



History of PIDE Series-4

# Population and Development

## Demographic Research at PIDE



Naushin Mahmood



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# **Population and Development Demographic Research at PIDE**

**Naushin Mahmood**

**PAKISTAN INSTITUTE OF DEVELOPMENT ECONOMICS,  
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## CONTENTS

	<i>Page</i>
<b>I. Introduction</b>	1
<b>II. Refugee Population Influx and Spatial Distribution</b>	2
<b>III. Population Growth Scenario</b>	3
Fertility Trends and Household Reproductive Behaviour	5
Population Policy and Programme	8
Mortality and Health	9
<b>IV. Migration and Urbanisation Patterns</b>	11
Urbanisation Trends	13
<b>V. Education and Demographic Change</b>	15
<b>VI. Labour Force Issues</b>	16
<b>VII. Population and Poverty</b>	18
<b>VIII. Population Census Data Evaluation</b>	19
<b>IX. Conclusions</b>	20
<b>References</b>	21
<b>Abstract</b>	29

### List of Table

Table 1. Population Size and Growth Rates: Census and Adjusted Rates, 1961–98	4
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### List of Figures

Figure 1. Total Fertility Rate Estimates for Pakistan: Various Sources	6
Figure 2. Estimates of Infant-child Mortality Rate from Various Data Sources, 1960–97	10
Figure 3. Growth Rates of Urban and Rural Population of Pakistan, 1961–98	14

## I. INTRODUCTION

In addressing the economic and social issues, Pakistan Institute of Development Economics (PIDE) has remained conspicuous in carrying out theoretical, empirical and policy relevant research since its inception in the late 1950s. With a 50-year history of contributions to enhancement and dissemination of knowledge about Development Economics, it is one of the few research organisations to have pursued academic excellence and professional autonomy to respond to educational and policy concerns. While ascertaining the structure and growth of the economy and analysing poverty and income distribution issues, the study of demographic change and analysis has been seen as relevant to economic and social development, and it has been an integral part of its research agenda. The evolution of demographic research at PIDE reflects the thinking about the complex relationship between population and development, and has identified many issues that are still a subject of scholarly debate in that context.<sup>1</sup> The general consensus<sup>2</sup> supported the view that a comprehensive approach encompassing both high-quality reproductive health services (including family planning) and broad development efforts in terms of improved educational levels, productive employment, infant/child mortality, and lessening of poverty and gender inequality are the best ways to deal with population and development interactions.

The unprecedented increase in Pakistan's population size until the 1980s presented many development challenges for the economy in terms of educating and productively employing the increasing labour force. The focus of demographic research in the 1980s was therefore on

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<sup>1</sup>Two basic propositions were held to explain the effects of population change on development. The first was that 'development is the best contraceptive', as was clearly asserted in the 1970s; the second is the opposite, proposing that direct interventions such as family planning services are the answer to bring down population growth rate to yield development dividends.

<sup>2</sup>The International Conference on Population and Development (ICPD) held in Cairo in 1994 was instrumental in defining the relationship between population and development and encouraged adaptation of a holistic approach to deal with population issues. PIDE research agenda aligns well with that proposition and has focused on examining various aspects of population and development interlinkages, covering topics of fertility, family planning and its determinants, labour force, human resource development, migration and urbanisation, and gender dimensions of development.

issues related to fertility decline, absorption of labour force in market, and out-migration of skilled manpower. With the advent of fertility transition in the 1990s, PIDE research evidence enriched the ongoing debate on the effects of demographic change on the economy and society at large. Over the years, the scope and dimensions of demographic research at PIDE enhanced and encompassed a broader analysis of development paradigm of the time where questions on poverty reduction strategy, education, health, and gender equality issues were addressed as embodied in the Millennium Development Goals (MDGs) agenda around the world.

This study views PIDE's contribution to demographic research as far back as the 1950s and points out the main messages it offers for effective policy development. The analysis is based on research output produced and published as part of the Institute's work program with the objective to highlight those parts of research that have contributed to a better understanding of the population and development discourse and reflect the thinking about the changing demographic scenario in Pakistan.<sup>3</sup>

## **II. REFUGEE POPULATION INFLUX AND SPATIAL DISTRIBUTION**

In early years of PIDE existence, the 1960s and 1970s, Pakistan's demographic situation was characterised by high levels of fertility and falling mortality rates, resulting in population growth rate of more than 3 percent—being one of the highest in the region. The influx of refugee population in the post-partition period had affected the size and spatial distribution of population. At this time, the reckoning of reliable population estimates including the vital rates was one of the major concerns of development planning both at the macro and the micro levels. The population censuses of 1951 and 1961, being the major data source for analysing demographic situation, were limited in scope to elicit direct information on births, deaths and migration patterns. Based on these data, PIDE demographic research provided estimates of displaced persons and immigrant population and their

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<sup>3</sup>It may not be feasible to make a comprehensive analysis of demographic research done over all these years. This volume reviews PIDE's research outcome in population and development and highlights findings in view of various demographic issues and topics relevant in that context. PIDE's historical evolution from a think tank to a university and its contribution to development thinking and to policy-making are described in: [Naseem (2008); Khan (2008) and Kemal (2008)].

distribution in different parts of the country. The evidence showed that the net balance of immigrants to Pakistan was about two million and most of them settled in the provinces of Punjab and Sindh.

A pioneering demographic research output in the 1960s came with a comprehensive study, *The People of Karachi: Demographic Characteristics*, based on analysis of the sample survey data collected as part of PIDE research activities. The findings showed that Karachi's population growth rate was unusually high at 10.7 percent in 1951 and 6.0 percent in 1961 with four-fifths of in-migrant population as an effect of the partition of the subcontinent. The study also highlighted that the city population had diverse demographic, economic and migration characteristics which was important for understanding the structural composition of a large metropolitan city for effective urban planning and development. This work is well-cited as a benchmark study on Karachi metropolis [Hashmi (1965)]. With the availability of data from the censuses, a comprehensive study by PIDE, *The Population of Pakistan* was produced which brought together, in one volume, detailed information on population size, its geographical/spatial distribution, and changes in components of population growth with the projected population estimates providing useful basis to analyse its implications for policy and development planning [Afzal (1974)].

### III. POPULATION GROWTH SCENARIO

Because of a rising population growth rate in the country, a major policy concern was to reduce it to lower level to nullify its adverse effects on socio-economic development. PIDE's demographic research in early years focused mostly on the estimation of population growth rate and population distribution using the available census data, and on keeping track of changes in fertility and mortality rates. To begin with, *The Population Growth Experiment (PGE) Project: 1962-65*, carried out jointly by PIDE and the Central Statistical Office (CSO), Government of Pakistan was a pioneering effort in this regard that provided benchmark figures of vital events and rate of natural increase for Pakistan and its provinces.<sup>4</sup> In the absence of a systematic vital registration system in

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<sup>4</sup>Based on these data, various research papers / reports were prepared on estimates of birth and death rates and population growth rates for Pakistan, including the then East Pakistan (now Bangladesh), while the salient findings of this project were documented in the final report of the PGE: 1962-65 [Farooqui and Farooq (1971)]. The involvement of an international advisory team at stages of sample design, estimation procedures, and preparation of final report was a value added to the execution of this endeavour.

Pakistan, these data supplemented the information provided in the censuses to measure birth and death rates and population growth estimates during the 1960s, and produced some technical research including the preparation of Life Tables, Nuptiality Tables, and age-sex pattern of fertility and mortality rates [Krotki and Khan (1976); Yusuf (1969); Afzal and Iftikhar (1974)]. Furthermore, the study on *The Population of Pakistan* provided evidence on inter-censal population growth rates and the socioeconomic characteristics of population with insights into the inadequacies of demographic data, especially in estimation of fertility and mortality differentials [Afzal (1974)].

The precise estimation of population growth rate remained a contentious issue until the 1980s due to fluctuating patterns of fertility and mortality rates from various data sources. PIDE research provided evidence on the trends of population growth rates and the factors contributing to that growth, which gave useful basis for population policy formulation. An important conclusion that emerged from in-depth analysis of data from various censuses was that the population growth rate increased during 1961-1986, from 2.6 percent to 3.5 percent, because life expectancy improved while the level of fertility remained constant, and it declined to 2.6 percent again during 1990-2000 because fertility declined rapidly during this period and life expectancy stagnated. These findings were derived after adjustment of census data for enumeration and reporting errors, and the results were somewhat at variance with the reported inter-censal population growth rates [Table 1 as quoted in Feeney and Alam (2003)]. This evidence suggested that the reported data in censuses and surveys needed assessment of its quality and should be used with caution.

Table 1

*Population Size and Growth Rates: Census and Adjusted Rates, 1961–98*

Census Year	Population Size (in 000s)		Population Growth Rates	
	Census	Adjusted/Projected	Census	Adjusted/Projected
1961	42,880	42,880	2.4	2.6
1972	65,309	58,840	3.6	3.0
1981	84,254	76,429	3.0	3.4
1998	132,352	132,074	2.4	2.6

Source: Feeney and Alam (2003).



With the changing development paradigm, PIDE research focus shifted from pure demographic analysis to examining population and development inter-linkages covering topics of fertility, family planning and its determinants, demographic transition, mortality and health, labour force, human resource development, migration and urbanisation that are briefly discussed below.

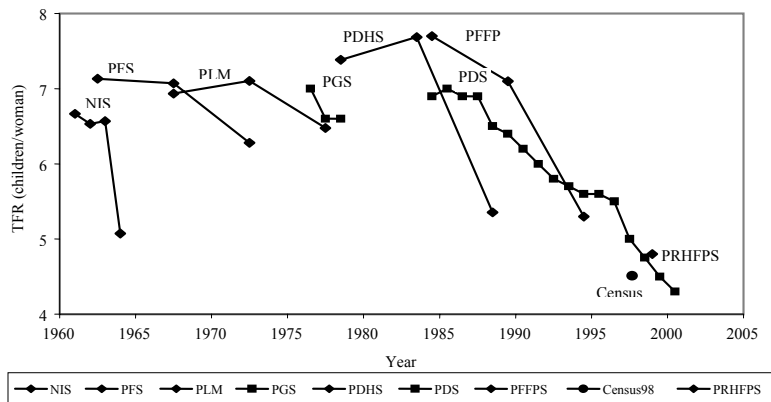
### **Fertility Trends and Household Reproductive Behaviour**

Studying trends and determinants of fertility remained a priority area for research for almost three decades indicating large urban-rural and regional differentials. The policy argument that emerged was that constant high fertility at aggregate level undermines development and exacerbates poverty, and women's education was a key variable to bring down fertility in Pakistan.

Although fertility showed gradual decline over the years, its level and trend estimates were critiqued by researchers at PIDE in terms of their reliability because different demographic and fertility surveys showed varying results covering the same time period. It was observed that the pattern of estimates was inconsistent and non-comparable among different sources, thereby raising questions about the pace and onset of fertility decline in Pakistan. A major contribution of PIDE research through a rigorous analysis of all data sources<sup>5</sup> showed that the level of fertility in Pakistan apparently remained constant at 6.8 children per woman from 1961 through 1987, making this finding consistent with the rising rate of population growth during the same period. The fertility decline started around 1988 with a reduction of approximately 2 children per woman in each decade through 2000 and later years, and so did the population growth rate (Figure 1). This research clearly documented the rapidity of the fertility decline as indicated by the Pakistan Demographic Surveys (PDS), and is considered to be one of the fastest declines in comparison with some other countries experiencing fertility transition [Feeney and Alam (2003)].

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<sup>5</sup>Fertility estimates derived from various nationally representative surveys indicate fluctuating pattern with a relatively more consistent decline as reflected by the PDS data from 1988 to 2000 and later years.

**Fig. 1. Total Fertility Rate Estimates for Pakistan: Various Sources<sup>6</sup>**

Studies analysing the reproductive behaviour at household/micro level showed that among a range of socio-economic factors, more education, especially of women, and access to better reproductive health services lead to lower fertility, making the case for increased allocation of resources for these social programmes, particularly if targeted for the poor and rural families. However, an interesting finding that poor families may not be motivated to reduce fertility because having large number of children may increase household income through child labour, provided the basis to understand complex issue of population and poverty inter-relationships and its implications for implementation of population policy and programmes. In addition, the finding that women bearing more of the costs and receiving fewer of the benefits of childbearing, are not fully involved in reproductive decision-making, and end up resorting to unwanted fertility and unsafe abortions.<sup>7</sup> These studies strongly suggested that promoting policies

<sup>6</sup>Various surveys used in the analysis are: NIS= National Impact Survey, 1968-69; PFS= Pakistan Fertility Survey, 1974-75; PLMS= Pakistan Labour Force, Migration, Migration Survey, 1979-80; PGS= Population Growth Survey, 1971-76; PDHS= Pakistan Demographic and Health Survey, 1990-91; PDS= Pakistan Demographic Survey, 1988-2005; PFFPS= Pakistan Fertility and Family Planning Survey, 1996-97; PRHFPS= Pakistan Reproductive Health and Family Planning Survey, 2001-02 as shown in the figure.

<sup>7</sup>Some of the studies that focused on analysing fertility and reproductive health behavior and its determinants are: Karim (1974); Syed (1978); Irfan (1979); Alam, *et al.* (1983); Farooqui (1984); Sathar and Irfan (1984); Soomro (1986); Ali (1989); Sathar (1989); Mahmood (1992); Sathar and Kazi (1997); Nayab (2005a) and Nayab (2005b).

and programmes that improve the status and autonomy of women, including for example their access to education, paid employment and micro credit would result in lower fertility and improved family welfare besides contributing to reducing poverty.

It has long been assumed by demographers that mortality decline tends to catalyse, with a lag, a subsequent fertility decline—a condition that is at the heart of the theory of demographic transition. PIDE research supplied the empirical evidence that demographic transition is underway in Pakistan with its mortality having begun to decline as far back as the 1950s, while fertility showed decline in recent years of 1990s labelling it as ‘late demographic transition’ scenario. Some studies looked into the issues of retardation in fertility change to seek explanations for delayed fertility transition and its social and economic ramifications.<sup>8</sup>

Though fertility decline is the primary impetus to the change in age composition of population in terms of decline in dependency ratio and increases in the relative share of working age population that generates the ‘demographic bonus’ and creates a window of opportunity for economic growth, it is yet to be determined how this potential opportunity can bring dividends to the economy. PIDE research on these issues indicated that Pakistan is experiencing a once-in-a-lifetime opportunity of demographic dividends which can turn out to be demographic threats if appropriate policies to enhance education up to secondary level, and increase in employment opportunities in combination with acceleration of fertility decline, are not pursued.<sup>9</sup> PIDE research showed that while human capital formation has progressed in Pakistan, especially in urban areas, the situation is dismal in rural areas, especially for females. Low female economic participation across education categories and high unemployment for males and females suggest for a strong youth employment policy and income generating activities to reap the benefits of the ongoing demographic transition. This piece of research has raised important questions about the inextricable links between demographic transition, capital formation, and economic

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<sup>8</sup>PIDE research studies on the subject of fertility transition are: Afzal, Kiani, and Ali (1993); Sathar and Casterline (2001); Arif and Chaudhry (2008).

<sup>9</sup>Some studies to be cited are: Nayab (2008); Arif and Chaudhry (2008); Mahmood (2008).

growth, and how best Pakistan could translate its potential demographic bonus into demographic dividends as exhibited by the East Asian economies during the 1960-1990 period.

### **Population Policy and Programme**

The need for a strong and coherent population policy has always been propagated to influence the components of population growth, especially high levels of fertility in Pakistan. Although an official family planning programme was launched by the Government in the 1960s, its justification and legitimacy as a means to reduce fertility has been contentious. It is generally argued that even though lower fertility brings economic and social benefits to population and the economy, and spacing of children has health benefits, it is presumptuous to expect that individual fertility choices and decisions would change and virtually all families would adopt fertility regulation behaviour. Studies on the analysis of Pakistan's family planning programme showed that nearly five decades old programme efforts achieved limited success in bringing a marked increase in contraceptive prevalence rates and in lowering fertility to desired levels.<sup>10</sup>

The evidence from various demographic and fertility surveys showed that contraceptive prevalence rate, a direct determinant of fertility, was as low as 12 percent until 1990-91, and then gradually increased to 30 percent in 2006-07 when fertility also declined. The research on the impact evaluation of population planning programme suggested that couples' reluctance to accept and practice family planning was related to socio-cultural constraints, desire for large family size, inadequate access and outreach of family planning services, inefficient management of the program; lack of education and limited autonomy of women to make decisions about use of family planning.<sup>11</sup> These constraints of the programme led to the existence of large unmet need for family planning in Pakistan, and it is contended that if this need is met, fertility could be brought down to half of its present levels. These studies strengthened the argument that family

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<sup>10</sup>The impact of population planning programme on changing fertility and contraceptive use behavior was analysed in studies: Green (1964); Green and Krotki (1966); Robinson (1978, 1987); Mahmood and Ringheim (1996); Karim and Zaidi (1999).

<sup>11</sup>Some research on factors constraining the use of family planning: Shah and Kazi (1977); Mahmood and Ringheim (1996); Mahmood (1998).

planning programme needed to crystallise the demand through an effective and efficient service delivery system.

A major concern arising out of this scenario was how to improve the implementation of Pakistan's population planning, both at the policy level to increase allocation of aggregate resources, and at the programme level to increase efficiency and effectiveness of quality services. Research at PIDE supported both kinds of arguments and suggested that 'integration' with health sector for improving services was one solution to the problem, and expanding service outreach to rural population through using networks of the NGO and the private sector was the other [Robinson (1978, 1987)]. This called for a renewed commitment to Pakistan's population issues and its incorporation into national development framework to achieve faster decline in fertility.

### **Mortality and Health**

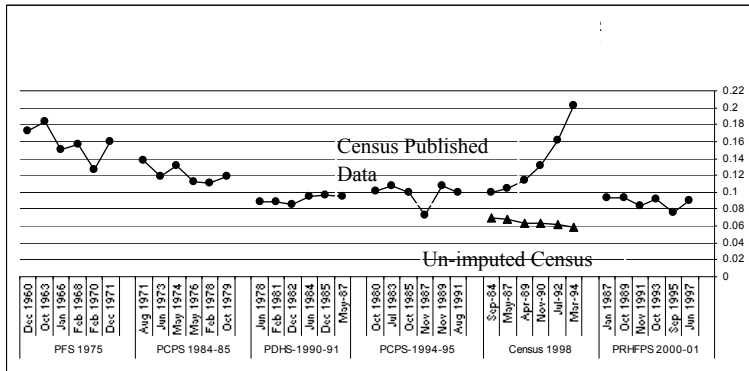
Mortality decline is not only a precondition to initiate the process of demographic transition, it more directly improves growth prospects, either by increasing investments in human capital, or because it is associated with morbidity declines and improved health status that raise productivity. PIDE research on issues related to mortality, morbidity and health has not been as exhaustive as in case of fertility and population planning. The scarcity of data on mortality and morbidity and the problem of quality in its direct estimation limited the possibility of ascertaining trends in mortality. Few studies analysed the infant mortality trends and differentials utilising available data from various demographic surveys that provided evidence of a decline in aggregate measures such as crude death rate and infant mortality rate and an improved life expectancy. The indirectly estimated mortality rates from various sources showed that crude death rate declined to less than 10 and infant mortality rate to less than 100 per thousand live births in the 1990s.<sup>12</sup> A notable contribution of PIDE research on estimation of infant mortality rate was through the evaluation of the 1998 census data which reaffirmed the declining trends of infant mortality rate based on all survey data sources, and pointed out that the reported census data on children ever born and surviving children generated implausible and

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<sup>12</sup>For detailed findings, see Irfan (1986); Green (1987); Afzal, *et al.* (1988); Sathar (1987, 1991); Mahmood (2003).

opposite pattern of mortality estimates (Figure 2). This suggested that the 1998 census data was not appropriate for any meaningful analysis of child mortality unless it was adjusted through the un-imputed data, but could be used to study infant mortality differentials by socioeconomic characteristics [Mahmood (2003)].

**Fig. 2. Estimates of Infant-child Mortality Rate from Various Data Sources, 1960-97**



Source: Mahmood (2003).

Other issues explored in the area of infant-child mortality pertained to analysing differentials by sex and seeking explanations to high levels of infant mortality with its effects on fertility level. The research on this issue established a strong positive relationship between infant-child mortality and fertility at a time when fertility change was resisted, and found that the tendency to compensate for child death was stronger among couples with a male infant death than among those with female child losses, supporting the argument that son preference is important in influencing fertility of couples.<sup>13</sup> The strong evidence that emerged in explaining high infant mortality showed that mother's education, better nutrition and health care practices, and spacing of births were effective means of reducing, to a large extent, high levels of infant mortality and improving maternal child health.<sup>14</sup>

<sup>13</sup>For evidence on the relationship between infant-child mortality and fertility, see Alam (1974); Rukanuddin (1982); Sathar (1992).

<sup>14</sup>Research studies that focused on determinants of high infant-child mortality are: Sathar (1987); Mahmood, (1994); Bennett (1999); Arif (2004).

#### IV. MIGRATION AND URBANISATION PATTERNS

The widely held view that migration and urbanisation are closely linked to development and constitute complex processes that are deeply rooted in the socio-economic relations of society, is supported by PIDE research on issues related to population mobility and its positive and negative effects on the economy. While the phenomenon of migration has been of interest to many, PIDE research was one of the most extensive and pioneering of such studies. Of particular importance for development thinking was the research on the size, composition, and regional patterns of human resource mobility within and across Pakistan's borders that influenced labour market structure and productivity levels, while income and capital flows through remittances affected the income distribution, consumption and investment behaviours of the families left behind.<sup>15</sup>

Admittedly, processes and patterns of migration and urbanisation have remained much less researched areas compared to other components of population change, probably because of the scarcity of appropriate data and the complexities involved in precisely reckoning the ever changing flows of population mobility and its socioeconomic ramifications. One of the pioneering work that generated data and research on migration was *The Population, Labour Force, and Migration (PLM)* study under which a nationally representative survey was undertaken in 1979-80 that integrated questions on the dynamics of these three components of Pakistan's population.<sup>16</sup> These data provided information on both internal and international migration estimates and highlighted important dimensions of the incidence and patterns of migration flows in relation to socioeconomic development. The research output produced from the PLM survey data provided useful insights into the issues surrounding poverty and household demographic behaviour, migration patterns and its relation to development.<sup>17</sup> The findings conformed to the argument

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<sup>15</sup>For detailed findings of studies on the interrelationships between migration and development, and patterns of international migration with its socioeconomic effects, see Abbasi and Irfan (1997), Arif and Irfan (1997); Irfan, Demery, and Arif (1981).

<sup>16</sup>This study was implemented through a PIDE/ILO project. The survey covered 10288 households wherein each household was administered four different questionnaires on Labour Force, Migration, Fertility, and Income and Expenditure to gather comprehensive information on the subject. For details of the survey and its household characteristics, see Irfan (1981).

<sup>17</sup>The research reports produced from these data on multiple topics of reproductive behaviour change, labour force dynamics and population movements within and across the borders of Pakistan are not discussed in detail here. All those studies are available on PIDE website and its information resource centre.

that rural to urban migration takes away the young and better educated workers bearing negative effects on productivity levels of rural agricultural sector. Moreover, remittances sent back were mostly spent on consumption expenditures by the recipient households, resulting in low rate of return on the investment made on out-migrants.

With a massive exodus of Pakistan's workers to the Middle East during the 1960s and 1970s, and with rising trends in brain drain in later years, PIDE's research on the subject was enriching and policy relevant in terms of assessing its impact on Pakistan's economy through remittances, savings and investment behaviour. A comprehensive study on *Labour Migration to Middle East and its Impact on the Domestic Economy* focused heavily on the volume and use of remittances with a cost-benefit analysis of international migration, based on primary data generated by five different surveys of migrants and their households.<sup>18</sup> This pioneering study provided data on the number of migrants to the Middle East with elaborate information on their occupational composition, remittances and its use, and the impact of emigration on domestic labour market, wages and output. The analysis of these data showed that more than sixty percent of the remittance money was consumed for household expenditures, and shortage created by migrant workers was a loss to the economy, resulting in worsening of income distribution during that period [Gilani, *et al.* (1981)]. Subsequently, some studies provided the evidence that the decline in domestic saving rate as a result of increase in workers' remittances was due to problems in the accounting procedures than that of a behavioural effect, and that the contribution of remittances to the national economy were apparent in terms of reduced current account deficit, improved debt-servicing ability, and the bulk of savings brought back home by return migrants to be invested either in agriculture or real estate enterprises [Amjad (1986); Burney (1987)]. Another research study on the remittances and its impact on saving and investment behaviour of recipient households, based on the 1986 ILO survey, made a break from earlier findings and revealed that migrants and their families directed a considerable portion of remittances into savings and investment, and this process was determined by a few factors such as worker's duration of stay in the Middle East, household economic position before migration occurred, costs and sources of migration financing, and human capital status (education level and skills) of the worker [Arif (1999)].

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<sup>18</sup>The study was conducted by PIDE with assistance provided by the World Bank, UNICEF, and the Government of Pakistan. The research output of the study was produced in three separate reports that are available at PIDE website. For details, see Gilani, *et al.* (1981).



PIDE demographic research produced a pioneering and elaborate analysis of female internal migration and their characteristics at both provincial and district levels during the 1970s and 1980s. This piece of research was produced at a time when information on female migration and its related characteristics was scanty.<sup>19</sup> The evidence highlighted three dominant patterns of migration for inter-district movement of adult Pakistani women which indicated high proportion of women migrating on account of marriage, higher tendency to migrate among older single women for employment purposes, and among divorced and educated women [Shah (1986)]. Evidence from a recent study produced the evidence that rural-urban migration is no more selective. The tendency towards family migration has increased with considerable proportion consisting of females [Arif and Hamid (2007)].

### **Urbanisation Trends**

PIDE research studies in the field of urbanisation, especially in the context of development economics discourse were primarily based on data generated by the different censuses showing trends and patterns of urbanisation,<sup>20</sup> while studies based on sample surveys highlighted the socio-economic characteristics of migrants and reasons of migration to major cities. A comprehensive research study on urbanisation in Pakistan, based on data from population censuses of 1951 to 1981, indicated levels and pace of urbanisation at provincial and district levels and its effects on the spatial distribution [Abbasi (1987)]. The study showed that the tempo of urbanisation was the highest during 1951-61 (23.5) primarily due to huge influx of refugee population to major cities in Sindh and Punjab provinces, which declined to the lowest in 1961-72 (10.4) and then rose again in 1972-81 (12.6) due to the combined effect of increased rural to urban migration and high rate of natural increase in urban areas. The study contributed to a better understanding of urbanisation process in Pakistan and provided the basis to build further research and policy analysis on the subject.

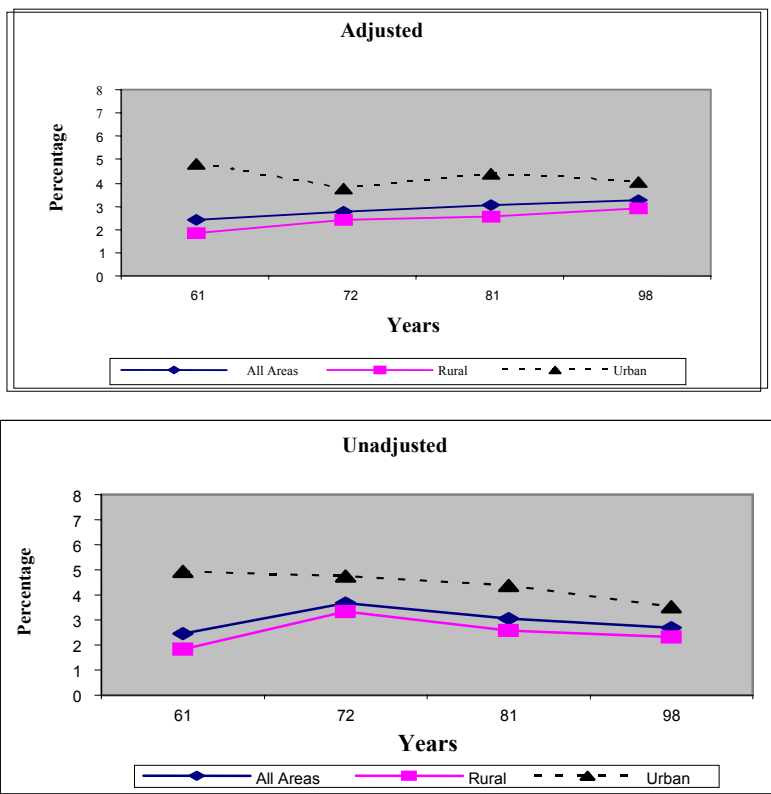
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<sup>19</sup>This work was presented in Chapter 4 of the book, *Pakistani Women: A Socioeconomic and Demographic Profile* by Nasra M. Shah (1986). This was the first ever comprehensive study on female internal migration flows in relation to their socioeconomic characteristics, using data from the 1973 Housing, Economic and Demographic (HED) Survey, and the 1974 Labour Force Survey.

<sup>20</sup>See for example, Helbock (1975); Afzal and Abbasi (1979); Abbasi (1987); Arif and Ibrahim (1998).

In later years, research analysis showed that reclassification of urban areas and inconsistencies in defining an urban locality in various censuses limited the scope of analysing urbanisation trends. The inconsistencies in defining urban areas in various censuses limited the scope of analysing urbanisation trends. The 1998 census data evaluation revealed that the use of administrative-based criterion of an urban area and underestimation of population of large cities reduced the share of urban area in total population by approximately 6.5 percent (Figure 3). However, urban population was mostly concentrated in major cities of Pakistan suggesting for improved urban planning, infrastructure and faster rural development to control unbalanced urban growth [Arif (2003)].

**Fig. 3. Growth Rates of Urban and Rural Population of Pakistan, 1961–98**



Source: Arif (2003).

Considering the scarcity of research on urban issues in Pakistan, more so in the context of rapid pace of urbanisation, PIDE recently produced evidence on many inter-related issues of cities and urban life in relation to growth and development paradigm.<sup>21</sup> Initiating its Cities Research Programme, it produced a volume on *Cities: Engines of Growth* which highlighted issues and critiques of urban development paradigm in terms of its physical and fiscal zoning, city infrastructure and its management, and service delivery to be able to choose better options for urbanisation and research agendas. [Haque and Nayab (2007)].

## V. EDUCATION AND DEMOGRAPHIC CHANGE

PIDE research on the link between demographic change and human capital formation has been done both on macro and micro levels, supporting the argument that decline in fertility allows for an increase in educational investment with its positive outcomes for socio-economic development. However, the micro level evidence of a general negative effect of high fertility on household allocations to education per child is rather limited. Alternately, most of the studies done in this area produced the empirical evidence that educational attainment is critical for lowering fertility and mortality levels, and the benefits of demographic transition could be reaped through improved educational levels of youth and their productive absorption in the labour market.<sup>22</sup>

In this context, research on human resource development<sup>23</sup> gained the attention of many demographers/economists who highlighted the issues in education, health and nutrition with its likely demographic impact. Numerous studies analysed the supply and demand side determinants of primary schooling in Pakistan,<sup>24</sup> and

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<sup>21</sup>PIDE initiated its *Cities Research Programme* through holding a conference in Karachi on the theme, *Cities: Engines of Growth* and produced a volume of selected papers on the subject [Haque and Nayab (2007)].

<sup>22</sup>Some studies to be cited are: Sathar (1984); Arif and Chaudhry (2008); Mahmood (1992, 2008).

<sup>23</sup>Studies in the area of human resource development and labour market analysis also included the estimation of returns to education, demand for skilled education, labour market imbalances and segmentation, education and earnings, child labour issues, etc. which are analysed in Kemal (2008) and are not discussed here.

<sup>24</sup>Some research studies on the supply and demand side determinants of primary schooling in Pakistan are: Burney and Irfan(1991); Sathar and Lloyd (1994); Mahmood, Javaid, and Baig (1994).

highlighted that parental education, especially of mothers, household income, land ownership of households, and quantity-quality trade-off between education and fertility were important in family decisions regarding child schooling. Besides, issues of access and equity in education and questions about the quality of primary level education were also analysed in terms of cost-effectiveness and the efficiency assessed from learning achievements and cognitive skills of pupils.<sup>25</sup> The evidence suggested for an improvement in quality of education in public compared to private schools. A few studies analysed the relationship between education and earnings and indicated very high financial and economic rates of returns to education, especially primary education. The analysis confirmed that each year of education brings approximately 7 percent returns for wage earners, and 15 percent for those who have skilled and technical education [Nasir and Nazli (2000)].

During periods of educational expansion in the 1980s and 1990s, PIDE's research emphasis was on improving gender, age cohort and urban-rural disparities in education that would ultimately increase demand for schooling and reduce fertility and mortality levels among younger age cohorts. The disadvantaged situation of females, especially in rural areas, reflected low school entries to begin with and high chance of discontinuing education before completing primary level.<sup>26</sup> These findings underscore the importance of educating women to reduce their fertility in subsequent generations and suggest for interlinking population and education policies to reduce gender gap in school attendance.

## VI. LABOUR FORCE ISSUES

The demographic dimension of labour force entails changes in population size and structure combined with labour force participation rates. The bulk of PIDE research on labour market issues has concentrated on quantitative aspects of the labour force including the labour force growth rate, changes in labour force participation rates or unemployment rates, age/sex structure of labour force and its correlates, and how these changes and variations are related to

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<sup>25</sup>For details, see Ismail (1994); Arif and Saqib (2003).

<sup>26</sup>Some research studies focusing on these issues are: Sathar (1984); Hamid and Siddiqui (2001); Mahmood (1999, 2004).

demographic characteristics, economic development, and labour market conditions.<sup>27</sup> On the other hand, studies on qualitative issues of labour force such as changes in educational attainment, industry/occupation composition of the work force and wage determination mechanisms appear limited and fragmented.<sup>28</sup>

An important consideration in labour force analysis has been the reliability of data and the precise quantification of labour force participation rates, especially of females. A number of studies undertaken to assess the labour supply measures indicated that different surveys covering virtually the same period showed varying economic activity rates and differed significantly from the census estimates, and this difference was more conspicuous in case of women.<sup>29</sup> Those analyses also identified the reasons of discrepancies from various data sources with suggestions to improve the quality of labour supply measures. A comparison of estimates from different sources challenged many of the premises of the prevailing employment policy as part of the development framework and suggested for reassessment and refinement of labour force participation rates.

Strictly speaking, the problems inherent in the measurement of labour supply indicators were related to the definition of 'economic activity' and its reference period, the enumerator's and respondent's bias, underreporting in categories of unpaid family helpers, self employed female workers, and misreporting of occupations. Despite these caveats, research on labour supply measures indicated a rising trend in work participation, especially for females and its strong association with levels of education and fertility. The rise in female participation in labour force was attributed partly to improved coverage in data collection efforts in this area.

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<sup>27</sup>For some of the studies on supply side issues of labour market in terms of measurement of employment, unemployment rates and its correlates, working conditions of the employed, and labour force size and structure, see Farooq (1975); Shah (1975); Irfan (1981); Ghayur(1996); Arif, Kiani, and Sheikh (2003).

<sup>28</sup>Research studies on labour market analysis in terms of estimating employment elasticities, trends in wage rates and structures, labour productivity and growth, labour segmentation, child labour issues, etc. are described in Kemal (2008) and are not included here.

<sup>29</sup>PIDE research on labour force and employment situation has largely been based on cross-section data generated through the Labour Force Surveys, Socioeconomic Surveys, Population, Labour Force and Migration (PLM) Survey, and the censuses.

Increasing labour supplies and the need to generate additional work opportunities have emerged as formidable development challenge during the 1990s and later years. PIDE demographic research responded to the changing labour market conditions through analysing the employment and unemployment situation and its effects on poverty and rising child labour in the country. A few studies indicated that labour absorptive capacity of the economy has worsened overtime with rising unemployment and underemployment in recent years. Among those employed, a large proportion is confronted with inadequate working conditions at work place. The findings from a study on longitudinal data on labour force dynamics revealed that transition from unemployment to employment has been quite slow in Pakistan, and more than half of the total current stock of unemployment consisted of short-term unemployed, while 15 percent were chronic unemployed. Moreover, factors like age, education, training and work experience showed greater influence on the probability of retaining employment, suggesting for provision of skill development opportunities to deal with issues related to unemployment.<sup>30</sup>

## VII. POPULATION AND POVERTY

Interdisciplinary research has been a strong forte of PIDE since the 1970s. Besides trend tracking of poverty levels, a number of studies examined the relationship between poverty and demographic factors. A comprehensive project "*Micro Impact of Macro Adjustment Policies (MIMAP)*" was undertaken in the year 1998-99 in which monitoring of poverty and income distribution trends, and information on related factors such as health status, child mortality, and nutritional status of population was captured through a sampled household survey,<sup>31</sup> as well as from secondary sources of socio-economic data. Research studies produced from these data revealed that structural adjustment and stabilisation programmes in Pakistan did not contribute to improving

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<sup>30</sup>For details, see Ghayur (1996); Arif, Kiani, and Sheikh (2002).

<sup>31</sup>A nationally representative household survey was carried out with two major components: poverty survey and nutrition survey. Details of the survey and its characteristics are provided in "An Introduction to the 1998-99 Pakistan Socioeconomic Survey (PSES), by Arif, Ali, Nasir, and Arshad. This survey was repeated in Round II through revisiting the same households in the year 2001-02 which generated the longitudinal data providing with the possibility to study inter-temporal variation in living conditions, poverty status, and well-being of households and its members.

employment and productivity, instead resulted in increasing levels of poverty and worsening income distribution during that period. The evidence showed that rising levels of poverty which started in early 1990s continued until the end of the decade with large proportion of rural households falling below the poverty line,<sup>32</sup> and poor socioeconomic status was closely associated with high child mortality, morbidity, low education levels and high unemployment. Some studies examined the factors that tend to increase poverty, the characteristics of households that moved in and out of poverty trap, and whether poverty is a transitional or structural problem of Pakistan.<sup>33</sup> All this research suggested for a shift in socioeconomic policies that would focus more on population subgroups below poverty line, especially those in the category of being ‘always poor’ and provided the rationale to undertake pro-poor growth initiatives for improving quality of life and well-being of population.

### VIII. POPULATION CENSUS DATA EVALUATION

Analysis and evaluation of census data has been integral part of PIDE’s research work. Numerous studies e.g. [Krotki and Hashmi (1962); Krotki (1963, 1976); Afzal (1973); and Hashmi and Sultan (1998) assessed the reliability and coverage of population data in censuses and showed how age reporting and enumeration biases affected the results that could be misleading for development planning and policy making purposes.

More recently, an in-depth analysis and evaluation of the 1998 population census was carried out by a research team constituted by PIDE, in collaboration and assistance from the UNFPA, marking it as the first ever comprehensive analysis of the census data. The research output was produced in a volume, *The Population of Pakistan: An analysis of 1998 Census Data*, comprising of about 18 topics on Pakistan’s population size, growth, its distribution and related

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<sup>32</sup>About 20 technical research papers were produced from these data showing poverty and socioeconomic profile of population at national and provincial levels in addition to establishing its linkages with child mortality, nutritional status of women and children, labour market, income distribution and tariff reduction policies, governance, gender, and occupational choice of Pakistan’s population. This research output is available on PIDE website for information.

<sup>33</sup>Details of research output on poverty and income distribution since the 1960s have been described in, Kemal (2008) ‘PIDE’s Contribution to Policy Making’. 2008 and is not discussed here.

characteristics from national to district level. [Kemal, Irfan, Mahmood (2003)]. The main conclusion that emerged from this analysis was that the coverage and reliability of the 1998 census data were relatively better than the previous censuses, but the age and sex distribution of population continued to suffer from age-misreporting, while urbanisation and migration data were under-estimated and limited in scope. This volume, considered as a useful reference document for data producers and users, provided useful insights and lessons for improving the content and data quality of census to be undertaken in the future and suggested that post-census evaluation was important to assess and rectify the content errors in the data.

## IX. CONCLUSIONS

A scrupulous look at PIDE's research output during the past decades reflects its immense contribution to the study of population issues as an integral part of the development economics discourse. During early years of PIDE existence, extremely useful research evidence was produced on Pakistan's demographic situation that had great worth for its technical excellence and policy relevance. In this context, a good deal of research focused on estimating population growth rates, tracking trends in birth and death rates, and identifying data constraints in demographic analysis.

Demographic research at PIDE gradually emerged from empirical work on population growth estimation and its components into broader analysis of the development paradigm of the time which included studying trends in mortality and fertility patterns and the factors associated with such changes. This process further led to analysing interrelationships between population change and human resource development, household demographic behaviour and poverty, population and health, labour force and gender related issues, offering the key message that population issues should not be studied in isolation but in an integrated development framework.

One of the most extensive and pioneering contribution of PIDE research to development thinking was in areas of migration and urbanisation, especially when massive exodus of Pakistan's workers to the Middle East during the 1960s and 1970s and rising trend of brain drain in later years was observed. A number of research papers analysed population mobility within and across Pakistan's borders and showed how this process influenced labour market structure and



productivity levels, while remittances and capital flows had positive and negative effects on the economy measured in terms of income distribution, consumption and investment behaviour of the recipient households.

In broad terms, some aspects of population and development phenomenon have remained much less researched areas, yet PIDE research evidence on various demographic issues has been enriching and policy relevant, in addition to spelling out limitations of demographic data collection and its importance for seeking strategic direction to the existing social and economic policies.

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### ABSTRACT

This study gives a view of PIDE's contribution to demographic research and its policy role while keeping the necessary balance between academic excellence and professional autonomy in the Population and Development Economics discourse. Based on the research output over the years, the analysis highlights those parts of research that reflect the thinking about the changing demographic scenario in Pakistan and its relevance to socioeconomic development and policy-making. Demographic research at PIDE gradually emerged from empirical work on population growth and vital rates estimation and expanded into broader analysis of interrelationships between population and development parameters of the time. This process included the study of changes in mortality and fertility patterns that marked the beginning of fertility transition in the late 1980s. PIDE research on these issues indicated that Pakistan is experiencing once-in-a-lifetime opportunity of demographic dividends, which might turn out to be a demographic threat if appropriate policies are not pursued to enhance human capital, especially education up to the secondary level and an increase in employment opportunities in combination with acceleration of fertility decline. A notable contribution of PIDE research to population and development was on migration and urbanisation which showed how this process influenced the labour market structure and productivity levels, while remittances and capital flows affected the consumption and investment behaviour of the recipient households. Indeed interdisciplinary research has been a strong forte of PIDE since the 1970s as reflected by studies on the relationship between poverty and demographic factors. The evidence supports the view that poor socioeconomic status was closely associated with high child mortality, morbidity, low education levels, and high unemployment. All this research has been enriching and policy-relevant, suggesting a shift towards socioeconomic policies that focus more on subgroups below the poverty-line and provide the rationale to undertake pro-poor growth initiatives to improve the quality of life and well-being of Pakistan's population.