6 (5.9)	53.8 (5.2)	59.8 (7.9)	(2.3)	(1.8)	(3.9)
1961–81	96.5 (3.4)	112.5 (3.8)	93.3 (3.2)	85.6 (3.1)	100.6 (3.5)	242.3 (6.2)	199.6 (5.6)	432.3 (8.7)	(2.3)	(1.7)	(4.4)

Note: The high literacy rate in the 1951 Census has been due to different definitions as compared with subsequent Censuses. In 1951, all those who could read the Holy Quran were considered literates. That is why the proportion of female literates was high (13.9%) in 1951 compared with succeeding censuses and female literacy rate declined to almost half in 1961.

Source: Government of Pakistan, *Hand Book of Population Census Data*, Population Census Organisation, Statistics Division, Islamabad.

beyond 60 per cent[6]. It is a matter of serious concern that even after 40 years of Independence, the literacy rate in the country is still so low. This issue needs due recognition and top priority by the Government so that illiteracy may be eliminated from the country. The High Priority Development Programmes of Pakistan, thus accord priority to literacy and education which is a step in the right direction. But, in addition, greater attention has to be given to formal education so that the future generation is educated properly rather than only being literate.

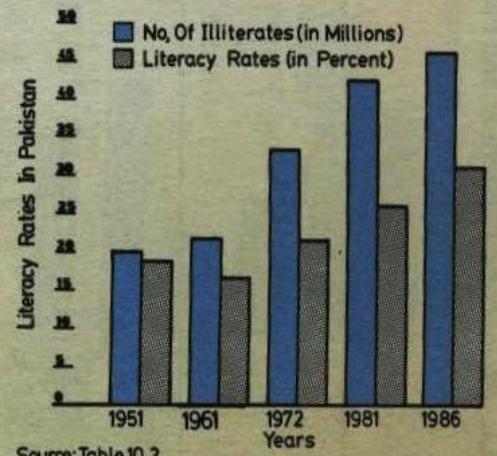
Literacy rate for the population 10 years and above as indicated in table 10.2 and figure 10.2 had risen in the country from 16.7 per cent in 1961 to 26.2 per cent in 1981. Male literacy rate during the corresponding period increased from 25.1 to 35.1 per cent and female literacy rate increased from 6.7 to 16.0 per cent, but female literacy in the rural areas remained dismally low at 7.3 per cent (Table 10.3). During the 1961–81 intercensal period, the population in the country almost doubled from 42.9 million in 1961 to 84.3 million in 1981, showing an increase of 96.5 per cent. As can be seen from the table, the population aged 10 years and above increased by 113 per cent and the literate population (10 years and above) increased two and half times i.e. 242 per cent during the 1961–81 period. On the other hand, the number of illiterate persons increased by 93 per cent primarily due to high population growth rate. Although the average annual percentage increase in literates during the period 1961–81 has been quite high (6.2%) compared with the increase in the number of illiterates (3.2%). During the same period, the number of illiterates almost doubled, increasing from 22.1 million in 1961 to 42.7 million in 1981 (Table 10.2). This took place inspite of the fact that the number of literates increased from 4.4 million in 1951 to 15.1 million in 1981. This is due to the fact that the annual literacy rate increased in 1961–81 at the rate of 2.3 per cent per annum compared with 3.4 per cent growth rate of the population.

Literacy rates by sex, urban and rural areas and provinces of the country for the period 1961–81 are given in table 10.3 and figures 10.3 and 10.4. According to the table, the gap between male and female literacy rates, both in the country as well as the provinces has narrowed down. The same trend is observed in both urban and rural areas. Although the difference in the literacy rates of urban and rural areas narrowed down for both sexes over the period 1961–81; there were still large variations in literacy ratios in 1981 from 55.3 per cent for urban males to a distressingly low 7.3 per cent for rural females. There are also large variations in the literacy rates of the provinces. Sind has the highest literacy rate (31.4%) followed by the Punjab (27.4%), NWFP (16.7%), and Baluchistan (10.3%). The lowest literacy rate in the country is observed for females of rural Baluchistan where it was recorded as only 1.7 per cent.

10.3 Current Educational Attainment

Table 10.4 shows the educational attainment of the population aged 10 years and above by

Figure 10·2 Number of Illiterates (persons 10 years and above) and Literacy Rates, Pakistan, 1951-86.



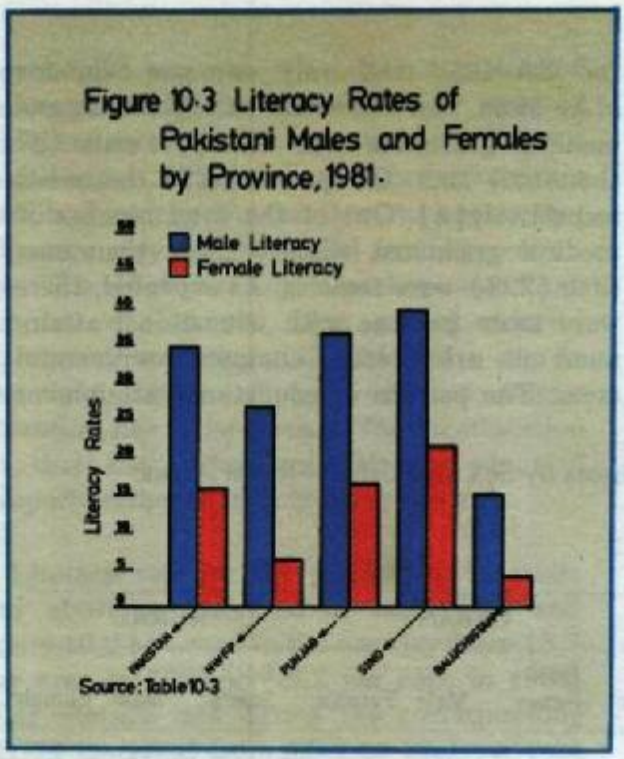
Source: Table 10·2

sex and urban-rural areas in 1981. According to the 1981 Census, there were 13 million people who had reported some level of educational attainment. Of these, 5.9 million (45%) had passed primary education (69% males, 31% females), 23 per cent had passed middle level (75% males, 25% females), and 20 per cent had passed Matric (78% males, 22% females). After Matric, the percentage falls to six per cent for Intermediate, four per cent for BA—B.Sc and only one per cent for MA—M.Sc. The percentage of engineering and medical graduates was 0.3 per cent (37 thousand) and 0.2 per cent (33 thousand) respectively[4]. Out of the total number of medical graduates, slightly more than one-fifth (22%) were females. As expected, there were more persons with educational attainment in urban areas compared with rural areas. The pattern of educational attainment

TABLE 10.3: Literacy Rates in Pakistan and Provinces by Sex and Urban—Rural Areas, 1961–1981

Province/Year	TOTAL			URBAN			RURAL		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
PAKISTAN									
1961	16.7	25.1	6.7	34.8	44.9	21.3	10.6	18.0	2.2
1972	21.7	30.2	11.6	41.5	49.9	30.9	14.3	22.6	4.7
1981	26.2	35.0	16.0	47.1	55.3	37.3	17.3	26.2	7.3
Punjab									
1961	16.1	24.5	6.2	34.6	45.5	20.4	10.9	18.3	2.5
1972	20.7	29.1	10.7	38.9	47.8	28.0	14.7	22.9	5.2
1981	27.4	36.8	16.8	46.7	55.2	36.7	20.0	29.6	9.4
Sind									
1961	21.0	29.0	10.6	36.1	44.3	25.0	11.5	19.0	2.2
1972	30.2	39.1	19.2	47.4	54.5	38.4	17.6	27.5	5.8
1981	31.4	39.7	21.6	50.8	57.8	42.2	15.6	24.5	5.2
NWFP									
1961	13.8	23.2	3.4	30.9	43.4	13.3	9.7	17.6	1.4
1972	14.5	23.1	4.7	33.7	44.7	19.9	11.0	19.0	2.2
1981	16.7	25.8	6.5	35.8	47.0	21.9	13.2	21.7	3.8
Baluchistan									
1961	9.8	15.2	2.9	34.8	46.1	16.2	4.0	7.0	0.3
1972	10.1	14.8	4.2	32.3	42.4	19.2	5.6	9.2	1.3
1981	*10.3*	*15.2*	*4.3*	*32.2*	*42.4*	*18.5*	*6.2*	*9.8*	*1.7*

Source: Government of Pakistan, *Hand Book of Population Census Data*, Population Census Organisation, Statistics Division, Islamabad.



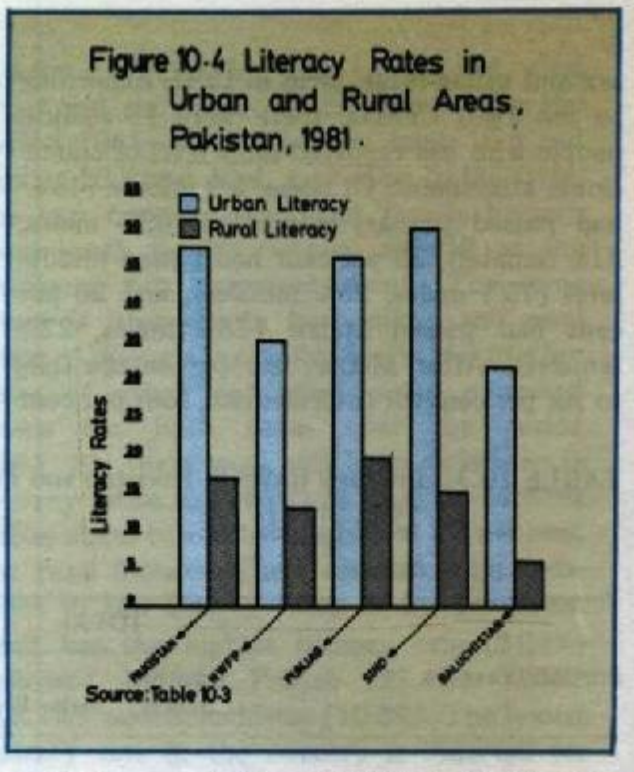


TABLE 10.4: Educational Attainment of Population 10 Years and Above in Pakistan by Sex and Urban–Rural Areas, 1981.

(in percentages)

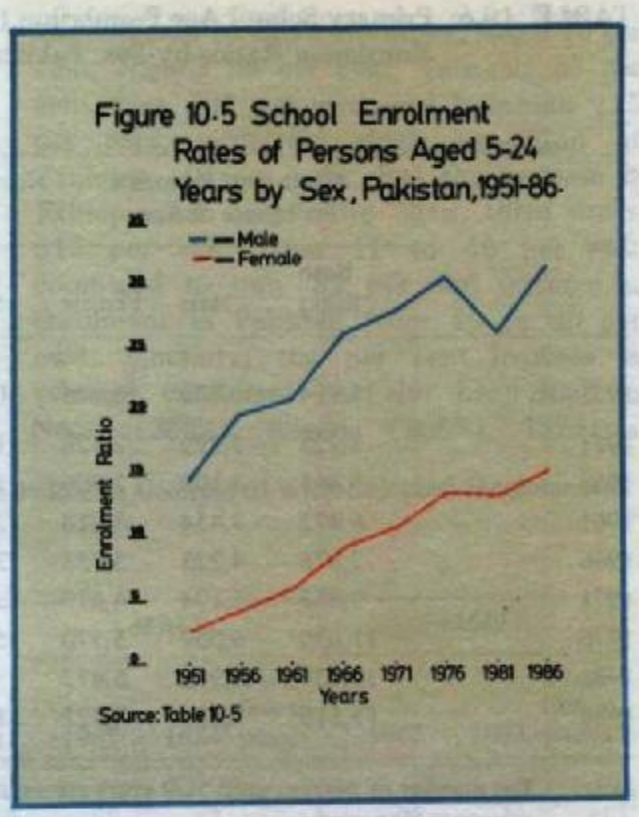
Sex/Residence	EDUCATIONAL ATTAINMENT										
	Primary	Middle	Matric-ulation	Inter-mediate	BA–BSc	MA/ MSc	BSc (Eng) and above	MBBS–BDS and above	LLB and above	Others	Total
Total											
Both Sexes	45.3	22.7	19.6	5.9	3.8	1.1	0.3	0.2	0.3	0.9	100
Male	43.0	23.5	20.5	6.0	3.8	1.1	0.4	0.3	0.4	1.0	100
Female	51.3	20.7	16.9	5.6	3.7	1.0	–	0.2	–	0.6	100
Urban											
Both Sexes	37.1	23.0	22.4	8.0	5.7	1.6	0.4	0.4	0.4	0.9	100
Male	33.8	23.1	23.9	8.5	6.2	1.8	0.6	0.4	0.6	1.0	100
Female	43.4	22.7	19.8	7.1	4.8	1.3	0.1	0.3	–	0.5	100
Rural											
Both Sexes	55.2	22.4	16.0	3.3	1.4	0.4	0.1	0.1	0.1	0.9	100
Male	52.0	23.8	17.3	3.6	1.5	0.5	0.1	0.1	0.1	1.0	100
Female	70.6	15.8	9.8	2.0	0.9	0.2	–	–	–	0.6	100

Source: Government of Pakistan, *Hand Book of Population Census Data*, Population Census Organisation, Statistics Division, Islamabad.

for the provinces was almost the same as for the whole of Pakistan[1].

10.3.1 Levels and Trends in Enrolment

The population aged 5—24 years is considered to be school and college-university age population, usually seeking education. The enrolment ratios of the age group 5—24 years by sex, for the period 1951—86, are given in table 10.5 and figure 10.5. As can been seen from the table, the enrolment ratio increased more than two and a half times from 9.0 per cent in 1951 to 24.0 per cent in 1986. For males the corresponding increase has been slightly more than two-fold, whereas, for females it has been quite marked (six times) rising from 2.4 per cent in 1951 to almost 15.0 per cent in 1986.



10.3.2 Primary Level

Table 10.6 and figure 10.6 indicate that in 1986, half the children of the primary age

TABLE 10.5: Population Aged 5—24 years, Enrolment of Students and Enrolment Ratios by Sex, Pakistan, 1951—1986

(Population in thousands)

Years	No. of Persons (5—24 Years)			No. of Students enrolled (5—24 Years)			Enrolment Ratio		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
1951—86	224,029	119,354	104,076	42,309	31,214	11,095	18.9	26.2	10.7
1951	16,178	8,704	7,474	1,441	1,254	187	8.9	14.4	2.5
1956	18,029	9,649	8,380	2,245	1,903	342	12.5	19.7	4.1
1961	20,094	10,698	9,396	2,772	2,227	545	13.8	20.8	5.8
1966	23,651	12,649	11,002	4,285	3,298	987	18.1	26.1	9.0
1971	27,935	14,985	12,950	5,518	4,159	1,359	19.8	27.8	10.5
1976	32,986	17,643	15,343	7,388	5,357	2,031	22.4	30.4	13.2
1981	39,001	20,708	18,293	7,796	5,414	2,382	20.0	26.1	13.0
1986	46,155	24,318	21,838	10,864	7,602	3,262	23.5	31.3	14.9

Note: The number of persons aged 5—24 year are estimated on the basis of average annual growth rate of the corresponding year.

Source: Government of Pakistan, *Economic Survey 1985-86*, Finance Division, Economic Adviser's Wing, Islamabad.

TABLE 10.6: Primary School Age Population (Aged 5–9 Years) School Enrolment and Enrolment Ratios by Sex, Pakistan, 1951–1986

(Population in thousands)

Year	Number of Persons 5–9 years of Age			Number of Students Enrolled (5–9 Years)			Enrolment Ratios		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
1951–86	75,924	39,778	36,146	30,449	22,015	8,434	40.1	55.3	23.3
1951	5,225	2,799	2,426	1,050	910	140	20.1	32.5	5.8
1956	5,815	3,109	2,706	1,690	1,420	270	29.1	45.7	10.0
1961	6,472	3,454	3,018	2,060	1,630	430	31.8	47.2	14.2
1966	7,976	4,223	3,753	3,160	2,410	750	39.6	57.1	20.0
1971	9,853	5,174	4,679	3,961	2,917	1,045	40.2	56.4	22.3
1976	11,639	6,069	5,570	5,319	3,770	1,549	45.7	62.1	27.8
1981	13,434	6,962	6,472	5,474	3,691	1,782	40.7	53.0	27.5
1986	15,510	7,988	7,522	7,735	5,267	2,468	49.9	65.9	32.8

Note: The number of persons aged 5–9 years are estimated on the basis of average annual growth rate of the corresponding year.

Source: Government of Pakistan, *Economic Survey 1985-86*, Finance Division, Economic Adviser's Wing, Islamabad.

group were enrolled in schools. The table also shows that enrolment of the school population (5–9 years) increased from 20.0 per cent in 1951 to 50 per cent in 1986. The enrolment ratio almost doubled from 20 per cent to 40 per cent during the 1951–66 period; thereafter, the enrolment rates varied between 40 to 50 per cent during the period 1966–86. However, during 1966–86, the pace of achievement in primary education slackened compared with the period 1951–66. For example, the male primary enrolment ratio doubled during the period 1951–86 but the increase was 76 per cent during the period 1951–66 and only 15 per cent during the subsequent period 1966–86. The female primary enrolment ratio also expanded significantly over the period 1951–86, but it is still quite low compared with the male enrolment. The female enrolment ratio must increase at a faster rate if the gap between male and female enrolment is to be bridged during the next two decades.

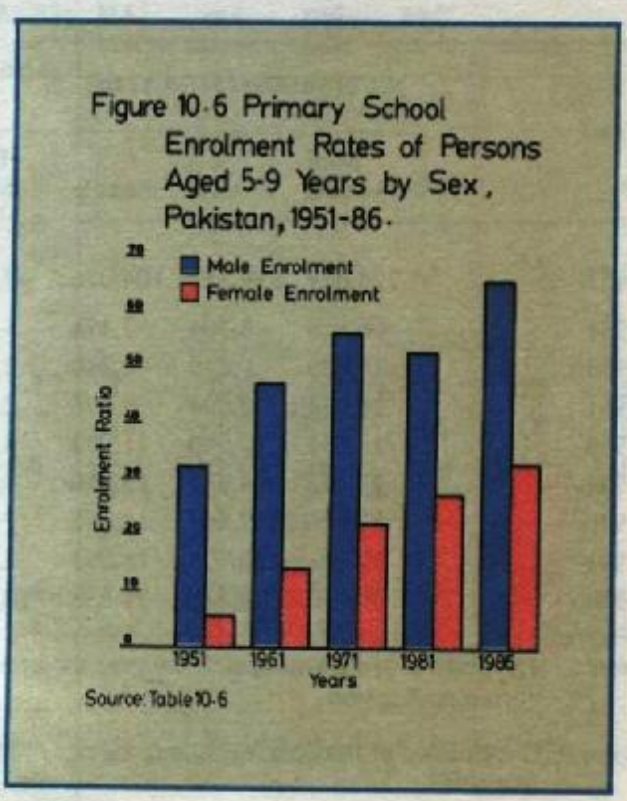


Table 10.7 indicates that Pakistan has a low primary enrolment ratio compared with the overall average of low and middle income economy countries and many of the developing countries. For example, the primary enrolment ratio for Pakistan was only 49 per cent in 1983 compared with 105 per cent for regions of middle income economies and 91 per cent for low income regions. According to the figures presented in the table, the increase in primary enrolment over the period 1965–83 was the lowest in Pakistan (49%) as compared to other countries; Nepal 73 per cent, Nigeria 98 per cent, Tanzania 87 per cent, Iran 101 per cent, and Indonesia 115 per cent, with the single exception of Ethiopia, 46 per cent. But the increase in Ethiopia has been more than three times, 318 per cent from 11 to 46 per cent compared to only 22 per cent increase in enrolment in Pakistan from 40 to 49 per cent. Similarly, the per cent increase in primary enrolment has also been high in Nepal (265%), Nigeria (206%), Tanzania

TABLE 10.7: Primary School Enrolment Ratio of Pakistan Compared with Selected Regions and Countries by Sex, 1965 and 1983.

Regions/Countries	TOTAL			MALE			FEMALE		
	1965	1983	Variation in points	1965	1983	Variation in points	1965	1983	Variation in points
PAKISTAN	40	49	+9	59	63	+4	20	23	+13
Regions									
Low-Income economies	80	91	+11	76	101	+25	46	76	+30
Middle-income economies	84	105	+21	90	108	+18	77	100	+23
Countries									
Bangladesh	49	62	+13	67	67	0	31	55	+24
Nepal	20	73	+53	36	100	+64	4	43	+39
India	74	85	+11	89	100	+11	57	68	+11
China	89	104	+15	–	116	–	–	93	–
Ghana	69	79	+10	82	89	+7	57	70	+13
Sri Lanka	93	101	+8	98	103	+5	86	99	+13
Indonesia	72	115	+43	79	118	+39	65	112	+47
Philippines	113	114	+1	115	115	0	111	113	+2
Egypt	75	88	+13	90	101	+11	60	76	+16
Nigeria	32	98	+66	39	–	–	24	–	–
Thailand	78	99	+21	82	101	+19	74	97	+23
Turkey	101	112	+11	118	116	–2	83	107	+24
Tunisia	91	113	+22	116	125	+9	65	102	+37
Jordan	95	100	+5	105	101	–4	83	98	+15
Iran	63	101	+38	85	113	+28	40	88	+48
Ethiopia	11	46	+35	16	58	+42	6	34	+28
Tanzania	32	87	+55	40	91	+51	25	84	+59

Source: World Bank, *World Development Report*, 1986 Washington D.C, USA.

(172%) Iran and Indonesia (60%). It is also noted that the enrolment ratio for males in Pakistan was the second lowest, where as, the ratio for females was by far the lowest among the countries listed in table 10.7.

Table 10.8 shows that during the period 1951–61, increase in the growth rate in primary enrolment was three times higher in Pakistan than the increase in the growth rate of the corresponding population (5–9 years). During the subsequent intercensal period (1961–72), growth rate of the primary school age population almost doubled (4.3%) compared with the previous decade, (2.2 per cent) whereas, the growth rate of enrolment remained almost constant (7%). During the period 1972–81, however, the growth rate in the enrolment ratio was the same as the growth rate of the population (3 per cent per annum) and there was no apparent gain in the enrolment ratio. The decline in the growth rate of enrolment at the primary level during the decade 1972–81 is considered to be one of the major factors which may be responsible for the very slow increase in the level of literacy in the country. Table 10.8 shows that during the period 1981–86, the growth rate of enrolment has increased, which is an encouraging sign. Between 1951

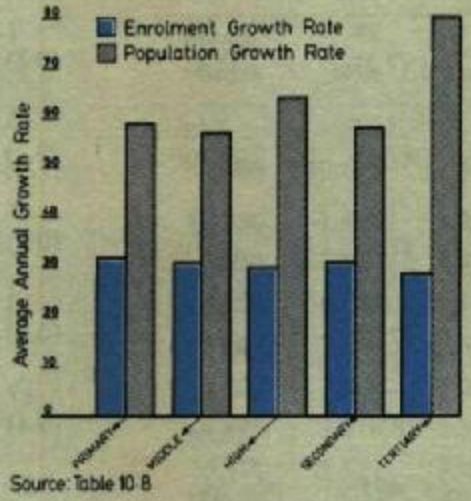
TABLE 10.8: Average Annual Growth Rates of Population and Enrolment, by Various Educational Levels, Pakistan, 1951–1986

Level of Education	Population Enrolment	Average Annual Growth Rate				
		1951–61	1961–72	1972–81	1981–86	1951–86
Total	Population	2.2	3.3	3.4	3.4	3.0
	Enrolment	6.8	7.0	3.3	6.9	5.9
Primary	Population	2.2	4.3	3.0	2.9	3.2
	Enrolment	7.0	6.7	3.0	7.2	5.9
Middle	Population	2.2	3.1	3.7	3.7	3.1
	Enrolment	5.0	7.2	4.3	6.0	5.7
High	Population	2.2	2.6	3.9	4.1	3.0
	Enrolment	7.6	7.8	3.8	6.0	6.4
Secondary	Population	2.2	2.9	3.8	3.9	3.1
	Enrolment	5.6	7.4	4.2	6.0	5.8
College and above	Population	2.2	2.8	3.5	3.6	2.9
	Enrolment	10.5	9.5	4.1	6.8	8.0

Source:-

1. Government of Pakistan, *Census of Pakistan, 1951, Bulletin No. 3*, Census Organisation, Ministry of Interior and Kashmir Affairs, Karachi.
2. Government of Pakistan, *Census Organisation, 1961, Vol. 3*,. Ministry of Home and Kashmir Affairs, Karachi.
3. Government of Pakistan, *Population Census of Pakistan, 1972*, A Statistical Report for Pakistan, Population Census Organisation, Statistics Division, Islamabad.
4. Government of Pakistan, *1981 Census Report of Pakistan*, Population Census Organisation, Statistics Division, Islamabad.
5. Government of Pakistan, *Economic Survey, 1985-86*, Economic Adviser's Wing, Finance Division, Islamabad.

Figure 10.7 Average Annual Growth Rates of School Enrolment and School Age Population, Pakistan, 1951-86.



Source: Table 10.8

and 1981, the growth rate of enrolment was higher than the growth rate of school age population at all levels (Figure 10.7). If the literacy level in the country is to be raised, serious efforts will have to be made to increase the primary enrolment ratios.

10.3.3 Advancement from Primary Level to Subsequent Levels

Primary education in Pakistan is characterised by high drop-out and repeater rates which are considered to be the highest in the world[4]. Only 50 per cent of the students who enter primary school complete the five-year cycle. Although, data on drop-out and repeaters are not available by grade in Pakistan, an experience from India may be a useful indication. It was found there that enrolment from Grade I to Grade II fell by over 40 per cent and of every 100 children enrolled in Grade I only about 40 reached Grade V and again only about 25 reached Grade VIII[5].

Table 10.9 shows the advancement or progression of students from primary to the next succeeding level of education. The proportion of students advancing at each level of education has been calculated by dividing the enrolment recorded at each level by the initial number of students enrolled at the primary level. As is evident from the table, out of 100 students enrolled at the primary level, about three-quarters of them either dropped out during the initial primary level or they did not continue after qualifying in the fifth grade. Only one-quarter of them were enrolled at the middle level and about nine per cent of them continued higher school (9th and 10th grade). Only six per cent of the students continued beyond high school level. However, this number has consistently grown over the period 1951–86. It is, nontheless, a matter of concern that progression of education at the middle level has remained almost constant. This requires serious attention so that the enrolment in the level of education is expanded. Until and unless the enrolment ratio of primary level is increased and the drop-outs reduced, it will not be possible to attain the desired literacy and education levels in the country on the one hand and to increase enrolment at the middle level on the other.

10.3.4 Middle Level Enrolment

The middle level enrolment comprises Grade VI to Grade VIII. Table 10.10 and figure 10.8 show that the enrolment at the middle level has increased from 0.3 million persons or 10 per cent in 1951 to 1.9 million or 24 per cent in 1986, showing a 138 per cent increase during the period 1951–86. The enrolment level for males increased from 17 per cent in 1951 to 34 per cent in 1986, whereas the increase for females has been from 2.5 per cent to 12.5 per cent during the same period in 1986 (Figure 10.8). Enrolment at the middle school level doubled for males during the period 1951–81 and for females it increased five-fold. As in primary level enrolment, the middle level also expanded faster (73%) during the period 1951–66, but then its expansion slowed down (37%)

TABLE 10.9: Advancement of Students (Number and proportion) from Primary Level to Higher Educational Levels, Pakistan, 1951–1986

(Population in thousands)

Year	Primary	Middle	High	Graduation	Post Graduation
1950–51	1,050 (100)	276 26.3)	77 (7.3)	38 (3.5)	1 (0.1)
1955–56	1,690 (100)	368 (21.8)	122 (7.2)	62 (3.7)	3 (0.2)
1960–61	2,060 (100)	449 (21.8)	160 (7.8)	98 (4.7)	5 (0.2)
1965–66	3,160 (100)	689 (21.8)	244 (7.7)	179 (5.7)	13 (0.4)
1970–71	3,961 (100)	933 (23.5)	336 (8.5)	271 (6.8)	17 (0.4)
1975–76	5,319 (100)	1,247 (23.5)	493 (9.3)	306 (5.8)	23 (0.4)
1980–81	5,474 (100)	1,412 (25.8)	509 (9.3)	359 (6.5)	43 (0.8)
1985–86	7,735 (100)	1,891 (24.4)	680 (8.8)	501 (6.5)	57 (0.7)

Source: Government of Pakistan, *Economic Survey, 1985-86*, Economic Adviser's Wing, Finance Division, Islamabad.

during the period 1966–86. The trend was the same for both males and females.

10.3.5 High School Enrolment

Enrolment for high school level education comprises Grades IX and X. High school age population (13–14 years), high school level enrolment and the enrolment ratios for the period 1951–86 are presented in table 10.11. As can be seen from the table, the enrolment ratio increased from 4.6 per cent in 1951 to 14.2 per cent in 1986. The corresponding increase for males and females has been from 7.4 per cent and 1.3 per cent to 20.0 per cent and 8.1 per cent respectively. Like the previous two levels, the female enrolment ratio during 1951–86 also expanded faster (523%) than male enrolment (170%). Similarly the overall expansion has been faster

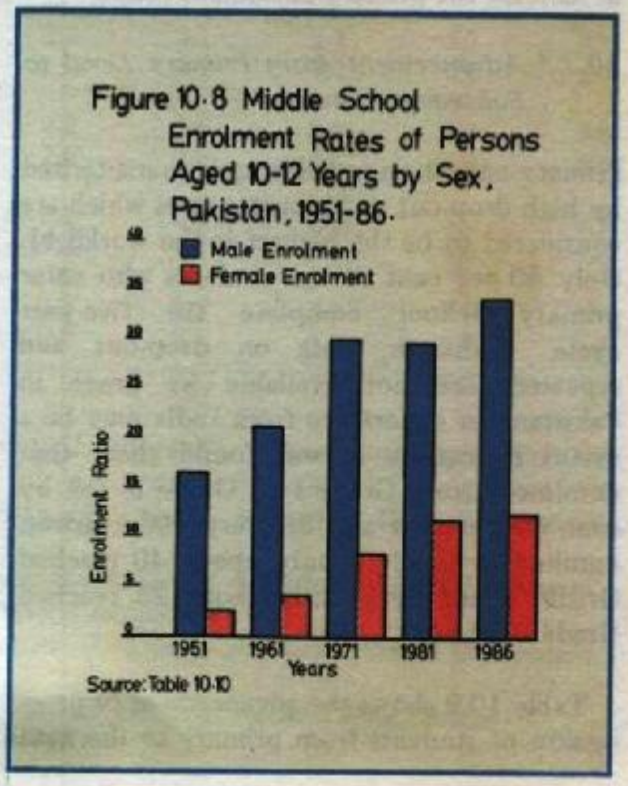


TABLE 10.10: Middle School-Age Population (Aged 10–12 years), Enrolment and Enrolment Ratios by Sex, Pakistan, 1951–1986

(Population in thousands)

Year	Number of Persons 10–12 Years of Age			Number of Students Enrolment (10–12 Years)			Enrolment Ratios		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
1951–86	37,635	20,185	17,450	7,264	5,674	1,590	19.3	28.1	9.1
1951	2,730	1,463	1,267	276	244	32	10.1	16.7	2.5
1956	3,039	1,623	1,416	368	322	46	12.1	19.8	3.2
1961	3,384	1,801	1,583	449	382	67	13.3	21.2	4.2
1966	3,944	2,124	1,820	689	540	149	17.5	25.4	8.2
1971	4,602	2,508	2,094	932	754	178	20.3	30.1	8.5
1976	5,473	2,970	2,503	1,247	953	294	22.8	32.1	11.7
1981	6,571	3,521	3,050	1,412	1,053	359	21.5	29.9	11.8
1986	7,892	4,175	3,717	1,891	1,426	465	24.0	34.2	12.5

Note: The number of persons aged 10–12 years are estimated on the basis of average annual growth rate of the corresponding year.

Source: Government of Pakistan, *Economic Survey, 1985-86*, Economic Adviser's Wing, Finance Division, Islamabad.

TABLE 10.11: High School-Age Population (Aged 13–14 Years) Enrolment and Enrolment Ratios by Sex, Pakistan, 1951–1986

(Population in thousands)

Year	Number of Persons 13–14 years of Age			Number of Students Enrolled (13–14 Years)			Enrolment Ratios		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
1951–86	22,644	12,254	10,390	2,621	1,780	835	11.6	14.5	8.0
1951	1,680	900	780	77	67	10	4.6	7.4	1.3
1956	1,875	1,002	873	122	106	16	6.5	10.6	1.8
1961	2,094	1,117	977	160	133	27	7.6	11.9	2.8
1966	2,376	1,290	1,086	244	195	49	10.3	15.1	4.5
1971	2,698	1,492	1,206	336	269	67	12.4	18.0	5.6
1976	3,213	1,770	1,443	493	387	106	15.3	21.9	7.3
1981	3,921	2,127	1,794	509	130	380	13.0	17.8	7.2
1986	4,787	2,556	2,231	680	500	180	14.2	20.0	8.1

Note: The Number of Persons aged 13–14 years are estimated on the basis of average annual growth rate of the corresponding year.

Source: Government of Pakistan, *Economic Survey, 1985-86*, Economic Adviser's Wing, Finance Division, Islamabad.

(124%) during the period 1951–66 compared with 1966–86 when it was 38 per cent. The same trend is applicable to both males and females.

The average annual growth rate of enrolment at high school level increased slightly from 7.6 per cent during 1951–61 to 7.8 per cent during 1961–72 (Table 10.8) However, during the period 1972–81, it declined to half, 3.8 per cent, but again rose to 6.0 per cent during 1981–86. In contrast, the growth rate of the high school level school-age population (13–14 years) consistently increased from 2.2 per cent during 1951–61 to 4.1 per cent during 1981–86.

10.3.6 *Secondary Level Enrolment*

Secondary level enrolment comprises students studying in classes VI to X which are the addition of middle school and high school levels of education discussed above. The reason for this classification is to be able to analyse and make comparisons with other developing countries of the world.

Table 10.12 shows the enrolment ratios of the secondary school-population by sex. These ratios increased from eight per cent in 1951 to 20 per cent in 1986. For males, the increase has been from 13 per cent to 29 per cent and for females it has been from two per cent to 11 per cent.

Table 10.13 shows secondary enrolment ratios for Pakistan and selected countries and regions, 1965 and 1983. It is apparent from the table that the secondary level enrolment ratio in Pakistan in both the years 1965 and 1983 is low compared with the average of low income and middle income economies and many of the developing countries. For example, secondary school enrolment ratio for Pakistan in 1983 was only 16 per cent compared to 47 per cent in middle

TABLE 10.12: Secondary School–Age Population (Aged 10–14 Years) Enrolment and Enrolment Ratios by Sex, Pakistan, 1951–1986

(Population in thousands)

Year	Number of Persons 10–14 Years of Age			Number of Students Enrolled (10–14 Years)			Enrolment Ratios		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
1951–86	60,279	32,439	27,840	9,885	7,454	2,425	16.4	23.0	8.7
1951	4,410	2,363	2,047	353	311	42	8.0	13.2	2.1
1956	4,914	2,625	2,289	490	428	62	9.9	16.3	2.7
1961	5,478	2,918	2,560	609	515	94	11.1	17.6	3.7
1966	6,320	3,414	2,906	933	735	198	14.8	21.5	6.8
1971	7,300	3,920	3,300	1,268	1,023	245	17.4	26.1	7.4
1976	8,686	7,740	3,946	1,740	1,340	400	20.0	28.3	10.1
1981	10,492	5,648	4,844	1,921	1,183	739	18.3	20.9	15.3
1986	12,679	6,731	5,948	2,571	1,926	645	20.2	28.6	10.9

Note:- The number of persons aged 10–14 years are estimated on the basis of average annual growth of the corresponding year.

Source:- Government of Pakistan, *Economic Survey, 1985-86*, Economic Adviser's Wing, Finance Division, Islamabad.

TABLE 10.13: Secondary School Enrolment Ratios of Pakistan Compared with Selected Regions and Countries, 1965 and 1983

Regions/Countries	1965	1983	Variation in Points
PAKISTAN	12	16	+ 4
Regions			
Low-income economies	23	31	+ 8
Middle income economies	20	47	+27
Countries			
Bangladesh	13	19	+ 6
Nepal	5	22	+17
India	27	34	+ 7
China	24	35	+11
Ghana	13	38	+25
Sri Lanka	35	56	+21
Indonesia	12	37	+25
Philippines	41	63	+22
Egypt	26	58	+32
Nigeria	5	–	–
Thailand	14	29	+15
Turkey	16	38	+22
Tunisia	16	33	+17
Jordan	38	78	+40
Iran	18	40	+22
Ethiopia	2	13	+11
Tanzania	2	3	+ 1

Source: World Bank, *World Development Report, 1989*, Washington D.C. U.S.A.

income economy countries and 31 per cent in low income economy countries. During the period 1965–83, the increase in secondary level enrolment in Pakistan has been 33 per cent (from 12 to 16 per cent), whereas the corresponding increase has been 35 per cent for low income countries (from 23 to 31 per cent) and 135 per cent (from 20 to 47 per cent) for middle income countries (Table 10.13). According to the figures presented in the table, the secondary school enrolment ratio for Pakistan was the lowest (16 per cent) among the 17 countries in 1983 with the exception of Ethiopia and Tanzania. However, there have been much higher increases in secondary education for the corresponding period in Ethiopia (550%), followed by Nepal (340%), Indonesia (208%), Ghana (192%), Turkey (138%), Egypt (123%), Iran (122%), Thailand (107%), Tunisia (106%), and Jordan (105%).

10.3.7 *Tertiary Level Enrolment*

The tertiary level education includes enrolment of students studying in secondary vocational institutions, science and arts colleges, professional colleges and in universities.

Table 10.14 presents the number of persons aged 15–24 years, number of students enrolled in tertiary level educational institutions and the enrolment ratios by sex for Pakistan, 1951–86. According to the table, the enrolment ratio at the tertiary level in Pakistan increased from 0.6 per cent in 1951 to 3.1 per cent in 1986, showing a five-fold increase over the period 1951–86. This increase for males has been from 0.9 per cent to 4.3 per cent and for females from 0.2 per cent to 1.8 per cent, showing a nine-time increase during the years 1951 to 1986.

Table 10.15 shows the comparison of tertiary level enrolment ratios in Pakistan with selected regions and countries of the world for the period 1965–1983. The tertiary level enrolment ratio for Pakistan (2 per cent) in 1983 was only one-sixth and half of the level of middle and low income countries respectively. Moreover, the increase in tertiary enrolment ratio in Pakistan had remained almost stable over the period 1965–83. Thus, the enrolment ratios for Pakistan with the exception of China (1%) are the lowest. The highest increases in tertiary enrolment ratios, however, were recorded in Jordan, Thailand, Egypt and several other countries (Table 10.15).

10.4 Literacy and Educational Attainment by the Year 2000

As discussed in the foregoing sections, literacy rates in Pakistan are quite low (26%) as are the enrolment ratios at almost all levels of education. It has also been seen that enrolment ratios are consistently low at primary and middle levels. Thus, in order to attain high literacy and universal primary education, efforts will have to be made to give this sector top priority, if illiteracy is to be eliminated. This calls for huge investment in the

TABLE 10.14: Tertiary Educational Level (College and above), Population Aged 15–24 Years, Enrolment and Enrolment Ratios by Sex, 1951–1986

(Population in thousands)

Year	Number of Persons 15–24 Years of Age			Number of Students Enrolled (15–24 Years)			Enrolment Ratios		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
1951–86	87,824	47,135	40,689	1,975	1,489	486	2.2	3.2	1.2
1951	6,544	3,542	3,002	38	33	5	0.6	0.9	0.2
1956	7,299	3,914	3,385	65	55	10	0.9	1.4	0.3
1961	8,144	4,326	3,818	103	82	21	1.3	1.9	0.6
1966	9,355	5,011	4,344	192	153	39	2.1	3.1	0.9
1971	10,781	5,811	4,970	288	219	69	2.7	3.8	1.4
1976	12,661	6,834	5,827	329	249	82	2.6	3.6	1.4
1981	15,074	8,098	6,976	402	291	111	2.7	3.6	1.6
1986	17,966	9,599	8,367	558	409	149	3.1	4.3	1.8

Note: The number of persons aged (15–24) years are estimated on the basis of average annual growth rate of corresponding year.

Source: Government of Pakistan, *Economic Survey, 1985-86*, Economic Adviser's Wing, Finance Division, Islamabad.

TABLE 10.15: Tertiary Enrolment Ratios of Pakistan Compared with Selected Regions and Countries, 1965 and 1983

Regions/Countries	1965	1983	Variation in points
PAKISTAN	2	2	0
Regions			
Low income economies	2	4	+ 2
Middle income economies	4	12	+ 8
Countries			
Bangladesh	1	4	+ 3
Nepal	1	5	+ 4
India	5	9	+ 4
China	(.)	1	–
Ghana	1	2	+ 1
Sri Lanka	2	4	+ 2
Indonesia	1	4	+ 3
Philippines	19	26	+ 7
Egypt	7	16	+ 9
Nigeria	(.)	2	–
Thailand	2	22	+22
Turkey	4	7	+ 3
Tunisia	2	5	+ 3
Jordan	2	33	+31
Iran	2	4	+ 2

Source: World Bank, *World Development Report, 1986*, Washington D.C. U.S.A.

coming years and will be discussed in section 10.5.

10.4.1 Literacy Attainment by the Year 2000

The main target of the Government is to raise the low level of literacy which was 26 per cent in 1981. The object is not only to reduce the backlog of the absolute number of illiterates (42.7 million as enumerated in the 1981 Census) but also to increase the overall literacy rates in the coming years.

Table 10.16 shows the estimated number of illiterate and literate persons aged 10 years and above with the corresponding literacy rates by sex for the years 1986, 1990 and 2000 under two alternative assumptions. The *first assumption* used for estimation for the year 1986 was that the 1961–81 growth rate of literacy (6.3%) should be maintained to the present level. On this basis, the current literacy rate (as of mid August, 1986) would have increased from 26.2 per cent in 1981 to 31.2 per cent by mid-August, 1986. The male and female literacy rates for the corresponding period would also have increased from 35.1 per cent and 16.0 per cent to 40.0 per cent and 21.5 per cent respectively. As can be seen from the table, despite a large increase in these rates, the absolute number of illiterates in the country would have actually increased from 42.7 million in 1981 to 46.5 million in 1986. According to the *second*

TABLE 10.16: Estimated Number of Illiterates and Literates, Literacy Rates (Population Aged 10 Years and above) by Sex, 1981, 1986, 1990 and 2000

(Population in thousands)

Year	Total Population	Estimates Under two Assumptions	Number of Illiterates (10 Years and above)			Number of Literates (10 Years and above)			Literacy Rates (10 Years and above)			Year
			Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	
1981 Base Year	84,254	—	42,690	20,038	22,652	15,155	10,838	4,317	26.2	35.1	16.0	1981 Base Year
1986	98,821	Alternative 1	46,543	21,398	25,145	21,149	14,276	6,873	31.2	40.0	21.5	1986
		Alternative 2	42,829	19,776	23,053	24,863	15,898	8,965	36.7	44.6	28.0	
1990	110,577	Alternative 1	42,363	18,634	23,729	33,051	20,657	12,394	43.8	52.6	34.3	1990
		Alternative 2	37,707	17,421	20,286	37,707	21,870	15,837	50.0	55.7	43.8	
2000	146,857	Alternative 1	19,884	5,568	14,316	79,538	45,734	33,804	80.0	89.1	70.2	2000
		Alternative 2	9,942	1,539	8,403	89,480	49,763	39,717	90.0	97.0	82.5	

Note: In Alternative 1, 6.3 per cent increase in literacy rates per annum throughout the period 1986–2000 is considered.
In Alternative 2, 9.5 per cent increase in literacy rates per annum throughout the period 1986–2000 is considered.

Source: Government of Pakistan, *1981 Census Report of Pakistan*, Population Census Organisation, Statistics Division, Islamabad.

assumption, it is assumed that the Government's efforts for raising literacy rates had exceeded in keeping the absolute number of illiterates to the same level in 1986 as in 1981. In order to keep the number of illiterates in 1986 at the level of 1981, the annual growth rate of literacy for the period 1981–86 should have been 9.5 per cent per annum or about 50 per cent higher than the 6.3 per cent experienced during the period 1961–81. If this growth rate of literacy was attained at 9.5 per cent only, then the number of illiterates would have remained constant at the 1981 level and the literacy rate in the country would have increased to 36.7 per cent in 1986 instead of 31.2 per cent as assumed under the first alternative assumption. On the basis of these two alternative assumptions, the literacy rate for mid-August, 1986, would not have been below 31 per cent and rather would have been more close to 37 per cent.

Under the first alternative projections, it is assumed that by the year 2000, the Government would be able to attain an 80 per cent literacy rate (97.0% for males and 82.5% for females) and under the second alternative projections it would achieve a 90 per cent literacy rate (97.0% for males and 82.5% for females). However, it must be pointed out that the illiterates aged 40 years and above would not be able to learn much. Therefore, it would not be possible to attain 100 per cent literacy rate by the year 2000 because of these age groups (40 years and above). Even achieving 80 per cent literacy rate for the population of 10 years and above would be a monumental task as an addition of 64 million persons (79.5 million minus 15.1 million) would have to be made literate by the year 2000. Efforts of the Government are not only to reduce the number of illiterate persons living in the country but also to increase the literacy rate with the aim of achieving 80–90 per cent literacy by the year 2000. If these goals are to be achieved, growth rate of literacy should not be less than nine per cent per annum under any condition. In fact, the growth rate of literacy should be even higher, if we were to achieve the dream of universal literacy. This is a collossal task which under all circumstances has to be given top priority if the welfare of the population at large and the quality of life of future generations is to be improved. The Development Programme of Pakistan has accorded very high priority to literacy with the same objectives in view.

10.4.2 Primary School Enrolment by the Year 2000.

Pakistan with its already low primary enrolment ratios, coupled with high drop-out and repeater rates has to make gigantic efforts in order to raise the present primary school enrolment from 50 per cent to 100 per cent by the year 2000. In order to attain 100 per cent universal primary education, it is estimated that with the constant growth rate of population, the number of primary school age students would increase almost four-fold, from 6.2 million in the base year 1982–83 to about 23.6 million by the year 2000 as can be seen from table 10.17. Should the growth rate of population decline from the present 2.85 to 2.1 per cent per annum by the year 2000, then the number of students to be provided with primary education would reduce from 23.6 million to 22.1 million and this would result in a net reduction of 1.6 million students.

10.4.3 Middle School Enrolment by the Year 2000.

With 100 per cent universal primary education, it is assumed that the attainment of middle school level enrolment would also increase from 24 per cent to 50 per cent by the year 2000. On this basis and with a constant growth rate of population, the number of students in the middle schools would increase from 1.6 million in 1982–83 to 5.9 million by the year 2000 (Table 10.17). Under a declining growth rate, however, it will be 5.5 million resulting in a net reduction of 0.4 million students.

TABLE 10.17: Projected Student's Enrolment in Various Educational Levels in Pakistan by The Year 2000, under Constant and Declining Growth Rates of Population

(Population in thousands)

Population, Student Enrolment by various Educational levels	Base Year Population (1982-83)	Projected Students in the year 2000		Savings
		Under constant growth rate of population remaining 2.85% by the year 2000	Under declining growth rate of population reaching 2.1% by the year 2000	
Total Population	88,269	146,894	137,100	9,974
Primary Level[1]				
Number of Students in Primary Schools	6,179	23,644	22,068	1,576
Lower Middle Level[2]				
Number of Students in Middle Schools	1,614	5,875	5,483	392
High Level[3]				
Number of Students in High Schools	550	1,762	1,645	117
Tertiary Level[4]				
Number of Students in Tertiary level	446	1,209	1,128	81

1. Target of achieving primary school enrolment from 50 per cent to 100 per cent by the year 2000.
2. Target of achieving middle level enrolment from 24 per cent to 50 per cent by the year 2000.
3. Target of achieving secondary level enrolment from 16 per cent to 25 per cent by the year 2000.
4. Target of achieving tertiary (college and above) level enrolment from 3.1 per cent to 4.5 per cent by the year 2000.
5. 2.85 per cent population growth rate is the estimate of NIPS.

Source:- Government of Pakistan, *Economic Survey 1985-86*, Finance Division, Economic Adviser's Wing, Islamabad.

10.4.4. High School Enrolment by the Year 2000.

It is assumed that the high school level enrolment ratio would increase from 16 per cent to 25 per cent by the year 2000. On this basis and with a constant growth rate of population, the number of students in high schools would increase from 0.55 million in 1982–83 to 1.8 million by the year 2000. If the population growth rate declines, the corresponding enrolment would reduce from 1.8 to 1.6 million (Table 10.17).

10.4.5 Tertiary Level Enrolment by the Year 2000.

The number of students at the tertiary level (college and above) would increase to 1.2 million by the year 2000 if the present enrolment ratio increases from 3.1 per cent to 4.5 per cent for the same period. However, under a declining growth rate, with a constant enrolment ratio, number of students at the tertiary level would reduce to 1.1 million (Table 10.17), a drop of 0.1 million in enrolment.

10.4.6 Requirement of Educational Institutions by the Year 2000.

On the basis of the targets for various levels of educational attainment discussed in the previous sub-sections, future requirements by the year 2000 have been estimated and given in table 10.18.

The requirement of primary schools in the country would increase from 63 thousand (base year 1982–83) to 241 thousand under a constant growth rate of population. In case of a declining growth rate, this requirement would be 225 thousand showing a net saving of 16 thousand primary schools by the year 2000.

Similarly, the requirement for middle, secondary and tertiary institutions would also increase to 20 thousand, 12 thousand and 2.3 thousand respectively, under a constant growth rate of population. With declining growth rate, however, the requirements of these institutions would be 18 thousand, 11 thousand and 2.1 thousand respectively (Table 10.18).

10.4.7 Requirement of Teachers by the Year 2000.

Projected requirement of teachers by educational level are given in table 10.19. As can be seen from the table, the number of teachers at each level of education has to

TABLE 10.18: Projected Requirement of Educational Institutions of Various Levels in Pakistan Under Constant and Declining Growth Rates of Population by the Year 2000

(Population in thousands)

Educational Institutions	Number of Institutions in Base Year (1982–83)	Projected Educational Institutions by the Year 2000.		Savings
		Under constant growth rate of population remaining 2.85% by the year 2000	Under declining growth rate of population reaching 2.1% by the year 2000	
Primary Level[1]				
Number of Primary Schools	63,066	241,323	225,233	16,090
Lower Middle Level[2]				
Number of Middle Schools	5,432	19,773	18,455	1,318
Secondary Level[3]				
Number of Secondary Schools	3,715	11,902	11,108	794
Tertiary Level[4]				
Number of Tertiary Institutions	832	2,255	2,105	150

1. Target of achieving primary school enrolment from 50 per cent to 100 per cent by the year 2000.
2. Target of achieving middle level enrolment from 24 per cent to 50 per cent by the year 2000.
3. Target of achieving secondary level enrolment from 16 per cent to 25 per cent by the year 2000.
4. Target of achieving tertiary (college and above) level enrolment from 3.1 per cent to 4.5 per cent by the year 2000.

Source:- Government of Pakistan, *Economic Survey 1985-86*, Finance Division, Economic Adviser's Wing, Islamabad.

be increased tremendously. Also, particular efforts have to be made to obtain and train the required number of qualified teachers, otherwise the target of achieving the corresponding enrolment of students will suffer, not only in terms of quantity but also quality. The requirement of the number of teachers has been worked out keeping the same teacher: student ratio as observed in 1982–83. The requirement of teachers by various levels of education is given in table 10.19. The number of primary teachers would have to be increased from 168 thousand in 1982–83 to 643 thousand by the year 2000 during the same period. Whereas the middle school teachers will have to be increased from 55 thousand to 201 thousand. Similarly, the demand for high school and tertiary level teachers would have to be increased from 70 thousand to 226 thousand and from 24 thousand to 65 thousand respectively. These requirements are estimated under a constant growth rate of population, but if the growth rate of population declines from 2.85 per cent to 2.1 per cent by the year 2000, then the requirement for teachers of primary, middle, high and tertiary levels would be 600 thousand, 187 thousand, 211 thousand, and 61 thousand by the year 2000 respectively (Table 10.19).

10.5 Expenditure on Education

Pakistan's very low level of educational attainment is primarily due to the result of persistent and continuous under-funding. This, in turn is due to low priority accorded to the education sector in the public sector development plan. The total expenditure as a percentage of GNP and per capita expenditure on education in Pakistan is low. It is only about two per cent of GNP and about 1 US dollar per capita. Although some progress has been made in recent years, allocation has never been more than two per cent of GNP and three per cent of public expenditure to the education sector. This is a small amount compared with several other developing countries as shown in table 10.20.

Table 10.21 shows the share of expenditure on education as a percentage of GNP and the proportion of the total educational expenditure. Over the past 25 years (1960–86), the

TABLE 10.19: Projected Requirement of Teachers for Various Educational Levels in Pakistan by the Year 2000, Under Constant and Declining Growth Rates of Population

(Population in thousands)

Educational Levels	Number of Teachers (in Base Year 1982–83)	Projected Requirement of Teachers by the Year 2000		Savings
		Under constant growth rate of population remaining 2.85% by the year 2000	Under declining growth rate of population reaching 2.1% by the year 2000	
Primary Level	168.1	643.2	600.4	42.8
Middle Level	55.1	200.6	187.2	13.4
Secondary Level	70.4	225.5	210.6	14.9
Tertiary Level	24.0	65.1	60.7	4.4

Requirement has been worked out keeping the same Teacher: Student ratio as observed in 1982–83.

Source: Government of Pakistan, *Economic Survey 1985-86*, Finance Division, Economic Adviser's Wing Islamabad.

TABLE 10.20: Expenditure on Education in Pakistan and Selected Countries, 1978–1983

Countries	Percentage of Total Central Government Expenditure 1983	Total Expenditure as percent of GNP, 1978–79	Per Capita Expenditure on Education (in US $)
Pakistan	3.1	2.0	1
Nepal	9.9	–	–
Bangladesh	14.9	1.5	–
India	1.9	2.6	–
Sri Lanka	7.1	2.1	–
China	–	–	10
Indonesia	9.4	2.8	6
Malaysia	23.4	5.8	50
Philippines	25.6	1.8	7
Morocco	18.6	6.0	–
Egypt	10.7	4.1	19
Turkey	12.5	3.6	–
Iran	13.9	2.9	–

Note: The years of individual countries varies according to availability of data.

Source: World Bank, *World Development Report 1985*, Washington, D.C. U.S.A.

TABLE 10.21: Total Annual Government Expenditure on Education in Pakistan, by Development and Non-Development Expenditure and its Share in GNP, 1960–86

Years	Rupees (in Million)	Expenditure		Share of expenditure on Education in GNP
		Development	Non-Development	
		%	%	%
1960–61	193.1	19.7	80.3	1.1
1965–66	509.2	34.9	65.1	1.8
1970–71	789.9	39.2	60.8	1.7
1975–76	2,482.2	30.3	69.7	2.0
1980–81	4,619.1	26.9	73.1	1.7
1985–86	11,317.7	26.6	73.4	2.2

Source: Government of Pakistan, *Economic Survey, 1985–86*, Finance Division, Economic Adviser's Wing, Islamabad.

share of educational expenditure, as a percentage of GNP, increased by only one percentage point from one to two per cent. At the same time, the share of development

expenditure increased from 19.7 per cent in 1960–61 to 26.6 per cent in 1985–86, showing an increase of about six percentage points or 35 per cent over the period 1960–86. During the same period, the non-development recurring expenditure declined from 80.3 per cent to 73.4 per cent, showing a decline of six percentage points. Expenditure on education, which is mostly recurring, needs to be increased to give a sound base to this sector. In order to provide higher allocations to education, the Government imposed an 'IQRA' surcharge of five per cent on all imports in the country starting from 1985–86. This step ensured that the existing educational institutions work to their full capacity besides supporting the development programme in the education sector.

The present low expenditure is reflected inevitably in the quality of educational inputs, such as poor physical infrastructure, shortage of teaching material and equipment and low teacher salaries, as such, the poor quality of teaching. It should also be noted that the budget for primary, secondary and tertiary levels is not equally distributed. Allocation of resources has favoured higher education at the expense of primary education which has been consistently under-funded. In 1973–78, primary education received an average of 16 per cent of development expenditure compared with 35 per cent for higher education, whereas, the Fifth Plan allocation was 31 per cent and 20 per cent respectively. This poor allocation to primary education has hindered literacy levels in the country. If this trend continues, it will be difficult in the coming years to reach the desired targets of literacy and primary education[4].

A sum of Rs. 7 billion was being allocated during the Sixth Plan for the expansion of primary education and a mass literacy programme, while a total investment of Rs. 20.5 billion was allocated for the education sector as a whole. This sum was in addition to Rs 35.5 billion required to meet the recurrent expenditure, thus, bringing the total amount to Rs 56 billion during the period 1.9 per cent of GNP annually[3]. Even this share of expenditure is on the low side when compared with the standard of the United Nations in which the minimum expenditure of four per cent of a nation's GNP is recommended for developing countries[8].

Although some progress has been made in this sector over the period 1961–81, as the education system has barely kept pace with the rapidly increasing school-age population, the absolute number of illiterates in the country has actually risen from 22 million in 1961 to 43 million in 1981. Hence, low educational attainments of Pakistan with a rapidly growing population, particularly, the female population, will become a serious impediment to the country's long term development process, unless immediate steps are taken to rectify the present state of the education sector at all levels. Pakistan has never allocated more than 2 per cent of GNP and 8 per cent of public expenditures to the education sector which is quite low as compared to the other developing countries, and is even quite low as compared to the United Nations standards in which a minimum expenditure of 4 per cent of a nation's GNP is recommended for education in the developing countries.

The literacy and educational enrolment targets given in section 10.4 above, indicate that substantially increased financial allocations have to be earmarked for education in the next Five-Year Development Plans, if the targets of mass literacy, universal primary education and increased enrolment at middle and higher levels are to be attained. In order to achieve these targets, annual allocations for development and non-development expenditure will have to be increased by 6 to 9 per cent per annum. Just to maintain the growing population under the "medium growth scenario", the World Bank estimates that Rs 92.1 billion has to be made available per annum by the end of the year 2000[9]. This is on the basis of 1984–85 constant rates on the existing level of enrolment. With

improved enrolment, the corresponding allocation would have to be increased further to four and a half times, which amounts to Rs. 186 billion[9].

10.6 Long-Term Educational Priorities

A sound social and economic growth in mass literacy attainment and universal primary education targets are followed alongwith development of the formal sector in education. This not only requires greater emphasis on improvement in enrolment in the education sector, but also increased financial allocations to this sector on the whole and particularly to primary and middle level education. Therefore, emphasis will have to be laid on improvements in both quality and expansion of education, particularly at the primary and middle levels. Improving quality will, on the other hand, need particular focus on the provision of teaching materials, teacher training and increased supervision. Expansion of education will also require a strong commitment to limit the growth and subsidisation of higher education in order to redirect resources to primary, middle and high levels of education. Primary, middle and high level education for females needs special attention, particularly in rural areas. Expansion in primary and middle level education could be attempted through the Government's Mosque School programmes and also by giving incentives and encouragement to the private sector which had been completely eliminated in the decade of 1970's and only now is coming up again.

Recurring education expenditure should be increased to give a sound base to the education sector. As education is primarily the responsibility of the provincial governments, it is essential that the federal and provincial governments collaborate more closely so that the programme is implemented more effectively and efficiently and without any bottlenecks. In addition, the existing manpower and financial resources have to be more efficiently utilised, if improved levels of education are to be achieved. Special efforts should be made to reduce the high drop-out and repeater rates, particularly at the primary level. There, improvements in the quality of the existing education system is an absolute necessity which should be given due importance alongwith increased enrolment. The potential demand for and access to education is one of the major causes of low enrolment and high drop-out and repeater rates in rural areas. These have to be improved by quickly implementing various primary social programmes already initiated by the Government.

To conclude, it should be noted that the future requirements are estimated at the current population growth rate of 2.85 per cent. However, as mentioned in earlier chapters, according to some estimates, the growth rate is even more than three per cent. If the latter rates are used, the problem becomes much more acute as all estimates for the years 1990 and 2000 will have to be increased. The fact remains that whatever population growth rate is adopted, the nation has a gigantic task at hand in the education sector which will become more acute with a larger number of families aspiring to educate their children which, no doubt, is a welcome sign. But this will require the diversion of colossal amounts to the education sector.

Another factor worth mentioning is that, (as discussed in chapter 5) female education beyond the primary stage makes major impact on fertility. So if a dual advantage of attaining knowledge and better life, as well as, a small family are to be attained, provisions should be made for continuation of female education beyond the primary school level; it is presumed that males automatically will proceed to attain higher levels of education.

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1. Government of Pakistan, *Hand Book of Population Census data*, Population Census Organisation, Statistics Division, December, 1985.
2. Government of Pakistan, *Economic Survey 1985-86*, Finance Division, Economic Advisers Wing, Islamabad.
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9. World Bank, *Pakistan Economic and Social Development Prospects*, 1986.

HEALTH SERVICES AND PLANNING

11.1 Introduction

Health planning may be defined as that aspect of overall development planning which includes all the public services for promoting and maintaining the health of all individuals of the society. Increase in the income and level of living of the population, as well as, the increase in its absolute size and greater awareness of health needs are bound to affect the demand for health services, and consequently, the resources which become available for the provision of health services. Health planning includes, among other things, programmes for environmental improvements, personal and social health services for the healthy, handicapped and the sick, the control of communicable diseases and general services contributing to good standards of nutrition.

According to the Sixth Five Year Plan, the Government at the time of Independence had inherited a situation of insanitary environmental conditions, a general state of under-nutrition, insufficient medical facilities and deficient maternal care. Thereafter, the expansion of health facilities, apart from manpower, has been painfully slow, which has led to extremely inadequate health facilities in both urban and rural areas.[10].

11.2 Health Services

The following paragraphs will highlight the state of health services available in Pakistan since its inception, as well as, implications of rapid population growth on future health requirements. In Pakistan, the Government has assumed the prime responsibility of providing primary health care, free of charge to all individuals in the country[1]. The basic health facilities[2] are provided through medical hospitals, Dispensaries, Basic Health Units, MCH Centres and Rural Health Centres. Most of the health facilities are located in urban areas where people have an easy access to them. Like many other developing countries, doctors do not like to go to the rural areas and prefer medical practice at large urban centres.

At the time of Independence, provision of health facilities and manpower in Pakistan was very limited for catering to the needs of the population. In 1948, there were only 300 hospitals, 741 dispensaries and 96 maternity and child health centres in the country (Table 11.1 and Figure 11.1), with a manpower of 1,360 doctors, 204 nurses and 37 lady health visitors (Table 11.2). By 1984, there were 633 hospitals, 3,386 dispensaries, 787 maternity and child health centres, and 319 rural health centres in the country (Table 11.1), with manpower of 38,322 doctors, 1,347 dentists, 12,000 nurses, and 2,753 lady health visitors (Table 11.2).

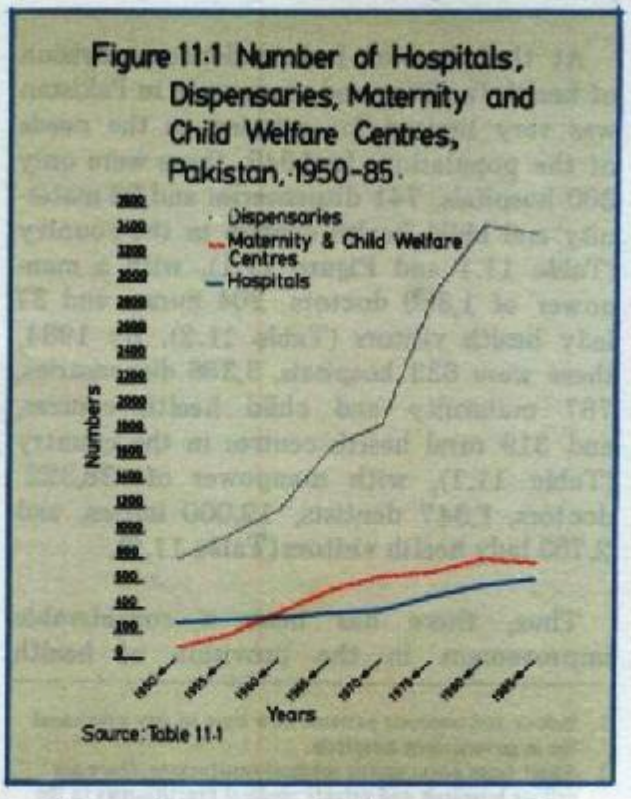
Thus, there has been a considerable improvement in the provision of health

1. Indoor and outdoor patients now have to pay a nominal fee in government hospitals.
2. Apart from government medical institutions, there are private hospitals and private medical practitioners in the country. Private practitioners of unani-medicine, homeopathy, as well as, para-medicals provide treatment to people mostly in the rural areas.

TABLE 11.1: Number of Hospitals, Dispensaries, Maternal and Child Health Centres and Rural Health Centres in Pakistan, 1948–1984

Year	Hospitals	Dispensaries	Maternal and Child Health Centres	Rural Health Centres
1948	300	741	96	–
1950	304	807	107	–
1955	333	964	198	–
1960	343	1,195	384	–
1965	383	1,695	554	–
1970	411	1,875	620	–
1975	518	2,910	696	134
1980	602	3,466	812	217
1981	600	3,478	823	243
1982	613	3,457	817	283
1983	626	3,351	794	302
1984	633	3,386	787	319

Source: Government of Pakistan, *Pakistan Economic Survey 1985-86*, Finance Division, Economic Adviser's Wing, Islamabad.



services and manpower in the country during the period 1948–84. Although, yearly fluctuations occurred in absolute growth of health services and manpower during the 36-year period, there was an overall increase in the yearly average growth in the health services like dispensaries, hospitals and maternal and child health centres estimated to be around 3 per cent, 10 per cent and 0.2 per cent respectively (Table 11.3). The highest average yearly growth of 15 per cent, however, took place in the size of rural health centres during the period 1975–84. On the other hand, examination of the absolute growth of health services and manpower in the country since Independence reveals the overall yearly average growth in the size of lady health visitors, nurses and doctors estimated to be around 204 per cent, 77 percent and 75 per cent respectively, whereas the corresponding growth in the number of dentists during 1970–84 was approximately 18 per cent. Hence, it could be inferred that manpower in the health sector has grown much faster than the health services in the country since Independence. Moreover, the expansion of overall health services has been low compared to the growth rate of population.

TABLE 11.2: Number of Doctors, Dentists, Nurses and Lady Health Visitors in Pakistan, 1948 – 84

Year	Doctors	Dentists	Nurses	Lady Health Visitors
1948	1,360	–	204	37
1950	1,950	–	656	67
1955	3,571	–	1,553	183
1960	6,130	–	2,311	441
1965	9,725	–	3,292	627
1970	14,109	386	4,543	1,169
1975	17,887	650	6,144	1,636
1980	23,594	927	9,098	2,009
1981	26,668	1,017	9,872	2,171
1982	29,931	1,121	10,554	2,368
1983	33,584	1,221	11,070	2,562
1984	38,322	1,347	12,000	2,753

Source: Government of Pakistan, *Pakistan Economic Survey 1985-86*. Finance Division, Economic Adviser's Wing, Islamabad.

TABLE 11.3: Average Annual Growth Rate of Health Service Facilities and Health Manpower in Pakistan, 1948 – 84

Period	HEALTH SERVICES				HEALTH MANPOWER			
	Hospitals	Dispensaries	Maternal and Child Health Centres	Rural Health Centres	Doctors	Dentists	Nurses	Lady Health Visitors
1948–50	0.6	4.4	5.1	–	21.7	–	110.8	40.5
1950–60	1.3	4.8	25.9	–	21.4	–	25.2	55.8
1960–70	2.0	5.7	6.2	–	13.0	–	9.7	16.5
1970–80	4.6	8.5	3.1	12.3[1]	6.7	14.0	10.0	7.2
1980–84	1.3	–0.6	–0.8	11.7	15.6	11.3	5.4	9.2
1948–84	3.1	9.9	0.2	15.3	75.5	17.9	77.3	203.9

Source: Tables 11.1 and 11.2

1. For the period 1975–80..

Since the health services and manpower are to serve the needs of the general population, statistics on health service facilities and manpower are related to population and are provided in table 11.4 and 11.5 at different points in time. (The number of doctors, nurses, lady health visitors and dentists per 100,000 are plotted in Figure 11.2) Although,

Health Planning is most closely related to the overall development planning of the country. The aim of health planning is to improve the health of all individuals in the society. For health services, the Government has chalked-out a comprehensive health policy to provide personal and social health services. Unfortunately, health conditions were very poor at the time of Independence, due to which health facilities, as well as, health manpower still remain extremely low in urban and especially in rural areas. The Government is providing primary health care to all the people, free of charge, yet the health facilities and manpower in the country do not match the requirements of the growing population and, hence, need to be improved.

the absolute size of manpower, as shown earlier has grown much faster but when related to the total population, the corresponding overtime growth seems to have considerably slowed down owing to a comparatively higher growth rate of population. For example, the number of doctors, dentists, nurses and lady health visitors appear to have increased by 28, 4, 59 and 74 times till 1984 but the corresponding increases in their population related ratios were only 10, 2, 20 and 25 times respectively. On the contrary, it can be seen, in the case of health services (Table 11.5) that although the number of hospitals doubled, the population pressure on hospitals rose from about 107 thousand persons per hospital to around

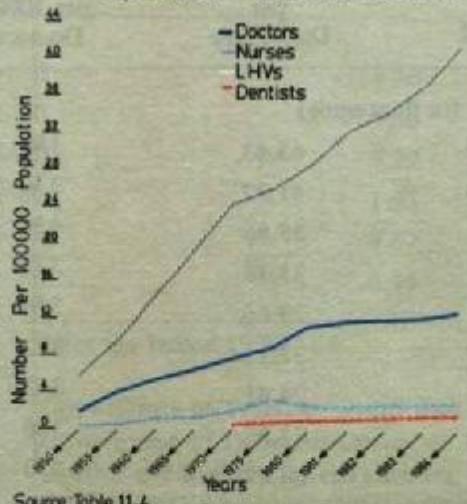
TABLE 11.4: Number of Doctors, Dentists, Nurses and Lady Health Visitors Per 100,000 Population in Pakistan, 1948–84

Year	Doctors	Dentists	Nurses	Lady Health Visitors
1948	4.18	–	0.63	0.12
1950	5.85	–	1.97	0.20
1955	9.53	–	4.15	0.49
1960	14.50	–	5.47	1.04
1965	19.34	–	6.55	1.25
1970	24.29	0.67	7.82	2.01
1975	25.95	0.94	8.91	3.27
1980	29.45	1.16	11.35	2.51
1981	32.29	1.23	11.95	2.63
1982	34.11	1.28	12.03	2.70
1983	37.12	1.35	12.24	2.83
1984	41.08	1.44	12.86	2.95

Source:-

1. Government of Pakistan, *Social Indicators of Pakistan, 1985*, Federal Bureau of Statistics, Islamabad.
2. Government of Pakistan, *Census of Pakistan, 1951*, Bulletin No. 3, Census Organisation, Ministry of Interior and Kashmir Affairs Division, Karachi.
3. Government of Pakistan, *Census of Pakistan 1961, Vol. 3*, Population Census Organisation, Karachi.
4. Government of Pakistan, *Population Census of Pakistan, 1972*, Statistical Report of Pakistan, Population Census Organisation, Statistics Division, Islamabad.
5. Government of Pakistan, *Provincial Results for 1981 Population Census of Pakistan*, Population Census Organisation, Statistics Division, Islamabad.

Figure 11-2 Number of Doctors, Nurses, Lady Health Visitors (LHV) and Dentists Per 100,000 Population, Pakistan, 1950-84.



Source: Table 11-4

147 thousand persons per hospital during the same period of time. Similarly, the number of dispensaries, though increased four-fold from 741 to 3,386 during 1948–86, the corresponding population pressure on dispensaries, inspite of this improvement declined only slightly by about 37 per cent from about 43 thousand persons per dispensary to around 27 thousand persons per dispensary in 1984. The two other positive indicators of the level of medical facilities available are the population per hospital bed and the nurse-doctor ratio. In 1948, one hospital or dispensary per bed could be made available to 2,279 persons but because of relatively greater improvement in the provision of beds, 1,739 persons could compete for the availability of the same bed (Table 11.5).

Further, examination of the pattern of growth in health facilities in relation to the total population during 1948–84 can be undertaken with the help of annual geometric growth rates. Tables 11.6 and 11.7 present these annual growth rates for health facilities and manpower as related to the population for varying periods of time. It is interesting to note that the annual growth rates per-capita of doctors, nurses and lady health visitors have been declining from their initial high values during 1948–50 to their lowest values during 1970–80 meaning thereby, that health facilities and manpower as related to the population have been continuously deteriorating during the period 1948–50 to 1970–80. The situation, however, seems to have been reversed and the period 1980–84, as such, witnessed substantial improvement in the provision of manpower in the country. The impact of these last four years has actually been a major factor in generating a respectable improvement in the overall period of 1948–84.

Overtime changes in the provision of health facilities measured in terms of periodic growth rates of population per bed, population per hospital, population per dispensary and nurse-doctor ratio are portrayed in table 11.7. The table shows declining periodic growth rates of population per bed and population per dispensary, thereby, indicating overtime improvements in the provision of hospital beds and establishment of dispensaries per capita in the country. On the other hand, positive overtime growth rates of population per hospital indicate a very slow establishment of hospitals for catering to the needs of rapidly growing population. Nurse-doctor ratio is a very important determinant in the provision of both health services and manpower in the country. This ratio, after some initial improvement, has tended to deteriorate, mainly because of the slow entry of younger ladies in the nursing profession. This occurred due to the establishment of the institution of purdah and other prevailing social norms, and as such, nursing profession no longer seems to be looked upon as a respectable choice by the Pakistani ladies.

Table 11.8 compares two important health indicators, namely, doctors and nurses per capita of Pakistan with those of two developing countries; India and Malaysia and three developed countries, Republic of Korea,

TABLE 11.5 Population per Hospital Bed, Hospital and Dispensary and Nurse: Doctor Ratio in Pakistan, 1948–1984

Year	Population per Hospital Bed	Population per Hospital	Population per Dispensary	Nurses per 1000 Doctors
		(in thousands)		
1948	2279	107.28	43.43	150
1950	2295	109.68	41.32	336
1955	1951	112.51	38.86	435
1960	1912	123.35	35.38	377
1965	1963	131.27	29.66	338
1970	2078	146.50	32.11	322
1975	1947	137.13	24.41	343
1980	1741	137.18	23.83	386
1981	1757	141.86	24.47	370
1982	1743	143.16	25.39	353
1983	1734	144.54	27.00	330
1984	1739	147.37	27.55	313

Source:-

1. Government of Pakistan, *Social Indicators of Pakistan, 1985*, Federal Bureau of Statistics, Islamabad.
2. Government of Pakistan, *Census of Pakistan, 1951*, Bulletin No. 3, Census Organisation, Ministry of Interior and Kashmir Affairs Division, Karachi.
3. Government of Pakistan, *Census of Pakistan 1961, Vol. 3*, Census Organisation, Karachi.
4. Government of Pakistan, *Population Census of Pakistan, 1972*, Statistical Report of Pakistan, Population Census Organisation, Statistics Division, Islamabad.
5. Government of Pakistan, *Provincial Results for 1981 Population Census of Pakistan*, Population Census Organisation, Statistics Division, Islamabad.

U.K. and U.S.A. for the years 1960, 1976 and 1980. As compared to the two developing countries, the health sector situation with respect to the provision of doctors per capita in Pakistan has somewhat improved overtime, whereas, in terms of nurses per capita, the overtime improvement lags behind India by an equal margin and Malaysia by a very wide margin. In Malaysia, a large number of women tend to enter the nursing profession, probably because in Malaysia 40 per cent of the population is constituted of Indian and Chinese origin. On the other hand, in the developed countries mentioned above, health conditions have been improving at a very rapid rate as compared to Pakistan and other developing countries.

The low level of health facilities available to the Pakistani population is mainly due to low level of health expenditure and unequal distribution of health facilities as well as rapid population growth. A large amount of the health expenditure is incurred in urban areas where most of the health facilities of the country are located. Pakistan spent only 0.15 per cent of its Gross National Product (GNP) and 2.13 per cent of its total government expenditure on health during the year 1971–72. However, the per cent of health expenditure increased to 2.22 per cent and 4.93 per cent of the Gross National Product and total government expenditure in 1985–86 respectively (Figure 11.3). On per capita basis, Pakistan spent only a meagre sum of

TABLE 11.6: Geometric Growth Rate of Doctors, Dentists, Nurses and Lady Health Visitors per Capita in Pakistan, 1950–1984

Period	Doctors	Dentists	Nurses	Lady Health Vistors
1948–50	18.30	–	76.83	29.10
1950–60	9.50	–	10.75	17.92
1960–70	5.29	–	3.64	6.81
1970–80	1.95	5.64	3.80	2.25
1980–84	8.67	–	3.17	4.12
1948–84	6.55	5.2*	8.74	9.30

* For the Period 1970 – 84.

Source:-

1. Government of Pakistan, *Social Indicators of Pakistan, 1985*, Federal Bureau of Statistics, Islamabad.
2. Government of Pakistan, *Census of Pakistan, 1951*, Bulletin No. 3, Census Organisation, Ministry of Interior and Kashmir Affairs Division, Karachi.
3. Government of Pakistan, *Census of Pakistan 1961, Vol. 3*, Census Organisation, Karachi.
4. Government of Pakistan, *Population Census of Pakistan, 1972*, Statistical Report of Pakistan, Population Census Organisation, Statistics Division, Islamabad.
5. Government of Pakistan, *Provincial Results for 1981 Population Census of Pakistan*, Population Census Organisation, Statistics Division, Islamabad.

TABLE 11.7: Geometric Growth Rates of Population per Hospital Bed, Hospital and Dispensary and Nurse : Doctor Ratio in Pakistan, 1950–1984

Period	Population per Hospital Bed	Population per Hospital	Population per Dispensary	Nurse Doctor Ratio
1948–50	0.35	1.11	–2.46	49.67
1950–60	–1.81	1.18	–1.54	1.16
1960–70	0.84	1.73	–0.96	–1.56
1970–80	–1.75	–0.65	–2.94	1.83
1980–84	–0.03	1.81	3.69	–5.11
1948–84	–0.75	0.89	–1.26	2.06

Source:-

1. Government of Pakistan, *Social Indicators of Pakistan, 1985*, Federal Bureau of Statistics, Islamabad.
2. Government of Pakistan, *Census of Pakistan, 1951*, Bulletin No. 3, Census Organisation, Ministry of Interior and Kashmir Affairs Division, Karachi.
3. Government of Pakistan, *Census of Pakistan 1961, Vol. 3*, Census Organisation, Karachi.
4. Government of Pakistan, *Population Census of Pakistan, 1972*, Statistical Report of Pakistan, Population Census Organisation, Statistics Division, Islamabad.
5. Government of Pakistan, *Provincial Results for 1981 Population Census of Pakistan*, Population Census Organisation, Statistics Division, Islamabad.

The ratio of doctors has increased, but is still low as compared with developed countries, as well as, developing countries like Republic of Korea. During the decade 1950–60, the ratio of health facilities was quite high in relation to the population, but it declined during 1960–70 and still further in 1970–80. In terms of doctors, the health facilities can be called as rapid in the first decade, moderate in the second and negligible in the last decade. Same was the case of nurses. There was a considerable improvement in 1950–60, deterioration in 1960–70 and improvement again in 1970–80. The above discussion presents a serious state of health facilities, in fact, a deterioration as compared to other developing countries. But during the last decade, there had been a considerable improvement in the number of beds and dispensaries. This setback is due to rapid population growth and insufficient spending on the health sector. Pakistan has been spending only two per cent of its GNP and five per cent of the total expenditure on the health sector. The expenditure is too small to cope with the population size, its rapid growth and rising expectations.

Rs. 0.93 per person in 1971–72. (Table 11.9 and Figure 11.4). Although health expenditure has increased 34-fold from Rs. 57 million in 1971–72 to Rs. 1,941 million in 1985–86, yet because of the rapidly growing population, per capita expenditure on health remained at a low level of 20.49 rupees per capita in 1985–86. This level of expenditure per capita is also still lower than many other developing countries of Asia and Africa.

Keeping in mind the above discussion, it could be said that although there have been considerable improvements in the provision of health facilities and manpower in the country since Independence, yet when related to the population and greater awareness of health needs, these facilities seem to be continuously deteriorating. The only substantial improvement in these four years during 1980–84 was that in manpower, such as doctors and lady health visitors. The only other noticeable overtime improvement in health facilities has been in the provision of beds for sick persons in the hospitals and dispensaries and the establishment of dispensaries across the country. This general deterioration is an outcome of rapid population growth and insufficient expenditure on health. During 1985–86, Pakistan was spending only about two per cent of its GNP and five per cent of its total annual expenditure on health which is too small an amount spent on such a large and rapidly growing population. In absolute terms, the total expenditure during 1971–72 to 1985–86 increased by about 34 per cent whereas, the corresponding increase in per capita expenditure was only 22 times.

TABLE 11.8: Number of Doctors and Nurses per 100,000 Population in Selected Countries of the World, 1960, 1976 and 1980

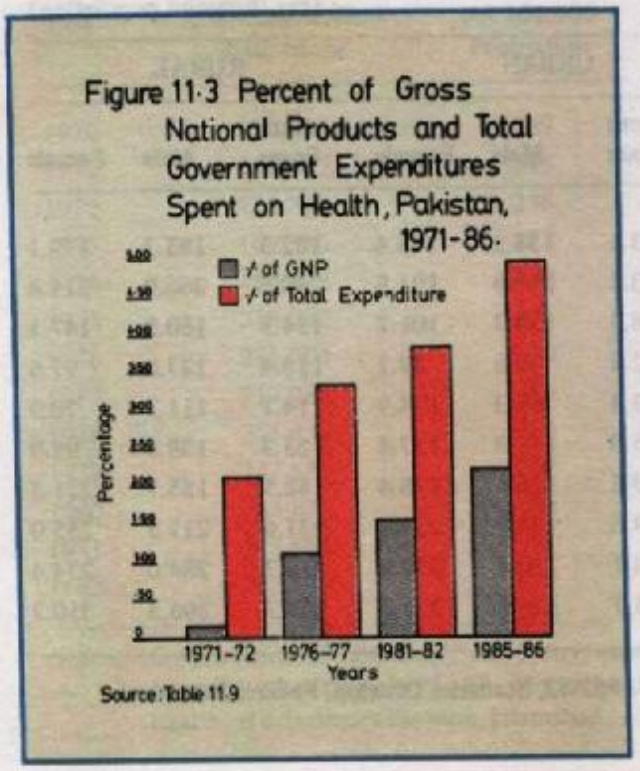
COUNTRIES	DOCTORS			NURSES		
	1960	1976	1980	1960	1976	1980
Pakistan	14.50	26.45	29.45	5.47	9.41	11.35
India	17.24	31.85	27.10	10.41	15.82	18.31
Malaysia	13.05	22.99	22.61	55.25	82.64	106.38
Korea	33.33	39.52	69.44	192.30	217.00	285.71
U.K.	104.17	149.25	153.85	238.09	555.55	714.29
USA	128.00	166.67	192.31	294.12	666.67	714.29

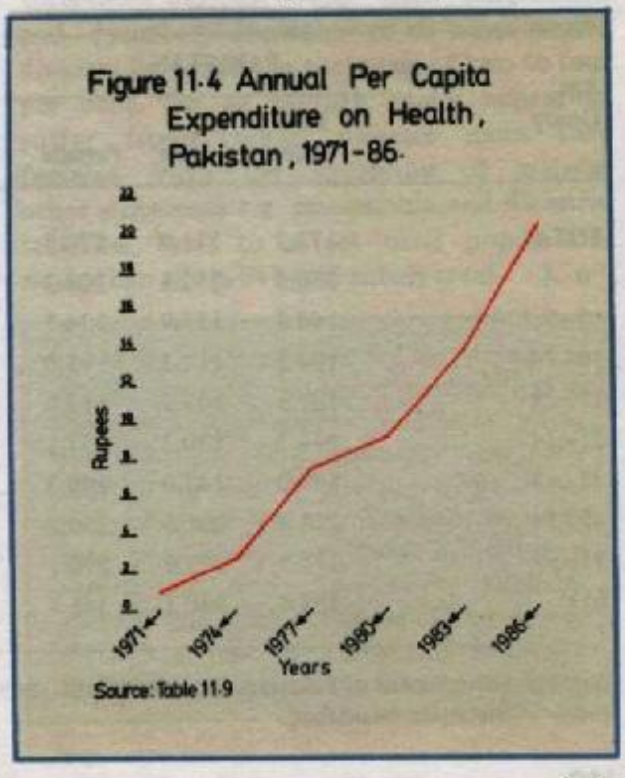
World Bank, World Development Report, 1980–1982, Washington, D.C., U S.A.

TABLE 11.9: Health Expenditure as Percentage of GNP and Total Government Expenditure and per Capita Expenditure on Health for 1971 – 72 to 1985 – 86

Year	GNP at Market Prices	Government Expenditure		Health Expenditure		Health Expenditure Per Capita
		Total	On Health	As Percentage of GNP	As Percentage of Total Expenditure	(in Rs.)
		(in Million Rs.)				
1971–72	36,818	2,681	57	0.15	2.13	0.93
1972–73	39,336	3,870	96	0.24	2.48	1.47
1973–74	41,422	6,415	176	0.42	2.74	2.67
1974–75	42,828	11,371	363	0.85	3.19	5.35
1975–76	45,242	13,144	629	1.39	4.79	8.99
1976–77	47,518	16,239	540	1.14	3.33	7.49
1977–78	52,622	17,150	512	0.97	2.99	6.89
1978–79	55,441	20,485	569	1.03	2.78	7.43
1979–80	60,113	21,500	717	1.19	3.33	9.08
1980–81	63,756	26,663	942	1.48	3.53	11.58
1981–82	67,548	27,000	1,037	1.54	3.84	12.37
1982–83	72,965	28,430	1,183	1.62	4.16	13.69
1983–84	76,646	29,148	1,563	2.04	5.36	17.54
1984–85	81,481	34,082	1,700	2.09	4.99	18.50
1985–86	87,175	39,398	1,941	2.22	4.93	20.49

Source:- Government of Pakistan, *Annual Development Plan,* Various Issues, Planning Commission, Islamabad.





11.3 Morbidity and Mortality

The age specific morbidity rates by sex in urban and rural areas for 1982–83 are presented in table 11.10 and figure 11.5. About one out of six persons (17%) in Pakistan were found to be sick during 1982–83, two weeks prior to the survey. Approximately 14 per cent of the population of urban areas was sick compared with around 18 per cent in the rural areas. The lower urban morbidity rate as seen is in conformity with the lower urban mortality rate. Moreover, it was found that the rural rates are higher at all ages throughout. Females experienced higher morbidity rates in reproductive ages and then in old age. A surprising finding is the rather low morbidity rates among the rural female population in the age groups 15–24 and 25–34 years as compared to the corresponding female population in the urban areas. This could be attributed to better health of young women in the rural areas or possibly under reporting among rural females. The age curve of morbidity almost exactly follows the age curve of mortality. It starts with high morbidity rate at age 0–4 years, drops suddenly to age 5–9 years declining

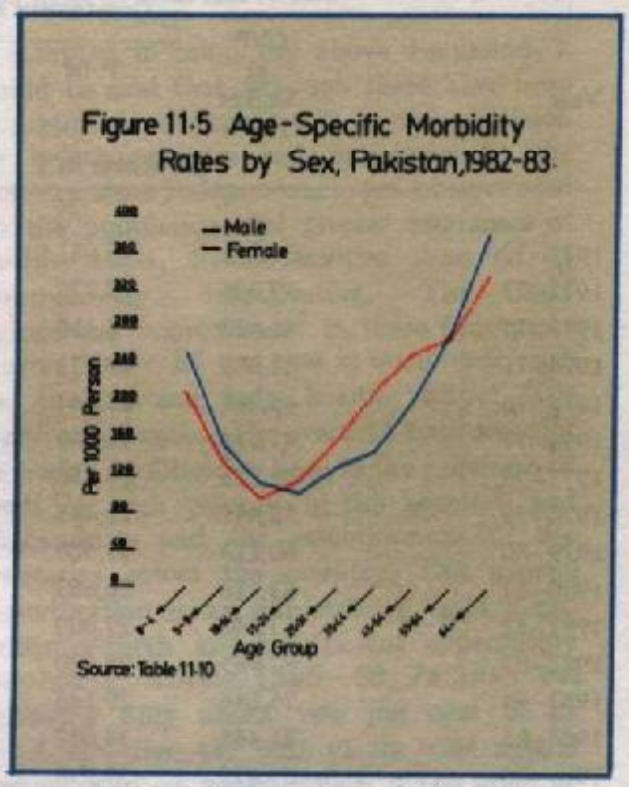


TABLE 11.10: Age-Specific Morbidity Rates in Urban and Rural Areas by Sex, 1982–1983

(Per thousand population)

Age Group	PAKISTAN			URBAN			RURAL		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
TOTAL	172.2	171.9	170.5	143.1	138.2	148.4	182.3	185.2	179.1
0–4	230.5	252.8	208.3	203.2	214.8	191.8	240.6	266.9	214.4
5–9	144.8	153.9	134.7	118.3	134.3	101.2	154.3	160.8	147.1
10–14	104.2	112.3	95.0	82.8	76.8	89.2	113.4	127.0	97.6
15–24	107.9	102.5	113.9	93.4	83.3	104.9	114.7	111.7	70.9
25–34	144.3	130.3	157.1	115.3	111.3	137.4	153.3	138.6	95.9
35–44	178.0	147.0	209.3	169.2	126.4	178.4	188.5	155.7	221.3
45–54	224.4	201.6	250.2	139.6	143.9	237.4	231.6	211.5	255.0
55–64	271.5	272.9	270.1	124.7	220.4	257.9	210.7	289.0	274.4
65+	465.4	380.1	346.7	395.7	326.4	331.9	379.3	396.3	350.7

Source:- Government of Pakistan, *National Health Survey 1982-83*, Statistics Division, Federal Bureau of Statistics, Islamabad.

steadily to its lowest level at age 10–14 years with only three exceptional rises, first slowly and then rapidly to old age where it attains a much higher value compared with its starting value at age 0–4 years.

Morbidity and mortality are closely related to each other. It was found that the situation in this regard was also disappointing because 17 per cent of the population of Pakistan was sick. The rate of morbidity in urban areas is 14 per cent while it is 18 per cent in rural areas. Morbidity rate of females was estimated to be higher in reproductive ages. However, the age curve of morbidity follows almost the same age curve that of mortality.

One of the startling statistics on patients' treatment in the government medical institutions is shown in table 11.11. As can be seen from the table, in 1970 only about 0.002 per cent of Pakistan's population availed the health facilities which increased to only about 0.009 per cent in 1982. The statistics seem to be deficient in coverage and probably reflect the situation of only a few government hospitals. Since the morbidity rate in Pakistan is about 17 per cent, at least more than 10 per cent of the population should be availing itself of the government health facilities. The second possibility could be a good percentage of the well off population which either goes to private practitioners, *hakeems* who practice *unani* medicine or homeopathic doctors, instead of going to a government hospital, as is apparent from table 11.13.

TABLE 11.11: Number of Patients Attending Medical Institutions and their Ratio to Population in Pakistan, 1970–1982

Year	Number of Patients Attending Medical Institutions	Patients per 100,000 Population
1970	125,699	209
1971	152,947	245
1972	152,759	236
1973	182,326	273
1974	158,472	230
1975	218,992	308
1976	271,004	370
1977	217,985	289
1978	251,835	324
1979	247,513	309
1980	563,871	683
1981	528,695	621
1982	763,759	870

Source:- Government of Pakistan, *Morbidity and Mortality Statistics 1975–83*, Ministry of Health, Bio-Statistics Division, Islamabad.

From the point of view of health planning, it is very important to determine the number of sick persons by the type of sickness. Since, both sexes are subject to different incidence of sickness, the distribution by cause of sickness is given separately in table 11.12. Among the total sick persons by sex, about 41 per cent males and 40 per cent females are exposed to diseases, such as malaria and other fevers. Another four per cent males and three per cent females suffered from infectious diseases other than tuberculosis and dysentery. Incidence of all other named diseases lie mostly in the range of two to four per cent. On an average, males appear to suffer from various diseases more than females. With the exception of malaria, other sicknesses e.g. pneumonia and digestive troubles, tend to affect rural populations more than those living in urban areas.

In 1970, 0.002 per cent of the population availed itself of the health facilities and it increased to 0.009 per cent in 1982. Out of the population covered by morbidity rates, more than 10 per cent of the population availed itself of health facilities. According to health data, most of the sick persons suffered from malaria and fevers followed by infectious diseases. It is worth noting that 16 per cent of the sick persons get treatment from government medical centres which is a very low figure.

TABLE 11.12: Percentage Distribution of Sick Persons in Urban and Rural Areas in Pakistan by Sex and Selected Diseases, 1982–83.

Diseases	TOTAL		URBAN		RURAL	
	Male	Female	Male	Female	Male	Female
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00
Tuberculosis	2.54	2.26	2.27	2.23	2.62	2.27
Dysentery	2.62	1.99	2.96	1.67	2.52	2.09
Other infective diseases	3.78	3.13	3.81	2.90	3.77	3.49
Certain diseases among children	3.22	2.97	3.25	3.17	3.21	2.90
Malaria (includes all other fevers)	41.08	39.55	32.72	30.64	43.53	42.42
Allergic disorders	4.03	2.20	3.69	2.37	4.12	2.80
Diabetes mellitus	0.80	0.53	0.84	1.07	0.79	0.35
Diseases of the eye	1.10	1.21	1.43	1.10	1.00	1.28
Chronic rheumatic heart disease, Arteriosclerosis and degenerative heart disease and Hypertension.	1.27	2.75	2.46	4.67	0.91	2.14
Acute nasopharynges (common cold)	6.76	6.16	9.56	6.71	5.94	5.98
Influenza	4.25	3.55	4.42	4.52	4.20	3.23
Pneumonia	1.15	1.42	0.88	1.14	1.23	1.51
All other respiratory diseases	5.51	4.71	6.68	5.22	5.16	4.55
Diseases of the stomach and duodenum except Cancer	3.59	4.84	3.75	6.86	3.55	4.19
Other diseases of digestive system	2.25	1.69	1.55	2.03	2.46	1.58
Arthritis & rheumatism except rheumatic fever	2.63	3.90	2.50	4.58	2.66	3.68
All other diseases	11.73	15.57	14.62	19.22	10.91	14.42
Accidents, poisoning and violence (external cause)	1.69	1.07	2.61	0.90	1.42	1.12

Source:- Government of Pakistan, *National Health Survey 1982-83*, Statistics Division, Federal Bureau of Statistics, Islamabad.

Also of importance to health planners is the source of treatment received by sick people. Such information is provided in table 11.13 and figure 11.6 for urban and rural areas. It is evident from the table that about 16 per cent of all sick persons in Pakistan approached government facilities for medical treatment. Since, only 17 per cent of the population in 1982–83 was sick, only 2.72 per cent (17 x 16 ÷ 100) of the sick population of Pakistan in 1982–83 used government sponsored medical facilities. This figure is too low for a developing country like Pakistan as the Government's prime responsibility is to provide basic health services to its citizens. A major portion of the remaining 14.28 per cent of the total sick population, presumably, received treatment from private hospitals, dispensaries and clinics, as well as, from *hakeems*, homeopaths, compounders and others. It is interesting to note that more sick persons in rural areas as compared to urban areas go to *hakeems* and compounders for treatment. Private hospitals and clinics are the major source of treatment in Pakistan. On the whole, 43 per cent of the sick persons, 63 per cent in urban and 37 per cent in rural

areas, have to go to private doctors in case of necessity and emergency.

As morbidity and mortality are closely inter-related, it is essential for the health planners to know the extent to which the individuals are subject to the risk of dying. Table 11.14 shows the distribution of estimated deaths by different causes of death at national and urban and rural areas in 1971. According to the table, about 64 per cent of the deaths in Pakistan were due to infective and parasitic diseases, 10 per cent were due to the incidence of malaria, seven per cent were related to the problems at birth and tuberculosis account for six per cent of such deaths. Because of the non-availability of adequate maternal and child health facilities and poverty, sizeable number of married women in reproductive ages die every year due to childbirth. More than eight per cent of the total deaths in 1971 were probably an outcome of such maternal deaths, seven per cent in urban areas and nine per cent in rural areas. These four leading causes of death amounted to 87 per cent of all deaths in Pakistan. Malaria, birth related deaths and tuberculosis were more prevalent in rural areas.

11.4 Implications for Health Planning

It has already been observed that the provision of health services in Pakistan are far

TABLE 11.13: Per cent Distribution of Sick Person by Source of Treatment Received in Urban and Rural Areas, Pakistan, 1982 – 1983

Source of Treatment	TOTAL			URBAN			RURAL		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Government Hospital – Dispensary Rural Health Centres, Sub-Centres	15.66	14.80	16.41	13.45	12.55	14.36	16.23	15.47	17.08
Private Hospital – Dispensary	17.73	18.13	17.70	22.55	23.99	21.09	16.50	16.41	16.60
Private Clinic	24.92	25.14	25.97	40.66	39.81	41.52	20.88	20.83	20.95
Hakim	12.34	12.85	11.13	4.29	4.68	3.89	14.41	15.25	13.47
Homeopath	1.23	1.21	1.29	1.66	1.34	1.99	1.21	1.18	1.06
Compounder	15.29	14.44	15.55	7.01	6.46	7.56	17.42	16.78	18.12
Self-treatment	5.54	5.81	5.14	4.22	4.83	3.62	5.88	6.10	5.64
No Treatment	3.11	3.33	2.80	2.20	2.46	1.94	3.35	3.59	3.08
Other	1.31	1.44	1.11	0.75	0.83	0.67	1.45	1.63	1.26
More than one source	2.86	2.85	2.88	3.21	3.05	3.38	2.76	2.76	2.74

Source:- Government of Pakistan, *National Health Survey 1982-83*, Statistics Division, Federal Bureau of Statistics, Islamabad.

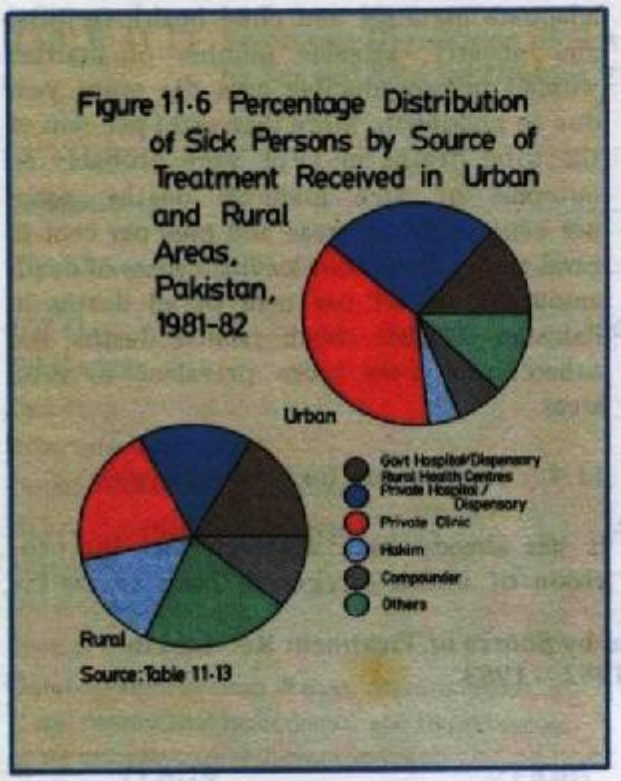


Figure 11-6 Percentage Distribution of Sick Persons by Source of Treatment Received in Urban and Rural Areas, Pakistan, 1981-82

Source: Table 11-13

from satisfactory. On per capita basis, there has been a steady decline of health services due to a more rapid population growth. One possible solution could be an increase in health facilities at a higher growth rate than the growth of population. A better alternative, however, would be to increase the health facilities and decrease fertility simultaneously, for an accelerated growth of health facilities.

In order to demonstrate the advantage of a declining fertility rate, the population of Pakistan is projected up to the year 2010, at five yearly intervals, assuming both constant fertility and declining mortality and declining fertility and declining mortality, while health facilities are assumed to remain constant at their 1984 level throughout the projected period. For undertaking this exercise, first the 1981 Census of population is projected to the year 2010, assuming a constant intercensal growth rate of 3.06

TABLE 11.14: Percent Distribution of Estimated Deaths by Cause of Death in Urban and Rural Areas, Pakistan, 1971

CAUSES OF DEATH	TOTAL	URBAN	RURAL
All causes	100.00	100.00	100.00
Infective and parasitic diseases	63.83	67.64	63.07
Malaria	10.44	7.86	10.96
Congenital anomalies, birth-injury, difficult labour and causes of perinatal mortality	7.36	5.64	7.71
Tuberculosis of all forms	5.55	2.86	6.09
Accidents, poisoning and violence	1.88	1.05	2.03
Bacillary dysentery & amoebiasis	2.51	2.88	2.44
Diseases of heart and the circulatory system	1.79	3.92	1.35
Diabetes millitus	1.14	0.75	1.22
Peptic ulcer, appendicitis, intestinal obstruction and hernia	1.20	1.09	1.22
Complications of pregnancy and child birth	1.13	1.39	1.08
Tumours	0.34	0.00	0.41
Unknown causes	2.83	4.92	2.42

Source:- Government of Pakistan, *Population Growth Survey, 1971*, Statistics Division, Federal Bureau of Statistics, Islamabad.

Health services in Pakistan are far from satisfactory. The most important reason is the high population growth rate which is higher than that of health facilities on per capita basis. It becomes still more miserable when the situation in rural areas is taken into consideration where very few doctors are ready to work and health facilities are far flung and inadequate. Under the circumstances, health facilities should be increased at a fast pace covering the whole range extending from doctors and nurses to hospital beds with special emphasis on rural and slum areas of the cities. The entire analysis shows that the overall situation can be improved by a break-through in fertility which would allow release of more funds for social services like health and education rather than catering to the needs of an army of infants multiplying continuously.

per cent per annum. Two more projections of the 1981 Census of population on component basis are undertaken, assuming medium and large decline of fertility. Details of these projections alongwith assumptions of fertility and mortality are explained elsewhere[12]. Tables 11.15 and 11.16 demonstrate the per capita availability of health facilities and manpower at various points in time under conditions of constant fertility, medium decline of fertility and rapid decline of fertility. As can be seen from the tables, under conditions of constant fertility, the population continues to grow unchecked and in order to maintain the same per capita availability of health facilities and manpower during 1984 to 2010, the number of doctors, dentists, nurses, lady health visitors, hospital beds, hospitals and dispensaries are projected at the same rate of growth. On the other hand, if the medium decline of fertility is affected through conscious efforts with increased socio-economic development, then for the given increases in health inputs under constant fertility, per capita availability of health inputs will continue to increase overtime.

According to these projections the number of doctors, dentists, nurses and lady health visitors will increase gradually from 41.08, 1.44, 12.86 and 2.95 per 100,000 population in 1984 to 51.42, 1.80, 16.10 and 3.69 per 100,000 population in 2010 under medium decline in fertility. One hospital bed available to 1,739 persons in 1984 will then be available to 1,389 persons in the year 2010 (Table 11.17). Similar improvements could be observed in per capita availability of during the period under consideration. With these circumstances, it could also be possible to affect a large decline of fertility, hence, achieving greater improvements in the per capita availability of health facilities and manpower in the country during the same period of time. From this analysis, it will be seen that the benefits of a declining fertility conceal not only health improvements but also availability of such facilities to the individuals. However, since the Government is to invest more in health, it is likely that improvements in this sector will be magnified by a simultaneous combination of investment and decline in the fertility rate.

To conclude, it can be said that the health care coverage in Pakistan is extremely poor as compared to developed countries and even some developing countries. This is mainly due to low expenditure spent on the health sector and partly due to the concentration of doctors and other facilities in the urban areas, thus, depriving the rural areas of the health coverage they deserve. Rapid growth of population is responsible for neutralising a good part of the additional health facilities being created. A decline in population growth rate accompanied by efforts to increase and improve health services is imperative if meaningful gains are to be made in the health sector.

TABLE 11.15: Projected Number of Doctors, Dentists, Nurses and Lady Health Visitors per 100,000 Population according to Constant and Declining Fertility Projections in Pakistan, 1984–2010

(Per 100,000 population)

Year	Doctors	Dentists	Nurses	Lady Health Visitors
		CONSTANT FERTILITY		
1984	41.08	1.44	12.86	2.95
1985	41.08	1.44	12.86	2.95
1990	41.08	1.44	12.86	2.95
1995	41.08	1.44	12.86	2.95
2000	41.08	1.44	12.86	2.95
2005	41.08	1.44	12.86	2.95
2010	41.08	1.44	12.86	2.95
		MEDIUM DECLINE OF FERTILITY		
1984	41.08	1.44	12.86	2.95
1985	41.38	1.45	12.95	2.97
1990	42.25	1.48	13.23	3.03
1995	43.67	1.53	13.67	3.14
2000	45.70	1.60	14.31	3.28
2005	48.32	1.69	15.12	3.47
2010	51.42	1.80	16.10	3.69
		RAPID DECLINE OF FERTILITY		
1984	41.08	1.44	12.86	2.95
1985	41.38	1.45	12.95	2.97
1990	42.28	1.48	13.24	3.04
1995	44.20	1.55	13.84	3.17
2000	47.62	1.67	14.91	3.42
2005	52.19	1.83	16.34	3.75
2010	57.39	2.01	17.96	4.12

Source:-

1. Government of Pakistan, *Pakistan Basic Facts, 1984-85*, Finance Division, Economic Adviser's Wing, Islamabad.
2. Government of Pakistan, *Pakistan Economic Survey, 1985-86*, Finance Division, Economic Adviser's Wing, Islamabad.
3. Hashmi, Sultan S., and A. Razzaque, Rukanuddin, *et al*, *Population Projections, Pakistan, 1981–2031*, National Institute of Population Studies, Islamabad, December, 1986.

TABLE 11.16: Population Per Hospital Bed, Hospital and Dispensary at Constant and Declining Fertility Levels in Pakistan, 1984–2010

Year	Population per Hospital Bed	Population per Hospital (000's)	Population per Dispensary (000's)
	CONSTANT FERTILITY		
1984	1739	147.37	27.55
1985	1739	147.37	27.55
1990	1739	147.37	27.55
1995	1739	147.37	27.55
2000	1739	147.37	27.55
2005	1739	147.37	27.55
2010	1739	147.37	27.55
	MEDIUM DECLINE OF FERTILITY		
1984	1739	147.37	27.55
1985	1727	146.43	27.35
1990	1691	143.36	26.78
1995	1636	138.57	25.91
2000	1563	132.46	24.76
2005	1478	125.35	23.42
2010	1389	117.73	22.01
	RAPID DECLINE OF FERTILITY		
1984	1739	147.37	27.55
1985	1726	146.42	27.34
1990	1689	143.26	26.76
1995	1616	136.91	25.60
2000	1500	127.11	23.77
2005	1369	116.04	21.68
2010	1245	105.50	19.72

Source:-

1. Government of Pakistan, *Pakistan Basic Facts 1984-85*, Finance Division, Economic Adviser's Wing, Islamabad.
2. Government of Pakistan, *Pakistan Economic Survey, 1985-86*, Finance Division Economic Adviser's Wing, Islamabad.
3. Hashmi Sultan S., and A. Razzaque Rukanuddin *et al*, *Population Projections, Pakistan, 1981–2031* National Institute of Population Studies, Islamabad, December, 1986.

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12. Hashmi Sultan. S et. al. *Population Projections* 1981–2031, National Institute of Population Studies, Islamabad.
13. World Bank, *World Development Report, 1984,* Washington, D.C., USA.

HOUSING NEEDS

12.1. Introduction

The study of population is focussed mainly on the structure, distribution and components of population growth, namely fertility, mortality and migration, as well as, on their determinants. The unit of observation in these analyses has usually been the individuals themselves, either by sex or as couples. However, in any society, individuals do not behave in isolation but their general participation in various activities is either in aggregates or groups. The most important human grouping is the family and household, and it is through the family that each generation is replaced by another generation. The family, thus, represents the molecular unit of the society which, through the mechanism of its reproduction process, contributes to the growth of population and also fulfils a desired portion of its responsibilities to the young and aged of the society.

Since a family or household, in most cases, is supposed to occupy a housing unit, a study of the household becomes of paramount importance in analysing housing trends for planning purposes and future needs. In studies of fertility, migration, savings, income distribution, economic growth and social welfare, the family or household in every society is usually considered statistically as a single primary unit. Families undergo a systematic life cycle through which changes occur in the size and composition of the family; these changes have, in turn, important bearing on individuals in the field of consumption, savings pattern, economic participation and social welfare, etc. Moreover, changes in the process of modernisation, industrialisation and urbanisation are bound to influence the size and structure of the family and of household, especially in bringing about a reduction in its size.

The concept, as well as, the definition of family and households need to be considered at the outset, as the close relationship between the two sometimes creates confusion. A household is defined [11] as a socio-economic unit consisting of individuals who live together or it may represent some sort of an arrangement between individuals, who may or may not be related, for providing themselves with food or other essentials of living. The household may be confined to only one person or it may be a multi-person household. Whereas, a family is defined [11] as consisting of those members of a household who are related through blood, adoption or marriage. The degree of relationship used in determining the limits of the family is dependent upon the use to which the data are to be put. The family, in this sense may also be termed as extended family or joint family which includes, in addition to a couple with their minor children, their married children and their families and other relatives as well.

The object of the present analysis is to examine the burden of population pressure on the past, current and future housing stock of Pakistan. The analysis will also deal with the extent of savings in future housing stocks,

if the fertility in Pakistan starts declining or remains constant. Another objective will be to study the levels and trends of housing units in isolation, as well as, in relation to the population at national and provincial levels. Urban and rural differentials in current and past housing stocks will also be studied at national and provincial levels.

Since Independence, four population censuses have so far been undertaken in Pakistan during the year 1951, 1961, 1972 and 1981. However, information on the housing situation in Pakistan is available only at three points of time; 1960 Housing Census, 1973 Housing, Economic and Demographic (HED) Survey and 1980 Housing Census of Pakistan. In 1973, housing information was obtained from weighted estimates of 255,000 sample households. These sample estimates are likely to differ statistically to a certain extent from census estimates on account of sampling errors alone. The 1972 Population Census was conducted just after the secession of East Pakistan, as before that the political climate was not suitable for such a gigantic operation. Also, some of the areas then, were badly affected by floods, which made enumeration difficult. It is likely, therefore, that the quality of enumeration in this census might have been seriously affected in certain areas. Since the frame of reference of 1973 HED samples was based on the 1972 Census, there is every probability that the quality of enumeration further deteriorated. Hence, the 1973 HED data in the present analysis is not likely to yield the same trend when compared with the 1960 and 1980 Housing Census Data. As such, the 1973 Housing Data have been utilised only minimally in this analysis.

Every analysis on housing face numerous difficulties, especially the longitudinal data. Usually data on households and families in population and housing census are subject to some important errors. These may arise from misconceptions on the part of the enumerators and respondents, ignorance of enumerators and respondents, and lapse of memory on part of the respondents. Unwillingness of respondents to give accurate information sometimes constitute a major problem. The most important source of errors or biases results from different concepts and difinitions employed in different housing and population census in any single country. The Pakistan Housing Census of 1960 and Census surveys of 1973 and 1980 suffer from all the above mentioned errors and biases and any major conclusion drawn from the analysis of the data are to be interpreted with caution. The 1951 Census of Population was undertaken just after Independence of Pakistan and it was not thought appropriate at that time to initiate a housing census prior to the population census, mainly because an efficient machinery for such type of an operation did not exist in the country.

12.2. Housing Stock, Current and Past

At the time of Independence, in 1947, the country had to face the formidable task of housing a large number of migrants from across the border. Because of too much of pre-occupation with the overall rehabilitation process, the new Pakistan Government could not pay due attention to the housing problem. A limited effort for providing shelter to displaced persons was made initially along with building of low cost housing projects on emergency basis[9]. The Government's own participation in housing activity was confined mostly to providing housing to its own employees and distribution of plots to lower and middle income groups in the private sector. The rising population growth rate resulting from a near constant fertility and declining mortality rate added further pressure on the already precarious housing condition in the country.

Pakistan is geographically divided into four provinces: the Punjab, NWFP, Sind and Baluchistan. The Punjab and Sind, the two fertile provinces, contain (according to the 1981 Census of Population) 56.5 and 22.6

per cent of the total population respectively, whereas, the provinces of NWFP and Baluchistan comprise 15.7 per cent and 5.2 per cent of the total population respectively. Table 12.1 gives the national and provincial levels of housing stock in Pakistan, in both urban and rural areas for 1960, 1973 and 1980. Pakistan had around 7.8 million housing units in 1960 which increased to about 10.9 million in 1973 and 12.6 million in 1980. Distribution of housing units within the four provinces is more or less the same as their distribution of population. The number of housing units exhibits a definite upward trend for both urban and rural areas. However, urban contribution to the total housing units on national basis during these two decades increased from 21.7 per cent in 1960 to around 28.2 per cent in 1980 while the proportion of the

The increasing population is exerting very high pressure on the existing housing stock, which is growing very slowly. Household size or the family size is the simplest measure to assess population pressure on housing stock. Baluchistan has the lowest size of household, while Sind and NWFP have the same household size as that of the national average and the Punjab lies in between the two. The visible differentials represent differences in fertility, mortality and migration.

TABLE 12.1: Housing Stock and its Distribution by Urban–Rural Areas in Pakistan and Provinces, 1960–1980

(in thousands)

Province / Area	1960		1973		1980	
	No	Per cent	No	Per cent	No	Per cent
PAKISTAN	7,816	100.0	10,881	100.0	12,588	100.0
Urban	1,699	21.7	2,847	26.2	3,554	28.2
Rural	6,117	78.3	8,034	73.8	9,034	71.8
PUNJAB	5,163	100.0	6,745	100.0	7,597	100.0
Urban	963	18.7	1,529	22.7	2,005	26.2
Rural	4,200	81.3	5,216	77.3	5,592	73.8
SIND	1,565	100.0	2,050	100.0	2,782	100.0
Urban	559	35.7	1,061	41.6	1,223	44.0
Rural	1,006	64.3	1,489	58.4	1,559	56.0
NWFP	792	100.0	1,074	100.0	1,616	100.0
Urban	125	15.7	183	17.0	234	14.5
Rural	667	84.3	891	83.0	1,382	85.5
BALUCHISTAN	296	100.0	512	100.0	593	100.0
Urban	52	17.7	74	14.5	92	15.4
Rural	244	82.3	438	85.5	501	84.6

Source: 1. Government of Pakistan, *Housing Census of Pakistan, Vol. 10., 1960*, Ministry of Home and Kashmir Affairs Division, Karachi.

2. Government of Pakistan, *Housing, Economic and Demographic Survey 1973, Vol. II*, Pakistan Census Organisation, Interior Division, Islamabad.

3. Government of Pakistan, *Housing Census Report of Pakistan 1980*, Population Census Organisation, Islamabad.

rural housing units declined from 78.3 per cent to 71.8 per cent during the corresponding period. A similar trend can be observed in the Punjab too. Hence, a significant contribution to urban housing comes from Sind with an increase in the proportion of urban housing units from 35.7 per cent to 44.0 per cent. NWFP and Baluchistan, however, tend to show a reverse trend. One can clearly judge from the above analysis, that the urban contribution to housing is positively related to the process of urbanisation. In other words, the more urbanised the province, the more contribution it makes towards its housing stock. This is because more housing units are constructed in the urban areas as compared to rural areas, particularly in large urban centres. Table 12.2 supports this argument by showing the urban and rural distribution of national and provincial population for 1961 and 1981. The most urbanised province is Sind, which makes the largest contribution to housing stock in urban areas, followed by the Punjab, Baluchistan and NWFP.

The growth or changing trend of housing stock during the two decades under consideration can be seen from table 12.3 and figure 12.1. Because the Housing Census of 1960,

TABLE 12.2: Population Size and its Distribution by Urban–Rural Areas in Pakistan and Provinces, 1961 – 1981

(in thousands)

Province/Area	1961		1972		1981	
	Population	%	Population	%	Population	%
PAKISTAN	42,880	100.0	65,309	100.0	84,254	100.0
Urban	9,640	22.5	16,594	25.4	23,842	28.3
Rural	33,240	77.5	48,716	74.6	60,412	71.7
PUNJAB	25,462	100.0	37,610	100.0	47,633	100.0
Urban	5,461	21.5	9,183	24.4	13,256	27.8
Rural	20,002	78.5	28,427	75.6	34,377	72.2
SIND	8,367	100.0	14,156	100.0	19,029	100.0
Urban	3,169	37.9	5,726	40.5	8,243	43.3
Rural	5,198	62.1	8,430	59.5	10,786	56.7
NWFP	7,578	100.0	10,880	100.0	13,260	100.0
Urban	782	10.3	1,209	11.1	1,666	12.6
Rural	6,796	89.7	9,671	88.9	11,594	87.4
BALUCHISTAN	1,353	100.0	2,429	100.0	4,332	100.0
Urban	228	16.9	400	16.5	677	15.4
Rural	1,125	83.1	2,029	83.5	3,666	84.6

Source: 1. Government of Pakistan, *Census of Pakistan 1961, Vol. 3 and 1972*, Census Organisation, Karachi.
2. Government of Pakistan, *Provincial Results for 1981, Population Census of Pakistan*, Population Census Organisation, Islamabad.

1973 (HED Survey) and 1980 Housing Census were not taken at equal intervals, therefore, the growth figures for the intercensal periods cannot really be compared. Thus, the figures for the two decades 1960–80 are also presented in the table. Here, again, the largest growth in urban housing stock took place in Sind followed by the Punjab, NWFP and Baluchistan. The table also presents the intercensal annual growth rates of housing stock and the corresponding population at national and regional levels. It must be noticed that in the two decades under review, the population growth rate in Pakistan tends to be higher compared with the growth rate of housing stock. This is also apparent at the regional level. The implications are that the growing population of Pakistan is bound to exert pressure on the already limited and slower growing housing stock. The average size of household continues to increase with pressures on families or households.

12.3. Pressure on Housing

The simplest measure of population pressure on housing is the average size of household or size of family. Study of the size and trend of household size in any society is important from the point of view of knowing the changes in family composition. Since, data on family in Pakistan are non-existent, recourse has been taken to study the household which, for all purposes, conveniently represents the concept of family. Table

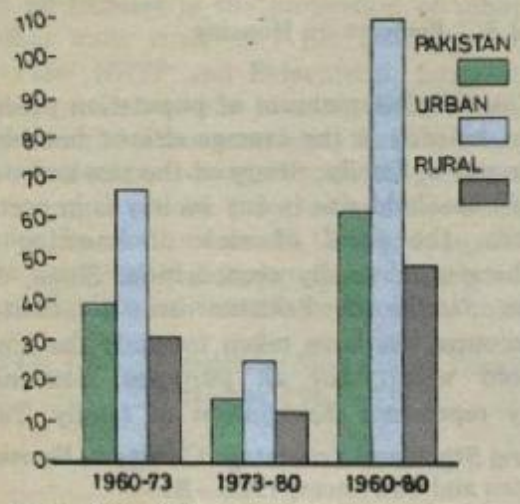
TABLE 12.3: Growth Rate of Population and Housing Stock and Percentage Change in Housing Stock by Urban–Rural Areas in Pakistan and Provinces, 1960–81

(Rate per 1000 population)

Province/Area	Growth rate of Population 1961–81	Growth rate of Housing Stock 1960–80	Percentage Change in Housing Stock		
			1960–73	1973–80	1960–80
PAKISTAN	3.42	2.38	39.2	15.7	61.1
Urban	4.61	3.72	67.6	24.8	109.2
Rural	3.02	1.95	31.3	12.4	47.7
PUNJAB	3.17	1.93	30.6	12.6	42.2
Urban	4.52	3.69	58.8	31.2	108.3
Rural	2.73	1.43	24.2	7.2	33.1
SIND	4.18	2.89	63.0	9.1	77.8
Urban	4.88	3.95	89.6	15.3	118.7
Rural	3.70	2.19	48.1	4.6	55.0
NWFP	2.83	3.59	35.7	50.4	104.0
Urban	3.84	3.17	46.9	27.9	87.8
Rural	2.70	3.66	33.6	55.0	107.1
BALUCHISTAN	5.97	3.49	72.9	15.7	100.0
Urban	5.56	2.81	42.4	23.0	75.1
Rural	6.06	3.63	79.5	14.5	105.5

Source: (Tables 12.1 and 12.2)

Figure: 12.1 Percentage change of housing stock between censuses by Urban Rural area, Pakistan, 1960-1980



Source : Table 12.3

12.4 and figure 12.2 present the average number of persons per housing unit at national and regional levels for 1960 and 1980. Number of persons per housing unit in Pakistan in 1960 was 5.7 persons and it was even higher than that of the total world (4.54), developing regions (5.22) and South Asia (5.25).

During the period of two decades, the housing unit size in Pakistan increased from 5.7 in 1960 to 6.7 by the year 1980. Regional differences in 1960, as shown in the table, place Baluchistan with the lowest size of household and NWFP the highest. In 1980, however, the number of persons per housing unit was the largest in Baluchistan (7.6) and it was the lowest in the Punjab (6.5). These differentials perhaps represent differences in fertility, mortality and urbanisation patterns. Another striking feature of the statistics presented is the higher housing size in urban areas than in rural areas with exceptions of Sind and Baluchistan. This is undoubtedly due to a higher growth rate of population in urban areas as a result of the higher natural growth rate and rural to urban migration, and a lower growth rate of urban housing construction which produces a higher urban household size. A smaller household size in the highly urbanised province of Sind could have been the result of more rapid construction of housing units particularly in Karachi. The very small population size together with the small urban sector and very low population density could have been responsible for the lowest household size in Baluchistan in 1960.

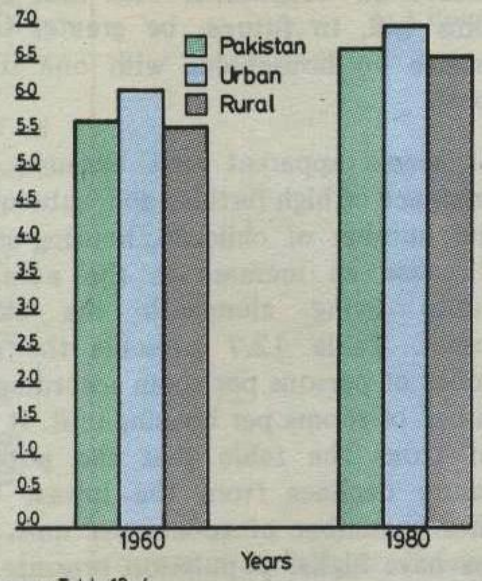
During the decades 1960–1980, household size in the provinces increased. The same trend is apparent in the case of both urban and rural areas of the Punjab. However, the increase seems to be much faster in Baluchistan, NWFP and Sind. Whether the trend is

TABLE 12.4: Average Number of Persons Per Housing Unit by Urban–Rural Areas in Pakistan and Provinces, 1960–1980

Province/Area	1960	1980
PAKISTAN	5.7	6.7
Urban	6.1	7.0
Rural	5.6	6.6
PUNJAB	5.5	6.5
Urban	5.7	6.9
Rural	5.4	6.3
SIND	5.6	7.1
Urban	5.5	7.0
Rural	5.7	7.1
NWFP	5.7	7.0
Urban	5.8	7.1
Rural	5.6	6.9
BALUCHISTAN	5.4	7.6
Urban	5.4	7.6
Rural	5.4	7.6

Source: (Tables 14.1, 14.2)

Figure 12.2 Average Number of Persons Per Housing Unit by Urban and Rural Area, Pakistan, 1960 and 1980.



Source: Table 12.4

real or not is hard to verify because of the possible under or over-enumeration in the censuses. Whatever the case, one point is certain, the population of Pakistan is growing so rapidly that it exerts a considerable pressure on the size of households and housing.

Population pressure can also be measured by the average number of persons per room and number of rooms per housing unit. Table 12.5 shows the number of persons per room in Pakistan in 1960 and 1980. As can be seen from the table, the number of persons per room in the country increased from 3.2 persons in 1960 to 3.5 persons in 1980. The number of persons per room in the Punjab in 1960 was below the national average, but the other provinces had averages above national level. Contrary to the number of persons per housing unit, pressure, per room was more in rural areas than in urban areas. This is because houses in urban areas tend to have more rooms built compared with the rural housing. During the two decades between 1960 to 1980, number of rooms per housing unit, except in NWFP, increased gradually at all levels but the increase was slower in urban areas compared with rural areas. Number of persons per room during this period also declined slightly in the urban areas of Sind and NWFP. The probable reason for this is that the rate of increase of the number of rooms compared with the housing stock remained higher in urban areas. In the urban areas of Sind, this rate could be even higher than that of the population.

Table 12.6 presents the average number of persons per housing unit by the number of rooms at national and regional levels. It is interesting to note that the household size for a one-room housing unit was found to be very high in Pakistan. It was 5.1 persons in 1960 and 5.9 persons in 1980. Such a tremendous pressure of population on households indicates both the severity of housing shortage and incidence of extreme poverty in both urban and rural areas, besides social hazards like health, sewerage disposal and lack of privacy for individual members, which is a recognised hurdle in the acceptance of new ideas.

Population pressure on households is also revealed by an increasing trend of the average number of persons by number of rooms, both at national and regional level. The number of persons per housing unit increased between 1960 and 1980 irrespective of the number of

The household size for a one-room housing unit in Pakistan was as high as 5.1 in 1960, which increased to 5.9 in 1980. This indicates a state of extreme pressure of population prevailing in the country. According to estimates, the population pressure on households with four or more rooms will in future be greater than the households with one to three rooms. This will cause the doubling of nuclear family living within the extended family. Urban areas have higher population pressure on all types of housing units.

rooms in each housing unit. The increase was particularly large for households of room size five or more. The number of persons per unit was consistently high in the rural areas with the sole exception of two room houses in 1980, where the rates are equal, both in urban and rural areas. As mentioned earlier, the data indicate higher household size in urban areas compared with rural areas. The growth of household size during 1960–80 shows a moderate increase of about one person for one-room and two-room units. An increase of about less than two persons is observed for household units of three and four rooms, with an average increase of two to four persons for units of five rooms or more. As a consequence, the population pressure on households with four or more rooms will, in future, be greater than the pressure on households with one to three rooms.

TABLE 12.5: Average Number of Persons per room by Urban–Rural Areas in Pakistan and Provinces, 1960 – 80

Province/Area	1960	1980
PAKISTAN	3.2	3.5
Urban	3.2	3.2
Rural	3.4	3.6
PUNJAB	3.0	3.3
Urban	2.9	3.1
Rural	3.1	3.9
SIND	3.8	4.0
Urban	3.5	3.3
Rural	4.0	4.7
NWFP	3.7	3.6
Urban	3.3	3.2
Rural	3.9	3.6
BALUCHISTAN	3.7	4.2
Urban	3.0	3.2
Rural	3.8	4.5

Source: 1. Government of Pakistan, *Census of Pakistan, Vol. 10, 1960*, Ministry of Home and Kashmir Affairs Division, Karachi.

2. Government of Pakistan, *Housing Census Report of Pakistan, 1980*, Population Census Organisation, Islamabad.

It seems apparent that because of the persistence of high fertility and subsequently, larger number of children, housing shortage will cause an increase in the number of families living alongwith the extended families. Table 12.7 presents the average number of persons per room according to the number of rooms per housing unit. It can be seen from the table that the population pressure declines from the lowest to the highest number of rooms per unit. Urban areas have higher population pressure on all types of housing units.

12.4 Trend in Size and Structure of Households

In the earlier section, population pressure on households and its relation to the number of rooms was discussed. Table 12.8 portrays the components of population pressure, namely the distribution of occupants of households by number of rooms and distribution of these housing units. It has been already pointed out in table 12.6 and 12.7 that the incidence of population pressure on houses with one room was quite serious in Pakistan. The statistics given in table 12.8 further indicates that, in 1960, 60 per cent of the total population of Pakistan resided in about 54 per cent of housing units with only one room (see also Figure 12.3). These figures are sufficient to indicate the severity of housing shortage, as well as, the extreme burden of population pressure on housing. Moreover, during 1960, 24 per cent of the total population occupied about 26 per cent of housing units with two rooms. Altogether, 84 per cent of the population occupied 80

TABLE 12.6: Average Number of Persons per Housing Unit in Urban–Rural Areas of Pakistan by Number of Rooms per Housing Unit, 1960 – 1980

Area/Year	Number of Persons per Housing units by Number of Rooms				
	1 Room	2 Room	3 Room	4 Room	5 + Rooms
PAKISTAN					
1960	5.1	6.0	6.6	7.0	7.6
1980	5.9	7.0	7.9	8.6	9.7
URBAN					
1960	4.8	6.3	7.0	7.4	7.9
1980	5.8	7.1	7.9	8.5	11.5
RURAL					
1960	4.9	5.9	6.5	6.9	7.4
1980	5.9	6.9	7.8	8.6	10.5

Source: 1. Government of Pakistan, *Housing Census of Pakistan, Vol. 10, 1960,* Ministry of Home and Kashmir Affairs Division, Karachi.
2. Government of Pakistan, *Housing Census Report of Pakistan 1980,* Population Census Organisation, Islamabad.

TABLE 12.7: Average Number of Persons per Room by Number of Rooms per Housing Unit in Urban–Rural Areas of Pakistan, 1960–80

Area/Year	Number of Rooms per Housing Unit				
	1 Room	2 Rooms	3 Rooms	4 Rooms	5+ Rooms.
PAKISTAN					
1960	4.9	3.0	2.2	1.8	1.2
1980	5.9	3.5	2.6	2.1	1.5
URBAN					
1960	4.8	3.1	2.3	1.8	2.6
1980	5.8	3.5	2.6	2.1	1.8
RURAL					
1960	4.9	2.9	2.2	1.7	1.8
1980	5.9	3.5	2.6	2.2	1.6

Source: 1. Government of Pakistan, *Housing Census of Pakistan, Vol. 10, 1960,* Ministry of Home and Kashmir Affairs Division, Karachi.
2. Government of Pakistan, *Housing Census Report of Pakistan 1980,* Population Census Organisation, Islamabad.

TABLE 12.8: Percentage Distribution of the Housing Units and the Population by Number of Rooms per Unit by Urban–Rural Areas, Pakistan, 1960–1980.

Area/Year	TOTAL	Per cent Distribution of Housing Units by Number of Rooms Per Housing Unit					Per cent Distribution of the Population by Number of Rooms Per Housing Unit				
		1 Room	2 Rooms	3 Rooms	4 Rooms	5+ Rooms	1 Room	2 Rooms	3 Rooms	4 Rooms	5+ Rooms
PAKISTAN											
1960	100.00	60.0	24.0	9.1	3.8	3.1	53.9	26.2	10.9	4.8	4.2
1980	100.00	51.5	29.6	10.8	4.5	3.6	45.4	30.9	12.7	5.8	5.3
URBAN											
1960	100.00	56.4	24.8	9.3	4.7	4.8	48.1	27.5	11.6	6.1	6.7
1980	100.00	42.6	31.5	13.7	6.5	5.7	35.3	32.0	15.4	7.9	9.4
RURAL											
1960	100.00	61.1	23.7	9.1	3.5	2.6	55.6	25.8	10.7	4.4	3.5
1980	100.00	55.1	28.8	9.6	3.7	2.8	49.2	30.1	11.4	4.8	4.5

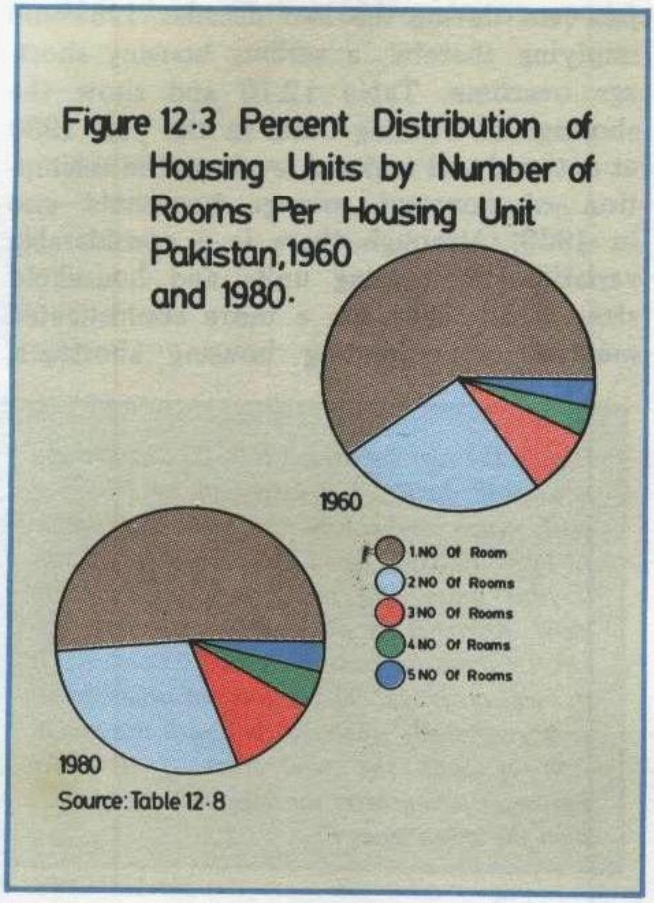
Source: 1. Government of Pakistan, *Housing Census of Pakistan, Vol. 10, 1960,* Ministry of Home and Kashmir Affairs Division, Karachi.

2. Government of Pakistan, *Housing Census Report of Pakistan, 1980,* Population Census Organisation, Islamabad.

per cent of housing units with one and two rooms.

Distribution of housing units by number of rooms has changed during 1960–80 with one room house declining by 8.5, 12.8 and 6.4 percentage points, respectively, at national, urban and rural levels. Two-room houses increased by about five percentage points at all levels while houses with three or more rooms increased only marginally in urban and rural areas by 0.5 and 4.4 percentage points respectively. The striking feature of table 12.8 is that two-room houses seem to be increasing at the expense of one-room houses. The decline in one-room houses has been very rapid, particularly in urban areas where houses with three or more rooms are on the increase. A similar analysis of table 12.8 indicates that during 1960–80, the distribution of occupant population has also undergone changes with one room house population declining by 8.5, 13.8 and 6.0 percentage points at national, urban and rural levels respectively. The population in two-room houses increased by about 5 to 7 percentage points at all levels. Occupants of three and more rooms increased by only one percentage point in rural areas, whereas,

Pointing to the severity of pressure on housing units during 1960, about 60 per cent of the total population of Pakistan lived in about 54 per cent of housing units with only one room, and about 24 per cent of the total population occupied about 26 per cent of the total housing units with two rooms. Altogether, 84 per cent population occupied 80 per cent of housing units with one and two rooms.



the increase was about seven percentage points in urban areas. Thus, the population of one-room houses has been declining rapidly in Pakistan, more particularly in urban areas, whereas the population of houses with two or more rooms has been increasing (Table 12.8 and Figure 12.4).

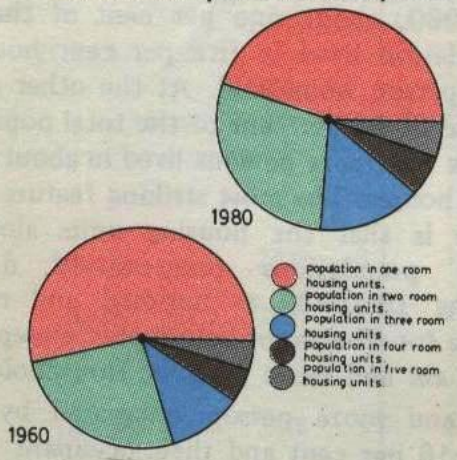
Table 12.9 provides the percentage distribution of housing units and population by size of household. In this table, households have been broken down into five categories, i.e. one-person, two-person, three-person, four-five person, six-person households. The majority are occupied by young unmarried people living in urban areas as independent dwellers in apartments, or as lodgers and boarders in the same housing unit with host households. These single persons are usually marginal groups. Households with two persons are regarded as couples (nuclear families) without children. Households with three and four-five persons signify nuclear families with one and two-three children. Households with six or more persons represent intermediate size households with relatively large families. The table shows that both the distribution of households, as well as, their occupant population are increasing very rapidly with respect to household size. In 1960, about one per cent of the total population lived in five per cent houses of one person household. At the other end of the scale, 65 per cent of the total population of six and more persons lived in about 44 per cent houses. The most striking feature of this table is that the housing units alongwith their populations progressively declined during 1960—80 at national and regional levels for all sizes of households, except those with six and more persons. Households with six and more persons increased by about 15—16 per cent and their occupant populations by 13—15 per cent during the two decades under consideration.

In a developing country like Pakistan where fertility is declining very slowly as compared to the decline in mortality, a considerable increase can be seen in large size households and families of six and more persons. There are, however, moderate decreases in moderate size households and families of four-five persons. Similarly, there are small decreases in relatively small households and families of one-three persons. In fact, there seems to be no stability in households and families of any household size. What is clear is that, households with six and more persons are increasing which indicates a situation of high fertility and under-development, leading to the construction of fewer houses as compared to the population growth.

12.5 Shortage of Housing Units

It has already been discussed in detail in the previous sections that the population growth in Pakistan is outpacing the growth of housing units by a considerable margin. As a consequence, the average household pressure on housing unit increased by 17.5

Figure 12·4 Percentage Distribution of The Population by Number of Rooms per Unit 1960, 1980.



Source: Table 12·8

per cent during the two decades 1960–8 implying thereby, a serious housing short age overtime. Table 12.10 and show th shortage of housing units in the year 198 at national and regional levels on the assump tion of constant average household siz in 1960. Although there is a considerabl variation of housing units and household sizes which calls for a more sophisticate method of estimating housing shortages

During the two decades, 1960–80, the average household density has increased by 17.5 per cent, which implies a serious housing shortage. In 1980, Pakistan faced a deficit of 2.2 million housing units with the Punjab suffering the most, followed by Sind, NWFP and Baluchistan. Of the total housing deficit, 73 per cent is in rural areas and 27 per cent in urban areas. It is empirically observed that with the exception of Sind, the rural areas of all other provinces face greater shortage of housing units than the urban areas.

TABLE 12.9: Percentage Distribution of Households and the Population by Size of Household in Urban–Rural Areas, Pakistan, 1960–1980.

Area/Year	TOTAL	Per cent Distribution of Household by size of Household					Per cent Distribution of Population by size of Household				
		1	2	3	4–5	6+	1	2	3	4–5	6+
PAKISTAN											
1960	100.00	5.0	8.9	12.0	29.7	44.4	0.9	3.2	6.5	24.3	65.1
1980	100.00	3.2	6.4	8.0	23.0	59.5	0.5	1.9	3.6	15.4	78.6
URBAN											
1960	100.00	7.0	9.3	11.2	26.7	45.8	1.2	3.3	5.9	21.4	68.2
1980	100.00	4.2	6.1	7.1	20.8	61.8	0.6	1.7	3.0	13.5	81.2
RURAL											
1960	100.00	4.4	8.8	12.2	30.6	44.0	0.8	3.2	6.7	25.1	64.2
1980	100.00	2.8	6.5	8.3	23.7	58.7	0.4	2.0	3.8	14.5	79.3

Source: 1. Government of Pakistan, *Housing Census of Pakistan, Vol. 10, 1960,* Ministry of Home and Kashmir Affairs Division, Karachi.

2. Government of Pakistan, *Housing Census Report of Pakistan, 1980,* Population Census Organisation, Islamabad.

TABLE 12.10: Estimated Housing Shortage in Urban–Rural Areas of Pakistan and Provinces, 1980.

(in thousands)

Area	Housing Units Required in 1980	Housing Units Available in 1980	Estimated Shortage of Housing Units in 1980	
			Number	Per cent*
PAKISTAN	14,796	12,588	2,208	17.5
Urban	4,149	3,554	595	16.7
Rural	10,647	9,034	1,613	17.9
PUNJAB	8.625	7.597	1,027	13.5
Urban	2,238	2,005	232	11.6
Rural	6,387	5,592	795	14.2
SIND	3,430	2,782	648	23.3
Urban	1,528	1,223	305	24.9
Rural	1,902	1,559	343	22.0
NWFP	1,931	1,616	315	19.5
Urban	264	234	29	12.6
Rural	1,667	1,382	286	20.7
BALUCHISTAN	811	593	218	36.8
Urban	120	92	28	30.9
Rural	691	501	190	37.8

*Housing shortage has been calculated as a percentage of available housing units in 1980.

Source:- Government of Pakistan, *Housing Census Report, 1980,* Pakistan Census Organisation, Islamabad.

a simple procedure has been adopted. In 1980, Pakistan appears to have faced a deficit of about 2.2 million housing units. Most of this deficit, i.e. 1.0 million was in the Punjab with Sind, NWFP and Baluchistan's share being about 0.6, 0.3 and 0.2 million respectively. Moreover, housing shortages seemed to be more acute in rural areas. Of the total housing deficit, 73 per cent was in rural areas and 27 per cent in urban areas. The rural areas of NWFP, Baluchistan and the Punjab had a deficit of 91, 87 and 77 per cent respectively. The highly urbanised province of Sind, however, had the lowest percentage deficit of 52 in its rural areas. This applies at all levels except in Sind where the shortage seemed greater in the urban areas. These shortages of housing units would have appeared much more severe in 1980 if an appropriate average household size had been used instead of the 1960 average.

12.6 Construction of Housing Units

Construction of houses and their composition represent the flow of demand and deficiency of national housing stock. Table 12.11 presents a very bleak picture of the housing situation in Pakistan. Out of the existing stock in 1980, only 20 per cent were constructed prior to Independence. Majority of the houses, i.e. about 37 per cent were constructed during 22 years following the Independence of Pakistan.

Since 1970, the rate of construction in

Pakistan has been continuously declining. As a consequence of the rising population growth rate and declining construction rate of housing, the average household size has been increasing. The same housing situation seems to apply to both urban and rural areas. Throughout the two decades 1960—80, the housing replacement and modification rates seem to be high. Although the absolute number of *Pakka, Semi-Pakka* and *Katcha* houses have been increasing (Table 12.12), the largest (fivefold) increase has occurred only in *Semi-Pakka* houses. Mostly *Katcha,* and to a greater extent *Katcha-Pakka,* houses are built in rural areas. The *Semi-Pakka* houses in urban areas represent the existence of *"Katchi abadis"* which are established mostly on the outskirts of large urban centres. Modification of *Katcha* into *Semi-Pakka* houses seems to be a practice in both urban and rural areas. Taken as a whole, only 21 per cent houses in Pakistan can be termed as *Pakka.* This percentage has declined during 1960—80 in both urban and rural areas owing to a remarkable increase in *Semi-Pakka* houses during this period of time. Why this is happening can be explained in terms of the rising cost of construction material and the extent of poverty level in the country. The cost of construction materials such as cement, wood and labour increased more than 100 per cent during the period 1974—78[10].

With regard to poverty, table 12.13 shows that about 35 per cent of all households and 39 per cent of the total population in Pakistan was living below the poverty line[2]. Of these, about 36 per cent and 40 per cent lived in urban areas, while, 35 and 39 per cent lived in the rural areas respectively.

Although there are variations in each province as to the extent of poverty (in terms of population), the Punjab seemed to experience more poverty followed by

2. The poverty line meant a monthly income at current prices was 95 Rs. in rural areas and 12.2 Rs. in urban areas. The corresponding figures for 1971-72 were 33.51 and 38.06 respectively.

TABLE 12.11: Distribution of Housing Units by Period of Construction in Urban—Rural Areas Pakistan, 1980.

(in thousands)

Period of Construction	Pakistan		Urban		Rural	
	No	Per cent	No.	Per cent	No.	Per cent
1976–80	2512 (628)	19.9	676 (169)	19.0	1836 (459)	20.3
1970–75	3004 (601)	23.9	759 (152)	21.4	2245 (449)	24.9
1947–69	4601 (209)	36.6	1407 (64)	39.6	3194 (145)	35.3
Prior to 1947	2471	19.6	712	20.0	1759	19.5
Total:	12588	100.0	3554	100.0	9034	100.0

Note: Figures in parentheses indicate the yearly average number of housing units built.

Source:- Government of Pakistan, *Housing Census Report of Pakistan, 1980,* Population Census Organisation, Islamabad.

TABLE 12.12: Distribution of Housing Units by Type of Construction of Walls in Urban–Rural Areas, Pakistan, 1960–1980.

(in thousands)

Area/Census Year	Total	TYPE OF CONSTRUCTION			
		Pakka	Semi Pakka	Katcha	Others
PAKISTAN					
1960	6,696	1,472	720	4,674	100
	(100.0)	(21.1)	(10.3)	(67.2)	(1.5)
1980	12,588	1,952	3,529	6,279	837
	(100.0)	(15.5)	(28.0)	(49.8)	(6.7)
URBAN					
1960	1,536	923	69	536	8
	(100.0)	(60.1)	(4.5)	(34.9)	(0.5)
1980	3,555	1,512	1,282	688	73
	(100.0)	(42.5)	(36.1)	(19.4)	(2.0)
RURAL					
1960	5,431	549	651	4,148	93
	(100.0)	(10.0)	(12.0)	(76.2)	(1.7)
1980	9,033	440	2,247	5,582	764
	(100.0)	(4.9)	(24.9)	(61.8)	(8.4)

Source: 1. Government of Pakistan, *Housing Census of Pakistan, Vol. 10, 1960,* Ministry of Home and Kashmir Affairs Division, Karachi.

2. Government of Pakistan, *Housing Census Report of Pakistan 1980,* Population Census Organisation, Islamabad.

Out of the existing stock of housing units in 1980, 20 per cent were constructed prior to 1947, while 37 per cent have been built in the following 22 years. Taken as a whole, only 21 per cent houses in Pakistan can be termed as Pakka. There has been a great increase in the proportion of semi-Pakka houses during 1960–80 which indicates a tendency towards building houses inappropriately and only to have a shelter without many facilities.

Baluchistan, Sind and NWFP. On an average, one can say, that the urban areas tend to be poorer except for Sind where the case is reverse. In the light of the above evidence, it can be concluded that, in the face of rising construction costs and poverty of the population, the capacity to construct private houses in large numbers in Pakistan is extremely limited. Because of the persistence of extreme poverty, most people under the poverty line resort to the construction of *Katcha* and *Semi-Pakka-Katcha* houses in both urban and rural areas. *Katcha* and *Semi-Pakka* houses are mostly constructed on a self-help basis in rural areas and may be termed as an economic activity taking place in the non-monetary sector of the economy.

12.7 The Nature of Housing Facilities

In the foregoing sections, the overall situation of housing and its growth at national and

TABLE 12.13: Estimates of Population and of Households Living Below Poverty Line in Urban–Rural Areas, Pakistan and Provinces, 1979

Area	Percentage of Poor Households	Percentage of Poor Population
PAKISTAN	34.42	39.13
Urban	35.66	39.69
Rural	35.35	38.91
PUNJAB	37.52	41.38
Urban	39.16	43.49
Rural	36.95	40.60
SIND	31.64	36.72
Urban	28.84	33.04
Rural	33.66	39.48
NWFP	31.30	31.71
Urban	39.73	42.33
Rural	29.94	31.71
BALUCHISTAN	34.48	39.67
Urban	34.00	40.80
Rural	34.55	39.47

Source: Cheema, Aftab Ahmed, *Poverty in Pakistan: Some New Dimensions*, Paper Presented to Second Annual General Meeting of Pakistan Society of Development Economists, Islamabad, 1985.

regional levels has been examined in relation to the population and its growth. Also reasons for housing shortage due to rising construction costs and the extent of extreme poverty are highlighted. Although, these considerations have a direct bearing on the quality of housing units, there are various facilities available which can determine the quality of housing. The situation regarding housing facilities in Pakistan has always been very disappointing. Tables 12.14 to 12.19 enumerate the basic facilities such as lighting, fuel, water, kitchens, toilets and baths over the period 1973–80 at both the national and regional levels.

According to table 12.14, only 18 per cent of households in Pakistan in 1973 had electricity; the remaining used kerosene oil for lighting purposes. The situation, however, improved with about 30 per cent of households having access to electricity by 1980. Of these, in urban areas, 54 per cent of households and in rural areas five per cent of households had electricity. Although in absolute numbers, an equal number of housing units got electricity in 1973–80 in both urban and rural areas, percentage-wise, the score was 71 and 15 per cent respectively. It may, however, be mentioned that during the Sixth Five Year Plan, electrification of villages has been given special attention and by the end of the Sixth Five Year Plan, it is hoped that, electrification situation will present a better picture.

With regard to cooking facilities (Table 12.15) in 1973, about 69 per cent of Pakistani households were using wood as fuel, 20 per cent cowdung and the ramaining kerosene oil, gas etc. Very little change seems to have occurred during 1973–80 in the use of wood, charcoal, etc. but around 0.6 million more houses started using gas at the expense of kerosene oil and other fuels. In 1973, about 57 per cent urban and 74 per cent of rural households were using wood. This rate declined in 1980 to 48 per cent in urban areas but rose to 78 per cent in the rural areas. Gas is only marginally used in rural areas. Most of the gas for cooking was found to be consumed in urban households where the percentage increased from seven to 22 during the period 1973–80. Analysis of lighting and fuel consumption indicates the slow and inadequate growth of energy resources compared with the rise in population growth rate.

Availability of pure drinking water to all segments of the population poses a serious problem. In 1973, only about 17 per cent (Table 12.16) of households had access to

TABLE 12.14: Distribution of Housing Units by Lighting Facilities in Urban–Rural Areas of Pakistan, 1973–1980

(in thousands)

Area/Year	Total	Electricity	Kerosene Oil	Others
PAKISTAN				
1973	10,881	1,945	8,896	40
	(100.0)	(17.9)	(81.7)	(0.4)
1980	12,587	3,849	8,963	275
	(100.0)	(30.6)	(67.2)	(2.2)
URBAN				
1973	2,847	1,550	1,290	7
	(100.0)	(54.4)	(45.3)	(0.3)
1980	3,554	2,524	990	4
	(100.0)	(71.0)	(27.9)	(1.1)
RURAL				
1973	8,034	395	7,606	33
	(100.0)	(4.9)	(94.7)	(0.4)
1980	9,033	1,324	7,747	235
	(100.0)	(14.7)	(82.7)	(2.6)

Source: 1. Government of Pakistan, *Housing Economic and Demographic Survey, 1973, Vol. II*, Pakistan Census Organisation, Interior Division, Islamabad.

2. Government of Pakistan, *Housing Census Report of Pakistan, 1980*, Population Census Organisation, Islamabad.

drinking water while the remaining households were using ground water for daily use. Although in 1980, 20 per cent of households had access to drinking water, the growth in those households during 1973–80 does not seem to match the growth in population. Under the present cirumstances, it seems impossible to be able to supply drinking water to a major segment of the population now or in the near future. Most of the urban houses had access to drinking water with their numbers increasing from 1.6 million (55%) in 1973 to 2.1 million (58%) in 1980. In the rural areas only about three per cent of households in 1973 and five per cent in 1980 acquired access to drinking water.

Strangely enough, it can be seen (Table 12.17) that in 1973 only about 20 per cent of households in Pakistan had separate kitchen facilities with 30 per cent such households being in urban areas and 16 per cent in rural areas. During 1973–80, this facility rose to about 44 per cent of households in urban areas. Although the practice of house cooking facilities in the courtyard or one of the living rooms is a traditional practice, partly caused by the size of the house, yet these inadequate kitchen facilities must have had a far-reaching effect on the health of the family.

The most serious problem facing the health planners in the field of preventive medicine seems to be the almost absence of health education in the country. What can be observed from table 12.18 is that only four per cent of households in 1973 had toilets with a flush, 30 per cent without a flush and 66 per cent were without toilets of any kind. This means

TABLE 12.15: Distribution of Housing Units by type of Cooking Fuel Used in Urban–Rural Areas of Pakistan, 1973–1980.

(in thousands)

Area/Year	Total	Wood	Charcoal	Kerosene	Gas	Electricity	Cowdung
PAKISTAN							
1973	10,881	7,563	65	815	217	15	2,206
	(100.0)	(69.5)	(0.6)	(7.5)	(2.0)	(0.1)	(20.3)
1980	12,588	8,810	87	781	813	11	2,086
	(100.0)	(70.0)	(0.7)	(6.2)	(6.5)	(0.1)	(16.6)
URBAN							
1973	2,847	1,612	41	742	210	5	237
	(100.0)	(56.6)	(1.4)	(26.1)	(7.4)	(0.2)	(8.3)
1980	3,554	1,714	46	714	786	4	290
	(100.0)	(48.2)	(1.3)	(20.1)	(22.1)	(0.1)	(8.2)
RURAL							
1973	8,034	5,951	24	73	6	9	1,971
	(100.0)	(74.1)	(0.3)	(0.9)	(0.1)	(0.1)	(19.9)
1980	9,033	7,096	41	66	27	7	1,796
	(100.0)	(78.5)	(0.5)	(0.7)	(0.3)	(0.1)	(19.9)

Source: 1. Government of Pakistan, *Housing Economic and Demographic Survey, 1973, Vol. II*, Pakistan Census Organisation, Interior Division, Islamabad.

2. Government of Pakistan, *Housing Census Report of Pakistan, 1980*, Population Census Organisation, Islamabad.

that about 96 per cent of the population of Pakistan was constantly exposed to the risk of infectious and other diseases. Only 13 per cent in urban areas and less than one per cent of households in rural areas had the privilege of having toilets with flush. By 1980, there had been some improvement in urban areas recording 25 per cent households with flush. What is amazing is that the inhabitants of 27 per cent of urban households went out of the house daily to relieve themselves. Bathing facilities in the household assume significant importance from the point of view of public hygiene.

In 1973, only 24 per cent of households had any bathing facility, the relevant figures for urban and rural areas being 50 and 15 per cent respectively (Table 12.19). By 1980, there had been very little improvement in bathing facilities in urban areas, households with a bath having increased only from 50 to 54 per cent during this period of time.

12.8. Implications for Future Housing Requirements.

It has been seen earlier that Pakistan's population is growing very rapidly, whilst the housing stock of the nation is growing only at a moderate rate. One might come across huge mansions being built in the urban areas, but they are occupied by single rich households while the majority does not have the capacity to construct even a modest dwelling. The result is an ever widening gap. The size of household, therefore, is continuously growing and thereby exerts great pressure on

TABLE 12.16: Distribution of Housing Units by Water Facilities in Urban–Rural Areas of Pakistan, 1973–1980

(in thousands)

Area/Year	Total	Piped Water		Hand Pump			
		Inside	Outside	Inside	Outside	Well	Others*
PAKISTAN							
1973	10,881	915	886	3,134	1,457	2,844	1,645
	(100)	(8.4)	(8.2)	(28.8)	(13.4)	(26.1)	(15.1)
1980	12,587	1,589	972	4,317	1,545	2,171	1,993
	(100)	(12.6)	(7.7)	(34.3)	(12.3)	(17.3)	(15.8)
URBAN							
1973	2,847	808	755	740	199	250	95
	(100)	(28.4)	(26.5)	(26.0)	(7.0)	(8.8)	(3.3)
1980	3,555	1,360	712	970	201	251	61
	(100)	(38.3)	(20.0)	(27.3)	(5.6)	(7.1)	(1.7)
RURAL							
1973	8,034	107	131	2,394	1,258	2,593	1,551
	(100)	(1.3)	(1.6)	(29.8)	(15.7)	(32.3)	(19.3)
1980	9,023	229	260	3,347	1,334	1,921	1,932
	(100)	(2.5)	(2.9)	(37.0)	(14.9)	(21.3)	(21.4)

Note: Figures in parentheses indicate the percentage distribution of houses.

*Water supply from ponds, springs, rivers and streams, etc.

Source:- 1. Government of Pakistan, *Housing, Economic and Demographic Survey 1973, Vol. II*, Pakistan Census Organisation, Interior Division, Islamabad.

2. Government of Pakistan, *Housing Census Report of Pakistan 1980*, Population Census Organisation, Islamabad.

both housing units and families. In these circumstances, it becomes essential to formulate rigorous population and housing policies so that the population growth rate can start declining through a decline in the fertility rate.

Investment in housing should start generating growth rate higher than the population growth rate itself. In such a situation, average household size starts declining and the population pressure on households and families is relaxed. The idea of small family norm becomes popular and nuclearisation of familes more wide-spread.

The foregoing can be materialised by projecting the population of Pakistan at constant fertility and moderately declining fertility and by projecting the housing stock at growth rates higher than the population growth rates. The 1981 Census of Population is projected to the year 2000 under two alternate assumptions of constant and declining fertility. Under the first assumption,

TABLE 12.17: Distribution of Housing Units by Availability of Kitchen Facilities in Urba Rural Areas of Pakistan, 1973–1980.

(in thousands)

Area/Year	Total	With Kitchen	Sharing Kitchen	Witho Kitch
PAKISTAN				
1973	10,881 (100.0)	2,146 (19.7)	207 (1.9)	8, (7
URBAN				
1973	2,847 (100.0)	868 (30.5)	57 (2.0)	1, (6
1980	3,554 (100.0)	1,580 (44.5)	156 (4.4)	1, (5
RURAL				
1973	8,034 (100.0)	1,278 (15.9)	150 (1.9)	6, (8

Source:- Government of Pakistan, *Housing, Economic and Demographic Survey 1973, Vol. II*, Pakistan Census Organisation, Interior Division, Islamabad.

Government of Pakistan, *Housing Census Report of Pakistan 1980*, Population Census Organisation, Islamabad.

TABLE 12.18: Distribution of Housing Units with Latrine Facility in Urban-Rural Areas of Pakistan, 1973–1980

(in thousands)

Area/Year	Total	With Flush	Without Flush	No Toile
PAKISTAN				
1973	10,881 (100.0)	429 (3.9)	3,288 (30.2)	7,1 (65
URBAN				
1973	2,847 (100.0)	381 (13.4)	1,909 (69.1)	6 (17
1980	3,554 (100.0)	890 (25.1)	1,701 (47.8)	9 (27
RURAL				
1973	8,043 (100.0)	47 (0.6)	1,318 (16.4)	6,6 (83

Note: Data for Pakistan and Rural Areas, 1980 is not available.

Source: 1. Government of Pakistan, *Housing, Economic and Demographic Survey, 1973, Vol. II.*, Pakist Census Organisation, Interior Division, Islamabad.

2. Government of Pakistan, *Housing Census Report of Pakistan 1980*, Population Census Organi tion, Islamabad.

TABLE 12.19: Distribution of Housing Units by Availability of Bath Facilities in Urban–Rural Areas of Pakistan, 1973–1980

(in thousands)

Area/Year	Total	With Bath	Sharing Bath	Without Bath
PAKISTAN				
1973	10,881 (100)	2,423 (22.3)	185 (1.7)	8,273 (76.0)
URBAN				
1973	2,847 (100)	1,354 (47.6)	65 (2.3)	1,428 (50.1)
1980	3,554 (100)	1,697 (47.2)	227 (6.4)	1,648 (46.4)
RURAL				
1973	8,043 (100)	1,068 (13.3)	120 (1.5)	6,846 (85.2)

Note: Data for Pakistan and Rural Areas, 1980 is not available.

Source: 1. Government of Pakistan, *Housing, Economic and Demographic Survey, 1973, Vol. II*, Pakistan Census Organisation, Interior Division, Islamabad.

2. Government of Pakistan, *Housing Census Report of Pakistan, 1980*, Population Census Organisation, Islamabad.

a constant growth rate of three per cent per annum is taken for the whole projection period, whereas, under the second assumption, the growth rate is declined by two percentage points for each of the subsequent five-year periods. Since the available housing data in Pakistan did not permit employment of sophisticated projection techniques, a simplistic model was applied under certain assumptions so that the housing growth rate throughout the projection period should remain higher than the population growth rate.

Table 12.20 shows the assumed growth rates of population and of housing stock under the alternate assumption of fertility at five-year intervals and the average household size under both assumptions of fertility. As is evident, average household size is declining faster under declining fertility compared with constant fertility. The implications of these results are that a declining population will result in a greater saving of both public and private expenditure on housing and that the housing requirement will grow side by side with the growing population requirement. It further becomes evident

With respect to future housing requirements, the size of the household is continuously increasing in accordance with the rise in population. Investment in housing should start generating growth rate higher than the population growth rate itself. Thus, the need is to restrain the population growth through reduction in fertility and increase housing capacity by more investment in housing stock. With regard to this in 1985–86, the Government earmarked only 3.6 per cent of its GNP and 7.9 per cent of its total expenditure on housing. Private sector therefore, has to come forward to increase the housing stock in the country both in the rural and urban areas.

TABLE 12.20: Average Annual Growth Rate of Population and Housing Stock and Average Household Size per Housing Unit Under Constant and Declining Fertility Assumptions in Pakistan, 1980–2010

Year	Population Growth Rate		Housing Growth Rate		Average Household size per Housing Unit	
	Constant Fertility	Declining Fertility	Constant Fertility	Declining Fertility	Constant Fertility	Declining Fertility
1980	3.0	2.8	3.7	3.5	6.7	6.7
1985	3.0	2.8	3.7	3.5	6.5	6.4
1990	3.0	2.6	4.2	3.8	6.2	5.9
1995	3.0	2.4	4.2	3.5	5.8	5.4
2000	3.0	2.2	4.4	3.6	5.4	4.9
2005	3.0	2.0	4.6	3.6	5.0	4.3
2010	3.0	1.8	4.5	3.3	4.6	3.8

TABLE 12.21: Gross National Product, Total Government Expenditure, Expenditure on Housing, Housing Expenditure as Per cent of GNP and Total Government Expenditure per Capita Expenditure on Housing in Pakistan, 1972–1986

Year	GNP at Market Prices	Total Government Expenditure (in million Rs.)	Expenditure on Housing	Housing Expenditure as Per cent of GNP	Housing Expenditure as Per cent of total Expenditure	Per Capita Expenditure on Housing (in Rupees)
1972–73	39,336	3,870	268	0.68	6.93	4.14
1973–74	41,422	6,915	476	1.15	7.42	7.12
1974–75	42,828	11,371	949	2.22	8.35	13.76
1975–76	45,424	13,144	1,209	2.67	9.20	17.02
1976–77	47,518	16,239	1,277	2.69	7.86	17.44
1977–78	52,622	17,150	1,273	2.42	7.42	16.87
1978–79	55,441	20,485	1,534	2.77	7.49	19.73
1979–80	60,113	21,500	1,427	2.37	6.69	17.81
1980–81	63,756	26,663	1,831	2.87	6.87	22.17
1981–82	67,548	27,000	1,887	2.79	6.99	22.17
1982–83	72,965	28,430	2,103	2.88	7.39	23.96
1983–84	76,464	29,148	2,612	3.42	8.96	28.86
1984–85	81,481	34,082	2,748	3.37	8.06	29.46
1985–86	87,175	39,398	3,119	3.58	7.92	32.43

Source:- Government of Pakistan, *The Sixth Five Year Plan 1983–88*, Planning Commission, Islamabad.

that the problem of housing shortage in Pakistan should be attacked on two fronts, through reduction in fertility and through a bigger investment in housing construction.

Statistics show (Table 12.21) that Pakistan, as opposed to its national requirement, has been allocating insufficient funds to housing. During 1985–86, the Government earmarked 3.6 per cent of its GNP and 7.9 per cent of its total expenditure on housing. The per capita expenditure on housing during this period stands at about Rs. 32 only. Although the size of expenditure since 1972–73 has increased by about 164 per cent, it does not appear sufficient to affect a growth rate in housing of about three to four per cent per year in the future. But at this point it should also be remembered that home construction is mainly a private sector activity and the real expenditure has to come from that sector. It should also be stated here that public housing is only an urban phenomenon and housing requirements in this sector are determined by the number of urban households rather than the urban population. Moreover, public housing requirements in urban areas also depend on the extent to which the private sector is willing and able to provide housing for the low-income sector. The Sixth Five Year Plan, has extensively created housing facilities for the low-income groups including proprietory rights for inhabitants of *Katchi abadis*. This may be an effort, which has the potential of developing into a nationwide programme of low cost housing, thus relieving the ever growing pressure on housing units.

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POPULATION GROWTH AND LABOUR FORCE

13.1 Introduction

Labour force or the economically active population represents the main group of the society whose major function is to produce goods and services to meet the requirements, as well as, satisfaction of all individuals of that society. The labour force consists of persons older than 10 or 12 years of age who are working or looking for work on wage or salary basis. Self-employed persons in business, employers and employees who work for profit or wages, alongwith those persons who work as unpaid family helpers in income-producing enterprises, are part of the total labour force. However, those, especially women, who perform domestic work at home, although produce goods and services, are not included in the labour force.

The size and age structure of the labour force, its proportion to the total population, its occupational structure and distribution in the industrial sector, all have an important bearing on the overall production of the economy. Regional distribution of the labour force also assumes importance from the point of view of industrialisation and growth of output among various segments of the population. Economic factors tend to be determinants of various features of the labour force, including employment and unemployment.

The principal sources of labour force statistics in Pakistan are the four population censuses of 1951[1], 1962[2], 1972[3], 1981[4]. Although many sample surveys on labour force have been conducted in Pakistan, their utility, for statistical study is limited. The main reason being inability of these surveys to provide meaningful estimates of various labour force categories at given points in time. Measurement of the labour force is extremely difficult because of a variety of concepts and definitions used in censuses and surveys which make comparisons difficult over any period of time. These include variations in the time reference of census questions, as well as, identification of unemployed persons. There are also various biases and errors which result from the inability of respondents to recall and report the facts accurately.

The following definitions have been used in various censuses in Pakistan. The 1951 Census asked questions from all persons of 12 years of age and above, who were self-supporting or partly self-supporting or were seeking jobs. The reference period in this case was one month preceding enumeration date. The 1961 Census asked all persons 10 years and above, whether they were working and, if not, were they looking for work. The reference period in this case was one week preceding the census date, but was applicable to non-agricultural workers only and not to agricultural workers. In the 1973 sample survey, all persons, 10 years of age and above,

1, 2, 3, 4: The labour force questions were asked directly in 1951 and 1961 Censuses whereas in the 1972 census no question was included on labour force. Instead the 1973 Housing, Education and Demographic Sample Survey of 255,000 households included questions on labour force. In the 1981 Census the labour force question was asked from ten per cent of total households on probability basis.

were asked whether they did any work at all in the week prior to the survey, either for pay or profit, or if they worked for a minimum of 15 hours as unpaid family helpers. They were also asked whether they found a job and did not work. In the 1981 Census, however, no reference period was used for the labour force question. The question asked was, whether the person usually did something and, if not was he looking for work. From the above, variations in both the labour force question and reference periods are bound to affect the measurements of labour, especially female labour, to a certain degree.

13.2 Economically Active Population

13.2.1 Levels

The growth of the total population, economically active population and the crude economic activity rates according to the four consecutive Censuses are given in table 13.1. According to the table, the total population of Pakistan increased by about 164 per cent during the three decades from 31.9 million in 1951 to 84.2 million in 1981. However, inspite of the very wide definition of the labour force used in the 1981 Census, the corresponding increase of labour force during the same period of time was only about 131 per cent and the labour force participation rate declined during 1973–81. Rate of increase of the economically active population, compared with the total population was higher during the first two decades, but was found to be lower, as by the latest intercensal period 1973–81.

In view of this close association between the growth of population and labour force, crude activity rate increased during the first two intercensal periods and then declined during the last period. A similar trend seemed to emerge in the case of males, who constituted about 96 per cent of the total labour force. Female labour force shows a rather awkward trend during the three decades under consideration. In 1951, econor lly active females constituted about tw cent of the total female population and per cent of the total labour force. T figures increased to about six per cent eight per cent in 1973, but declined to a two per cent and four per cent in 198 must be noted that the third popula Census, Housing Economic and Demogra (HED) survey was undertaken in 1 just after the separation of East Pakistan, to which, most likely, the quality of enu ration suffered in certain areas.

Since the 1973 HED survey was base the 1972 Census and was undertaken du a period of severe floods, it is highly prob that the quality of enumeration fur deteriorated in that survey. At the s time, variable concepts and definitions e loyed in censuses and surveys must made differences in enumeration. Bec of the concept of self-supporting persons in the 1951 Census, fewer persons of ei sex worked as unpaid family helpers. Sinc reference period was exercised in the 1 Census on agricultural labour force, size of unpaid family workers of ei sex increased considerably. Hence, in 1973 HED survey, a person working fo minimum of 15 hours as an unpaid fa helper was also included in the labour fo and it undoubtedly increased the size of group. Likewise, the wider definition labour force in the 1981 Census with reference period had probably resulted reduction of the number of unpaid fa helpers.

The effect of various definitions on four Censuses, therefore, created differen in the size of the male and female lab force. Varying effects of definitions gave rise to greater fluctuations in the of female labour force than that of male labour force. Table 13.1 indic 30.71 as the crude activity rate in 19 which meant that every economically ac person on an average, had to support m than two additional persons excluding hi

TABLE 13.1: Growth of Total Population and Economically Active Population (10 years and above) by Sex, Pakistan, 1951–1981

(Population in thousands)

Census year/Sex	Population			Economically active population (10 years and above)			Crude activity rate
	Total	Percentage increase	Annual growth rate	Total	Percentage increase	Annual growth rate	
Both Sexes							
1951*	31,948	–	–	9,812	–	–	30.71
1961	39,442	23.46	2.15	12,763	30.07	2.68	32.36
1973	60,510	53.41	3.45	19,762	54.84	3.52	32.66
1981	84,254	39.24	4.52	22,626	14.49	1.81	26.85
Males							
1951*	17,204	–	–	9,495	–	–	55.19
1961	21,168	23.04	2,11	11,641	22.60	2.07	54.99
1973	32,511	53.59	3.46	18,016	54.76	3.52	55.41
1981	44,233	36.05	4.19	21,791	20.95	2.55	49.26
Females							
1951*	14,744	–	–	317	–	–	2.15
1961	18,274	23.95	2.19	1,122	253.62	13.57	6.14
1973	27,998	53.21	3.44	1,746	55.59	3.56	6.23
1981	40,021	42.94	4.88	835	52.16	9.37	2.09

* 12 years and above for the year 1951.

Source:

1. Government of Pakistan, *Census of Pakistan 1951, Vol. 7*, Census organisation, Ministry of Interior and Kashmir Affairs, Karachi.
2. Government of Pakistan, *Census of Pakistan 1961, Vol. 3 (West Pakistan)*, Census Organisation, Ministry of Home and Kashmir Affairs, Karachi.
3. Government of Pakistan, *Housing, Economic and Demographic Survey 1973. Vol. II, Part I*, Statistical tables, Census Organisation, Interior Division, Islamabad.
4. Government of Pakistan, *1981 Census Report of Pakistan*, Population Census Organisation, Statistics Division, Islamabad.

herself. Such high dependency rates are also found in most parts of Latin America, as well as, in North Africa. The crude activity rate tended to increase by about five per cent during the period 1951–73, which could be due to changes in labour force definitions and/or changes in the age structure of the population.

Due to varying definitions of the labour force, 2.39 million unpaid family workers were enumerated in the 1961 Census, 4.14 million in the 1973 Census survey and 3.29 million in the 1981 Census. Unpaid family workers were excluded from the 1951 Census altogether and, therefore, if they were also excluded from the 1961, 1973 and 1981 volume of the labour force, crude activity rates for these three years would come down to 26.3, 25.8 and 22.9 per cent respectively. Regarding the effect of age structure, it can be seen that this has more or less remained

stable throughout, owing to a moderate decline in mortality and a slight decline in fertility. Misreporting of age and the habit of under or over-enumeration in certain age groups, does affect the total activity, but not to a very high degree.

13.2.2 Trends

Study of the past trends of activity rates assumes importance from the point of view of future projections of employment for planning. Table 13.2 presents the size of population and labour force of Pakistan by sex from 1901 to 1951, together with crude activity rates. It also shows the intercensal growth of population and the labour force. It was observed during all the intercensal decades from 1901 to 1951, that the growth of labour force lagged behind the growth of population. During these 50 years, the total population increased by 94 per cent, from 16.5 million persons in 1901 to 31.9 million in 1951. Whereas, the labour force grew by only 71 per cent from 5.7 million persons in 1901 to 9.8 million in 1951. The corresponding annual growth rates during this period were 1.33 per cent and 1.08 per

TABLE 13.2: Growth of Population and Economically Active Population (10 years and above by Sex, Pakistan, 1901–1951

(Population in thousands)

Census year/Sex	Population			Economically active Population (10 years and above)			Crude activity rate
	Total	Percentage increase	Annual growth rate	Total	Percentage increase	Annual growth rate	
Both Sexes							
1901	16,502	–	–	5,737	–	–	34.7
1911	17,676	71.14	0.69	6,025	5.02	0.49	34.0
1921	18,243	3.21	0.32	6,079	0.90	0.09	33.3
1931	21,248	16.47	1.54	6,726	10.64	1.02	31.8
1951	31,948	50.36	2.06	9,812	45.88	1.91	30.7
Males							
1901	8,937	–	–	5,098	–	–	57.0
1911	9,702	8.56	0.82	5,528	8.43	0.81	56.9
1921	10,059	3.68	0.36	5,642	2.06	0.20	56.0
1931	11,709	16.40	1.53	6,304	11.73	1.12	53.8
1951	17,204	46.93	1.94	9,495	50.62	2.07	55.1
Females							
1901	7,565	–	–	639	–	–	8.4
1911	7,974	5.41	0.53	497	–22.22	–2.48	6.2
1921	8,184	2.63	0.26	437	–12.07	–1.28	5.3
1931	9,539	16.56	1.54	458	4.80	0.47	4.8
1951	14,744	54.56	2.20	317	–30.79	–1.82	2.1

Source:

1. Farooq Ghazi M, *Dimensions and Structure of Labour Force in Relation to Economic Development*, a comparative Study of Pakistan and Bangladesh, Pakistan Institute of Development Economics, May, 1975, Islamabad.
2. Government of Pakistan, *Census of Pakistan 1951, Vol. 7*, Census Organisation, Ministry of Interi and Kashmir Affairs, Karachi.

cent respectively. The crude activity rate declined from 34.76 in 1901 to 30.71 in 1951. This is in contrast to the trend observed during 1951—61 when crude activity rates somewhat increased (Table 13.1).

There are various reasons for the declining trend of crude activity rates during 1901—51, perhaps the most important being improvement in the overall mortality level which increased the survival of children. Thus, the resulting age structure with a larger size of young children continued to lower the activity rates. Also, the downward trend of the participation of children in the labour force, largely, due to an improvement in primary and middle level education had a negative effect on activity rates overtime.

13.3 Economic Activity Pattern

13.3.1 Age Pattern

Crude activity rates or refined activity rates being single measures of economic activity do not represent an accurate picture or incidence or variation of economic activity, either at a point in time or through different time periods, because the total activity rates are also dependent upon the population age structures to which they belong. Education, marital status, level of income, place of usual residence and family responsibility too, affect the activity rates of either sex. The age of entry into labour force is not only influenced by social and cultural norms of the society, but also by its industrial level and development. Because of the prevalence of child labour in Pakistan, the age of entry into labour force has been fixed at 10 instead of 15 years as the minimum age. Table 13.3 and figure 13.1 show the economic activity rates by various age groups and sex for Pakistan and urban-rural area, 1961—81. A definite pattern of age-specific activity rates for Pakistan emerge from the table. The male activity rate increases rapidly from its lowest level in the age group 10—14 years to 25—34 years age group where almost all the males are in the labour force. It then declines progressively until the age of 65 years, but with varying levels of activity. Rural activity rates for males tend to remain higher at all ages compared with their urban counterparts. This is because males in the rural areas start working in agricultural occupations at an early age and continue to do so even in old age.

Agriculture is mostly a family enterprise and the usual requirements of education, skill and age do not apply. Primitive methods of cultivation, seasonal nature of agricultural work and prevalence of a subsistence level of farmers' living demand an early entry into economic activity. This activity continues until a person is physically unable to work, owing to the passing age or otherwise.

It is noted from the table that activity rates for males have declined at all ages during the two decades 1961—81, although under conditions of continued economic growth, the rates should have risen. This downward trend in the age-specific rates was brought about because of the adoption of varying definitions of labour force in the three censuses. The two exceptions in this case are the young age group 10—14 years, 15—19 years and the old age groups 60 years and above or 65 years and older. Decline in activity rates for these age groups seems plausible on the grounds that child labour is decreasing due to higher enrolment aspirations in educational institutions. High mortality rates at old age tend to exert a depressing effect on activity rates at the advanced ages.

13.3.2 Sex Pattern

Female participation in economic activity deserves to be dealt with, not only carefully but special attention is required. The economic activity of females in Pakistan is influenced first of all by marital status. The most important determinant of female economic activity after marriage is the age of children which induces or deters a woman to participate in economic activity. There are also strong social and cultural factors

TABLE 13.3: Age-Sex Specific Economic Activity Rates by Urban–Rural areas, Pakistan, 1961, 1973 and 1981.

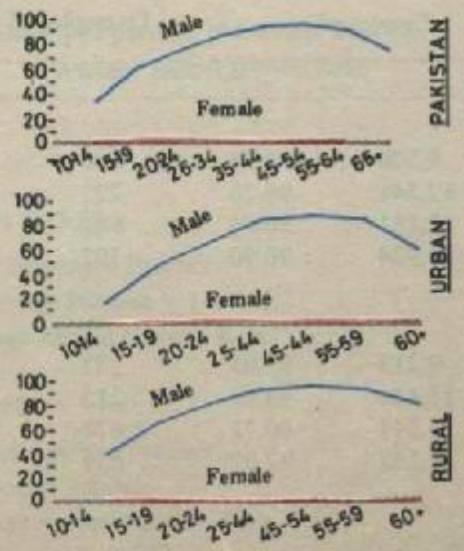
Age group/Residence	ACTIVITY RATES					
	MALES			FEMALES		
	1961	1973	1981	1961	1973	1981
PAKISTAN						
10 years and above	80.80	77.60	72.40	9.3	9.10	3.17
10–14	38.40	39.50	34.73	4.70	10.30	3.21
15–19	72.30	67.70	61.96	7.60	8.60	3.42
20–24	87.90	87.40	76.52	9.60	10.80	3.64
25–34	93.70	95.39	87.23	10.60	8.70	3.47
35–44	94.50	96.86	92.37	11.70	8.40	3.09
45–54	94.30	95.28	92.93	11.80	8.50	2.89
55–64	88.40	87.53	90.41[a]	10.30	7.90	2.35[a]
65 +	65.90	65.68	74.42[b]	6.80	8.90	2.34b
URBAN						
10 years and above	72.20	70.58	63.35	4.10	8.69	3.54
10–14	18.30	26.13	17.80	1.30	10.21	1.43
15–19	57.50	52.70	47.66	2.40	7.97	2.42
20–24	81.30	81.05	67.70	4.00	10.90	4.55
25–44	91.60	95.43	84.77	5.10	7.44	4.88
45–54	91.20	93.33	89.45	6.70	8.09	4.08
55–59	81.00	85.48	84.06[a]	5.40	7.01	3.47
60+	62.30	62.95	60.94[b]	6.00	9.62	2.99
RURAL						
10 years and above	83.90	80.36	76.41	10.90	9.27	3.03
10–14	45.50	44.78	41.39	6.00	10.40	3.97
15–19	78.10	74.12	68.87	9.40	8.96	3.91
20–24	91.10	90.32	81.36	11.60	10.77	3.20
25–44	94.90	96.29	91.66	12.80	8.97	2.66
45–54	95.20	96.02	94.37	13.10	8.64	2.48
55–59	93.80	92.71	92.89[a]	11.40	7.38	1.90
60+	84.40	76.81	80.16[b]	8.70	8.51	2.15

(a) [a]The rate for the year 1981 pertains to age group 55–59.
(b) [b]The rate for the year 1981 pertains to terminal ages of 60 and over.

Source:

1. Government of Pakistan, *Census of Pakistan 1961, Vol. 3 (West Pakistan)*, Census Organisation, Ministry of Home and Kashmir Affairs, Karachi.
2. Government of Pakistan, *Housing, Economic and Demographic Survey 1973. Vol. II, Part I, Statistical tables*, Census Organisation, Interior Division, Islamabad.
3. Government of Pakistan, *1981 Census Report of Pakistan*, Population Census Organisation, Statistics Division, Islamabad.

Figure :13.1 Age-Specific Economic Activity rates by sex and Urban & Rural areas, Pakistan, 1981.



Source: Table 13.3

which influence the economic activity of women. As a consequence, the institution of *purdah* and the absence of an organised labour market have created a very small, refined activity rate of about three per cent.

As with males, the activity rate for females first rises sharply from a low level in the 10—14 years of age group to 20—24 years age group, then slowly to its peak by the age of 55 years. Thereafter, it starts declining until the terminal ages. This pattern is quite contrary to that observed in the developed countries of the world, where the activity rate records a peak at 15—19 years of age group and continues to decline thereafter, until reaching a minimum at old age. However, the urban-rural differentials indicate higher activity rates at all ages in rural areas compared with urban areas. The explanation for these differences has already been cited above.

13.4 The Employed

Questions related to employed and unemployed persons in the four Censuses have already been mentioned in earlier paragraphs. As it was pointed out, definition of the economically active population in 1951 excluded unpaid family workers, whereas, in all the subsequent censuses they were included.

In order to study the relative share of employed and unemployed persons, data obtained from the four censuses are presented in table 13.4. As can be seen from the table, the percentage of employed persons slightly increased between 1951—61, while that of unemployed declined. This is because in 1951, the reference period for economic activity was one month, during which the probability of locating unemployed persons was higher. On the other hand, in 1961, the reference period was only one week, which was applicable only to the non-agricultural labour force. Therefore, fewer unemployed persons were recorded, both in the non-agricultural sector, because of the short reference period of one week, and in the agricultural sector, because of the absence of any reference period.

As is evident from the table, the percentage of unemployed persons jumped from 1.74 per cent in 1961 to around 13 per cent in 1973. Although the short reference period of one week in 1973 should have yielded fewer unemployed, yet the reverse took place. As has been stated earlier, the 1972 Census, and consequently the 1973 HED survey, were subject to enumeration inaccuracies besides sampling errors. As such, the increase of unemployed persons in 1973 seems to be an outcome more of enumeration than that of definition errors. However, it is possible that, as an aftermath of the 1971 war with India, and the separation of East Pakistan, industries, as well as, economic activities were dislocated in Pakistan, thus, creating a sizeable unemployment in the country.

Since no reference period was adopted in the 1981 Census survey for economic activity, both the employed and unemployed population seem to have been affected, to a

TABLE 13.4: Percentage Distribution of Economically Active Population (10 years and above) by Sex and Employment Status, Pakistan, 1961–1981

(Population in thousands)

Census Year/Sex	Total Economically active Persons		Employed		Unemployed	
Both Sexes						
1951*	9,812	100.00	9,506	96.88	306	3.12
1961	12,763	100.00	12,541	98.26	222	1.74
1973	19,762	100.00	17,181	86.94	581	13.06
1981	22,626	100.00	21,924	96.90	702	3.10
Males						
1951*	9,495	100.00	9,213	97.03	282	2.97
1961	11,641	100.00	11,426	98.15	215	1.85
1973	18,016	100.00	16,344	90.72	1,672	9.28
1981	21,791	100.00	21,152	97.07	639	2.93
Females						
1951*	317	100.00	293	92.40	24	7.60
1961	1,122	100.00	1,115	99.39	7	0.61
1973	1,746	100.00	838	47.97	908	52.03
1981	835	100.00	772	92.49	63	7.51

*12 years and above for the year 1951.

Source:

1. Government of Pakistan, *Census of Pakistan 1951, Vol. 7,* Census organisation, Ministry of Interior and Kashmir Affairs, Karachi.
2. Government of Pakistan, *Census of Pakistan 1961, Vol. 3 (West Pakistan),* Census Organisation, Ministry of Home and Kashmir Affairs, Karachi.
3. Government of Pakistan, *Housing, Economic and Demographic Survey 1973. Vol. II,* Part I, Statistical tables, Census Organisation, Interior Division, Islamabad.
4. Government of Pakistan, *1981 Census Report of Pakistan,* Population Census Organisation, Statistics Division, Islamabad.

certain extent, not only by the absence of reference period, but also because of the sampling error. The table shows that variable definitions affected the female labour force more severely than the male labour force. The data generated by the Federal Bureau of Statistics after 1981, show some variations which would be reflected in subsequent editions of this book.

13.4.1 Trends

In view of the limitations of the data cited above, it becomes very difficult to study the trend of employment. Table 13.5 gives the number of employed persons as having increased by 131 per cent during the 30-year period from 9.5 million in 1951 to about 21.9 million in 1981. The average rate of growth during this period was about 2.82 per cent per annum. The growth, however, varied between 2.52 per cent to 3.31 per cent between the intercensal periods due to changes in definitions, as well as, enumeration problems.

A comparable growth in employed males occurred during 1951–81 with an intercensal growth ranging from 2.19 per cent to 3.50

TABLE 13.5: Growth of Employed Population (10 years and above) by Sex and Urban–Rural Areas, Pakistan, 1951–1981.

(Employed persons in thousands)

Employed persons, percentage increase, Average annual growth Rate	CENSUS YEAR			
	1951	1961	1973	1981
ALL AREAS				
BOTH SEXES				
Total Employed Persons	9,506*	12,541	17,181	21,924
Percentage increase	–	31.92	36.99	27.61
Average Annual Growth Rate	–	2.83	2.52	3.31
MALES				
Total Employed Persons	9,213	11,426	16,344	21,152
Percentage increase	–	24.02	43.04	29.42
Average Annual Growth Rate	–	2.19	2.87	3.50
FEMALES				
Total Employed Persons	293	1,115	837	772
Percentage increase	–	280.37	–24.90	–7.76
Average Annual Growth Rate	–	14.42	–2.24	–1.07
URBAN				
Total Employed Persons	N.A.	2,789	4,164	5,728
Percentage increase	–	–	49.30	37.56
Average Annual Growth Rate	–	–	3.22	4.35
RURAL				
Total Employed Persons	N.A.	9,752	13,017	16,197
Percentage increase	–	–	33.48	24.43
Average Annual Growth Rate	–	–	2.31	2.96

Note: The breakdown of Employed Population for 1951 by Urban–Rural Category was not available.

*12 years and above for 1951.

Source:

1. Government of Pakistan, *Census of Pakistan 1951, Vol. 7*, Census organisation, Ministry of Interior and Kashmir Affairs, Karachi.
2. Government of Pakistan, *Census of Pakistan 1961, Vol. 3 (West Pakistan)*, Census Organisation, Ministry of Home and Kashmir Affairs, Karachi.
3. Government of Pakistan, *Housing, Economic and Demographic Survey 1973. Vol. II, Part I, Statistical tables*, Census Organisation, Interior Division, Islamabad.
4. Government of Pakistan, *1981 Census Report of Pakistan*, Population Census Organisation, Statistics Division, Islamabad.

per cent during the periods. Accordingly, the proportion of males in the employed population varied from 97 per cent in 1951 to 91 per cent in 1961 to 95 per cent in 1981[1, 2, 9]. Perhaps, the dip in 1961 occurred, because of the large enumeration of female unpaid family workers in agriculture in the absence of any reference period. As can be seen from the table, there are large fluctuations in the growth of employed females during the three decades under consideration. Due to the absence of unpaid family workers in 1951 and inclusion of these in 1961, the growth of employed females grew at the rate of about 14 per cent per annum during 1951–61. The size of employed females then declined from 1.1 million in 1961 to around 0.8 million in 1973. This was because the 1973 HED survey was undertaken during the months of August-September when agricultural activity happens to be low. Similarly, because of the absence of any reference period in 1981, the size of employed females further declined to 0.77 million.

The growth of employed population between 1961 and 1981 by urban and rural areas is indicated in table 13.5. During this period, while the total employed population increased by 75 per cent, the employed population in urban and rural areas increased by 105 and 66 per cent respectively. The urban areas as such, recorded higher annual growth rates compared with those of total and rural employed population during the intercensal periods. This disparity in the growth of the employed population between urban and rural areas was more marked between 1973 and 1981 when the urban employed population increased at an average rate of 4.35 per cent per annum, the corresponding rate for rural areas being only 2.96 per cent. It may be observed that the share of the urban employed population increased over the years while that of the rural employed population declined. This decline can largely be explained in terms of both area and population increase. Growth of urban employment was due to increase in many urban areas, in-migration of rural unemployed labour force, and the natural growth of urban population.

13.4.2 *Classification of Economic Activity*

The type of economic activity performed by an employed person can be classified according to the type of industry he/she is engaged in, the type of occupation he/she has

A study of previous trends in labour force participation in Pakistan indicates a decline in activity rates. The crude activity rate in 1951 was 30.71 which declined to 26.85 by 1981. Although under conditions of increased economic activity, labour force participation rates should increase overtime but in Pakistan the reverse has happened. Age-specific activity rates for males declined during the period 1961–81 in almost all the age groups. A decline in the age groups 10–14 years, 15–19 years and 60 & above or 65 & above seems plausible since increased facilities for education have led to postponement of entrance into the labour force, thus reducing child labour. The activity rates of females need to be given special attention. Activity rates of females are influenced by their marital status and the ages of their children. These are the main factors which lead to the decision of entry of women in the labour force. Moreover, the institution of purdah and absence of an organised labour market have created a very small refined activity rate for females. The activity rates of females in 1981 rose from 3.21 in the age group of 10–14 years to 3.64 in the age group 20–24 years, then the rates started falling uptil the ages of 65 years and above. It is observed from the data that age-specific activity rates of both sexes tend to remain higher at all ages in the rural areas as compared to urban areas. The reason for this could be that in rural areas, agriculture is the main occupation. To support family income children assist their elders in the fields and continue to do so till old age as long as they are physically fit.

adopted and the working status he/she enjoys during the period of employment. These classifications could be obtained from some of the censuses at national, urban and rural levels.

There are several limitations of the data by industry and sex e.g., varying definitions of the labour force used in the four censuses / surveys with varying reference periods, the extent of over or under-enumeration, and the varying degree of enumeration of unemployed persons in censuses/surveys. Besides these, there is yet the problem of unclassified category which excluded 6.8 per cent of the labour force in 1951 and 1.5 per cent in 1961. These classifications are not strictly comparable for reasons like differences in definition and accuracy of enumeration, and as already mentioned, precise analysis becomes difficult.

For purposes of comparison, industrial occupation groups have been reduced to only three categories and are presented in table 13.6 and figure 13.2. The table shows that in 1951, about 65 per cent of all employed persons were engaged in the primary sector, 10 percent in the secondary sector, 17 per cent in the tertiary sector and the rest were reported as unclassified. The distribution of males by sectors was almost the same as that of both sexes combined.

The proportion of females employed in the primary sector was larger than that of males, but in the other two sectors, the share of males was higher compared with that of females. Moreover, as can be seen, the proportion of workers employed in the primary sector was much higher in rural areas compared with urban areas. Females, however, had a larger share in the primary sector in rural areas (80 per cent in 1973) compared with urban areas (7.6 per cent in 1973). The presence of a substantial number of female unpaid family workers in traditional agriculture sector was the main factor responsible for a higher percentage of female workers, in the primary sector. Most urban workers engaged in the tertiary sector, had a higher proportion of females than that of males. On the other hand, the proportion of females in rural areas remained higher in both primary and secondary sectors.

Regarding changes in the distribution of employed workers, the proportion of employed persons in the primary sector declined by about 12 percentage points during the 30-year period between 1951 and 1981 with corresponding percentage points increase in secondary and tertiary sectors being about 3 and 12 respectively. The same percentage changes are apparent in the case of employed males. However, some changes seem to have occurred in the case of females during this period of time. The proportion of employed females declined by about 29 percentage points during 1951−81, with corresponding increases in secondary and tertiary sectors being 11 and 24 per cent respectively. These proportionate changes seem to be counterbalanced by corresponding changes in the

In Pakistan 96 per cent of the labour force consists of males while only 4 per cent constitutes females. More than 95 per cent of the total labour force is employed. It has been observed that over the years, the share of rural employment in total population has declined while that of urban employment has increased. In the early years of Independence, majority of the employed population was engaged in the primary sector of agriculture. During the years, with the process of industrialisation, the share of the primary sector in total employment has declined while that of the secondary and tertiary sectors has increased. In 1951, 65 per cent of the total employed population was engaged in agriculture. By 1981 the share had declined to about 52 per cent. It is observed that a larger number of male and female workers tend to be employed in agriculture in rural areas as compared to their urban counterparts. In urban areas a higher proportion of females tends to be higher in the secondary sector.

TABLE 13.6: Percentage Distribution of Employed Population (10 years and above) for Major Industrial Sector by Sex and Urban–Rural areas, Pakistan, 1951, 1973, 1981.

Census Year/Sex/Residence	Number of Employed Persons (in thousands)	Total	Type of Industry			
			Primary	Secondary	Tertiary	Unspecified
PAKISTAN						
Both Sexes						
1951*	(9,506)	100.00	65.30	10.45	16.79	7.45
1973	(17,181)	100.00	58.60	13.76	26.71	0.93
1981	(21,924)	100.00	52.72	13.75	28.61	4.92
Males						
1951*	(9,213)	100.00	65.20	10.56	16.89	7.35
1973	(16,344)	100.00	58.27	13.90	26.95	0.88
1981	(21,152)	100.00	53.21	13.60	28.25	4.94
Females						
1951*	(293)	100.00	68.46	6.80	13.77	10.97
1973	(838)	100.00	65.07	11.09	21.95	1.89
1981	(772)	100.00	39.34	17.91	38.29	4.46
URBAN						
Both Sexes						
1973	(4,164)	100.00	10.40	26.73	61.00	1,87
1981	(5,728)	100.00	7.38	25.00	60.19	7.43
Males						
1973	(3990)	100.00	10.53	26.94	60.72	1.81
1981	(5,480)	100.00	7.56	25.35	59.58	7.51
Females						
1973	(174)	100.00	7.56	21.91	67.47	3.06
1981	(248)	100.00	3.40	17.15	73.75	5.70
RURAL						
Both Sexes						
1973	(13,017)	100.00	74.02	9.16	15.74	0.63
1981	(16,197)	100.00	68.76	9.77	17.44	4.03
Males						
1973	(12,354)	100.00	73.69	9.68	16.05	0.58
1981	(15,672)	100.00	69.18	9.48	17.30	4.04

Females						
1973	(663)	100.00	80.17	8.25	10.00	1.58
1981	(524)	100.00	56.25	18.27	21.61	3.87

Note: Primary: Includes agriculture, forestry, hunting and fishing.
Secondary: Includes mining and quarrying, manufacturing and construction.
Tertiary: Includes electricity, gas, water and sanitary services, commerce, transportation, storage, communications and other services.

• 12 years and above for the year 1951.

Source:

1. Government of Pakistan, *Census of Pakistan 1951, Vol. 7,* Census Organisation, Ministry of Interior and Kashmir Affairs, Karachi.
2. Government of Pakistan, *Housing, Economic and Demographic Survey 1973, Vol. II, Part I, Statistical tables,* Census Organisation, Interior Division, Islamabad.
3. Government of Pakistan, *1981 Census Report of Pakistan,* Population Census Organisation, Statistics Division, Islamabad.

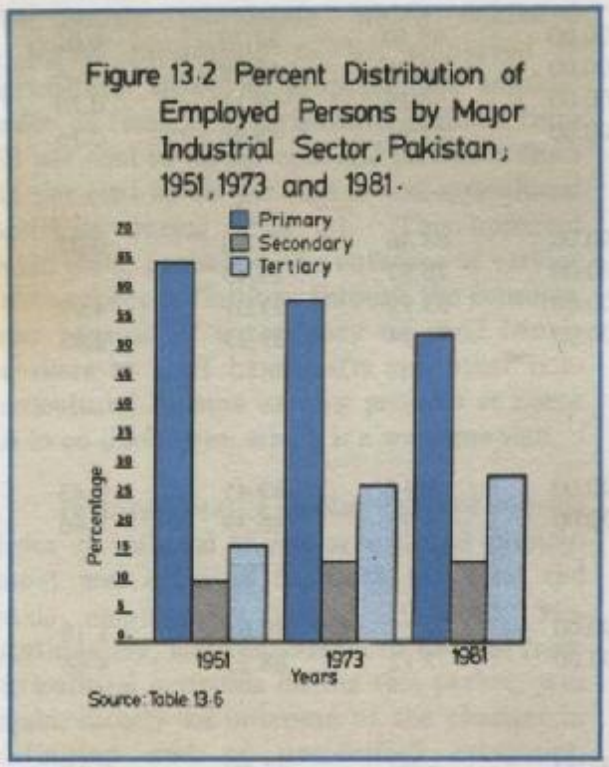


Figure 13.2 Percent Distribution of Employed Persons by Major Industrial Sector, Pakistan, 1951, 1973 and 1981.
Source: Table 13.6

unspecified category but, probably with the process of industrialisation and continued economic growth, surplus manpower in the primary sector inclined more towards secondary and tertiary sectors. In the case of Pakistan, the tendency to shift seems more prominent for females than males and more apparent in rural areas. In urban areas, there were some shifts from primary to other sectors, although they were mostly to unspecified categories.

13.4.3 *Occupation*

Distributions of employed population by major occupation groups and sex fo Pakistan and urban-rural areas for 1951–81 are presented in table 13.7. The occupational distributions are combined into two major groups: agriculture and non-agriculture. The agricultural occupations consist of farmers, hunters and related workers, whereas, the non-agricultural workers include all those classified in other specific occupation groups. According to the table, in 1951, the employed population was distributed among agricultural and non-agricultural groups in a 2:1 ratio. This distribution has continuously been changing in Pakistan due to continued economic growth, resulting from rapid industrialisation and a sizeable improvement in agricultural productivity. During the 30-year period between 1951 and 1981, proportionate distribution of the total agricultural employment declined from about 65 per cent to 51 per cent, whereas, non-agricultural employment increased from around 35 per cent to 46 per cent. In other words, distribution of employment among the two sectors is levelling out.

Because of the very small size of female employment in Pakistan, the trend of occupational shift from agricultural to non-agricultural employment was, more or less, identical for both the total and male emp-

TABLE 13.7: Percentage Distribution of Employed Population (10 year and above) for Major Occupation Groups by Sex and Urban–Rural Areas, Pakistan, 1951–1981

Census Year/Sex/Residence	No. of Employed Persons (in thousands)	Total	Agriculture	Non Agriculture	Unspecified
PAKISTAN					
Both Sexes					
1951*	9,506	100.00	65.30	34.69	0.01
1961	12,541	100.00	59.44	40.56	–
1973	17,181	100.00	56.57	42.52	0.91
1981	21,924	100.00	51.43	46.39	2.17
Males					
1951*	9,213	100.00	65.20	34.79	0.01
1961	11,426	100.00	58.38	41.62	–
1973	16,344	100.00	56.19	43.11	0.70
1981	21,152	100.00	51.91	45.92	2.16
Females					
1951*	293	100.00	68.46	31.50	0.03
1961	1,115	100.00	70.57	29.43	–
1973	837	100.00	63.99	31.01	4.99
1981	772	100.00	38.24	59.23	2.53
URBAN					
Both Sexes					
1973	4,164	100.00	9.12	89.45	1.43
1981	5,728	100.00	6.95	88.39	4.66
Males					
1973	3,990	100.00	9.21	89.61	1.18
1981	5,480	100.00	7.12	88.22	4.66
Females					
1973	174	100.00	6.99	85.89	7.12
1981	248	100.00	3.29	92.03	4.67
RURAL					
Both Sexes					
1973	13,017	100.00	71.74	27.51	0.75
1981	16,197	100.00	67.16	31.54	1.29
Males					
1973	12,354	100.00	71.35	28.09	0.55
1981	15,672	100.00	67.58	31.13	1.29

Females					
1973	663	100.00	78.96	16.61	4.43
1981	524	100.00	54.68	43.80	1.52

12 years and above for 1951.

Note: The figures for 1951 and 1961 for urban and rural areas are not available.

Source:

1. Government of Pakistan, *Census of Pakistan 1951, Vol. 7,* Census Organisation, Ministry of Interior and Kashmir Affairs, Karachi.
2. Government of Pakistan, *Census of Pakistan 1961, Vol. 3 (West Pakistan),* Census Organisation Ministry of Home and Kashmir Affairs, Karachi.
3. Government of Pakistan, *Housing, Economic and Demographic Survey 1973. Vol. II, Part I, Statistical tables,* Census Organisation, Interior Division, Islamabad.
4. Government of Pakistan, *1981 Census Report of Pakistan,* Population Census Organisation, Statistics Division, Islamabad.

loyed population. The shift was more for the female population which exhibited a higher proportion of the employed in agriculture. However, proportionate employment of females in agriculture declined from 68 per cent to 38 per cent and increased from 31 per cent to 59 per cent in non-agricultural activities during 1951–81. This apparent rapid shift, probably is an outcome of varying labour force definitions through the censuses, also because of a tendency of rural female workers to start handicrafts and other non-agricultural income earning projects at home or in co-operatives, which is a welcome sign.

In rural areas, a similar trend of moving from agricultural to non-agricultural employment was observed for both the total and male employment during 1973–81. Proportionately, large movement of females from agricultural activities during this period, was again, mostly an outcome of the changes in definition and of unspecified categories. Urban areas also show some shifts out of agricultural employment to unspecified categories for the total and males and to non-agricultural employment for females during 1973–81.

13.4.4 *Productivity*

Productivity in any particular sector of the industry demands particular skills and education on the part of the employed population. With increased education, skill training and on the job training, productivity will continue to increase in various sectors, depending on the demand for such type of skills. White collar occupations are still considered to be the new attraction for employment in industry. This includes occupations which are professional, technical, administrative, managerial, clerical and sales related. White collar occupations, of course, are the better paid, not only at higher levels but even down to the lower levels of clerks and salesmen. Industry and services sectors are usually more organised because of better management capabilities of white collar workers.

Table 13.8 gives the distribution of white collar, agricultural and other occupations at national level for the year 1951, 1961, 1973 and 1981. It is evident from the table that during the 30-year period between 1951 and 1981, the proportionate agricultural employment in Pakistan declined by about 14 percentage points while the white collar and other non-agricultural workers gained seven percentage points. A similar phenomenon is apparent in the case of employed male workers. On the other hand, female employment in agriculture declined by about 30 percentage points during the period under consideration, two-third of which was taken up by an increase in white collar occupations and one-third by other

TABLE 13.8: Distribution of Employed Population (10 years and above) by Sex and Occupation Groups, Pakistan, 1951–1981.

(Population in thousands)

Category	White collar occupations		Agricultural occupations		Other occupations	
	No.	Per cent	No.	Per cent	No.	Per cent
Both Sexes						
1951*	933	9.82	6,208	65.30	2,265	24.88
1961	1,528	12.24	7,417	59.44	3,532	28.31
1973	3,008	17.51	9,719	56.57	4,454	25.93
1981	3,645	16.62	11,277	51.43	7,003	31.94
Males						
1951*	921	9.99	6,007	65.20	2,285	24.80
1961	1,480	13.00	6,648	58.38	3,259	28.62
1973	2,895	17.71	9,183	56.19	4,266	26.20
1981	3,453	16.32	10,981	51.92	6,718	31.76
Females						
1951*	12	4.19	201	68.46	80	27.34
1961	47	4.35	769	70.57	273	25.08
1973	113	13.54	536	63.99	188	22.47
1981	192	24.83	295	38.24	285	36.95

* 12 years and above in the year 1951.

Source:

1. Government of Pakistan, *Census of Pakistan 1951, Vol. 7*, Census Organisation, Ministry of Interior and Kashmir Affairs, Karachi.
2. Government of Pakistan, *Census of Pakistan 1961, Vol 3 (West Pakistan)*, Census Organisation, Ministry of Home and Kashmir Affairs, Karachi.
3. Government of Pakistan, *Housing, Economic and Demographic Survey 1973. Vol. II, Part I, Statistical tables*, Census Organisation, Interior Division, Islamabad.
4. Government of Pakistan, *1981 Census Report of Pakistan*, Population Census Organisation, Statistics Division, Islamabad.

non-agricultural occupations. The probable reason being that women usually prefer to adopt white collar occupations, particularly in urban areas. Due to paucity and inadequacy of relevant data, comparable results for urban and rural areas are not available.

13.5 Structure of the Labour Force

13.5.1 Introduction

Structure of the labour force is usually defined by three-way classification, namely industry, occupation and status. This type of presentation requires a big matrix, which is beyond the scope of this study. For the sake of convenience, censuses and surveys generally provide a two-way classification. The study of the structural aspects of labour force is important from the point of view of knowing the organisation of the economy and the level of technological development that has been attained. Analysis of this structure is also essential from the point of view of manpower projections, which need to be classified into different types of economic activities. This then deals with the industry and status structure of the labour force.

Table 13.9 presents the distribution of labour force by sex and industry for 1951 1961, 1971 and 1981. As stated earlier, results may not be strictly comparable from one census to another, as the unemployed persons in the non-agricultural labour force have been excluded both in 1951 and 1961. Also, agricultural labour force could not be subdivided into cultivation, livestock, forestry, etc., due to lack of comparable data.

13.5.2 Industry

As can be seen from the table, from 1951 to 1981, proportionate distribution of labour in agriculture declined while that of non-agricultural labour increased. The chances of an even distribution of labour force between the agricultural and non-agricultural sectors taking place in the very near future, therefore, becomes evident. It is also apparent that in 1951, about three-fourth (73%) of the total non-agricultural labour in Pakistan was absorbed by three main divisions: manufacturing, trade & commerce and services. These were also the main sources of employment for males in Pakistan. On the other hand, manufacturing and services were the main sources of employment (58% in 1951) for females, though their number was very small. Within manufacturing and services, women were mostly concentrated in textiles and services, particularly, as women were not widely employed in industries until very recently, where physical labour was a prerequisite. The retail trade accounts for a substantial part of trade and commerce were usually in the hands of family type organisations.

By 1961, the contribution of these three major divisions to the total and male employment increased to about 87 per cent, but declined to about 75 per cent in 1973 and about 70 per cent in 1981. Whether these movements are accurate or not, is difficult to ascertain because of the limitations of the data already discussed. Sub-divisions of these three major divisions, if made available, could have thrown more light on the trend. However, it could be said that 70 to 75 per cent of the total (as well as male) non-agricultural labour force in Pakistan had so far remained in these three major divisions.

Females contribution to manufacturing and services shows fluctuating trend during the period under consideration. It increased from 58 per cent in 1951 to 94 per cent in 1961 because of their increased contribution to both manufacturing and services. It then declined to 67 per cent in 1973 due to their reduced contribution to manufacturing and unexpectedly very high contribution to mining sector (11%). Further it increased to 85 per cent in 1981 due to sudden increase in manufacturing at the expense of mining. What is evident then is that females are more concentrated in manufacturing and services and to a less extent in trade and commerce.

13.5.3 Employment Status

As stated earlier, data obtained from censuses, surveys are not tabulated so as to yield a smooth series of relevant information across the censuses. Therefore, wherever possible, information has been grouped for at least two of the censuses. The labour force by status is usually classified into employees, self-employed and unpaid family helpers. Definitions have already been provided by the United Nations and have been used in all the four censuses of Pakistan. Because of lack of comparable data, the status composition of the agricultural labour force has not been made separately. The status composition of the employed population shown in table 13.10 and figure 13.3 indicate that the self-employed category is the largest. This applies particularly to males who mostly operate retail trade as family enterprises in rural areas. In 1973, 51 per cent of males at the national level were accounted as self-employed with corresponding figure for urban and rural areas being about 39 and 54 per cent respectively. Corresponding female figures at national, urban and rural levels were about 17 per cent, 20 per cent and 16 per cent respectively.

TABLE 13.9: Percentage Distribution of Employed Labour Force (10 years and above) by Sex and Industry, Pakistan, 1951 – 1981.

Occupations	1951*			1961			1973			1981		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
Civilian Labour Force	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Agricultural	65.31	65.20	68.47	60.71	59.68	71.29	58.60	58.27	65.07	52.72	53.21	39.34
Non-Agricultural	34.69	34.79	31.53	39.29	40.32	28.71	41.39	41.73	34.93	47.28	46.79	60.66
Non-Agricultural Labour Force	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Mining	0.28	0.26	0.79	0.44	0.47	0.04	2.33	1.94	11.37	0.84	0.86	0.43
Manufacturing	27.91	28.13	20.26	34.67	34.10	42.91	19.98	20.17	15.61	19.37	19.09	25.17
Construction and Utilities	1.89	1.93	0.50	5.82	6.13	1.31	11.18	11.44	5.12	10.13	10.41	4.36
Transportation, Storage and Communications	3.39	3.48	0.21	6.83	7.26	0.63	9.47	9.80	1.73	8.76	9.04	2.81
Trade and Commerce	19.80	20.21	5.83	18.16	19.17	3.63	24.14	24.78	9.04	21.52	22.02	10.99
Service	25.23	24.87.	37.63	34.08	32.87	51.48	30.45	29.54	51.56	28.97	28.03	48.89
Others and Unclassified	21.50	21.12	34.78	–	–	–	2.45	2.31	5.57	10.41	10.55	7.35

* 12 years and above for the year 1951.

Source:-

1. Government of Pakistan, *Census of Pakistan 1951, Vol. 7*, Census organisation, Ministry of Interior and Kashmir Affairs, Karachi.
2. Government of Pakistan, *Census of Pakistan 1961, Vol. 3 (West Pakistan)*, Census Organisation, Ministry of Interior and Kashmir Affairs, Karachi.
3. Government of Pakistan, *Housing, Economic and Demographic Survey 1973, Vol. II, Part I, Statistical tables*, Census Organisation, Interior Division, Islamabad.
4. Government of Pakistan, *1981 Census Report of Pakistan*, Population Census Organisation, Statistics Division, Islamabad.

The next largest status category is that of unpaid family helpers. In rural areas, females were employed mostly as unpaid family helpers, their contribution to total female employment being about 14 per cent in urban and 66 per cent in rural areas in 1973. The third largest status category is that of employees comprising mostly males. In 1973 their contribution to the total male employment was about 45 per cent in urban areas and around 14 per cent in rural areas. Total female employees, on the other hand, were estimated to be 55 per cent in urban areas and 11 per cent in rural areas. The last status category is that of employers who constitute a very small portion of the total employment in the country.

The question arises as to what changes have taken place in status composition of the employed population in Pakistan during the brief period of 1973–81. Interestingly, both the absolute sizes and proportionate distributions of employers and unpaid family helpers declined during this period. In contrast, absolute sizes, as well as, the proportionate distribution of employees and self-employed persons increased at the expense of employers and unpaid family helpers during the same period at national, urban and rural levels. Males tended to contribute more to the self-employed category in rural areas compared with urban areas, while contribution to employees grew faster in both areas. Exactly the same phenomenon can be observed for female employment.

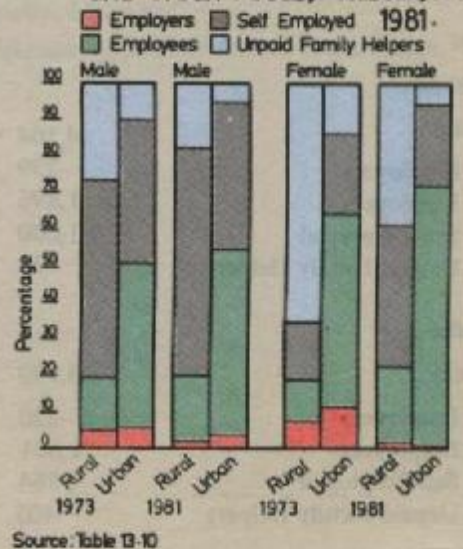
Study of the status composition of those employed in the non-agricultural labour force assumes great importance from the point of view of economic development of the society. In the initial stages, retail trade seemed to flourish in the country with employees constituting a small part of the total employment. Then, with the progress of economic development, the proportion of small retail trade declined and that of private employees continued to increase.

In 1951 (Table 13.11) out of total employment, about 62 per cent were self-employed and the remaining 38 per cent were employees. Distribution tended to remain the same for males. However, comparatively more females than males concentrated in the employees category in the non-agricultural labour force. The table also shows changes in the proportionate distribution of status composition during 1951–61, but these seem to be the outcome of the 1951 exclusion of unpaid family helpers.

13.6 Occupational Composition and its Relationship with the Industrial Structure

It is necessary to study the relationship of occupation with industry in order to examine its simultaneous development in the labour force. This relationship is a complex one in more advanced economies, whereas, in agricultural economies, the relationship tends to be more simple. Table 13.12 gives the occupational distribution of Pakistan by sex for the four census years. Since the break-up of agricultural occupation in these censuses is not available, in the present context,

Figure 13-3 Percentage Distribution of Employed Persons by Sex and Employment Status Rural and Urban Areas, Pakistan, 1973, 1981.



Source: Table 13-10

TABLE 13.10: Distribution of Employed Population (10 years and above), Percentage Increase and Annual Growth Rate by Sex, Employment Status and Urban–Rural Areas, Pakistan, 1973–1981

(in thousands)

Employment Status/Sex/Residence	1973		1981		Percentage Increase 1973-1981	Annual Growth Rate 1973-1981
	No.	Per cent	No.	Per cent		
PAKISTAN						
Both Sexes						
Total	17,181	100.00	21,925	100.00	27.61	3.09
Employers	829	4.83	436	1.99	47.40	–7.72
Employees	3,769	21.94	5,972	27.24	58.44	5.92
Self Employed	8,440	49.12	12,224	55.75	44.83	4.74
Unpaid Family Helpers	4,143	24.11	3,293	15.02	–20.51	–2.83
Males						
Total	16,344	100.00	21,152	100.00	29.42	3.28
Employers	762	4.66	428	2.02	–43.77	–6.94
Employees	3,598	22.02	5,680	26.86	57.88	5.87
Self-Employed	8,301	50.79	11,965	56.57	44.14	4.68
Unpaid Family Helpers	3,683	22.53	3,078	14.55	–16.42	–2.22
Females						
Total	837	100.00	772	100.00	–7.76	–1.00
Employers	67	8.01	8	0.99	–88.61	–23.78
Employees	171	20.41	291	37.66	70.23	6.88
Self-Employed	139	16.61	258	33.46	85.79	8.05
Unpaid Family Helpers	460	54.97	215	27.89	–53.21	–9.06
URBAN						
Both Sexes						
Total	4,164	100.00	5,728	100.00	37.56	4.07
Employers	239	5.73	160	2.80	–32.79	–4.85
Employees	1,896	45.53	2,996	52.31	58.03	5.89
Self-Employed	1,600	38.42	2,301	40.17	43.81	4.65
Unpaid Family Helpers	430	10.32	271	4.72	–36.99	–5.61
Males						
Total	3,990	100.00	5,481	100.00	37.37	4.05
Employers	220	5.52	158	2.89	–28.14	–4.05
Employees	1,801	45.13	2,821	51.47	56.65	5.77
Self-Employed	1564	39.21	2,246	40.97	43.56	4.62
Unpaid Family Helpers	405	10.14	256	4.67	–36.73	–5.56

Females						
Total	174	100.00	247	100.00	41.84	4.46
Employers	19	10.68	2	0.91	–87.86	–23.17
Employees	95	54.59	175	70.84	84.09	7.93
Self-Employed	36	20.40	55	22.30	55.05	5.63
Unpaid Family Helpers	25	14.33	15	5.94	–41.23	–6.43
RURAL						
Both Sexes						
Total	13,017	100.00	16,197	100.00	24.43	2.77
Employers	590	4.53	276	1.70	–53.31	–9.08
Employees	1,873	14.39	2,976	18.37	58.85	5.95
Self-Employed	6.840	52.55	9,923	61.26	45.07	4.76
Unpaid Family Helpers	3,713	28.53	3,023	18.66	–18.60	–2.54
Males						
Total	12,354	100.00	15,671	100.00	26.85	3.02
Employers	542	4.39	270	1.72	–50.12	–8.33
Employees	1,797	14.55	2,860	18.25	59.11	5.98
Self-Employed	6,736	54.53	9,719	62.02	44.28	4.69
Unpaid Family Helpers	3,278	26.53	2,822	18.01	–13.91	–1.85
Females						
Total	663	100.00	525	100.00	–20.79	–2.87
Employers	48	7.31	5	1.02	–88.91	–24.03
Employees	76	11.43	116	22.05	52.85	5.45
Self-Employed	104	15.62	203	38.71	96.34	8.79
Unpaid Family Helpers	435	65.64	201	38.21	–53.89	–9.22

Source:

1. Government of Pakistan, *Housing, Economic and Demographic Survey 1973. Vol. II, Part I, Statistical tables*, Census Organisation, Interior Division, Islamabad.
2. Government of Pakistan, *1981 Census Report of Pakistan*, Population Census Organisation, Statistics Division, Islamabad.

TABLE 13.11: Distribution of Employed Non-Agricultural Labour Force, Percentage Increase and Annual Growth Rate by Sex and Employment Status, Pakistan, 1951 and 1961

(Population in thousands)

Category of Non-Agricultural Labour Force	1951		1961		Percentage Change 1951–1961	Annual Growth Rate 1951–196
	No.	Per cent	No.	Per cent		
Both Sexes						
Total	3,319	100.00	5,002	100.00	50.70	4.1
Employers	11	0.34	47	0.93	306.62	15.1
Employees	1,249	37.63	1,896	37.91	51.85	4.2
Self-Employed	2,051	61.80	2,742	54.81	33.66	2.9
Unpaid Family Helpers	8	0.23	317	6.34	4,103.10	45.3
Males						
Total	3,226	100.00	4,676	100.00	44.93	3.7
Employers	11	0.35	46	0.99	307.29	15.0
Employees	1,206	37.38	1,805	38.60	49.63	4.1
Self-Employed	2,001	62.03	2,572	55.00	28.51	2.5
Unpaid Family Helpers	7	0.23	253	5.41	3,281.02	42.2
Females						
Total	93	100.00	326	100.00	251.59	13.3
Employers	.1	0.07	.44	0.13	558.21	20.7
Employees	43	46.08	92	28.10	114.40	7.9
Self-Employed	50	53.77	170	52.05	240.31	13.0
Unpaid Family Helpers	.1	0.07	64	19.72	97,284.85	98.9

Source:

1. Government of Pakistan, *Census of Pakistan 1951, Vol. 7*, Census Organisation, Ministry of Interior and Kashmir Affairs, Karachi.
2. Government of Pakistan, *Census of Pakistan 1961, Vol. 3 (West Pakistan)*, Census Organisation, Ministry of Home and Kashmir Affairs, Karachi.

TABLE 13.12: **Percentage Distribution of Employed Labour Force (10 years and above) Major Occupation Groups, Pakistan, 1951 – 1981**

Occupations	1951*			1961			1973			1981		
	Both Sexes	Males	Females	Both Sexes	Males	Females	Both Sexes	Males	Females	Both Sexes	Males	Females
1	2	3	4	5	6	7	8	9	10	11	12	13
Civilian Labour Force	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Agricultural	65.30	65.20	68.47	60.82	59.81	71.18	56.57	56.18	63.99	51.43	51.91	38.24
Non-Agricultural	34.69	34.79	31.53	39.18	40.19	28.82	43.43	43.81	36.01	48.57	48.09	61.76
Non-Agricultural Labour Force	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Professional Technical and Related	3.12	3.04	5.70	4.58	4.21	9.82	11.77	11.14	26.73	7.92	7.03	26.87
Managerial, Administrative, Clerical and Related	9.24	9.44	2.34	9.62	10.19	1.43	9.04	9.24	4.43	9.23	9.39	5.66
Sales and Related occupations	15.93	16.24	5.25	15.76	16.64	3.19	19.49	20.04	6.44	17.08	17.52	7.67
Mine, Quarry and Related	0.23	0.21	0.78	0.35	0.37	0.02						
Transport & Communications	2.28	2.35	0.11	5.98	6.37	0.34	47.74	48.74	24.05	52.63	53.13	42.08
Manufacturing and Mechanical	25.47	25.67	18.62	32.27	31.56	42.50						
Construction & Gen Labour	27.96	27.69	37.04	14.89	15.51	6.10						
Service, Sport, Entertainment and Recreation	15.75	15.34	30.05	14.62	13.66	28.37	9.68	9.24	24.49	8.66	8.43	13.63
Non Classifiable workers	0.02	0.02	0.11	1.93	1.49	8.23	2.10	1.60	13.86	4.47	4.49	4.09

12 years and above for 1951.

Source:-

1. Government of Pakistan, *Census of Pakistan 1951, Vol. 7*, Census Organisation, Ministry of Interior and Kashmir Affairs, Karachi.
2. Government of Pakistan, *Census of Pakistan 1961, Vol. 3 (West Pakistan)*, Census Organisation, Ministry of Home and Kashmir Affairs, Karachi.
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only the non-agricultural labour force will be analysed. It is noted that in the non-agricultural labour force, only four occupation groups: i.e. sales and related workers, manufacturing and mechanical workers, construction and general labourers and services, sports and recreation, etc, absorb the bulk of the labour force in Pakistan. Because a complete breakdown of occupations in 1973 and 1981 was not used, occupations like mining and quarrying, transport and communication have been merged with two of the above four occupation groups. Because of the small numbers in these two occupations, the totals of the major groups are not likely to be affected.

In 1951, these groups constituted about 87 per cent of the labour force and then declined to about 84 per cent in 1961 and 77 per cent in 1973 but increased to around 78 per cent in 1981. The trend of the male concentration in the four groups throughout is exactly the same as that for both sexes. The largest group of workers in 1951 was that of general labourers followed by manufacturing, sales and service workers. In 1961, however, the order changed and the largest group was manufacturing followed by sales, general labourers and services. This order seems to be the same in 1973 and 1981.

Since the data on distribution in 1951 suffered from certain deficiencies as mentioned earlier, it is not strictly comparable with other census results. It would seem that 75 to 80 per cent of the total male non-agricultural labour force in Pakistan comprised four major occupation groups as mentioned earlier.

Table 13.13 shows the total number of workers in 1973, classified by occupation and industry. In view of specialisation required in certain industries, a few occupations have been concentrated in certain industrial groups. Thus, about 49 per cent of the professional, technical and related workers were in service industry, alongwith about 56 per cent of clerical and related workers.

On the other hand, 92 per cent workers v
sales occupations were found in trade. Ou
the total persons employed in producti
transport and related occupations, 20
cent, 35 per cent and 20 per cent w
employed in construction, manufacturing a
services industries respectively. Lastly, 79
cent of the workers in service occupati
were concentrated in the service indus
itself. Because of lack of data, it is n
possible to draw any conclusions regardi
the relationship between occupation a
industry, as well as, changes in these relatio
ships.

13.7 Implications of Population Growth

A growing population creates serious pro
lems for all sectors of the economy, especial
those sectors which are not growing as fa
as the population itself. In developi
countries where the population is growi
rather rapidly, employment usually la
behind this growth, mainly due to slowe
growth of the economy. Consequently, th
rising population in working ages, resultin
mainly from a high and near constant fert
lity and moderately declining mortality, i
bound to increase even further because of
favourable age structure with its in-buil

The need of the hour is to slow down the growth rate of population so that our future generation may not be confronted with the grave consequences which a rapidly growing population entails with respect to employment and related factors. The advantage of a reduction in the population growth rate can be seen from the fact that if the growth rate is brought down to 2.1 per cent from the current rate by the year 2000, then 36.81 million persons would have to be provided jobs by the year 2000 as compared to 39.44 million under a constant growth rate of population, thus indicating a saving of 2.63 million jobs. It can be concluded that it is essential to develop all sectors of the economy in line with the growing population and use more labour intensive methods so that a greater proportion of the available labour force is employed.

TABLE 13.13: Employed Population (10 year and above) and its Percentage Distribution by Major Industry and Major Occupation Groups, Pakistan, 1973

Industry / Occupation	Total	Professional Technical & Related Workers	Managerial & Administrative	Clerical and Related	Sales and Related	Agriculture	Production, Transport, Communication, Construction	Service	Workers not Classifiable
				EMPLOYED POPULATION (In thousands)					
TOTAL:	17,182	879	104	571	1,454	9,719	3,562	736	157
Agriculture, Forestry, hunting and fishing.	10,067	273	15	16	15	9,633	94	16	5.00
Mining	164	47	7	3	3	3	27	10	64
Manufacturing	1,420	27	14	50	31	5	1,259	24	10
Utilities	10	7	0	1	1	3	5	0	2
Construction	782	17	15	10	9	7	706	9	9
Transportation Storage and Communications	674	12	5	81	7	5	545	12	7
Trade	1,592	9	7	17	1,337	14	139	62	7
Commerce	125	27	14	48	9	1	15	9	2
Services	2,167	431	22	321	29	38	720	582	24
Activities not adequately defined.	172	29	5	24	13	10	52	12	27
				PERCENTAGE DISTRIBUTION OF MAJOR OCCUPATION GROUPS BY MAJOR INDUSTRY					
TOTAL	17,182 (100)	879 (100)	104 (100)	571 (100)	1,454 (100)	9,719 (100)	3,562 (100)	736 (100)	157 (100)
Agriculture, Forestry, hunting and fishing.	58.59	31.06	14.42	2.80	1.03	99.12	2.64	2.17	3.18

Mining	0.95	5.35	6.73	0.53	0.21	0.03	0.76	1.36	40.76
Manufacturing	8.26	3.07	13.46	8.76	2.13	0.05	35.35	3.26	6.37
Utilities	0.11	0.80	0.00	0.18	0.07	0.03	0.14	0.0	1.27
Construction	4.55	1.93	14.42	1.75	0.62	0.07	19.82	1.22	5.73
Transportation, Storage and Communications	3.92	1.37	4.81	14.19	0.48	0.05	15.30	1.63	4.46
Trade	9.27	1.02	6.73	2.98	91.95	0.14	3.90	8.42	4.46
Commerce	0.73	3.07	13.46	8.41	0.62	0.01	0.42	1.22	1.27
Services	12.61	49.03	21.15	56.22	1.99	0.39	20.21	79.08	15.29
Activities not adequately defined	1.01	3.30	4.81	4.20	0.89	0.10	1.46	1.63	17.20

PERCENTAGE DISTRIBUTION OF MAJOR INDUSTRY BY MAJOR OCCUPATION GROUPS

TOTAL:	17,182	5.12	0.61	3.32	8.46	56.57	20.73	4.28	0.91
Agriculture, Forestry, hunting and fishing	10,067 (100)	2.71	0.15	0.16	0.15	95.69	0.93	0.16	0.05
Mining	164 (100)	28.66	4.27	1.83	1.83	1.83	16.46	6.10	39.02
Manufacturing	1420 (100)	1.90	0.99	3.52	2.18	0.35	88.66	1.69	0.70
Utilities	19 (100)	36.84	0.00	5.26	5.26	15.79	26.32	0.00	10.53
Construction	782 (100)	2.17	1.92	1.28	1.15	0.90	90.28	1.15	1.15
Transportation Storage and Communications	674 (100)	1.78	0.74	12.02	1.04	0.74	80.86	1.78	1.04
Trade	1592 (100)	0.57	0.44	1.07	83.98	0.88	8.73	3.89	0.44
Commerce	125 (100)	21.60	11.20	38.40	7.20	0.80	12.00	7.20	1.60
Services	2167 (100)	19.89	1.02	14.81	1.34	1.75	33.23	26.86	1.11
Activities not adequately defined	172 (100)	16.86	2.91	13.95	7.56	5.81	30.23	6.98	15.70

Source: Government of Pakistan, *Housing Economic and Demographic Survey 1973, Vol. II, Part*, Statistical tables Census Organisation, Interior Division, Islamabad.

momentum. Therefore, the chronic problems of poverty and under-employment tend to prevail.

The best possible remedy for such situations would be to affect a slower rate of population growth, simultaneously with continuous improvement in employment opportunities. Table 13.14 persents an estimated number of persons in the labour force in Pakistan by the year 2000, under constant and declining growth rate of population, which is the result of an exercise through which the advantages of a declining population growth on the total employment requirement are displayed. The figures are also plotted in figure 13.4. It can be seen from the table and the figure, that if the present crude activity rate of 26.85 per cent for Pakistan continues by the year 2000, then 39.44 million persons will have to be provided with jobs under conditions of a constant growth rate of population. However, if the growth rate of Pakistan's population declines in such a way that it reaches 2.0 per cent per annum by the year 2000, then 36.81 million persons will have to be provided with jobs. It is,therefore, evident that under a declining growth rate as opposed to a constant growth rate of population, 2.63 million fewer jobs need to be created during a period of 18 years. If the crude activity rate increases than more jobs have to be created by the year 2000.

The economically active population has grown continuously from 1901 to 1951 except in 1911 for some unexplained reason, as the total population also showed a dip during this period. The annual growth rate for this period (1901—1951) from 0.49 per cent in 1901 to 1.91 in 1951 also shows a steady increase. The female rates are highly erratic but due to their small percentage they can be ignored.

The percentage of employed persons increased steadily or at least remained stable except in 1973, when the definition was changed. But the growth rate should be seen in the light of the growth of population, extent of under-employment and change in the definition of economically active population. The picture remains grim and sceptical of unemployment or under-employment which was there all the time.

Table 13.9 is a key table for depicting the situation of employed persons. Since, females are a very small number of the total labour force, it is statistically permissible to use the figures for both sexes. The employment in primary occupations (agriculture, forestry, hunting etc.) declined from 65.30 in 1951 to 52.72 in 1981, while the employment in secondary and tertiary occupations quarrying, mining, manufacturing, construction (secondary) and gas, electricity, storage etc. (tertiary) were 13.60 per cent and 28.25 per cent in 1981 as compared to 10.56 and 16.89 per cent respectively in 1951. This clearly indicates that there is a tendency to move from agriculture and related occupations towards commercial and industrial enterprises. This is corraborated by a greater number of mechanical devices being used in agriculture and movement of more population from rural to urban areas due to the usual allures of urban areas. The data for 1973—81 period show that there had been a greater allure of the more "urban" and "respectable" type of occupations than agricultural labour. Partly, it might be due to psychological reasons but more so, because of migration from rural to urban areas, due to congestion in the rural areas and mechanisation. In fact, a detailed survey is required to find out the motives behind rural to urban migration and what happens to migrants in the urban areas.

Female labour force, though small, is an important social indicator. There is a noticeable jump among the female white collar employees of the absorption of college and university female graduates in the white collar occupations. A similar increase is noticed in the female employed persons in

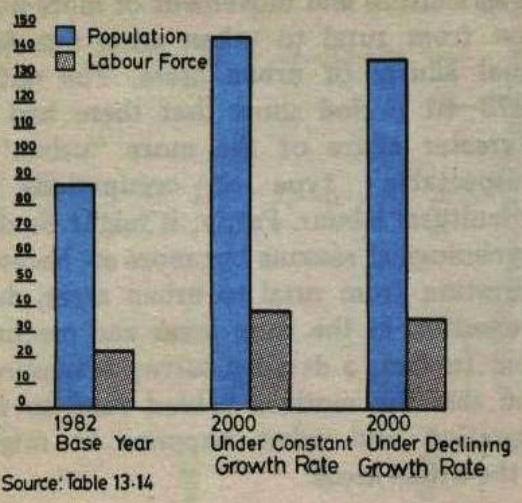
TABLE 13.14: Estimated Number of Persons in Labour Force in Pakistan by the year 2000 under Constant and Declining Growth Rate of Population.

(Population in thousands)

Population/ Labour force/Activity rate	Basic year 1982–1983	Requirement by the Year 2000		Savings
		Under Constant Rate of Population growth of 2.85%	Under declining Rate of Population growth by the Year 2000	
Population	88,269	146,894	137,100	9,794
Total labour force	23,700	39,441	36,811	2,630
Crude activity rate (10 years and above) (per cent of population)	26.85	26.85	26.85	

Source:

Figure 13.4 Estimated Population and Number of Persons in Labour Force by The Year 2000 Under Constant and Declining Fertility Assumptions



Source: Table 13.14

other occupations but there is a clear decline in female agricultural employment from 1961 to 1981. Female participation though small in statistics due to definition, is sizeable and the trend in its increase or decrease is an indication of development in the society.

There has been an increase in the enrolment of women in educational institutions, an increase in their participation in white collar occupations and non-agricultural occupations and a decline in their share in agricultural occupations. It is definitely a welcome sign that the women population is coming up in Pakistan. In 1981, their percentage in the total female employment was 39.34 compared with 68.46 in 1951 in primary sector (agriculture etc.) but only 17.91 per cent in secondary occupations from 6.80 per cent in 1951 and 38.29 per cent in tertiary occupations which are more sophisticated as compared to 13.77 per cent in 1951. This augers well for female population of the country.

The study clearly shows that there was a shift from agriculture occupation to non-agricultural employment during the period 1951–81. Of course, this shift is more important for males as they formulate the bulk of the labour force. Table 13.18 is very significant as it shows that the female population has recorded a very high rate of non-agricultural occupation as compared to agricultural employment.

Table 13.14 supports this contention, and table 13.8 supports it further as white collar occupations indicate a much higher proportion in 1981, both for males and females as compared to 1951. The analysis of the data available for 1951 and 1981 show that there is an increasing tendency of moving from agricultural sector to non-agricultural sector, both among males and females and the urban and rural areas. The data need to be analysed in detail through special service before a realistic picture emerges.

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FOOD REQUIREMENTS

14.1 Introduction

Among the basic requirements of human beings in the world, food is the most important for survival. Scarcity of food causes under-nutrition and malnutrition in the population and, in case of severe shortages, incidence of sickness, starvation and premature deaths are common. There is a certain minimum requirement of food which governments of all developing countries are constantly endeavouring to provide through the huge investments made in agriculture.

The present relationship between food and population leaves a doubt as to whether the current production of food can actually manage to satisfy the demands of the rapidly growing population of the world. This doubt arises because most of the developing countries are experiencing very rapid population growth rates due to which, as is apprehended, food and nutrition requirements of these countries will not be met adequately. As the demand for food has been increasing at a very rapid rate, it is against this background that the relationship between food and population in Pakistan is discussed.

14.2 State of Agriculture: Past and Present

Agriculture occupies the most important place in the economy of Pakistan. This can be seen by the fact that three quarters of the population is engaged in some form of agricultural activity. A major portion of the national income and most of the exports are contributed by this sector. Crops account for nearly two-third of the total and of these, food grains are of overwhelming importance, The three major crops are wheat, rice and maize. Cotton is also a major crop, followed by sugarcane, tobacco and oil seeds[4, 5]

Staple food for the majority of the population is wheat, except in some hilly areas where it is maize. Superior quality of rice is grown mainly in the fertile areas of the Punjab and Sind. Although a semi-arid zone, Pakistan has the largest gravity fed irrigation system in the world. The Indus river, fed by its own large tributaries, flows out to the sea over the wide Indus Plain. The irrigation system developed many years ago, depends on a network of canals, minor, distributaries and watercourses carrying water to the farmlands. These watercourses have been so badly neglected that a recent survey estimated the water losses at 47 per cent. Today, donor-aided and other projects are effecting recon-

There are only 7 per cent of the farms consisting of less than 2 hectares. Farm sizes of 2 to less than 5 hectares and 5 to less than 10 hectares occupy 27.4 and 24.7 per cent of farm area in Pakistan. Eighteen per cent of farm area belongs to farm sizes of 10 to less than 20 hectares., The remaining area belongs to farms of 20 hectares and above i.e. 23 per cent. Productivity of land has increased during the past decades due to introduction of new varieties of plants and intensive use of fertilisers and pesticides but the main beneficiaries are the big landlords who have resources to procure them. Same applies to mechanised agriculture.

struction and repairs and are trying to improve the farmers' use of water thus saved. Conjunctive use of water for irrigation by tubewells also has an important role to play. The weather pattern, too, has a significant bearing on the overall production of both total food and non-food products.

Agricultural land in Pakistan is very unevenly distributed, with 23 per cent of farms comprising 20 or more hectares. On the other extreme, about seven per cent of the farms are of less than two hectares, while 27.4 per cent are those of two to less than five hectares and 24.7 per cent of five to less than 10 hectares. The remaining 18 per cent of the farming area belongs to farms between 10 to less than 20 hectares[3].

The use of fertilisers has increased tremendously since 1965–66. At that time only about 70 thousand nutrient tonnes of fertilisers were being used, but by 1985–86 this figure increased to 1,484 thousand nutrient tonnes. This represents a twenty one-fold increase during a period of only 20 years[4].

The Government has played a very major role in encouraging machanisation in agriculture, with the result that machanised techniques are no longer unknown to farmers; of this, the most noticeable is the expanded use of tractors. In 1965–66 there were only 4,113 tractors in Pakistan, but by 1985–86 this figure increased seven-fold to 28,500 over the 20-year period[4].

TABLE 14.1: Area Under Major Food Grains in Pakistan 1947–48 to 1985–86

(in thousand hectares)

Year	Wheat	Rice	Bajra	Jowar	Maize	Barley	Total
1947–48	3,954 (100)	790 (100)	308 (100)	426 (100)	364 (100)	168 (100)	6,510 (100)
1950–51	4,370 (111)	968 (123)	972 (120)	508 (119)	378 (104)	174 (104)	7,310 (112)
1955–56	4,521 (114)	969 (123)	891 (110)	537 (126)	429 (118)	183 (109)	7,530 (116)
1960–61	4,639 (117)	1,181 (149)	746 (92)	476 (112)	480 (132)	187 (111)	7,709 (118)
1965–66	5,155 (130)	1,393 (176)	840 (104)	594 (139)	542 (148)	155 (92)	8,679 (133)
1970–71	5,977 (151)	1,503 (190)	750 (93)	558 (131)	640 (176)	141 (84)	9,569 (147)
1975–76	6,111 (155)	1,710 (216)	624 (77)	476 (112)	620 (170)	186 (111)	9,727 (149)
1980–81	6,984 (177)	1,933 (245)	406 (50)	394 (92)	796 (219)	259 (154)	10,745 (165)
1985–86	7,358 (186)	1,870 (237)	561 (69)	371 (87)	804 (221)	193 (115)	11,157 (171)

Note: Index of area under cultivation of important food items, 1947-48 taken as 100, is given in parentheses.

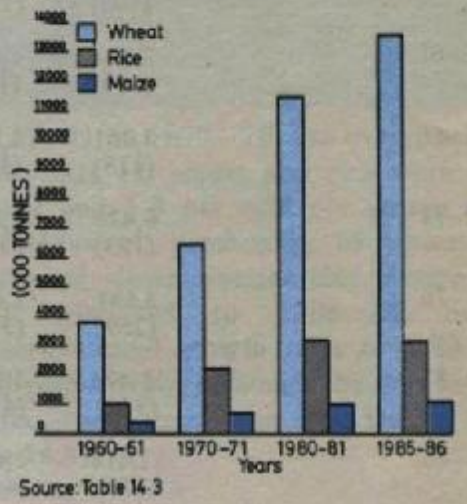
Source: Government of Pakistan, *Pakistan Economic Survey 1985-86, Finance Division, Economic Adviser's Wing, Islamabad.*

14.3 Production of Major Food Grains

Before undertaking any analysis of agricultural production in Pakistan, it should be pointed out that the incidence of water-logging and salinity is very severe due to lack of drainage and the consequent accumulation of groundwater. In 1985–86, 7.35 million hectares of land (66% of the total available land) was under wheat cultivation. Rice accounted for 1.87 million hectares (17%) of cultivated land and the remaining cultivated land grew other food crops (Table 14.1 and 14.2). Inspite of water-logging and salinity, the areas under wheat cultivation increased by 86 per cent during the past 38 years; from 1947–48 to 1985–86 and the areas under rice cultivation increased by 137 per cent, but during these 38 years, the total area under cultivation increased by only 71 per cent (Table 14.1).

The annual variations in major food production since Independence can be explained in relation to certain specific time periods. From 1947–48 to 1960–61, agricultural production increased very little, owing to the fact that the government then, layed greater emphasis on rapid industrialisation (Table 14.3 and Figure 14.1). The annual geometric growth rates of wheat and rice during this period were only 0.07 per cent and 1.57 per cent per annum respectively, (Table 14.4). The other factors responsible for lesser agricultural production were meagre use of fertilisers, low rate of tubewell installation and an inadequate supply of irriga-

Figure 14.1 Annual Production of Wheat, Rice and Maize, Pakistan, 1960-61 to 1985-86.



Source: Table 14.3

TABLE 14.2: Percentage Distribution of Area under Major Food Grain Cultivation in Pakistan, 1947–48 to 1985–86.

Year	Total	Wheat	Rice	Bajra	Jowar	Maize	Barley
1947–48	100	61	12	12	7	6	2
1950–56	100	60	13	12	7	5	3
1960–61	100	60	15	10	6	6	3
1965–66	100	59	16	10	7	6	2
970–71	100	62	16	8	6	6	2
1975–76	100	63	18	6	5	6	2
1980–81	100	65	18	4	4	7	2
1985–86	100	66	17	5	3	7	2

Source: Government of Pakistan, *Pakistan Economic Survey 1985–86*, Finance Division, Economic Adviser's Wing, Islamabad.

TABLE 14.3: Annual Production of Major Food Grains and the Indices of Change in Pakistan, 1947–48 to 1985–86

(in thousand tonnes)

Year	Wheat	Rice	Bajra	Jowar	Maize	Barley	Total Food Grain
1947–48	3,354 (100)	693 (100)	301 (100)	205 (100)	359 (100)	113 (100)	5,025 (100)
1950–51	3,933 (117)	865 (125)	392 (130)	248 (121)	387 (108)	131 (116)	5,956 (119)
1955–56	3,370 (100)	881 (127)	346 (115)	253 (123)	457 (127)	128 (113)	5,395 (107)
1960–61	3,814 (114)	1,030 (149)	306 (102)	220 (107)	439 (122)	120 (106)	5,929 (118)
1965–66	3,961 (118)	1,317 (190)	370 (123)	274 (134)	540 (150)	83 (73)	6,500 (129)
1970–71	6,476 (193)	2,200 (317)	355 (118)	329 (160)	718 (200)	91 (81)	10,169 (202)
1975–76	8,691 (259)	2,618 (378)	308 (102)	281 (137)	803 (224)	130 (115)	12,831 (255)
1980–81	11,475 (342)	3,123 (451)	214 (71)	230 (112)	970 (270)	176 (156)	16,188 (322)
1982–83	12,414 (370)	3,445 (497)	220 (73)	222 (108)	1,005 (280)	185 (164)	17,491 (348)
1984–85	11,000 (327)	3,453 (498)	276 (921)	234 (114)	1,027 (286)	161 (142)	16,692 (332)
1985–86	13,500 (402)	3,051 (440)	259 (86)	217 (106)	1,009 (281)	133 (118)	18,169 (362)

Note: Index of production of major food items 1947-48 taken as 100 is given in parentheses.

Source: Government of Pakistan, *Economic Survey 1985-86*, Finance Division, Economic Adviser's Wing, Islamabad.

tion water. Consequently, during the Second Five Year Plan (1960–61 to 1964–65) the Government took major steps to achieve self-sufficiency in food grains. These included extensive tapping of private sector initiatives and resources, implementation of 1959 land reforms, arranging adequate supplies and use of fertilisers and encouraging the use of tubewells[1]. During this period, the growth of agriculture showed positive signs of improvement. The annual growth rate of wheat and rice was 4.74 per cent and 7 per cent respectively (Table 14.4).

The policies adopted during the Second Plan period, thereafter, continued from 1965–66 to 1969–70. Major steps taken during this period included an increased use of fertilisers, plant protection measures, high-yielding seed varieties and an improvement in cultural practices and economic incentives through subsidisation of inputs and better prices for outputs.

During 1965, the country was at war with India. At the same time, there were severe droughts coupled with a low discharge

of water from the canals. Besides these adverse factors by 1966–67, wheat crops were the second best in Pakistan's history, reaching 6.8 million tonnes by 1967–68 and exceeding the Government's own target. As a result, the annual geometric growth rates of wheat and rice increased to 16.8 per cent and 16.2 per cent per annum respectively during this period (Table 14.4).

Then the period 1970–71 to 1977–78 witnessed a disappointing performance in agriculture both in terms of yield and area improvement. Major factors responsible for low productivity were political uncertainty, the separation of East Pakistan, three major droughts (1970–71, 1971–72 and 1974–75) and floods in 1973–74. At the same time, the international prices of fertilisers increased by 300 per cent, thus rising the domestic prices. For these reasons, the growth rate of wheat and rice dropped very rapidly to 3.73 and 4.28 per cent per annum respectively.

The period 1978–79 to 1982–83 in the Fifth Five-Year Plan witnessed a considerable improvement in the field of agriculture. Although there was some decline in growth, the country at least, became self-sufficient in agricultural products with some surpluses for export. Apart from serious setbacks

The area under wheat cultivation increased by 86 per cent during 1947–48 to 1985–86 but it did not always increase production. During 1950–51 to 1959–60, agricultural production increased very little. The Government during the Second Five Year Plan 1960–61 to 1964–65 took some major steps for attaining self sufficiency in food grains. The 1967–68 crop year was the second best as the production of wheat reached the mark of 6.8 million tonnes. The period 1970–71 to 1977–78 was disappointing because of various political factors. The coinciding period of 1978–79 to 1982–83 with Fifth Five Year Plan witnessed satisfactory performance.

of 1970–71 to 1977–78, the overall annual growth rates of wheat and rice were 5.69 per cent and 1.3 per cent per annum upto 1983. However, production of wheat and rice slowed down considerably during the period 1982–83 to 1985–86, having registered annual growth rates of 2.83 and –3.92 respectively, although the growth rate of total food grain was reported as 6.31 (Table 14.4).

Increases in yield per hectare are an important index of food production in any society. Table 14.5 and figure 14.2 show that yields per hectare of wheat and rice were nearly satisfactory only during very few periods

TABLE 14.4: Annual Growth Rates of Food Grain Production in Pakistan, 1947–48 to 1985–86

Period	Wheat	Rice	Bajra	Jowar	Maize	Barley	Total Food Grain
1950–51 to 1959–60	–0.07	1.57	–1.93	–0.69	2.77	0.66	2.31
1960–61 to 1964–65	4.74	7.00	9.88	7.43	4.72	–0.41	33.36
1965–66 to 1969–70	16.82	16.20	–4.95	0.90	5.46	5.80	40.23
1970–71 to 1977–78	3.73	4.28	–1.56	–2.08	1.93	4.15	10.45
1978–79 to 1982–83	5.69	1.30	–8.73	–3.12	5.90	9.43	10.47
1982–83 to 1985–86	2.83	–3.92	5.53	–0.74	0.131	–10.32	6.31
1947–48 to 1985–86	3.92	4.09	–0.41	0.15	4.40	3.18	0.55

Source: Government of Pakistan, *Economic Survey 1985-86*, Finance Division, Economic Adviser's Wing, Islamabad.

existence, although there was a 30 per cent improvement in the area under cultivation (Table 14.2). These yields then increased by about 138 per cent and 72 per cent during the period 1965–66 to 1985–86, although the area under cultivation increased by only 43 per cent for wheat and 34 per cent for rice. Other factors responsible for the increase in yield have already been discussed.

14.4 Availability of Food, Per Capita.

It has been seen that growth of agriculture since Independence has been fluctuating, while the overall growth seems to have been satisfactory only during very few Periods of the history of Pakistan. Only recently, has Pakistan attained self-sufficiency in food. Taken as a whole, the annual growth rates of major food items since Independence have been less than four per cent per annum, thereby, indicating a slower overall growth of agricultural production. At times, the Government has had to import food grains to meet food shortages in the country.

Although higher growth rate in agriculture indicates sufficiency in relation to population, the real situation of agricultural growth is more significant, when related to population growth in the form of per capita availability of food. The availability of food grains in Pakistan since 1947–48 is shown in table 14.6. As can be seen from the table, per capita production of wheat remained in a state of complete depression, but regained its original level in 1970–71. Its decline has been about 26 per cent during the first 23 years, then in subsequent years it indicated a rise. During the last 37 years, per

TABLE 14.5: Annual Yields of Major Food Grain and the Indices of Change in Pakistan, 1948–49 to 1985–86

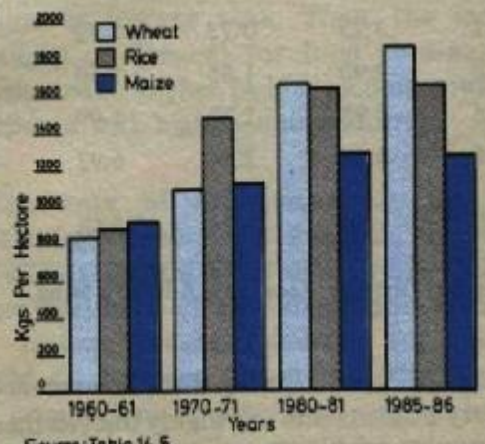
(Kg. per hectare)

Year	Wheat	Rice	Bajra	Jowar	Maize	Barley
1948-49	836 (100)	891 (100)	378 (100)	489 (100)	1,002 (100)	683 (100)
1950-51	914 (109)	908 (102)	410 (108)	496 (104)	1,040 (104)	765 (112)
1955-56	757 (91)	924 (104)	395 (127)	479 (127)	1,082 (108)	711 (104)
1960-61	835 (100)	886 (99)	417 (110)	470 (124)	929 (92)	652 (95)
1965-66	781 (93)	961 (108)	448 (119)	469 (124)	1,012 (101)	544 (80)
1970-71	1,101 (132)	1,487 (107)	481 (127)	599 (158)	1,139 (114)	650 (95)
1975-76	1,445 (173)	1,555 (1751)	417 (110)	600 (159)	1,315 (131)	710 (104)
1980-81	1,669 (200)	1,641 (184)	536 (142)	593 (157)	1,282 (128)	690 (101)
1985-86	1,864 (223)	1,658 (186)	469 (124)	594 (157)	1,275 (127)	700 (102)

Note: Figures in the parentheses refer to the index of annual yields 1948–49 as 100.

Source: Government of Pakistan, *Pakistan Economic Survey 1985–86, Finance Division, Economic Adviser's Wing*, Islamabad.

Figure 14-2 Yield Per Hectare of Wheat, Rice, and Maize, Pakistan, 1960-61 to 1985-86.



Source: Table 14-5

capita wheat production has increased by only about 32 per cent while the population during this period increased almost three times. Rice production per capita has also improved, but rather slowly since Independence, although its overall increase has been about 60 to 70 per cent.

The growth of agriculture, since Independence has been experiencing wide fluctuations due to a variety of factors. It has been satisfactory only during very few years. The per capita wheat production increased by about 60 to 70 per cent since partition. Production per capita of other crops shows continuous decline during the last 37 years. Much lower growth in per capita availability as compared to the total is directly related to high growth of population. There is evidence of extreme poverty in Pakistan resulting from highly skewed income distribution.

Production per capita of other crops shows a continuous decline during the last 37 years, As is evident from previous discussions, the growth of food production, namely that of wheat and rice, did increase but not as fast as the population, whereas, in other food crops, per capita production fell far short of population growth.

Growth rates of per capita availability of major food items for certain time periods

TABLE 14.6: Per Capita Availability of Major Food Grain in Pakistan, 1947–48 to 1985–86

(in kilograms)

Year	Wheat	Rice	Bajra	Jowar	Maize	Barley	Gram
1947–48	106	22	10	7	12	4	15
1950–51	119	26	12	8	12	4	23
1955–56	90	24	9	7	12	3	19
1960–61	90	25	7	5	10	3	15
1965–66	78	26	7	6	11	2	11
1970–71	107	36	6	5	12	1	8
1975–76	122	37	4	4	11	2	8
1980–81	139	38	3	3	12	2	4
1984–85	118	37	3	2	11	2	6
1985–86	140	32	3	3	11	1	6

Source: Government of Pakistan, *Economic Survey 1985-86*, Finance Division, Economic Adviser's Wing Islamabad.

TABLE 14.7: Annual Growth Rate of Per Capita Availability of Major Food Grain in Pakistan, 1947–48 to 1985–86

Period	Wheat	Rice	Bajra	Jowar	Maize	Barley	Gram
1950–51 to 1959–60	–2.44	–0.85	–7.96	–3.10	0.38	–1.56	–4.71
1960–61 to 1964–65	1.02	3.07	6.11	3.25	0.73	–3.72	–1.41
1965–66 to 1969–70	12.34	12.09	–8.38	–2.90	1.85	1.50	–5.14
1970–71 to 1977–78	0.49	1.04	–4.26	–4.98	–1.27	1.99	–0/17
1978–79 to 1982–83	2.56	–1.73	–11.06	–5.98	2.84	6.92	–7.86
1947–48 to 1985–86	0.75	1.02	–3.20	–2.26	–0.24	–3.68	–2.45

Source: Government of Pakistan, *Economic Survey 1985-86*, Finance Division, Economic Adviser's Wing, Islamabad.

are given in table 14.7. These periods are the same as those specified for food production (Table 14.4). As for agricultural production, per capita availability of food items experienced exactly the same type of fluctuation. Although there appears to be a positive correlation between the growth of food production and growth of per capita availability of food, the magnitude of growth in terms of per capita availability seems to be much lower compared with the growth in agriculture. The only exception was the five-year period 1965–66 to 1969–70, during which the country achieved a fantastic growth in agriculture. The lower growth in per capita availability compared with the total growth results from higher growth of population.

14.4.1 Nutritional Intake

Adequacy of nutritional intake is also an indicator of sufficiency of food supply and its consumption. Malnutrition is mostly an outcome of poverty and poor distribution of food. This is mainly a result of an uneven distribution of income. Malnutrition mostly affects the young, aged and the pregnant and lactating mothers and is more prevalent in rural areas compared with urban areas. Statistics in Pakistan indicate no deficiency in calorie intake which was 2,200 during 1979[4]. Since, there is evidence of poverty pockets due to a highly uneven income distribution, there is every reason to believe that a sizeable majority of the population remains in a state of under-nourishment. There is further need for more investigation in the area of nutrition in order to assess the more rational standards of calorie and protein intakes in the country.

14.5 Implications of Population Growth

Earlier sections have highlighted the state of food grain production in Pakistan, both in isolation and in relation to population size. The growth of production indicates wide fluctuations due to the factors already stated. No such fluctuations in population size emerged due to a constant or very slow decline in fertility and a moderate decline in mortality, resulting in slow per capita improvement in food grain availability. The actual demand for food, as distinct from requirements or needs, is dependent upon a number of factors. Two fundamental factors are the size of population and levels of living.

An increase in population creates additional requirement for food. Likewise, as per capita income rises, part of such increase tends to be spent on food. At low levels of

income, by far the largest part of it is spent on food and, in such cases, the quantity and quality of diet for majority of the population tends to be deficient. However, as income continues to increase, and with it the amount of food consumed, the percentage of additional income spent on food tends to decline as income rises. Thus, the income elasticity of demand for food continues to remain much higher in low income countries compared with high income countries.

The crux of the matter is, that in a developing country like Pakistan, where the population is growing at such a rapid rate and where majority of the population is in the low income bracket, demand for food is bound to increase faster with the increase in population. Under such circumstances the appropriate policy would be to continue to effect a much higher growth in food production. Thus, per capita food production would continue to increase moderately with improvement in the nutritional intake of the masses. However, far better results could be achieved if there is a continuous growth of food production simultaneously with a slowing down of population growth. Under such circumstances, per capita availability of food would increase rapidly. At the same time, the nutrient level of the population would rise and lead to better health of the masses. Food surpluses would then become exportable.

Rises in income of the rural poor, resulting from increased agricultural production would, in turn, continue to have a depressing affect on fertility. To show the effect of such a policy, production of wheat and rice were projected from the year 1980 to the year 2010 at five-year intervals. The constant yearly growth rates[1] were assumed to be 6 per cent for wheat and 4.5 per cent for rice. The total population for the same period was projected on the assumption of both constant and progressively declining fertility. Consumption of wheat and rice at five-year intervals was governed by the adoption of a constant per capita consumption[2] of 134 kg of wheat and 15 kg of rice. The results of these calculations are provided in table 14.8. The table shows the production of wheat and rice at five-year intervals, together with the corresponding consumption of these items at both constant and declining fertility levels.

Majority of the population in Pakistan belongs to low income bracket and food resources are not evenly divided. Besides this, the demand for food is bound to increase faster with the increase in population. The most effective policy would be to simultaneously affect a continued growth in food production alongwith slowing down of population growth. Under such circumstances, per capita availability of food would increase rapidly. Food surpluses so generated would become exportable. To show the effect of such a policy, production of wheat and rice were projected from the year 1980 to year 2010 at five yearly intervals under the two assumptions of fertility and mortality variations. The projected assumptions also suggest that without a significant rate of decline in fertility, nutritional requirements of the nation are going to suffer further inspite of increase in agricultural production.

It is clear from the table that consumption of wheat and rice starts declining with a declining fertility level, at first slowly and then rapidly with the passage of time. Conversely, after the reduction of consumption, savings of wheat and rice start increasing under a declining fertility assumption as opposed to a constant fertility. With the passage of time, the savings first increase slowly and then rapidly. As a result of higher overall growth rate of wheat and rice production under a constant growth rate of popula-

1. These rates seem to be reasonable because recent average growth rates for wheat and rice in Pakistan during the period 1960–61 to 1985–86 were 5.19 and 4.44 respectively.
2. These figures have been taken as of 1979 from Housing, Income and Expenditure Survey.

tion, per capita availability of wheat and rice continue to increase to the year 2010. It can be observed that under the impact of slowing down of the population growth, per capita availability of wheat and rice increases much faster than under the assumption of constant fertility. The savings thus obtained could be effectively utilised for export of wheat and rice.

TABLE 14.8: Production, Consumption and Saving of Wheat and Rice and their Per Capita Availability and Saving according to Constant and Declining Fertility Projections, of Pakistan, 1985 to 2010

	1985	1990	1995	2000	2005	2010
PRODUCTION						
Wheat (000 Tonnes)	14,645	18,692	23,856	30,447	38,858	49,594
Rice (000 Tonnes)	3,892	4,850	6,043	7,531	9,386	11,697
CONSUMPTION						
Wheat						
Constant Fertility	12,937	14,998	17,387	20,157	23,367	27,090
Declining Fertility	12,813	14,567	16,401	18,287	20,190	22,074
Rice						
Constant Fertility	1,432	1,661	1,925	2,232	2,587	2,999
Declining Fertility	1,419	1,613	1,816	2,025	2,235	2,444
SAVING						
Wheat						
Constant Fertility	1,708	3,694	6,469	10,290	15,491	22,504
Declining Fertility	1,832	4,125	7,455	12,160	18,668	27,520
Rice						
Constant Fertility	2,460	3,189	4,118	5,299	6,799	8,698
Declining Fertility	2,473	3,237	4,227	5,506	7,151	9,253
PER CAPITA AVAILABILITY OF FOOD GRAINS (Kg)						
Wheat						
Constant Fertility	152	167	184	203	223	246
Declining Fertility	154	172	196	224	259	302
Rice						
Constant Fertility	40	43	47	50	54	58
Declining Fertility	41	45	50	55	63	71
PER CAPITA SAVING OF FOOD GRAINS (Kg)						
Wheat						
Constant Fertility	18	33	50	69	89	112
Declining Fertility	19	38	61	89	124	168
Rice						
Constant Fertility	26	29	32	35	39	43
Declining Fertility	26	30	34	41	48	56

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NATURAL RESOURCES AND ENVIRONMENT

Introduction

Throughout the history of the world, governments and scholars have been concerned with the relationship between the size of the human population and the availability of land and other natural resources. Malthus, was one of the first to stress upon the importance of such a relationship and its possible adverse repercussions when the population outpaced the available resources[9]. With the substitution of new resources for the old, which the continuous discoveries of science and technology rendered possible, the human resource relationship continued to enjoy a favourable ratio beyond Malthus's expectations though their availability varied significantly between the rich and the poor nations. Therefore, a crucial question arises as to how long the natural resources and environment of developing countries can support the alarming growth of their own population at the same time raising the level of their standard of living.

In developing countries, where a low rate of resource exploitation always prevails, economic development continues to be hindered by the high rate of population growth, which subsequently, affects the accumulation of capital in these countries. Moreover, with advancement in development, consumption of natural resources accelerates. According to the United Nations[11], the natural resources of a country can be classified as those belonging to air, space, weather, climate, water, land and soil, fuel and non-fuel minerals from the land and sea, as well as, new energy resources from solar, geothermic, tidal and atomic energy. The following paragraphs will discuss the natural resources and environment in Pakistan, both in isolation and in relation to the growth of population.

15.1 Water-Logging and Salinity

Pakistan has the largest gravity fed irrigation system in the world. The irrigated lands of the Indus Basin and its tributaries cover about 13.8 million hectares of land[7]. However, due to lack of maintenance, the canal and water-course system is deteriorating and presents the largest single resource management problem in the country. Increasing portions of the land are being rendered infertile. This is due to the fact that the ground water level is continuously rising, resulting in an ever increasing water-logging and salinity.

Of the 9.3 million hectares affected, 4.9 million hecatares are severely damaged. The most disastrous areas of about 1.0 million hectares have the water table within five feet of the surface. Meanwhile, by 1982, 5.5 million hectares have been treated and drained to cure water-logging and salinity[5].

Water-logging and salinity are a formidable threat to agriculture. They also directly affect population distribution, as people are forced to leave their unproductive land. Unless this menace can be cured or at least, controlled,

In 1982, 5.5 million hectares have been drained to cure water-logging and salinity. Water-logging and salinity directly affect population distribution as people are forced to leave their unproductive land and move to towns or cities. Only four per cent of the total land area is covered by forests and its ranking is 113th among 140 countries. Deforestation, overcultivation, and overgrazing accelerate the encroachment of the desert. This has particularly been the case in Baluchistan.

the loss of agricultural land, according to a recent survey by (WAPDA), is just under five hectares per hour. Reclamation through curative measures is in the order of only eight hectares per hour. This gap is too great to bridge and will remain so, as long as preventive measures remain at the present level. Special attention is being given to this vital issue and an allocation of Rs. 14.0 billion was provided in the Sixth Five-Year Plan for drainage and reclamation.

15.2 Forestry

Forests play a pivotal role in the ecological and economic life of the country. Less than four per cent of the total land area of the country is covered by forests—ranking Pakistan 113th out of 140 countries in the world, whereas the desired level of forest area should range between 20—25 per cent[10]. The effort being made to plant trees all over the country are being negated by deforestation. Floods, landslides and erosion pose serious problems in steep, deforested areas. Increased deforestation means that watersheds are cleared and dams begin to silt up. Less electricity will then be generated because less water flows through the turbines and thus, the economic life of investment is reduced.

The continuing demand for firewood is a major cause of deforestation in the country. Moreover, the influx of more than three million Afghan refugees and their needs for fuel-wood, together with their herds of sheep and goats in certain areas, present special problems for both forest and range management in the regions where they are encamped. Deforestation, over-cultivation and overgrazing accelerate the pace of desertification of the country. This has particularly been the case in Baluchistan.

15.3 Livestock

Livestock is a vital sector of the national economy, as meat, milk, butter and eggs are some of the basic nutritional requirements. Supply of these products does not meet the increasing demand of the rapidly growing population. Moreover, the by-products of hides, skins, wool and animal hair, not only provide raw material for domestic industries, but are also a source of foreign exchange earnings.

The livestock sector contributes about 28 per cent of GDP in agriculture and 15.7 per cent of the total export earnings[10]. The livestock sector also supplies animal traction for land cultivation, land levelling and rural transport. Increase in total livestock products, with the exception of poultry, over the past several years has resulted mainly from an increase in the livestock inventory rather than the production per animal; increase in milk production has not kept pace with the growth in population. The production of goat meat has increased, while increases in beef production have been negligible.

The live-stock sector contributes about 28 per cent of GDP in agriculture and 15.7 per cent of total export earnings. Fisheries contribute six per cent of the country's total exports. Pakistan is increasingly using engine powered boats and gear development of efficient fish harbours and landing facilities. The private sector has been given incentives, encouragement and all possible assistance to develop and strengthen fisheries in the country.

15.4 Fisheries

Fish is an important source of protein and fisheries account for six per cent of the country's total exports. The Sixth Five-Year Plan had indicated a tremendous potential of fish catch from Pakistan's coastal and deep sea belt. Pakistan intends to introduce engine powered boats and fishing gear, development of efficient fish harbours and landing facilities. The private sector has been given incentives, encouragement and all possible assistance to develop and strengthen fisheries in the country.

15.5 Transport and Communications.

Pakistan, with 179 passangers—km per capita ranks 35th out of 84 countries in the world in railway passenger traffic. It also had about 113,000 km of all types of roads, which is approximately one-third of the generally accepted standard for developing countries. This means, there is a deficiency in the order of 247,000 km. In addition, there are capacity and structural deficiencies in about 6,000 km of existing roads required to be provided and/or repaired. In terms of length of roads, Pakistan ranks 113th out of the countries with 12.63 square km. of the national territory per km. of roads. In view of the increased road traffic, this sector is still far behind the requirement of its increased volume of traffic.

Pakistan with 179 passengers km. per capita ranks 35th among 84 countries in railway passenger traffic. In road transport, it has 113,000 km. of all types of roads while according to the generally accepted standards for developing countries there should be at least 247,000 km of additional roads. Since almost 70 per cent population of Pakistan lives in rural areas, the importance of linking them with market towns should have a very high priority. Government will have to devise policies that the unequity between the railways and the highways running parallel to the rail roads is rationalised and the expenditure on main highways is diverted to rural roads.

For sound and sustained socio-economic development it is, therefore, essential that a good transport and communications system be developed side by side, which will facilitate the movement of goods and services and the people.

15.6 Rural Development

In a country where 70 per cent of the population lives in rural areas, rural development is the pivot of the country's development strategy. The average rural income in Pakistan is about one-third less than the per capita urban income. A large part of under-employment and disguised unemployment is found in rural activities. Only one-fifth of hospital beds are available in rural areas, and most of the targets for rural social development could not be achieved during the Five Year Plan period[10].

Rural development efforts in the Sixth Five-Year Plan will be mounted on all fronts, embracing production and productivity of agriculture, water resources, a break-through in rural infrastructure and physical and social development such as, education, health, sanitation and housing. In addition to the existing number of 16,000 villages already electrified, 20,000 more will be added to reach an electrification target of 80 per cent of the villages in the country by the end of the Plan period.

Absence of rural roads, particularly village roads, also had been minimised during the Sixth Plan period. The benefits of these programmes will go a long way in transforming and changing the rural agricultural scene in the country. If the targets laid down for rural development bring about big changes, it will ultimately help to change age-old attitudes and values. This in turn will help to change the behaviour of individuals to consider having smaller families. The Government Development Programme is mainly

aimed at accelerating these efforts. It is hoped that the implementation of this programme will ease the situation to an extent but the enormity of the problem will still remain, unless the growth of population is controlled.

15.7 Refugees

The United Nations meetings have discussed several times the problem of refugees and displaced persons and their forced migration. This includes their right to return to their homes and properties be settled in accordance with the Charter of the United Nations, the Universal Declaration of Human Rights and other international instruments.

According to the United Nations High Commissioner for Refugees (UNHCR), by the end of 1981, the number of refugees in the world (excluding Palestinians) had risen to nearly seven million. It is estimated that more than three million refugees have taken shelter in Pakistan, which seems to be one of the highest number ever to be reported in the world. The Government of Pakistan has given shelter to these refugees solely on humanitarian grounds. They are a great strain on the national resources of Pakistan and it is hoped that they will return honourably to their country in accordance with the UN Charter.

15.8 Energy

It is a fact that the energy which sustains all living organisms in the world is derived from solar radiation. The solar radiations are absorbed by plants and converted into chemical energy, which later on, is supplied to human beings in the form of food, fossil fuels, coal, petroleum and natural gas from the organic matter of former plants and animals which remain buried in the earth for a long time. Use of energy is the key to supply of food, physical comfort and enhancement of the quality of life beyond the means for survival.

In 1971–72 industrial, transport, and power sectors constituted 68 per cent of the total energy requirements. In Pakistan, the growth rate of energy consumption has always been outpacing population growth. Pakistan has been maintaining growth rate of energy consumption above six per cent per annum which is twice as high as population growth rate. The overall growth rate since Independence stands around nine per cent per annum which is higher than most of the developing countries. During the first six years, oil contributed about 80–84 per cent to per capita consumption, but in 1984–85 it was close to 33 per cent. Annual growth rate in per capita consumption prior to 1984–85 was 5.9 per cent which is quite high by any standard. There are certain limits to energy resources in the country and import of energy cannot continue for ever without hunting the import of industrial and other raw materials and machinery. In order to increase per capita consumption of energy, the population growth rate will have to be controlled ultimately besides efforts to increase energy resources.

In Pakistan, there are two sources of energy available, non-commercial and commercial. Non-commercial sources of energy are dung cake, firewood, bio-gas, cotton plant sticks, sawdust, shrubs, wood, tobacco sticks and charcoal, (although the latter is often produced commercially). The commercial sources of energy are oil, gas, coal, electricity, nuclear and Liquid Petroleum Gas (LPG).

In developing countries, consumption of commercial energy is concentrated in urban areas where the beneficiaries are mainly industry, commercial transport and the urban population. In rural areas, where majority of the population of Pakistan lives, most households use non-commercial energy, i.e. firewood, agricultural residues and animal wastes to meet their fuel requirements for cooking and heating. Manpower and animal power is used for farm operations.

Pakistan has deficient resources with

respect to commercial energy, particularly petroleum. In 1976, Pakistan ranked 52nd of the 122 countries in terms of energy production with 8.33 million metric tonnes of coal equivalent[10].

Among the commercial sources of energy, coal and oil are mostly imported. About 97 per cent of the coal consumed in Pakistan is in the kilns of the brick industry[6]. Its consumption in the domestic sector has declined, having been replaced by natural gas. However, its share in the power sector is increasing in view of inadequate generation of electricity. Oil is produced in relatively small quantities from a number of fields which are now old and depleting fast[5]. Recently, oil discoveries from new fields have helped offset the decline in production from old wells. Most of the oil consumption is in the transport sector (49%), followed by the power sector (14%) and industry (12%).

During 1949–50, Pakistan required only 1.05 million tonnes of oil equivalent. This increased more than five - fold during the first 15 years, ten-fold during 25 year period and more than twenty-fold during 35 years. During 1949–50, oil met 80 per cent of the total requirements, followed by coal (19 per cent) electricity (14 per cent) and gas (9 per cent). During 1984–85 oil accounted for 33 per cent followed by gas (38 per cent), electricity (25 per cent) and coal (4 per cent).

Regarding the supply of energy in the

TABLE 15.1: Total Energy Supply and Percentage Distribution by Source of Supply in Pakistan, 1949–50 to 1984–85

Years	Oil	Coal	Electricity	Gas	Total
		(in thousand TOE*)			
1949–50	841	199	12	–	1,052
1955–56	1,370	293	99	165	1,927
1960–61	1,767	410	153	578	2,908
1965–66	3,313	578	339	1,487	5,717
1970–71	4,073	619	821	2,727	8,240
1974–75	4,390	580	2,366	4,131	11,467
1980–81	6,292	705	3,823	6,941	17,761
1984–85	7,374	1,001	5,475	8,424	22,274
		Percentage Distribution			
1949–50	80	19	1	–	100
1955–56	71	15	5	9	100
1960–61	61	14	5	20	100
1965–66	58	10	6	26	100
1970–71	49	8	10	3	100
1974–75	38	5	21	36	100
1980–81	35	4	22	39	100
1984–85	33	4	25	38	100

*TOE = Tonnes of Oil Equivalent

Source: Government of Pakistan, *Economic Survey, 1985-86*, Finance Division, Economic Adviser's Wing, Islamabad.

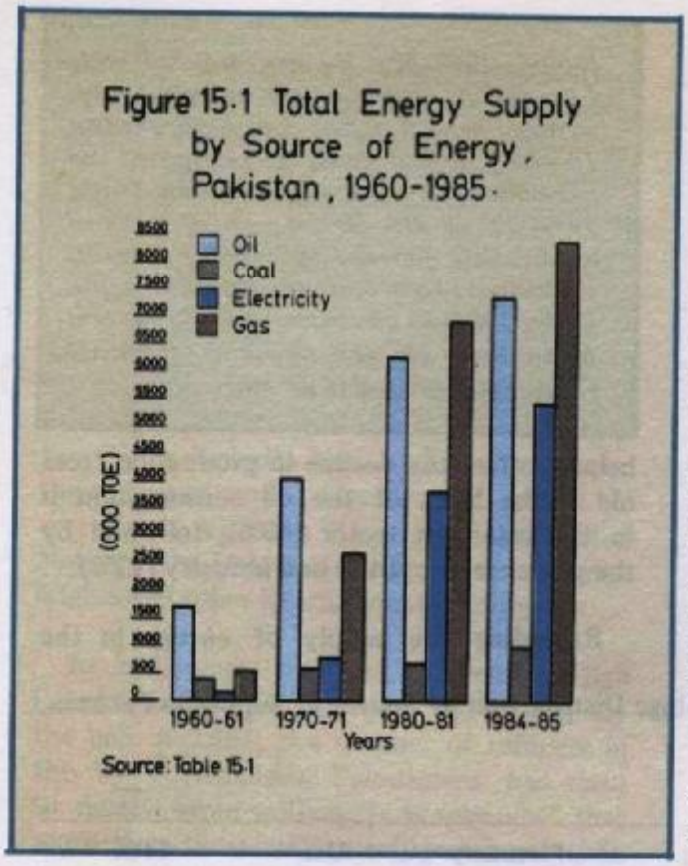


Figure 15.1 Total Energy Supply by Source of Energy, Pakistan, 1960-1985.

Source: Table 15.1

country, it can be observed in Table 15.1 and figure 15.1 that during 1949–50, Pakistan required only 1.05 million Tonnes of Oil Equivalent (TOE[1]). This increased more than five-fold during the first 15 years, more than ten-fold during a 25-year period and more than twenty-fold during a 35-year period. Such a tremendous increase resulted from continuous demands in various sectors of the economy. During 1949–50, oil met 80 per cent of the total requirements, followed by coal (19%) and electricity (1.0%). Since then, oil contribution has been continuously declining alongwith that of coal which has been mostly due to the increased use of gas and electricity. During 1984–85, oil accounted for 33 per cent of the total requirements, followed by gas (38%), electricity (25%) and coal (4%).

During the initial years of Independence, a major portion of the total energy (70.5%) in the form of oil was imported from abroad

TABLE 15.2: Imported Energy and Oil Importation Pakistan, 1949–50 to 1984–85

Year	Imported Energy		Oil Importation		
	Total* (in '000 TOE)	as % of Total Energy	Total* (in '000 TOE)	as % of Total Energy	as % of Total Importation
1949–50	742	70.5	742	70.5	100.0
1955–56	1,093	56.7	1,093	56.7	100.0
1960–61	1,467	40.4	1,467	50.4	100.0
1965–66	2,878	50.3	2,878	50.3	100.0
1970–71	3,518	42.7	3,518	42.7	100.0
1974–75	4,080	35.5	4,069	35.6	99.7
1980–81	6,019	32.7	5,814	33.9	96.6
1984–85	6,092	27.4	5,612	27.3	92.3

*TOE = Tonnes of Oil Equivalent

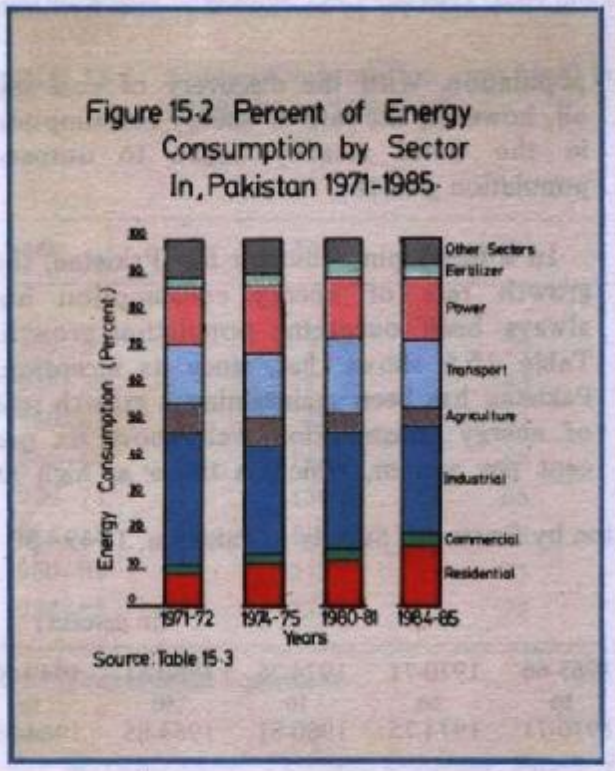
Source:- Government of Pakistan, *Economic Survey 1985-86*, Finance Division, Economic Adviser's Wing, Islamabad.

1. All units have been converted into TOE for purposes of convenience.

TABLE 15.3: Commercial Energy Consumption by Sector in Pakistan, 1971–72 to 1984–85

Sector	1971-72	1974-75	1980-81	1984-85
Residential	8.8	12.2	11.2	16.3
Commercial	2.0	3.2	2.5	3.3
Industrial	35.9	31.5	29.7	29.1
Agriculture	7.6	5.3	7.7	5.0
Transport	16.7	20.9	17.6	18.8
Power	15.5	16.6	18.4	16.8
Fertiliser	2.6	4.1	3.2	4.3
Other Government	10.9	6.2	9.7	6.4
Total	100.0	100.0	100.0	100.0

Source: Government of Pakistan, *Pakistan Energy Year Book, 1981, 1984, and 1985*, Ministry of Petroleum and Natural Resources, Islamabad.



(Table 15.2). Since the discovery of gas and oil in the country, dependence on imported oil continued to decline over the years. During 1984–85, total dependence[2] on oil constituted about 27 per cent of the total energy requirements in the country.

The pattern of consumption of commercial energy is shown in table 15.3 and figure 15.2. As is evident from the table, the largest share of consumption goes to the industrial sector, followed by transport, power and residential. In 1971–72, these three sectors constituted 68 per cent of the total requirements. Agriculture, including fertilisers, commercial sector and other government consumption constituted about an equal share of 10 per cent each. There seems to be a declining trend in the industrial, agricultural and government consumptions, whereas in the residential, transport and power sectors, consumption is increasing rapidly, with the major increase being in the residential sector.

Annual growth rates in consumption in the same sectors can also be studied with the help of table 15.4. As before, the largest contributor of energy consumption is industry (16%) and transport and power showing a growth rate higher than eight per cent per annum from 1971–72 to 1984–85. Residential and commercial sectors are also reaching very high growth rates. It is apparent from the foregoing analysis that, with the process of economic development, the demand of energy increases very rapidly in

2. Energy imports create far-reaching problems for developing countries. The two oil crises of 1973 and 1979 created major adjustments and foreign exchange problems for Pakistan alone.

TABLE 15.4: Growth Rate of Energy Consumption by Sector in Pakistan, 1972–72 to 1984-

(in per cent)

Sectors	1971-72 to 1975-76	1975-76 to 1980-81	1980-81 to 1984-85	1971-72 to 1984-85
Residential	11.18	10.52	16.52	12.72
Commercial	14.81	11.71	9.02	11.18
Industrial	3.74	7.14	6.15	15.97
Agriculture	2.58	3.31	6.48	4.05
Transport	8.24	11.24	5.37	8.49
Power	5.43	10.08	8.60	8.18
Fertiliser	9.71	14.61	9.86	11.62
Other Government	0.81	0.3	9.40	3.19
Total:	5.59	8.42	8.29	7.50

Source: Government of Pakistan, *Pakistan Energy Year Book, 1981, 1984 and 1985*, Ministry of Petroleum and Natural Resources, Islamabad.

the industrial, commercial and other related sectors.

15.9 Implications of Population Growth On Energy

Just as a country's energy consumption is closely related to its national production, so is energy consumption closely related to the population size. In earlier times, the amount of energy generally increased at a little more than the speed of the increase of population. With the discovery of coal and oil, however, the rate of energy consumption in the world steadily began to outpace population growth.

In a developing country like Pakistan, the growth rate of energy consumption has always been outpacing population growth. Table 15.5 shows that, since its inception, Pakistan has been maintaining a growth rate of energy consumption well above six per cent per annum, which is twice as high as

TABLE 15.5: Growth Rate of Energy Consumption by Source of Supply in Pakistan, 1949–50 to 1984–85

(in percent)

Source of Energy Supply	1949-50 to 1954-55	1954-55 to 1960-61	1960-61 to 1965-66	1965-66 to 1970-71	1970-71 to 1974-75	1974-75 to 1980-81	1980-81 to 1984-85	1949-50 to 1984-85
Oil	10.84	3.87	14.06	4.22	1.89	6.18	3.94	6.4
Coal	3.9	9.25	7.11	1.38	–1.61	3.31	9.16	4.72
Electricity	43.49	13.13	17.24	19.35	30.29	8.3	9.39	19.12
Gas	–	38.19	20.8	12.89	10.94	9.03	4.96	16.65
Total	11.4	8.28	14.48	7.59	8.61	7.57	5.82	9.11

Source: Government of Pakistan, *Economic Survey 1985-86*, Finance Division, Economic Adviser's Wing, Islamabad.

the population growth rate of three per cent per annum. It was only during the next few years, since 1980, that the growth rate has come down slightly to under six. During 1950s and 1960s, Pakistan had to maintain high growth rates for catering to very rapid industrialisation of the country. The overall growth rate since Independence stands at around nine per cent per annum, which happens to be higher than most of the developing and developed countries of the world.

Various sources of energy show different rates, but those of electricity and gas tend to dominate. The relationship between population size and energy consumption can also be studied with the help of per capita consumption. In terms of the latter, Pakistan consumed only 32 Tonnes of Oil Equivalent (TOE) per 1,000 population during 1949–50. This almost doubled during a 10-year period. It increased four-fold during the 20-year period, more than six-fold during the 30-year period and seven-fold during the 35-year period. During the first six years, oil contributed about 80–84 per cent to the per capita. This has since then been steadily declining and in 1984–85 was close to 33 per cent. (Table 15.6).

Growth in per capita consumption followed the same trend as the growth in total consumption (Table 15.6). Between 1970–71 and 1984–85, energy dependency on oil was reduced somewhat, while the dependency on gas and electricity has increased (Figure 15.3), however the levels remained low throughout. Annual growth rate in per capita consumption during the last

TABLE 15.6: Energy Consumption per 1000 Population by Source of Supply in Pakistan, 1949–50 to 1984–85

(in TOE)

Year	Total	Oil	Coal	Electricity	Gas
1949–50	32	26	6	0.4	–
1955–56	51	43	7	3	9
1960–61	68	41	10	4	13
1965–66	111	65	11	7	29
1970–71	134	66	10	13	44
1974–75	164	63	8	34	59
1980–81	212	75	9	46	83
1984–85	235	78	11	58	89

*TOE = Tonnes of Oil Equivalent

Source:-

1. Government of Pakistan, *Economic Survey 1985-86*, Finance Division Economic Adviser's Wing, Islamabad.
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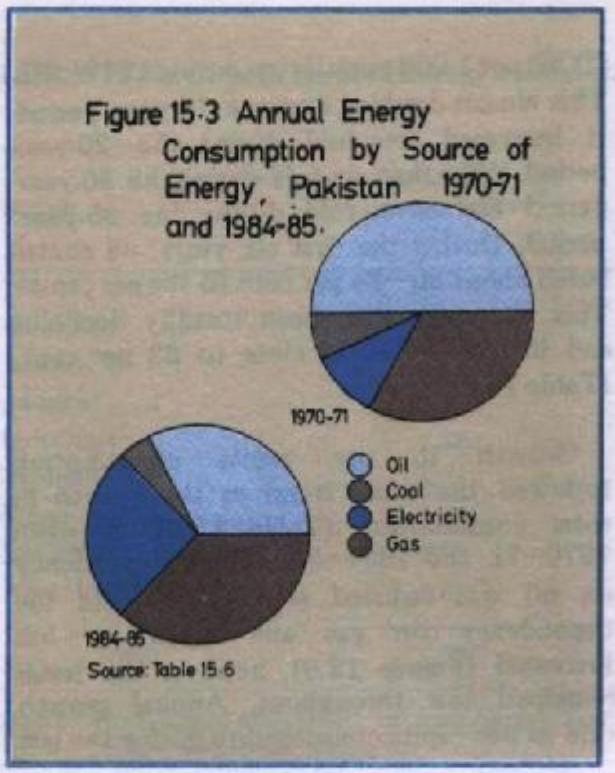

Figure 15.3 Annual Energy Consumption by Source of Energy, Pakistan 1970-71 and 1984-85.

Source: Table 15.6

35 years prior to 1984–85 was 5.9, which is quite high by any standard.

It must be stated that there are limits to availability of energy in Pakistan; the present state of affairs cannot continue indefinitely. There are certain limits to energy resources in the country and import of energy will not continue forever because of the probable decline in oil resources in the entire world. It may be noted that bulk of our foreign exchange (about 20,000 million) go to the imports of petroleum and its products[10]. Therefore, the best possible solution for increasing per capita availability would be on the one hand, to explore and develop local energy resources and on the other hand, affect a decline in the fertility of the population.

In order to show what a favourable effect of decline in fertility on per capita consumption would be like, both population and total energy figures in January 1981 are projected forward at five-year intervals upto the year 2011. In the case of population, two alternative projections, one based on constant (3%) population growth rate throughout, and the other with a declining population growth rate (2%) have been calculated.

On the basis of past growth rates, it has been assumed that total energy consumption in Pakistan will continue to grow at six per cent per annum upto the year 2011. The results of this exercise are shown in table 15.7. Gains in per capita consumption

TABLE 15.7: Per Capita Energy Consumption According to Constant and Declining Fertility, Pakistan, 1981–2011

(TOE per 1000 population)

Year	Constant Fertility	Declining Fertility
1981	212	212
1986	244	246
1991	282	289
1996	308	345
2001	375	418
2006	433	511
2011	500	632

*TOE = Tonnes of Oil Equivalent

Source: Government of Pakistan, *Pakistan Energy Year Book, 1981*, Ministry of Petroleum and Natural Resources, Islamabad.

under a declining fertility trend as opposed to constant fertility, tend to be marginal by the year 1991, but after that, these gains continue to be very large till the year 2011.

Thus, it could be said that the energy policy in Pakistan should take into consideration, both the growth of energy and controlling aspect of the population. In the absence of population control, all benefits of economic growth resulting from growth in energy consumption will be eaten away by the rising population.

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ECONOMIC DEVELOPMENT

Pakistan is intrinsically an agricultural country with more than 70 per cent of its population depending on land for its livelihood. Agriculture is the largest single sector of the economy which employs more than 50 per cent of the labour force, accounting for 24 per cent of the share in Gross Domestic Product (GDP) and 70 per cent of the share in export earnings[6, 7]. Industry in the cities has transformed the economy of Pakistan and the country is beginning to be self-sufficient in most of its basic requirements.

TABLE 16.1: Per cent Share of GDP by Major Sources of Production, 1965 – 84

Source of Production	1964–65	1983–84
Total	100	100
Agricultural	40	25.3
Industry	20	29.4
Services	40	45.3

Source: Government of Pakistan, *Economic Survey 1985–86*, Finance Division Economic Adviser's Wing, Islamabad.

Table 16.1 shows the share of Gross Domestic Product (GDP) by major sources of production for the period 1965–84. It is noted that the share of agriculture in GDP declined to around 37 per cent (from 40% to 25%) for the period 1965–84, while the share of Industry and Services increased during the same period.

16.1 Gross Domestic Product (GDP), Gross National Product (GNP), and Per Capita Income

In 1986–87, the average annual per capita income in Pakistan was about Rs. 6,336. This ranks Pakistan as 116th among 144 countries of the world in terms of per capita income and rates it among the low income countries. Since there are on an average 6.7 members in the family, with 1.8 of them earning, the average family income in 1985–86 was estimated at Rs. 2,980 per month. The average income of each earner was, therefore, Rs. 1,660 per month. Moreover the average rural monthly income per household in Pakistan was about more than one-third lower than the per capita urban income. Moreover, the ratio of rural to urban income declined over the period 1970–79 which is clearly observed in table 16.2 and figure 16.1.

The population of Pakistan grew at an average annual rate of 3.1 per cent during the 1972–81 intercensal period, whereas, the average annual growth rate of GDP during 1969–70 to 1980–81 remained about 5.8 per cent. During the period 1972–73 to 1976–77 the GDP (at constant factor cost) increased by four per cent and during 1975–76 to 1982–83, it grew at an annual rate of 6.2 per cent. However, the steadily improving economic performance was interrupted by an unexpected lowering of agricultural production and declining foreign

* NIPS is grateful to the Planning Commission for this chapter.

TABLE 16.2: Distribution of Monthly Household Income in Urban and Rural Areas of Pakistan by Indexed Annual Growth Rate, 1968 – 79

Year	Average Monthly Income per household (in Rs.)		Urban/Rural Ratio
	Urban	Rural	
Distribution of Income			
1968–69	293.43	189.87	64.71
1969–70	302.93	197.24	65.11
1970–71	316.56	208.79	65.96
1971–72	360.54	234.39	65.01
1979	1345.91	835.65	62.09
Index			
1968–69	100.00	100.00	100.00
1969–70	103.24	103.88	100.62
1970–71	107.88	109.96	101.93
1971–72	122.87	123.45	100.47
1979	458.68	440.12	96.00
Annual Growth Rate			
1969–70	3.34	4.04	121.0
1970–71	4.71	6.21	131.8
1971–72	15.90	13.86	87.2
1979–80	17.90	17.22	96.2
1969–70 to 1979	18.02	17.40	96.6

Source: Government of Pakistan, *Social Indicators of Pakistan, 1985.* Federal Bureau of Statistics, Islamabad.

remittances during 1983 – 84. This resulted in a growth rate of GDP of 4.4 per cent in 1983–84. Taking the 1984 and 1985 fiscal years together, the growth of GDP averaged 6.6 per cent per annum. During the 1985 fiscal year, the economic growth rate revived after the slow down of 1984.

Table 16.3 indicates that the real GDP in Pakistan during the period 1960 – 70 and 1970 – 82 has grown faster than in the South Asian countries. However, comparing the two periods of Pakistan, it is noted that the GDP declined by 25 per cent from 6.7 per cent in 1960 – 70 to 5.0 per cent in 1970 – 82. Still its growth is higher than in the neighbouring countries. One of the major factors of decline in GDP over the period, *inter alia*, may be attributed to high growth rate of population in the country coupled with oil crisis in early 1970s and hasty nationalisation policy of the Government.

The average annual growth rate of GNP per capita at constant factor cost has been about 2.3 per cent over the 12 years 1970–82 as against a population growth rate of 3.1 per cent during the period 1972–1981. Similarly, the average rate of growth of GNP at constant prices declined from 8.1 per cent in 1982–83 to 3.9 per cent in 1983–84. During the period 1979–84, the real GNP per capita increased by 3.1 per cent per annum. Thus, the growth performance of

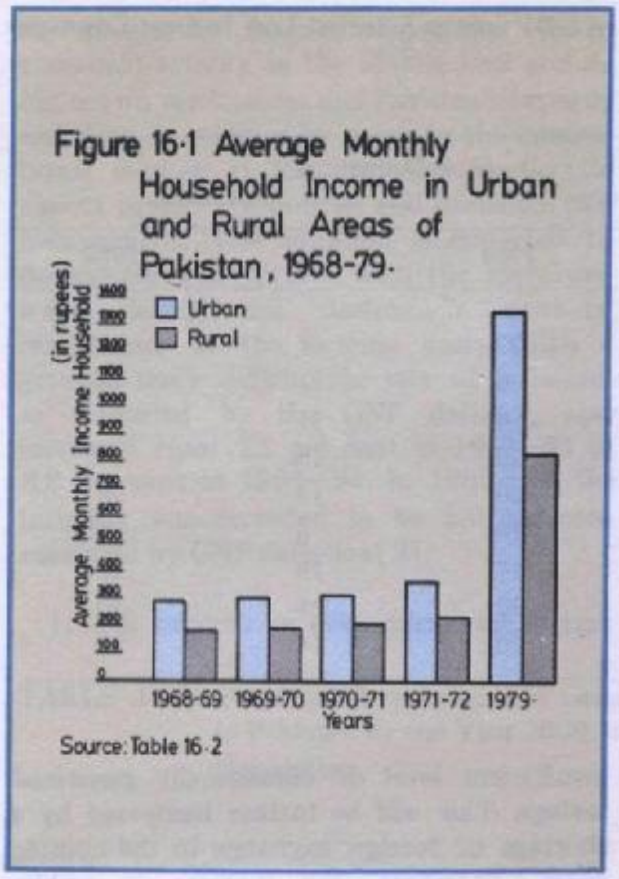

TABLE 16.3: Comparative Real Gross Domestic Product Growth Rate in Pakistan and South Asian Countries, 1960–70 and 1970–82

Countries	Annual Real Growth Rate of GDP	
	1960–70	1970–82
Pakistan	6.7	5.0
Bangladesh	3.7	4.1
India	3.4	3.6
Sri Lanka	4.6	4.5
Nepal	2.5	2.7

Source: World Bank, *World Development Report, 1983, 1984.*

the country has been quite impressive when compared with Industrial Market Economics and other developing countries. Even the growth rate of GDP did not decline during the 1980–83 world recession. In fact, it increased to about 6.6 per cent per annum in 1980–83 compared with 4.8 per cent in the 1970s and reached 7.5 per cent in 1985–86[2].

16.2 Savings and Investment

Although, the rate of growth of GDP in Pakistan has been higher compared with its South Asian neighbouring countries, its rate of savings both in absolute, as well as, in relative terms is very low, putting Pakistan in the category of low income economies of the world. Table 16.4 indicates that Gross Domestic Savings in Pakistan were 6.0 per cent of the GDP. Pakistan's saving performance deteriorated substantially from 13.0 per cent in 1965 to six per cent in 1984, whereas, the other low income countries, with the exception of Bangladesh, have shown increases in the rate of savings. However, in the year 1985–86, Pakistan recorded its savings at more than 7.0 per cent, ranking it 82nd among the 102 countries of the world. Similarly, the Gross National Savings in the country also declined from about 15.0 per cent in 1982–83 to around 11.0 per cent in 1984–85, thereafter, showing a slight improvement and rising to around 13.0 per cent in 1985–86. This shows that the people of Pakistan, on the whole, are poor and reluctant savers compared with people of other countries. The level of domestic savings, therefore, indicates a dependence on external borrowings. It also shows the limited ability to mobilise domestic resources, a problem which continues to be a nagging constraint on the saving performance of the country. Pakistan, thus, remains rather heavily dependent on outside financial resources, which is not an encouraging sign for sustainable and sound development. Efforts should be made at all levels to attain financial self-reliance in the country. This could be achieved, among other things, with efficient entrepreneurial leadership and effective social sector performance, thereby, improving the efficiency of the financial system and capital

TABLE 16.4: Savings and Investment as Per cent of GDP among Selected Low Income Countries and Pakistan, 1965–84

Countries	Gross Domestic Savings		Investment	
	1965	1984	1965	1984
Low Income Economies	19	23	21	25
Pakistan	13	6	21	17
Bangladesh	8	4	11	16
India	16	22	18	24
Sri Lanka	13	20	12	26
Nepal	–	10	6	19
Burma	13	17	19	22
China	25	30	25	30
Kenya	15	20	14	22

Source:- World Bank, World Development Report, 1986.

market and efforts to mobilise rural savings to financial institutions.

Like savings, the gross investment as a percentage of GDP is low in Pakistan compared with the overall average of the low income countries and several developing countries of the region. Since the late 1970s, Pakistan has managed to sustain a high economic growth rate despite low investment levels. Moreover, Pakistan's investment rate is low by international standards and has decreased since 1960s. (Table 16.4).

Pakistan cannot have a sound capital and human resource base alongwith a deteriorating social and physical infrastructure, unless it develops its capability to sustain a high growth rate of investment. The investment, which has been made possible so far has mainly been due to the remittances by overseas Pakistanis alongwith financial resources from abroad. Pakistan's indebtedness to the tune of about US $ 12 billion has enabled it to finance its development projects in the absence of adequate savings. Economic growth will be further constrained by an insufficient level of domestically generated savings. This will be further hampered by a shortage of foreign exchange in the coming years. Therefore, the increase in public investment would only be possible with major domestic resource mobilisation efforts, which ultimately could substantially raise public savings and would put the country on sound footing and on the path of economic development.

16.3 Balance of Payments

The situation of Pakistan's balance of payments deteriorated considerably during 1985–86 due to decline in exports (73%) and foreign remittances (10.6%), alongwith an increased proportion of imports. During 1983–84, exports grew by only 1.6 per cent which resulted in a trade deficit of 11.5 per cent[7]. The overall deficit in the country rose to $ 900 million and the gross official exchange reserves decreased by $11.1 billion. At the end of the fiscal year 1985, gross official foreign exchange reserves were equivalent to about five weeks of imports. Although deterioration in the balance of payments was in part due to a combination

of exogenous factors, especially, lower economic activity in the Middle East and its impact on remittances and Pakistan's exports, and drop in commodity prices in the international market. It also reflected inadequate export promotion policies and exchange rate management. The situation is expected to deteriorate still further with the increasing trade deficit and decline in workers' remittances in the coming years. With a growing trade deficit, the rate of inflation, as measured by the GNP deflator, also increased from 7.1 per cent in 1982–83 to 8.8 per cent in 1983–84. In 1985–86, the inflation was recorded to be 5.0 per cent measured by GNP deflation[2].

It will become an even more crucial task for the country to bridge the gap in the balance of payments in the coming years in the light of both the deficiency of internal savings, inflation and trade deficit. This would require policies to reduce population growth, stimulate savings and reduce imports, while at the same time increasing exports. It is a known fact that smaller families and lower rates of population growth would facilitate savings at both the micro and macro levels. Moreover, the lower rates of population growth would reduce requirements for the import of consumable goods, such as, foodstuffs and clothing, releasing foreign exchange for other investment purposes. The 1987–89 trade policy has included measures to rectify this situation to a certain extent but the need for consump-

TABLE 16.5: Projected Requirement of Gross National Product (GNP) and Per Capita Income in Pakistan by the Year 2000, under Constant and Declining Growth Rates of Population

	Population, GNP, Per Capita Income and Investment	Base Year 1982-83	Requirement by the year 2000		Savings
			Under Constant Rate of population growth of 2.85%	Under Declining rate of population reaching 2.1% by the year 2000	
	(1)	(2)	(3)	(4)	(5)
1.	Population (in '000s)	88,269	146,894	137,100	9,794
2.	Gross National Product (GNP) at Factor Cost (in billion Rs)	365.585	1,101.705	1,028.25	73.455
3.	Per Capita Income (in Rs)	4,142	7,500	7,500	–
4.	Additional Gross National Product (GNP) required (in billion Rs)	–	736.120	662.665	73.455
5.	Investment (required to create additional GNP at 4 above assuming a capital output ratio 3:1 (in billion Rs)	–	2,208.360	1,987.995	220.365

Source: Government of Pakistan, *Economic Survey 1985-86*, Finance Division, Economic Adviser's Wing, Islamabad.

tion goods for the increasing population cannot be denied.

16.4 Requirements of GNP and Per Capita Income by the Year 2000

On the basis of the stipulated growth rates of GDP during the Sixth Five Year Plan, it was estimated that per capita income by the year 2000 would increase to Rs. 7,500. On the basis of the 1982–83 base year and a constant growth rate of population, an additional sum of Rs. 736 billion, or a total of Rs. 1,102 billion, would be required to achieve a per capita income of Rs. 7,500.

Assuming a capital-output ratio of 3: investment of Rs. 2,208 billion is required t generate additional GNP of Rs. 736 billio (Table 16.5). Under a declining growt rate of population from 2.85 per cent to 2.1 per cent by the year 2000, the investmen required would be Rs. 1,988 billion. Th would result in a saving of Rs. 220 billio (Rs. 2,208 – Rs. 1,988 = Rs. 220) whic could be diverted to other developmen projects.

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DEMOGRAPHIC AND SOCIO-ECONOMIC IMPLICATIONS

In the light of the demographic situation of Pakistan, *vis-a-viz* other socio-economic variables portrayed in the foregoing chapters, implications of a fast growing population are discussed below.

17.1 Demographic Implications

In a population where international migration is negligible, the rate of population growth is determined by the level of fertility and mortality. In Pakistan, the high level of fertility has been mainly responsible for the rapid increase in population alongwith a steady decline in the level of mortality during the past several decades. This high rate of population growth not only increases the absolute number, but it also produces an age distribution which is broad-based towards younger ages with a high proportion of population under 15 years of age and a low proportion in the productive ages of 15—64 years, resulting in a high child dependency ratio. As discussed earlier, this age structure, together with low participation of women in economically productive activities, has resulted in a very high dependency burden on the working population.

In a population where fertility is declining, the proportion of population under one year will be smaller in the first year, so that those under two years of age will be smaller in the second year of the fertility decline. Similarly, the proportion of children under five years will be smaller in the fifth year of the decline and so the process will continue. Thus, during the first fifteen years of fertility decline, the proportion of persons under 15 years of age will be substantially lower than the corresponding population, where fertility were to remain constant. On the other hand, the number of persons in the working age group of 15—64 years in both populations will remain the same during the first 15 years of fertility decline. After the first year of fertility reduction, there will be a slight and then ultimately a widening difference in the proportion of the labour force. The number of aged persons 65 years or above will be different for both the populations for at least 65 years.

The high rate of increase in the absolute number is generally due to high fertility which produces a population of younger age groups. These age groups combined with low participation of women in economic activities create a high dependency burden over working population resulting in poor living conditions, poverty and disease. In the long run it leads to an uneducated, unhealthy and unskilled population which is nonconducive to development.

This analysis is shown in table 17.1, presenting the population of Pakistan from 1981 to 2031. Fertility and mortality is assumed to be declining in all the three projections. Projection I represents a case of slow decline in fertility, Projection II represents a moderate decline in fertility, while Projection III represents a fast decline in fertility[3].

According to the medium projections, the

TABLE 17.1: Population Projections Under High, Medium and Low Assumptions by Broad Age Groups , Pakistan 1981 to 2031

Age Group	1981 Census		Years				
	Enumerated	Adjusted	1991	2001	2011	2021	2031
			POPULATION (THOUSAND)				
			HIGH VARIANT				
All Ages	84254	85096	112280	143749	180641	223415	269776
00–14	37493	34342	44250	54128	64214	75553	85485
15–64	43138	48168	63646	82960	107316	134988	167042
65 +	3623	2586	4384	6661	9110	12874	17249
			MEDIUM VARIANT				
All Ages	84254	85096	111208	138348	165690	191886	213406
00–14	37493	34342	43178	48943	51895	53311	51150
15–64	43138	48168	63646	82745	104685	125701	145047
65 +	3623	2586	4384	6661	9110	12874	17249
			LOW VARIANT				
All Ages	84254	85096	110983	131852	147555	162158	170913
00–14	37493	34342	42953	42447	35738	35638	32391
15–64	43138	48168	63646	82745	102737	113645	121273
65 +	3623	2586	4384	6661	9110	12874	17249
			POPULATION (PER CENT)				
			HIGH VARIANT				
All Ages	100.00	100.00	100.00	100.00	100.00	100.00	100.00
0–14	44.5	40.4	39.4	37.7	35.6	33.8	31.7
15–64	51.2	56.6	56.7	57.7	59.4	60.4	61.9
65+	4.3	3.00	3.9	4.6	5.00	5.8	6.4
			MEDIUM VARIANT				
All Ages	100.00	100.00	100.00	100.00	100.00	100.00	100.00
0–14	44.5	40.4	38.9	35.4	31.3	27.8	23.9
15–64	51.2	56.6	57.2	59.8	63.2	65.5	68.0
65+	4.3	3.00	3.9	4.8	5.5	6.7	8.1
			LOW VARIANT				
All Ages	100.00	100.00	100.00	100.00	100.00	100.00	100.00
0–14	44.5	40.4	38.7	32.2	24.2	22.00	18.9
15–64	51.2	56.6	57.3	62.8	69.6	70.1	71.00
65+	4.3	3.00	4.00	5.00	6.2	7.9	10.1

Source: Hashmi Sultan S et-al. *Population Projections of Pakistan 1981 to 2031*, National Institute of Population Studies, Islamabad. 1986.

total population of Pakistan will increase from about 85.1 million in 1981 to 138.3 million by the year 2001 and to 213.4 million by the year 2031. On the other hand, if the fertility rate were to decline slowly than that assumed under medium projections and follows the pattern assumed under high projections, the total population will increase to 143.7 million by 2001 and to 269.8 million by the year 2031. However, if the efforts of the Government of Pakistan and other Non-governmental Organisations to moderate the future level of fertility are to succeed and eventually the level of fertility declines faster, then the total population of Pakistan will increase to about 131.9 million by 2001 and 170.9 million persons by the year 2031 as projected under the low variant. Thus, under the low variant projections, the total population of Pakistan will be about 12 million persons fewer by the year 2001 and about 100 million persons less by the year 2031, when compared with the figures under the high variant projections.

It is already mentioned in the previous chapter that age distribution of a population is a major function of fertility. As is evident from table 17.1, the age distribution of population changes drastically under the fast declining fertility projections (Low Variant), where the proportion of children under 15 years of age declines from 40.4 per cent in 1981 (adjusted) to 32.2 per cent in 2001 and to 18.9 per cent by the year 2031. Similarly, the proportion of working population (aged 15–64 years) increases from 56.6 per cent in 1981 to 62.8 per cent in 2001 and to 71.0 per cent by the year 2031, while the proportion of senior citizens i.e. population 65 years and above increases more than 3 times from three per cent to five per cent in 2001 and 10 per cent by the year 2031.

When these percentages are compared with the slow declining fertility (High Variant) presented in table 17.1, it is noted that the corresponding decline of children under 15 years of age is 40.4 per cent in 1981 to 37.7 per cent in 2001 and to 31.7 per cent in the year 2031. The working population (15 to 64 years of age) then increases from 56.6 per cent in 1981 to 57.7 per cent in 2001 and to 61.9 per cent by the year 2031, and the proportion of senior citizens (population 65 years and above) increases from three per cent to 4.6 per cent in 2001 and to more than six per cent during the entire period of projection.

Similarly, in the case of moderate decline in fertility (Medium Variant), the age distribution changes in a moderate manner when compared with high and low variant fertility decline. In case, the country does not experience any decline in fertility, then the proportion of children under 15 years of age will increase instead of declining. This proportion would then increase from 40.4 per cent in 1981 to more than 50 per cent by the year 2000 and the working population would decline from 56.6 percent in 1981 (adjusted) to less than 47 percent by the year 2000[1].

On the basis of the projected fertility decline under the three assumptions, the age distribution of the population in the country will also change, which in turn will change the dependency burden in the country. Table 17.2 shows how the age distribution under three different fertility assumptions will change the dependency burden in the country.

According to the table, in the case of slow decline of fertility (High Variant), the dependency ratio declines from 76.7 in 1981

In this document, mortality is assumed to be declining in all the three projections untill 1980–85 but remaining constant thereafter. In the 1st projection, fertility remains constant at its 1960–65 level of Gross Reproduction Rate (GRR) of 3.86. Projection II represents moderate declining fertility - constant untill 1970 but declining 30 per cent untill 1985, remaining constant thereafter. In projection III, fertility rate declines 50 per cent between 1965 and 1985, after which it adopts a constant course.

to 73.5 per cent in 2001 and to 61.5 per cent in 2031. With a moderate decline in fertility (Medium Variant), the dependency ratio declines from 76.7 per cent in 1981 to 67.2 per cent in 2001 and to 47.2 per cent in 2031, while in the case of fast declining fertility (Low Variant), the dependency ratio declines from 76.7 in 1981 to 59.3 per cent in 2001 and to 41 per cent by the year 2031. This indicates as to how the fertility decline brings about a change in the age distribution of the country, ultimately changing the dependency ratio.

The most important consideration in planning is the momentum of population growth. The population, already born requires huge amounts of public and private funds for social services. The number of women leaving productive years will be smaller than those entering them. Similarly, the number of new entrants in the labour market would be larger creating a serious problem of employment. This will require tremendous efforts for resource mobilisation to encourage labour-intensive techniques without affecting productivity.

It is, therefore, concluded that in order to attain a viable age distribution in the country, in which the dependency ratio is less and working population more, it is essential that attempts be made to achieve a small family norm in the country over a short period of time.

17.2 Momentum of Population Growth

In addition to this, the momentum of population growth for long term perspective planning has to be taken into consideration. The population which already exists will be requiring increasingly larger government funds for social services. Moreover, the number of women leaving their productive years will be smaller than those who will be entering them. Similarly, the number of new entrants in the labour market would be much larger because of a broad-based age pyramid. This momentum of population growth would put social pressures on the economy for several decades, requiring the Government to spend more on the welfare and well being of the people, in order to maintain a minimum standard of living[4].

It may be concluded from table 17.2 that a decline in fertility from a sustained high level will first reduce the proportion of children and ultimately shape the age distribution to make it more compatible with economic growth. The dependency burden related to working age population will slightly decrease at first, but then a sharp decline will

TABLE 17.2: Projected Dependency Ratios under Different Fertility Assumptions, Pakistan, 1981 to 2031

Fertility Variant	Years						
	1981		1991	2001	2011	2021	2031
	Enumerated	Adusted					
High	95.3	76.7	76.4	73.5	68.3	65.5	61.5
Medium	95.3	76.7	74.7	67.2	58.3	52.7	47.2
Low	95.3	76.7	74.4	59.3	43.7	42.7	40.9

Source: Hashmi Sultan S. et. al, *Population Projections, Pakistan, 1981 to 2031*, National Institute of Population Studies, Islamabad.1986.

appear over a period of 10—25 years from the initial rate. During this period, the population will not only have a smaller number of persons to divide the total national income resulting in a higher per capita income, but it will also produce a viable age distribution which will further help increase the level of savings and investment. In other words, under declining fertility, the age structure will be such that there will be a larger proportion of population in the working ages and a smaller proportion of population in the dependent age groups.

17.3 Socio-Economic Implications

A high dependency ratio resulting from a high and sustained fertility implies that a large proportion of the national income has to be spent on the rearing and caring of children and the up-keep of the old population. Families with a larger number of children will find it difficult to save, so that the volume of savings will be less and the level of net investment for augmenting the productive capacity of the economy will be low.

An increasing number of children under 15 years of age would impose a tremendous burden on their parents and on the country's educational system. The higher dependency burden will therefore, force the young population to work and child labour may increase to supplement the family income. Further, high fertility will diminish the Government's ability to raise funds through taxation. It will also create social pressures on the Government to spend more on the welfare of the people in order to maintain a minimum standard of consumption and living.

A phenomenon which has received little attention so far is the increase in the older population. A high fertility with improving survival rates ultimately lead to a large number of older citizens. The western economies are already facing the problem. Within a generation, Pakistan will have to face the same problem. The traditional joint family system may not be effective as nuclear families are increasing with urbanisation and the values are changing. It is high time that attention is paid to this aspect of population distribution.

Higher food consumption requirements would mean a switch over from cash crops to food grains, which may deprive the country of the benefits of cash crops, unless a new agricultural revolution takes place. Since at both the individual and national levels, it becomes hard to save and invest, it will ultimately have an adverse and long-term effect on the creation of new job opportunities and expansion of productive resources.

Thus, a high rate of population growth clearly creates more problems in raising the standard of living. It is usually agreed upon that the percentage of the national income that needs to be invested to prevent per capita income from falling, is roughly three times the annual rate of population growth or alternatively, the rate of growth of the labour force. If the yearly rate of growth of population is three per cent, then the required level of investment, essentially, should be nine per cent, simply to keep the productivity per worker from falling and to maintain the same level of per capita income. At a respectable level of investment of 15 per cent, the growth of per capita income will be marginal in a fast growing population but substantial in a slow growing population. The per capita income growth in a situation of three per cent growth rate of population will be only two per cent on the assumption that the stock of capital would be roughly three times the national income, i.e. the capital output ratio would be 3:1[4].

The accelerated increase in the population of Pakistan has diluted the impact of development efforts, as is clearly observed from the rate of increase in its Gross National Product (GNP). If the population continues to grow at this rapid rate, the economy will not be able to bring about a significant improvement

in the standard of living for the masses. In the Sixth Five Year Plan (1983–88), it is expected that the growth rate of Gross Domestic Product (GDP) will increase to 6.5 per cent, with the primary aim of improving the quality of life of the people in the country. These goals, however, will become even more difficult to achieve with faster rate of growth of population, since the requirements of food and other consumables, as well as, housing, health, education etc., will be much greater than for a relatively slower growing population. The latter situation can only be brought about through a decline in fertility rates.

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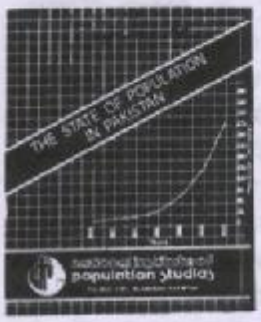
SUMMARY, CONCLUSIONS AND DISCUSSION



SUMMARY, CONCLUSIONS AND DISCUSSION

The purpose of this publication "The State of Population in Pakistan", is to discuss the size, growth, age and sex composition of the population, levels and trends of its fertility, mortality, migration and geographic distribution, as well as, other aspects such as literacy and educational attainment, skill development, health, housing, food and nutrition, economic activity, income distribution, status of women, and utilisation of natural and physical resources in the context of environment. The implications of population growth in relation to these sectors are also discussed with a view to understand the policy issues involved in the complex interaction between population and socio-economic development in Pakistan. Overall, it has been noted that the socio-economic and population factors are closely interrelated and influence each other in bringing about changes in the quality of life of the Pakistani people. Some important features of the socio-economic and demographic factors emerging from the discussions in various chapters are highlighted and discussed below:

Pakistan at the Global Level

Between 1901 and 1987, the population of Pakistan increased six-fold, i.e. from 16.6 million persons in 1901 to 102 million persons in 1987, making it the tenth most populous country in the world. On the other hand, the world population increased slightly more than three-fold, i.e. from 1.5 billion persons to 5 billion persons during the same period. By the year 2000, the population of Pakistan is expected to increase nine-fold (from 16.6 million persons to 150 million persons), in comparison to the World population, which would increase to 6 billion showing a four-fold increase over a period of one centrury.

At the global level Pakistan is categorised among the low income economies of the World with:

- one of the highest rate of population growth (around 3% per annum);
- high fertility (crude birth rate between 39—42 per thousand population, average woman giving birth to 6 children);
- high mortality (crude death rate between 10—12 per thousand population, infant mortality of 90—120 per thousand live births);
- low expectation of life at birth (around 55 years) and low average age;
- low literacy rate (30%);
- low primary school enrolment (around 50%);
- low rate of savings (7%); and
- low per capita income (US $ 380).

A. Population Characteristics

Population Size and Growth

The population of Pakistan which was

estimated to be 32.5 million at the time of Independence on August 14, 1947, has now reached, as of August 14, 1987 to 102 million. The current annual growth rate of population is estimated at around 3 per cent, which is the highest growth rate among the 10 most populous countries of the world. If this growth rate continues, the present population will double in about 23 years. The enormity of the problem could be visualised from the fact that the population of the country would reach 150 million by the end of this century, and about 390 million in 40 years from now. It means that the population will increase about four-fold in the next 50 years and eight-fold in the next 70–75 years. Even assuming a rapid decline in the growth rate of population, the country will still attain a population of about 290 million in the next 50 years.

In Pakistan, where productive resources are limited, labour force productivity is low, human resources are less developed, capital requirements are larger and capital formation is inadequate, an accelerated growth of population will put enormous pressure on the resources of the country. It is, therefore, essential that, *interalia*, the growth rate of population be reduced to achieve a better quality of life for the people of Pakistan.

Population Distribution

The population of Pakistan is unevenly distributed throughout the country: 56 per cent of the total population lives in the Punjab, 23 per cent in Sind, 13 per cent in NWFP and 5 per cent in Baluchistan. The average population density is 106 persons per square kilometre. Pakistan remains primarily a rural economy with about 30 per cent of the population living in urban areas and two-fifths (40%) of this urban population living in the cities of Karachi, Lahore and Faisalabad. The urban population has and is mostly increasing due to migration from rural to urban areas. If this trend continues, the three largest cities will undergo an accelerated growth in the comin years due to rural migrants and Pakistani returning from abroad, most of whom prefe to settle in large cities due to civic amenitie and greater opportunities for employment This rural-urban migration will result in furthe pressures on the already deteriorating urba facilities.

International migration due to the parti tion of the Indo-Pakistan sub-continent accounted for 5.2 million persons (6% of the total population), of which 88 per cent moved from rural areas. As regards the internal migration, two-third of the migrants moved within the province and one-third between provinces Migration to Middle Eastern countries is estimated at around 2.5 million persons with four out of five such persons being from rural areas The lower economic growth due to the oil glut has led to a decline in out-migration, and return migration will soon start exacerbating the labour absorption problems in Pakistan.

Population Momentum

Rapid population growth has resulted in an increasingly younger population, which is heavily weighted towards economically unproductive younger ages. The relative size of the economically productive population has reduced, which has resulted in an increase in the overall dependency burden (95 per cent) in the country. The dependency ratio is further affected due to low participation rate of females in the formal labour force, resulting in an increased aggravation of the economic burden on the working male population.

The already high proportion of children (45%) and large economically dependent sector of the population, alongwith large population momentum, have to be seriously taken into consideration for long term perspective planning, as these factors will exacerbate the deceleration of socio-economic development process in Pakistan. The population momentum

would result in the expansion of a young population entering the succeeding age groups, particularly since more persons would be entering the school age population and the labour force, and an increasing number of women would enter the reproductive ages. The population momentum puts pressure on the economy and particularly its social sectors for several decades, requiring the Government to divert more funds for immediate consumption needs, and thereby further shrinking the already low level of savings and investment available for the socio-economic development of the country.

Fertility Levels

Although the mean age at marriage for females has increased from 16.9 years in 1951 to 20.8 years in 1981, the fertility levels in Pakistan remain among one of the highest in the developing countries of the World. Economic growth, urbanisation and modernisation, however, have made only a slight dent in fertility reduction. In Pakistan, an average woman today has about six live births during her reproductive time span, with most births occurring in the age group 25–29 years. The high fertility rates are the result of continued high infant and child mortality, particularly in rural areas and low income groups. As a result of this high infant and child mortality, couples try to protect themselves against expected deaths by having more children than the desired and ideal family size. Moreover, continued high levels of fertility are primarily the result of the prevalent socio-cultural values which determine the status of women within the socio-cultural milieu of the Pakistani society.

Health Conditions and Mortality

High fertility, *interalia*, has affected the health conditions of the population in the country. Repeated pregnancies and births affect health conditions resulting in birth complications, infectious diseases among infants and children and maternal morbidity and mortality.

Unfortunately, the health conditions were very poor at the time of Independence. Pakistan presently faces, although to a lesser extent, the same health risks which prevailed at the time of Independence. Although over time, the health services in the country have improved considerably, yet wide-spread but preventable communicable diseases, malnutrition among children and women of reproductive ages, inadequacy or absence of facilities for waste disposal and clean drinking water still persist in the country. About one-third of all deaths in the country are due to infectious and parasitic diseases. It has been noted that high fertility affects the health conditions of a population, particularly infants, children and mothers.

The mortality level in Pakistan is very high even when compared to several developing countries. Almost half of the total deaths in the country are comprised of infants and children under 5 years of age. Also, infant and child deaths are higher among women with shorter birth intervals. Available data suggest that although a gradual decline in mortality has been taking place in the country due to improved public health measures, the health services are still insufficient and require significant augmentation in order to reduce mortality further, especially in rural areas. Assuming the same ratio between the population and medical facilities/health manpower as observed in 1986, it is estimated that by the year 2000, these facilities and health manpower have to be increased by 50 per cent to maintain a constant ratio for catering to the needs of the growing population.

Status of Women

In an orthodox and illiterate rural society like that in Pakistan, the low status of females begins early in life with an inferior position

accorded to them with respect to food, care, clothing and education. Women, therefore, continue to measure their value in terms of child-bearing and consequently, large families continue to be their main source of self-esteem and social prestige. This vicious circle is difficult to break, since women are secluded within their extended families mainly because only 16 per cent women in Pakistan (7% in rural areas) are literate and majority of them do not attend school. Only 33 per cent of school-going girls are enrolled in primary schools, while in middle schools their enrolment further declines to 12 per cent. Every year approximately 28,000 mothers die during child birth and of all females, aged 15–49 years, slightly less than one-third of all deaths are directly or indirectly related to some maternity problem.

The total fertility rate of literate women is 3.6 compared with 7.1 for illiterate women. Thus, female education, especially for those who have completed secondary level, has a strong influence on lowering fertility rates. Women in any society play a crucial role, particularly the rural Pakistani women, as cultivators, suppliers of fuel, fodder, water and house-keeping, etc. As wives and mothers, they should be equally concerned with family size, family betterment and family well being It is, thus, essential that programmes relating to raising the status of women and their active involvement in formal sectors of the economy be geared up, which ultimately would result in lowering the fertility levels in Pakistan.

Desire for Children

The demand for children in Pakistan is high, averaging five children in urban and 5.5 in rural areas. This reflects a particular desire to have more living sons. The desire for additional children among married women is higher for those with a low number of living sons together with those who have experienced infant and child deaths. In Pakistani society, daughters are mostly perceived as an economic burden, while sons are considered to be an economic asset, as they provide insurance against incapacity, loss of the household head, land or other assets. Sons usually contribute to family income from childhood, while females have very limited opportunities to participate in economically productive activities outside the house. The low status of women, therefore, perpetuates the high demand for sons.

B. Social and Economic Characteristics

Literacy and Educational Attainment

Even after 40 years of Independence, Pakistan could attain a literacy rate of only about 30 per cent, thus placing Pakistan 111th among 125 countries of the world. Although the literacy rate increased over the period 1961–1981, but with accelerated growth of population, the absolute number of illiterates in the country increased from 22 million in 1961 to 43 million in 1981. In order to maintain the same number of illiterates as in 1981 *(i.e.* 43 million), the country will have to attain a literacy rate of 44 per cent by the year 1990, otherwise the absolute number of illiterates would increase further.

The gross enrolment ratios of school-going children at primary (50%), secondary (12%) and tertiary (4%) levels are low in Pakistan as compared to many other developing countries. The increase in primary enrolment has been very low, rising from 40 per cent in 1965 to 49 per cent in 1983. Similar trend is noted for secondary and tertiary levels when compared to several developing countries. The per capita expenditure and total expenditure on education and health as a percentage of GNP is quite low in Pakistan compared with countries like India, Sri Lanka, China, Indonesia, Malaysia and Egypt. The objective of achieving universal primary education by the year 2000 for 22 million children and attaining 50 per cent enrolment for middle school level

for 5 million children would become an arduous objective to achieve. Unless allocation to this sector is increased substantially and crash programmes are initiated, the problem will further worsen, affecting the educational skills of the population and overall productivity in Pakistan.

Housing

The increasing population is exerting very high pressure on the existing housing stock in the country, which is growing very slowly in relation to the population growth. Housing density has increased from 5.5 persons per housing unit in 1960, to 6.7 in 1980 and 7 in 1987. More than half of the housing units in Pakistan comprise only one room with 6 persons living per room. The basic facilities, such as access to piped water inside the house, are only available to 13 per cent of the housing units and 8 per cent have such facilities available outside the housing units. Housing conditions in terms of structure and facilities such as water, waste disposal and electricity, are quite deplorable in the rural areas, "Katchi Abadis" and slums of the country.

Ill health and poor housing conditions impose economic costs by reducing continuous availability of labour and impairing the productivity of the working population in the country. On the basis of the 1980 Housing Census figure of 6.7 persons per housing unit, about 8.7 million additional housing units would be required by the year 2000. On the other hand, using the corresponding figure from the 1960 Housing Census, *i.e.* 5.5 persons per housing unit, the additional housing requirements for the increasing population by the year 2000 is estimated to be 13.3 million. This will, obviously, require heavy public and private spending in the housing sector.

Labour Force and Employment

In Pakistan, 96 per cent of the labour force consists of males, while only 4 per cent comprises females. The average labour force participation rate for the total population of Pakistan has been very low: 27 per cent compared to 41 per cent in developing countries and 38 per cent in other countries of South Asia. This is partly due to definitional problems in the 1981 Census which resulted in a very low (2%) female participation rate. The male participation rate was 49 per cent.

There are about 30 million persons in the labour force, to which about 0.9 million persons are added every year. With existing low levels of labour force participation, unemployment (particularly among the educated class), under-employment, disguised unemployment and mismatching of jobs, present a picture which is rapidly becoming intolerable. With a rapidly growing population, the gravity of the problem would further increase with respect to employment and other related factors.

It must be emphasised that by the end of the Sixth Plan period, almost 4 million new jobs will have to be created, even at the present low level of participation. Finally, by the year 2000, the total labour force would increase to 47 million with about 17 million new entrants seeking jobs in the labour market, further aggravating the unemployment situation in the country.

Food and Nutrition

It is observed that poor quality of diet is mainly responsible for severe malnutrition among children, as well as, pregnant and lactating mothers, resulting in high prevalence of deficiency diseases such as anaemia. Comparing the population growth and food production in the country in the 23 years *i.e.* from 1959 to 1982, the population has almost doubled, while the food crop increased only by 29 per cent. It is estimated that by the year 2000, about 10 million tonnes of additional food grains (wheat, rice, etc.) would be required

for the growing population.

Land Utilisation and Agricultural Yield

Although the cultivable area in the country has increased from 36 million acres in 1947 to 51 million acres in 1987, yet because of the accelerated population growth the cultivable land per person has declined from 1.1 acre to 0.5 acre during the same period. If the same trend of population growth continues, this figure would further decline to 0.2 acres in the next 40 years.

In Pakistan, the yield of major agricultural crops, such as wheat, rice, sugarcane and cotton is between a quarter and a half of the production in countries like India, Sri Lanka, Egypt and Gabon. The low yield per acre, together with a deteriorating man/land ratio, increased deforestation, waterlogging and salinity, overgrazzed grasslands, especially in Baluchistan, scarcity of water, lack of scientific know-how in modern techniques and agricultural management problems continue to be major obstacles to future growth in this sector. The increased high demand for energy in relation to population growth and low supply would further aggravate the socio-economic development process of the country.

GNP Per Capita

Each year more than three million people are being added to the existing population of the country. In order to generate enough income, an additional investment of Rs. 68 billion will be required annually to keep the present population at the same level of consumption. Futhermore, by the year 2000, for a population of 150 million, Rs. 2,200 billion would be required for investment to create the additional GNP, in order to achieve an annual per capita income of Rs. 7,500.

C. Discussion

The Future Scenario

Imagine the year 2000, when about 150 million people will be living in the country, with almost half of them living in urban areas. The urban environment will then be heavily overcrowded with sprawling suburbs in every city. A large number of families will be living in small flats in outlying areas. Commuting distances will require long hours in transit to and from work, giving rise to enormous traffic problems. In urban areas, particularly in large cities, the conservancy and sanitation services will be under serious strain. The growing school-age population will need many more educational institutions and teachers, and will probably also require the introduction of double shifts in schools. This will aggravate the student/teacher ratio and will adversely affect the quality of education – which already leaves much to be desired. Sprawling slums and squalor in urban areas and shanty towns, alongwith sky-rocketing prices of real estate, construction costs and consumer items will further aggravate living conditions, germinating frustration and political chaos.

In rural areas the man/land ratio will further deteriorate. With rising costs of agricultural inputs and a high dependency burden, peasants will try desperately to supplement and increase their income from subsistence land-holdings, which, with the passage of time, will become smaller and smaller. All this is likely to result in a marked increase in the cost of providing the basic necessities of life, unless extraordinary improvements in skills and agricultural productivity are achieved.

On the basis of the present trend of economic development, the economy will hardly be capable of supporting the huge population of 150 million, let alone bringing about any improvement in the quality of life of the masses. If the rate of population growth

is not reduced, it will further aggravate the problems of unemployment and underemployment, malnutrition, housing, education and health.

It is earnestly hoped that the above mentioned scenario will not be realised. Through the concerted efforts of the Government and with active participation of the people, improvement in the level of productivity and better standard of living can be achieved. An improvement in socio-economic conditions, including education, health, nutrition, reduction in infant and child mortality, the changing role of women and effective implementation of the Population Welfare Programme, must ultimately moderate fertility levels in the country.

Urgent Considerations

As a result of its high growth rate, the present level of population in Pakistan is exerting an enormous pressure on land and other resources of the country. The population/ resources ratio is too unfavourable to provide a decent living for the people. The low per capita income has created a vicious circle of poverty, low savings, low investment, unemployment, underemployment, inadequate and deficient diet, inadequate housing and poor health. This, in turn, has resulted in low working efficiency, low productivity and retardation of economic growth. Inspite of Government efforts to raise the standard of living of the masses in Pakistan, this high rate of population growth has had an adverse impact on social, economic and political conditions.

A reduction in the growth rate of population is essential to increase per capita income and to eliminate abject poverty, illiteracy, unemployment, hunger, malnutrition and disease.

The Way Ahead

The examples of Japan, Republic of Korea and China offer some hope. In these countries, the growth rate of population has been significantly reduced and a substantial improvement in their standard of living has been achieved within a short span of time. However, this achievement was only made possible with dedicated and concerted efforts on the part of both the individuals and the Governments. If similar results are to be achieved, Pakistan will have to emulate discipline, dedication, commitment and hard work of these nations whose efforts have already been crowned with success.

Pakistan is a country with a strong potential for growth and development. In the Sixth Five Year Plan, the Government has indicated developmental strategies and priorities to attain its desired social and economic goals. The current high rate of population growth ranks as one of the biggest constraint and limitation on development. However, through the concerted and carefully planned efforts of the Government and active participation of the people, improvements in the standard of living of the masses can be achieved.

There should be improvements in the socio-economic conditions through education, health and housing. There must also be a reduction in infant and child mortality, as well as innovations and transformation in agricultural technology and rural development, particularly electrification of the villages. A balanced programme of conservation and sustainable development of resources and environment has to be pursued vigorously to meet the increasing basic needs for the next century. Attainment of these goals will ultimately lead the country onto the path of modernisation. Concurrent with these improvements will be a positive change in attitudes and behaviour of people towards decent living. It is only then that any significant change in the growth rate of population will occur.

It is, therefore, essential that more efforts should be exerted through the Population Welfare Programme for the people to adopt a

small family norm and reduce fertility, thus moderating the high rate of population growth in the country. Reduction in family size will inevitably accelerate improvement in infant mortality, child health, nutrition, education, housing and other amenities of the society, which is the ultimate objective of the Government.

It is strongly recommended that the Government should reaffirm the Population Policy and provide a steadfast commitment for implementation of various components of the Population Welfare Programme envisaged in the Seventh Five Year Plan through all sectors of the Federal and Provincial Governments.

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ERRATA

Page	*Column*	*Line*	*For*	*Read*
3	Table 1.1	Col. 5	53th	53rd
3	Table 1.1	Col. 5	82th	82nd
3	Table 1.1	Col. 5	32th	32nd
25	1	11	of them	(To be deleted)
25	Box	7	52	54
37	2	11	57	65
37	2	12	59	57
37	2	13	Asia	South Asia
41	Note under table 4.7		Col.6=Col. 3÷Col. 4x100	Col. 5=Col. 2÷Col. 3x100
41	Note under table 4.7		Col. 7=Col. 5÷Col. 4x100	Col. 6=Col. 4÷Col. 3x100
41	Note under table 4.7		Col. 8=(Col. 3+Col.5)÷Col. 4x100	Col. 7=(Col.2+Col. 4)÷Col. 3x100
45	2	19	data	registration data
49	2	9	—	(Add) and 6.25 (PGS)
50	In sources: third item		1962—76	1962—65
51	1	20	Four	Six
51	1	22	Nine	Ten
57	Notes below Table 5.6	—	De-Jure basis: LR	(To be deleted)
80	1	29	females	males
80	1	30	males	females
82	Heading of Table 6.12	—	Death	Rates
82	1	4	PSF	PFS
83	Table 6.13 (Col. 3)	—	MNR	NNR
83	2	20	Order	Interval
89	Reference No. 8		SFS	WFS
91	1	29	Widowed	Widows
113	1	24	1973	1972
113	2	10	1973	1972
115	Table	4	Mentally	Mentally Retarded
118	1	24	fail	fails
126	1	—	year	years
139	Table 10.13 (source)	—	1989	1986
144	Table 10.17 (title)	—	Student's	Student
150	—	1	data	*Data*
163	Table 11.13	—	Hakim	Hakeem
182	—	—	12.2	122
214	Table 13.11 (Col. 2)	—	.1	0.1
220	2	16	augers	augurs
220	2	22	formulate	form
224	2	9	machanisation	mechanisation
224	2	10	machanised	mechanised
237	1	13	passangers	passengers
273	In Bibliography: 12th item		minueographed	(mimeographed)
273	In Bibliography: 13th item		minueographed	(mimeographed)
Inside back cover (Organization Chart)			Associate Fellow	FELLOW
			Imtiazuddin Husain	Imtiazuddin Husain
			M.A. (Socio)	M.A. (Socio)