THE IMPACT OF POPULATION GROWTH ON SOCIO-ECONOMIC DEVELOPMENT: PAKISTANI EXPERIENCE

by

Ahmad, Afzaal

THESIS

submitted to
KDI School of Public Policy & Management
in partial fulfillment of the requirements for the degree of

MASTER OF PUBLIC POLICY

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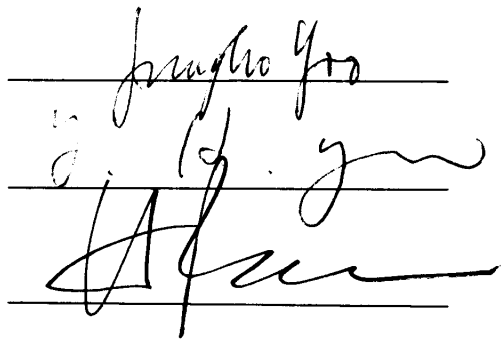
Committee in charge:

Professor Yoo, Jungho, Supervisor

Professor Yoo, Yoon-Ha

Professor Park, Hun-Joo



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Dedicated to:

My parents…supported my education while living in a far-flung hamlet and elevated to the highest possible level of education…expired before my educational attainment from KDI School of Public Policy & Management and could not see their foreign qualified son.

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ABSTRACT

THE IMPACT OF POPULATION GROWTH ON SOCIO-ECONOMIC DEVELOPMENT: PAKISTANI EXPERIENCE

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Pakistan is the sixth by virtue of its population size. This colossal population and galloping population growth rate consumes most of financial and natural resources and leaves little for development. The population growth is a challenge posed to Pakistan economy as it increases expenditures on health, education infrastructure and basic provisions of life. It also depletes natural resources, food, water etc.

Development is the center of all economic activities. However, development alone is futile when it does not bring positive change in the lives of masses. Different studies have shown that population growth negatively affects development process. In the backdrop of Pakistan, this situation has been worsened as the problem was never given due attention and gravity of the problem with its multi-dimensional facets has become very complicated. Despite limited possible government efforts, the fertility rate has not decreased to the stabilized population growth rate at desirable level. The huge population size deprived of health care, education and employment facilities is a titanic load over the poorly managed economy growing at snail pace.

The empirical analysis done in this thesis supports the hypothesis, that population growth is negatively related to factors involved in sustainable economic development.

LIST OF ACRONYMS:

ASFR	Age-Specific Fertility Rate
CIA	Central Intelligence Agency (USA)
CPI	Consumer Price Index
GDP	Gross Domestic Product
GNP	Gross National Product
HDR	Human Development Report
HDI	Human Development Index
ICDP	International Conference on Development and Population
LDCs	Less Developed Countries
MoPW	Ministry of Population Welfare (Pakistan)
NCHD	National Commission for Human Rights
NIPS	National Institute of Population Studies (Pakistan)
NNP	Net National Product
OLS	Ordinary Least Square (Method)
PCY	Per Capita Income
PDHS	Pakistan Demographic and Health Survey
PGR	Population Growth Rate
PPP	Purchasing Power Parity
PQLI	Physical Quality Life Index
PRB	Population Reference Bureau
SBP	State Bank of Pakistan
SPI	Satisfactory Performance Increase
TFR	Total Fertility Rate
UDCs	Under Developed Countries
UNDP	United Nations Development
WPI	Weighted Price Index

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CHAPTER I
INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Development is the center of all economic activities. During the last quarter of 20th century anno domini, development has emerged with a human dimension. Development is meaningless if it is not translated into real lives of the people. The relationship between population and economic development has been a subject of debate and research since long. The features of population dynamics and its linkage with socio-economic factors tremendously contribute to effective planning and issues relevant to population and development.

The history of mankind shows that the accumulation of first billion of world population, took one million years, the second billion took one hundred years. In the present era, with the existing fertility trends and population growth rates, it takes about twelve years in less developed countries (LDCs) to raise world population by one billion. The world population is approximately 7 billion and is increasing very rapidly. This large population and growth rate put immense pressure on natural, manual, physical, capital and social resources globally.

Pakistan is a developing country with a population of 167.00 million and population is increasing at a rate of 1.9 percent per annum (NIPS, 2007). Since independence in 1947, Pakistan population has increased from 32.5 million to 132.4 in 1998, 153.6 million in 2005 (NIPS, 2001) and in the mid of 2007 it was 160 millions. The geographical area of Pakistan ranks thirty-second in the world but by virtue of population, it stands at sixth highly populated country after China, India, USA, Indonesia and Brazil (CIA Fact Book). Pakistan is one of the most populous countries with about 2% of the world population living on less than 0.7% of the globe.

If the present fertility trends follow, population of Pakistan is expected to reach 171 million in 2011 (NIPS, 2001). Pakistan's share in world population is 2.36% (PRB, 2001). As such the total population growth rates need to be rationalized. Prospective future population

projection at the existent population growth rate implies that the population will be doubled i.e. 300 million by the year 2050 A.D.

The decline in fertility rates needs no assertion and the need for concerted efforts to bring down fertility rates is, now globally recognized. Although the *stabilization of population size* is a challenging task, yet rapid decline in birth rates is indispensable for economic development and improvement of socio-economic indicators like health, education, living standards etc. Ministry of Population Welfare (MoPW) and National Commission for Human Development (NCHD) arranged a seminar on 'Population & Development' on 29-01-2008, wherein the speakers emphasized that it was imperative to control high population growth rate and to stabilize the population so that burden on the existing infrastructure and resources could be relieved and vehicle of economic growth to attain economic development and prosperity could be accelerated. All the developed and industrialized nations have comparatively less number of people. At the same time, it is also important that if the problem is not given due attention, the people may not able to 'sustain development'.

The consequences of this *population explosion* may include reduction of plants, desertification, food, energy and water shortages besides depletion of non renewable resources. With scarce resources and destabilized population, neither MDGs nor national economic goals can be achieved. Luxuries of the 20th century have become basic necessities of the 21st century that is why it is not possible to live underdeveloped in the comity of nations. I personally believe that excess of everything is bad.

At the same time, since its birth, Pakistan has made some economic development but not conspicuous and prominent. The intelligentsia and economic lizards always talk about slow pace of economic growth which is due to high population growth rate especially during the 1960s, 1970s, 1980s, and 1990s. My posting in Population Welfare Department, Government of the Punjab for almost three years and study at KDI School forced me to ponder why Republic of Korea and Islamic Republic of Pakistan with same national life of 60 years have a huge and visible difference in economic conditions. Then what are the factors responsible for such difference. As a lay man approach, one difference lies in the number of people i.e. 50 million and 167 million people, with different population growth rates.

Under the given circumstances, my mind focused to analyze the point of controversy that

Pakistan's rapid population growth rate may be one of the main hurdles restricting all government candid efforts for achieving the overall national development goals and meeting socio-economic challenges. Even the fast growing economies like China has adopted officially one child policy and India has also concentrating on controlling the population for better future of the people and national prosperity. Poverty forced me to conduct this research.

Admittedly, large number of people and high population growth rate are not the only reason for lower economic performance. There might be other reasons like destabilized political system, weak internal institutions, low productivity of the people due to acute weather conditions, less number of education and health facilities, non-exploitation of the natural resources, poor performance of agriculture and industrial sectors, low level of educational attainments, bad provision of health facilities in the public sector, international power politics, Afghan transit trade with special reference to bara market phenomenon, war against terrorists, high expenditure on defense systems owing to bitter and volatile bilateral relations with neighboring India, CBMs at snail pace and weak public policy but I am keen to know to what extent the alleged factor of large number of people and high population growth are negatively related to the economic growth of my country on the basis of empirical evidence through this thesis which I took as an opportunity.

There is an urgent need to put concerted efforts toward creating a balance between population and development, improvement in reproductive health and above all reduction in population growth rate. These efforts will help in securing a better quality of life for broader segments of society and socio-economic development in country. A large number of people scrutinized this issue and reached at almost same conclusion that there is a negative relation between population growth rate and economic growth in context of Pakistan but I could not simply help believe due to an educated person with curiosity to examine with the assistance of an international institute like KDI School.

1.2 STATEMENT OF THE PROBLEM

The Pakistan has experienced a rapid population growth rate and low GDP growth rate in past. Futuristic population projections reveal that due to high fertility trends and juvenile

demographic patterns, the population will continue to grow for many years to come, creating *population momentum*. Under the given economic conditions of the country, it is exigent to put serious efforts to bring down fertility rate and population growth rate to a lower level from where the economic growth can take off for sustained economic development at desired velocity and may be accelerated with the passage of time. Pakistan has been struggling to achieve prosperity and economic well being but still a long way to go.

1.3 OBJECTIVES

The specific objectives of the study are to:

1. Analyze how the concept of development has evolved including social and human dimensions.
2. Discuss present demographic patterns and fertility trends in Pakistan, giving a comparative analysis, regionally and globally.
3. Investigate relationship between high population and economic development.

CHAPTER II
ECONOMIC DEVELOPMENT: APPROACHES AND VIEWS

Before getting down to the crux of the enigma in the context of Pakistan, it was thought essential to have first hand know how of various concepts of economic development so that paper may reach to a certain conclusion. Economic development is a subject which has already been discussed by almost every economist right from Adam Smith in 18th century to the modern times. After the World War II, when reconstruction of Europe started, the problems of less developed and under developed countries came to the fore front. During the second half of 20th century, theories and models of development were formulated.

Economic development can be defined in many ways, in fact the definition and the concept both evolved gradually. Todaro and Smith (2005) state that the term *development*, may mean different to different people, however, it seems necessary to have some of the working definitions of economic development. They have defined economic development in three different ways. These different approaches to economic development are:

1. Traditional View
2. New Economic View
3. Core Values of Development.

2.1 TRADITIONAL VIEW

In strict economic terms, development has traditionally meant the capacity of national economy whose initial economic condition has been more or less static for a long time, to generate and sustain an annual increase in its gross national product (GNP) at rate of perhaps 5 to 7 percent.

On the whole, prior to the 1970 A.D., development was always seen as an economic phenomenon in which rapid gains in overall and per capita GNP growth would either *'trickle*

down' to the masses in the form of economic opportunities, or create the necessary condition for distribution of the economic and social benefits of growth.

2.2 NEW ECONOMIC VIEW OF ECONOMIC DEVELOPMENT

In 1950 and 1960, many countries of the world were experiencing high growth rates but the condition of the masses was unchanged. This state of affairs compelled the economists to reconsider the definition of development. Many economists clamored the dethronement of GNP. It became a pre-requisite for development to attack absolute poverty, inequality and unemployment. Redistribution was a new concept which became a popular slogan. World Development Report, 1991 asserted that the challenge of development is to improve the quality of life and focusing efforts in the poor countries of world. A better quality of life generally calls for higher incomes—but it involves better education , higher standard of health and nutrition, less poverty, clearer environment, more equality of opportunity, greater individual freedom and a rich cultural life.

Therefore, according to the new concept of development, it is a multidimensional process. This involves major changes in social structures, popular attitudes, national institutions, as well as acceleration of economic growth, the reduction of inequality and the eradication of poverty.

Recently the concept of development has changed further. Now the focal point is welfare of 'human being' not the material gains only. The view, that income and wealth are not ends in themselves but in fact these are instruments to get the main 'end' that is welfare of human being. This idea dates back to Aristotle. Amartya Sen, a Harvard Professor and the 1998 Nobel laureate in economics argues that *'capability to function'* is what really matters. According to his opinion, economic development is not an end in itself it is rather an instrument to improve the life and to widen the scope of freedom of choices that human beings enjoy. He explains that the concept of functioning reveal various things, which a person may value doing or being. The value functioning may vary from elementary such as being adequately nourished and being free from avoidable diseases, to very complex activities, such as being able to contribute in the life of community and having self respect.

2.3 CORE VALUES APPROACH

Yet there is another concept of development as per opinion of Goulet (1971) and some other economists. At least three basic components should serve as a conceptual foundation for understanding the meaning of development. These core values are sustenance, self esteem and freedom.

2.3.1 Sustenance; the Ability to Meet Basic Needs

Human beings have certain basic needs, which, if not satisfied can make the life impossible. These needs include food, shelter, health and protection. From this description, we can conclude that main function of all economic activity is to provide larger segments of society with means of overcoming the helplessness and misery that is the outcome of failure to get these basic needs. .

UNDP, HDR, 1994, regards human beings as born with certain potential capabilities. And the purpose of development is to create an environment in which all people can expand their capabilities, and opportunities can be increased for present and future generations as a whole.

2.3.2 Self-esteem

The second universal component is self-esteem; a sense of worth and self respect, of not being used as a tool by others for their own ends. It is in human instincts although in some different forms and names like identity dignity, respect, honor or recognition. Goulet (1971) argues that the important point is that underdevelopment will be there for of majority of population as long as esteem or respect is dispensed on grounds other than material development, and if the prevailing image of the better life includes material welfare, as one of the postulates it becomes difficult for the materially underdeveloped to feel respected. It is also very unfortunate that in the present era LDCs wants development in order to gain esteem which is denied to them and they are compelled to live in a state of *'disgraceful underdevelopment'*. Development is legitimized as goal because it is an important, perhaps even an indispensable way of gaining esteem.

2.3.3 Freedom from Servitude

The third and final universal value is the concept of human freedom. Freedom here means a sense of emancipation from alienating material condition of life and servitude from misery, nature, ignorance, other people and institutions. Lewis (1963) is of the opinion that the advantage of economic growth is not that wealth increases happiness; the main advantage is that it gives human beings a wide range of choice. All these views presented by different economists in different time periods, make us able to conclude the discussion of *'objectives of development'* which are:

a) To increase the availability of basic life sustaining goods and make them available to wider segments of society;
b) To improve the standards of living of human beings; Give them social, economic health, cultural and political security from misery, servitude and dependence; and
c) To make human choices wider and broader.

It also seems appropriate to add some of the definitions of renowned economists. Adam Smith comments that a society can not be happy if a greater numbers of that society are poor and miserable. Streeten (1979) states that we must redefine development as an attack on the major evils of the world today which include: malnutrition, diseases, illiteracy, slums, unemployment and inequality, if we measure growth rate in term of increase we are successful but we have failed in terms of jobs, justice and the elimination of poverty. From these definitions it can be easily deduced that the process of development has the human and social postulates as well. In 1994, in International Conference on Population and Development (ICPD), it was asserted that *population related goals and policies are an integral part of cultural, economic and social development.* James Grant, former Director General of UNICEF opined, "*Central issue of our Time may turn out to be how the world addresses the problem of ever expanding human numbers".*

From these definitions and concepts, it is crystal clear that development, as a concept has evolved over the period of time, it has become a growing concern for the developed and under

developed countries to bring population at such a level where it can serve as an asset instead of a burden on the resources of a country in particular and on world resources in general.

2.4 SUSTAINABLE DEVELOPMENT

Brundtland Commission (1987) used a new concept of sustainable development. The Commission defined it as meeting the needs of present generations without compromising the needs of future generations. UNDP, HDR, 1999-2000 stresses upon the creation of sustainable improvement in the quality of life of all people as the principal goal of development policy. Economic development has also been defined while including the issue of environment which states, "*Economic development refers to a sustainable increase in living standards. It implies increased per capita income, better education and health as well as environmental protection".*

Todaro and Smith (2005) added that environmentalists have used the term sustainability to clarify the desired balance between economic developments on the one hand, and environment preservation on the other, it can also be explained as such: if the capital resources are maintained on the same level or there is an increase in them, it may be called a sustainable development. If the resources are used unscrupulously in order to get some short term goals then both future and present generations will suffer, therefore, some of the economists have introduced environmental accounting**.** Pearce and Warford (1993) are among these economists. Symbolically they term sustainable development as:

$$NNP^* = GNP - D_m - D_n$$

Where NNP* is sustainable national income, D_m is the depreciation of the manufactured capital asset and D_n is the depreciation of environmental capital.

There are further modified and more sophisticated forms of this accounting but we stick to our topic. The question that how the seemingly different concepts of development, environment and population can be correlated, is indeed very interesting.

2.5 ECONOMIC GROWTH VS ECONOMIC DEVELOPMENT

In the early literature related to the subject, economic development and growth have been synonymously used. Lewis (1955), for example, used growth and development synonymously but he uses development for the sake of variety. So it can be inferred that some of the economists do not distinguish between growth and development .however this is not the case always. Friedman (1972) regards *growth* an expansion of the system, in one or more dimensions and there is no change in structure, in contrast to it *development* is an innovative process that leads to the structural transformation of social system. We can also add some other views as well. Kindleberger (1965) is of the view that economic growth is related to increase in output, while economic development involves both; more output and institutional and technical changes.

As a conclusion and to settle the matter we can say that economic growth is an increase in a country's per capita income consumption, savings, labor force, trade and capital while economic development is a broader concept, it encompasses both change and development as well. So throughout the thesis term development will be used instead of growth.

CHAPTER III

MEASUREMENT OF ECONOMIC DEVELOPMENT

3.1 METHODS FOR THE MEASUREMENT OF ECONOMIC DEVELOPMENT

The following discussion has been mainly adopted from Jhingan (2007). However, some additional other material has also been consulted.

Economic development is measured in four ways

1. GNP
2. PCY or per capita income
3. Welfare
4. Social indicators

3.1.1 GNP

It is one the methods to measure economic development, that is to say if a country's real national incomes increases over a long period of time, it may be termed as economic development . GDP is the total value of the goods and services produced in a country in a year whereas GNP is defined as:

GNP = GDP + factor payments from abroad – factor payments to abroad

However, there are many problems in this method like double counting, overestimation and underestimation, voluntary service, value addition treatment of inventories, used goods, housing and other imputations etc. These problems can lead to the biased results in national income accounting. Besides, there is another issue which requires considerable attention that is, which 'deflator' should be used e.g. GDP deflator; SPI; CPI or WPI.

3.1.2 PCY (Per Capita Income)

Meir comments about economic development as "Economic development is a process whereby a country's PCY increases over a period of time in such a way that the number of people living the poverty line does not increase and distribution does not become unequal".

Another definition of 1960 states; that economic development, in term of PCY, is process wherein a country's state is transformed from having negative rate of increase in PCY to one where a significant self sustained increase in PCY becomes a long term feature.

Normally we use exchange rate to compare living standards of people living in different countries, it can be illustrated as under

National Income / (Population ÷ Exchange Rate)

However, exchange of rate includes prices of traded goods and services and it is based on the 'demand and supply of dollars' in the market. In this method there is a possibility that people remain poor despite an increase in real GNP per capita and possibilities of inequality are prone to be there price levels, population size, institutional changes and culture are also the considerations which must be kept in view. Because of these problems and many other as well, it is better to use purchasing power parity (PPP) which is defined as: *"Unit of foreign currency that is required to purchase identical quantity of goods and services in the local market as one dollar would buy in US"*

PPP includes prices of traded and non traded goods and prevents problems of underestimation in living standards. The more underdeveloped a country is the poorer it is and lowers the ratio of non traded good to the traded goods and more the use of official exchange rate will underestimate the living standards of the country

3.1.3 Welfare

Okuns and Richardson opine, *"Economic development is a sustained and secular improvement in material well being, which may consider to be reflected in an increasing flow of goods and services".*

A country will be economically developed when the welfare of a larger segment of society will tend to increase. However welfare itself is *'subjective measure'* and has to be incorporated value judgment regarding income distribution , composition output ,tastes, real cost and other particular changes that are associated with overall increase in real income.

3.1.4 Social Indicators

Recently, certain economists, dissatisfied with the overall traditional measures of development have tried to include a wide variety of social indicators in the measurement of development. The merit of social indicators is that they are concerned with ends, the ends being *'human development'* and *'economic development'* is a means to get these ends.

Hicks and Streeten (1979) consider social indicators for basic needs

	Basic Needs	**Indicators**
i.	Health	Life expectancy at birth
ii.	Education	Literacy /primary school enrollment as percentage of population.
iii.	Food	Calorie supply per head.
iv.	Water Supply	Infant mortality and percentage of population having access to potable water.
v.	Sanitation	Infant mortality and percentage of population with access to sanitation.
vi.	Housing	None.

3.2 DEVELOPMENT INDICES

Since the concept of development now includes ‘welfare and ‘human beings are the focal point of this development , therefore some of the economists have attempted to measure social indicators of basic needs by taking one two or more indicators . However only two of them are discussed

-Physical Quality Life Index (PQLI); and

-Human Development Index

3.2.1. PQLI

This measure was developed by Morris (1979). He constructed a composite PQLI of 23 countries for a comparative study. The indicators used by him are infant mortality rate, life expectancy at age one and basic literacy at 15 year of age. PQLI is scaled between zero and 100. In the indicators selected by Morris there are two positive indicators and one is negative. To calculate the positive indicator its minimum value is deducted from its actual value and the balance is divided by the difference (range) between and maximum value and minimum value i.e.

Achievement Level = (actual value – min. value) / (max. value - min. Value)

To calculate the negative indicator, its actual value is deducted from its maximum value and the balance is divided by the difference (range) between maximum value and minimum value i.e.

Achievement Level = (max. value - actual value) / (max. value - min. value)

For life expectancy and infant mortality rate, there is no natural maximum and minimum value. But there is need to select the right values.

Morris maintains that each of the three indicators measure results and not input. Each is sensitive to distribution effect which means that an improvement in these indicators signifies

an increase in the proportion of people benefiting from them, but none of the indicators depend on any particular level of development. Each indicator lends itself to international comparison. Taking Gabon's infant mortality rate as worst (it was 229 per thousand live births in 1950), Morris sets it at zero (0). At the upper end the best achievement is set at 9 per thousand in the year 2000. Again, taking Vietnam's life expectancy as 38 years in 1950 Morris sets it at zero (0). The upper limit is set at 77 years (in the year 2000).

3.2.2. HUMAN DEVELOPMENT INDEX

The following discussion is based mainly on Todaro and Smith (2005) and UNDP, HDR, 1991. The social indicators it used are, longevity as measured by life expectancy at birth, knowledge as measured by a weighted average of adult literacy (two third) and mean years of schooling and standards of living as measured by real per capita income adjusted for different purchasing power parity of each country's currency to reflect cost of living and for the assumption of diminishing marginal utility of income. Calculation of HDI has undergone a number of changes since its inception. Using the three measures of development and applying a formula to data for 177 countries, the HDI ranks all the countries in three groups: low human development (0.0 to 0.499), medium human development (0.50 to 0.799) and high human development (0.80 to 1.0).

HDI calculations are sub divided into further indices which are as follows:

a) $$Income\ Index = \frac{[\log(Country's\ Existing\ Income) - \log(100)]}{[\log(Maximum\ Desirable\ Income) - \log(100)]}$$

b) $$Life\ Expectency\ Index = \frac{[Existing\ Life\ Expectency]}{[Desirable\ Life\ Expectency - 25]}$$

c) $$Adult\ Literacy\ Index = \frac{[Existing\ Adult\ Enrolement - 0]}{[100 - 0]}$$

d) $$Gross\ Enrolement\ Index = \frac{[Existing\ \mathrm{Pr}imary\ Enrolement - 0]}{[100 - 0]}$$

e) $$Education\ Index = \frac{2}{3}(Adult\ Literacy\ Index) + \frac{1}{3}(Gross\ Enrolement\ Index)$$

f) $$HDI = \frac{1}{3}(Income\ Index) + \frac{1}{3}(Life\ Expectency\ Index) + \frac{1}{3}(Education\ Index)$$

Finally we can arrive at the conclusion that HDI allows nations to take a broader view of their development performance and to focus their economic and social policies more directly on the areas where the change is required. Each country can figure out what are the hindrances and impediments towards attaining the desired goals and targets of development. The most important point here is that the increasing number of population in less developed countries (LDCs) and under developed countries (UDCs) is a major obstacle in attaining development goals, and providing even basic necessities of life. The small increase in GNP is eaten up by huge masses and the result is low per capita income, low consumptions, low savings, low investment, low capital formation and finally low productivity. Thus a vicious circle of poverty is set to momentum. The other side is even more grim, when incomes are low, revenues generated by them are also low so the government is left with little to spend on health, education, sanitation, potable water and other facilities, therefore, all indices of development where social indicators are used, depict a gloomy picture of the overall performance of country.

CHAPTER IV

POULATION GROWTH AND ECONOMIC GROWTH (DEVELOPMENT)

The recipe of economic development is not very difficult ‘although it has become the most important issue of today. The centerpiece of all economic activity is ‘development’ it is another matter that definition of development varies for every school of thought. Nordhaus and Samuelson (1998) write that if we look at the history, we come to know that all the countries of world did not follow the same path. Britain, for example started with industrial revolution, Japan by contrast, and started first by imitating the foreign technologies and protecting industries. So the path, modalities and time required for development is different for every country. They have, however, described that there are four wheels of economic development, these are:

- Human resources
- Natural resources
- Capital formation
- Technology.

They add that it is also very interesting to note that history of advanced nations can be summarized approximately by the following trends:

Trend 1: The capital stock has grown more rapidly than the population.

Trend 2: This indicates a strong upward trend in real wages.

Trend 3: The share of wages and salaries in national income has edged up very slightly over long run but has been virtually constant over the last two decades.

There are many other trends in other areas but the Trend1 shows that the decline in population growth rates has enabled most of the countries to achieve development targets, sustain that development and share it with the broader segments of the society. Prediction of economic and social trends can be optimistic or pessimistic, but still the situation can be seen with a realistic view as well. The analysis is, however, is by the author.

4.1 MALTHUSIAN THEORY

About two centuries ago, Thomas Robert Malthus presented his theory and stated that population increases geometrically and food supplies increase arithmetically subjecting population to poverty. Human reproductive power outstrips the power of land to feed people. Hodgson (1983) opined: "On the basis of this theory, we can say that there is negative relationship between: fertility rates and standards of living (the higher the fertility rates, the lower the standards of living and vice versa), second negative relationship is between fertility rates and social class and the third negative relationship is between fertility rate and urbanization. Because of these three relationships an explanation of western fertility decline emerged.

4.2 THEORY OF DEMOGRAPHIC TRANSITION

Theory of Demographic Transition, although had been able to synthesize the population dynamics of advanced nations yet it failed to take into consideration the population explosion of UDCs and LDCs by an annual growth rate of above two percent .

The theory of demographic transition was initially presented by W.S. Thomson and F.W. Notestein and further modified by C.P Blacker. The theory explains the effects of change in birth rates and death rates on the growth rates of population. This theory is based on the actual population trends of advanced countries of the world. This is the most acceptable theory of population growth. It does not adopt a pessimistic view point like Malthusian theory but this is superior to other theories. In the fourth stage of demographic transition, the fertility rates decline and tend to equal the death rates. Thus more or less the population growth rate is stationary (remains at the replacement level). As a result of this, standards of living of people rise, output expands, educational facilities become widely available, family planning finds a place amongst the priorities of the masses, and such a decline in population growth rates give impetus to increase in per capita income and a further decline in fertility rates. If we observe the populations trends in advanced nations, it is found that they are passing through this fourth stage.

It is also worth mentioning here that universality of this theory gave the impressions that similar patterns would be followed in LDCs and UDCs as well, but what is happening in these countries

is not '*Demographic Transition'* but '*Population Explosion'*, The reason thereof, is that the population growth rates in these counties is much higher than what was historically observed in developed countries. Following are some of the reasons:

- *The birth rates in developed countries were much lower when they were not developed as against in the less developed countries at a comparable state.*
- *The birth rates in LDCs are twice that of the developed countries. There are almost seven times more births in LDCs than in developed countries as a whole.*
- *In developed countries, fertility rate of women is at replacement level, whereas in UDCs, women bear five children on average. If this trend continues the size of population doubles in only three decades.*
- *In LDCs mortality rates are declining at a greater speed because of advancement of medical facilities, therefore, the gap between death rates and birth rates is widening.*
- *Developed countries gained benefits of increased life expectancy due to fall in fertility but in LDCs life expectancy is increasing due to fall in mortality.*
- *Pattern of demography are different in LDCs and developed countries, children under age 15 make up almost 40% of the total population but in developed countries this ratio is 20%. This phenomenon leads to 'dependency burden' that shows that the number of non productive members of society increases.*

4.3 THE CLASSICAL THEORY

This theory has its roots and foundation on Malthusian theory. It was postulated by David Ricardo and is also called Stationary Theory. It states that when population increases demands of population for food and shelter also increases, in the beginning fertile lands are brought under cultivation but with the passage of time when population pressure raises less fertile land are also cultivated. The burden on each piece of land tends to rise, wages increase and cost of production also increases, as wages increase profit falls and a negative trend of growth i.e. zero growth rates of profit ensues.

This theory was perfected and extended by Mill (1909), who argued that technological progress can arrest the tendency of zero growth rates. However, again unfortunately technological changes are taking place in the developed countries more often and LDCs are prone to be the victims of stagnation. In LDCs and UDCs, agriculture is the dominant sector of the economy. Approximately 2/3 of their population lives in rural areas and depends on agriculture for their subsistence. It is also a reality that agriculture sector is traditional in these countries. People are static and risk aversive .There is little technological transformation. Therefore, population explosion brings about stagnation (zero growth, or very low economic development)

Ghatak and Ingersent (1984) state that the obvious implication of model is that in predominantly agrarian societies, curtailment of population growth is the sole feasible means of materially improving living standards of the majority of the population

Again this theory has relevance for many LDCs, because these countries are unable to import the requisite amount of food and other things due to many constraints. In addition to that the population trends as observed today in many UDCs have never been observed in developed countries.

4.4 NEO MALTHUSIAN THEORY

This theory or the model was developed by William and Paul Paddock. This model is more like a forecasting, in that time period when it was presented. After the World War II, less developed countries were exporting more and more food grains and they were losing the capability to feed their people as their population was increasing rapidly. It became a growing concern for the world concerned agencies. At that time in 1966, Science Advisory Committee of the US President made a special study of the emerging food problem and their expert report drew the attention to the grim reality of food shortages that would occur during the two decades 1965-66 to 1985-86.

Although this prognosis, that the world would face a visible food shortage did not prove to happen, yet food shortages in the present era in many of the LDCs; due to excessive burden of their population, on one hand and their inability to feed their masses with imported food supplies on the other hand, speaks volume of severity of situation. It is also pertinent to mention here that import bills of many LDCs are enormously big. They are not importing capital which can help in their development and add to capital formation; instead the large chunk goes for import of food. When this is the situation, trade deficits become a recurring phenomenon, the gaps between saving and investment, imports and exports and technological gaps are filled by foreign debts and foreign direct investment which mortgage the country on very harsh terms and conditions, thus a vicious circle of financial slavery sets in.

4.5 THEORIES OF POULATION INCREASE AN ECOLOGICAL DISASTER.

This part of thesis is in conjunction with the last part of chapter 2 which discusses sustainable development. Many theories and models have been presented to picture ecological disasters due to population increase, besides some of the studies have also been done in this regard.

4.5.1 Wilkinson Ecological Model of Economic Development.

Wilkinson (1973) makes point that changing ecological circumstances, centering on the relationship between population and resources, force societies to exploit their environment in more difficult ways. The model also states that the traditional methods of population control have been abandoned. Therefore, most of the LDCs are facing what is called ‘Population Explosion’. One of the important policy implications of this model is that there appears a gap between food supplies and demand by the masses. In fact, a new social agreement is badly needed to bring population growth rates to the level where the resources can cater the need of large population. It is also very unfortunate that in many countries population policy rely on voluntary acceptance. It is very common to just persuade parents to have few children through moral appeals. In many countries taboos like prevalence of contraceptives, and poor role of

women in decision making about family size also impede the efforts of bringing fertility rate down.

Yet there is some exception. Birdsall (1980), while analyzing China states that the largest population having country[China] adopted the policy of having one or two children, long ago because the government of China realized that large family is anti social because it wrongfully diverts the resources from productive, developmental and important tasks to the less important tasks. In fact Chinese government has exerted very strong pressures to discourage all those practices which increase population growth even some of the policies of government like relaxation in taxation and preferential treatment in provision of basic necessities of life helped to bring down population growth rates down. Similarly discriminatory policies against large families have been adopted in Singapore.

In LDCs parents have been given liberty to determine their family size and children suffer when they don't get basic necessities of life. The number of poor increases every minute. All the governmental efforts to develop become a futile exercise and end in fiasco

4.6 LIMITS TO GROWTH MODEL.

This thesis was expounded by 'The Club of Rome'. A research team of seventeen members constructed a very complicated model wherein to find out inter linkage of five major trends of world rapid population, accelerated industrialization, widespread malnutrition, depletion of non renewable resources and environmental degradation. This mathematical model was run and on the basis of its conclusion, it was predicted that if the present trends are not changed, too many limits will hamper economic growth in the next century. As per the opinion of Meadows (1972), the world faces a danger of collapse, if the present course of population growth and industrialization is not changed. This model also predicted that world may face shortage of food, extinction of raw material and environmental degradation in the second half of 21st century with the present trends.

There are many other surveys, reports and models, however, summing up, increased population growth and high fertility rates have been a cause of concern for the world intelligentsia since long because it not only comes in the way of economic development, makes the lives of present generation difficult and miserable but it also makes sustainable development impossible. It is, therefore, always emphasized that population growth rates have to be curtailed to a reasonable level.

4.7 HIGH PGR AND ITS CONSEQUENCES

According to predictions of United Nations, the world population will be 9.1 billion by the year 2050 and it will reach maximum of 11billion in the 2200. Ninety percent of this population will inhabit in developing world. Of course, there are certain social, economic and other implications of this high population rise. Among the most critical issues; poverty, standards of living, unemployment, health and education are not only the indicators of economic development but ultimate goals of development as well.

Another very important issue is that why high fertility rates and population growth is hard to curb. Kuznet (1974) writes about the parents of developing countries and observed that larger proportion of population sees their economic and social interests in more children. They take them as supply of family labor and as a matter of *economic and social security* in a society having less economic security.

Children in poor societies are investment and parents are unable to think about a tradeoff between, few but high quality children and larger number of low quality; uneducated children with low earning prospects.

4.7.1. The Consequences:

There are many consequences of rapid population growth rates. These include social, economic and environmental. Ehlrich (1972 & 1975), for example, predicts population problem as causing catastrophe and ecological damages.

Economist also use 'Simplified Solow Model' to demonstrate adverse consequences of rapid population growth. As illustrated by Todaro and Smith (2005), low economic growth, poverty and inequality, low literacy rates, poor health, environmental degradation and international migrations are fruits of rapid population growth. Discussing these consequences the writers state that evidences show, rapid population growth lowers per capita income, the case becomes even worse, when the country is already poor. Thus high population growth rates puts pressure on natural resources of country. When the population pressure is there, poor masses face the problems of landlessness; they also suffer from the cuts in government health and education program. It is also generally agreed that large family's size and low income curtail the opportunities of parents to educate their children. At the same time, high fertility harms the health of mothers. Closely spaced births increase infant mortality rates. Environmental degradation is a consequence that comes in the wake of rapid population growth.

Jhingan (2007) also states that with rapidly increasing population it becomes difficult to manage the adjustments that accompany economic and social changes. Population growth retards capital formation when the per capita income decreases and people have to feed large family with this meager income which implies high consumption, low savings and low investment.

Food shortages brought about famine, hunger and malnutrition in many parts of the world. UNDP, HDR, 2002 gives alarming figures about many of the social indicators of development i.e. 766 million people in poor countries are living without access to health services, almost one billion don't have access to safe drinking water, 2.4 billion live without sanitation facilities and 158 million children under 5 are malnourished.

Ghatak and Insergent (1984) while analyzing the causes of malnutrition write that lowering the population growth by means, such as improved family planning is a viable approach to improved nutrition in LDCs.

CHAPTER V
FERTILITY TRENDS IN PAKISTAN

5.1 OVER VIEW OF THE ECONOMY

Pakistan is a country having an area of 0.796 million sq-km and a population of 167 million. As such its share in world population is 2.36% and it is sixth largest country in term of population in the world. Pakistan's population increased from 32.5 million in 1947 (when Pakistan came into being on 14-08-1947) to 132. 4 million in 2001, 153.4 in 2005 and is expected to reach 171 million in 2011 and 198 million in 2021.

State Bank of Pakistan (SBP), 2004 asserts that although growth rate is gradually declining since FY81, population growth is still very high i.e.1.9 percent per annum. Since we already have scarce resources, such a high population growth creates unsustainable demand on these scarce resources. Rapidly growing population is one of the important factors, contributing to the worsening of social indicators in the country. The negative impact of the high population growth is evident on social sector, particularly on health and education, which means that the productivity of the country's large labor pool has remained low despite all efforts. If we want to change the situation in the long-run, we have to focus on reducing its population growth rate to sustainable level.

The concern shown by state institutions implies that the situation, despite efforts, has not improved. UNDP Report, 2003 observes that Pakistan's development strategy in the past was growth-oriented, based on the premise that the effects of economic growth would trickle down to the people. Therefore, investments in basic social sectors that are relevant for future growth have remained low and human development has also been neglected in the process of economic development. Consequently, progress in literacy and education has been much below the desired levels. Socio-economic implications of high fertility and rapid population growth are morbid. There is an urgent need for the implementation of an effective population policy operating within the framework of well-defined development goals.

PDHS (NIPS), 2008 envisaged that the rapid population growth has resulted at fivefold increase in the number of people in Pakistan over the period of past five decades. This has annulled economic gains; in spite of a 327-fold increase in the national GDP between 1960 and 2006, the per capita income has increased only nine-fold. Although the literacy rate has increased since the early 1960s, we have more than 52 million illiterates' number of people. Unemployment has grown by 11 times in the past 35 years, per capita availability of water has declined to below 1,200 cubic meters per year and an investment of over 7.4 billion US dollars is required to keep the 2006 level of per capita income of US$847 (PDHS, NIPS, 2006). The rapid increase in population is also adversely affecting health indicators. To maintain existing ratio of population per health facility, Pakistan needs huge funds. Health facilities present a very gloomy picture, there is only one hospital available for over 1,70,000 persons; one rural health centre (RHCs) available for 1,84,000 persons living in semi-rural areas; one basic health unit (BHUs) available for more than 19,000 persons in rural areas and one maternity and child healthcare centre (MCHCs) available for more than 4,400 expecting mothers and newborns. There is only one doctor available for over 1,300 people and one nurse for 4,600 persons. The rapid increase in population constrains economic gains and stretches the already overburdened health facilities (Government of Pakistan, 2007).

5.2 FERTILITY

Fertility is one of the three principal components of population dynamics, the others being mortality and migration. In view of the fast growing population of Pakistan, the government has been trying since the 1960s to reduce the fertility rate through implementation of various population policies. However, the fertility transition in this country only started about two decades ago. Arnold and Sultan, (1992) observe that fertility levels that remained more or less constant at more than six children per woman from the 1960s to the mid-1980s started to decline in the late 1980s.

5.3 CURRENT FERTILITY

Total fertility rate (TFR) is a common measure of current fertility and is defined as the average number of children a woman would have if she went through her entire reproductive period (15-49 years) reproducing at the current age specific fertility rates. The total age-specific fertility rates (ASFRs) are calculated by dividing the number of births to women in a specific age group by the number of woman-years lived during a given period. The following table shows that total fertility rate (TFR) is generally higher in rural areas i.e. 4.5 as compared to urban areas i.e. 3.3. The reason thereof is that in urban areas women more educated have better access to information and health facilities. That is why their status is higher than the women living in rural areas. Because of these reasons urban women have some decision making role, particularly in determining size of their family.

Table 5.1: Age specific fertility rates, total fertility rate, the general Fertility rate and crude fertility rate for the three years preceding the Survey, by residence, Pakistan 2006-7.

	Residence				
Age group	Total urban	Major city	Other urban	Rural	Total
15-19	39	36	44	58	51
20-24	152	131	178	194	178
25-29	218	213	225	248	237
30-34	161	157	167	194	182
35-39	65	46	95	127	106
40-44	24	19	33	54	44
45-49	7	0	16	23	18
TFR	3.3	3.0	3.8	4.5	4.1
GFR	113	103	127	147	135
CBR	27.6	25.6	30.2	32.3	30.7

Notes: Age-specific fertility rates are per 1,000 women. Rates for age group 45-49 may be slightly biased due to truncation. Rates refer to the 1-36 months preceding the survey. Because rates are based on all women and Pakistan is an ever-married sample, the number of women was increased using a factor based on all de facto women listed in the household who had never been married. The "all women" factors were based on age in the household and background information available at the household level.
TFR = Total fertility rate, expressed per woman
GFR = General fertility rate, expressed per 1,000 women
CBR = Crude birth rate, expressed per 1,000 population

Source: Pakistan Demographic and Household Survey (NIPS), 2008.

5.4 FERTILITY TRENDS

Following table shows fertility trends in Pakistan during the last two decades i.e. from 1984 to 2004. In the year 1984-85, TFR was 6.0 in Pakistan, however, it declined to 5.4 per women in 1992-96. In 2004-06 TFR was 4.1.

Table 5.2: Age specific and total fertility rates from selected surveys 1984 to 2006-7.

	Survey and approximate calendar period						
	PCPS 1984-85	PDHS 1990-91	PCPS 1994-95	PFFPS 1996-97	PRHFPS 2000-01	SWRHFPS 2003	PDHS 2006-07
Age group	1984	1985-90	1994	1992-96	1997-00	2001-03	2004-06
15-19	64	84	44	83	65	60	51
20-24	223	230	227	249	211	190	178
25-29	263	268	307	278	258	233	237
30-34	234	229	243	215	206	194	182
35-39	209	147	179	148	128	117	106
40-44	127	73	92	75	61	56	44
45-49	71	40	36	24	26	33	18
TFR	6.0	5.4	5.6	5.4	4.8	4.4	4.1

Note: Age-specific fertility rates are per 1,000 women, while the total fertility rate is per woman.
PCPS = Pakistan Contraceptive Prevalence Survey
PFFPS = Pakistan Fertility and Family Planning Survey
PRHFPS = Pakistan Reproductive Health and Family Planning Survey
SWRHFPS = Status of Women, Reproductive Health, and Family Planning Survey

SOURCE: Pakistan Demographic and Household Survey (NIPS), 2008.

Finally at the turning point of the Century, there is definite evidence of fertility decline in Pakistan. Significantly, all estimates for the 1990s for the first time fall below 6.0 births per woman to a little less than 5. This is a contrast to numerous surveys that indicated that the TFR remained above six births per woman in the 1980s. The latest Census held in 1998, whose provisional results were released in July, 1998, indicates that the average population growth for the period 1981-1998 was 2.6 percent per annum, a decline from previous intercensal rates and consistent with a decline in fertility in the 1990s. An Inter-Ministerial Committee on the Population Growth Rate reached a consensus that the PGR for 1998 was 2.4, placing the current PGR in 2001 at 2.2 or even less. The fertility transition occurred as a result of crystallization of existing desires for smaller families along with a decline in family size desires and a reduction in the social, cultural and psychic costs of contraception (Sathar and Casterline 1998).

5.5 FERTILITY PREFERENCES

In Pakistan fertility preferences are differ in rural and urban areas. Desire to have more children depends on the total number of children, a family already has, their sex and composition. Pakistan remains a feudal and agricultural society with strong bonds of caste and family. The position of women has hardly changed in terms of their educational opportunities and enhancement of remunerated work outside of the family farm or enterprise. Thus the composition of low educational attainment and expansion, lingeringly high infant mortality, weak women's power within household and society, so-called religious creeds, the strong preference for male progeny as patrimonial social set up are the factors which impede the abrupt change in the fertility desires and in woman's motivation to control their fertility. The major contribution to rapid population growth in the recent past is the most definitely high fertility. Though accepted as high by any standards, internationally and within the country, demographers continue to struggle to establish the exact level of fertility in Pakistan. An effort to reduce fertility preferences from their current levels requires strong investments in social and economic development (Bongaarts and Amin, Forthcoming). The cobweb of overburden of population, less saving and lower investment ending at no substantial and significant difference in the economic growth at snail pace is further becoming enigmatic. Unskilled labor intensive economy compelled the already poor people to think more children to increase the labor force at their stake. Because they are not capable to provide good education to their off springs; if one, two, three or more, this is not matter of concern for them. Short sightedness of generating income through large number of unskilled labor force has no other consequence than deepening the already sinking boat of economy. The second main basic reason evolves from the religious creeds of the common mind set originally built up by the pedagogues preaching the wealth (*rizq*) is in the hands of God *(Allah)*. This strong belief decelerate the rational decision making process. This is vicious circle of fertility preferences prevalent in Pakistan. That is why efforts of civil societies since 1953, collaborated by the government since 1965 could not make a dent in the static mind set of the large majority of the people, especially living in the remote, rural and tribal regions of Pakistan. This table shows the fertility preferences:

Table 5.3: Percent distribution of currently married women age 15-49 by desire for children, according to number of living children , Pakistan 2006-7.

Desire for children	Number of living children[1]							Total
	0	1	2	3	4	5	6+	15-49
Have another soon[2]	81.3	38.6	24.0	15.1	8.2	4.7	1.8	21.1
Have another later[3]	5.2	49.9	39.7	22.8	13.2	5.7	3.4	19.6
Have another, undecided when	2.7	4.2	3.6	2.2	0.6	0.8	0.6	2.0
Undecided	3.0	1.6	3.6	2.9	2.2	2.6	1.7	2.4
Want no more	0.5	4.1	24.6	48.2	60.2	68.2	72.3	43.3
Sterilized[4]	0.0	0.4	2.0	6.3	12.9	16.1	15.2	8.2
Declared infecund	7.0	1.2	2.1	2.4	2.6	2.0	4.9	3.2
Missing	0.3	0.1	0.4	0.1	0.1	0.0	0.1	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	947	1,298	1,408	1,365	1,312	1,090	2,136	9,556

[1] The number of living children includes the current pregnancy.
[2] Wants next birth within 2 years
[3] Wants to delay next birth for 2 or more years
[4] Includes both female and male sterilization

SOURCE: Pakistan Demographic and Household Survey (NIPS) 2008.

5.6 THE ROLE OF PUBLIC POLICY

The educated and enlightened people of Pakistan felt the need to keep the population stabilized and in a reasonable proportion with the economic development of the country. For example, an NGO, the Family Planning Association of Pakistan (FPAP) was established in 1953, just after six years of creation of Pakistan. The said NGO pioneered the family planning movement with a commitment to responsible parenthood as a human concern for the well-being of women, children, families and communities in Pakistan. It was only 1960s that the government joined hands with the efforts made by the people by their own. There may be two reasons for government stepping in the population planning-one of the highest population growth rate during 1960s and the keen desire and volition of the then government to make significant difference in the prevailing economic conditions of the country. Follow up of the program during 1970s was not desirable and during 1980s once the government suspended this program thinking it anti-religious.

During 1960s, Pakistan government had recognized the PGR was extremely high. The government had adopted an official anti-natalist population policy since 1965 but official efforts at reducing population growth have met with little success. Population Program has taken many

turns since 1965. The said program has only changed in the specifics about how it ought to deliver services but has remained focused towards women and has been based on the model where women themselves are expected to seek services. The main problem with the program and still exists is lack of political commitment, and at many points it has lacked funds. Once, this program was shelved under the Zia regime for two or three years. Since mid eighties, the program has got momentum and every subsequent government is pursuing its important role in the economic uplift of Pakistan. The late Benazir Bhutto, former Premiere of Pakistan for two terms, even attended the ICPD Conference despite fear of religious backlash. At present, the program has been reinvigorated through new policy initiatives e.g. recruitment of the Male Mobilizers, purchase of vehicles for Mobile Service Units, establishment and expansion of RHS-A Centers, coordinating with NGOs, NPOs, CBOs, GMPs, Hakeems, TBAs, etc., engaging opinion builders-religious pedagogues, academicians, community and business leaders, woman groups, politically influential people, introduction of Village Based Family Planning Worker Scheme, appointments of LHWs at a large scale, Family Welfare Centers in every Union Council level, cross sectoral approach and extensive advocacy over print media, electronic media and ads on important public places through CCTV, etc. through new policy measure of information, education and communication (IEC). Government has put special emphasis on the PP in the Eight Five Year Plan. UNFPA (UNDP) has strengthened its role in coordination with the MoPW.

CHAPTER VI
DEMOGRAPHIC PROFILE AND DETERMINANTS IN PAKISTAN

The current demographic profile and its determinants are depicting alarming situation to accept high PGR and TFR as one of the biggest problem and hurdle in the way of fast track growth of economy. The majority of the people who are not literate and educated do not rank the population control as one of the most serious threat facing the country. While some educated people admit, it is somewhat of a problem. Many of them are also not too much concerned about this issue. When we read newspapers even the most popular one, news or reports sensitizing the people about demographic issues are occasionally missing. Demographic profile of Pakistan and its main determinants are discussed ut infra:

6.1 POPULATION AND GENDER

Gender disparities in Pakistan are severe and pervasive. Deeply rooted cultural and institutional constraints prevent Pakistani women from playing a fulfilling role in the development of society. Their presence in the public sphere is condemned under the guise of cultural and religious values thus, making their contribution outside the home difficult, if not impossible. Institutionalized violence against women in Pakistan allows crimes of 'passion' and 'honor' to go unpunished and has become, in the past two decades one of the biggest constraints in widening their role in the public domain.

The 1998 Population Census showed that 52 per cent of Pakistan's population is male and only 48 per cent is female. The significantly lower number of women in Pakistan is caused by preferential treatment given to male offspring. Female children are generally more undernourished and have poorer access to immunization and healthcare, which results in higher female child mortality. Education statistics also strongly indicate gender discrimination. According to the Pakistan Economic Survey 2003-04, 66 percent of men are literate, whereas only 42 per cent of women are literate. Figures for rural areas are even more skewed.

There is a strong link between gender discrimination and population growth. The key to population control has long been seen as the education of women, so that they can make

informed choices about family size and an improvement in basic healthcare. Women can and must play a powerful role in sustainable development and poverty eradication. Families, communities and nations with educated and healthy women are far better than those societies, families and nations which have uneducated women in abundance.

There are some common challenges that women have been facing in Pakistan, such as: under representation in political processes until the present leadership took over; low access to decision-making in government and business, civil society and family; gender gaps in wages and gender segregation at workplace, especially in the informal economy, unequal access to employment and promotion opportunities, weak access to healthcare system, deteriorating reproductive health of women and discriminatory gender stereo types. Women are marginalized and discriminated at the workplace. The latest Labor Force Survey (LFS) has revealed that there are only 4 per cent women in administrative and managerial positions. Gender-based violence has been reported in various studies. A study conducted in the province of Punjab reported 33 per cent of women being beaten by their husbands at least once. Mobility among women in Pakistan is severely restricted due to the norm of *Purdah* and harassment of women not accompanied by family member or female friends, A reproductive health study conducted by NIPS reported that only one in five women could go to hospital alone. Finally, women do not enjoy high level of autonomy in decision-making, even on basic household matters. The same study reported that one in three women could make a decision about medical treatment of their own child.

According to LFS, only 14 per cent women are active part of the labor force of Pakistan. About two-third of them are associated with the agriculture sector. In terms of occupation, female contribution is lower than male in all spheres of life. Only in the associate professional category, 40 per cent were women, whereas, in unskilled and professional categories, women had only one fifth of the jobs. This indicates serious lack of highly educated and skilled female professionals in the country.

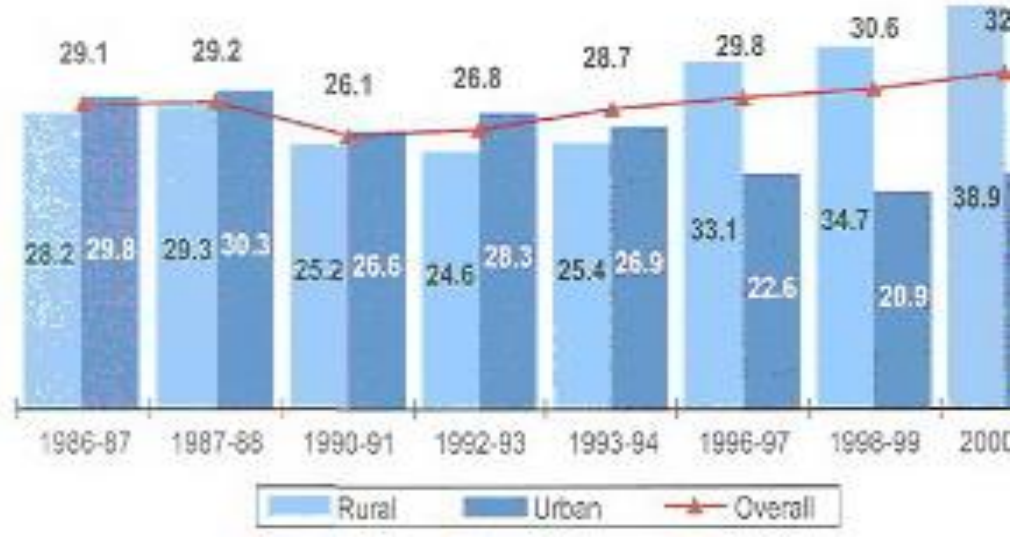
According to the 1998 Census of Pakistan, around half the population of Pakistan was found to be literate. Large differentials existed in terms of urban and rural residence and sexes. Only about a third of the females were literate. The figure shows the gender gap in educational attainment by age and the positive gains, we have achieved in narrowing the gap. However, still

the policies should exclusively focus on female enrolment, especially those residing in rural areas.

The president Musharraf's Government has adopted various policies to combat this situation, such as greater representation of women in the government at the local, provincial and federal levels. It recognized that women experienced inadequate recognition of contributions to national development while bearing the brunt of childbearing and rearing, family health care and community activities. However, whether these policy change result in improved conditions for women in Pakistani society remains to be seen.

6.2 POPULATION AND POVERTY

Pakistan did not have an official poverty line for many decades and the subject was dealt with more as an academic exercise. It was later that the Planning Commission adopted an official poverty line of 2,350 calories per adult equivalence per day, which approximates to Rs. 748.56 per month per adult. Poverty in Pakistan has been on the rise since the last decade and only declined about 3 percentage points during 1998-99 and 200-01. The rise has mainly been in the rural areas and is believed to have experienced a gradual decline in urban areas. According to UN estimates, 13.4 per cent of Pakistan's population lives below $1 a day and 65.6 per cent below $2 a day.



Source: Centre for research for Poverty Reduction and Income Distribution (CRPRID). Ministry of Finance (2004).

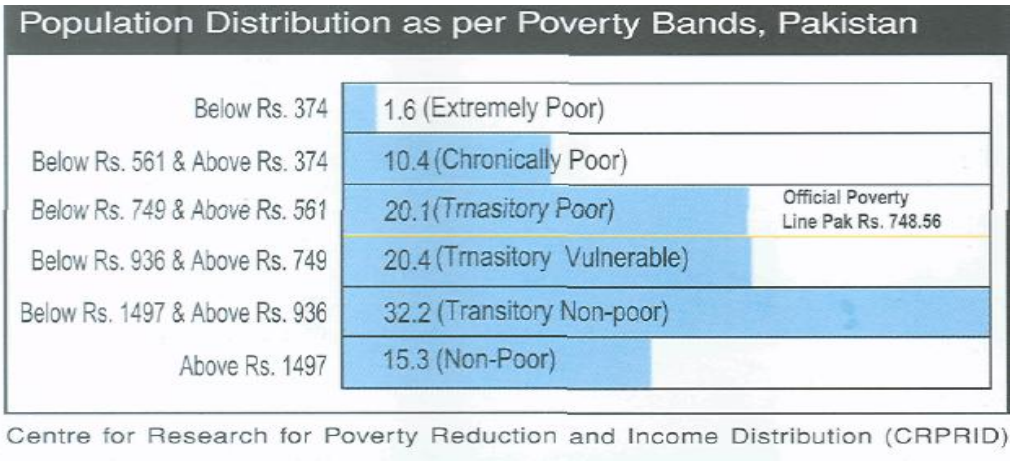


Figure 6.1: Poverty trend in Pakistan (Head Count Ratio), by Region, 1986 to 2000.

On the basis of the official poverty line of Pak Rs. 748.56 per adult per month, slightly less than one-third of Pakistanis lived below the poverty line in 2001. Distribution of household income reveals that more than 40% of the income was held by 20% of the households whereas 40% households at the bottom possessed only about 20% of the income. Planning Commission of Pakistan alleges that about two-third of the poor population falls between the poverty line and the consumption line. A large section of population which does not fall below the poverty line can be categorized as vulnerable and can fall into poverty as a result of inefficient and already scarce resource distribution.

Pakistan is ranked 144th in 175 countries of the world in the Human Development Index and Pakistan is ranked 65th among 94 developing countries in the Human Poverty Index. These figures describe the intensity of poverty and human deprivation of basic needs in Pakistan. These figures describe the many dimensions of poverty in Pakistan:

A recent survey by the Federal Bureau of Statistics showed that the incidence of poverty had declined during the last few years mainly due to two years of strong economic growth of 5.1 per cent in 2002-03 and 6.4 per cent in 2003-04. The survey showed that the incidence of poverty has declined by 4.2 per cent during the period. The incidence of poverty is around 23%, but still very high.

6.2.1 Implications of Poverty

a. Child Labor: According to the only Child Labor Survey conducted in 1996 in Pakistan, there are about 3.1 million children involved in labor activities. A recent national level survey found 40% of boys and 25% of the girls in the age range of 15-17 are working. The latest Labor Force Survey has revealed that 17% of the boys and 6% of the girls in the age range of 10 to 14 are part of the labor force.

b. Unskillful Employment: Only 2.2% of the entire labor force in Pakistan is of professionals whereas more than 18% of the labor force is involved in unskilled professions. According to UN statistics there are merely 69 scientists and engineers in R&D per million people in Pakistan.

c. Mortality and Morbidity: Mortality and Morbidity rates are extremely high in Pakistan. The latest statistics reveal that Maternal Mortality is more than 500 per 100,000 deliveries whereas Infant Mortality is 77 per 1,000 live births

d. Gender Discrimination and Disparities: Women in Pakistan are most deprived in education. Female enrollment rate at the primary level in rural areas is one-fourth less than boys whereas overall literacy rate is almost half of the boys. One-third of the girls who have never attended schools are not being allowed by their parent. Pakistan is ranked 120 out of 144 countries in gender development index.

e. Nutrition & Productivity: According to the National Nutrition Survey, only 31% children under age 5 are not underweight. Similarly 30% mothers in Pakistan are anemic. Moreover, 13% mothers in Pakistan are malnourished.

f. Law and order: Law and order situation has remained grim in Pakistan. This includes sectarian violence, honor killing, incidents of rape and suicides, kidnapping, human trafficking and crime against women and children.

It has been widely acknowledged and empirically proven that economic growth is central to reducing poverty in developing countries. Decrease in the population growth rate would have an even greater impact. If the rate of economic growth in Pakistan increases to the targeted 7-8 per cent over the next three to four years and the population grows at less than 2 per cent, the per capita

income would grow at an average rate of 5.5 to 6 per annum, which would substantially reduce poverty and unemployment in the country.

It should be realized that poverty cannot be eliminated overnight. Nevertheless, poverty alleviation must be made a priority item by all the stakeholders including government, international partners in development, developmental organizations and most importantly the community as a whole. Only by this collaboration, the vicious cycle of poverty can be broken.

6.3 PUBLIC-PRIVATE PARTNERSHIP IN POPULATION WELFARE

Arresting rapid population growth and achieving population stabilization is a gigantic yet essential task. The family planning advocacy and clinical services in Pakistan were started by the non-governmental sector in 1954. The government did express its concern about rapid population growth in the First Five Year Plan, but provided a financial allocation only in the Second Five Year Plan (1960-65). The NGO's, however, sustained the activities they had started in the 1950's. Cooperation between government and the non-governmental sector forged at that time continued to flourish in the years to come. By 1980's, this partnership had strengthened further by induction of the commercial sector. Presently, government and the private sector cooperation consist of a three-pronged relationship comprising government, NGO's and the Social Marketing of Contraceptives initiative in the commercial sector.

One of the motivations for this cooperation has been the need for developing a joint strategy to use the resources and expertise of the private sector to advance the social good of making family planning information and services available more widely and overcome any hostile attitude towards family planning. In practical terms, the main connection was based on official assistance and the flow of foreign assistance through government channels. Yet another basis of public-private collaboration was the necessity of taking the family planning message to remote areas besides cities and towns, some of which could be approached more effectively by the non-governmental sector. NGO's also had the advantage of having greater freedom to spread, originally, a controversial message as compared to the public sector inherently bound by political and administrative exigencies.

A more formal link between the government and the NGO's sector was created in 1985 through establishment of the Non-Governmental Organizations Coordinating Council under the aegis of the Federal Government. It was meant to provide technical skills and support to NGO's, especially the small ones, which did not have any direct link with foreign donors. In 1994, it was restructured into a trust and was named National Trust for Population Welfare. It provides funding and guidance to NGO's after checking their status, dedication to the cause of population welfare and the potential to fulfill their objectives. One of the most meaningful partnerships between the public and the private sector was ushered by inception of the Social Marketing of Contraceptives Project. It was initiated to utilize the private sector to make family planning information and services omnipresence and available to every demanding person.

The initiative was meant to complement public sector efforts to enhance the use of contraceptives through managerial skills and dealerships at the disposal of the private sector. Since the family planning program in the public sector, in more than two decades, had not made much headway in the adoption of family planning idea or the use of contraceptives, it called for an innovative step. Government took the bold step of involving the commercial sector as a full partner in the program for making contraception available at places having outlets of the commercial firms involved.

This experiment has proven the efficacy of this partnership for achieving the objectives of a large national development undertaking. At present, two commercial firms namely Green Star Marketing (GSM) and Key Social Marketing (KSM) are executing the Social Marketing Program through advertisement, marketing research, training and dispensation of contraceptive products. Their network includes 47,500 retail outlets, 12,500 medical doctors, 7,000 paramedics and 9,500 chemists/druggists. They, collectively, contribute 20 per cent of couple years of protection (CYP) to the national program of population welfare. The SMC sector which operates outside Public Sector Development Program (PSDP) is supported by an international grant of US$ 70 milion.

Population growth, in spite of encouraging economic indicators and a promise of decline in human fertility, will require a sustained national effort from all sections of society. The collaboration between the public and the private sectors is the key to such a national endeavor. Pakistan has an impressive record of achievements of this partnership. It must be sustained and

strengthened if the goal of population stabilization by the year 2020 is to be achieved, along with a Population Growth Rate of 1.3 percent and a Total Fertility Rate of 2.1 per cent.

6.4 POPULATION AND ENVIRONMENT

Pakistan primarily has an agrarian economy while two-third of its population lives in the rural areas. However, Pakistan has observed extremely high rates of urbanization and industrialization which have had enormous impact on environmental degradation. The urban population has more than doubled since the independence of Pakistan. According to UN estimation, the largest city of Pakistan, Karachi would be among world's 10 largest cities by year 2010. This has double edged sword effect on environment. Firstly, by exerting more pressure on the already scarce resources i.e. land, water availability, etc. and secondly putting to test the poor development planning in urban areas i.e. infrastructure, roads, telecommunication, etc. The most important such issues, which require immediate attention, include: loss of agricultural land due to water logging and salinity, resulting from inefficient irrigation practices, damage to soil and freshwater resources due to the extensive and uncontrolled use of fertilizers and pesticides, deforestation and rangeland degradation due to land clearing, logging, fuel wood extraction and livestock grazing, resulting in the destruction of wildlife habitat, soil erosion and sedimentation of lakes and reserves and contamination of the freshwater resources and the degradation of coastal areas, including mangrove forests resulting from the construction of dams, unplanned urbanization and industrialization. With high population growth and urbanization rates, per capita water availability has been reduced to 1,200 cubic meters from 5,650 cubic meters in 1951 and rapidly approaching the scarcity level of 1000 cubic meters. Moreover, existing water resources are under increasing threat by untreated municipal and industrial wastes discharged in water sources and water reservoirs. Another adverse impact is in the shape of land pollution. Pakistan, on an average, generates 47,920 tons of solid waste daily. With no disposal management or wastes treatment system in place, urban areas are being polluted every day. By estimation, 80 per cent of the solid waste in Pakistan is disposed of by open dumping. The author of this thesis had an opportunity to serve in the second largest city of Pakistan i.e. Lahore as head of the Solid Waste Management unit

(Executive District Officer-Municipal Services). The situation in City District Government, Lahore is worse than that is in Karachi.

Total emission of Carbon Dioxide in the last decade has increased by 43 per cent whereas per capita CO2 emission has increased by 12 per cent contrary to a decline of 2 per cent observed globally, due to use of liquid fuels which comprise more than half of the overall CO2 emission in Pakistan, transportation being a major source of increase. Latest statistics reveal that the number of motor cycles and motor cars on road in Pakistan has increased almost three folds only in the last decades; this has been a major contributing factor in the overall environmental degradation in Pakistan by increasing road congestion, CO2 emission and noise pollution levels. Specifically, key factors contributing to air pollution in Pakistan are a fast growing transportation sector and rapidly growing energy demand. While toxins are increasing, forests are being depleted. Total natural forests area in Pakistan is around 1.3 million hectors which has been reduced by one-third in the last decade alone. Globally, this rate of reduction was only 4 per cent. The deforestation rate ranging from 0.2 per cent to 0.5 per cent annually in Pakistan is in fact the second highest rate in the entire world. The principal cause of deforestation is the consumption of fuel wood and timber and high population growth.

Loss of biodiversity is another area of concern for Pakistan which fundamentally is due to unsustainable high rate of human population growth, industrial wastes and poor management of biological resources. Continuing loss, fragmentation and degradation of natural habitats is another great concern in Pakistan. Some of the species are already extinct in Pakistan and many are threatened.

A direct result of rapid population growth is the pressure on energy resources. More than half of the total energy in Pakistan is consumed by residential sector followed by the industry and transportation sectors which are growing rapidly. On the other hand, Pakistan for its energy is heavily dependent upon imported oil and spends around 3 billion US dollars annually on oil imports.

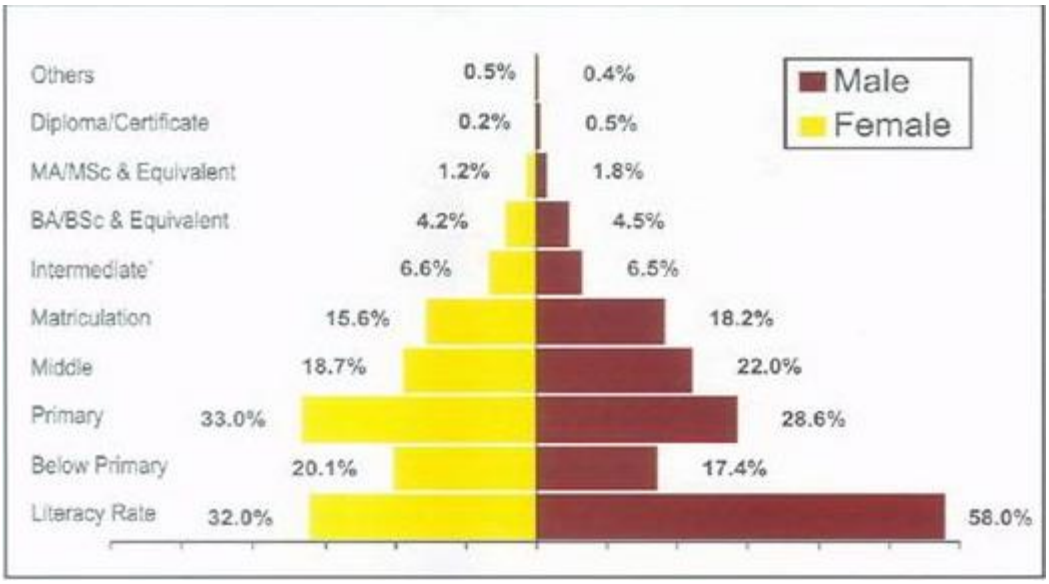
Finally environmental issues are directly linked to the growing population exerting increasing pressure on natural resources. This pressure has to be released. Some important steps taken by various Governments over the years to address critical environmental problems in Pakistan

include: Formulation of the National Conservative Strategy, provincial conservation strategies followed, which are the main policy documents dealing with environmental issues; Establishment of environmental protection agency (EPA) at the federal and provincial levels; Enactment of the Environmental Protection Act, 1997, which provides the framework within which environmental regulations can be developed and enforced; and Establishment of Environmental Tribunals, dealing with environmental cases, in Karachi and Lahore.

Although the legislative and regulatory framework for environmental protection and conservation has been developed to a large degree, major steps towards implementation are still required. Pakistan is already reaching the disaster point in respect of environment degradation, pollution level and forest depletion. Most of the harm has been inflicted by lack of information among the masses, perpetuating old attitudes towards environment, especially the trees and forests. It is augmented by indifference of government and the local civic bodies vigorous efforts are needed to implement laws and reverse the trend. Formulation of environment monitoring bodies with people's representation at a management and administrative levels may stimulate conservation and accelerate implementation of program.

6.5 POPULATION AND EDUCATION

Pakistan has one of the lowest literacy rates in this region. The situation is even worse in rural areas and for the female population. The overall literacy rate in Pakistan in 2003 is estimated to be only 54 per cent. Literacy rate for men in estimated to be 66 per cent while it was as low as 42 per cent for women. According to 1998 Census, of the 32 per cent literate women, one fifth did not even attain full primary education. More than half of the children in Pakistan drop out of school before completing class 6 - in case of girls the dropout is almost two-third. Successive governments since 1965 have vowed to achieve universal primary education in Pakistan. However, this goal has never been achieved due mainly to a number of factors including rapid population growth and the limited resources being spent on education.



Source: Pakistan Census Organization (2002)

Figure 6.2: Level of Educational Attainment in literate population in Pakistan by sex.

Primary education in Pakistan is characterized by low enrolment and high dropout rates. The number of schools in Pakistan, especially in rural areas is quite insufficient for the growing number of children of school going age. There are many areas with no education facilities. Many villages do have educational facilities for boys but none for girls. Most parents do not consider girls' education important and prefer to spend on educating the boys. Even boys are often pulled out of school so that they work and contribute to the household. As a result, in the rural areas, more than one-third of all the children do not even complete primary education and drop out. The Net Enrolment Rate is only 46 and 38 per cent for boys and girls of ages 5 to 9 years respectively. However, the girls are more eager to continue with their education, though not always allowed. Despite government's recent efforts to increase the accessibility to primary education by making it free, a huge proportion of children are dropped out of school as education is found to be too expensive for parents to afford.

Quality of education in terms of physical facilities is not only important in retaining children in educational institutions but also is critical in attracting out of school children. Level of physical facilities available at most public and private educational institutions in Pakistan is dismally poor. Also, there is the need to ensure availability of all basic infrastructure and facilities at all

educational institutions and levels, especially at the primary level and provision of more advanced technological facilities i.e. computers, library, etc. at various levels.

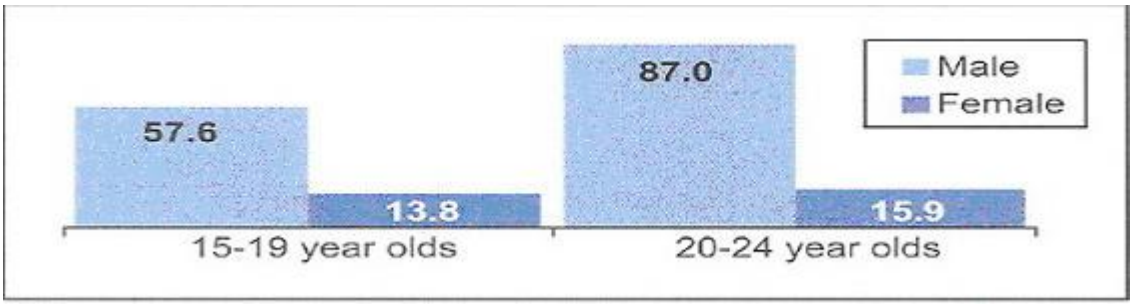
The Government of Pakistan is laying renewed emphasis on literacy in its recent education policies, proposing many reforms in the education sector. Policies include the elimination of gender gaps in basic education, an improvement in technical education, and an acknowledgment of the private sector's contribution to education. Pakistan has set itself high targets and aims at 100 per cent Net Enrolment Rate and an adult literacy rate of 86 per cent by the year 2015. On the other hand, poor quality of education with respect to polarization in the provision of better education mostly to people who can afford may hamper the overall objective of creating an enriched and sustained social environment. Secondly an ill-focused market-based approach in education could well create a paradoxical situation in Pakistan whereby education may be perceived as useless among masses. To improve the situation the formal government educational system should be made accessible as well as acceptable to parents and reflect ground realties. It must impart skills and vocational training that emerge after carefully analyzing local, national as well as international demands.

6.6 ADOLESCENT AND YOUTH IN PAKISTAN

Pakistan has a youthful population. About half of the population is under the age of 20 and three out of four Pakistani households contain one or more young people of age 10-24 years. The census of 1998 counted 56 million children under the age of 15. There were another 13 million adolescents between the age bracket of 15 and 19 and 11 million within the age bracket of 20 to 24 years old. Of the 15 largest countries in the world by population size, Pakistan has by far the youngest population. This demographic situation provides our young with an extraordinary opportunity to compete in whatever sphere they choose. The government and the civil society should join their hands for utilizing this huge resource for nation-building and protecting the emotional and physical health of the youth, their skill-based education, provision of recreational facilities, employment and above all incorporation of self confidence, motivation and courage to move forward.

The challenges, constraints and opportunities, the young people face vary from region to region and culture to culture - from forced early marriages to increased poverty resulting from adjustment policies, from armed conflicts to lack of opportunities. For many, bread and butter is a problem, for others lack of education or poverty are major constraints in life. But nobody denies that the youth, wherever they are, need to be redirected to strive for larger well-being and prosperity of their countries. The youth of Pakistan, face a multitude of problems like unemployment, poverty, remorselessness, social taboos, drugs, guns and politics, which need to be addressed urgently.

Adolescence is an age of physical, psychological and mental growth and change. In our culture, there is no mechanism to guide these young adults about the change in life and functions. A vast majority (65%) of adolescents remains unaware of even such simple matters as physical changes in boys and menstruation in girls, before attaining puberty. About three quarters of young people think that this information should be given to them beforehand. Traditionally, mothers used to steer their daughters through physical and emotional transition from childhood to youth. However, society has changed so enormously, that councilors, teachers, clubs and associations will have to come forward. Civil society has a task tailor-made for them. The basic task is that of raising a responsible, constructive and healthy youth who enter their working life with confidence and enthusiasm.



Source: Federal Bureau of Statistics (2004).

Figure 6.3: Labor Force Participation rate of young people in Pakistan, 2001-2002

Marriage - even prospect of marriage - are an important event in the life of youth. Most marriages in Pakistan take place at a young age. The average age at marriage in Pakistan is 22 for females and 27 for males. However, tremendous variations are found between regions. Overall, a little more than a quarter (29%) of adolescents get married. Among the ever-married females, 30 per cent either get pregnant or are mothers. In respect of care during

pregnancy, there are wide urban-rural differentials. More than two thirds of urban females had received antenatal care for their first child, whereas in the rural areas, only about a half reported receiving antenatal care.

The most important dimension of the picture of youth and adolescents is education. About a third of young people have never attended school. Rural girls are most deprived in this regard: 60 per cent of them have never been enrolled in a school. Young people, who ever attended school, on the average, received about 8 years of schooling. Pakistan plans to achieve universal primary education by the year 2015. But there remain huge differences in educational attainment between urban and rural areas, the provinces and between males and females.

An important step to be taken not only by the Government of Pakistan but also the civil society, media, intelligentsia, and NGOs, is the formulation of National Youth Policy which focuses on creating an ambience in which youth stand educated, healthy, usefully employed, and productive.

While Pakistan is striving to achieve universal primary education by the year 2015, there are still huge differences in educational attainment between urban and rural areas and the provinces and between boys and girls. There is the need to concentrate on an education based on partnership of public and private sector, which is progressive, purposeful and goal oriented.

6.7 MOTHER AND CHILD HEALTH IN PAKISTAN

The state of mother and child health in Pakistan continues to pose a great challenge in Pakistan. An average woman in Pakistan gives birth to 4 children in her lifetime - 5 per cent of all births being in the age group of 15-19 years. One out of ten mothers suffers from night blindness, due to iron deficiency. About a fifth of the mothers suffer from some form of Goiter. More than half of them consume less than the recommended calories. Awareness regarding nutritional needs of the mother and child during and after pregnancy periods is extremely poor among the general population. Three out of four mothers do not feed their own milk to the infant within 1 hour of

delivery and a sizeable number of women especially in the rural areas and with low education, believe that colostrums (brown secretion before the milk) is harmful for the baby.

Overall only about half of the population has access to government health facilities, almost such facilities are concentrated in urban areas which deprive a large number of women of basic health care. The lady health care program, providing primary health care is accessible to about 45 per cent of the population. However, according to one evaluation exercise, only 29 per cent of married women were contacted by a community worker during 12 months - rising from 16 per cent in 1996. More than 3/4th of the births in Pakistan take place at home. Most of them, 80%, are attended by untrained (TBA: Traditional Birth Attendants) *dais* or relatives. According to PIHS 2002, around 40 per cent of women were given two or more IT shots in their first pregnancy. On an average, every year 30,000 mothers die due to causes related to child-birth which mostly are preventable. The main direct causes of maternal deaths are post partum hemorrhage (heavy bleeding after delivery), eclampsia (hypertension), side effects of unsafe abortion and ruptured uterus. Ensuring 2 antenatal visits along with 2 TT shots and clean deliveries could have direct impact on reducing the morbidity. Slightly more than half of one-year old children are fully immunized against measles.

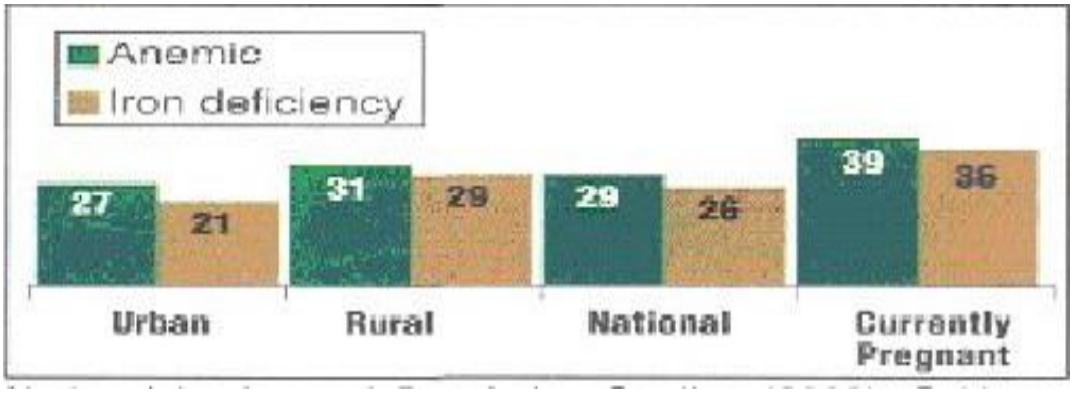
Control of population numbers remains a crucial factor for the health of mother and child. Death of infants under 1 year, account for more than a quarter of ails deaths in Pakistan. About half of these deaths occur within the first month of birth. On an average, 785 infants die each day, mostly due to infections, respiratory illness during the first month and gaiter on due to diarrhea.

Source: Federal Bureau of Statistics (2004).

Figure 6.4: Number of infant, child and maternal deaths in Pakistn, Daily, 2001.

Yet only about 28 per cent of couples in Pakistan are currently using any method of family planning in Pakistan, it has increased one-third of the figure from 1991 (21 %). It is estimated that the Contraceptive Prevalence Rate (CPR) has risen to 34 per cent in 2004. Despite constant rise in the use of family planning methods, there are a sizeable proportion of couples in Pakistan, who would like to limit or space their families, but are not taking any measures to do so. In other words, one third of married couples in Pakistan have an 'unmet' need for family planning. The reasons for this gap in behavior lie in husband's disapproval, fear of side effects, social and religious constraints and accessibility. One manifestation of high proportion of unwanted pregnancies is indicated by rise in levels of induced abortion. Various studies have estimated the prevalence of abortion to be around 3 - 6 per cent. Due to fear of prosecution, most of these abortions are conducted back doors and under unsafe conditions.

Nutrition Survey of Pakistan shows about a third of the children under five, have adequate body weight. A fifth of the children suffer from severe growth retardation. Health of women in Pakistan as such continues to present a dismal picture, especially of those residing in rural areas. Overall, more than one fifth of women in Pakistan suffer from anemia.



Source: National institute of population studies 2002.

Figure 6.5: Anemia and Iron deficiency among mothers in Pakistan by region.

The situation of the health of women and children needs immediate correction. Since medical facilities for both will continue to prevail for a period of time due to rapid increase in population, emphasis will have to be laid on dissemination of information, training of birth attendants and effective propagation and delivery of family planning practice. The Lady Health Visitors program should be monitored and evaluated regularly and the momentum of program

maintained. The expenditure on health remains one of the lowest in the world. However, an improvement in public health institutions is imperative. The number of facilities and the personnel, particularly in the rural areas and for women, children and the growing number of the aged should be high on the agenda. In the face of the enormity of health needs and limited resources in the public sector, a close collaboration between the public and private sector should be initiated and followed diligently.

CHAPTER VII
LITERATURE REVIEW

7.1 Ali and Zahid (1998) have admitted that high population growth rates increases the proportion of young people. While analyzing the case for Pakistan, they state that in the recent past, high population growth rates have annulled most of the developmental achievements and country remained poor in terms of socio-economic indicators. The paper clearly indicates that low per capita income, illiteracy and poor availability of basic health facilities are outcomes of high population growth. Family Planning Program has been a part of many Development Plans, to bring down fertility rates. It has not produced desirable results, however, in the census of 1998, total fertility rate (TFR) has shown a declining trend and it reflects that transition has begun in Pakistan. It is also asserted that to accelerate the process of transition, concreted efforts should be taken. A complete analysis of the steps taken to contain the TFR, in different developmental plans and public expenditure is also presented in the paper. The examples of Bangladesh and India, the two major countries in the South Asia, have shown that effective policy in this regard have proved to successfully bring down TFR. Another main argument made by the paper is that role of women in determining the family size can also produce desired results. Although no tactical methodology is used in this research paper, however, the case to bring down TFR to achieve results of high per capita income and improvement in socio- economic fields is well analyzed.

7.2 Siddiqui (1998) investigated continuous high population growth rates in Pakistan and found that a very obvious result of this rapid growth rate was an increase in the number of persons less than 15 years of age. This is a serious problem because despite a respectable economic growth, the high growth rate of population has kept per capita income low by international standards. The high fertility rates coupled with declining death rates has created a situation which puts tremendous pressure on the provisions of adequate resources for health, education employment and other social programs. The reason is that a rapidly growing labor force requires a continuous and sustained expansion in economic activities just to leap the current level of income. All the efforts of economic development are eaten up by ever increasing population. The paper advocates controlling population growth rates which is a serious problem.

Population is both a challenge and a constraint as well to development prospects of Pakistan and this challenge must be met with real sense of purpose and commitment. The study also illustrate that many developed countries have found a source of further growth due to their industrial advancement but the countries like Pakistan are still struggling for recourses to provide even basic necessities like health. The first step to solve any problem is to acknowledge that the problem actually exists. The paper concluded and recommended that at all levels and awareness should be created that Pakistan is facing this problem. This may achieve economic development which is a multidimensional concept. Population problem requires great commitment and a strong policy should be adopted to get desirable results. However, the paper could not make comparison with those countries developed at fairly high population growth rate and the reasons why these countries made progressed on economic front either it was internal organizations and reforms of systems etc.

7.3 Kelly and Schmidt (1994) have shown that high population growth rates have worked as brakes to impede average growth rates when calculated as per capita gross domestic product (GDP). The study presented a very good analysis of poor and less developed countries and a strong negative relationship was found between high population growth rates and GDP. The results were established for the periods of 1960s and 1970s. Another important consequence of high fertility rate was high dependency burden that was caused by increased number of young people added to the population. At the same time, it exerted pressure on government expenditures further cutting growth of GDP. Throughout the period (i.e. 1960s and 1970s), Pakistan experienced high population growth rates and remained one of the poorest countries. Had the population growth rates been lower, GDP per capita growth rates would have been more positive. During 1960s, industrialization and industrial achievements were idealized by many countries of the developing regions but the question is many of such countries had almost same population growth rate as that of Pakistan but even then their economic growth was better than Pakistan's.

7.4 Amjad (1992) has analyzed the alarming situation of population explosion in employment perspective. He showed that the most direct and socially explosive effect of this population increase was is on the employment scenario. As Pakistan will require creating 2 to 3%

jobs every minute in 1990s because population of Pakistan will be increasing by 1.25 million annually in this period. This study only highlighted the effect of high population growth on employment situation and neglected other economic development obstacles like adverse effects of population growth on health sector, education provisions, etc. This paper analyzed the employment scenario during 1990s but could not take into consideration high GDP growth from 2000, onward with same PGR during 1990s.

7.5 Barro, 1996, has pointed out that for a starting level of real per capita GDP; the growth rate is enhanced by higher initial schooling and life expectancy, lower fertility, lower government consumption and low inflation etc. For given values of these and other variables, growth is negatively related to the initial level of real per capita GDP. He based his empirical findings for a panel of approximately 100 countries from 1960 to 1990 i.e. for 30 years' experiences of such countries with different cultural, political and social back grounds.

7.6 Afzal, 2008 examined the case of population growth and economic development in Pakistan. The rapid population growth is a real problem for the economy because it contributes to lower investment growth and diminishes the saving rate. Foreign investment and export promotion have only a small impact on Pakistan's economic growth. Owning to its rapid population growth, Pakistan has among the world's highest dependency ratios. Policy makers can address these serious economic consequences of rapid population growth by investing in family planning services. High population growth has become an important limiting factor for achieving the overall development goals. Pakistan's situation cannot be compared with the developed and sparsely populated countries (e.g. Canada) situations as the two are divergent. Manpower export of the exploding population is not possible because already many millions Pakistanis are working abroad notably in oil-rich Middle Eastern countries and the remittances are a significant source of foreign exchange earnings and form an important part of the current account balance. Resources that could be used for productive purposes are diverted to satisfy the consumption needs that have adversely affected the national saving rate.

7.7 Alam et al. (2007) have dilated upon impact of population growth rate and other factors on environmental degradation, simultaneously. A relationship has been established to prove that environmental degradation is dependent on the level of energy usage, carbon dioxide emission,

rapid population growth and urbanization. The industrial environmental degradation is a very complex global issue which is resulting in changed climate. Environmental degradation is expected to have considerable effects on the natural recourse system, environment, human sustenance and economic activities. The results of economic modeling showed that rapid urbanization and increased population growth in Pakistan has resulted in environmental degradation and hampered economic progress in the long run. Panel data of 1971 to 2005 have been utilized to investigate the relationship among energy intensity, carbon dioxide emission, population growth and urbanization and sustainable economic development.

7.8 Siddiqui (2001) has emphasized on devising an effective and integrated population policy for Pakistan. Despite very modest progress, the overall population growth rate is still very high. A broader view of population growth and economic development is suggested instead of a narrow family planning process. The paper is a modest attempt at understanding the importance of population growth rate and its relationship with economic development in Pakistan. The country experiences with population issue and economic development has been a case of missed opportunities. It also poses serious implication for future. The paper also emphasizes the role of integrated population policy and terms it essential for maximizing the positive outcome of whatever development efforts are contemplated. Changing concept of development right from 1950s to the present era and different population theories has been discussed. The paper very rightfully makes a case that population control is necessary for economic development, because it poses adverse effects on developmental efforts i.e. poverty, education, gender inequality, health and malnutrition. It is also suggested that population policy must be given top of priority in development process of country.

7.9 Boadu (1994) while analyzing the case for Ghana points out that without removing the obstacle of rapid population growth, economic improvements will occur more quickly. In Ghana population growth rate is 2.9 %, however, the previous governments of Ghana did not take the warning seriously that rapid population growth would be an obstacle towards economic development and the issue was recognized as a real problem very late. Fast growing population increases dependency burden and governments liability to spend more on education of children being added to population continuously and enormously. Besides, it also increases infant

mortality rates and maternal morbidity rates due to increased pregnancies. Giving population trends of Ghana, it is also pointed out that fast growing population (2.9 %), increasing fertility rates and declining death rates have increased competing demand of land for economic and residential purposes. Effects of rapid population growth on migration, population density and rural urban changes are also discussed in the study. The results of the study have suggested that population growth rates must be reduced and development of Ghana would be easy if the problem of population is solved. The paper is a good attempt to examine the demographic situation of Ghana, an underdeveloped country of southern Africa but comparison of the natural resources and exploitation of the available natural resources were not made part of discussion. There are some countries in the world with comparatively high population growth rate but the abundance of natural resources and its proportional income from such resources with the GDP per capita is a relevant factor.

7.10 The United Nations World Population Conference held in Bucharest in 1974 adopted a world Population Plan of Action that asserted "population and development are interrelated, population variables influence development and are also influenced by them". The plan recommended that "population measures and programs should be integrated into comprehensive social and economic plans and programs and this integration should be reflected in the goal, instrumentality and organizations for planning within the countries. These are general policy guidelines in the context of the overall population increase in the world which can be followed as general principles but cannot be adopted strictu sensu.

7.11 Lloyd and Brandon, (1994), have pointed out that of a large family with many younger siblings; girls are less likely to be enrolled in schools than boys in Ghana. Seeking future security in their old age, parents prefer to educate sons to daughters. Girls are also more likely than boys to drop out of school to care for younger siblings. The probability of dropouts for boys increases as the number of older siblings increases. The study concluded that high fertility reduces educational attainment at higher levels and increases the workload and financial responsibilities among older siblings. This fact prima facie appears relevant to the case of Pakistan and the author witnessed personally few examples in his villagiate set up but this requires further in-

depth study before formulating it as a principle to be incorporated in the population policy of Pakistan.

7.12 Pernia et al., (1999), reviewed the continuing debate on the relationship between population growth rate and economic development. The study focused Philippines as a case study. It was observed that the history of economic development in Philippine has not been very smooth. The population of Philippines was growing at a rate of 2.5%, in 1995, in contrast to its neighbors. Population policy of the country received weaker support from political leadership in 1970s and 1980s, however, later on, the situation improved. The study discussed the interaction of population growth with socio-economic development, investment on human capital, poverty and environmental degradation and showed that the high population growth rates affected all these variables. The reason is the fact that population problem impedes economic growth, lowers per capita income, increases expenditure on education and health and creates environmental degradation. It suggests that problem can be addressed by delayed marriages, altering fertility preferences and well targeting human capital investments. This paper has many similarities in term of Pakistan's population trends especially weak political good will and back-up for the population policy, low per capita GDP expenditure for making human capital and early marriages. The fanatic pedagogues in Pakistan occasionally passed verdicts in their Friday sermon and on private consultation that a boy or a girl should immediately be married just on attaining the age of puberty. This concept of early marriage is preached to avoid secret sexual relation which is *zina;* one of the great sin in the religion. Average age of marriage in Pakistan is lower than the average age of marriage in the highly industrialized nations.

7.13 Bloom and Williamson (1997) analyzes the basic relationship between growth in per capita income and population, using convergence pattern or technology gap model. It was found that demographic factors were important determinants for economic development. However, the study emphasized on the issue by considering indirect effect of population increase i.e. increased dependency burden. This paper has also neglected impact of economic growth and development on the per capita income and thereafter decline in the population growth which implies that starting point for the economic growth is not the fiercely pursuing strict control over population growth but other factors which may reforms of the internal national institutions and inculcating

in the people cardinal moral norms like dedication to work, work hard, working honestly, with sense of nation building, patriotism and passion for development etc.

7.14 Another important effect of rapidly increasing population was investigated by Shultz (1987). It was found from the results that population growth does affect investment and expenditure on human capital particularly on education and health. Although enrolment in educational institutions increased but per capita expenditure decreased with high population growth rates. Observations made in the paper are applicable in case of Pakistan. Pakistan could not increase its per capita expenditure on education and health due extra expenditure on defense installations. The security of the people was preferred over their economic well being. This is due to four wars with neighbor of Pakistan, India in 1948, 1965, 1971 and 1999 with 50 years presence of forces and skirmishes round the year at the highest points freezing points of Himalaya in Kashmir region, ten years war with the then world super power former USSR from 1979 to 1989 and engagement of armed conflict with the terrorists in the northern part of Pakistan for last eight years.

7.15 Ahlburg (1996), investigated the effect of population rise and high fertility rates on income and poverty. He found that particularly in Latin American and African countries, the increase in population also increases labor force but at the same time employment for such rapid growing population become a problem that is difficult to handle. The study also commented on the relationship between high population growth rates and human capital investment and physical assets e.g. land, poverty, income distribution etc. The author argued that high population growth rates are negatively correlated because in large families, quality of health and education deteriorates. It was suggested that alternative techniques for handling the issue (i.e. provision of social services to the broader segments of society) should be adopted.

7.16 A study by Alam et al. (2007) discussed the problem of population and provides some empirical evidence to support linkage between economic development and population growth. The annual population growth from 1965-1984 for low income countries remained 2.25%. Cross sectional approach has been employed for the studies. Government should increase the educational opportunities for the poor, job opportunities for the women, better health and

nutrition facilities etc. This is typical study of population growth in Pakistan and its impact on the economic growth without comparison with the other countries with variety of experiences. The keenness of educated fabric of society for accelerating economic growth moving at snail pace is the main factor of only studying the case of Pakistan and it may contain the element of bias and prejudice. Perfection lies nowhere in the world. We need to meticulously study the economic models adopted by various fast growing countries of the world in toto and should examine their components or economic indicators and their applicability in context of Pakistan.

CHAPTER VIII

METHODOLOGY & EMPIRICAL EVIDENCE

8.1 DATA AND METHODOLOGY

The study is an attempt to analyze the impact of increasing population which lowers the development process especially in LDCs. Twenty-four (24) year's time series data has been collected from the year 1982 to 2005 by the Economic Survey, Government of Pakistan, Finance Division. Ordinary Least Square (OLS) estimation technique is used to analyze the negative relationship between population growth and the factors involved in development process of the economy. The simple linear regression model is used to analyze the linear relationship between the factors of economic development and the population growth simultaneously. 't-statistic' is used to check the significance of the simple linear regression equations and to test null hypothesis of $\beta = 0$ against the alternative hypothesis that of slope coefficient (β) is not simultaneously zero, at 1% level of significance.

The generalized regression equation is as under:

$$\mathbf{Y_i = \beta_1 + \beta_2 X_i + \varepsilon_i} \text{ *}$$

Table 8.1 List of Variables and their Description

Variables	Description
PP	Population Growth Rate (X)
GDP	Gross Domestic Product (Y1)
π	Inflation Rate (Y2)
μ	Unemployment Rate (Y3)
M	Import (Y4)
X	Export (Y5)
DE	Development Expenditure (Y6)
LFP	Labor Force Participation Rate (Y7)
EH	Expenditure on Health (Y8)
EDU	Expenditure on Education (Y9)

* International Edition, Gujrati, N. Damodar, "Basic Econometrics" fourth edition.

Simple Linear Regression of POP on all factors was calculated and the results regarding regression coefficients, standardized regression coefficients, standard error of regression

coefficients, t-statistics, p-values and coefficients of determination for each model are presented in the following table for each model.

Table 8.2: Simple Linear Regression Model

Sr #	Models	Regression Coefficient	S.E. of Estimates	Standardized Reg. Coefficient	t	p-value	R^2
1	Regression POP on GDP	-155344	31104.001	-.729	-4.994	.000	.531
2	Regression POP on π	628.502	150.047	.666	4.189	.000	.444
3	Regression POP on μ	.079	.009	.873	8.416	.000	.763
4	Regression POP on M	994.625	103.799	.898	9.582	.000	.807
5	Regression POP on X	-25226.4	8650.345	-.528	-2.916	.008	.279
6	Regression POP on DE	2.031	.352	.776	5.770	.000	.602
7	Regression POP on LFP	-.011	.009	-.258	-1.253	.223	.067
8	Regression POP on EH	.017	.032	-.110	-.520	.608	.012
9	Regression POP on EDU	.034	.109	.066	.310	.760	.004

8.2 EMPIRICAL EVIDENCE

The results indicate that only LFP, EH and EDU are found to be insignificant whereas the other factors like GDP, μ, π, M, X, DE are highly significant to the population growth.

The regression results depict the impact of population growth (PP) on the factors involved in economic development of the country. The variables selected for the study have major contribution in development process of the economy. The expected sign of coefficient is negative showing inverse relationship of the Gross Domestic Product with Population Growth. By increasing Population Growth of the country, Gross Domestic Product lowers down as country's economic activity is affected through decline in country's living standard, by variation in private consumption, gross investments, government spending and net exports, similarly, cost

of final goods and services is also affected due to increase in its local demand. It presents the lower economic development.

Population Growth is positively related to the Inflation Rate showing that the growing population uplifts the rate of inflation. Due to rising demand of goods & services against its actual supply, the cost of goods & services increases resultantly higher the rate of inflation and reduces the purchasing power of money. It reflects the lower economic development by discouraging the investment and savings of a country.

Growth in population positively effects unemployment rate, by increasing population growth, unemployment rate will also increase, growing population creates the need for more job opportunities to meet the basic requirements of rapidly increasing population. Although, decreasing unemployment rate is the basic requirement of a developing economy, but in LDCs like Pakistan, it is difficult to lower down the unemployment rate by creating more job opportunities where there is slow process of economic development due to continuous increase in country's population.

By applying linear regression, the import factor is positively related to the population growth. The requirements of people to get better facilities of life increases to improve their living standard along with to fulfill their demands for basic as well as luxurious goods resultantly grow up the imports of country. Growing population leads to the less/decreasing process of exports of a country which is the consequence of increasing demand of locally produced goods due to rapidly growing population as well as resource constraints in less developed country. For a developing or especially an agrarian economy, it is difficult to maintain its exports of eatables while fulfilling the rapidly increasing requirements of locally demanded consumer goods. Growing population also increase the development expenditures of a country. The process of economic development of a developing country is hampered by increasing public expenditures along with less national savings which also increases public debt.

Although, Labour Force Participation is not significant as (LFP, b= -.011) with (p=.223) but it is just so, the coefficient is negative would indicate the more growth in population is related to the lower labour force participation.

Similarly, although, Expenditures on Health is not significant as (EH, b= .017) with (p=.608) but it is positive to growing population. Growth in population would increase Expenditures on Health. Similarly, Expenditure on Education (EDU) is also positively related to

the population growth rate. Although, it is insignificant to the population growth for this study, but it is just indicating that the population growth would increase the Expenditures on Education. The contribution of these factors involved in the model proves the significant negative/positive relationship with population growth of the country.

CHAPTER IX
CONCLUSIONS AND RECOMMENDATIONS

9.1 CONLUSIONS

The factors GDP, μ, DE are highly significant and supported by the literature in the study like Kelly *et al*., (1994), Amjad (1992), Alburg (1996), Alam *et al*., (2007). However, the variables X, M are also significant to the population growth. Although, the literature regarding the support of these indicators is not available but their natural interpretation suggests the significant role in economic development of Pakistan. The variable π is also highly significant to the population growth and lower inflation leads to growing GDP and supported by the literature in the studies like Barro (1996). In other words, it also states that decreasing population may also decrease inflation rate as described in this study which represents economic development of the country.

On the other hand, other factors EH & EDU are supported by the literature given in the study and also found significant, for instance Siddique (2001), Boadu (1994), Perri *et al*.,(1999), Shultz (1987), Alburg (1996), Alam *et al*., (2007). But these factors are found insignificant for this study; there may be the reason of validity and reliability of data available against these variables or awareness/importance of these factors for the people in Pakistan, e.g. people are not health conscious especially those families with poor and illiterate background or they might be rarely in contact with professional doctors to get better treatment of disease. Similarly, due to poverty prevalence among such families and below the average literacy ratio among mothers (i.e. 32%) to motivate their children for education, there may be no urge for educational attainment rather they prefer earnings on daily wages through juvenile employment especially in backward regions/pockets of the country.

But it is a continuous experience as supported by different research studies, when the population of a country grows, requirements of basic health services also increases which are usually below the average in developing countries. Resultantly, Expenditure on Health relatively increases to meet the problems in providing basic health services. Moreover, Expenditure on Education (EDU) is also positively related to the population growth rate, but it is also essential to determine the large percentage share of the expenditures made on education in a less developed

economy along with its depressing economic condition. The economy like Pakistan which has geographical, strategic and economic dilemmas never musters up courage to overcome its very basic issue. Because in LDCs like Pakistan, still the percentage of funds allocated for this sector remains lower (for example in Pakistan since its birth in 1947, mere 1.9% to 2.1% of the GDP is allocated for education which is far below the minimum threshold of 5% as prescribed by the UNESCO) which leads to the unskilled human resource and less participation of labour force. Thus large population about 70% living in backward areas remains deprived from basic education facilities.

LFP is also insignificant to the population growth. Although, it is not supported by literature in the study but the coefficient is negative which would indicate the more growth in population is related to the lower labour force participation. Number of unskilled adults and juveniles keep on increasing hence burden on economy is raised. It is also expected that the large number of human cannot be utilized as an effective labour force due to increasing unemployment rate resulting at no virtual human capital especially in remote areas of developing country.

In the dearth of these basic requirements, the process of economic development comes to a halt. Explosion of population growth has negatively affected development process and sustainability of growth rate.

9.2 RECOMMENDATIONS

The drive to control population comes from within. Though the role of government can't be ignored yet a two pronged strategy needs to be adopted at all level i.e. lowering the population growth rate and increasing resources at optimum utilization.

Government of Pakistan is required to focus on adopting scientific, advanced and medicinal means to control population and create awareness through a campaign over electronic, print and webpage media, social gatherings, religious pedagogues, respectable and influential persons and opinion builders; doctors, teachers, professors, tribal heads, elected representatives and government officials. Once the people are convinced, they may be provided with support they require.

On the other hand, resource management, financial, social and human, is inevitable. Every individual needs to join process of development rather than relying on others. The

problem needs to be realized, assessed and treated in a proper manner. Only then the economic development and targets of economic growth can be achieved.

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