Patterns of population structure and growth in East Pakistan

Elahi, K. Maudood

ABSTRACT

The aspects of population structure refer to the individually carried traits or attributes of a population group, and include such ascribed and non-ascribed characteristics as age, sex, marital status, literacy and education, economic activities and related phenomena which are thought to be the principal associates of geodemographic conditions and socio-economic levels of a country. These observations are applied in this study of population of East Pakistan. The study attempts by means of a detailed and exclusive analysis of the available materials to evaluate and elaborate past and present patterns in the different ascribed and non-ascribed characteristics of the population and their growth in socio-economic, cultural and regional contexts, and in quantitative terms.

For regional studies, the 17 rural districts and 37 selected urban centres have been taken into consideration in relation to different aspects of population structure. Further, the aspects of population structure are studied individually and regionalized quantitatively by using a multivariate technique, known as Factor Analysis, which incorporates geodemographic and socio-economic variables for the respective residential areas. The results of the quantification present some of the most significant spatial characteristics in this agrarian society with very high density, ethno-cultural and linguistic homogeneity, low urbanization, high and stable fertility, and unbalanced and unfavorable age-sex structures, which have far reaching geodemographic implications in the country.

On the other hand, as indicated in the text, the patterns of the population characteristics are closely associated with the framework on which rests the institutional structure of the whole society, and the attitude and outlook of the people who live within it. Many elements of population composition are themselves functions of the form and the mode of operation of existing institutions, i.e. value systems, traditions and norms. The residential variations in this connection only reflect the mode of their institutional differentials. The uniformity in the aspects of population structure within a particular residential or regional unit signifies the institutional exclusiveness or distinctiveness within it, the intra-residential and spatial differences imply the degree of dynamism or change in this exclusiveness - which is more apparent in the urban centres than in the densely populated rural areas.

The overall low variability in most elements of population structure, in turn, reflects the slow socio-economic change, and the traditionalism in the geodemographic set-up of East Bengal. Given no significant institutional and attitudinal changes any radical and favorable transformation in the patterns of population structure in the province seems to be rather remote. These aspects of East Pakistan's population are of particular importance in relation to her geodemographic development and planning strategy in relation to the overall socio-economic development of the country.

PATTERNS OF POPULATION STRUCTURE AND GROWTH IN EAST PAKISTAN

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PATTERNS OF POPULATION STRUCTURE AND GROWTH IN EAST PAKISTAN

A thesis submitted to the Faculty of Social Sciences, University of Durham in candidacy for the degree of Doctor of Philosophy

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PREFACE

I was encouraged to undertake this research when I developed an interest in the population geography of developing countries during my postgraduate study at the University of Dacca in 1965-66. The main incentive in the selection of the particular area of East Bengal originated from the uniqueness of her population and the need for such a work in this region. Later many people, both in East Pakistan and in England helped me enormously to materialize this research project. In particular, I am grateful to Prof. J.I. Clarke, under whose supervision and valuable guidance it was undertaken and completed. Thanks are due to Prof. W.B. Fisher, Head of the Department of Geography, who kindly accepted me in his department and offered me a great opportunity to do the research.

During the course of preparation of the manuscript and the maps I received cooperation, valuable criticism and suggestions from many people, of whom I would like to thank Mr. I.S. Evans, Lecturer in geography, Mr. M.A. Power, Mr. A. Hameed, and Dr. R.K. Roy Choudhury in the University of Durham. My sincere appreciation goes to Prof. F.K. Khan (Dept. of Geography, Dacca University), Mr. K. Mushtaq Elahi (Dept. of Journalism, Dacca University), Miss Sabiha Sultana (Education Extension and Research Centre, Dacca University) and Mr. M. Saleheen (Lecturer in Geography, Jahangirnagar University) for providing me with various recent materials while the research was in progress. I am also thankful to the staff of the Department of Geography, Computer Unit, Science Library, Palace Green Library, and the School of Oriental Studies in the University of Durham; the

London University Library and India Office Library in London; National Lending Library, Boston Spa in Yorks; and the PIDE (Karachi, Dacca) in Pakistan for their valuable cooperation.

Finally my sincere thanks and indebtedness to the Directorate of Education, East Pakistan, and the British Council (U.K.) who provided the financial support.

My work was made less arduous because of the hospitality extended to me by my friends in Durham. To all of them I am deeply indebted.

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AAAG	Annals of the Association of American Geographers (Journal).
ALF	Agricultural Labour Force.
AMED	Asian Model of Educational Development (UNESCO-Plan).
APC	Asian Population Conference, New Delhi, Dec. 10-12, 1963.
ASC	Asian Studies Centre, Michigan State University (USA).
ASP	Asiatic Society of Pakistan, Dacca (East Pakistan).
BEC*	Bengal Educational Consultations (Govt. of India/Bengal).
CIA	Centre of International Affairs, Mass. (USA).
CLF	Civilian Labour Force.
CNRS	Centre National de Researche Scientifique, Paris.
CSO	Central Statistical Office, Govt. of Pakistan (Karachi, Rawalpindi, Islamabad).
DBSSHP	Demographic and Biological and Social Structure of Human Populations (Burg Warnestein Symposium, Aug. 22-30, 1970), Wenner-Gren Foundation for Anthropological Research, New York, (USA).
DPI*	Director of Public Instruction (Govt. of India/Bengal).
DTRC	Demographic Training and Research Centre, Bombay (India).
ECAFE	Economic Commission for Asia and Far East (UNO).
EDCC	Economic Development and Cultural Change (Journal).
EPBS	East Pakistan Bureau of Statistics, Govt. of Pakistan, Dacca, (Formerly East Bengal Bureau of Statistics, Govt. of Bengal, Dacca).
EPGS	East Pakistan Geographical Society, Dacca (East Pakistan).
FAO	Food and Agriculture Organization (UNO).
GCPI*	General Committee of Public Instruction (Govt. of India/Bengal).
GRPI*	General Report of Public Instruction (Govt. of India/Bengal).
IAIC	International Academy of Indian Culture, New Delhi (India).
IESHR	Indian Economic and Social History Review (Journal).
IGU	International Geographical Union, Zurich.
ILO	International Labour Organization (UNO).
IPC*	Indian Public Consultations (Govt. of India).
ISRT	Institute of Statistical Research and Training, Dacca (East Pakistan).
IUSSP	International Union for Scientific Study of Population, New York (1961), Ottawa (1963), Sydney (1967).
LAS	London Asiatic Society (Translation group), London.
MMFQ	Milbank Memorial Fund Quarterly (Journal).
NALF	Non-agricultural Labour Force.
NCLF	Not in Civilian Labour Force.
NIC	National Income Commission, Govt. of Pakistan.

PBPB	Pashém Bāngā Prākāsh Bhābān, Calcutta (India).
PEA	Pakistan Economic Association, Peshawar Conference, 1965, (Rawalpindi).
PDR	Pakistan Development Review (Journal).
PGE	Population Growth Estimate - project by PIDE (1962-64).
PIDE	Pakistan Institute of Development Economics, Karachi, Dacca.
PRB	Population Research Bureau, Washington, D.C. (USA).
PRP	Population Research Project, Washington, D.C. (USA).
SPHTZDTI	Scientific Problems of the Humid Tropical Zones Deltas and Their Implications (Dacca Symposium, 24th Feb. - 2nd March, 1964), UNESCO, Paris, 1966.
SSRP	Social Science Research Project, University of Dacca, 1964.
TDR	Total Dependency Ratio.
TESG	Tijdschrift voor Econ. en Soc. Geografie (Journal).
UNBER	Universities' National Bureau of Economic Research, Princeton, New Jersey (USA).
UNESCO	United Nations Education, Scientific and Cultural Organization (UNO).
UNO	United Nations Organization, New York.
USOEB	United States Office of Education Bulletin, Washington, D.C. (USA).
WHO	World Health Organization (UNO).
WPC	World Population Conference, Rome (1954), Belgrade (1965)

* See Chapter V.

LIST OF LOCAL TERMS

Bānglā/Purbo Bānglā	Bengal/East Bengal (both refer to East Pakistan in this study).
Bazar	Main market place of the town.
Bustee	Squatters' huts in the larger urban centres (equivalent to 'Barriadas' in Peru or 'Ranchos' in Venezuela).
Desh	Locally refers to village home, or original home-district as well as country.
Doāb	River interfluves.
Grama	Village.
Jhum	Shifting cultivation (slash and burn cultivation) in the district of Chittagong Hill Tracts.
Madrasāh	Religion oriented higher schools for the Muslims.
Maktab	Religion oriented elementary schools for the Muslims.
Māli	Aesthetic gardeners (florists).
Mauza	Surveyed and recorded area for the realization of agricultural revenues. It may be a collection of villages or an individual village depending on population size.
Mullah	Muslim religious preachers.
Pathshala	Indegenous primary school (earlier run by the Hindus).
Purdah	Religious and social seclusion of women.
Rabi-crop	Winter crop.
Shahar/Nagar	Towns/urban centres.
Zamindars	Land lords. (Zamindari-system of land holding - Feudal system of land holding; now abolished in East Bengal but prevalent in West Pakistan).

' The problems of economic development posed by East Pakistan's rapidly growing population are of a kind and dimension hardly encountered in any other part of the world at this time'.

- U.N.O. (1959).

I N T R O D U C T I O N

Geography as a whole has in recent decades drawn further away from the natural sciences and approached the social and economic sciences in terms of matter and method,[1] yet retaining the regional relationship of phenomena - both physical and non-physical. On the other hand, other social disciplines, such as demography, economics and sociology have become interested in the problems of the regional distribution of human environment.[2] It is in this context that the role of "population geography" has become most vital as an individual faculty of human ecology, and has carved its way "as the science that deals with the ways in which the geographic character of places is formed by, and in turn reacts upon, a set of population phenomena that vary within it through both space and time as they follow their own behavioral laws, interacting one with another and with numerous non-demographic phenomena".[3] This view is widely held by both the western and eastern geographers,[4] and as a step further population geography is now assuming a practical role in the national planning and development in many socialist countries.[5]

Despite its importance in socio-economic planning formulations, population geography is still a neglected field of study in the developing countries. And in Pakistan there has not been any systematic study of population in a geographic context, although some demographers, from time to time, have thrown light on some of the important aspects of population

growth in Pakistan as a whole,[6] or in Indo-Pak subcontinent as a geographical unit.[7] As such their analyses have, to some degree, obliterated or misrepresented the different population characteristics of some of the physically, culturally and in many ways demographically varied segments of this part of South Asia. This calls for an individual study of population of ethno-culturally exclusive and homogeneous geo-political units of this region, and is the basis for the selection of the present topic of study of population in East Pakistan, or East Bengal as it is popularly known.[*]

It is only during the 1960's that there have been some occasional studies on certain aspects of population geography of East Bengal as a single geo-political unit.[8] These suffice to make it apparent that the contribution of geographers in this field has not been substantial. The present study attempts by means of a detailed and exclusive analysis of the available materials to evaluate and elaborate past and present trends in some aspects of population structures and growth, and their regularities and irregularities in the regional context as well as various factors behind the trends.

AIM OF THE STUDY. East Pakistan, probably has one of the most unique populations in the world. She is the third largest and

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[*] East Pakistan is popularly called East Bengal or Bengal (Purbo Bangla or Bangla) by the Bengalis. Therefore in this study the terms Bengal and East Bengal are occasionally substituted for East Pakistan. The term "East Bengal" was being officially used until 1956. The name "East Pakistan" used throughout the thesis is, however, provisional and is subject to change in accordance with the decision of the future constitution of the civilian government under a federal system, or with any other internal political settlement.

the most homogeneous population group in south and south-east Asia (after India and Indonesia). The uniqueness is expressed in her 95 per cent population as rural, more than 85 per cent as agricultural, more than 80 per cent as Muslim, about 99 per cent as speaking Bengali language, and in her most homogeneous and high population density per unit area as well as in her least developed urban and non-agricultural sectors - the combined effects of which are reflected in the extreme forms of various ascribed and non-ascribed characteristics of her population. They also ensure the degree of her socio-cultural homogeneity and the exclusiveness of her economic activities. On the other hand, various aspects of these features logically asserts that she is confronting a serious population problem within the country. The crucial phenomena in this respect are the existing economy of the country, the limited geographical area, the socio-cultural structure of the society, and above all the current outlook, attitudes - in brief the actual functional ecology of men operating in space, time, society and ecosystem, or in Zelinsky's terms the 'Geodemographic conditions' in relation to the 'Growth Syndrome' of a country.[9] It is in this context that the present study of population in East Pakistan has been undertaken and the most important population structures, which are of direct concern with the geodemographic conditions of this region, are studied individually in relation to various demographic and non-demographic factors through time. In addition the regional distribution of population structures in both rural and urban areas are studied in their socio-economic context and in quantitative terms. Although the

study by nature is statistical, population structures have been correlated with cultural factors and conditions, particularly religion and socio-economic traditions. The regional population data and their explanation through time have been expressed in three forms:

(i) general pattern for East Bengal as a whole between 1901 and 1971, and a projection for 1981;

(ii) rural areas (17 districts), emphasising the 1951 and 1961 censuses; and

(iii) thirty seven selected urban centres[x] with populations of 5,000 and over, emphasising the 1951 and 1961 censuses.

In the study comparison has been made between East Pakistan and some of the developing countries, especially Muslim countries, to establish the uniqueness of East Pakistan's population. No attempt has been made to compare with Western countries as they are admittedly geodemographically different from any of the developing countries.

A background study of the population geography of East Bengal covering geo-political development and problem, evolution of population, density, distribution, future population trend and potential, urbanization, pattern of migration, and ethno-religious and linguistic characteristics has been presented in the first chapter of the thesis. This chapter considers various geographic factors which contribute to population growth, fertility, mortality, migration and

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[x] Out of a total 64, as detailed data are available by indirect calculation for 37 urban centres (see chapter II).

urbanization; and some aspects of these are compared with selected developing and Muslim countries. It also serves as the elaborate background for the rest of the seven chapters in the thesis.

The second chapter deals with age structure and its religious and residential distributions. It also covers the development of age distributions in the province and the impact on socio-economic development of the population.

The third chapter is on sex composition of the population and its religious and residential differentials. It also points out the relation between sex ratio on the one hand, and labour force and age structure of the population on the other hand, as well as the future implications.

The fourth chapter deals with one of the most important aspects of population structure, that is the marital status. Because of the typical socio-religious condition, East Pakistan has a characteristic marital pattern which influences the age-sex structures, level of fertility, as well as many of the ascribed characteristics of the population, such as, literacy and labour force.

The fifth chapter is on literacy and level of education which are supposed to be some of the main indicators of population quality in a country. The chapter discusses the historical development of literacy, and its residential, religious and sex differentials, and current trends and problems in relation to the type and quality of education - level that are available in the province. Some solutions of the problems are suggested keeping in mind the possibility of improving the size of manpower and increasing overall literacy.

The sixth chapter distinguishes the typical features of economic structure of East Pakistan's population. Since long past East Pakistan has been extremely agrarian and majority of the population has been engaged in agricultural activity, giving an almost mono-structural labour force. On the other hand, because of the youthful age structure, sex selective tradition in labour force and ruralism, the proportions of dependency, female underemployment and unemployment are quite high leading to the relatively small size of the total labour force. The impact of labour force size on existing resources and other geodemographic implications are also noted. The chapter further discusses the types of labour force (occupational groups) and the employment status of the population, and also suggests recommendations to improve the quality and quantity of the overall labour force.

In chapter VII, an attempt has been made to analyse objectively the combined pattern of internal contrasts and overall unity in population structures of East Pakistan by using factor analysis. In doing so, besides the demographic characteristics elaborated throughout the earlier chapters, some of the socio-economic variables associated with them in rural and urban areas have been used. The results have given about three or four distinct regional patterns in each of the residential areas, identifying some of the favourable and unfavourable trends in the regional populations within East Pakistan.

Finally, the last chapter, that is the concluding section of the thesis draws the findings of the individual

chapters together, suggesting some implications in relation to current population pattern and the state of economic growth in Pakistan as a whole, and the future outlook for East Pakistan.

SOURCES OF MATERIALS AND METHODOLOGY . Two distinct sources of materials in terms of population data have been tapped for the present study, they are: (1) official sources, and (2) private organizations and individual research papers and other special reports.[10.]

(1) Official sources:

a) Govt. of India, Census of India, 1881-1941; all volumes on Bengal (reports and tables), and the volumes of general reports on India,

b) Govt. of Pakistan, Census of Pakistan, 1951-61; all volumes on East Bengal / East Pakistan and the bulletins related to East Pakistan,

c) Govt. of Pakistan, Census of Pakistan, Population Projections, 1961-1981; provincial tables (see below),

d) Govt. of East Pakistan, EPBS, Statistical Digest, 1964-1966; all volumes,

e) Govt of East Pakistan, EPBS, Estimates of Intercensal Population of East Pakistan, 1901-1961 and its projection upto 1971,

f) Govt. of Pakistan, CSO, Statistical Yearbook, 1964-1967; all volumes,

g) Govt. of Pakistan, Pakistan Census of Agriculture, 1960, Vol. I, East Pakistan,

h) Various UNO studies on ECAFE Regions, 1950-1970, and UNO Demographic Yearbook, 1964-1969; all volumes,

i) Miscellaneous official reports, surveys etc. by different departments; and the reports of the Planning Commission (1950-1970) of the Pakistan Government,

j) Govt. of India / Bengal, reports on education and literacy during pre-Independence decades (preserved in the India Office Library, London).

In this connection it should be noted that, for 1971, official census data could not be used as the census enumeration was postponed from January '71 to a later date because of the reimposition of military rule after the general election (Dec. '70 and Jan. '71) which led to a serious political movement in the country and in East Bengal in particular. But according to an estimation following the reports of the Pakistan Election Commission the total population of East Pakistan in 1971 came nearer to the constant fertility (declining mortality) population projection - 1970-71 by the PIDE (see chapter I), which was slightly more than the UNO - estimate.[11.] This is also confirmed by other independent sources. Therefore, this figure for 1971 has been used throughout the study,[x] while

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x Actual population (in million) of East Bengal in 1971 according to main sources:

	Total	0-20 yrs.	20 yrs. over
1) Govt. of Pakistan, Election Commission, 1970-71	73.30	44.20[x]	29.10
2) PIDE (Karachi), 1970-71	73.36	44.25	29.11
3) Govt. of Pakistan, Census Org.	67.25	37.78	29.47
4) U.N.O., 1971	71.42	39.67	31.75

Sources 1 and 2 have been followed in this study. x Estimated.

detailed regional data from 1961 census have been used in analysis of areal patterns.

These sources have been exploited to the greatest possible extent. Pre-Independence data have been adjusted to the present area forming East Pakistan, or adjusted - figures from official sources have been used, and studies are made in conformity with the administrative boundaries of the districts in 1961-1968/69 (Fig. 1.0).

(2) Private organizations, individual research papers and other special reports:

a) Demographic sample surveys and other materials published by the PIDE, 1960-1971,

b) Conference reports of the PEA, 1965,

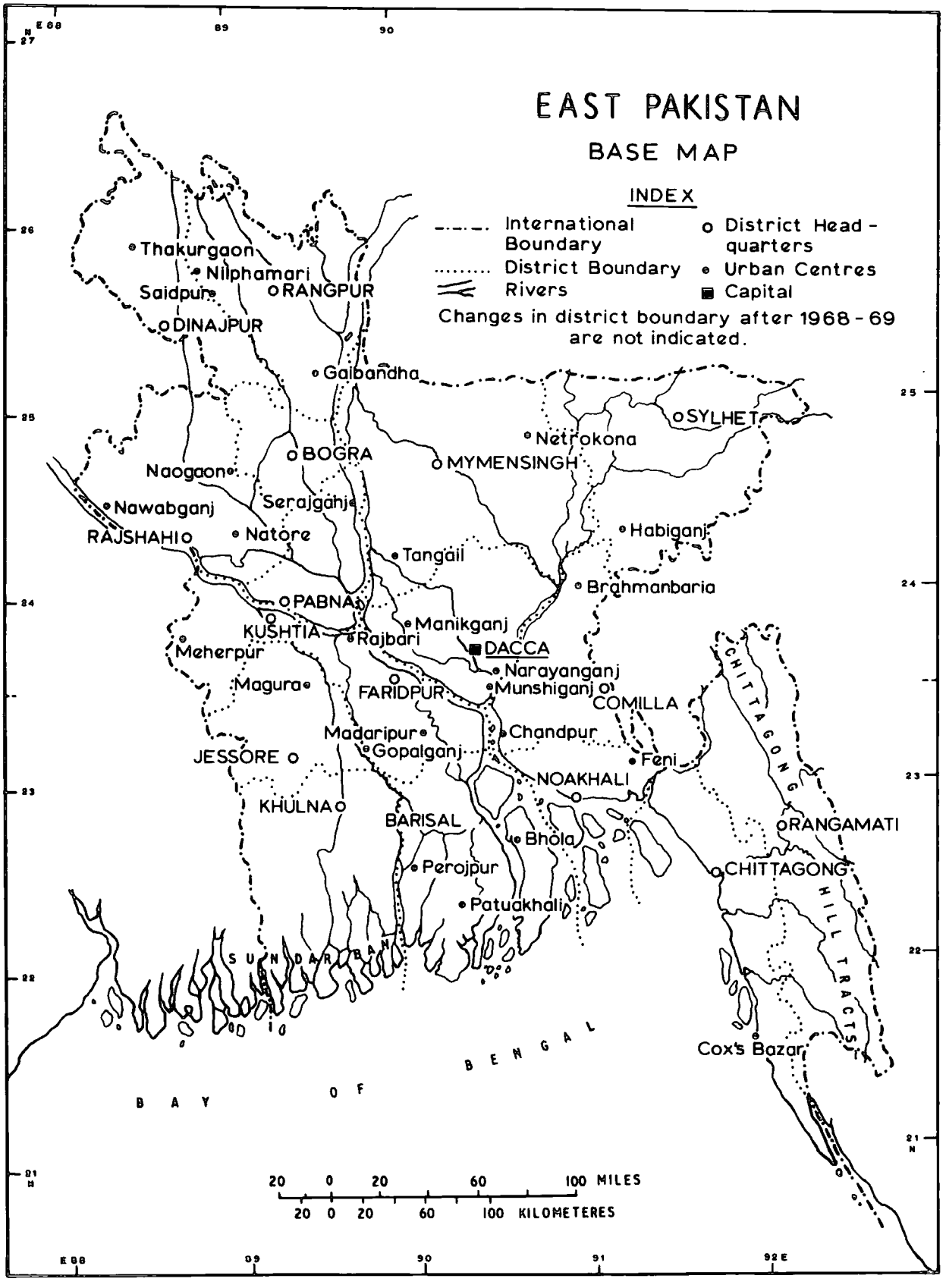
c) Various articles on population geography of East Pakistan by EPGS, 1960-65,

d) Other small scale individual research papers on different fields of social sciences (such as by SSRP and EPGS) related to East Pakistan, which are duly acknowledged,

e) Research reports by the ISRT, Dacca University.

These provided not only very recent data and other geographical information, but also adjusted and corrected some of the earlier official statistics. The two sets of materials have been compiled together for the purpose of comparison and identification of dependability. In order to minimize the extent of various discrepancies the examination has mostly been done by means of relative numbers.

FIG.1.0


EAST PAKISTAN
BASE MAP
INDEX
International Boundary
District Boundary
Rivers
District Head - quarters
Urban Centres
Capital
Changes in district boundary after 1968 - 69 are not indicated.
Thakurgaon
Nilphamari
Saidpur
RANGPUR
DINAJPUR
Gaibandha
SYLHET
Netrokona
BOGRA
MYMENSINGH
Naogaon
Nawabganj
Serajganj
RAJSHAHI
Natore
Tangail
Habiganj
Brahmanbaria
PABNA
KUSHTIA
Rajbari
Manikganj
DACCA
Meherpur
Narayanganj
Munshiganj
Magura
FARIDPUR
COMILLA
Madaripur
Chandpur
Gopalganj
JESSORE
Feni
NOAKHALI
KHULNA
BARISAL
Bhola
RANGAMATI
Perojpur
CHITTAGONG
Patuakhali
CHITTAGONG HILL TRACTS
SUNDARBAN
Cox's Bazar
BAY OF BENGAL
20 0 20 60 100 MILES
20 0 20 60 100 KILOMETERES

The detailed notes on the extent of reliability and dependability of both sets of data, and mainly the former have been given at the beginning of individual chapters, and hence are not mentioned here.

A seemingly obvious limitation of the study is the reliance on official census reports. But the extent of dependability of these data outweighs the limitation. It has been noted that ..... in spite of social conditions which cause severe difficulties in taking population censuses in some parts of this area (South - Central Asia) and in spite of the known deficiencies of vital statistics, the estimates and usable statistics can be considered accurate and reliable.[12] Besides the long census history originating in 1881[x], conscious efforts to improve data in successive decades and fairly elaborate population classifications provide sufficient information to study and determine conveniently the population trends and related phenomena. In order to ensure further quality of the study, the official data, in most cases, are related and compared with the findings of various sample surveys and individual studies. Despite little co-operation from different official departments of the governments of Pakistan and East Pakistan in connection with obtaining recent unpublished materials because of various restrictions imposed upon them during last few years, I was fortunate enough to receive parallel information from various autonomous and semi-autonomous research institutions, particularly the PIDE (Karachi, Dacca), which were found to be very useful. Finally, my personal attachment to East Bengal

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[x] In Bengal the first comprehensive census was taken in 1871.

as well as the people therein, and the first hand experience I have gathered about the socio-economic and other conditions of the population throughout my professional life have in many ways aided in the present research work.

The available statistics involved a large amount of computation, processing and tabulation, which were started during 1967 to 1968. The results were further checked by high speed electronic calculators in the Department of Geography, University of Durham. Some of the large and complicated calculations, such as analyses of variance, tabulations of correlation matrices of multi-variables, and the quantitative analyses in chapter VII were done on an IBM computer in the University of Durham.

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C H A P T E R I

GENERAL CHARACTERISTICS AND EVOLUTION OF POPULATION IN EAST PAKISTAN

SECTION A

EVOLUTION OF POPULATION IN EAST PAKISTAN

The most outstanding feature of East Pakistan is the nature of her population evolution and concentration. It has the most densely and homogeneous population of all humid deltas in the tropics. With an area of about 55 thousand sq. miles or $\frac{1}{6}$ the size of West Pakistan it supports about 73 million (50.84 million in 1961) or nearly 60 per cent of the country's population. In the past the size of population and the distributional pattern were very different from they are now.

The evolution of population in the area now forming East Pakistan can be classified into five stages:

1) Buddhist period - relatively high population with definite areas of settlements;
2) Period of Hindu revival - decline of Buddhist culture and a period of partial depopulation;
3) Muslim period - resettlement and population expansion through Muslim in-migration and conversion;
4) British period - evolution of present pattern of population growth, preceded by slower rate of increase;
5) Recent period of "Demographic Divide" - geo-political basis of current population revolution in East Pakistan.

1) Patterns of population distribution and size are not known precisely before the Buddhist period (until 10th century A.D.). During this period two main areas were the regions of highest population concentration: (a) Tista - Karotoya interfluves, covering northern East Bengal, and part of northern West Bengal (India); and (b) Meghna valley covering eastern and central East Bengal. The southern and north-eastern parts of East Bengal (now covering Khulna division and parts of Dacca and Chittagong divisions respectively) were either sparsely populated or uninhabited due to large covers of tidal forests, swamps and shifting river channels. The exact size of population of East Bengal during this period is hard to estimate although various Chinese travellers, such as Yuan Chwang, repeatedly mention its dense and flourishing population.[1]

2) The 11th century was a period of Hindu revival in India, when Bengal was overrun by the Brahmanic Sen dynasty from Deccan who adopted a policy of suppressing Buddhism. This led to mass out-migration of Buddhists, and the total population declined very drastically as the two main centres of Buddhist culture in East Bengal were destroyed. Such a situation continued until the advent of the Muslims with a large-scale conversion of oppressed Buddhist population during the 11th and 13th centuries. Acceptance of the Muslims among the original inhabitants encouraged more Muslim immigrants and converts, and by 1211 A.D. they numbered between 2 and 3 million[2].

3) After the fall of the Brahmanic Hindu rule by the invading Mughals in the early 13th century, various parts of

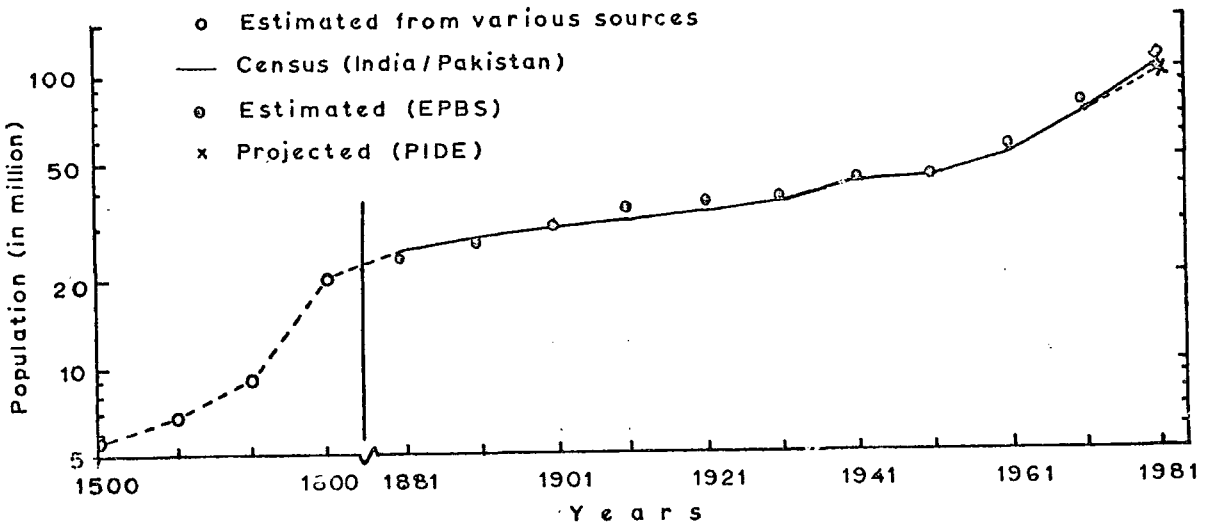
Bengal were consolidated and brought under a semi-independent Sultanate with the capital firstly at Gour and then at Sonargaon (near Dacca). From this period the region received continuous flows of Muslim immigrants from various parts of India,[3] who led the great land reclamation scheme to southern Bengal and a few other non-settled areas, which continued for several centuries. Probably because of the late influx of the Muslims in this part (South Bengal) their proportion has remained lower in later centuries. During the middle ages, however, the estimated population of East Bengal could be put between 5 and 10 million (Fig. 1.1).

4) During the British period the population distribution was becoming more or less uniform in most of East Bengal and was assuming a highly settled rural pattern. The exact figures of birth or death rates were absent for this period, but considering the overall demographic situation of the 18th and 19th centuries it may be thought that both were very high leading to a very low rate of population growth. During the 19th century until very recently there are reasons to believe that the population of East Bengal (like the whole subcontinent) grew very slowly because of repeated occurrences of famines and epidemics. In 1881 about 25 million people were registered in the area now forming East Pakistan[4]. (Fig. 1.1).

5) The extent of current population concentration in East Pakistan is to be understood in its geo-political context. The creation of a Muslim political unit in Eastern India was not necessarily the result of direct Hindu-Muslim political cleavage. In East Bengal Islam is more accommodating and

FIG. 1.1

EVOLUTION OF POPULATION IN EAST BENGAL (EAST PAKISTAN)
1500-1800 AND 1881-1981



tolerant than the rigid dogma of West Pakistani Muslims[5] because of the province's cultural homogeneity and because, all the religious groups share common language, dress, agrarian economy, social traditions and outlooks (see section C). The origin of East Bengal (later East Pakistan) was rather an expression of a demand for individual identity and economic freedom from the socio-economic discrimination of Caste Hindus and Upper class Hindu elites[*] who monopolized the economy of the region and systematically exploited the Muslim peasants as well as the common Hindus in this region throughout last few centuries.[6] The struggle reached its climax during the first decade of the present century when the British authority also started to realize the problem.[7] Their demands were expressed in a seemingly innocuous manner and made

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[*] In Broomfield's term "Hindu Bhadrolok". (Broomfield, 1968, p.5)

in 1903 to form a separate province free from the exclusive control of Calcutta. The demand was granted in 1905, and the new province of Bengal, closely corresponding to Yeats's[x] River Basin Scheme, had an area of 107,000sq. miles with a

TABLE 1.1

Evolution of population and vital rates of East Bengal (East Pakistan), 1881 - 1981.

Years	Population (million)	% increase	CBR	CDR	Natural Increase	Infant Mortality	Expectancy of Life at Birth
1881	25.09	-	-	-	-	-	-
1891	27.10	8.01	-	-	-	-	-
1901	28.92	6.71	49	37	1.2	222	-
1911	31.55	9.09	49	37	1.2	222	-
1921	33.25	5.39	49	30	1.6	211	-
1931	35.60	7.07	49	30	1.9	176	-
1941	41.99	17.94	-	-	-	-	32.5
1951	42.06	0.28	62	49	1.3	168	32.5
1961	50.84	20.87	58	32	2.0-2.6	145	48.2
1962-63 1971(Est).	-	-	56	20	3.6	141	48.0
PIDE	73.36[a]	44.29	53	12	3.6-4.1	130	53.7
	73.36[b]	44.29	48	11	3.7	-	-
UNO	71.42[a]	-	-	-	-	-	-
1981(Est.)							
PIDE	111.72[a]	52.29	54	8	4.6	100	62.3
	104.90[b]	42.99	43	8	3.3	-	-
Census	92.85[a]	-	50	16	3.4	-	57.5
	87.72[b]	-	43	13	3.0	-	-
EPBS	103.01[b]	-	48	12	3.5	-	-
UNO	83.30[b]	-	-	-	-	-	-

a Constant fertility and declining mortality projection,
b Medium fertility (declining) and declining mortality projection.
Est. - Estimated.

Sources:
For CBR and CDR:-
1. Davis, K. 1951
2. Ahmed, A.S.M.M. 1963.
3. Krotki, K.J. 1963

For infant mortality, expectancy of life and population projections:-
1. Bean, L.L., Khan, M.R. and Rukanuddin, A.R. 1968.
2. Census of Pakistan, Bulletin 7, 1967.
3. Chandrasekhar, S. 1959.
4. Nazir, A. and Krotki, K.J. 1964.
5. EPBS, Dacca, 1966.
6. UNO, New York, 1959.

For population figures:-
1. Census of India, 1901-41, (5 vols on Bengal).
2. Census of Pakistan, 1951-61, (2 vols on East Pakistan/Bengal)

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x Indian Census Commissioner (Tayyeb, 1966, p.108)

population of about 31 million (59.3% Muslim, 39.0% Hindu, and 1.7% others)[8]. The 'New Bengal' provided a fairly sound economic base for the self-sufficient socio-economic development of a large population.[9] But the clamour against the formation of a new province by the Hindu elites and mercantile class from West Bengal and particularly from Calcutta region was so great that in 1912 the British Government nullified the scheme. This led to the frustration of the East Bengalis which later assumed a serious religious - orientated political role for the first time in history, and the Muslims associated their demands with the movement for a separate state.

Unfortunately geographical considerations probably did not play any significant role in the movement, and after a hectic partition of Bengal in 1947, the new political unit forming East Pakistan was found to be most illogically created. The results were obvious. Within Greater Bengal a high-density - agrarian area of 55,000 sq. miles with a population of 42 million was separated from relatively less dense areas and of high economic potential (some having overall Muslim predominance), such as the Brahmaputra valley, the northern tea-plantation areas, and part of the Calcutta - Hooghly industrial complex.[10] Post-Independence political antagonism between India and Pakistan affected East Pakistan both demographically and economically much more than the less populated and industrially developing West Pakistan, as the population movement between East Pakistan and her neighbouring

areas was stopped and further outlet of employment outside Bengal was ended. On the other hand, owing to physical and cultural reasons, an attempted population shift to West Pakistan proved impossible. This within less than a decade culminated into what may be termed a "Demographic Divide", coupled with demographic immaturity, immobility, economic underdevelopment and lack of sufficient industrial - urban infrastructure in the province. The implications of the "Demographic Divide" became more acute owing to deterioration of the province's economy as a result of sudden policy - shift of the Central Government banning jute and other trade relations with India. These as could be seen in subsequent chapters, exert far reaching effects on the socio-economic development and on manpower and demographic planning of this region.

PATTERNS OF POPULATION CHANGE

The growth of population in the present century has been the result of an excess of births over deaths as there has been no large-scale immigration.[*] And since the last century two stages of acceleration in the pattern of population change in East Pakistan have taken place:

a) the slow rate of population growth until 1921, and

b) the accelerating increase of population since 1921 and a fresh momentum to it after 1951.

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[*] Between 1951 and 1961 about 34,000 or 0.07 per cent of population born in East Pakistan were enumerated in W. Pakistan, and about 16,000 or 0.03 per cent of the population born in W. Pakistan were enumerated in East Pakistan giving a net out-migration from East Pakistan at 0.04 per cent (ref. census of Pakistan, 1961, Vol. 1, Pp. II/70 - II/73).

In 1901 East Pakistan had a population of 28.92 million. It increased by about 9.0 per cent by 1911 (Table 1.1). In the period 1911-21 the rate of increase was very slow (5.3 per cent) due to high mortality from the influenza epidemic of 1918-19. After that the growth rate started to recover until 1931. In view of the overestimation in the 1941 census due to unstable socio-political conditions[11] it is not possible to examine the exact rate of increase of population for the decade 1931-41, but it is observed that this decade was a normal one regarding the fertility and mortality conditions and the population increase might have been higher than 17.94 per cent. In the next decade (1941-51) the rate of increase was very low (0.28 per cent) due to the Bengal famine in 1943 which cost about 1.7 to 2.5 million lives,[12] and to subsequent movement of population during the Independence. In East Pakistan there was a gross outward movement of about 2.5 million and in-movement of 0.70 to 0.85 million people.[13] The decade 1951-61 showed the highest rate of population increase (Table 1.1) owing to stable socio-political conditions, the combined effect of improved health conditions, eradication of epidemics and a successful check on famines. To a great extent this rise has been the result of an unprecedented acceleration of the rate of growth of Muslim population (26.9 per cent) in the province, although this was lower than in West Pakistan.[14] The 1951-61 increase and the subsequent increases may also be aided, together with the impact of the post-Independence "Demographic Divide", by

a continuation of return migration of Hindus to East Pakistan. And according to the sources of the Govt. of India during the period under report (1950-59), the number of Hindus returning to East Pakistan slightly exceeded the number of immigrants into India.[15] Such a return migration continued during the 1960-70 decade.* But this was rather offset by a significant outmigration of population - both Hindus and Muslims - after March, 1971 as a result of the civil war condition in East Bengal. It is estimated that a population numbering over 6 million from East Bengal moved into West Bengal, Assam, Meghalays and Tripura in India.** This, however, will exert little demographic effect on the population of East Bengal because of the size of its base population, and in view of past experience many of these migrants (particularly the Muslims) are likely to return home when the political situation in East Pakistan becomes normal (see chapter VIII).

BIRTH AND DEATH RATES - Although registration of births and deaths was introduced in Bengal in 1892, the available figures were far from correct because of various administrative

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* Between 1960 and 1970 about 86,000 Hindus were known to have returned and resettled in Pakistan (ref. Quoted from the lecture of the leader of the Pakistan Delegation at the UNO General Assembly, 2nd October, 1970).

** According to various international sources, the influx of refugees has surpassed the 5 million mark by mid-June, 1971. This was supported by the U.N. observers (The Times, 22nd June, 1971, London). On the first week of August the estimated total of refugees into India has reached 7.5 million mark (Times, August 2nd, 1971, New York 1971, Pp. 26-34). Because of the absence of any figure published by the Pakistan Government these numbers, however could not be compared.

and technical limitations. And in the absence of vital statistics from other sources it is rather difficult to ascertain the actual annual rate of population increase in pre-Independence East Pakistan. Various estimates have confirmed that the increase has not been very rapid (Table 1.1), and the CBR and CDR were estimated at 45 to 49 and 33 to 37 respectively with periodically the death rate (during epidemic or famines) reaching as high as 60.[16] This gave an annual rate of increase of about 1.2 per cent during the early present century which was governed from time to time by high death rates as a result of epidemics and famines, such as in 1866-67, 1873-74, 1876, 1884-85, 1907-8, 1918-19 and 1943,[17] as well as an uncontrolled extent of malarial fever and other communicable diseases.[x] After 1921 a rapid growth of population was the consequence of measures undertaken to check the intensity of epidemics and local diseases as well as improvement in maternity and health conditions (Table 1.2). This effected a drop in death rate to 30 in 1930's, while the birth rate remained stable (Table 1.1). The mortality and fertility conditions were offset during 1941-51, as mentioned earlier, by famine and the unsettled socio-political situation, resulting in a low annual increase in population (1.3 per cent). During the 1951-61 decade

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x During 1918-21, the total deaths recorded 40% were malarial deaths, 30% typhoid, 20% post natal deaths and maternal mortality, and 10% others (fevers etc). (ref. Robinson, W.C. in : Robinson, W.C. (ed) 1967. Pp. 1-50; and Learmonth, A.T.A. 1958, Pp. 1-59).

TABLE 1.2

Estimated death rates by specific causes for selected years, East Pakistan, 1901 - 1960.

Specific causes	Death rates ‰ (1950-60)	Percentage of total deaths 1950-60	Percentage of total deaths 1901-11
Cholera	0.5	2.5	7.4
Small-pox	0.2	1.0	
Malaria	3.0	15.0	72.3[1]
Typhoid	3.0	15.0	
Childbirth and associates	2.0	10.0	
Tuberculosis	2.5	12.0	
Respiratory diseases	1.0	5.0	0.5
Diarrhoea and dysentries	3.0	15.0	2.5
Others	5.0	25.0	17.3
Total	20.2	100.0	100.0

1. Probably includes typhoid, small pox and other fevers.

Sources: 1. Robinson, W.C. (ed), 1967

2. Gourlay, C.A. 1912.

population increased by about 2.1 per cent a year (according to the census of Pakistan). Ahmed and Krotki[18] however estimated high birth and death rates (Table 1.1) which gave a growth rate

between 2.5 and 3.0.* This was higher than Chandrasekhar's[19] estimate of the CBR and CDR for India (1951-56) which gave a growth rate of less than 2.0 per cent for that country. Considering India's history of vital registration and her present rate of population growth his figures may be underestimation. On the other hand, the Planning Commission of Pakistan (1960-65) put the growth rate at 2.6 for the decade 1960-70 in contrast to the subsequent sample survey by the PIDE (1962-63) which gave a rate of about 3.6. From various observations the present rate of population growth in East Pakistan may be put at not less than 3.0; and the CBR and CDR, during the 1962-63, at 56 and 20 respectively.

However, although the annual rate of population increase in East Pakistan is comparable with many of the developing and Muslim countries, such as Mexico (3.5), Thailand (3.1), Malaysia (3.2), Venezuela (3.6), Kuwait (5.1), Jordan and Iraq (3.2), Morocco (3.3), Libya and Iran (3.0)[20], the net increase of population on an already large population is substantial. International migration playing an insignificant role, this (as may be seen in subsequent chapters) exerts far reaching effects on various ascribed and non-ascribed characteristics of population in the province. Such a trend in population evolution is however noticeable in many of the developing and Muslim countries. According to the 'theory of

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* Following the Chandrasekhar-Deming estimates obtained from PGE Project (1962-63) Khan and Bean have calculated the intrinsic rate of population growth as high as 3.8 for East Pakistan (ref. Khan, M.R. and Bean, L.L. 1967, Pp. 504-518).

demographic transition' high CBR and CDR are characteristics of pre-industrial socio-economic structure and a departure from this set up towards industrial development leads to a decline of both birth and death rates. Under the present demographic conditions with almost stable birth rate and fast declining death rate this theory is not applicable to East Pakistan, implying the inapplicability of the theory in rigid form in many of the agrarian societies such as in China and particularly in India.[21]

FUTURE POPULATION OF EAST PAKISTAN - As mentioned earlier the present rate of population growth in East Pakistan is not less than 3.0 (Table 1.1). Since the Second Five Year Plan period it has been the policy of the Government to extend improved medical facilities and other public health utilities all over the province. As a result, for instance, malarial fever has been almost checked and the targets in the malaria eradication programme in the attack and preparatory phases were achieved by 1965.[22] Further large scale plans have been undertaken to eradicate other communicable diseases as well as to lower infant mortality by establishing maternity and child-welfare institutions in this and future plan periods.[23] Consequently the expectancy of life has started to rise very quickly and the infant mortality has declined tremendously, and a continuation of these will lead to massive population build up in the near future (Table 1.1). Thus the implications of post-Independence "demographic divide" and the corresponding population revolution are all too well

marked for East Pakistan. The Census of Pakistan has estimated that the annual rate of population increase will be 3.0 in 1970-71 and 3.4 in 1980-81, but assuming the favorable effect of the family planning programme on the fertility level of the population the rates may decline to 2.8 and 3.0 respectively with a 5 per cent and 10 per cent fertility decline in the respective years. In this connection it should be noted that the population of East Pakistan has already reached about 73 million in 1971, and it will not be below 90 million in 1980-81 (Table 1.1), which is assumed under the observation that during the Second Five Year Plan Period (1960-65) the achievement of the family planning movement was not very encouraging because of various technical and institutional limitations.[24] The future success is likely to depend on the evaluation studies which will provide a sound basis for the translation of programme performance data into demographic measures, and until such studies are carried out the overall success in terms of population control remains open to question.[25] Besides, the current political development may pose a dangerous threat to family planning programmes, because on entering a federal system of government, the representation in Pakistan national assembly will be determined by the population ratio between the units of the federation. This will give the politically more conscious but economically depressed Bengalis from East Pakistan greater representation to dominate the administrative decision, and they subsequently

will not be willing to reduce their margin of representation by controlling their size of population by any means.[x] This population race could probably be avoided by giving a degree of autonomy, and more decision-making powers to the federating units.

In the light of these observations and assuming a further decline in the overall death rate it may be concluded that there is every likelihood that the population of the province will continue to increase at a rate above the 1960-65 level for few more decades.

DENSITY AND DISTRIBUTION OF POPULATION IN EAST PAKISTAN

According to the census of 1961, the density of population in East Pakistan was 923 persons per sq. mile or 980 if the river areas were excluded (Tables 1.3 and 1.4). If only cultivated land is taken into consideration the density would be 1,400 persons per sq. mile, with maximum overcrowding in the rural areas along the lower Padma and Meghna where the density is over 2,000.[26] In the province as a whole slightly less than half of the total population was in the density range of 1,000 to 1,200 persons per square mile.[27]

As revealed in Table 1.3, East Pakistan is one of the most densely populated areas of the world, but unlike other

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x At the same time other federating units will try to increase their representation. Political consideration might already be influencing the birth control programme. For instance, in West Pakistan, which can regain its political dominance only if its population outstrips the eastern wing, sterilizations have dropped dramatically in recent months (ref. The Times, 24th Dec. 1970. London. 1970. p.4). Additional research in this connection will be highly relevant.

TABLE 1.3

Some geodemographic characteristics of selected densely populated countries and East Pakistan (1961-71)

Countries	Persons per sq. mile	Persons per 100 ha. of Total area	Persons per 100 ha. of Cultivated area	No. of Active males in agriculture - per 100 ha. of culti. land
Ceylon	450	130	570	85
China	200	60	560	100
India	370	115	240	50
Indonesia	283	55	470	95
Japan	655	240	1620	160
Java/Madura[x]	900	410	585	115
Thailand	163	50	260	55
Vietnam (South)	150	70	365	70
Pakistan ('61)	530	185	370	83
West Pakistan ('61)	138	45	230	45
East Pakistan ('61)	923	325	510	120

x Indonesian islands.

Sources: 1. PRB, Washington, D.C. 1968;

2. U.N.O. Demographic Yearbook, 1968 and 1969 (2 vols);

3. Myrdal, G. 1968;

4. Census of Pakistan, 1961, Vol. I.

densely populated areas in Europe which have intensive agriculture and a high degree of industrial and urban development.

East Pakistan is primarily a rural-orientated agricultural country. Thus the greater the amount of cropped land, the larger is the population in the district and the higher is the density (See Appendix 1). A regressional analysis between total cropland and population of 17 districts gave

TABLE 1.4

Density of population by districts, East Pakistan, 1901-61.

	PERSONS PER SQ. MILE							Rural Density*	
DISTRICTS	1901	1911	1921	1931	1941	1951	1961	1951	1961
Dinajpur	444	461	481	587	527	544	655	581	750
Rangpur	595	658	691	715	790	792	1025	943	1185
Bogra	599	689	734	761	855	868	1048	972	1250
Rajshahi	523	550	557	548	604	608	769	710	900
Pabna	776	780	759	788	929	868	1044	1083	1320
Jessore	633	614	611	596	651	656	860	752	940
Kushtia	646	614	571	589	671	647	851	939	960
Khulna	264	287	306	339	404	432	851	948	1065
Barisal	615	647	705	791	743	902	1005	1145	1350
Faridpur	689	758	786	837	1026	1051	1180	1308	1525
Mymensingh	630	727	777	824	968	931	1103	1071	1300
Dacca	955	1069	1157	1258	1541	1492	1768	1600	1900
Comilla	845	970	1065	1208	1525	1500	1639	1774	2040
Sylhet	416	459	471	505	580	628	729	769	875
Noakhali	715	816	922	1068	1388	1424	1285	1712	1800
Chittagong	527	587	627	699	838	902	1103	2526	3300
Chittagong Hill Tracts	25	31	35	43	49	57	76	-	1300
E. Pakistan	581	630	668	715	841	841	923	1180	1400

Sources: 1. Ahmad, N. 1968
2. Census of Pakistan, 1961. Vol. 2.

* Persons per sq. mile of cultivated area.

a highly positive coefficient of correlation (+ 0.923).

Excepting Chittagong Hill Tracts (where the density in 1961 was 76), the density in the province in 1961 varied between 655 persons per square mile in Dinajpur to over 1600 persons per square mile in Dacca and Comilla. Excepting the tidal forest (Sundar Ban) of south-western Bengal and Chittagong Hill Tracts, the rich alluvial soil and favourable climate always encourage cultivation of land so that 80 per cent of total area of the province is arable including the double-cropped area. The influence of double cropped land on the density of population is not conclusive, but it is aparent from practical experience that a per capita land-holding of 0.70 acre and that of cultivated land of 0.40 acres in the province[28] simply leaves no choice for the people but to cultivate whenever there is an opportunity. Rice is another important factor facilitating high densities in East Pakistan. It is the main food crop and is one of the most accommodating plants growing in varied soil and humidity conditions, and thereby the dependence on it in East Pakistan is so conspicuous that the concentration of population is closely associated with the production of rice (See Appendix 1). This is reflected in a fairly high and positive coefficient of correlation between the two variables (+ 0.765).

From the anthropo-geographic point of view, a warm humid climate permits the growth of a dense population. Further, the economic life of the people being largely self-subsistent and the standard of living generally low, a unit area can support

a large population. The influence of rivers on the habitat is reflected in the greater concentration of population and economic institutions along their banks. On the basis of these observations, the population concentration of East Pakistan can be categorized into four groups (Fig. 1.2):

a) Densities of 1500 persons per sq. mile and over occur along the lower Padma, Jamuna and Meghna rivers and include the districts of Dacca and Comilla. These are the districts which have the highest rural densities for any large single rural area of East Pakistan (1500 to 2000 p.p.s.m.). Land is extremely productive yielding rice and jute. These districts also include several of the important industrial and commercial centres of East Pakistan.

b) Densities of between 1000 and 1500 persons per sq. mile are found in the interfluves (Doab) of the tributaries and distributaries of the Jamuna and the Padma forming an axis of districts extending from north to south and roughly dividing the East Bengal plain. The districts of Rangpur, Bogra, Pabna, Barisal, Faridpur, Mymensingh, Noakhali and one coastal district of Chittagong fall in this category. Most of the districts of north Bengal falling in this group and Mymensingh are important agricultural districts as they are less affected by yearly flood and cyclone, and concentrate on several crops a year, such as rice, jute, sugarcane and tobacco; while those in south Bengal mainly produce rice and sugarcane. Chittagong overlooking the Bay of Bengal is a port and industrial district, but is also agriculturally

important because of the Karnafully river that passes through it (Fig. 1.2).

c) Densities of between 500 and 1,000 persons per sq. mile are found in the five western and one eastern districts, namely Dinajpur, Rajshahi, Kushtia, Jessore, Khulna and Sylhet. The western districts cover the old alluvial plain in the north and an area of moribund rivers and deteriorating drainage with practically no widespread inundations and where living conditions are less healthy. The soils are also less fertile. As observed by Learmonth and Patel,[29] these districts suffered, until recently from high mortality due to malaria, and the population growth has been very slow, particularly during the early part of the present century. The same situation is observed in eastern West Bengal in India[30]. Moreover, the southern part of Khulna is covered by tidal forest and part of it suffers from salinity, while a fairly large area of Sylhet is under swamps (locally called Haor) and forest-covered hills. Hence all these areas are rather less populated and this is reflected in the lower density of population (Figs. 1.2 and 1.3).

d) A density of under 500 persons per sq. mile is found only in Chittagong Hill Tracts (Table 1.4 and Fig. 1.2). The density of 76 persons per sq. mile - the lowest in East Pakistan - is the response to its mountainous and forest nature. The percentage of arable land is very low (Appendix 1) and much is inhabited by nomadic tribes

FIG. 1.2

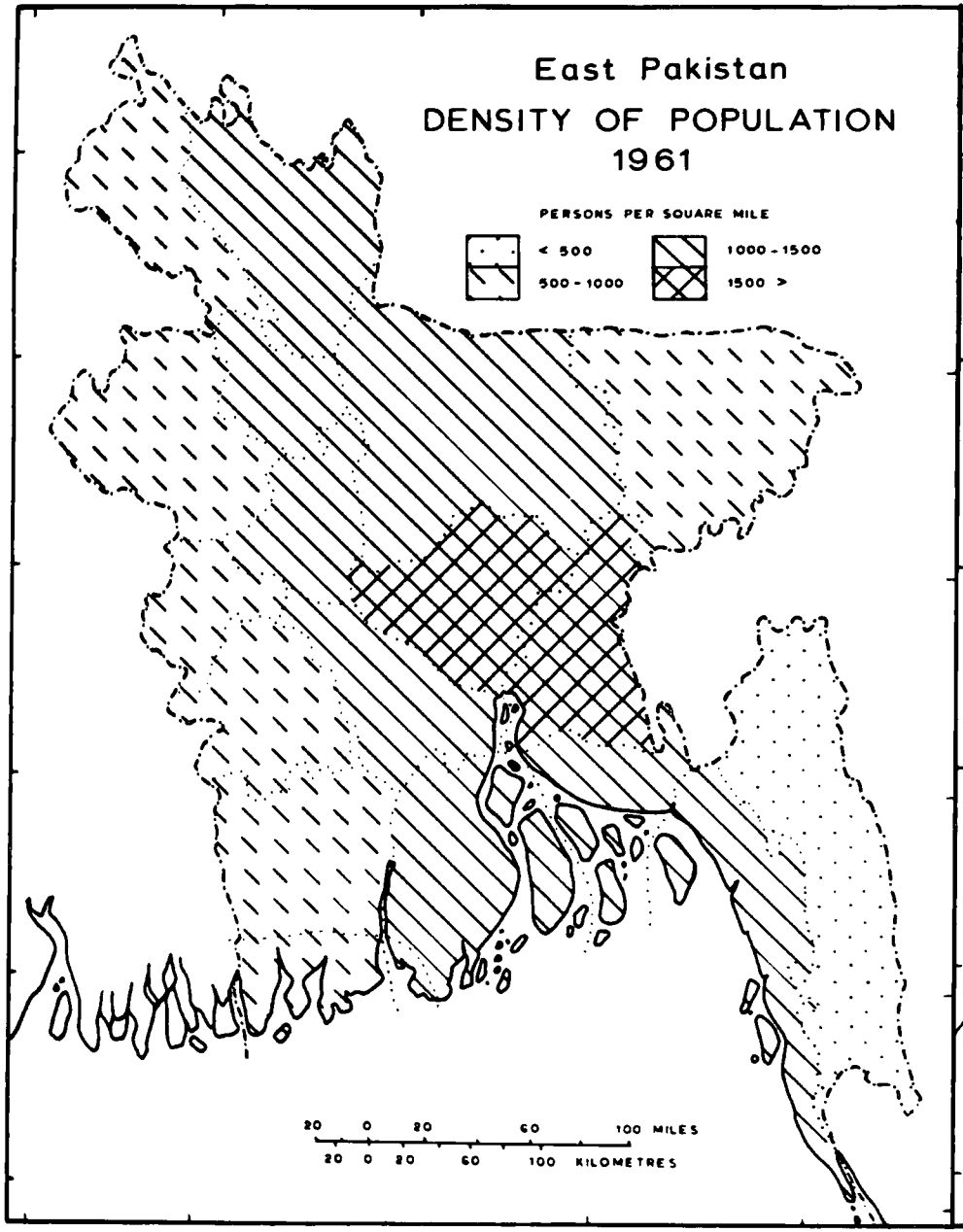
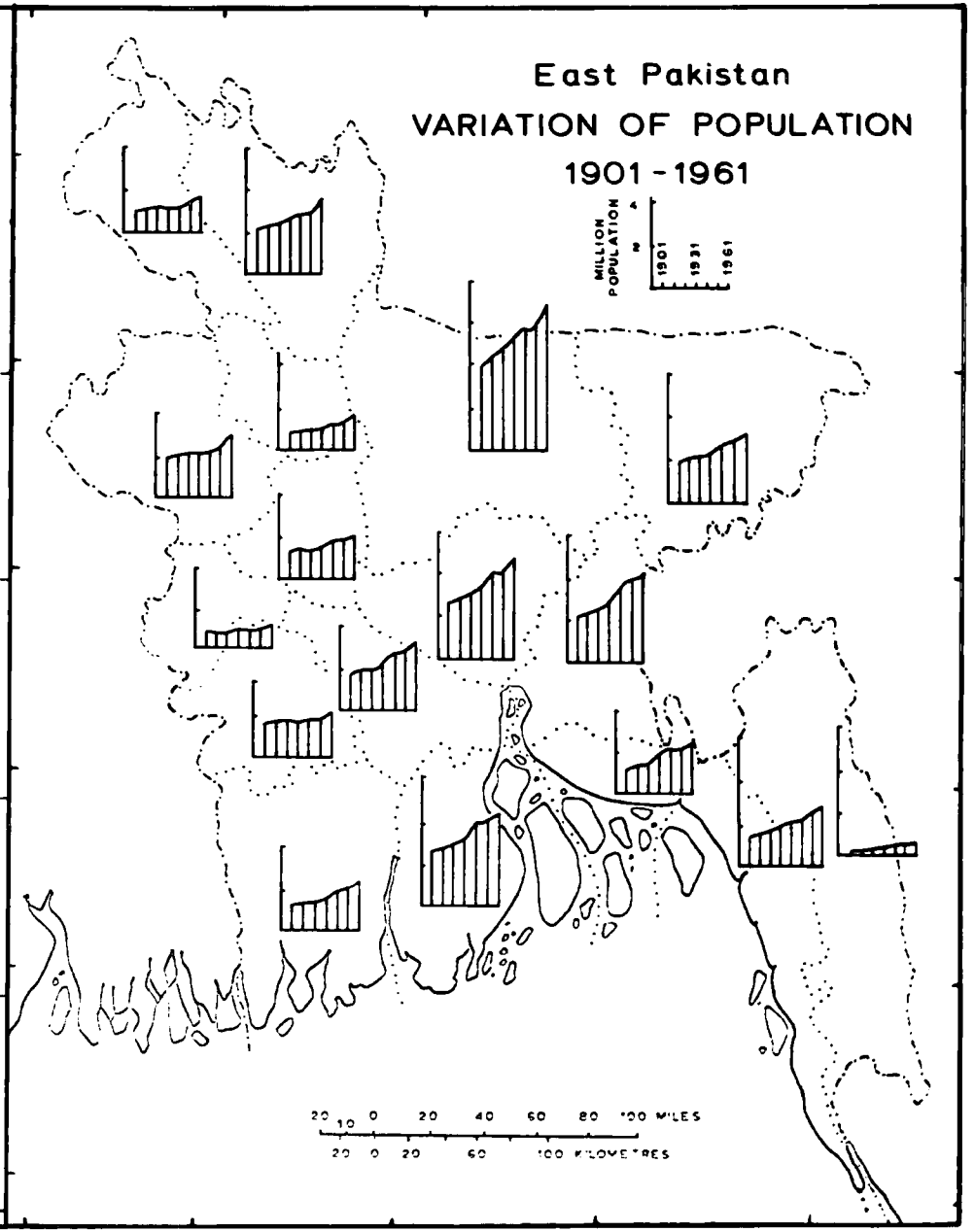

East Pakistan
DENSITY OF POPULATION
1961
PERSONS PER SQUARE MILE
< 500
500 - 1000
1000 - 1500
1500 >
20 0 20 60 100 MILES
20 0 20 60 100 KILOMETRES

FIG. 1.3


East Pakistan
VARIATION OF POPULATION
1901 - 1961
MILLION POPULATION
4
2
1901
1931
1961
20 10 0 20 40 60 80 100 MILES
20 0 20 60 100 KILOMETRES

practising shifting cultivation (locally called Jhum). The district is also relatively unhealthy which does not encourage dense population. Equally low density of population is found in certain pocket areas of Sundarban and Sylhet hills, and a small area of Barind and Modhupur Tracts in north and central Bengal respectively, where the agricultural conditions are less favourable.

VARIATION OF POPULATION

During the 70 years (1891-1961) the population of East Pakistan more than doubled. As noted earlier, the variation of population in the pre-Independence period was mainly due to famines, epidemics and to a certain extent socio-political instability in some particular decades. This is precisely reflected in the low rate of population increase in the northern and western districts, where the effects of famines and epidemics had been severe (Fig. 1.3 and Table 1.5). If the variation from 1901 to 1951 is considered it will be found that there had been an appreciable increase of population in almost all the eastern, central and southern districts of East Pakistan, particularly in Khulna (64.3%), Barisal (60.7%), Dacca (56.2%), Comilla (77.9%), Sylhet (55.7%), Noakhali (100.7%), Chittagong (71.4%) and Chittagong Hill Tracts (131.2%). Besides the fact that the districts of low population increase (those in Western East Bengal) had suffered from the high mortality conditions, there had also been some out-migration of Hindu population from them during 1940-50. Since the influx of Muslim population to these regions was not proportional the net increase has been slower until in recent

TABLE 1.5

Population* of East Pakistan by districts, 1901 - 1961

DISTRICTS	1901	1911	1921	1931	1941	1951	1961	% Variations 1901 - 51	% Variations 1951 - 61
Dinajpur	1125	1168	1219	1234	1335	1354	1710	20.35	26.29
Rangpur	2202	2434	2555	2646	2924	2916	3796	32.42	30.18
Bogra	884	1017	1083	1122	1260	1278	1574	44.57	23.16
Rajshahi	1902	2000	2027	1993	2199	2205	2811	15.93	27.48
Pabna	1402	1425	1385	1438	1696	1584	1959	11.55	23.67
Jessore	1647	1797	1590	1552	1695	1638	2190	-0.10	33.70
Kushtia	885	841	783	808	919	884	1166	-0.01	31.90
Khulna	1268	1380	1453	1626	1944	2075	2449	63.64	18.02
Barisal	2485	2613	2844	3196	3811	3642	4262	46.56	17.02
Faridpur	1781	1958	2030	2160	2650	2774	3179	55.75	14.60
Mymensingh	3922	4531	4342	5135	6029	5785	7019	47.50	21.33
Dacca	2617	2929	3171	3449	4223	4073	5096	55.63	25.11
Comilla	2139	2455	2696	3056	3811	3992	4389	86.62	9.94
Sylhet	2031	2241	2298	2466	2831	3059	3489	50.61	14.06
Noakhali	1143	1303	1473	1707	2217	2017	2383	81.19	15.06
Chittagong	1353	1508	1611	1797	2153	2512	2983	85.66	18.75
Chittagong Hill Tracts	124	154	173	212	247	287	385	131.45	34.14

* Population in thousand

Sources: 1. Census of Pakistan, 1951, Vol. 3.

2. Census of Pakistan, 1961, Vol. 2.

decades.

The rate of increase of population by districts was highest during 1951-61 decade. Inspite of the impact of yearly floods and cyclones on part of the province, the improved general health and hygienic conditions accounted for lower death rates and higher growth rates.

As revealed by Table 1.5, the percentage increase of population during 1951-61 was in some cases nearly as large as during the previous five decades - particularly in some of the western districts where the population remained almost stagnant until 1941-51 (Table 1.5, Fig. 1.3). The largest numerical increase of population during 1951-61 took place in Mymensingh and the lowest in Chittagong Hill Tracts, though the latter recorded the highest percentage increase. Faridpur and Sylhet also showed low percentage increases (14.6% and 14% respectively) during this period, though there have been vast numerical increases.

The post-independence population increase in the province is explained primarily by natural increase, since the role of migration was found to be insignificant. Besides natural increases, some districts, particularly those in northern East Bengal, were affected by inter-district migrations.[31] Until 1971 the population of East Pakistan gave the appearance of being a closed one, and it seemed that future variations in population would be affected by natural increase and inter-district migration, but the recent emigration of refugees has dramatically altered this situation (see above), although their long term effect on the overall demography of this region is inconclusive at the present moment (see also Chapter VIII).

SECTION B

RURAL AND URBAN POPULATION OF EAST PAKISTAN

According to the 1961 census, 94.81 per cent of the population of East Pakistan lived in rural areas - characteristically called 'Grama' or villages, and only 5.19 per cent in urban areas or towns. The urban population included all cities (urban centres with population 100,000 and over) and continuous collection of settlements inhabited by not less than 5,000 persons, as well as a few below 5,000 inhabitants, provided the area had pronounced urban characteristics.[32] In this study however, only towns with 5,000 inhabitants and over have been considered as urban.

CHANGES IN RURAL AND URBAN POPULATION

East Pakistan's socio-economic and cultural background has given it a distinctive rural pattern. The primary rural nucleus is a close collection of houses related by tradition, economic activities and socio-religious links. When the cluster grows in dimension the term "village" is applied. For administrative purposes, villages are regarded as individual population units of a few blocks of extended families or families and often given under "Mouza", which is a surveyed and recorded area for the realization of agricultural revenues.

Since long East Pakistan has been typically rural and the percentage of rural population has changed very little during this century (Table 1.6). Even in the period 1951-61, the urban percentage increased by only 0.85, and although the

rural declined slightly the number of villages increased from 61,424 in 1951 to 64,729 in 1961.

As noted in Table 1.6, the position of 1901 with 2.4 per cent of urban population remained almost static until 1920's, and an increase in the urban population started only during 1930's. Since then the proportion has grown slowly and steadily. There were only about 40 urban centres between 1901 and 1921, with one city. After 1930

TABLE 1.6

Changes in urban and rural population, East Pakistan, 1901 - 1961

Years	Rural Population (%)	Increase (%)	Urban Population (%)	Increase (%)
1901	97.57	-	2.43	-
1911	97.46	8.94	2.54	14.96
1921	97.36	5.29	2.64	8.80
1931	96.98	6.65	3.02	22.55
1941	96.94	17.18	3.36	42.85
1951	95.66	0.86	4.34	18.41
1961	94.81	20.16	5.19	45.11

Source: Same as Table 1.5.

the number increased; during 1941-51 there were 57 towns and in 1961 there were 68. Between 1941 and 1951 the number of towns with 5,000 population and over did not change at all, although there was a small net increase in urban population (Table 1.7).

Despite a definite trend towards urbanization in

East Pakistan in the recent decades, the rural population has not been reduced in an absolute sense. Moreover, there are districts where the urban and rural population has not changed appreciably, as in Rangpur, Dinajpur, Barisal, Faridpur, Sylhet, and Noakhali (Table 1.8). However, a marked urban increase has occurred in the districts of Khulna,

TABLE 1.7

Numbers and sizes of cities and towns, East Pakistan 1901 - 1961

Population Size	1901	1911	1921	1931	1941	1951	1961
100,000 and over	-	1	1	1	1	2	4
50,000 - 99,999	-	1	2	3	4	3	5
25,000 - 49,999	1	1	5	6	13	14	15
10,000 - 24,999	23	23	20	21	20	20	23
5,000 - 9,999	15	13	13	17	19	18	21
Total -	39	39	41	48	57	57	68

Source: Census of Pakistan, 1961, Vol. 2.

Dacca, Chittagong and Chittagong Hill Tracts, the first three districts receiving the impetus of urbanization out of recent commercial, administrative and some industrial development; while Chittagong Hill Tracts, for the first time of its demographic history had an urban population in 1961 (Table 1.8).

Between the districts, the proportions of rural and urban population vary quite widely; in 1961 the percentage of urban population varied from 1.4 per cent in Noakhali to 14.8 per cent

in Dacca, the next highest urban percentages being 12.5 in Chittagong and 7.0 per cent in Khulna. The urban percentages of Pabna, Kushtia and Chittagong Hill Tracts remained above the provincial average. The remaining 11

TABLE 1.8

Percentage distribution of rural and urban population, East Pakistan, 1951 and 1961.

Districts	Rural		Urban	
	1951	1961	1951	1961
Dinajpur	94.4	95.8	5.6	4.2
Rangpur	95.6	95.8	4.4	4.2
Bogra	97.2	97.0	2.8	3.0
Rajshahi	96.2	95.7	3.8	4.3
Pabna	95.6	94.9	4.4	5.1
Kushtia	95.4	94.6	4.6	5.4
Jessore	97.7	96.6	2.3	3.4
Khulna	96.7	92.9	3.3	7.0
Barisal	96.4	97.2	3.6	2.8
Mymensingh	96.9	96.6	3.1	3.4
Dacca	89.9	85.2	10.1	14.8
Faridpur	97.9	97.5	2.1	2.5
Sylhet	98.0	98.0	2.0	2.0
Comilla	96.9	96.8	3.1	3.2
Noakhali	99.0	98.6	1.0	1.4
Chittagong	88.3	87.5	11.7	12.5
Chittagong Hill Tracts	100.0	94.1	0.0	5.9

Source: Same as Table 1.7

districts registered a below-average urban percentage, while Dinajpur, Rangpur and Barisal showed a decline in the same between 1951 and 1961. This was because of the lesser availability of incentives to urbanization and probably because of reclamation of new agricultural lands which effected an expansion of rural settlements.

There were only one city in 1931; in 1961 there were four, namely, Dacca, Chittagong, Narayanganj and Khulna - a substantial increase in post-independent decades (Table 1.7). Similarly, there were only 3 towns with between 50,000 and 100,000 inhabitants in 1931, but 5 in 1961. There has also been a marked increase in the number of medium and large sized towns (10,000 to 50,000 population) since independence, possibly owing to their increase in administrative functions and the addition of other urban functions in the later decades.

One characteristic of urban populations of East Pakistan is that they are mostly concentrated in four cities, and in medium sized towns with population between 10,000 and 50,000 (Table 1.9). Thus 45.86 per cent of the urban population or 3.96 per cent of the total population live in the cities, locally called "Shahar" or "Nagar", followed by medium sized towns (35.18 per cent) and larger urban centres (11.18 per cent).

TYPICAL PHYSIOGNOMY AND ECONOMIC CHARACTERISTICS OF THE URBAN CENTRES OF EAST PAKISTAN

Urbanization in East Pakistan, like many of the South and South-East Asian countries, differs from Western countries

TABLE 1.9

Percentage distribution of urban population in different urban size groups, East Pakistan, 1961

Urban Size Groups	% of Total population	% of Urban Population	Average Density (pps/m)
100,000 and over	2.38	45.86	12050
50,000 - 99,999	0.58	11.18	1600
25,000 - 49,999	1.07	20.60	1650
10,000 - 24,999	0.76	14.58	1500
5,000 - 9,999	0.33	6.35	-
Below 5,000[x]	0.07	1.43	-

x not considered in this study

Source: Same as Table 1.7.

in three main aspects:

a) urbanization in East Pakistan had a colonial background with an indigenous rural culture,

b) its development has been very slow and very recent in origin, and

c) it took place in an already densely populated area giving extreme densities in the towns. Therefore, though the population is characterized by rurality and reluctance to urbanization the towns are overcrowded for various geographic reasons (Table 1.9).

In the early and middle ages there were certain highly populated royal cities with trade and commercial base, such as Mahasthan, Sonargaon, Vikrampur and Chatigram (Chittagong).

During 1600 to 1700 A.D. when Dacca was the capital of Bengal, Bihar and Orissa it supported a population of about 900,000[33]. Despite the massive size of these few individual cities, the province lacked the degree of urbanism in the modern sense of the term. The proportions of town dwellers were very small because of the province's economy based on rural paddy culture and industry, and limited means of intraregional communication. The towns were purely administrative centres with associated functions in relation to river transport and commercial facilities.

During the British period, the importance and concept of towns in this region increased greatly because of : (i) the status of early towns as collecting, exporting or trade centres was extended, (ii) they were further used for administrative purposes, and (iii) expansion of urbanization received a fresh momentum with the establishment of railway transport. Consequently, the towns became the centres of colonial economy and administration rather than a result of socio-economic development through an internal process of evolution of the region itself, as manifested in their patterns of function and growth. From this point of view, they may be characterized as "parasitic" urban centres rather than "generative".[34] Since the Industrial Revolution in Europe they, like many other South and South-East Asian towns, served as the collecting and exporting centres of agricultural raw materials, such as indigo, jute, tobacco, silk and tea. Later many of these towns declined or changed their economic base due to the competition from other countries and the use

of wide varieties of synthetic substitutes in the industries of the western world.[35] In the present century, most of the towns were left as administrative centres, others enjoyed only local commercial importance, and merely a few possessed certain industrial concerns for the indigenous population. They are also serving the role of intermediaries by bringing about social and cultural changes between them and the surrounding rural areas and thereby assuming a "generative" role.

Since the beginning of the present century the rate of urbanization and the size of the non-agricultural labour force in the urban centres have been increasing steadily. The towns, particularly the larger ones are receiving a large population from the rural areas and smaller towns. This is being accelerated by the elaboration of economic institutions and various fiscal aids by the government and other private enterprises. Since the agricultural sector is still under-invested, even a slight increase in industrial and related development in towns leads to unbalanced urban growth as in the smaller industrial towns of Thakurgaon, Habiganj and the like. Because, as found in other agrarian societies, the increment in employment resulting from such industrialization or investment (without giving any regard to agriculture) is accompanied by an increase in unemployment and underemployment within the towns,[36] as a result of sudden influx of unskilled rural migrants to such towns. While in larger towns with sufficient and diversified economic base,

as in Dacca, Narayanganj, Chittagong and Khulna, the prestige of governmental and public buildings and opulent new residential areas of the rich minority are flanked by temporary bamboo houses of rural migrants, called "Bustee" or squatter huts, of the sort which are now creating a major crisis in all developing countries[37]. Under this situation the migrants do not necessarily contribute directly to the urbanism and the urban economy, as many of them, because of their qualitative limitations, fail to enter typical urban employment (in administration or industry) and start self-sufficient jobs and support their living in towns as well as their families in the villages. The drain of urban resources, though aiding rural economy, leads to low living standards for these urban dwellers. Owing to lack of data in this connection and because of the traditional prevalence of shared poverty, the actual degree of unemployment and underemployment is difficult to ascertain on a statistical basis for the urban centres in general.

Morphologically the main focus of most urban settlements is the single main road, and its few branches with comparatively little urban renewal, vertical extension, functional multiplicity and suburban development. Excepting the cities, all of them lack true CBDs and are usually centred around a central market or "Bazar" which is often hard to delimit from the surrounding townscape, especially in smaller towns. The cities, on the other hand present different morphologies characterized by : (a) an old quarter, identified

by middle or early modern period semi-planned congested area, and (b) a modern area, with rectangular or semi-rectangular road patterns and new residential areas indicating a degree of administrative and institutional unity with increasing suburban development.

Like other parts of the Indo-Pak subcontinent the East Pakistani towns are neither purely theocratic nor definitely secular though every town has its main mosque and temple whose role differs from that of a central mosque in a Middle Eastern city or the temples of many towns in India. This is also mostly reflected in the lack of definite religious or racial segregation within them.

The towns are, functionally the result of one or more of the following activities: river transport and commerce, inland collecting centres of agricultural products, local industries, administrative and other cultural institutions, communications nodes, and relatively recent industrial development. The size and interdependence of towns depends on their respective multiplicity of functions on the line of these activities.

NOTES ON THE DISTRIBUTION OF CITY SIZES IN EAST PAKISTAN

The principles of rank size distribution of towns are being widely used in recent literature on urban geography. Earlier exponents, such as Jefferson[38] observed that the largest city in a country is far greater than the second one and proposed the so-called "law of primate city" and Zipf[39] formulated that the distribution of all cities by rank and

size is such that the population of any city multiplied by its rank is a constant. Later writers observed deviations from this rigid process and different patterns in urbanization could be expected in many geographical regions, establishing that primacy and the rank - size rule are not mutually exclusive models, and as observed by Berry[40] certain intermediate models may be distinguished in a number of countries. As such Berry identified countries into three types according to their city-size distributions (Appendix 2):

(a) Countries with log-normal city-size distribution: This group included both developed countries (U.S.A.) and developing countries (Korea); large countries (China) and smaller ones (El Salvador);

(b) Countries with primate distribution: They included a stratum of small urban centres which is dominated by one or more very large urban centres with very few towns with intermediate size. This group also included both developed countries such as Sweden, Portugal, Denmark and Japan, and developing countries like Thailand, Ceylon, Mexico and Peru.

(c) Countries with intermediate distribution: They represented a pattern between (a) and (b), and also included both advanced and developing countries, such as England and Wales, Canada, Norway, and Malaya, Pakistan, Ecuador and Nicaragua.

From Berry's observations it is deduced that log-normal city-size distributions appear to be associated with larger countries with long urban history and complex economic and political set up; the converse is true for countries with

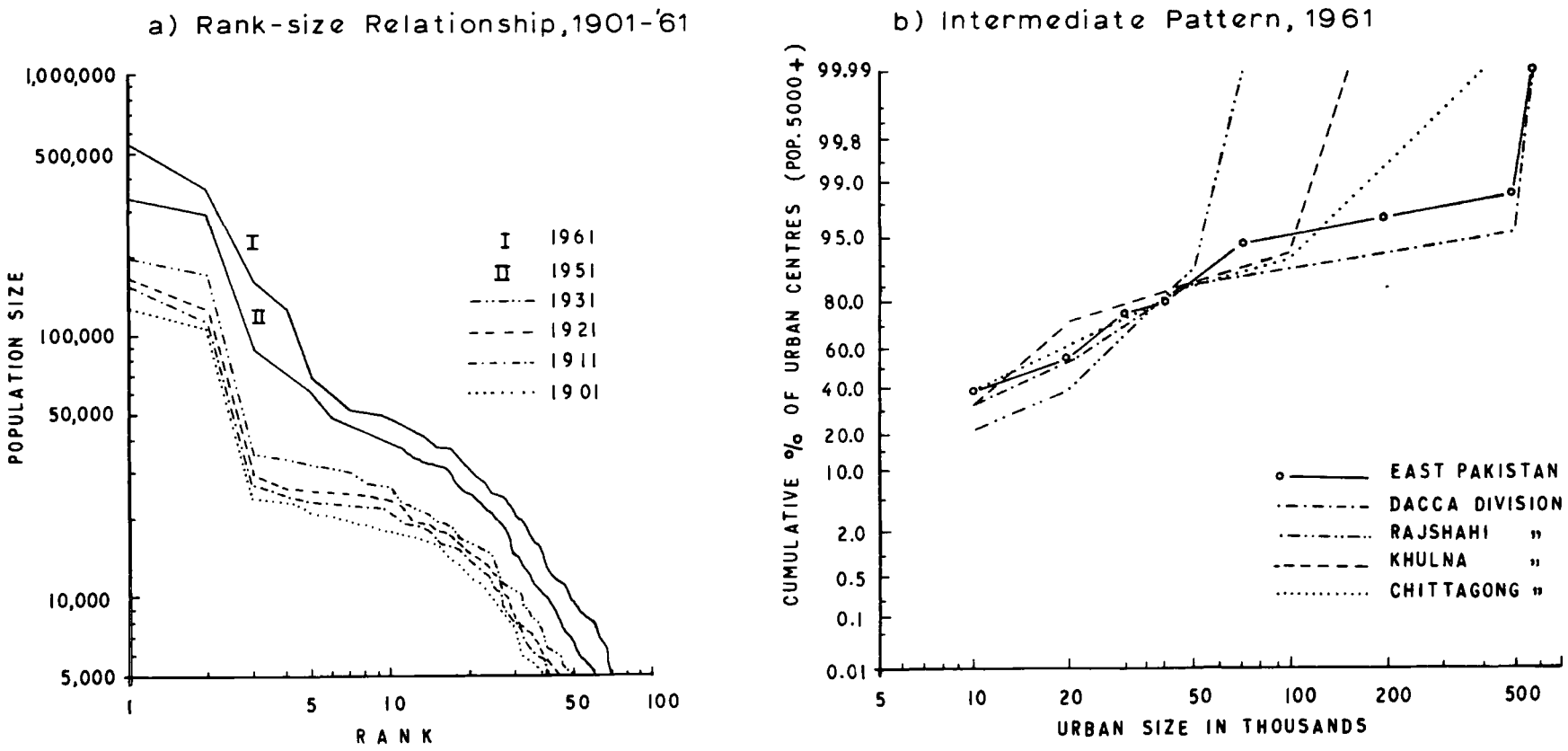
primate distributions. But log-normal distributions are not only characteristic of advanced or developed countries neither are primate distributions related in any significant way with underdeveloped or developing countries.

The concept of urban primacy has been examined in relation to the development of towns in East Pakistan for six decades from 1901 to 1961 and for four administrative divisions, in order to observe the whole process of evolution through time and space (Fig. 1.4). Very low urbanization with the predominance of two large towns (duality) is represented in the curves of 1901 to 1931, while those for 1951 and 1961 present departure from this pattern (Fig. 1.4a) owing to increase in population in a number of medium sized towns and to a certain extent, the smaller towns as well. There had been a considerable rearrangement in the ranking of the towns in 1901 to 1931 - particularly in the smaller ones as indicated by the overlapping of curves, while the medium sized towns during this period grew very slowly (Fig. 1.4a). The rearrangement in the ranking of the towns did not occur either in 1951 or 1961, indicating a balanced growth of individual towns. Thus in contrast to earlier decades the numerical importance of middle sized towns has increased immensely, while the continued duality of two cities (Dacca and Chittagong) during earlier decades has greatly decreased. This was because Chittagong has long been the only sea port in the province and its functions were the concomitant to a process of greater internal interdependence of cities, and

FIG. 1.4

East Pakistan

DISTRIBUTION OF CITY-SIZES, 1901-1961



its economic importance was dependant on the export of jute and other raw materials and some import functions. However it lost its functional monopoly after the establishment of another sea port near Khulna and the expansion of the river port in Narayanganj after Independence. Dacca, the largest city and other larger towns greatly increased their respective functional importance when the province was liberated from political and economic dependence on Calcutta, which had long been the only primate city of undivided Bengal. This, immediately after the Independence has led to a pattern of rank - size relationships of urban centres in the province which may be called a "Decapitated primate distribution".

The medium sized towns, though they seem to approach log-normality in their distribution since 1931, fall short of the expected values of log-normal distributions because of their limited functions as mainly administrative centres. Disparity in their sizes as well as numbers might also have caused such a trend. In the case of smaller towns in 1951-61, the rank size distributions were slightly above the expected values, indicating their fast growth. These were the towns whose administrative status received new incentive in the post-independence periods and in many of them new industries and commerce were being developed. In contrast to larger towns, people readily move into them as their accommodation problems are not so acute nor the living cost is high.

Although East Pakistan enjoyed all the ecological pre-requisites for primacy, such as fairly long urban history coupled with colonization, saturated rural economy and dense population, primacy is not now particularly strong because of two main reasons:

i) in East Pakistan very limited urbanization took place in the past because of its typical agrarian nature and its role as supplier of raw materials for the industrial complex in the Hooghly Valley (West Bengal) and other places, and

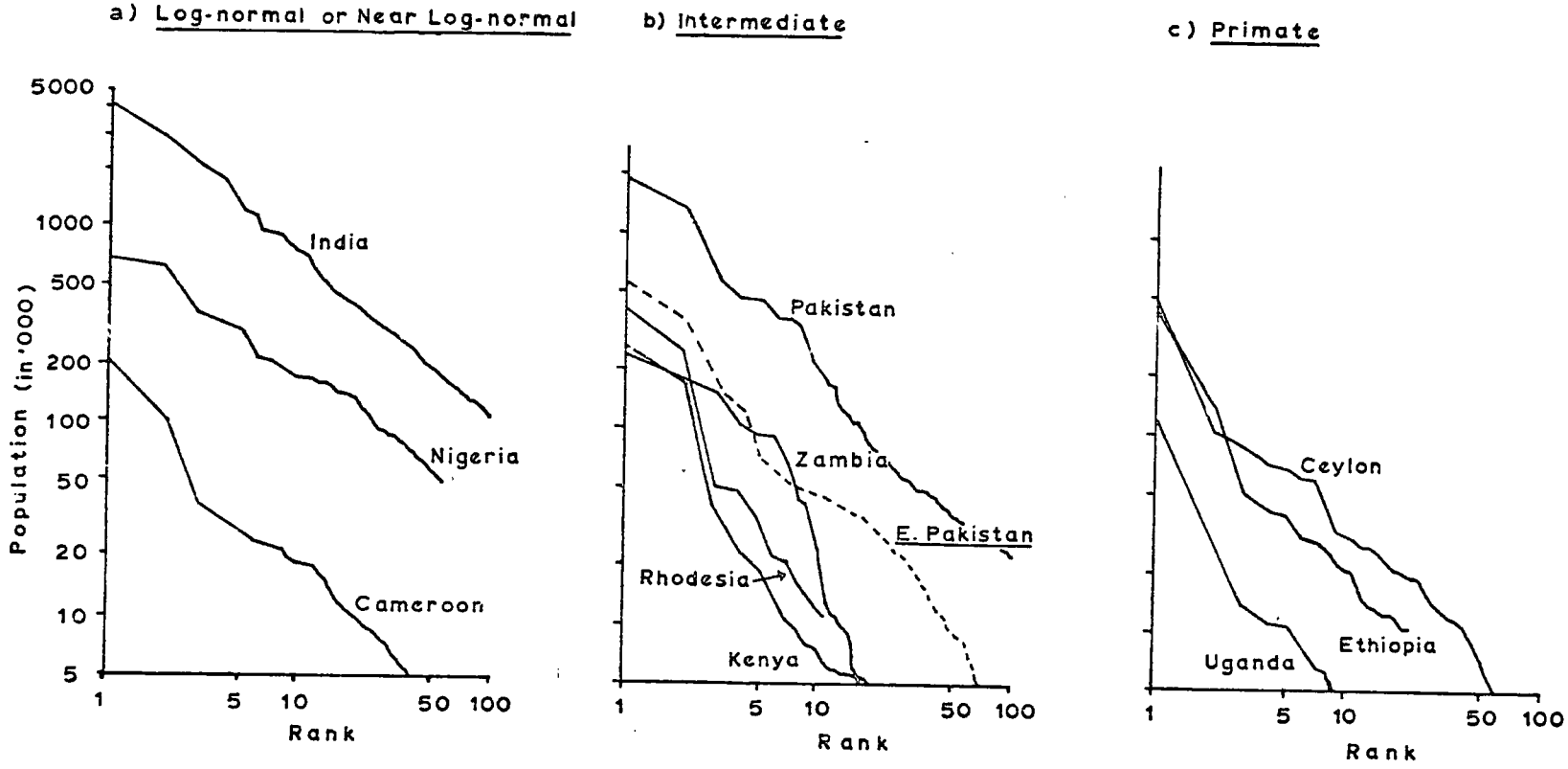
ii) the main urban development took place in the Hooghly Valley in West Bengal with special multidimensional development in and around Calcutta, on which East Bengal depended economically and politically until the present century.

Consequently, at present the cities of East Pakistan have neither high primacy nor a log-normal distribution. This is graphically represented in Fig. 1.4b, drawn after the technique used by Berry[41] (Appendix 2), who observed the same patterns in 9 countries including Pakistan, and termed them as "Intermediate pattern" - between primacy and log-normality. When viewed regionally the urban development in the four divisions of East Pakistan also clearly indicates this pattern (Fig. 1.4b).

Similar pattern in urbanization has been observed by Clarke[42] in many of the African countries, such as Rhodesia,

FIG. 1.5

DISTRIBUTION OF CITY-SIZES OF SELECTED COUNTRIES AND EAST PAKISTAN



(Graphs of African towns are drawn after Clarke, 1970)

Zambia, Congo and a few others (Fig. 1.5). For East Pakistan, like many countries with "intermediate urban pattern", such a trend is the result of and associated with low rate of urbanization, colonial impact provoking political fragmentation or smaller regional extent, and limited economic activities together with low national income.[43]

How long this intermediate stage will persist is not definite. If the present processes of changes of population in the individual towns continue (that is greater increase among medium sized towns), the middle size towns will emerge to offset the existing duality of two cities in the province. The present trend in urbanization in East Pakistan is in this direction, and the distribution of urban centres may well assume the log-normal pattern in near future. This view may be supported by the ensuing governmental policies towards industrialization and further expansion of transport, commerce and other urban institutions in the medium sized and smaller towns, as well as decentralization of industrial estates away from some of the larger urban centres.[44]

INTER-DISTRICT AND RURAL - URBAN MIGRATION IN EAST PAKISTAN

In the face of high rural density coupled with progressive fragmentation of holdings, and over saturated agricultural conditions, rapid changes in the urban areas are obviously expected when the process of urbanization has already set out. But this rule appears to be ineffective for East Pakistan. Hard agrarian conditions and positive distress, in certain parts based upon geographic as well as social and economic factors have been exerting a sort of "push", but the "pull"

from the urban centres has not been strong enough.[45] This is because of the lack of social security measures, the unemployment and underemployment problem, scarcity of accommodation and high cost of living in towns. Moreover, as a result of abolition of the "Zamindari system" of land holding (1951-54) the lands are now owned by the peasants, giving them a new sense of power and destiny which has contributed in slowing down the volume of migrants from rural to urban areas. On the other hand, the norm of shared poverty in an extended family system, low rural literacy, traditionalism as well as rise in land value have also made the rural population unresponsive to urbanization, and those who migrate to towns stay there for a limited period of time and most of them ultimately return to village - homes - a fact which Bose[46] has termed "push back" factors in relation to internal migration in this part of Asia. This does not mean that the rural population of the province is immobile. A great deal of short range and age-sex selective inter-territorial migration has been taking place in the province. The extent of selective migration will be discussed in detail in the chapters on age and sex structures. The short range migration takes place between: (i) rural and rural areas, (ii) rural and urban areas, (iii) urban and urban areas, (iv) urban and rural areas. All of these can be denoted under a broad heading of "inter-district migration", which depends on the rurality and density of particular regions and the distance involved.[47] Because of the absence of data in relation to particular points through which migrants move into

and move out of the district or residential areas and because of the existence of a diversified transport system and complex riverways it is difficult to explain and present these types of migrations on a statistical basis. Table 1.10, however gives a general picture of the nature and movement of internal migrants by districts. Fig. 1.6 represents the general movements of population and population by place of birth and enumeration in 1951 and 1961. Fig. 1.6(b) shows that the majority of the populations were born and enumerated within the district followed by those born within the respective administrative divisions. From Table 1.10 it is assumed that the inter-district migration was very low during the early part of the present century and the trend has not much changed in recent decades. In relation to density and distance, the main geographic regions (almost identical to the administrative divisions) of the province show unequal response as far as migrants are concerned. North Bengal, where the density is relatively low, shows little mobility compared to south-eastern regions. More specifically, the districts of north Bengal received less migrants from contiguous districts, but more from non-contiguous districts and elsewhere (Fig. 1.6). The southern districts (such as, Chittagong, Barisal, Jessore and Comilla) received a greater proportion of migrants from contiguous districts.

Migrants to individual urban centres are difficult to estimate. Obaidullah has, however worked out migration from different regions to some selected towns (Table 1.11).

TABLE 1.10

Percentage distribution[1] of migrants by categories of regions and their density in relation to total density, 1951-1961.

	1911			1921			1951			1961			Density per sq. mile			
	A	B	C	A	B	C	A	B	C	A	B	C	MIGRANTS 1951	MIGRANTS 1961	TOTAL 1951	TOTAL 1961
Dinajpur	17.84	9.17	72.99	16.21	11.02	72.77	9.47	13.69	76.84	14.54	39.88	45.58	3.93	7.38	544	655
Rangpur	27.51	22.46	50.03	32.02	12.94	46.04	28.20	19.24	52.56	14.87	53.54	31.59	5.68	10.81	792	1025
Rajshahi	52.55	10.51	36.94	53.26	12.36	34.38	17.07	18.29	64.64	22.73	31.82	45.45	6.56	11.37	608	769
Bogra	54.02	11.25	43.75	44.01	13.54	42.45	52.08	6.26	41.66	33.89	42.79	23.32	23.73	41.13	868	1048
Pabna	52.99	7.79	39.22	58.64	8.69	32.67	50.00	11.12	38.88	27.78	60.26	11.96	38.51	58.52	868	1044
Jessore	83.22	6.66	10.12	64.77	7.40	27.83	37.88	18.18	43.94	25.24	54.21	20.55	16.78	39.19	656	860
Faridpur	81.35	5.15	13.50	84.34	3.33	12.33	75.86	10.35	13.79	50.55	33.52	16.13	30.10	58.29	1051	1180
Khulna	86.87	5.54	7.59	84.92	4.99	10.09	53.06	10.21	36.73	37.94	38.39	23.67	5.85	11.06	432	851
Barisal	64.89	26.62	8.49	63.20	28.27	8.53	35.00	55.00	10.00	38.93	58.02	3.05	13.12	24.83	902	1005
Mymensingh	35.85	4.65	59.50	45.18	5.10	49.72	59.09	9.09	31.82	49.52	45.34	5.14	18.14	36.25	931	1103
Dacca	65.34	8.80	34.86	64.70	7.97	27.33	31.25	14.58	54.17	44.26	27.45	28.29	51.69	72.86	1492	1768
Comilla	65.48	4.91	29.61	65.82	6.37	27.81	73.33	6.67	20.00	39.69	50.52	9.79	46.35	102.83	1500	1639
Noakhali	82.79	13.99	3.22	79.96	14.99	5.05	33.33	50.00	17.67	15.47	16.37	68.16	64.50	127.39	1424	1285
Chittagong	26.18	31.41	42.41	27.10	37.94	34.96	28.57	8.58	62.85	34.39	40.76	24.85	10.24	20.27	902	1103
Chittagong H.T.	-	-	-	-	-	-	73.77	13.11	13.12	54.72	39.48	5.80	0.15	0.45	57	76
Sylhet	-	-	-	-	-	-	23.08	46.16	30.76	55.60	27.91	16.49	5.11	7.48	628	729
Kushtia	-	-	-	-	-	-	6.84	7.90	85.26	15.06	17.89	67.05	16.96	27.99	647	851

- not available

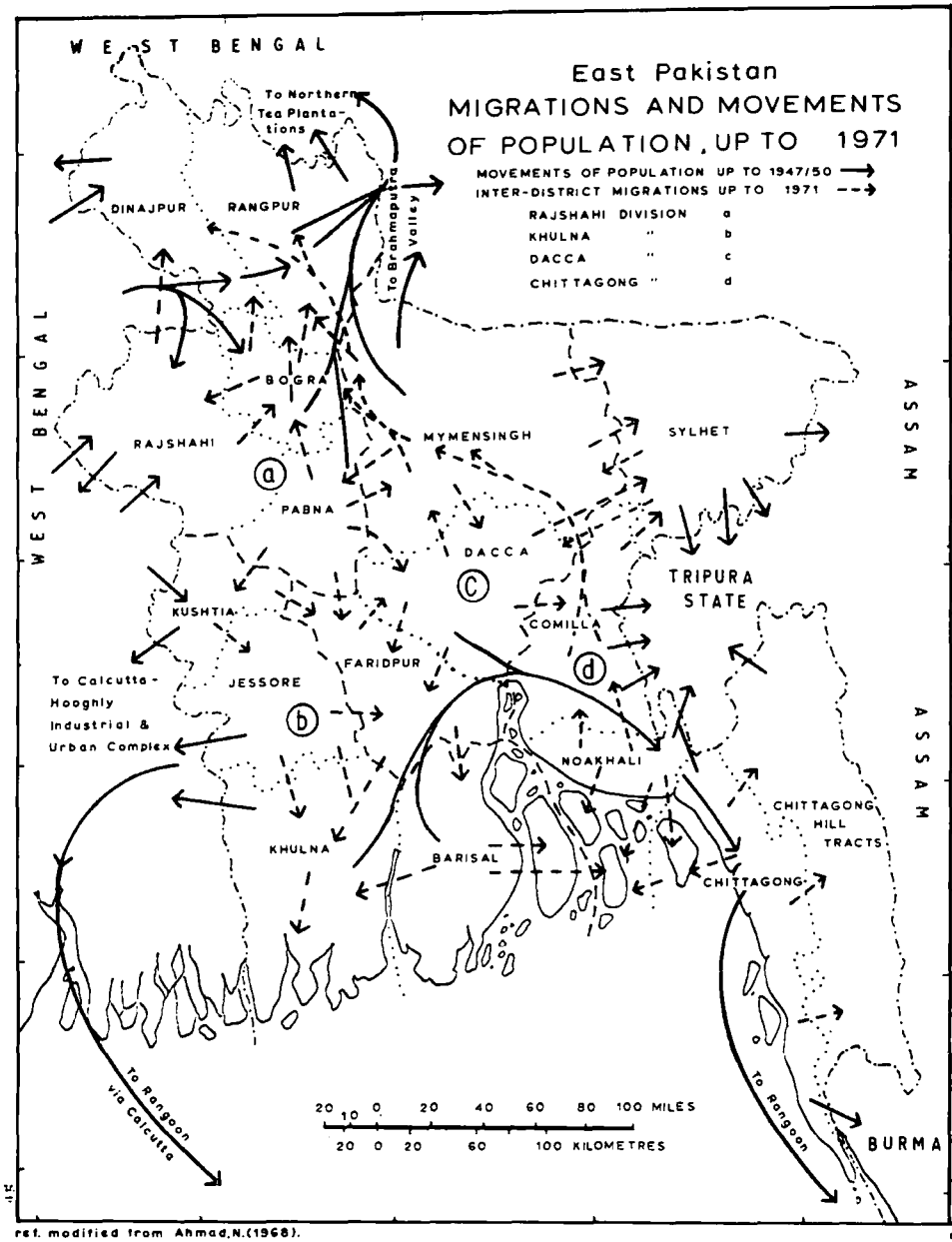
1. Percentage of total migrants in the districts.

A. - From contiguous districts, B - from non-contiguous districts

C. - From outside East Pakistan.

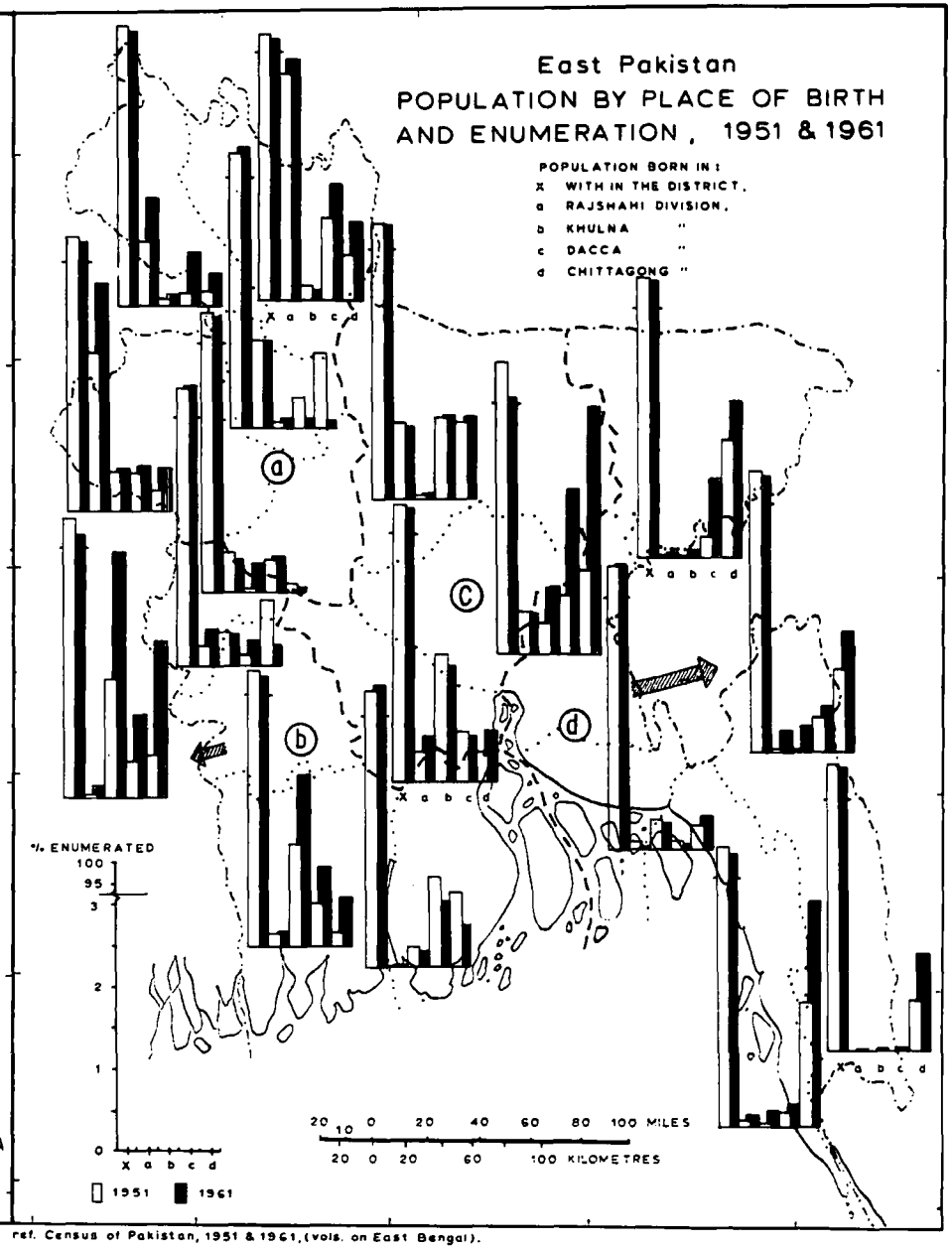
Sources: - Calculated from: 1. Obaidullah, M. 1967,
2. Census of Pakistan, 1961, Vol. 2.
3. Census of Pakistan, 1951, Vol. 3.

FIG. 1.6 a



ref. modified from Ahmad, N. (1968).

FIG. 1.6 b



ref. Census of Pakistan, 1951 & 1961, (vols. on East Bengal).

TABLE 1.11

Percentages of migrants to different towns from different regions, East Pakistan, 1951 and 1961.

To / From		North		South		East & N.East		T/Cr Ratio* (Migration)
		1951 - 1961		1951 - 1961		1951 - 1961		
Dacca	C	1.51	2.20	2.45	3.54	96.04	94.26	152
Narayanganj	"	-	1.05	-	2.31	-	96.64	164
Chittagong	"	0.85	1.13	0.97	1.73	98.18	97.13	176
Khulna	"	1.19	3.08	76.61	67.41	22.19	29.50	176
Saidpur	M	86.89	92.53	2.04	1.41	11.06	6.07	92
Rajshahi	"	89.37	91.73	3.23	2.80	7.37	5.46	116
Barisal	"	0.31	0.44	85.76	86.39	13.93	13.17	140
Comilla	"	0.80	0.32	0.97	1.75	98.22	97.92	128
Mymensingh	"	1.69	2.03	0.93	1.31	97.38	97.66	132

C = City, M = Municipality

* For statistical procedure of calculating T/Cr ratio (indicating volume of migrants), see Chapter II and Appendix 3.

Source: Obaidullah, M. 1967.

Sex-selective rural-urban migration ratios have been calculated in Chapter II, and have been presented in Table 1.11, where it is evident that a majority of towns attracts most movements of population from the east and north-east regions. The people of the north were again found to be less mobile when towns in other regions were concerned.

TYPES OF MIGRANTS - With low rates of urbanization and industrialization in the province, it will be interesting to note the types of migrants. There are four main types of

inter-territorial migrants in East Pakistan:

1. Casual or Temporary Migrants migrate mainly between contiguous districts, especially as a result of any of the following socio-economic reasons: (a) marriages, (b) visits of relatives during social and religious festivals, (c) young mothers' visits to parents' homes during pre- and post-natal periods, (d) visits to fairs and pilgrimages, (e) movement of labour in construction works.

2. Periodic Migrants move to home-villages during holidays from plantations and factories, and place of income. The mobile traders and mobile beggars spending a particular time each year in a series of districts could be included in this group. Their exact number is however not known.

3. Permanent Migrants are common in the southern deltas and in the northern districts of East Pakistan, where farmers and fishermen from other overcrowded districts (mostly from the south - centre) have moved into them, and are responsible for reclaiming the lowlands of southern districts and the jungle areas of the north Bengal (and the lower Assam valleys).

4. Rural to Urban and Semi-permanent Migrants live and earn mostly in urban centres and retain their social, economic and psychological links with their village homes. Many of them usually leave their families in the villages where they hope to return upon their retirement from work in old age. Most of the rural-urban migrants in the province are of this nature.

EFFECTS OF INTERNAL MIGRATION ON POPULATION STRUCTURES - Internal migration has not only demographic but also socio-economic implications. Out of the above mentioned four main

types of migrants, the first two act as agents of population exchange between districts; and the third move with the family to settle in a new district and are ultimately assimilated within it. Therefore, they act as modes of population exchange between districts. The fourth, namely rural-urban migration, being associated with demographic and socio-economic changes leads to certain far reaching effects in the country. In the first place it creates maladjustments due to slow urbanization and industrialization, low economic level and associated features of the province. On the other hand, as noted in the subsequent chapters, it influences the fertility, mortality, age, sex, literacy and economic structures of two broad residential areas of East Pakistan. For instance, most of the rural-urban migrants are within the adult age groups who are likely to affect fertility both in their areas of origin and destination. Because of frequent visits to their place of origin (i.e. rural homes), where they leave their families, the fertility conditions are not changed, while both fertility and marriage rates in urban areas become much lower. Age and sex selectivity of migrants in towns affects the overall qualitative character of population in them. On the other hand, in their frequent contact with rural areas the migrants act as intermediaries of social change in villages. Since most of the migrants in towns also support their families back in villages, they also act as a deterent against large-scale rural-urban migration (which is in contrast with many African and Latin American countries) by acting as agents

reducing pressure on rural resources. While, the selectivity of population characteristics in urban areas is greatly offset by unemployment or underemployment, and shortage of housing, as noted earlier, to the establishment of shanty towns, particularly in larger towns - a social fact which discourages many migrants from bringing their families in towns. These conditions, together with unfavorable and unbalanced age and sex structures create a wide range of economic and social problems which will be discussed in appropriate chapters in the thesis.

SECTION C

RELIGIOUS AND LINGUISTIC CHARACTERISTICS OF THE POPULATION OF EAST PAKISTAN

(i) RELIGION

The Muslims are the dominant population group in East Pakistan, followed by the Hindus (Table 1.12). Only a small proportion of population belongs to Buddhism, Christianity and other tribal religious groups. The dominance of Muslim population in the province has been the result of two of the three stages of Muslim expansion during 8th to 13th centuries in the Indo-Pak subcontinent, namely, first, infiltration and settlement of Arabian and Persian Muslim Traders in Western and South-Western India; secondly, influx of the Muslim conquerors from the north-west; and lastly, the Muslim missionaries moving into remote areas.[48] In Bengal the Muslims came as merchants and thereafter religious expansion took place by the Muslim missionaries of the 10th to 12th centuries, when

the local Buddhists were being socially, politically and economically suppressed by the rising Caste-oriented Hindu revivalists under the Sen dynasty. Consequently many Buddhists fled to Tibet, Burma, Thailand and Ceylon, while the others embraced Islam. At the same time the reimposition of a rigid caste system made many Hindus indignant towards the neo-Brahminism and must have accepted Islam to achieve better socio-economic equality.[49] The expansion of Islam continued well beyond the fall of the Sen dynasty by the Muslim Khiljis (1201-6 A.D.) who established semi-independent Muslim rule in Bengal. In 1211 the Muslim population in Bengal numbered between 2 and 3 million[50] and by the early 14th century the Muslim expansion in the Bengal plain was almost complete.

GROWTH OF MUSLIM AND NON-MUSLIM POPULATIONS

During the middle ages the expansion of Muslim settlements in the province was also aided by various physical factors. They were spreading towards the new unbroken and fertile lands of the deltas and northern jungles. During this time the Hindu dominated West Bengal had been an unhealthy region and deteriorating in agricultural production due to silting up of the rivers leaving stagnant backwater and marshes. In contrast to it, East Bengal was being drained each year with floods leaving behind fresh deposits of alluvium, and was rich in agriculture - a condition conducive to massive population

expansion. The differentials in geographic and health conditions[x] between the two regions had a marked effect on statistics of population by religion at the later dates. During the mid-19th century the two religions could claim almost equal number of adherents in whole Bengal, but by the end of the 19th century the Muslims outnumbered the Hindus by 10 percent and the Muslim population was growing faster than the Hindus.[51] In 1901 there were 66 per cent Muslims and only 33 per cent Hindus in East Bengal. As noted earlier, the main reason was one of location: almost 4/5th of the Muslims lived in the healthier and more prosperous eastern and northern Bengal, while 60 per cent of the Hindus lived in the declining western and central districts (of Greater Bengal)[52]. Consequently, in 1941 there were 70 per cent Muslims in East Bengal who earned separate nationhood in 1947, and it reached more than 80 per cent by 1961 (Table 1.12), while both the Hindus and other religious groups had increased very slowly. Abnormal percentage increase in population in all the religious groups in 1941 had been due to overstatement

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x Learmonth has observed that the most of East Bengal had low to medium infant mortality and death rates compared to most of India. Almost the whole of East Bengal was found to be a "healthy plain" - malarial fever was less serious (Spleen rates was less than 10% compared to high spleen rates in W. Bengal and other areas). He also noted that, "The relative freedom from malaria in E. Bengal has long been ascribed to ... very thorough flushing of almost every waterbody by sheet-floods from local rains as well as convergent rivers ... coupled with favourable economic factors for a period following the spread of jute growing as a cash crop". This was not so in W. Bengal due to its "dead rivers" and "dying deltas". (Learmonth, A.T.A. 1958, Pp. 1-59).

TABLE 1.12

Population by religious groups, East Pakistan, 1901 - 1961

YEARS	MUSLIMS			HINDUS			OTHERS		
	Popl. Mil.	%	% Increase	Popl. Mil.	%	% Inc.	Popl. Mil.	%	% Inc.
1901	19.1	66.07	-	9.5	33.00	-	0.30	0.93	-
1911	21.2	67.19	10.99	9.9	31.54	4.21	0.40	1.27	33.33
1921	22.6	68.10	6.60	10.1	30.57	2.02	0.44	1.33	10.00
1931	24.7	69.46	9.29	10.5	29.36	3.96	0.40	1.18	- 9.09
1941	29.5	70.26	19.43	11.7	27.97	11.43	0.70(0.05)	1.77	75.00
1951	32.2	76.85	9.15	9.2	22.04	-21.37	0.50(0.11)	1.11	-28.57
1961	40.9	80.42	27.00	9.4	18.43	2.17	0.60(0.42)	1.15	20.00

(Figures in parentheses are for Christians).

Source: Same as Table 1.5.

of community figures in the census due to political conditions prevailing at that time. Excepting that year, the rest of the decades maintained a plausible trend (Table 1.12). During 1941-51, the Muslims increased by only 9.15 per cent despite the influx of Muslims from India after the Independence (see below). This was obviously affected by the 1943 famine. The rate of growth of Muslims during 1951-61 was 27.00 per cent due to better health conditions and a supposedly higher fertility ratio.

On the other hand, the Hindus increased very slowly from 1901 and in fact declined after 1941. Between 1951-61 they however registered an improvement. The gradual decay in the Hindu population resulted from sex selective deaths, lack of

female remarriage, (giving low fertility and high widow rates), non-acceptance of converts and some out-migration immediately after the Independence. Slow positive increase in Hindu population between 1951-61 was the result of natural increase and return migration of some Hindus from India.

The increase in "other" religious groups had also been slow and at time sporadic. In this group the proportion of Christians has risen more than the Hindus or any other religious groups who accepted converts mainly from tribal groups and low caste Hindus, and still the missionary activities are most active in the remote tribal areas. Christians have increased slightly faster in East Pakistan than in the western wing during the decade 1951-61: an increase of 39.8 per cent (34.9% in West Pakistan), which was even greater than the increase of the total population. This may be because of East Pakistan's greater religious tolerance than the western wing. Most of the Christian populations in the province live in Dacca and Khulna divisions, while the tribal groups are localized in Chittagong Hill Tracts, Dinajpur, Rajshahi, Mymensingh and Sylhet; and the Buddhists mainly in Chittagong and Chittagong Hill Tracts.

The slow and sporadic growth of tribal groups may be due to some gross underenumeration in earlier decades as they were not well defined in any of the censuses[53] prior to 1951. In recent decades their slow growth is accounted for by : (i) conversion to Christianity or Islam, (ii) higher

mortality due to environmental conditions peculiar to them, and (iii) partly due to underenumeration because of their nomadic habit.

In this connection the impact of the newly emerging phenomenon of "demographic divide" is to be considered in relation to the recent religious structures and population growth in East Pakistan. It has already been noted that East Bengal has been expanding in the past few decades prior to Independence both in rapid population growth and in the settlement of lands not previously under intensive cultivation. The Muslim agricultural and population expansions, particularly in Assam, have been looked upon with suspicion by the orthodox political leaders in India, and immediately after Independence the Indian government enacted a bill in 1949 prohibiting any immigrant "whose stay in the State (Assam) was detrimental to the State"[54] leading to eviction of many Muslims from the Brahmaputra valley. Subsequent communal riots in Assam and West Bengal (and also in other parts of India) brought the movement of population between them and East Bengal to a halt, and the demographically significant long-established population out-movements in this region were stopped. The demographic isolation of the East Bengalis was also accentuated by the customs regulations, restrictions on the expatriation of money and property and strict passport regulations[*] by the government of Pakistan.[55] The net effect in an area of dense and rapidly expanding population was obvious and the pressure upon an already

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[*] Significant was the withdrawal of 'A' category visas which allowed free passage for those living within 10 miles of the border, and 'B' or 'F' category visas for those whose work requires them to stay for a longer period of time.

over - burdened economy is becoming apparent on the recent demographic and economic conditions of East Pakistan.

RELIGIOUS STRUCTURES BY DISTRICTS. In most districts the proportions of Muslims increased by about 3 per cent in the period 1951-61 (Table 1.13). The northern and the eastern districts recorded the highest percentage of Muslim population because of their healthy economic and environmental conditions, the southern districts (Khulna division) having a higher Hindu population but the district of Kushtia came out to be an exception with very high Muslim population (Fig. 1.7) which may be due to the fact that it received more Muslim migrants from India during 1940-50. In this district neither Hindu nor other religious groups showed a positive change since 1951, the actual reason however is hard to determine. Marked increase in the proportion of Muslims occurred in Dinajpur, Rangpur, Khulna, Mymensingh, Dacca, Sylhet, Comilla and Chittagong Hill Tracts results from natural increase within the districts plus inter-district migration of Muslim population - which is particularly true in relation to northern districts. Excepting most of the south-eastern districts, the others registered positive increases in population of "other" religious groups. It is interesting to note that in many districts the Christians and the Buddhists are increasing during last few decades. According to the Census of Pakistan this is due to conversion of Hindu and Tribal groups (animists)[56]. Chittagong Hill Tracts stands out from the general pattern of religious structure of

FIG. 1.7

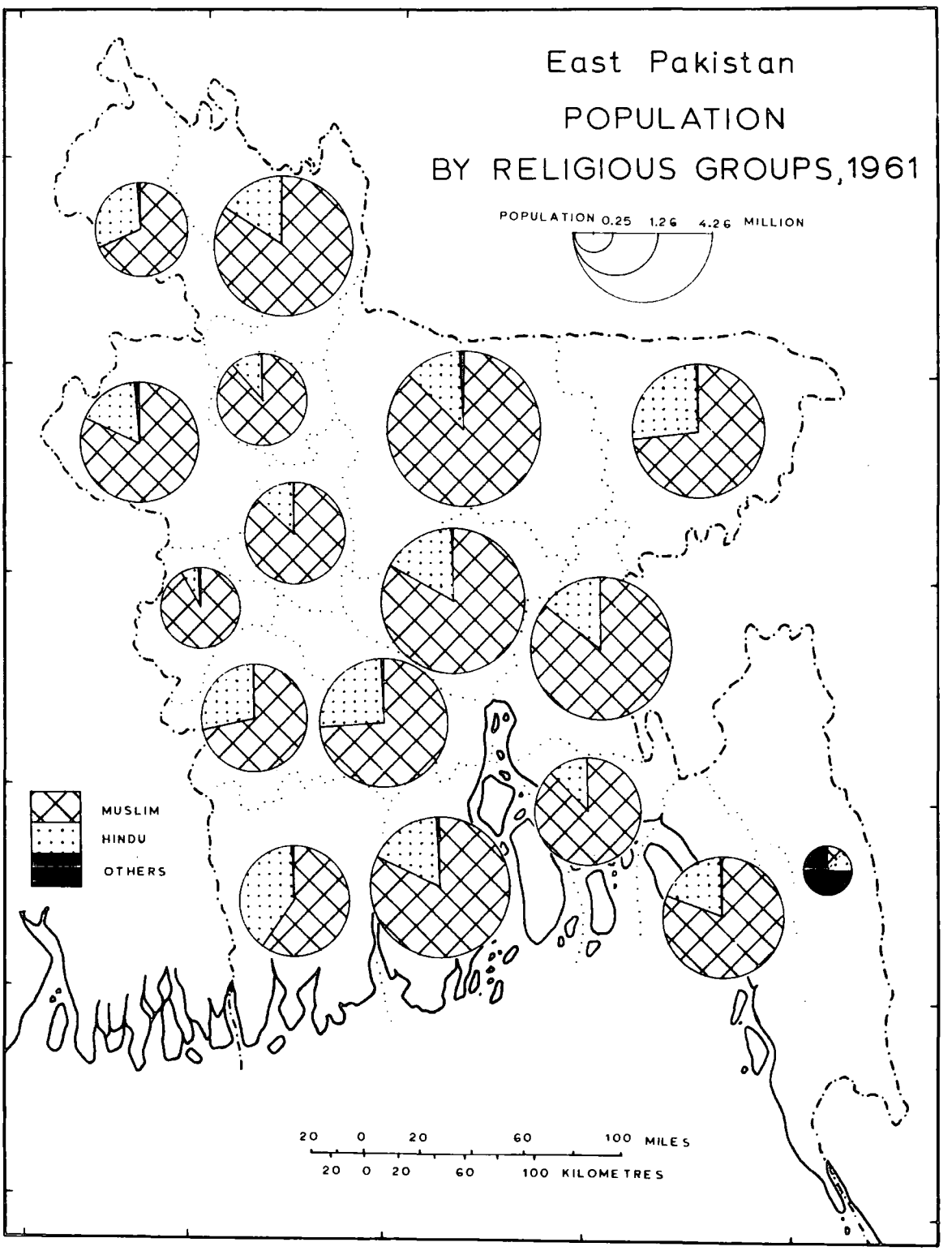

East Pakistan
POPULATION
BY RELIGIOUS GROUPS, 1961
POPULATION 0.25 1.26 4.26 MILLION
MUSLIM
HINDU
OTHERS
20 0 20 60 100 MILES
20 0 20 60 100 KILOMETRES

TABLE 1.13

Percentage distribution of population by religions, East Pakistan, 1951, 1961.

DISTRICTS	1951 MUSLIM	1951 HINDU	1951 OTHERS	1961 MUSLIM	1961 HINDU	1961 OTHERS
Dinajpur	64.52	35.13	0.35	68.63	30.72	0.65
Rangpur	79.78	20.18	0.04	84.11	15.78	0.11
Bogra	87.25	12.69	0.06	88.62	11.25	0.13
Rajshahi	80.34	19.39	0.27	81.74	17.31	0.95
Pabna	83.67	16.26	0.07	86.55	13.34	0.11
Kushtia	91.55	8.01	0.44	92.00	7.57	0.43
Jessore	62.62	31.29	6.09	71.85	28.03	0.12
Khulna	54.55	45.22	0.23	60.20	39.20	0.38
Barisal	79.56	19.67	0.77	82.04	17.38	0.53
Mymensingh	82.90	16.37	0.73	87.18	11.92	0.90
Dacca	78.88	20.63	0.49	82.59	17.09	0.32
Faridpur	70.79	28.86	0.35	73.83	25.86	0.31
Sylhet	67.77	31.51	0.72	73.12	26.60	0.28
Comilla	81.38	18.51	0.11	85.54	14.39	0.07
Noakhali	84.38	15.55	0.07	87.71	12.22	0.07
Chittagong	77.38	18.84	3.78	80.70	16.56	2.74
Chittagong Hill Tracts	6.29	14.26	79.45	11.77	12.37	75.86
E. Pak. Total	76.85	22.84	0.31	80.43	18.45	1.12

Source: Same as Table 1.7

the province; 88 per cent of its population are non-Muslims, mostly Buddhists and tribals, but of its rather small urban population more than 70 per cent are Muslims.[57]

RELIGIOUS STRUCTURES BY SELECTED TOWNS - The percentage distribution of population by religions is more varied in towns (Table 1.14, Fig. 1.8). In some districts the percentage of non-Muslim population is higher than their percentage in the district, while in others, the reverse is the position. The proportions of Muslim population living in many urban centres do not differ much from their distributions in the districts. In 1961 it was found that the towns of 7 out of 17 districts (Rangpur, Mymensingh, Comilla, Sylhet, Faridpur, Dacca, Khulna) support more Muslim than their respective district percentages. In many cases the proportions of Muslims in towns and districts are more or less the same. In about 10 districts the non-Muslims, mainly the Hindus, prefer to live in towns, where their proportions are larger than in the districts. This is the result of their high literacy (See Chapter V), and their lesser fixity to agriculture when compared to the Muslims. The reason for higher Hindu concentration in towns has also been partly due to a so-called "Hindu-bourgeois revolution" in which Hindu professional and mercantile castes gained an early socio-economic advantage since the onset of the British rule by availing themselves of English education and controlling trade and commerce in the towns of East Bengal. The Hindu landlords preferred to stay in towns and from where they used to realize revenues from their Muslim tenants through agents. When the landlord - system was abolished most of such agents migrated to towns to take up urban occupations. So in quite a few towns, such as Gopalganj and Habiganj, the percentage of Hindus surpassed that of Muslims.

The towns in the western districts have higher proportions

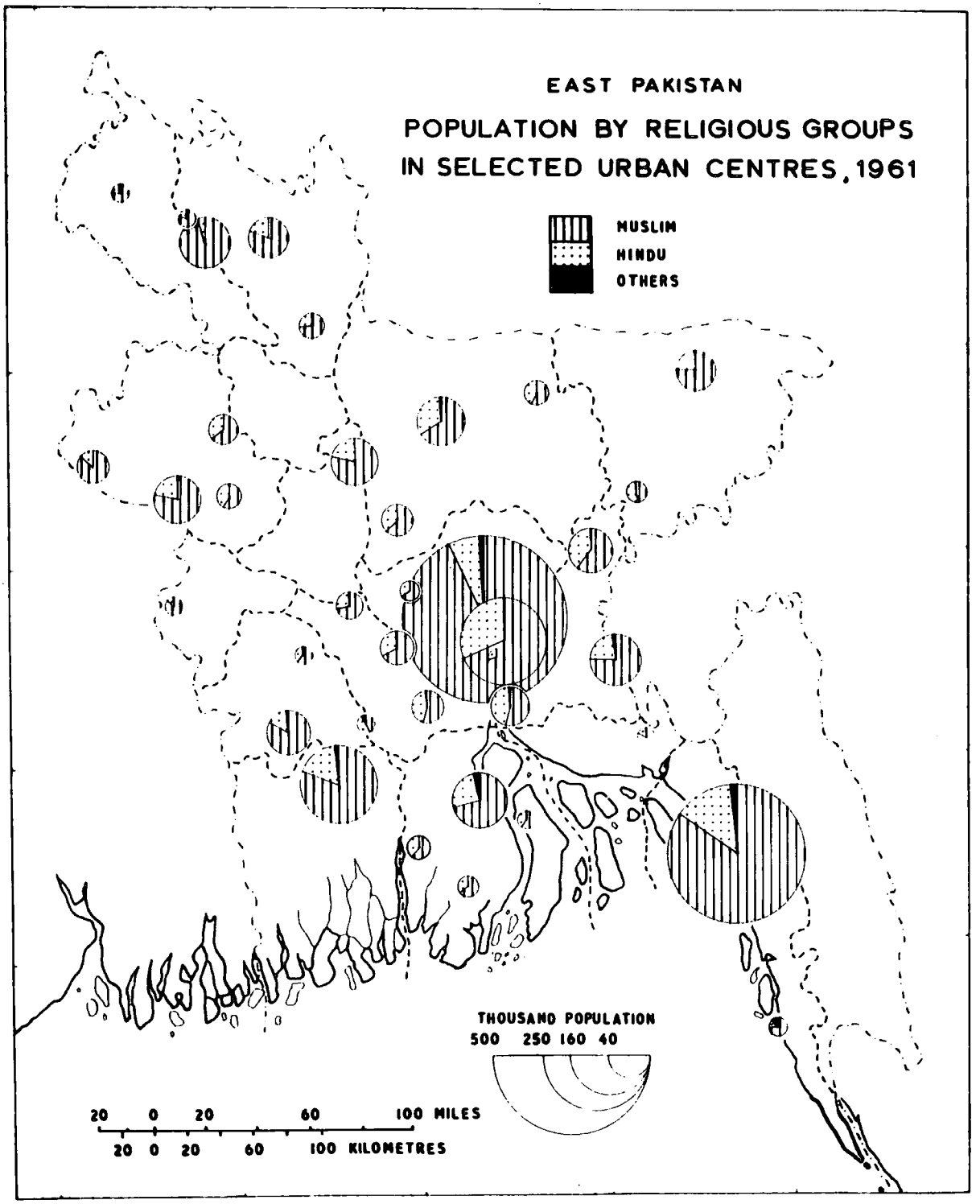
TABLE 1.14

Percentage distribution of population by religions in selected urban centres, East Pakistan, 1961

URBAN CENTRES	MUSLIM	HINDU	OTHERS	URBAN CENTRES	MUSLIM	HINDU	OTHERS
Thakurgaon	76.54	21.31	2.15	Netrokona	57.75	42.25	-
Nilphamari	79.10	20.61	0.28	Tangail	62.76	37.25	-
Saidpur	95.40	4.53	0.06	Dacca	93.16	6.01	0.83
Rangpur	80.78	19.08	0.13	Narayanganj	68.26	31.61	0.13
Gaibandha	73.47	26.44	0.08	Munshiganj	69.83	30.08	0.09
Naogaon	65.06	34.87	0.07	Manikganj	62.96	37.03	-
Nawabganj	86.27	13.73	-	Rajbari	71.15	28.57	0.49
Rajshahi	79.35	22.32	0.21	Faridpur	67.04	31.94	1.02
Notore	58.23	41.68	0.08	Madaripur	54.84	44.97	0.18
Serajganj	80.54	19.44	-	Gopalganj	42.53	50.46	7.00
Meherpur	85.91	13.76	0.33	Sylhet	75.42	24.21	0.37
Magura	61.29	38.47	0.21	Habiganj	46.08	53.69	0.23
Jessore	83.14	16.01	0.84	Brahmanbaria	60.22	39.62	0.17
Khulna	80.50	17.69	1.80	Comilla	74.80	24.84	0.35
Barisal	70.67	25.08	4.25	Chandpur	54.27	45.46	0.27
Bhola	59.43	40.35	0.21	Feni	80.97	18.81	0.21
Patuakhali	64.71	35.13	0.14	Chittagong	84.47	14.07	0.14
Perojpur	60.20	39.79	-	Cox's Bazar	74.26	16.27	9.46
Mymensingh	65.79	33.88	0.32	E. Pak. Urban	70.49	28.65	0.86

Source: Same as Table 1.7

FIG. 1.8


EAST PAKISTAN
POPULATION BY RELIGIOUS GROUPS
IN SELECTED URBAN CENTRES, 1961
MUSLIM
HINDU
OTHERS
THOUSAND POPULATION
500 250 160 40
20 0 20 60 100 MILES
20 0 20 60 100 KILOMETRES

of Muslim population and correspondingly lower non-Muslim populations. Most of the towns in this part have been acting as the foci of exchange of Muslim and Hindu migrants between India (West Bengal, Bihar) and East Pakistan. Some of the important towns in this respect are Saidpur, Nawabganj, Meherpur, Khulna, Jessore and Rangpur (Fig. 1.8) which now support very high Muslim populations. In most of the central and eastern districts the majority of the non-Muslim population live in towns (Fig. 1.8).

The concentration of Christian population in urban areas deserves special mention. According to the 1961 census, of the total urban Christians 59.0% lived in major urban areas (with population 20,000 and over) and the rest in smaller towns. This may be explained by the history of the Christian movements, and the influx of Christians from remote rural or tribal areas to the towns.

(ii) LANGUAGE

The uniqueness of the population of East Pakistan lies not only in its massiveness and uniformity in high density, but also in characteristically homogeneous language and culture. In the province Bengali is the only mother tongue of over 98 per cent of the population, which constitutes over 55 per cent of the total population of Pakistan (Table 1.15). This aspect has long been moulding the sense of cultural unity and uniformity of thinking among the various sections of East Pakistan's population, and as such has been the reason for conflicts at times with the politico-ideological thinking of ethno-culturally and

linguistically more diversified West Pakistan.[58] The linguistic characteristics of population have been of enormous geo-political importance with respect to current social and political trends in Pakistan. This importance has been intensified after nearly a decade of conflicts over language selection and the question of national language when Bengali was recognized as one of the state languages in Pakistan (the other is Urdu).

Historically Bengali belongs to the Indo-Aryan branch of language and forms the largest spoken language in the South-Central Asia. For a long time Bengal formed one of the five geo-political units identified by linguistic unity in India,[59] and it still maintains this exclusiveness. The existence of a fairly voluminous Bengali literature dating back to the Buddhist period[60] indicates that Bengali was the both spoken and state language in this area. During the period of Hindu revival it was replaced by Sanskrit and the development of Bengali language underwent some repression. But with the expansion of Muslim settlement in later period the popular language was revived and the semi-independent Muslim rulers of Bengal of the middle ages gave special attention to the promotion of Bengali language and literature irrespective of religion, and also recognized Bengali as the official language.[61] From this time on, the language, literature and vocabulary were enriched by Islamic influence. Subsequently, the language was further influenced by Anglo-European contact, making it at present structurally more

TABLE 1.15

Percentage of population speaking the main languages in Pakistan and East Pakistan, 1951 - 61.

Languages	MOTHER TONGUES		EAST PAKISTAN			
	Pakistan '61	W. Pakistan '61	Total Speakers 1951	Total Speakers 1961	Mother Tongues 1951	Mother Tongues 1961
Bengali	55.48	0.12	97.42	97.66	98.16	98.43
Punjabi	29.02	66.39	0.02	0.03	0.02	0.02
Pushtu	3.70	8.47	0.007	0.007	0.005	0.007
Sindhi	5.51	12.59	-	-	-	-
Urdu	3.65	7.57	1.09 (0.46)	1.30 (0.70)	0.63	0.60
Baluchi	1.09	2.49	-	-	-	-
Brahui	0.41	0.93	-	-	-	-
Persian	0.03	0.07	0.06	0.04	0.002	0.003
Arabic	0.01	0.01	0.10	0.12	-	-
English	0.02	0.04	1.30 (1.29)	0.84 (0.84)	0.01	0.005
Others	1.09	1.32	※	※	0.76	0.92

Figures in parenthesis - spoken as additional language

※ not available, - not significant

Sources: Calculated from Census of Pakistan 1951 and 1961 (2 vols).

developed than any other language in the Indo-Pak sub-continent.[62]

At present it is the language of nearly 100 million people in Greater Bengal (East Pakistan and West Bengal) and probably is the seventh largest spoken language in the world (after Chinese, English, Russian, Spanish, Arabic and Japanese). Other languages under the Indo-Aryan branch, namely Urdu and Hindi, Punjabi, and a few more are also spoken by a small

group of people, togetherwith some in the families of Iranian, Semitic, Tibeto-Chinese and Austric in the province (Table 1.15).

DISTRIBUTION OF MOTHER TONGUE AND MAIN LANGUAGES

Only 1.57 per cent of the population of East Pakistan speak non-Bengali languages of which Urdu constituted 0.60 per cent in 1961. The situation has not changed much since 1951 (Table 1.15). In the past centuries probably almost all of the population was Bengali speaking because the influx of the Urdu and Hindi speaking people and others has been of very recent origin, particularly after the Independence due to communal disturbances in India. This however could not be presented statistically due to lack of data on Muslim migrants from India and their languages. In 1951, English was the second most widely spoken language in East Pakistan, followed by Urdu, but by 1961, the situation was reversed. This arose mostly from (i) the introduction of Urdu as an additional language paper in elementary schools, (ii) the move to replace English by Bengali as the medium of instruction in both schools and colleges, and (iii) the governmental efforts to popularise Urdu among the masses. Under the continuation of the present trend it is most likely that the proportion of English speaking population will be reduced by at least half the present level within a few decades. The antagonism against English has gained an indirect momentum after the language movement of 1952 which was primarily launched against Urdu. This attitude has been intensified by the inclination to Bengali by the intelligentsia

because of the alleged move to "Islamize" or "Arabicize" the Bengali language by the Central Government[63]. Despite this, as an additional language of speach, English came first in 1961 with about 0.84 per cent (it is still an official language in Pakistan), followed by Urdu (0.70 per cent) (Table 1.15).

As compared to 1951, there was an increase of 0.24 per cent in the proportion of the total Bengali speakers in 1961, and 0.27 per cent increase as mother tongue. In the proportion of persons speaking Urdu, though there was an increase in total speakers, there has been a decrease of about 0.03 per cent in the proportion of those speaking it as mother tongue. Most possibly, this is the result of migration of some of the Urdu-speaking families to West Pakistan with the hope of better cultural and linguistic adjustment.

In the proportion of Arabic speaking persons there was only a small increase, Arabic being spoken as additional language and generally confined to the religious experts.

The proportions of population speaking Pushtu, Punjabi and other West Pakistani languages has remained very low and only restricted to those claiming them as mother tongues. The lack of expansion of these languages in East Pakistan is easily explicable. The people speaking these languages in this province are usually not keen to expand their languages because of their number and state of profession. Secondly, in West Pakistan there has been a swift move to take up Urdu as their national language and hence the status of the regional languages is declining. Thirdly, the West Pakistanis

residing in East Pakistan have taken up Urdu as their occupational and conversational language.

REGIONAL DISTRIBUTION OF POPULATION BY PROFICIENCY OF MAIN LANGUAGES -

Table 1.16 gives geographical distribution of population according to the proficiency of languages including mother tongues. The table also represents a markedly different trend in the urban areas of East Pakistan - especially where Urdu, English and Arabic languages are concerned. The distributional diversity is the lowest in the case of the Bengali language which falls within the range of $\pm$ 1 standard deviation ($\bar{x}$ = 97.43 and σ = 4.58 in the districts) while in others it is much higher (Urdu $\pm$ 2 standard deviation, when $\bar{x}$ = 1.29, σ = 1.25). Both in the districts and in towns the distribution of proficiency in Bengali language is most uniform. The English-speaking population is also fairly uniformly distributed in comparison to either Urdu or Arabic (Table 1.16). The concentration of Urdu and Arabic-speaking people have been lower in smaller towns, but they are nevertheless fairly uniform in medium and large urban centres. As shown in Table 1.16 this has also been the overall picture in 1951. Thus it may be concluded that in the state of uniform proficiency of Bengali language in all regions, the secondary languages, mainly English and Urdu present deviating trends. And on the whole, though the proportion of English-speaking population has decreased while that of Urdu has increased relatively, the former is more uniformly distributed in both the towns and in all the districts because of its

TABLE 1.16

Percentage distribution of population by proficiency of main languages, East Pakistan, 1951-61.

A. DISTRICTS	1951 BENGALI	URDU	ARABIC	ENGLISH	OTHERS	TRIBAL	1961 BENGALI	URDU	ARABIC	ENGLISH	OTHERS	TRIBAL
Dinajpur	96.39	2.92	0.05	0.59	0.05	-	95.01	2.50	0.06	0.52	0.04	1.87
Rangpur	96.80	2.59	0.05	0.51	0.05		97.44	2.12	0.05	0.39	-	
Bogra	98.04	1.18	0.06	0.67	0.05		97.99	1.32	0.06	0.63	-	
Rajshahi	98.63	0.54	0.06	0.63	0.14	-	98.60	0.56	0.06	0.64	-	0.14
Pabna	98.81	0.51	0.05	0.63	-		98.68	0.60	0.07	0.65	-	
Kushtia	98.74	0.65	0.08	0.48	0.05		99.23	0.08	0.04	0.65	-	
Jessore	98.49	0.50	0.08	0.93	-		98.28	0.94	0.05	0.63	0.10	
Khulna	98.48	0.57	0.05	0.90	-		98.60	0.48	0.06	0.84	0.02	
Barisal	98.43	0.32	0.07	1.14	0.04		99.21	0.26	0.05	0.46	0.02	
Mymensingh	98.88	0.36	0.04	0.67	0.05		98.88	0.44	0.05	0.58	0.05	
Dacca	94.89	2.99	0.07	1.85	0.20		93.95	3.57	0.27	1.94	0.28	
Faridpur	98.65	0.40	0.04	0.91	-		99.20	0.32	0.04	0.44	-	
Sylhet	98.00	0.50	0.08	1.28	0.14	-	97.05	0.77	0.19	1.05	0.15	0.79
Comilla	98.60	0.92	0.02	0.27	0.19		98.47	0.60	0.15	0.69	0.09	
Noakhali	97.68	0.64	0.06	1.46	0.16		98.10	0.80	0.20	0.81	0.09	
Chittagong	94.23	1.89	0.51	3.25	0.12		95.16	2.62	0.20	1.87	0.15	
Chittagong H.T.	57.14	0.24	-	0.79	-	41.83	9.15	1.08	-	0.88	-	6.54
B. SELECTED TOWNS												
Saidpur	not available						37.15	60.00	-	2.85	-	
Rajshahi	86.04	6.14	0.49	6.97	0.36		90.52	2.54	-	6.94	-	
Khulna	80.43	13.04	0.13	6.30	0.10		75.67	19.40	-	4.93	-	
Barisal	88.90	5.63	0.50	4.47	0.50		90.00	3.00	-	7.00	-	
Mymensingh	85.59	5.96	0.10	8.25	0.10		84.42	9.38	-	6.20	-	
Dacca	62.05	25.11	0.44	10.77	1.63		66.48	22.30	1.01	8.80	1.41	
Narayanganj	88.40	4.59	0.22	6.52	0.27		81.58	11.58	1.38	5.40	0.06	
Comilla	88.44	4.22	0.10	7.14	0.10		86.48	7.38	-	6.14	-	
Chittagong	71.19	15.25	0.40	12.78	0.38		79.18	14.40	0.48	5.74	0.20	

1. also includes Hindi speaking population which was not separately classified in the census,
2. mainly includes West Pakistani and other Indian languages, togetherwith some Persian.
- not significant.

Sources: Same as Table 1.15.

implication in the professional life of the population.

In this connection it must be noted that excepting Bengali which is universally spoken in the province, the other languages are related to certain socio-occupational strata of the population. In the first place, English is known among the educated class with relatively higher professional status. Urdu and Hindi are spoken by many of the labourers in factories, railway yards and tea plantations[64] and some in higher occupational groups, mainly police and military forces. Regionally, the majority of people speaking these two languages are found in the border districts and towns (such as, Dinajpur, Rangpur, Bogra, Khulna etc) and are correlated with the immigrant population from India in them. Pushtu, Punjabi and others are spoken by a small group of West Pakistanis working mainly in the urban centres of East Pakistan. At the same time, a few immigrants, mostly urban, speak non-Indo-European languages, such as Tamil, Malayalam and others[65]. Some small groups of Tibeto-Chinese linguistic family are found in north, north-east and south-east East Pakistan,[66] as in the tribal areas of Dinajpur, Rajshahi, Sylhet and Chittagong Hill Tracts. They have direct parental links with the languages of Nepal, Bhutan, Sikkim and Arakan area of Burma.

SUMMARY AND CONCLUSION

East Pakistan is one of the most densely populated regions of the humid deltas in the tropics, the population being extremely rural and agricultural. The rate of population increase over the years has varied depending upon various

factors, of which large-scale international migration has played almost no part. A drastic decline in mortality coupled with almost stable fertility condition were the most important factors. The present rate of population increase is likely to persist for a few decades more as the effect of the measures of population control is very slowly influencing the reproductive behaviour of the great majority of the population.

The concentration of population and its density are delicately balanced with the availability of cropland and the cultivation of two main crops, namely, rice and jute. Because of the traditional agrarian nature of the population and economy, and the slow development in industrialization, the rate of urbanization is very low despite its fairly long history. Again, for various socio-economic and cultural reasons people are not responsive to urbanization to the extent found in Latin America or some of the African countries. At present, the urban pattern and its development in East Pakistan do not appear to be purely a function of the overall level of economic development and industrialization. In many respects, the urban pattern is similar to those countries which are smaller than average in terms of oecumene with relatively recent and fresh urban evolution, and simple in socio-economic and associated characteristics.[67] The towns, therefore are neither log-normally distributed nor have marked primacy. Most of the urban centres reflect two main functions - administration with some agrarian-based economic functions (industry or commerce), which as we shall

see soon influence the different structures of population in various ways. This is highly in contrast to Stewart's[68] view that in pre-industrial subsistence economies rural areas are orientated to the countryside and the agricultural population, and the towns face on another only.

The pattern of inter-territorial migration in East Pakistan is very different from most developing countries. In the province the "push" or expellant factors from rural and "pull" factors in urban areas are not very well marked. The rural community in fact implies a traditional social group reinforced by an attachment to family and village, an outlook which reveres agricultural work and shows apathy to town-ways: socio-economic uncertainity and corruption that allegedly accompanies urbanization, which make the rural population unresponsive to urbanization, and those who do migrate mostly return to villages after certain period. Yet of various types of internal migration, the rural-to-urban migration affecting various population structures of the two residential areas and their economies is of great geodemographic importance. The migrants are temporary in nature and highly sex and age selective, giving notably different ascribed as well as non-ascribed characteristics of rural and urban populations. As long as such a trend with respect to population mobility continues and every social attitude of the majority of the population is jealously preserved, any socio-economic changes in terms of urbanization, both agricultural and non-agricultural economic activity and related orientation are rather remote. As such there are reasons to believe that given no radical change in attitude the rurality and the growth of population

will remain independent of the socio-economic development. These aspects as they affect different ascribed and non-ascribed characteristics of population are discussed in the subsequent chapters.

The complex systems of ethnic, religious and linguistic structures in South Asia are much more simplified in East Pakistan where the population groups are more integrated by sharing common cultural traditions and social norms, which are highly improbable in many of the multi-religious societies*. The religious groups in East Pakistan are assimilated in such a way as to give the population more of a secular character, yet retaining their respective individual religious identity and freedom. This is primarily because of common ethnic and linguistic background of the population,[69] and of the social and philosophical outlook under which the religions have developed and flourished, which later evolved an outlook to integrate and humanise sectarian diversities and at the same time to reject the ethnocentric philosophies of the caste Hindus. In recent decades the inter-religions homogenity has been the outcome of strong linguistic affinity, abolition of early existent caste or religious prejudices while retaining individual religious principles and practices. As a consequence

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* This is highly in contrast with the rivalries between Sikh, Muslim and Hindu, and Hindu Upper Castes and Harijans (lower Castes) in India; Buddhism and Christianity in South Vietnam; Islam and Christianity in Sudan and in Nigeria, and a few others. (also see Sopher, D.E. Englewood, 1967).

the Hindus and many Buddhists share the food, dress and traditional habits of the dominant religious group, namely the Muslims. The minor religious groups have sought to accept in degrees many Islamic taboos. For instance, women working in public is looked down upon by them, and the women, in contrast to south and south-east Asian countries are not found working in the fields. Their participation rates in economic activities in towns are also extremely low. These are also some of the reasons of traditional backwardness in terms of literacy and labour participation ratios of females in East Pakistan. On the other hand, the very low frequency of widow remarriage and non-practice of divorce taboos of the Hindus are also shared to a great extent by the Muslims resulting in a definite marital pattern in the population. Likewise, various work taboos in different castes of Hindus are also disappearing. In fact, great progress has been achieved eventually in East Bengal towards an effective symbiosis of different religious groups which is reflected in the current social value system and political thinking, which partly serve as the underlying factors of the current geodemographic conditions within this region.

As may be seen in subsequent chapters, socio-religious factors play a very important role in geo-demographic matters in East Pakistan, and are some of the determining factors in various structures of population and often aggravate the extent of pressure of high population.

The study of the evolution of population also indicates that the population of East Pakistan does not conform to the requirement of the hypothesis of "demographic transition" because of inconsistent development in the trends of current birth and death rates, and the rate of population increase appears to be highly independent of the level of economic development. East Pakistan, being in a state of "demographic divide" and the rate of economic development being rather slow, has a serious population problem and her socio-economic development largely depends on the solution of this problem. Chances of population transfer to less dense West Pakistan or large-scale emigration elsewhere being almost nil, the solution of the problem lies in the reduction of the birth rate, agricultural reorganization, increase in food production and rapid industrialization as well as reviewing the restrictions on population movement between East Bengal and her neighbouring areas (in India and Burma). The concept of family limitations by artificial means is, however, an elitist idea of a small group of people, and will take some time to spread to the rural areas for various social and administrative reasons. A fall in birth rate can not be expected in the near future with the existing levels of age structures and declining mortality. The increased production of food is not associated with large-scale agrotechnology and industrialization,[70] and these need appropriate attention in the future national planning formulations. On the other

hand, relaxation of restrictions on population movement out of East Bengal to neighbouring areas mainly depends on the change in political conservatism and attitudes of the governments of India, Pakistan and other neighbouring states; and as one of the means to ease the population pressure on short-term basis, the political factors should be seriously reviewed. However, unless various incentives and opportunities are given by the provincial governments of West Pakistan and by the Central government the large-scale population movement from East Pakistan to the other wing remains open to question.

The following chapters indicate the extent of influence of demographic, socio-religious, political and cultural factors on various population structures and their growth as they in turn affect the socio-economic development of East Pakistan.

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CHAPTER II

AGE STRUCTURE

The age structure of a population is of greater geo-demographic importance than any other characteristic since a wide range of socio-economic phenomena of a country is directly related to it. The age distribution of a population is the result of three interrelated variables : fertility, mortality and migration. As noted earlier (Chapter I) East Pakistan contains an almost closed population due to lack of substantial population exchange on an international scale. In a closed population the main determinant of the age structure is the course of fertility, while mortality exerts only minor effects on it and more on the growth rate of the population.[1]

STATISTICAL INFORMATION AND BACKGROUND. Decennial data of population by age groups and sex of East Pakistan are available since the end of the last century. Although many of the censuses suffer from misenumeration of sex and some particular age groups owing to low literacy, repeated famines, epidemics and so on[2] leading most often to digital preference and misreporting in age data,[3] the consequences are well surmountable. Compared to India or West Pakistan the age data in the census enumerations were substantially better in East Pakistan, which was established by Yusuf[4] in his comparative study of censuses by applying the Myer's Index. Krotki's[5] study confirmed that underenumeration of women in West Pakistan was greater than in East Pakistan, the social taboos in the former being stronger. These studies indicated fairly good and dependable population data of East Pakistan for geographic analyses. In the present

study certain modifications have been made over the available census figures in order to avoid discrepancies arising from the above mentioned phenomena. That is the age-sex pyramids have been drawn and analysed with 10 year age groups instead of taking 5 year groups or less.

SECTION A

GENERAL CHARACTERISTICS OF THE AGE STRUCTURE OF THE POPULATION OF EAST PAKISTAN

Persistent high levels of fertility in East Pakistan have given rise to an almost constant pattern of age structure since the beginning of the present century. All the age-sex pyramids between 1901 and 1961 gave similar structures - a broad based pattern that tapers rapidly with age (Fig. 2.1). During these six decades nearly 43 per cent of the population were children (0-14 years) and 52 per cent and 5 per cent were adult (15-59 years) and old (60+ years) respectively. The broad base was presumably the result of high birth rates and the narrow top of the pyramids reflected increasing death rates with increasing age. This type of age structure is typical of most of the developing and many Muslim countries of the world (Table 2.1 and Fig. 2.2), reflecting a large potential for future population growth, and contrasting with the aging process in many Western countries.

The characteristics of the age structure of a population can best be studied in relation to the proportion of population in the adult age group who mostly engage in economic activities. Most of the modern population geographers and demographers recognized the variation in age-specific entry of economic

FIG. 2.1

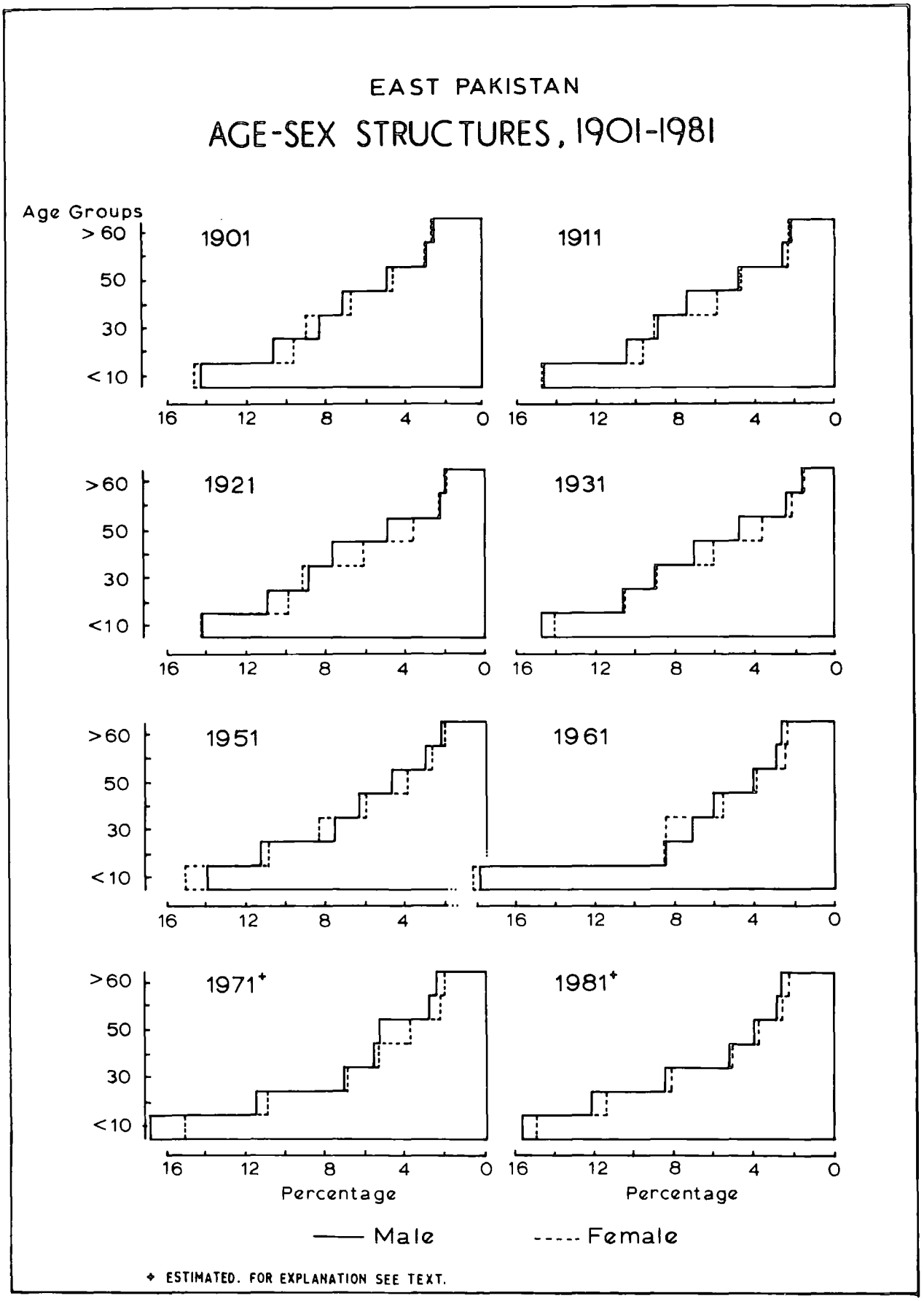

EAST PAKISTAN
AGE-SEX STRUCTURES, 1901-1981
Age Groups
>60
50
30
<10
1901
1911
1921
1931
1951
1961
1971+
1981+
16
12
8
4
0
Percentage
Male
Female
+ ESTIMATED. FOR EXPLANATION SEE TEXT.

TABLE 2.1

Age structure of selected developing countries and East Pakistan, (1961-71)

Countries	Percentages			Child Index	Aging Index	Total Dep. Ratio	Median Age
	Children (0-14)	Adult (15-59)	Aged (60+)				
Algeria	47.14	46.27	6.59	0.89	0.07	1.16	16.50
Ceylon	41.93	51.36	6.71	0.72	0.07	0.95	17.00
Chile	39.66	53.44	6.90	0.66	0.07	0.87	20.29
India	41.71	52.67	5.62	0.72	0.06	0.90	17.79
Indonesia	42.09	53.25	4.66	0.79	0.05	0.88	19.66
Iran	46.14	47.41	6.45	0.86	0.07	1.11	16.53
Iraq	48.06	45.43	6.51	0.92	0.07	1.20	17.51
Jordan	45.79	48.77	5.44	0.84	0.06	1.05	16.90
Libya	43.50	49.43	7.07	0.77	0.07	1.02	18.03
Mexico	56.63	39.22	4.15	1.30	0.04	1.55	16.00
Morocco	46.38	49.42	4.20	0.86	0.04	1.02	16.40
Peru	45.10	49.96	4.94	0.82	0.05	1.00	16.50
Sudan	46.77	49.75	3.48	0.94	0.03	1.01	16.20
Syria	47.46	46.60	5.94	0.90	0.06	1.15	16.65
Turkey	41.95	51.05	7.00	0.72	0.07	0.96	16.55
Pakistan-'61	44.50	49.54	5.96	0.80	0.06	1.03	18.01
W. Pakistan '61	42.43	50.64	6.93	0.74	0.08	1.02	18.49
E. Pakistan '61	45.10	49.70	5.20	0.84	0.05	1.05	17.53
'71	48.91	46.49	4.60	0.96	0.05	1.15	17.00

Sources: U.N.O. Demographic Yearbook, 1968 and 1969, Census of Pakistan. 1961, Vols. 2, 3.

FIG. 2.2

Age Structures Of Selected Countries And East Pakistan

1 INDIA
2 IRAN
3 JAPAN
4 JORDAN
5 MEXICO
6 MOROCCO
7 PAKISTAN
8 PERU
9 TURKEY
10 U.K.
11 U.S.A.

EAST PAKISTAN
1901-71: --o-+-o--o-+

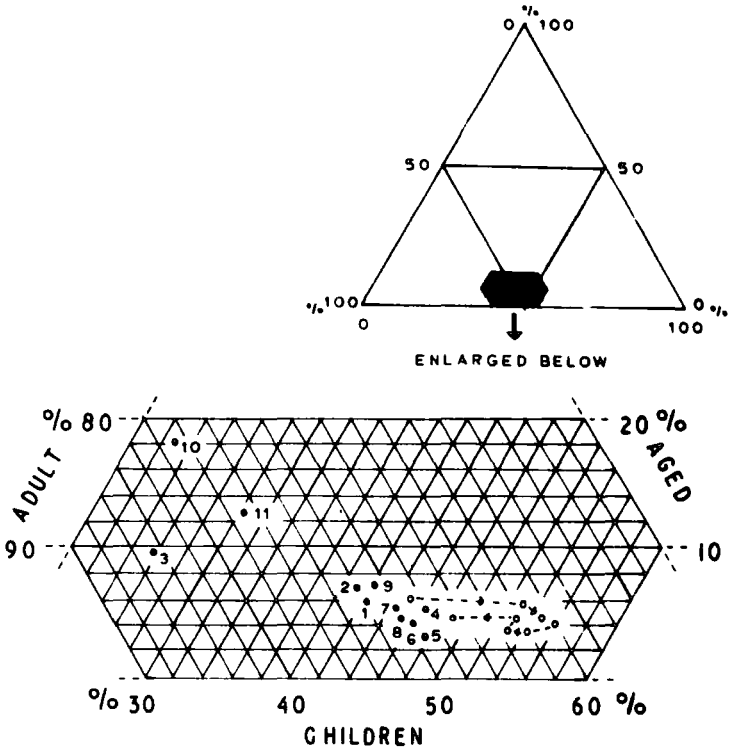
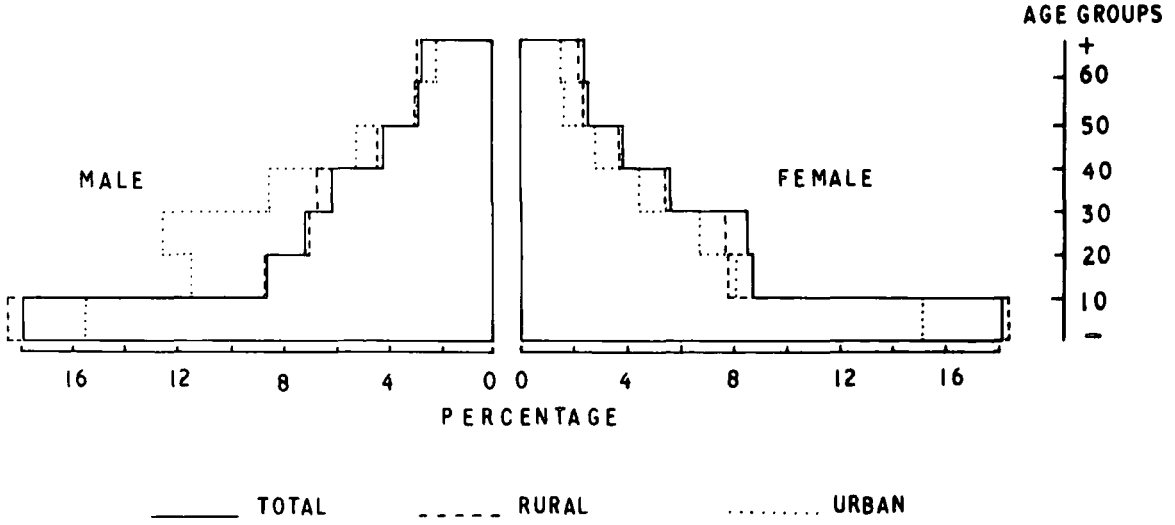


FIG. 2.3

Age-Sex Pyramid Of Total, Rural & Urban Populations East Pakistan, 1961



activities and put the age 15 as the approximate lower limit of the productive power of a population and that of 60 or 65 as near the top limit.[6] The same inference can be used to study the age structure of East Pakistan. The upper age limit of economic activeness, however varies. In many countries it is 65, but in East Pakistan like many other Oriental countries mortality is so high that few people live to approach the age of 65, so the age of 60 may be set as the upper limit of productive population in this case. Therefore, age structures considered in this chapter are related to three groups:

1. Adult population (15 to 59 years),
2. Dependent population: a) Children (0 to 14 years)
   b) Aged (60 years and over).

In this connection it should be noted that children under 15 years of age may contribute only nominally to economic production (see Chapter VI) as most would be school going and their participation will be as part of family labour. Similarly, persons of 60 years and over may not also contribute much to productive activity as most of them would have retired and if not, their contribution cannot be appreciable, as they account for only a small proportion of the total population (about 5 per cent). The persons in the age group 15-59, therefore form the most important group from the point of view of participation in productive labour force. They also form the crude activity rates of the population.

TABLE 2.2

Age structure of the population of East Pakistan, 1901-1981

Years	Percentages			Child Index	Aging Index	Dependency Ratio	Median Age
	Children	Adult	Aged				
1901	42.11	53.46	4.43	0.90	0.046	1.00	18.49
1911	43.33	52.60	4.07	0.76	0.042	0.90	18.04
1921	42.25	53.70	4.05	0.73	0.042	0.86	18.56
1931	40.93	55.53	3.54	0.69	0.037	0.78	18.93
1941	41.23	54.82	3.95	0.70	0.041	0.82	19.07
1951	41.50	53.50	5.00	0.70	0.052	0.87	18.44
1961	45.10	49.70	5.20	0.85	0.055	1.05	17.53
1971* (i)	48.91	46.49	4.60	0.96	0.050	1.15	17.00
(ii)	45.86	49.38	4.76	0.85	0.050	1.02	-
1981* (i)	48.24	47.35	4.41	0.93	0.046	1.11	17.05
(ii)	46.27	49.00	4.73	0.86	0.050	1.04	-

* 1971 - Constant fertility projection, 1981 - Medium fertility projection.

(i) PIDE, Karachi, (ii) Census of Pakistan.

Sources: (calculated from):

1. 1901-1941: EPBS, Dacca, 1966.
2. 1951-1961: Census of Pakistan, 1951, Vol. 3, Census of Pakistan, 1961, Vol. 2,
3. 1971-1981: Bean, L.L., Khan, et.al. Karachi, 1968. Census of Pakistan Bulletin - 7, Islamabad, 1967.

1. The Total Adult Population (15 to 59 years)

The adult population comprises those aged 15 to 59 years, and in East Pakistan nearly half the total population is classed as adult. The percentage of population in the adult age group in East Pakistan showed a slight upward trend from 1901 to 1931; after a drop in 1911. It dropped from 53.46 per cent in 1901 to 52.60 per cent in 1911. Thereafter it continued to improve until 1931 reaching 55.53 per cent. From 1941 onward it started to decline reaching 49.70 per cent in 1961 (Table 2.2). Assuming fertility will remain unchanged, the proportion of adults in 1971 is likely to be 46.49 per cent, but may slightly improve in 1981 if it is assumed that the fertility declines by about 5 to 10 per cent between 1971-81. Since the majority of the adult population is generally economically active, it means that about one half of the total population is bearing the burden of the rest - who may be classed as dependent. Such a phenomenon is also common to almost all developing countries with high fertility characteristics (Table 2.1), while the developed countries give a contrasting picture.

As far as East Pakistan is concerned, the decreasing percentage of the population within the adult age groups can be explained by:

a) persistent high fertility and fast decline in infant mortality bringing about a net increase in the size of the younger age groups,

b) increase in the expectancy of life at birth as a result of improved medical and health services, and

c) a decline in the mortality of the aged due to

effective control of diseases and epidemics, and to improvement in general health conditions,[7] causing a proportionate increase in the aged.

The combined effect of these factors initiated an increase in proportions of aged and children lowering the overall proportion of adults in the province. Consequently the adult population was inversely correlated with the children and the aged population. The coefficient of correlation between the adults and the children was -0.97, and that between the adults and the aged was -0.86. Therefore, though the death rate of the adult population has gone down and their life expectancy increased, their percentage share in the total population has decreased. As indicated in Table 2.2 the low proportion of adult population is likely to continue until the end of the present century and there are reasons to believe that in the face of this trend, the burden of total population will continue to rest on less than half of the population. About 50 per cent of the total population as dependent will offset the consequences of economic development and bring about new socio-economic problems in the decades to come. Another serious consequence of the socio-religious structure of Pakistan, like some other Muslim countries is that it does not permit the females of adult age to participate in economic activities outside the home or family. According to the 1961 census the female activity rate in East Pakistan was among the lowest recorded in the world (about 11 per cent), and the great majority of

the rest were classed as housewives. This feature has been elaborated in Chapter VI. Thus this large female population, which one may attempt to characterize as "unpaid and underemployed labour" adds to the existing burden of the economically active adult male population. Consequently the whole characteristics of age structure of the province contribute to low standards of living, as well as lack of effective capital formation and investment.

2. The Total Dependent Population (children and aged)

In East Pakistan most of the dependents are children (Table 2.2). The same pattern is found for Pakistan as a whole, India and other developing countries (Table 2.1). According to the census of 1901, the children in East Pakistan were 10 times more numerous than the aged; in 1961 9 times. THE CHILDREN - The percentage of children has always remained high in East Pakistan and has become higher in the post-Independence decades. During pre-Independence decades the proportion fluctuated between 41 and 43 per cent; it was 41.50 per cent in 1951 and 45.10 per cent in 1961 (Table 2.2). Assuming a high and stable fertility rate, such a massive increase has been the result of decrease in infant mortality which in turn has been the result of improvement in medical and environmental conditions.

The proportional relationship between the children and the rest of the population is measured by the "Child Index" (Appendix 3). The child index of East Pakistan has long been very high, and was 0.85 in 1961. A child index of 0.50

is considered moderately high, and, as one would expect, it is usually high among the countries with high fertility and particularly those with lowering infant mortality but a high crude death rate. These conditions are typical of most of the developing and less urbanized countries (Table 2.1), and are in contrast to most of the western countries.

THE AGED - In East Pakistan the aged population constituted a very small fraction to the total population. Its percentage distribution declined from 1901 to 1931, but after 1931 its proportion increased as a result of improvement in health and longevity. Their proportions are likely to decrease slightly or to remain stable during 1971 and 1981 because of the smaller cohorts.

The proportional relationship between the aged population and the rest is expressed by the "Aging Index" (Appendix 3). As noted in Table 2.1, the aging index of East Pakistan is one of the lowest in the world. It is lower in those countries where the death rate is high or the rate is recently on a declining trend as in many countries of Latin America, Asia and Africa. On the other hand, developed countries having a low death rate together with fairly high longevity register a high aging index - often is 4 times higher than that of developing countries.

As far as East Pakistan is concerned, the aged population is not a major problem when viewed against the volume of

children, as the former does not contribute effectively to the total dependency of the population.

THE TOTAL DEPENDENCY RATIO.

One of the main problems of the socio-economic development of developing countries, particularly those in South Asia is related to the consequences of their unbalanced age structure and thereby the excess of dependent population. This is measured by the "Dependency Ratio" (Appendix 3), which is the proportional relationship between active or adult population and those of children and aged taken together. Since the beginning of the present century, the dependency ratio in East Pakistan has been showing a U - Curve revealing that it declined until 1931 (from 1.00 in 1901 to 0.78 in 1931), thereafter it started to increase, reaching 1.05 in 1961 (Table 2.2). The decline in the dependency ratio between 1921 and 1930 had primarily been due to the proportional increase in the adult population, because the cohort born between 1901 and 1905 who were quite large in size and by then entered the adult age groups. After that the dependency ratio started to increase because the child index began to improve and at the same time the aging index also started to show an upward trend (Table 2.2). This two-way development affecting the total dependency was the response of declining mortality while fertility remained high and unchanged.

With the continuation of the present trend, the dependency ratio is likely to remain fairly high during this century. If the fertility declines by 5 to 10 per cent in 1981, the ratio may decline to 1.11 (from 1.15 in 1971), which is in no way a

substantial change for the existing age structure of the population.

That this high total dependency has primarily been the result of a high proportion of children in the population, and that the aged population did not exert any major effect on the same, is extrapolated from the following observations as well:

a) there exists a highly significant coefficient of correlation (+0.80) between the dependency ratio and the child index;

b) the coefficient of correlation between the dependency ratio and the aging index is not at all significant (+0.28).

The total dependency ratio, together with median age can be thought as one of the indices of "over-population" in terms of economic efficiency of a country. Kamerschen contended that when this ratio (dependency) exceeds 1.00 a country is "over populated" in a dynamic as well as a static sense.[8] In such a case, the median age starts to fall (see below), and the country in question experiences slow change in socio-economic welfare[9]. Although this is not an exclusive index of overpopulation from the economic point of view, it no doubt indicates the extent and dimension of population imbalance in economic efficiency, pressure on existing resources, human and non-human and others; and hence, may be accepted as a general indicator of population pressure. In East Pakistan the dependency ratio has almost surpassed the level of 1.00 and the median age has become very low compared to many countries of the world (Table 2.2). Such is the condition of

nearly all the developing countries of the world and as such they can be assumed as having entered the state of over population. In this connection it may be pointed out that if GNP or per capita income is thought to be the criterion or index of a nation's economic status, then it is very low and slowly developing in the developing countries of South Asia, including East Pakistan, together with many in Latin America and Africa. In addition, their per capita incomes and dependency ratios are closely negatively correlated.[10]

THE TOTAL MEDIAN AGE

A convenient summary index of age composition of a population is the "Median Age" (Appendix 3). The lower the median age the younger is the population and vice versa. East Pakistan has a very low median age, emphasising the young nature of its population. It was 17.53 in 1961, lower than the median age for Pakistan (Tables 2.1 and 2.2). East Pakistan has shown a declining trend in median age in the recent decades as the percentage of the population in lower age groups has gone up. During the pre-Independence decades the median age fluctuated within the range of 18.04 to 18.93 years. It reached 19.07, the maximum in 1931. Thereafter it showed a declining trend. Under the present demographic conditions, with particular reference to fertility in the province, the median age will continue to be low for a few more decades to come (Table 2.2).

Countries with young populations such as those in

South Asia, Africa and Latin America, have low median ages (Table 2.1), while developed countries with mature populations have high median age with high proportions of adult and moderately high aged populations. When comparing East Pakistan's median age with countries having identical fertility, mortality, expectation of life and rate of growth conditions, it is found that her situation is not too discouraging. The present level of median age in the province has been due to a sharp decline in mortality unaccompanied by any decline in fertility. A favourable change in median age or in overall age structure depends to a certain extent no doubt on decline in mortality which will lengthen the period of working life of the population; but more on a decline in the high fertility levels currently prevailing in the province, since other things remaining the same, it is fertility rather than mortality which is the primary determinant of a population's age structure.

SECTION B

AGE STRUCTURE OF THE RURAL POPULATION OF EAST PAKISTAN

For long the population of East Pakistan has been overwhelmingly rural in character. Figure 2.3 showing the age-sex pyramids of total, rural and urban populations, indicates the impact of rural concentration of population on overall age structure in 1961. Because of the magnitude of rural population many of the demographic features of total

population follow the general trend of the former. On the other hand, the age structure of the urban population reflects a different picture from that of rural or total populations in respect of a surplus of male population in the former, particularly in the adult age groups. Such an age structure in the urban areas of East Pakistan will be discussed in a separate section later in this chapter. For the present, the age structure of the rural population shows certain remarkable features among the districts of East Pakistan when studied regionally and by broad age groups under the scheme developed in the earlier section of this chapter.

THE ADULT RURAL POPULATION.

In the absence of age-sex data of rural population in the pre-independence censuses decennial comparison of age structures is impossible. In the post-independence period such data are available only for 1961 and hence the study in this connection will be limited to 1961. One reason for the lack of districtwise rural data by age and sex may be that in the pre-independence period the rate of urbanization was too low (about 2 to 3 per cent), and urban centres were few, therefore differentiation between rural and total age-sex, data was not made.

According to the census of 1961, the percentage of rural population in the adult age group in East Pakistan was 48.43. In other words, less than half of the rural population had to work and earn for the rest. This has been an alarming situation in view of the province's economic and demographic

conditions. In East Pakistan the average density was 923 persons per sq. mile in 1961 and the agricultural density was as high as 1300 to 1500 persons per sq. mile, with 0.70 acre of land and 0.40 acre of cultivated land per capita.[11] The high agricultural density together with a massive agricultural labour force amply demonstrate the tremendous pressure on existing land and resources. The population being young and expansive makes the situation dangerous, as in future many more new mouths are to be fed and more persons are to be employed with limited increase in quantity or quality of land. The whole situation is in fact creating an enormous geodemographic problem in East Pakistan.*

The variation in the percentage of the adult population in the rural areas of East Pakistan is fairly well marked. In 1961 the range of variation was 6.28 per cent, with Chittagong Hill Tracts having the highest (52.14 per cent) and Pabna the lowest (45.86 per cent). Within this range the districts can be classified into four regional groups of differing concentration of adult population following the quartile principles. In the first group fall the districts of Pabna, Kushtia, Noakhali and Dacca with less than 47.20 per cent ($\bar{x}$ = 48.72) of population in their adult age groups (Table 2.3). The reason for such low percentage of adult

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* For a detailed discussion on this aspect see chapter on Economic Characteristics of the Population of East Pakistan.

population may be due to the location of Pbana, Noakhali and Kushtia near to some of the industrially developed

TABLE 2.3

Age structure of rural population by districts, East Pakistan 1961

Districts	Percentages			Dependency Ratio	Median Age
	Children	Adult	Aged		
East Pakistan : Rural	46.29	48.43	5.28	1.06	17.39
Dinajpur	44.24	51.54	4.22	0.94	18.40
Rangpur	46.26	48.93	4.81	1.04	17.47
Bogra	44.64	50.55	4.81	1.01	18.75
Rajshahi	45.58	49.39	5.03	1.02	17.61
Pabna	48.33	45.86	5.81	1.17	16.27
Kushtia	47.85	46.91	5.24	1.13	15.28
Jessore	46.65	48.01	5.34	1.08	18.47
Khulna	45.24	49.17	5.59	1.06	17.75
Barisal	47.53	47.56	4.91	1.10	16.59
Mymensingh	45.67	48.90	5.43	1.04	15.28
Dacca	47.12	47.12	5.76	1.12	18.50
Faridpur	47.23	47.21	5.56	1.10	17.03
Sylhet	44.03	50.62	5.35	0.90	18.56
Comilla	46.82	47.76	5.42	1.09	17.10
Noakhali	48.36	46.62	5.02	1.14	16.02
Chittagong	45.96	49.00	5.04	1.04	17.59
Chittagong Hill Tracts	43.85	52.14	4.01	0.91	18.63

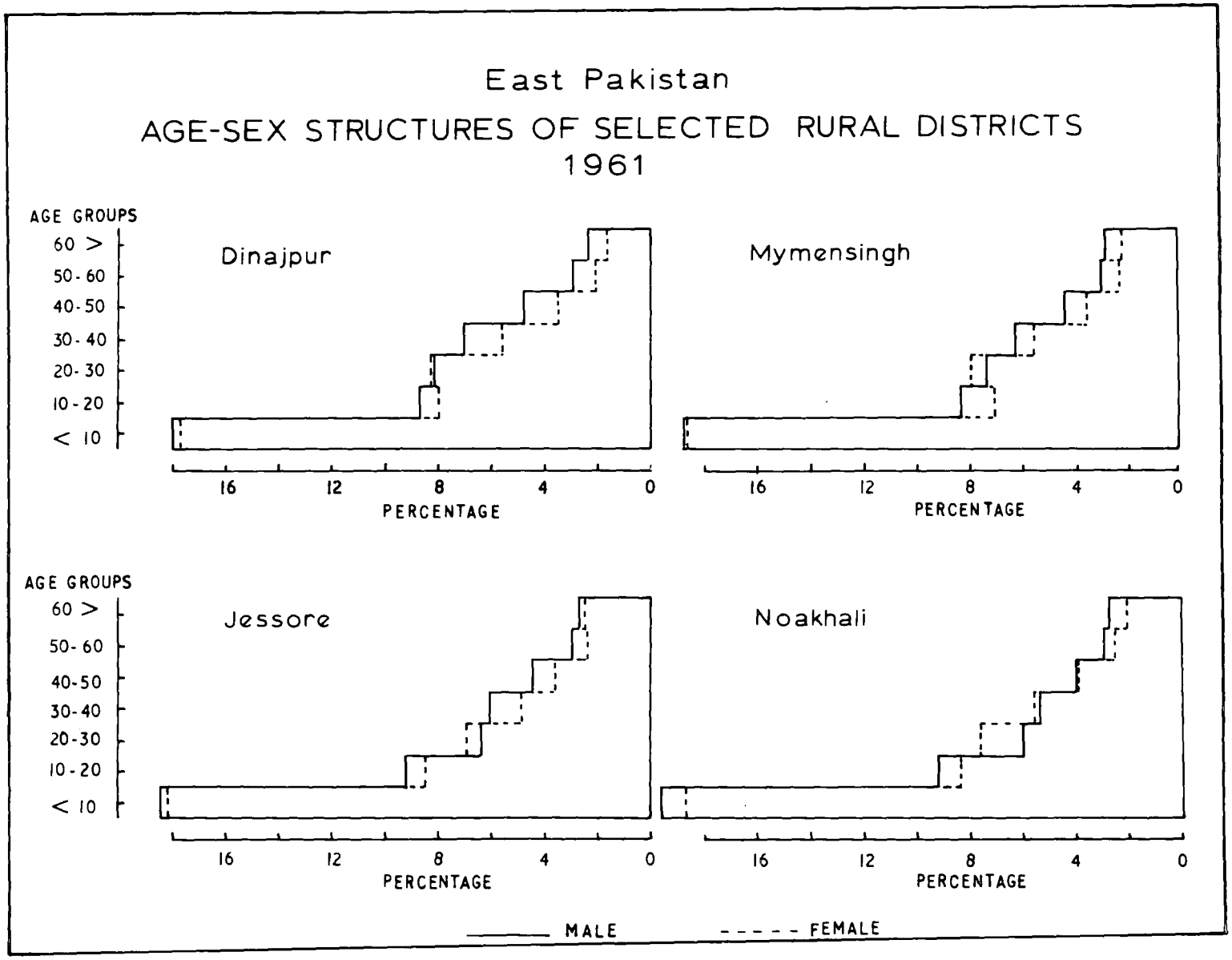
Source: Calculated from: Census of Pakistan, 1961, Bulletin 3.

districts, such as Dacca, Khulna, Bogra and Chittagong into which people must have moved for jobs during their adult age periods. It is known that the people of Noakhali district, mainly the males, are the most mobile in East Pakistan and this is likely to decrease the proportion of adults in its rural population. Dacca being the capital of East Pakistan and supporting several important industrial areas usually has attracted adult population at a greater proportion from its rural areas as well as from the surrounding districts and thereby effected a decline in the adult percentages in their rural population (Figs. 2.4, 2.5).

The next group is composed of the districts of Faridpur, Barisal, Jessore and Comilla with adult percentages between 47.20 and 48.72 in their respective rural populations, which were below the provincial average ($\bar{x}$=48.72). These districts also experienced the same condition as the first group. One peculiarity of these districts is that they are devoid of any important industrial concern, and the productivity of land, particularly in Faridpur, Barisal and Jessore is not very high owing to physical reasons. While from Comilla many people of adult age are probably moving out due to its very high density. Therefore, many of the adult populations in these districts find their livelihood outside their respective districts, leading to higher percentages of children.

In the third group there are two industrially developed districts, namely Khulna and Chittagong, and three of the agriculturally important districts, namely Rangpur, Rajshahi

FIG. 2.4


East Pakistan
AGE-SEX STRUCTURES OF SELECTED RURAL DISTRICTS
1961
AGE GROUPS
60 >
50-60
40-50
30-40
20-30
10-20
< 10
Dinajpur
Mymensingh
Jessore
Noakhali
16
12
8
4
0
PERCENTAGE
MALE
FEMALE

and Mymensingh (Fig. 2.5). They all had adult percentages above the provincial rural average, but their percentage distributions did not exceed 50. The adult populations above the provincial average in Khulna and Chittagong's rural areas are rather hard to explain except by the character of their respective agricultures and by the presence of large number of fishermen in the rural areas. Rangpur and Mymensingh beside producing food crops have been the main jute and tobacco growing areas of the province with almost equal importance in the production of sugar cane, providing all year jobs for the rural population, and as such adults have become less mobile.

In the last group there are two northern districts and two hilly districts (Fig. 2.5, Table 2.3). They registered very high proportions of adults in their respective rural areas. The population of North Bengal is often said to be less mobile compared to the remaining districts of East Pakistan, possibly because of their highly stable agricultural conditions. The case of Sylhet and Chittagong Hill Tracts is different, as a large amount of orange, tea and pineapple plantation labourers and some forest workers are included in their rural populations. Besides, the rate of urbanization was very low in Sylhet (2.0 per cent in 1961), and Chittagong Hill Tracts registered urban population for the first time in its history in 1961. On the other hand, part of Sylhet and most of Chittagong Hill Tracts are dominated by

tribal population practising primitive agrarian ways of life characterized by shifting cultivation (Jhumming), and relatively poor health and environmental conditions. This also gave rise to a low percentage of children (due to high infant mortality), immobility of the population which led to increase in the proportions of adults.

Thus the variations in the proportions of adult populations were the outcome of inter-district age-selective migration, and partly of area and age selective mortality and to a certain extent the degree of density within the districts.

THE DEPENDENT RURAL POPULATION

As stated earlier, dependent population in this study are the children below 15 years and the old persons of 60 years and above. In rural East Pakistan some of the children below 15 years do considerable farm and household work during school or "Madrasah" holidays and during the sowing and harvesting seasons, and similarly some old people are not completely inactive. For their work they usually are not paid and in most cases their work is not upto the standard of adult labour - partly because of the nature of work usually assigned to them. Most of them are regarded as unpaid family workers. Despite their participation in farm and family economy they are classed as dependent in accordance with set demographic practice, in order to facilitate comparison and understanding.

THE CHILDREN. The children formed a very high percentage

FIG. 2.5

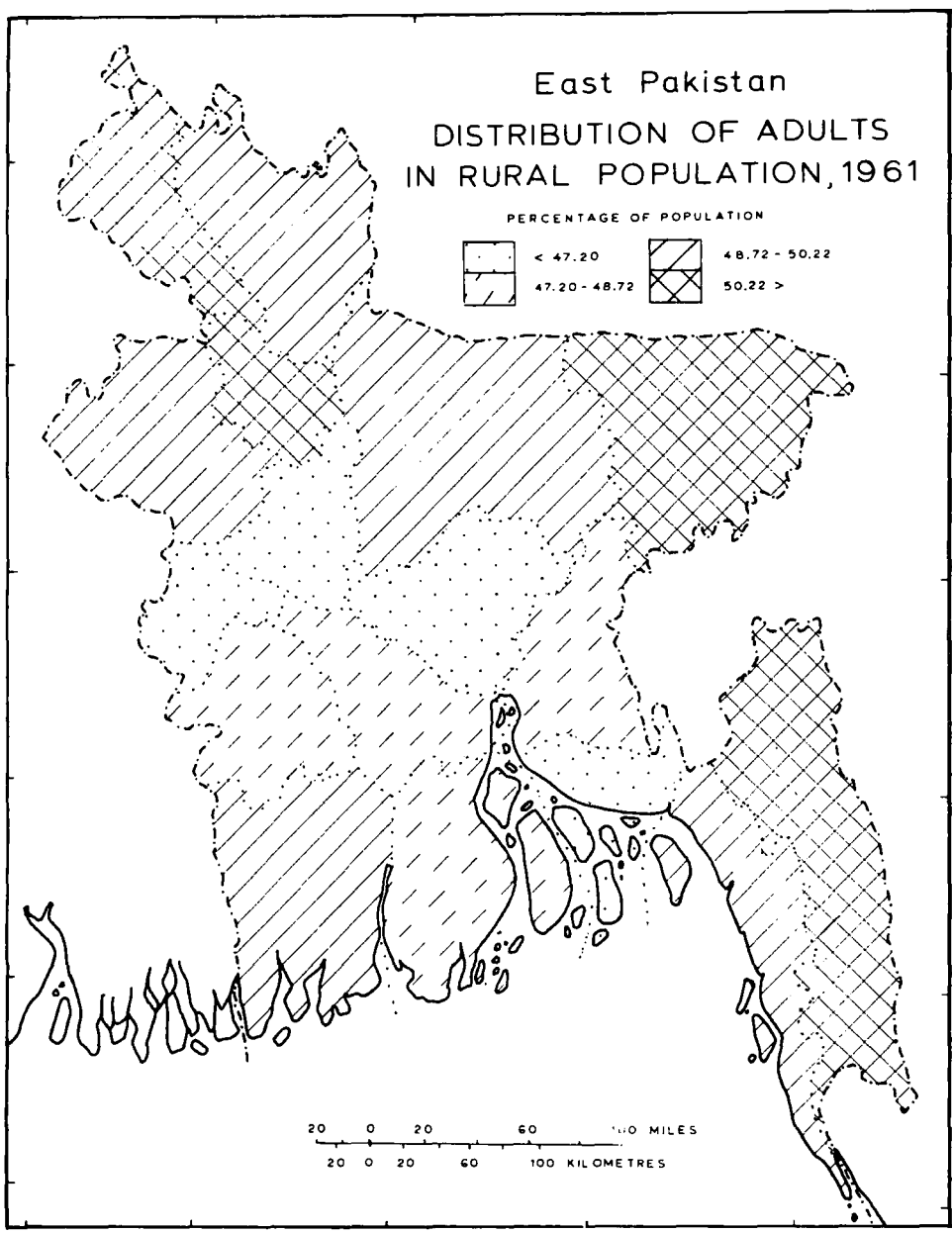
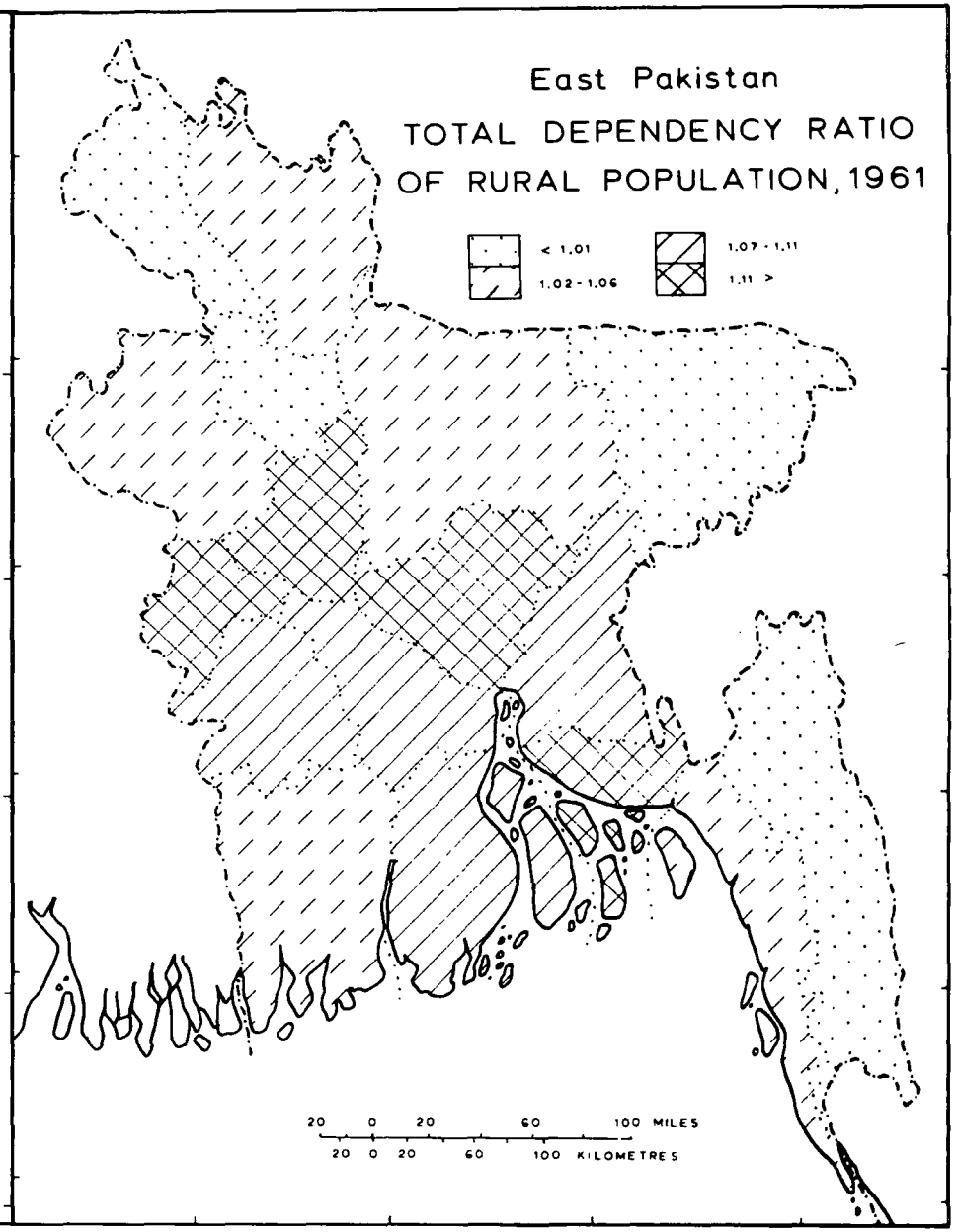

East Pakistan
DISTRIBUTION OF ADULTS
IN RURAL POPULATION, 1961
PERCENTAGE OF POPULATION
< 47.20
47.20 - 48.72
48.72 - 50.22
50.22 >
20 0 20 60 100 MILES
20 0 20 60 100 KILOMETRES

FIG. 2.6


East Pakistan
TOTAL DEPENDENCY RATIO
OF RURAL POPULATION, 1961
< 1.01
1.02 - 1.06
1.07 - 1.11
1.11 >
20 0 20 60 100 MILES
20 0 20 60 100 KILOMETRES

(46.29) of the rural population of East Pakistan (Table 2.3) which was higher than that of the total population (45.10 per cent) of the province. This high percentage of children has necessarily been the result of a higher birth rate. Krotki[12] puts the rural crude birth rate at 58 per thousand, and the Housing Census (1961)[13] as low as 28. Although Krotki's estimate is most likely, the difference between the two estimates is considerable and permits much criticism. Therefore, another acceptable measure of fertility namely the "Fertility Ratio" (Appendix 3) may be used. As in rural areas of the province girls are married at arround 14 years of age[¤ 14], a lower limit of 15 years of age has been taken as the beginning of the reproductive period for calculating the rural fertility ratio. At the census of 1961, this was very high, 939.43. In towns, however the fertility ratio is lower, about 854.62. Similar fertility differential between rural and urban areas is universal and has been noted in the U.S.A., New Zealand and many other countries.[15] In addition, a very low proportion of childless marriages, which was 3 to 5 per cent in the province (assuming duration of marriage of 20 years and over), as against 7 per cent in West Bengal (India), 12 per cent in Ceylon, 17 per cent in Germany and 18 per cent in U.S.A.,[16] presumably results in very high proportions of children in the population where marriage is almost universal

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¤ Also note discussion about mean age at marriage in Chapter on Marital Status.

TABLE 2.4

Total fertility ratio and percentage distribution of children in the rural districts of East Pakistan, 1961

Districts	Total Fertility Ratio	Children (%)
East Pakistan : Rural	939.43	46.29
Dinajpur	870.48	44.24
Rangpur	983.24	46.26
Bogra	925.56	44.64
Rajshahi	927.66	45.58
Pabna	1040.93	48.33
Kushtia	1085.85	47.85
Jessore	1005.02	46.65
Khulna	926.94	45.24
Barisal	944.44	47.53
Mymensingh	921.92	45.67
Dacca	965.18	47.12
Faridpur	954.84	47.23
Sylhet	846.48	44.03
Comilla	937.87	46.82
Noakhali	933.33	48.36
Chittagong	884.08	45.96
Chittagong Hill Tracts	869.56	43.85

Source: Same as Table 2.3.

and children are valued most (see also Chapter IV).

As one would expect the percentage distribution of children in the rural districts varies with the fertility ratios (Table 2.4). In 1961, the lowest percentage of children was in Chittagong Hill Tracts (43.85) and the highest was in Noakhali (48.36) - the range of difference being 4.51 per cent. Besides variations in fertility, this difference may also be explained by local variations in the migratory habits of adults in the rural areas of districts, and partly by those in mortality.

Generally it has been noted that the Muslims have higher birth rates than the other religious groups in India and Pakistan, and it is also explicit in many of the Muslim countries of the Middle East and North Africa.[17] Such a characteristic stems from socio-religious norms towards family size, common social opposition to change in traditional value systems of existing family structure and family outlook. In East Pakistan (excluding Chittagong Hill Tracts) the coefficients of correlation between the fertility ratio and the percentage of married women, and between the former and the percentage of Muslim population substantiate this assumption. In both cases the correlations were fairly significant and positive, that is +0.78 and +0.64 respectively. A multiple correlation was then attempted which worked out to be +0.819. While the relation between the proportion of Hindu population and fertility was found to be negative and non-significant in the same area.

THE AGED. The aged population (60 years and over) has long been small in number compared to the rest of the population and uniformly distributed in the rural areas of East Pakistan (Table 3.5). The highest percentage of aged was found in Pabna (5.81) and the lowest in Chittagong Hill Tracts (4.01). Within the range of 1.80, which was very narrow indeed, eight districts registered below the provincial rural average (5.28) of aged percentage, while the rest were higher.

These differences were the result of many complex factors. They may result from past (when they were born) differential fertility ratios among the districts, or subsequent increase in the proportion of children, or the differential death rates between the districts. Inter-district or rural-urban migration may also have played an important role, since the people migrate as adults and many never come back to their original villages after their retirement.

Unfortunately, data on differential fertility prior to 1901 (when this cohort was born), age-specific death rates and inter-district migration were not available. Therefore, it is difficult to ascertain the specific effect of individual factors in causing the variation in the percentage of aged in various rural districts of the province, but it is beyond doubt that they were the cumulative result of the factors mentioned above.

THE TOTAL DEPENDENCY RATIO (RURAL)

Figure 2.6 shows the regionalism of dependency rates in

the rural population of East Pakistan. The map is almost the inverse of Fig. 2.5 showing the proportions of adults. Likewise the dependency ratios have been found to be inversely related with the median ages of respective rural districts.

In the rural districts of East Pakistan, there was a dependency ratio of 1.06 in 1961. This was higher than the average for East Pakistan. The districts having dependency ratios below the provincial average have been those with high agricultural productivity, including the production of several of the industrial crops, and necessitating constant adult labour supply. Such districts have been Sylhet, Chittagong Hill Tracts (with plantation agriculture and some tribal agriculture); Dinajpur, Rajshahi (noted for mango plantations); Bogra, Rangpur and Mymensingh (which produce jute, tobacco, sugarcane together with rice) (Fig. 2.6). The districts having dependency ratios higher than the provincial rural average have been, firstly, those having some industrial importance and having a relatively high degree of urbanization in East Pakistan, such as Dacca (Khulna falling on the margin), and Kushtia, Jessore, Pabna and Comilla (mainly handloom industries). Very high dependency ratios in the rural populations of Dacca, Kushtia, Noakhali and Pabna reflected a massive movement of adult population to urban centres in them and in the adjoining districts. The reasons have been mentioned in the earlier section and hence are not repeated here.

As mentioned earlier, the dependency ratio in rural areas is mainly dominated by the preponderance of children, while

the aged have had only a nominal effect upon the overall distribution of dependency ratio.

This heavy concentration of dependence in rural areas poses certain problems of great socio-economic importance. Firstly, they exert an adverse effect on the economic capacity of the adult population of rural areas where the per capita land and income have been very low (also see Chapter VI). In the long run, these dependent populations, particularly the children deserve attention for effective educational expansion in an area where the people are mostly traditional-minded and the literacy is very low (also note Chapter V). This is a necessity so that in future they may be developed as an effective reservoir of labour force for the country as well as the province.

THE RURAL MEDIAN AGE

The median age of the rural population of East Pakistan has been very low (Table 2.3). In 1961, it was only 17.39 years, even lower than that of total population (17.50) of the province. Of the rural areas, ten districts registered a median age slightly higher than the provincial rural average (Table 2.3) - the maximum reaching 18.75 years in Bogra, followed by 18.63 in Chittagong Hill Tracts, where the percentages of adult populations were also high. Mymensingh and Kushtia registered the lowest median age (15.28 years) in the rural populations of East Pakistan.

Primarily, this low median age has been the result of characteristically high proportion of children, which in turn

has been the result of high fertility, and secondly, of rural to urban migration of the adult population. The underlying facts of high proportion of children have already been discussed and the facts relating to intra-regional migration lowering the median age will be fully discussed in the study of age structure of the urban population (Section C).

The regional variation of the median age closely corresponds with that of dependency ratio, because the distribution of median age maintains an inverse relationship with that of adult population.

SECTION C

AGE STRUCTURE OF THE URBAN POPULATION OF EAST PAKISTAN

No data by age group and sex of the urban centres of East Pakistan are available for the pre-independence period. In 1951, age-sex data by broad age groups were given for a few towns.[18] The 1961 census, however supplied such data for only nine selected urban units out of more than 60 towns, of which four were cities and five were municipalities.[19] It also provided data of the same nature for total and rural population on the sub-division basis. By deducting the rural population from the total, the data for urban population by sex and age groups can be worked out. By this process data for 28 more urban centres were obtained where there was only one town in a sub-division. Therefore our study in this section will be related to 37 selected urban centres of East Pakistan.

As noted in the comparison of the urban age-sex pyramid of East Pakistan with those total and rural (Fig. 2.3), a completely different age-structure of the former has become evident. The urban centres of East Pakistan are characterized by a greater concentration of population in the adult age-periods of life - particularly male-selective. Such a characteristic is also found in India, West Pakistan and most of the Muslim countries of Africa and Middle East.[20] Such a phenomenon is related to the economic basis of urbanization on the one hand, and to the attitude of the Muslim society towards female employment on the other. The socio-economic attitudes discouraging active participation of females in labour force are discussed in the chapters as sex composition and economic characteristics of population, and hence do not call for special mention here.

The male-selective influx of population to urban centres from rural areas has made the age structure of the former peculiar in many respects. Rural adult males move to towns leaving their children and families in the villages because of the scarcity of accommodation in the urban areas.[x] Consequently the towns give some of the typical features in the age-structure of urban population, such as,

a) the adult population is more prominant, especially on the male side, indicating male-selective rural-urban migration,

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x These migrants spend every vacation, holiday and festival with their families in their respective rural homes (Desh). When they have saved enough money, they retire to villages for the rest of their life. Thus the people of this province have acquired some of the economic, demographic and technological features of urbanization without changing the basic family and socio-religious norms.

b) the proportion of children is less in the urban population,

c) the proportion of the aged is still lower.

But when the individual urban centres are studied, deviations of different magnitude, depending on the functional characteristics of respective towns are observed.

THE ADULT URBAN POPULATION

The proportion of adults in the urban population is much higher than in the rural population. In 1961, it was 54.34 per cent as against 48.43 in the rural and 49.70 in the total population. The variations between the towns have been considerable - the range being 17.90 per cent in 1961. The highest percentage of adult population was in the city of Chittagong (63.36) and the lowest in Munshiganj town (45.46) (Table 2.5). In general, in the majority of subdivisional and other small rural oriented towns the percentage of the adults has been below 50.00; they included the municipalities of Saidpur, Gaibandha, Nawabganj, Serajganj, Tangail, Rajbari, Madaripur, Gopalganj, and Brahmanbaria, and the towns of Naogaon, Natore, Meherpur, Magura, Manikganj and Munshiganj. Out of these, Saidpur has been classed as a declining town as a result of loss of population during the last decade;[21] Serajganj, Meherpur, Gopalganj, Gaibandha, Rajbari, Brahmanbaria and Tangail have certain commercial importance; while the others, particularly Munshiganj, Manikganj, Madaripur and Nawabganj, still possess many of the rural characteristics. Because of their limitation in urban functions the proportions of adult population have been low (Table 2.5). The populations in

TABLE 2.5

Age structure of selected urban centres, East Pakistan, 1961

Urban Centres		Percentages			Dependency Ratio	Median Age	t/Cr Ratio
		Children	Adult	Aged			
E. Pakistan: Urban		41.81	54.34	3.85	0.84	19.68	-
Rajshahi	M	45.84	50.00	4.16	0.80	19.06	116
Saidpur	M	49.86	46.56	3.58	0.98	17.69	92
Khulna	C	39.54	57.48	2.98	0.63	22.33	176
Barisal	M	41.42	54.75	3.83	0.84	19.30	140
Dacca	C	41.10	55.75	3.15	0.79	19.93	152
Narayanganj	C	37.28	59.13	3.59	0.69	22.32	164
Mymensingh	M	43.46	52.66	3.88	0.89	18.83	132
Chittagong	C	33.58	63.36	3.06	0.65	22.17	176
Comilla	M	37.45	58.88	3.67	0.96	18.84	128
Thankugaon	T	45.22	50.99	3.79	0.96	17.76	128
Nilphamari	T	44.36	51.94	3.70	0.92	18.84	128
Rangpur	M	44.82	51.49	3.69	0.94	17.72	124
Gaibandha	M	45.77	49.96	4.27	0.98	17.81	120
Naogaon	T	48.94	46.53	4.53	1.01	17.81	108
Nawabganj	M	48.61	46.35	5.04	1.15	16.43	88
Natore	T	46.13	48.75	5.13	1.05	17.57	108
Serajganj	M	44.11	48.24	7.65	1.08	18.71	100
Meherpur	T	49.12	46.05	4.83	1.15	16.21	96
Jessore M/Cant.		41.09	57.28	1.63	0.78	21.29	152
Magura	T	47.38	47.98	4.64	1.08	16.28	108
Bhola	M	45.30	50.51	4.19	1.00	17.81	128
Patuakhali	M	44.62	51.26	4.12	0.94	18.24	128
Perojpur	M	44.84	50.02	5.14	0.99	17.95	112
Netrokona	M	41.76	53.17	5.07	0.88	19.75	128
Tangail	M	47.94	46.85	5.21	1.13	17.08	100
Manikganj	T	45.83	48.05	6.12	1.08	17.99	108
Munshiganj	T	50.66	45.46	3.88	1.15	15.72	120
Rajbari	M	46.11	49.02	4.87	1.03	18.04	112
Faridpur	M	44.63	50.93	4.44	0.99	18.51	116
Madaripur	M	47.24	47.64	5.12	1.09	17.64	104
Gopalganj	M	48.33	47.47	4.20	1.02	16.67	116
Sylhet	M	43.06	52.81	4.13	0.88	18.71	132
Habiganj	M	42.66	52.45	4.89	0.90	18.80	128
Brahmanbaria	M	46.19	48.69	5.12	1.04	17.66	100
Chandpur	M	44.28	51.16	4.56	0.95	18.77	124
Feni	M	41.41	54.27	4.32	0.84	19.43	152
Cox's Bazar	M	43.31	54.08	2.61	0.81	18.76	136

C - City, M - Municipality, Cant. - Cantonment, T - Town.

Source: Same as Table 2.3.

almost all of the district headquarters and a few subdivisional towns with relatively high industrial and commercial importance have 50 to 55 per cent adults. In this category were the district-towns of Barisal, Mymensingh, Rajshahi, Rangpur, Faridpur, and Sylhet possessing a fair degree of educational and commercial importance with their administrative function. Out of the subdivisional towns, Thakurgaon, and Habiganj are industrial centres; and Nilphamari, Bhola, Patuakhali, Perojpur, Netrokona, Chandpur and Feni are of high commercial importance; and Cox's Bazar is a health resort and sea-side town which attracts adult people to the hotel and fishing industries (Fig. 2.8).

Some of the very high adult percentages are concentrated in four cities, namely, Dacca, Narayanganj, Chittagong and Khulna, and in two district headquarters, Jessore and Mymensingh. With more than 55 per cent of their populations as adult, they demonstrate their centripetal attraction. Narayanganj is purely an industrial city* and the main jute - handling riverport in Pakistan. Of the other three, Dacca, the capital of the province with more than four industrial areas, has long been the centre of concentration of adult people from surrounding districts. Chittagong and Khulna are both divisional headquarters and possess industrial areas as well as sea ports, and have expressed similar attraction, especially for male adults (Fig. 2.8).

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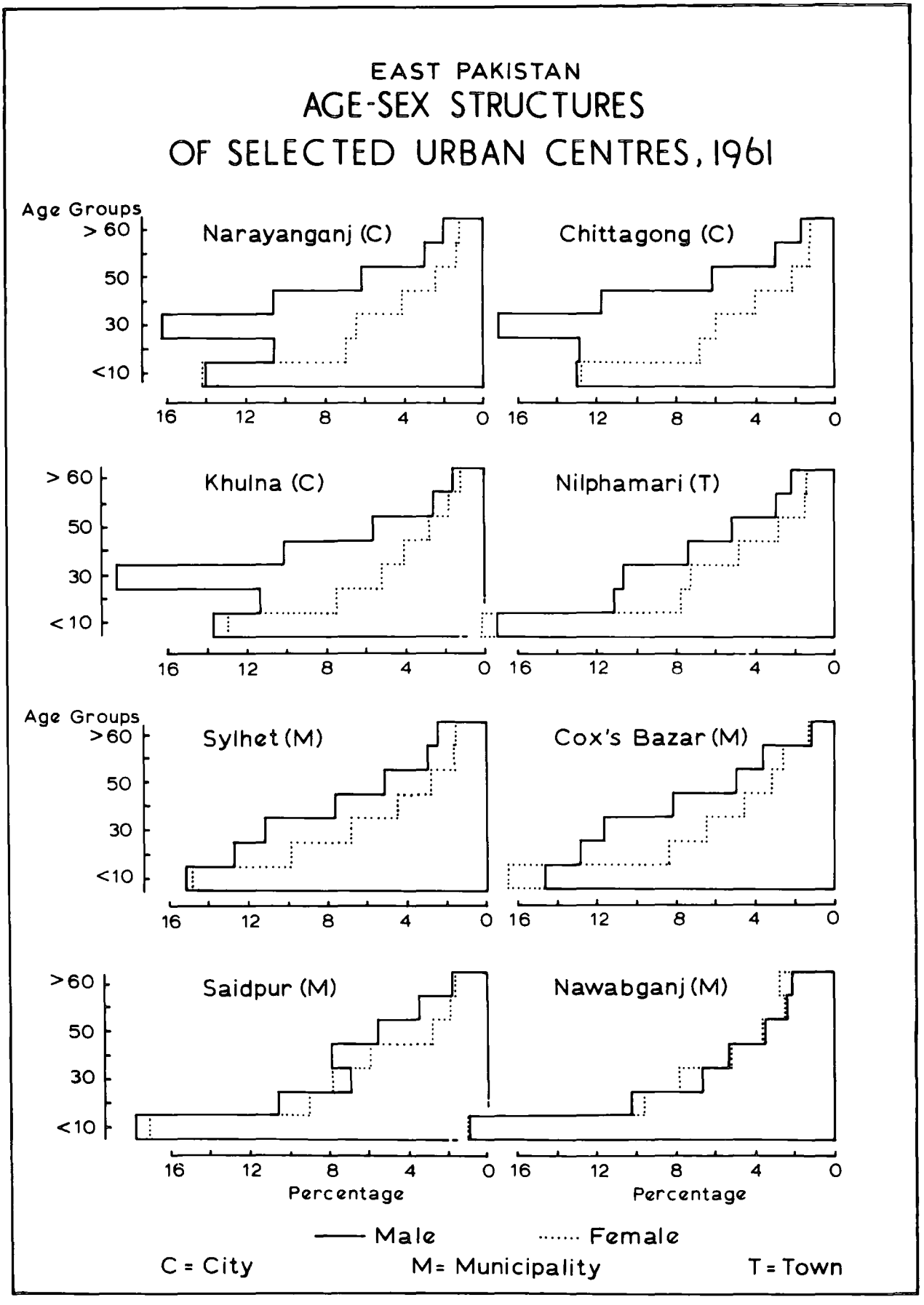
* It is the largest jute-industry centre in the world, and is often called the "Dundee of the East".

One important characteristic of age structure of urban centres is the male selectivity - mainly among the adults (Fig. 2.7). Male surpluses in towns (note sex structure) are explained by the sex selective immigration, which as noted earlier, is in conformity with the socio-religious bias of the people against allowing their females to seek remunerative jobs in towns. It is also true that literacy among the females in the province is very low and that employment is not thought to be of a nature to suit females. The household responsibility and the traditional respect rendered to females which stem from religious directives stand as a bar to the participation of women in work outside home. Thus, on the whole, the proportion of male migrants from rural areas has been greater in the larger towns with industrial or commercial importance (Fig. 2.7). In this connection, it may be noted that there is every likelihood of 'stepped migration', that is from rural to small towns, thence to larger towns as is evident from the declining towns or those having very slow growth. There is very little documentary evidence in favour of this type of migratory pattern of the rural people and it is hard to establish statistical evidence. On the other hand, in the absence of rural-urban migration data, it cannot be directly substantiated that the migrants to urban areas mainly influence their age structure. But for assessing the volume of rural-urban migration, the "town-country ratio" (t/Cr) of adults can be used as a useful index (Appendix - 3). The index as formulated by Browning,[22] is an indication of the volume of migration by

FIG. 2.7


EAST PAKISTAN
AGE-SEX STRUCTURES
OF SELECTED URBAN CENTRES, 1961
Age Groups
> 60
50
30
<10
Narayanganj (C)
Chittagong (C)
Khulna (C)
Nilphamari (T)
Sylhet (M)
Cox's Bazar (M)
Saidpur (M)
Nawabganj (M)
16
12
8
4
0
Percentage
Male
Female
C = City
M = Municipality
T = Town

relating the age structure of towns with that of the country (rural areas) as a whole.* This index as a measure of volume of migration has certain advantages over the percentage increase of population in urban centres for a particular period, which is the result of both migration and natural increase. The t/Cr ratio tends to omit the influence of natural increase (as only the adult age-period is taken under consideration) and therefore reflects the actual impact of immigrants from rural areas to urban centres.

The calculated range of t/Cr ratio of the 37 selected urban centres was 88, the highest ratio being 176 in Khulna and the lowest 88 in Nawabganj (Table 2.5). The functional characteristics of Khulna have already been noted and it is natural for that city and others like it to attract more migrants from rural areas than small towns like Nawabganj. Thus, all the small towns, such as, Naogaon, Natore, Magura, Tangail, Manikganj, Munshiganj, Brahmanbaria, Gaibandha including the declining town of Saidpur registered low t/Cr ratios (less than 120). On the other hand, business and industrial centres, and almost all of the district towns registered fairly high ratios (121 to 136). The urban centres having medium proportions of adults (50 to 55 per cent) closely coincided with this group of t/Cr ratios (Table 2.5). The district towns of Rajshahi and Faridpur registered low ratios

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* The formula of t/Cr has been modified in this study to suit the conditions of East Pakistan. For a detailed explanation see Appendix 3.

because of their limited functional diversity. Thus the different groups of urban centres reflect their varied extent of attraction to rural migrants depending on their functional diversity which are, in turn, reflected in their respective age structures (Fig. 2.7).

THE DEPENDENT URBAN POPULATION

The dependent population is lower in the towns of East Pakistan (Table 2.5, Fig. 2.9) than in rural areas; yet like the latter the dependents are mainly children.

THE CHILDREN. The percentage of children in the urban areas of East Pakistan has been lower than that of the province as a whole. In 1961, it was 41.81 in the urban population. The percentage distribution of children has been more uneven among towns than among rural populations. The range in the distribution of children in the rural populations was only 4.51 per cent, while it was 18.32 in the urban areas (Table 2.5). In other words, the proportions of children in rural population fall within $\pm$ 1.65 standard deviations, whereas those in urban centres are more widely distributed, ranging from - 2.00 to + 4.20 standard deviation levels. The lower average child percentage in the urban population and its wide variations between towns are explained by:

a) Higher age at marriage of the urban population. As may be seen later, both males and females marry late in the urban areas (mean age at marriage: male - 25.2 yrs, females - 15.9 yrs). This fact stems from the progressive nature of the

FIG. 2.8

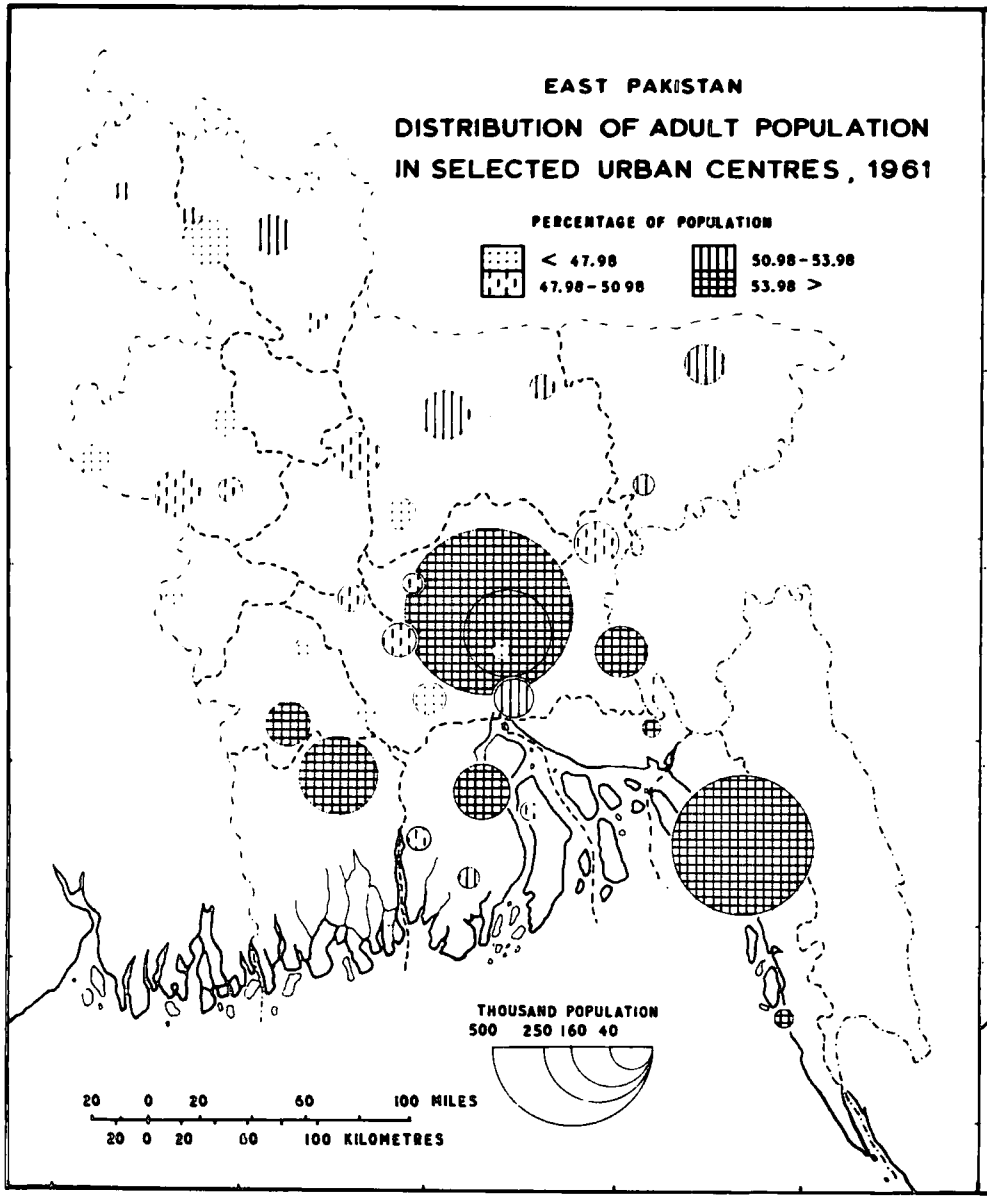
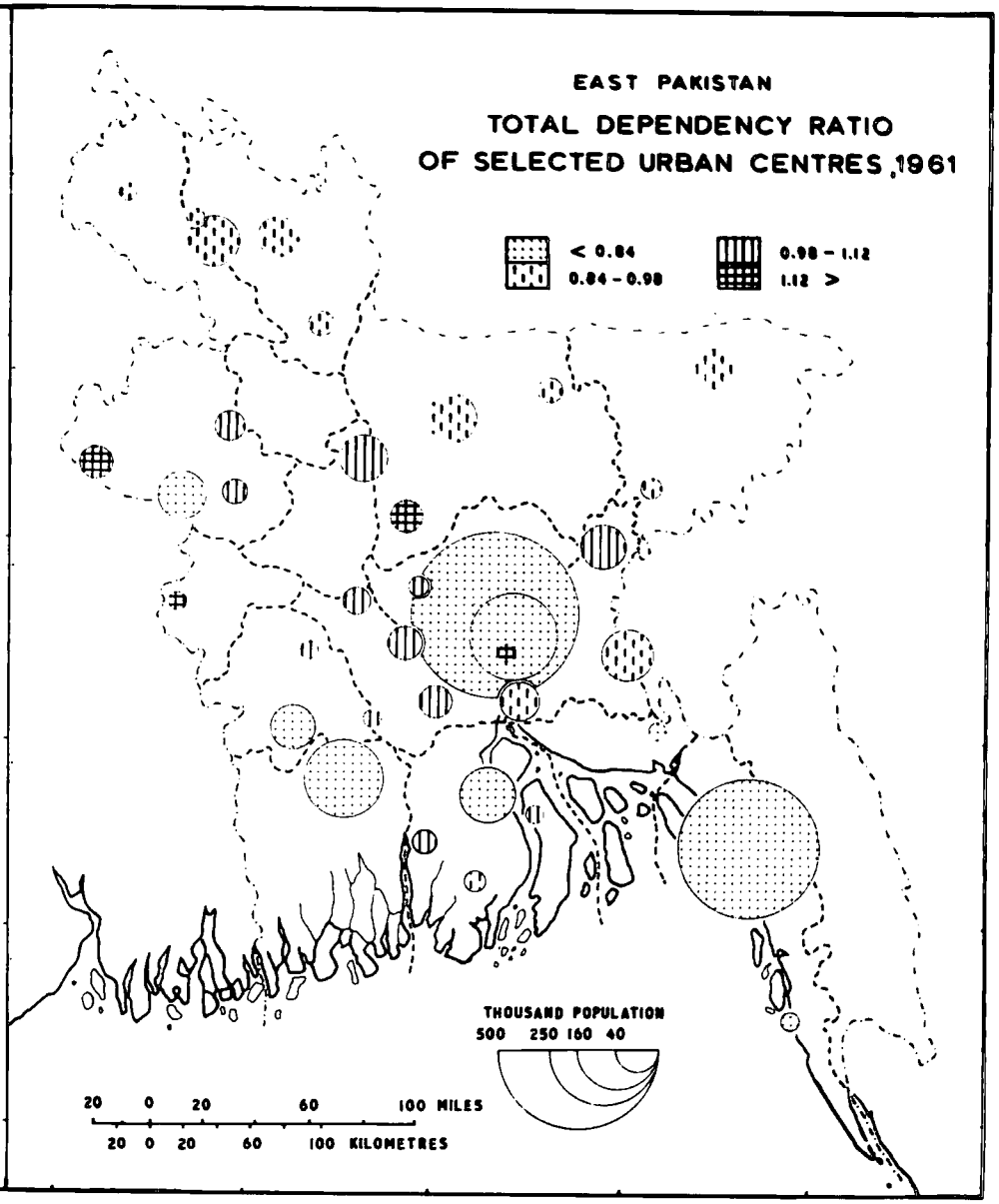

EAST PAKISTAN
DISTRIBUTION OF ADULT POPULATION
IN SELECTED URBAN CENTRES, 1961
PERCENTAGE OF POPULATION
< 47.98
47.98 - 50.98
50.98 - 53.98
53.98 >
THOUSAND POPULATION
500 250 160 40
20 0 20 60 100 MILES
20 0 20 60 100 KILOMETRES

FIG. 2.9


EAST PAKISTAN
TOTAL DEPENDENCY RATIO
OF SELECTED URBAN CENTRES, 1961
< 0.84
0.84 - 0.98
0.98 - 1.12
1.12 >
THOUSAND POPULATION
500 250 160 40
20 0 20 60 100 MILES
20 0 20 60 100 KILOMETRES

urban population, their relatively high literacy (45.7 per cent), and the unwillingness of males to marry before attaining economic stability.

b) Lower fertility ratios of urban population. It follows from the first point that the urban population has a lower fertility ratio (854.6 in contrast to 939.4 in rural areas), and as in many other countries the birth rate tends to vary inversely with urbanization.[23] This is reflected in the higher child-women ratios in rural areas than the urban areas - the ratios were 87 and 85 respectively in 1961,[24] and in cities, such as Narayanganj and Khulna they were much lower.

c) Tendency of male migrants to leave children and womenfolk in villages. The adult males migrating to towns usually leave their children and womenfolk in villages. This has become the usual practice of many, particularly in big towns and cities, because of the scarcity of accommodation and high house-rents and because the males usually do not stay long in those urban centres. These facts have lowered the percentages of children in the urban centres with corresponding increases of the same in rural areas.

As to the regional concentration of children, it is found that the smaller the town the greater is the proportion of children, and vice versa. Thus, all the cities and some of the district and subdivisional towns with industrial or commercial importance, such as Jessore, Barisal, Netrokona, Feni and a few others have less children than the provincial urban average (41.81 per cent), while almost all the sub-divisional towns, having mainly agrarian characteristics, registered high

proportions of children. Some examples of such towns are Brahmanbaria, Gopalganj, Madaripur, Munshiganj, Manikganj, Tangail, Magura, Natore, Nawabganj, Naogaon, Meherpur and Saidpur, which are also characterized by low percentages of adults (Table 2.5). It is likely that the adults (mainly the males) have moved out to other big towns seeking jobs. On the other hand, almost all of the district towns and some of the sub-divisional towns having some industrial and commercial importance registered medium percentages of children (42 to 46 per cent). Some of the representative towns are Rajshahi, Mymensingh, Comilla, Faridpur, Sylhet, Thakurgaon, Nilphamari, Rangpur, Gaibandha, Serajganj, Perojpur, Patuakhali, Habiganj, Chandpur and Cox's Bazar. These urban centres have also experienced a change in relation to the proportion of children as a result of a new awakening since Independence and Governmental efforts to popularize education, so that these medium sized towns received children from rural areas along with their parents. These are the places which possess schools, colleges, technical institutions and universities, different training establishments such as community development centres, and various urban recreation facilities, such as stadiums, parks, public libraries, cinemas, and the best medical facilities available in the province. Besides, availability of accommodation in them is unlike that of cities, and yet at the same time these towns differ from some rural character of many smaller towns. Therefore, the children are brought and maintained in these medium sized towns rather

more economically than in larger towns and cities.

THE AGED. The aged population constituted a small percentage of the total population of East Pakistan, and their proportion is still lower in the urban areas. In 1961, the percentage of the aged in the total population was 5.21, while it was only 3.85 in the urban population (Table 2.5). The overall low proportion of the aged is no doubt due to low expectancy of life (despite its recent positive change) of the population. The regional differences in the proportion of the aged are explained by the attraction of the towns for adults from rural areas and their repellant power to people afterwards. That is, on retirement many of the adults living in towns look forward to go back to their ancestoral rural-homes to spend the rest of their lives with their relatives. Such motivation is renewed with every reunion with their families in villages during religious festivals, vacations and so on.

As noted in Table 2.5, the towns with very low percentages of the aged are generally industrial and commercial and in general relatively large towns, such as the four cities, and Thakurgaon, Barisal, Nilphamari and Comilla. They all have lower percentages of aged people than the provincial urban average. Between urban and provincial averages are included most of the district and subdivisional towns - the representative ones are Rajshahi, Mymensingh, Faridpur, Sylhet, Rajbari, Gaibandha and Naogaon. The highest percentages of aged exist in small towns with strong rural influence, like Manikganj, Natore, and Serajganj. The abnormally low percentage of aged in Jessore may be explained by excessive influx of adults in

its cantonment and municipal areas.

THE TOTAL DEPENDENCY RATIO (URBAN).

The dependency ratio in towns is also influenced by the proportion of children. The larger the towns and more complex the functions are, the lower the proportion of children and lower the dependency ratio. Therefore, with a few exceptions, the regional concentration of dependency closely resembles that of children. Hence, the towns having low dependency ratios have been those with low percentages of children, i.e. Khulna, Barisal, Dacca, Narayanganj, Chittagong, Jessore and Feni (Fig. 2.9). Very high dependency ratios prevail in small towns, as in Meherpur, Tangail, Nawabganj, Munshiganj, followed by Rajbari, Madaripur, Gopalganj, Brahmanbaria and few others; while most of the districts and administrative towns have high dependency ratios (Fig. 2.9). The reasons for this have been mentioned earlier.

THE URBAN MEDIAN AGE

With relatively smaller percentages of children and aged, and larger percentages of the adult population, the towns and cities of East Pakistan have a higher median age than that of the total population; the median age of the urban centres in 1961 was 19.68 as against 17.53 in the total. The range of distribution in median age was 6.61 years, with the highest median age of 22.33 in Khulna city and the lowest being 15.72 in Munshiganj. Only seven out of 37 towns under study have median ages below the provincial average (Table 2.5). All these are smaller in size, and none has registered an increase

in population more than the total urban population of the province between 1951 and 1961.[25] This is because of their functional limitations and lack of new urban infrastructure to attract more adult population from adjacent areas. The remaining 30 towns have median ages higher than the median age of the province. Four of them have very high median ages (above 20 years) - Khulna, Narayanganj, Chittagong and Jessore of which the first three are cities with high population concentration and multiplicity in functions and usually attract adult populations. Such a relationship can be demonstrated by a regressional analysis between median age representing total index of age structure of population and town-country ratio (t/Cr), the index of volume of migration from rural to urban areas. The coefficient of correlation between the two variables was found to be highly significant (+ 0.807).

SUMMARY AND CONCLUSION

It is observed that as a result of the very high fertility conditions, the age structure of the population of East Pakistan is characterized by a high dependency burden. The dependency burden is higher in rural areas than in the urban centres, because of latter's more favourable age structure resulting from rural-urban migration of adult population.

The overall unfavourable age structure relates to the mean age of the labour force which is very low, as identified by the low median age of the population. Though the young labour force has an advantage in terms of its flexibility and interception of new skills over time, the smallness of its size outweighs

the advantage.

Changes in age structure are usually associated with changes in national income, capital formation and investments; each tends to be positively correlated with output per head, which in turn tends to vary with the ratio of the labour force to the total population.[26] Because of a youthful population and high overall dependency in East Pakistan, the economic consequences of the pattern of consumption of national wealth are exerting a less favourable atmosphere for capital formation, investment and production. Thus the young population "..... apart from raising the rate of dependents to workers, increased dependency, all other things being equal, operates in other ways to reduce product per head and therefore to affect level of living adversely".[27] On the other hand, such an age structure also influences the other aspects of population, such as the size of school population, probabilities of marriage for males and females, size of future labour force and so on. These aspects have been discussed in the subsequent chapters in detail.

A departure from this traditional age structure lies with a successful reduction of fertility which would have the direct effect of decreasing the total dependency burden. With the continuation of fertility - declining measures of the recent decades and their further elaboration and intensification, the depleted age cohorts when they enter the adult age periods would have a certain tendency towards favourable age structure in the future. Such change is likely to occur first in urban

areas where the extent of social orientation and transition are much more evident. Further ahead, if fertility reaches a sufficiently lower level than it is now, and the expectancy of life increases, then the age distribution would tend to become 'normal' and it would not return to the present high dependency condition. With a lowering dependency burden, the overall national product and levels of living would rise although the present levels of consumption of children and adults maintain their relative patterns.[28] One indirect effect of increase in consumption would be the positive change in productivity by increasing both participation of labour force (due to increase in the size of adults) and labour efficiency,[29] bringing about positive and cumulative changes in the social (health, education etc.) and economic situation of the province. For instance, reduced fertility would decrease the maternal and infant mortality to a great extent, decrease the overall mortality, increase the size of labour force and boost up levels of living and economic welfare.

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C H A P T E R III

SEX STRUCTURE

Sex structure of a population is of considerable interest in population geography, and the "sex ratio"* furnishes the preponderance of one sex and also correlates different social and demographic variables in the population group. It is assumed that sex ratio of a closed population is a function only of the sex ratios of births and age-sex specific deaths. The fact that East Pakistan unaffected, as mentioned in earlier chapters, by any significant migration of population has shown a continuous excess of males or high sex ratio since the relevant past, deserves close study over time and space.

SECTION A

GENERAL CHARACTERISTICS OF THE SEX STRUCTURE OF THE POPULATION OF EAST PAKISTAN

For a long time the sex structure of East Pakistan has exhibited a marked masculinity (Table 3.1 and Fig. 3.1). This is true not only of East Pakistan but of Pakistan as a whole, and this has been the general pattern prevailing in many south and south east Asian countries,[1] and almost all of the Muslim countries of the world (Table 3.2). As such it should be noted that masculinity is a connotation related to certain definite family and social structures. It is, therefore dominant in

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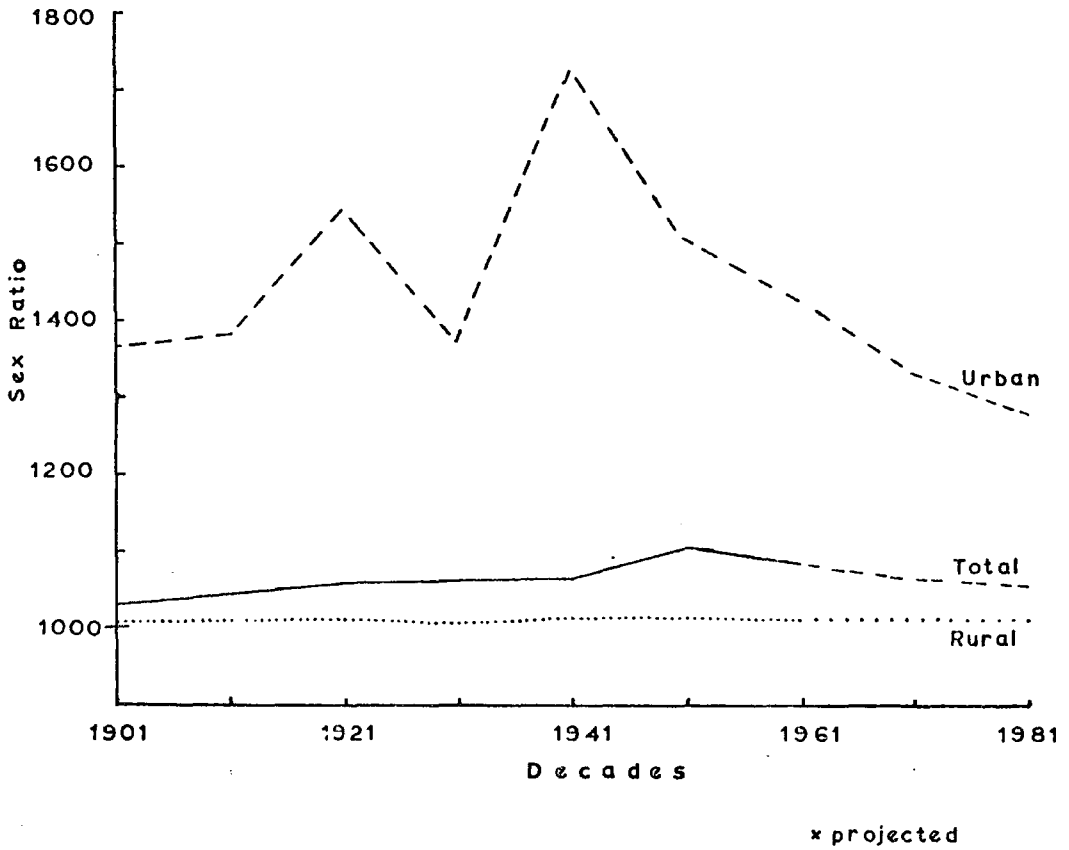
* Throughout this chapter the term "sex ratio" refers to the number of males per 1,000 females (for statistical information see Appendix 3). This definition is in conformity with the international practice. It is also assumed that the sex ratio is a constant of 1050 or 1060 considering that significant deviations from this constant are indicative of data deficiencies, sex selective deaths and migration. About the quality of age-sex data of the province's population, see Chapter II.

FIG. 3.1

SEX RATIO OF TOTAL, RURAL AND URBAN POPULATIONS EAST PAKISTAN, 1901-61, AND 1971*, 1981*



those areas where the patriarchal system has been in vogue since the distant past and has assumed a traditional pattern. The sex ratio is also high in areas of traditional agricultural settlement as in South East Asia, while it is low in the industrial countries of the West.

The traditional excess of males in the population of East Pakistan in all the censuses from 1901 to 1961 is somewhat surprising (Table 3.1, Fig. 3.1). Serious doubts about the validity of this composition were raised in the beginning of the present century and many attributed the deficiency of females to their underenumeration at the early censuses. But by elaborate verification after successive censuses it has been established as typically real for this part of Asia.[2]

TABLE 3.1

Sex ratio of East Pakistan, 1901-1981

YEARS	Males per thousand females		
	Total	Rural	Urban
1901	1031	1026	1364
1911	1043	1036	1373
1921	1054	1047	1540
1931	1058	1050	1364
1941	1059	1060	1729
1951	1100	1085	1507
1961	1076	1060	1423
1971 (Est)	1056	1050	1326
1981 (Est)	1048	1040	1272

Est. - Estimated

Sources: Calculated from:

1. Census of India, 1901-1941 (5 vols on Bengal).
2. Census of Pakistan, 1951, Vol. 3.
3. Census of Pakistan, 1961, Vol. 2.
4. Census of Pakistan, Bulletin - 7, 1967.
5. Bean, L.L., Khan, M.R. and Rukanuddin, A.R., 1968.

Besides, increasingly better coverage of sexes in 1961 census has narrowed down the sex ratio to some extent in East Pakistan.[3] Some independent evidences suggesting that the excess of males to be real is available from Table 3.3. But still the impact of some degree of misenumeration of females, as may be seen later, for certain particular age groups can not be ignored

TABLE 3.2

Sex ratio by broad age groups of selected developing countries and East Pakistan (1961-71)

Countries	Total	Age groups			
		0 - 1	0 - 14	15 - 59	60+
Algeria	1008	1028	1048	980	934
Ceylon	1082	1024	984	1106	925
Chile	972	1044	1019	958	838
India	1062	1006	1071	1100	995
Iran	1073	1108	1090	1052	1078
Iraq	1040	1129	1083	1003	1039
Jordan	1026	1046	1119	988	1038
Libya	1082	1037	1063	1053	1220
Mexico	1007	1036	1051	972	956
Morocco	998	-	1002	1002	907
Peru	1013	-	1028	1003	889
Sudan	1022	1025*	1025	1024	897
Syria	1040	-	1071	1018	968
Turkey	1039	1079	1080	1040	809
Pakistan - '61	1111	1013	1085	1115	1281
W. Pakistan '61	1158	1029	1123	1166	1334
E. Pakistan '61	1076	1000	1059	1076	1229
'71	1056	1039*	1032	1074	1139

* 0 - 4 yrs.

Sources: UNO, New York, 1969 and 1970 (2 vols).

Census of Pakistan, 1961, Vols. 2 and 3.

Bean, L.L., Khan, M.R. & Rukanuddu, A.A. 1968.

when studying the age-specific sex ratio.

FACTORS CONTRIBUTING TO HIGH SEX RATIO. The sex ratio is expected to be a constant 105ō or 106ō in a population. A wide range of deviations occurs due to differences in sex ratio at birth, which in turn is affected by socio-cultural factors. The effects of genetic factors and traits, and other physiological variables are not conclusive.[4] Besides opinions greatly differ as to effects of factors such as family size, differences in age between marital partners, birth order, race, colour, inbreeding and outbreeding, blood group, birth control, radiation damage, geographic and climatic conditions, and socio-economic status and conditions, on sex ratio.[5] According to many authors the differences in sex ratio in terms of its masculinity are the results of various aspects of socio-cultural and religious factors in this part of Asia.[6] More precisely these factors are more responsible for the deficit of females. Social units and institutions in the Bengali society, and the value systems as they existed in their integrity were not individualist but collectivist and were manifested in all spheres of life and living. One aspect of these facts is expressed in the preference for male children among the people of the province. This is also true of other localities of South East and South Asia - particularly among the Hindus who have religious encouragements as well. It is also operative among many Muslim societies.[7] One main reason for desiring sons, common to all patrilineal agro-societies of the world is the

TABLE 3.3

Enumerated and estimated sex ratios of East Pakistan by individual sources, 1951-1981.

Sources	Census		Adjusted		Estimated		S.R. of stationary population with S.R. at birth of 1050	Sex ratio of 1971	Projected Sex ratio, 1981
	1951	1961	1951	1961	1951	1961			
1. Census of Pakistan	1100	1076	1097	1076	-	-	-	1067	1060
2. PIDE	-	-	-	1054	-	1067[a]	-	1056	1046
3. EPBS	-	-	1047	1048	1049	1059	-	1045	1039
4. PGE project (PIDE)	-	-	-	-	-	1096[b]	-	-	-
5. Hashmi, (PGE)	-	-	-	-	-	-	1092[b]	-	-

a - for 1960, b - for 1962-63

Sources:

1. Census of Pakistan, Bulletin - 7, 1967
2. Bean, L.L., Khan, M.R., and Rukanuddin, A.R., 1968,
3. EPBS, Dacca, 1966, and EPBS Technical paper No. 5, Dacca, 1966,
4. Hashmi, S.S. New Delhi, 1963.

transmission of family name and property, as well as to raise the earning power of the family.[8] In East Pakistan, the male population being the main economic force, the male children are basically looked upon as great economic assets, who provide economic support in the old age of the parents or in case of earlier disability. And this is more so in the extended families who rarely hire labour from outside. This, in fact is the reflection of a socio-economic structure of this part of Asia where there is little or no access to organized social insurance or any form of economic provisions for old age. Hence, the possession of more sons is some sort of support upon which the elderly can rely upon - socially and economically. From the religious point of view (of both Hinduism and Islam), the responsibility of looking after the aging parents usually lies with the sons, since after marriage the daughters leave the family literally for ever. Thus in a society where the family-life is very close and intricate, emotional and other forms of support are readily available from sons rather than daughters. These socio-religious facts amply demonstrate the causes of preference of male children in this population group.

Another economic factor for the preference of sons, operative in both rural and urban areas is that a large dowry (often equivalent to the income of several months) either in cash or kind, has to be given to the son-in-law at the time of marriage of one's daughter. This is a great financial loss for a family having more daughters. Besides, male children usually inherit most of the parental property according to

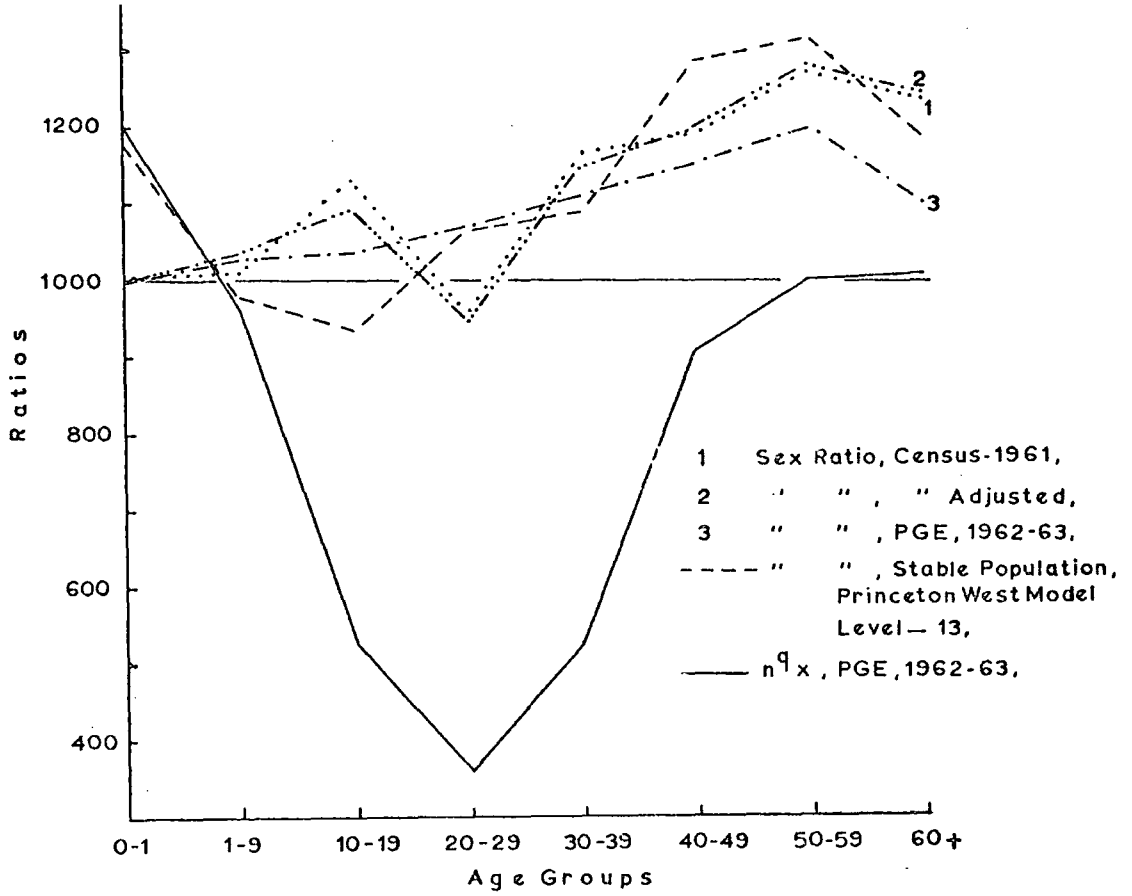
the laws of inheritance of both Hinduism and Islam. Consequently, female children, deliberately or unconsciously, are neglected and very often regarded as a socio-economic problem, and this view is supported by the low expectancy of life at birth of females compared to males and the greater female mortality afterwards. Aslam et.al.[9] calculated male and female expectancy of life at birth ($^{o}e_{o}$) by using PGE (PIDE) - 1962 data (included Chandra-Deming factors) at 49.0 and 44.8 years respectively. The respective figures as calculated by Rukanuddin[10] using PGE (PIDE) - 1962 Life Tables (and comparing them with Princeton West Model Level - 13 of Coale and Demeny) were 49.2 and 46.9 years. Rukanuddin's ratios of male/female death probabilities ($_{n}q_{x}$) for East Pakistan and Princeton West Model Level - 13 have been presented in Fig. 3.2. Rukanuddin also observed that if female mortality exceeds male mortality by an amount which results in a 2 to 3 year difference in life expectancy, then the overall sex ratio of population should be roughly 1070 to 1090.[11] The 1961 census sex ratio and all the estimated sex ratios (Table 3.3) fall within this range substantiating the role of differential mortality theory as responsible for high sex ratio in the province.

The sex ratio at birth very often determines the subsequent trends in overall sex ratio. The sex ratio at birth may normally be expected to vary between 1020 to 1070[12] and this is true for almost all the countries of the world (Table 3.2). As noted in Table 3.4, the earlier decades of the present century registered female excess at birth which may be due to

high incidence of male-selective infant deaths as a result of overall poor health conditions and related phenomena. In recent decades sex ratios at birth were either nearly balanced or a slight excess in male births. After 5 or 10 years of the birth the males greatly surpassed the females due to above mentioned socio-cultural factors (Table 3.4). In the subsequent age groups the post-natal deaths of females are particularly greater giving rise to higher sex ratios.[13] This is a well-known phenomenon in areas where proper hygienic and sanitary conditions are not adequate and family planning is not practised effectively, and they have been extended only recently to many parts of rural areas where a majority of the population live. This environmental factor was accentuated by the sex-selective death to the cost of females particularly in times of famines and epidemics in pre-Independence days.[14] The same pattern of sex-selective deaths in the past, as observed by Gosal, has contributed considerably to the inequality between the two sexes in India.[15] It should be noted here that the mortality pattern in countries like the USA, UK and New Zealand is very different - very often just the reverse from East Pakistan or India because of abundant availability of medical aid and nursing facility in the former.[16]

The high sex ratio of East Pakistan and its abnormality in certain age groups can further be explained by migration and misreporting of age by a particular sex. The outmigration of females so as to affect the overall sex ratios of East Pakistan is not known to have occurred in large numbers. The migration of some Hindu females after Independence was offset by the

FIG. 3.2 RATIOS (male / female) OF AGE-SPECIFIC DEATH PROBABILITIES ($_nq_x$) AND SEX RATIOS, EAST PAKISTAN, 1961, 1962-63



influx of Muslim migrants from the Indian provinces of West Bengal, Bihar, and Assam. These provinces of India also exhibited equally high masculine population as East Pakistan since the beginning of the present century.[17] The 1951 sex ratio of East Pakistan was perhaps affected by the return migration of male population from Burma, and the neighbouring provinces of India during late 1940's. This was reflected in the abnormally high sex ratio in 1951 (Table 3.1). Internal migration in terms of age-sex selective movement of population from rural to urban areas has affected age-specific sex ratios in East Pakistan.

Finally, the misreporting of ages and the digital preference in stating ages (see Chapter II) have also disturbed the sex

TABLE 3.4

Sex ratio by age groups, East Pakistan, 1901-1981

Years		Age groups								
		TOTAL	0-1	0-9	10-19	20-29	30-39	40-49	50-59	60+
1901	C	1031	982	979	1102	922	1067	1959	973	790
	A	1052	982	1053	1063	1078	1073	1076	980	943
1911	C	1043	980	990	1089	964	1250	1222	1067	949
	A	1058	983	1055	1066	1077	1061	1124	975	931
1921	C	1054	990	992	1111	962	1229	1314	1120	1009
	A	1055	989	1057	1064	1079	1082	1038	982	940
1931	C	1058	995	1043	1013	1000	1251	1290	1174	1097
	A	1053	996	1056	1068	1082	1072	1021	969	912
1941	C	1074	983*	1023	1095	921	1153	1262	1247	1142
	A	1054	1054*	1056	1072	1081	1072	1034	975	918
1951	C	1100	999	1014	1133	966	1125	1250	1149	1215
	A	1097	1000	1054	1067	1077	1070	1036	986	1230
1961	C	1076	1000	1011	1127	960	1161	1185	1261	1230
	A	1076	1012*	1037	1091	949	1144	1194	1275	1238
1971	Est.	1056	1039*	1038	1019	1046	1098	1132	1133	1139
1981	Est.	1048	1047*	1045	1039	1024	1055	1099	1107	1092

* age group 0-4 years.

C - Census, A - Adjusted, Est. - Estimated

Sources: same as Table 3.1, and

EPBS, Statistical Digest, 1965.

ratio in some age groups. These facts will be discussed in full while studying age-specific sex ratios.

Thus it is the differential in sex at birth followed by differentials in the rate of mortality in the two sexes at different ages, together with the socio-psychological effects of desirability of sons which explain the existing overall sex ratios of East Pakistan.

AGE-SPECIFIC SEX RATIO OF EAST PAKISTAN

The age-specific sex ratio of a closed population generally shows a declining trend with progression in ages if the age data are statistically complete. Theoretically the younger age groups will show a higher sex ratio and gradually the age-specific sex ratio will decline due to the higher mortality risks among males than among females and ultimately with advance in age it will decline very rapidly and the overall sex ratio of the population will approach unity.[18] But because of the factors mentioned earlier in this chapter the sex ratio patterns in East Pakistan present different picture.

Table 3.4 and Figs. 3.3 and 3.4 show changes in the age-specific sex ratios of the province since 1901. In East Pakistan the age group 20-29 shows an excess of female in all decades, and some excess of females in the age group 0-9 in 1901, 1911 and 1921 (Table 3.4). These excesses may be due to over-reporting of ages of young male children (below 9 years), under-reporting of female ages in the same age group and high incidence of male-selective deaths in lower age groups.

It is hard to single out the relative effect of these factors, but the results of PGE data (1962-63) has revealed higher mortality among male infants than among female infants.[19] In the next age-group (10-19), however the males recover greatly to surpass the female ratio because of the higher premium paid to the male children for various socio-cultural reasons. The deficiency of females at this age group is also the result of the combined consequences of very early marriage (see Chapter IV), high incidence of maternal deaths and other environmental factors. The understatement of age of the young wives and its exaggeration after reaching motherhood might also have affected the sex ratio at this age group. Misreporting of females' age of this age group is also highest in many illiterate and rural societies; and in East Pakistan this is intensified by the prevailing 'Purdah' system, where the greatest anomaly between census and adjusted figures (Table 3.4) and between the former and individual survey data (Fig. 3.2) is noticeable in this age group, and this has also affected the subsequent age groups. The predominance of females in the 20-29 age groups in all decades is the continuation of effects of the above facts, as there is no evidence of male-selective mortality to explain this anomaly. Migration of young males from East Pakistan to West Pakistan in recent decades may seem to be one plausible reason of the excess of females in this age group.[20] The decrease in the proportions of graduates and post-graduates in East Pakistan between 1951 and 1961 seems to substantiate this fact. But the proportion

FIG. 3.3

AGE-SPECIFIC SEX RATIO OF SELECTED DECADES

EAST PAKISTAN

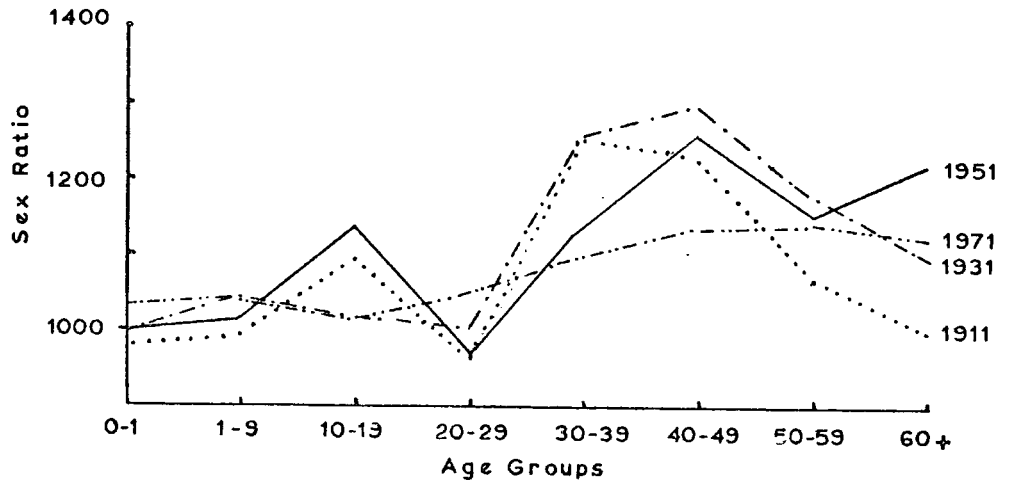
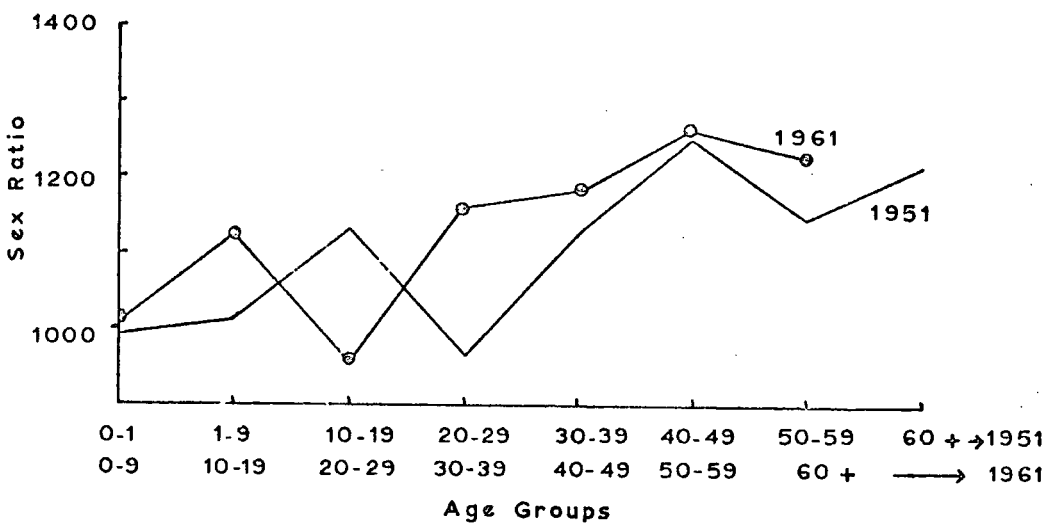


FIG. 3.4

AGE-SPECIFIC SEX RATIO OF 1951-COHORTS

SURVIVED IN 1961, EAST PAKISTAN



of East Pakistani migrants to West Pakistan which was only 0.07 per cent (or about 25,000 males and 9,000 females)[21], and which was not in proportion to the decline in graduates and post-graduates in East Pakistan (see Chapter VI) does not in any way explain the gross deficiency of males in this age group (20-29). Thus if this "migration-factor" is ruled out, the situation is best be explained by misstatement of ages in earlier age groups and in this age group.

In the rest of the age groups the sex ratio remained high in almost all the decades when the deficiency of females was affected by higher female mortality due to prolonged maternity and physical exhaustion.[22] ※

After the age of 50, the sex ratio showed a steady decline in almost all the decades (Fig. 3.3) indicating a relative improvement of the female ratio. In fact at the age of 60 and over, the sex ratio fluctuated between a maximum of 1230 in 1961 and a minimum of 912 in 1931 (adjusted sex ratio: Table 3.4, Fig. 3.3). Such a change in the trend in sex ratio may be explained by the following facts:

a) Once females pass the child-bearing period, their expectancy of life increases,

b) Males usually experience a higher death probability (Fig. 3.2) at this stage, due to greater strain and stress of life they have had undergone,

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※ The Planning Commission estimated the maternal death rate at 30 per thousand during 1960's which was too low. In urban areas where the health services are quite good this was estimated at 34 by Islam. In the rural areas this figure may be around 50. (ref. Planning Commission, (Third Five Year Plan 1965-1970); 1966, P.245, and Islam, 1961, Pp. 10-21).

c) There is also some overstatement of the age of females because of their fascination for social seniority and reverence which weigh much in the socio-cultural set up of East Bengal.

In this connection, it should be noted that in higher age groups, a falling number of males is almost universal in every population (Table 3.2).

COMPARISONS BETWEEN AGE-SPECIFIC SEX RATIO OF 1951 COHORTS SURVIVED IN 1961, AND ESTIMATED SEX RATIO (PGE - 1962) AND U.N. MODEL LIFE TABLE. The mortality pattern of UNO model life table[23] and that of PGE ($n\,{}^{q}x$, 1962-63) (Fig. 3.2) indicate a contrasting picture of the age-specific sex ratios. According to both the census of Pakistan (1961) and the PGE experience (1962-63), the expected age-specific sex ratios rise continuously upto the age of 50-59 with a decline in the age group 20-29 and a slight drop in 40-49 years age group. After 50-59 the sex ratio either remains stable or declines. Thus it is experienced that after age group 10-19 an inverse correlation between the increase in ages and the sex ratio exists in the province's sex structure - which is far from reaching the "Unity" of the UNO model life table (see above).

To indicate the pattern of change of age-specific sex ratios during 1951-61, the sex ratio of 0-1 age group in 1951 and that of 0-9 age group in 1961, and 0-9 in the former and 10-19 in the latter were compared (Fig. 3.4, Table 3.4). It is noted that sex ratios of these age groups have increased considerably over a decade which suggests either female - selective infant mortality or sex-selective misenumeration.

The 10-19 age cohort of 1951 shows a great decline in the sex ratio which is just the reverse of its earlier age group. This is thought to be the result of misstatement of ages which inflated the sex ratios of preceding and subsequent age groups. The same trend continued in 1961 census, but this is likely to decline in 1971 (Fig. 3.3). The sex ratios in next age groups (up to 50-59) in 1951 are proportional to the changes in 1961. The lowering trend in sex ratio after this age in 1961 indicates that sex differentials in mortality are narrowing down gradually.

Thus, the pattern of age-specific survival of 1951 cohorts during 1951-61 has been irregular in East Pakistan - as in Pakistan and India[24] - causing large variations in the age-specific sex ratios of the cohorts studied between 1951-61, which were the results of both misenumeration and mortality differentials of the population. The effect of inter-provincial migration was practically absent.

SECTION B

SEX RATIO BY RELIGIOUS GROUPS IN EAST PAKISTAN

Differences in sex ratio exist among the various religious groups in East Pakistan, which are the response to the varying degree of social conservatism and religious way of life affecting the sexes in form of misenumeration and mortality differentials (Table 3.5, Fig. 3.5). Since 1901 there has been a considerable change in the Muslim sex ratio, followed by the Hindu and the rest of the population. The change is also established by an analysis of variance (Table 3.5). From the analysis it is deduced that socio-religious conditions affecting female

TABLE 3.5

Sex ratio by religious groups, East Pakistan, 1901-1961

Years	Total	Muslim	Hindu	Others
1901	1031	1040	1066	1030
1911	1043	1044	1074	1034
1921	1054	1052	1074	1028
1931	1058	1059	1074	1036
1941	1059	1074	1097	1047
1951	1100	1101	1082	1059
1961	1076	1081	1052	1042
Total Variance (Σd^2) =		2904	1088	725
σ =		53.89	32.98	26.92

Sources: Same as Table 3.1

mortality and misreporting of ages have been higher among the Muslims than the Hindus or other religious groups. In this connection it should be noted that the effects of socio-religious conservatism, say for instance, the observance of "Purdah", or economic participation in employment outside home, or social enlightment (for instance literacy and levels of education), are rather more extreme among the Muslims than the Hindus. In fact they differ in these socio-cultural practices in degree and not in kind.

The disparity in sex ratio among almost all religious groups increased in favour of males from 1901 to 1951 and only in 1961 has the disparity slightly decreased, which was due to an overall

FIG. 3.5

SEX RATIO BY RELIGIOUS GROUPS
EAST PAKISTAN, 1901-71

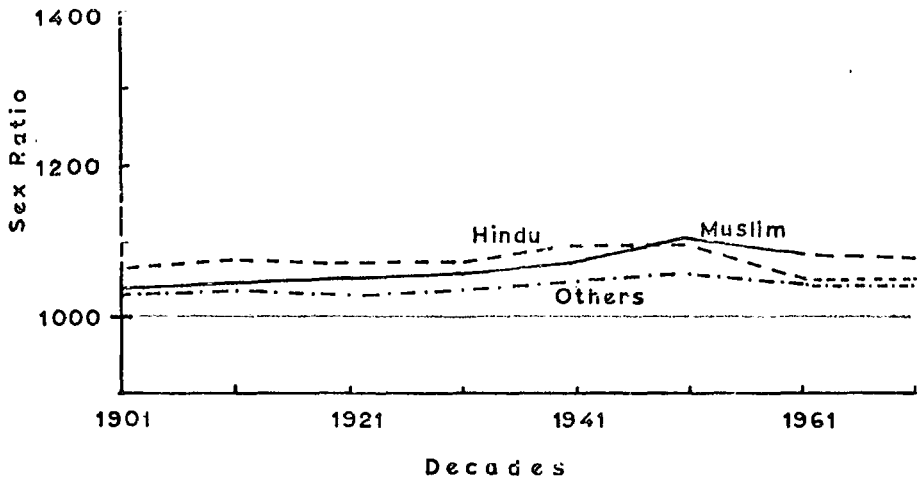
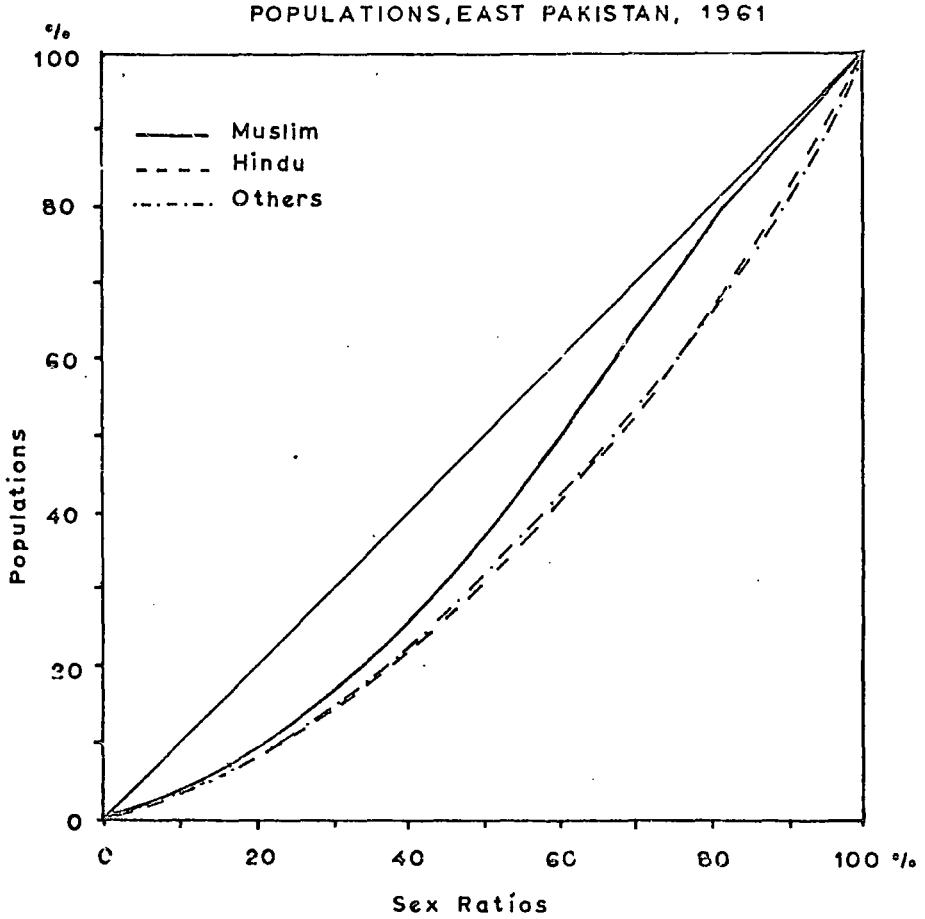


FIG. 3.6

CUMULATIVE PERCENTAGES OF SEX RATIO
BY RELIGIOUS GROUPS AND DISTRICT
POPULATIONS, EAST PAKISTAN, 1961



improvement of health conditions affecting existing female mortality, and relatively better coverage of females in the 1961 census[25] (Table 3.5).

Table 3.6 shows that the sex ratios by age groups for the main religious groups follow the same trend as those for the total population with only minor variations. Some of the important features have been:

a) Small disparity in sex ratio in the 0-9 age group: this is less true in regards to the 'other' religious groups, probably because of lower incidence of mis-reporting,

b) Decrease of the female proportion in the age group 10-19: among the 'other' religious groups no generalization is possible, as it changed from decade to decade.

c) Excess of females in the 20-29 age group: this, as mentioned in the preceding section was due mostly to mis-reporting of age.

d) Sharp fall in the proportion of females after 29 years of age which continues up to 49 years of age, owing to excess of maternal mortality in all religious groups.

e) After 49 years of age, the end of the female reproductive period, the proportion of females improved.

REGIONAL VARIATIONS IN SEX RATIO BY RELIGIOUS GROUPS, 1911 - 1961.

Table 3.7 gives the distribution of sex ratios by religious groups in the districts of East Pakistan since 1911, and Fig. 3.6 shows the variations in the distribution of sex ratios by main religious groups and districts. It is noted that in case of

TABLE 3.6

Age-specific sex ratios by religious groups,

East Pakistan, 1911-1961.

Age groups	1911			1921			1931			1951			1961		
	M	H	O	M	H	O	M	H	O	M	H	O	M	H	O
0 - 9	993	969	989	995	964	972	1045	1052	919	1016	1005	1022	1012	1006	1016
10-19	1061	1090	972	1049	1118	951	959	1030	920	1130	1121	1022	1130	1126	939
20 - 29	1006	1076	935	869	952	862	1208	1168	1182	1061	1059	1098	1050	1013	1006
30 - 39				1195	1206	1002									
40 - 49	1151	1164	1219	1251	1255	1195	1279	1233	1290	1309	1200	1082	1232	1155	1196
50 - 59				1155	1131	1312	1233	1159	1264						
60+	1030	952	1121	1110	999	1272	1233	1080	1225	1270	1120	1256	1267	1056	1231
Total	1044	1074	1034	1052	1074	1028	1059	1074	1036	1101	1082	1059	1081	1052	1042

M = Muslim, H = Hindu, O = others

Sources: Same as Table 3.1.

Muslim sex ratios there has been a great deal of clustering in their distribution than either of the Hindu or the 'others' religious group. Such a diversity was reflected in the distribution of sex ratios of the respective religious groups in the districts since the beginning of this century (Table 3.7). In 1961, in case of Hindu sex ratio, 9 out of 17 districts registered very high sex ratio - above the Hindu provincial average (Table 3.7). Almost all of these districts had also very high Muslim sex ratios. The 'others' religious groups presented a different type of sex ratio pattern which is again not uniformly distributed in the province. Five districts, namely Dacca, Noakhali, Chittagong, Mymensingh and Bogra registered very low sex ratios indicating excess of females in their populations (Table 3.7), while Barisal registered balanced sex ratio. In no other religious groups was there any excess of females. The unusual female preponderance in the 'others' religious group in these districts is difficult to explain, except by sex selective mortality. In this religion three districts had sex ratios below the provincial average. The rest of the 8 districts had very high sex ratios and include those having both very high Hindu and Muslim sex ratios. Their overall masculinity in sex composition is also reflected in their respective total population and has been the trend since the relevant past.*

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* For religious groups detailed data of rural and urban areas were not available. Therefore, residential differences in sex ratio by districts could not be studied.

TABLE 3.7

Sex ratios by religious groups and districts, East Pakistan, 1911-1961

DISTRICTS	1911			1921			1931			1951			1961		
	M	H	O	M	H	O	M	H	O	M	H	O	M	H	O
Dinajpur	1090	1154	1034	1087	1144	1026	1098	1136	1010	1144	1130	962	1123	1062	1051
Rangpur	1074	1180	-	1078	1163	-	1084	1122	-	1111	1099	1127	1083	1059	1054
Bogra	1021	1169	-	1035	1166	-	1037	1137	-	1065	1085	1065	1047	1062	966
Rajshahi	1026	1095	-	1052	1101	-	1069	1108	1098	1062	1048	1180	1052	1037	1024
Pabna	1021	1065	-	1041	1014	-	1052	1022	-	1083	1037	988	1064	1028	1067
Kushtia	1012	1004	-	1056	1036	-	1072	1064	-	1095	1092	1035	1087	1075	1033
Jessore	1074	1015	-	1099	1045	-	1106	1063	-	1113	1060	1053	1102	1047	1040
Khulna	1071	1077	-	1091	1087	-	1103	1096	-	1114	1073	1144	1135	1055	1081
Barisal	1053	1048	-	1050	1046	-	1050	1050	1044	1097	1085	1044	1057	1051	1000
Mymensingh	1053	1120	1014	1066	1119	1030	1074	1115	1010	1106	1101	1036	1083	1062	989
Dacca	1001	970	-	1024	990	-	1038	1022	-	1123	1072	1039	1120	1058	900
Faridpur	1045	995	-	1061	1007	-	1060	1015	1054	1080	1063	1038	1049	1038	1123
Sylhet	1051	1055	-	1055	1060	-	1070	1065	-	1097	1088	1056	1082	1058	1074
Comilla	1037	1044	-	1054	1045	-	1055	1049	-	1082	1053	1045	1052	1022	1076
Noakhali	978	1019	-	994	1049	-	1004	1044	-	1106	1103	881	1027	1031	985
Chittagong	912	903	864	923	980	991	934	992	872	1153	1118	1031	1150	1051	947
Chittagong Hill Tracts	-	1355	1095	-	1219	1104	-	1205	1103	2369	1198	1078	3204	1218	1078
East Pakistan Total	1044	1074	1034	1052	1074	1028	1059	1074	1036	1101	1082	1059	1081	1052	1042

- data not available or absent

M - Muslim, H - Hindu, O - Others.

Sources: Same as Table 3.6.

SECTION C

RESIDENTIAL DIFFERENTIALS IN SEX RATIO IN EAST PAKISTAN

The rural-urban differentials in sex ratio are of special interest since they represent two opposing occupational and functional groups of the population. East Pakistan, as mentioned before is essentially a rural area. The result is that the rural sex ratio greatly influences the sex ratio of the province, and the two sex ratios and their regional patterns are very similar.

Masculinity is the common feature of both total and rural populations. The male ratio increased in every decade from 1901 to 1951. It was in 1961 that females made a slight recovery (Table 3.1, Fig. 3.1). As estimated by various authorities the sex ratios of both total and urban population will improve in favour of the females in the coming decades (Table 3.1). This is very likely because of the improvement in health facilities and midwifery systems in the province.

The male ratio, as expected, is much higher in the urban population (Table 3.1, Fig. 3.1). This is almost universal in Muslim countries and is a common feature of many developing countries. But the abnormally high proportion of males (1423 males per 1000 females) is so significant of the urban sex ratio of East Pakistan that the urban centres are probably the most masculine in the world.

Males, though dominant throughout every decade of the period from 1901 to 1961, have registered highest urban sex

ratios in 1921, 1931 and 1941, when the large number of females were transfered out from the towns, and/or more males moved into them as a result of disturbed political conditions (1931, 1941) famines and epidemics (1921), as well as depressed agricultural conditions during these periods. In periods of relatively settled conditions the female ratio showed a slight increase. The phenomenal increases of females after 1951 - from a sex ratio of 1507 in 1951 to 1423 in 1961 - are attributable to settled political and socio-economic conditions, decline in female mortality, and expansion of female education and some employment opportunities for them in towns (Table 3.1). In the subsequent decades the sex ratios in urban East Pakistan are likely to decline if the present trend continues.

AGE-SPECIFIC SEX RATIOS IN RURAL AND URBAN AREAS, 1961.

The age-specific sex ratios of rural population follow closely those of the total population (Table 3.8, Fig. 3.7) for the reasons mentioned earlier this section.

The urban sex ratio by age groups presents a different picture, forming an up-turned U-graph. The proportion of females decreases until the 30-39 age group and thereafter it slowly increases. This is also demonstrated by the lopsided age-sex pyramid for the urban areas (see Chapter II), from the age of 20 and over. The excessive male domination is explained by the migration of a large number of males from the villages to the towns for various economic reasons, leaving behind the females in the rural homes. This fact will be viewed in detail when studying sex ratios of individual urban centres by broad

TABLE 3.8

Age-specific sex ratios by residential areas, East Pakistan, 1961.

Age groups	Total	Rural	Urban
0 - 9	1011	1011	1011
10 -19	1127	1111	1406
20 -29	960	918	1848
30 -39	1161	1130	1874
40 -49	1185	1160	1770
50 -59	1260	1244	1718
60+	1230	1225	1328
All ages: Total	1076	1060	1423

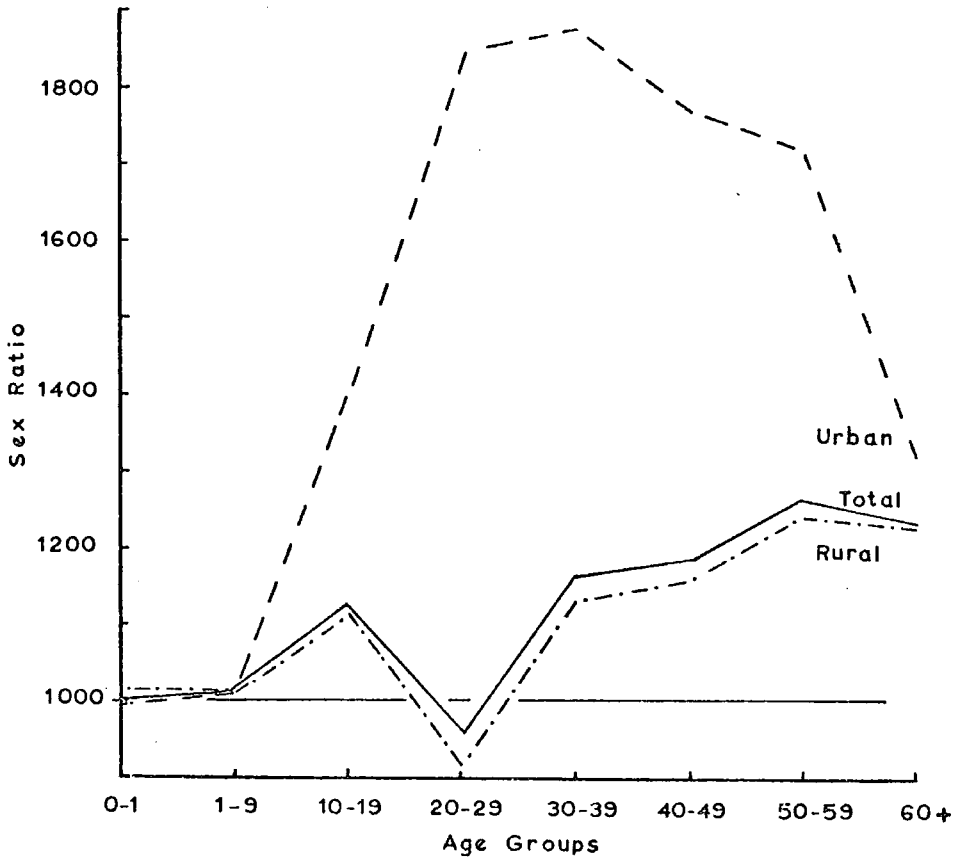
Source: Calculated from Census of Pakistan, 1961, Bulletin 3.

age groups. In later age groups the female-ratio improves, because many of the retired males return to villages and secondly, after the child-bearing period the longevity of the females improves.

REGIONAL VARIATION OF RURAL SEX RATIOS

The variation in sex ratios among the rural districts of East Pakistan has been considerable. For example, in 1961, Chittagong Hill Tracts and Dinajpur had 1162 and 1113 males per 1000 females respectively, whereas Noakhali and Comilla had 1022 and 1042 respectively (Table 3.9). In some censuses some districts registered more females than males: in 1911 Dacca, Noakhali and Chittagong; in 1921 Dacca and Chittagong; and in 1931 Chittagong. On the average Dinajpur and Chittagong Hill Tracts

FIG. 3.7 AGE-SPECIFIC SEX RATIO OF TOTAL, RURAL AND URBAN POPULATIONS, EAST PAKISTAN, 1961



have always registered very high sex ratios, and Dacca, Noakhali and Chittagong low sex ratios (Table 3.9). The reasons for such a maldistribution of sexes will be explained later.

SEX RATIO BY BROAD AGE GROUPS AND THE REGIONAL VARIATIONS

The variation in sex ratio is largely influenced by the active age group and the aged,* as revealed by the wider ranges of distribution in them (Table 3.10, Fig 3.8).

SEX RATIO OF THE RURAL CHILDREN - With the single exception of Dinajpur there is little regional variations of rural sex

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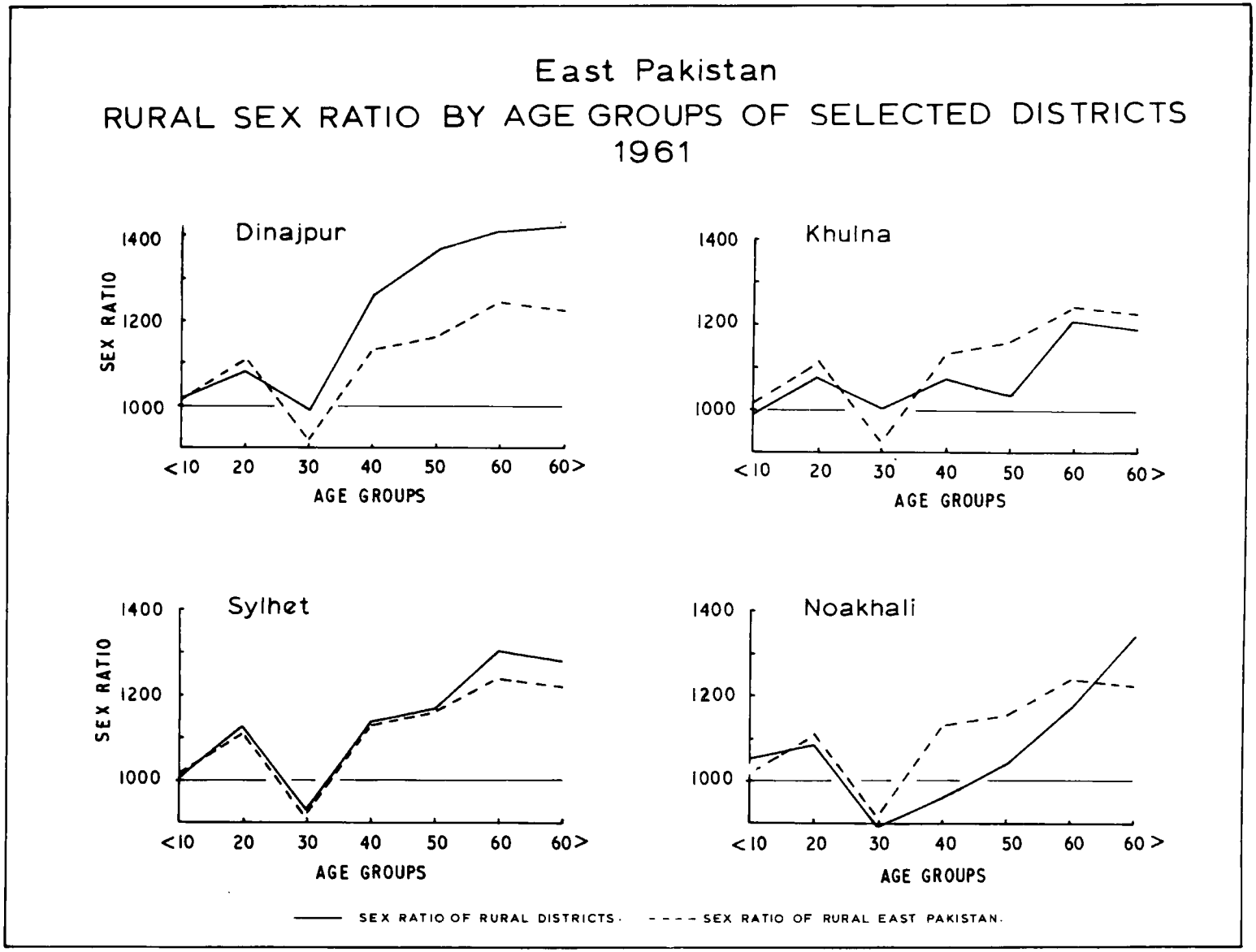
* The broad age groups followed in this chapter are related to the scheme devised in the chapter on age structure. They are: Children (0-14), adult (15-59), and aged (60+).

FIG. 3.8


East Pakistan
RURAL SEX RATIO BY AGE GROUPS OF SELECTED DISTRICTS
1961
Dinajpur
Khulna
Sylhet
Noakhali
SEX RATIO
1400
1200
1000
<10
20
30
40
50
60
60>
AGE GROUPS
SEX RATIO OF RURAL DISTRICTS.
SEX RATIO OF RURAL EAST PAKISTAN.

ratio of children among the districts. This is also evident from very low standard deviation and range of distribution ($\bar{x}$=1058, σ = 19.30), compared to adult and aged sex ratios (Table 3.10) because of the fact that the children are least

TABLE 3.9

Rural Sex ratio by districts, East Pakistan

1911 - 1961

DISTRICTS	1911	1921	1931	1941	1951	1961
Dinajpur	1112	1103	1107	-	1160	1113
Rangpur	1102	1096	1086	-	1106	1174
Bogra	1042	1053	1048	-	1064	1046
Rajshahi	1037	1058	1072	-	1059	1055
Pabna	1023	1031	1039	-	1073	1063
Kushtia	1012	1053	1065	-	1073	1080
Jessore	1049	1075	1087	-	1095	1076
Khulna	1075	1083	1095	-	1086	1071
Barisal	1038	1036	1036	-	1071	1047
Mymensingh	1064	1073	1076	-	1101	1076
Dacca	977	997	1015	-	1069	1050
Faridpur	1022	1035	1037	-	1073	1044
Sylhet	1047	1065	1050	-	1100	1071
Comilla	1038	1043	1079	-	1069	1042
Noakhali	981	1004	1008	-	1102	1022
Chittagong	902	917	924	-	1074	1052
Chittagong Hill Tracts	1167	1167	1159	-	1145	1162
E. PAKISTAN: RURAL	1036	1047	1050	1060	1085	1060

Source: Same as Table 4.6.

affected by the consequences of intra-regional migration. The lowest sex ratio (992) in Dinajpur is rather peculiar, but it is likely to be modified by external forces in terms of occupation of new lands in Dinajpur by the agricultural migrants from Noakhali, Comilla, Mymensingh and Dacca[26] who might have brought some of their children with them to start a new farming life and thereby affecting the sex ratio in this age group.

Because of the uniform distribution and low range in variations the child sex ratios of rural areas are not studied in further detail.

SEX RATIO OF THE RURAL ADULTS - Table 3.10 reveals that there is a range of 329 males per 1000 females in the distribution of rural sex ratio in the adult age groups in the districts of East Pakistan. On the basis of standard deviation the rural sex ratios in this age groups may be divided into the following groups ($\bar{x}$ = 1069, σ = 72.85):

SEX RATIO CHARACTER	SEX RATIO	GROUPS OF DISTRICTS
a) Female Dominant	Below 996	Noakhali;
b) Male Dominant - I	996 - 1069	Bogra, Rajshahi, Pabna, Dacca, Sylhet, Faridpur, Mymensingh, Barisal, Chittagong;
c) Male Dominant - II	1069 - 1142	Rangpur, Jessore, Khulna Kushtia, Comilla,
d) Male Very Dominant	1142 and over	Dinajpur, Chittagong Hill Tracts.

Differences in sex ratio among any residence (rural or urban) are, for a closed population, due primarily to sex differentials in internal migration, mainly rural to urban. In East Pakistan,

males from rural areas migrating to urban centres disturb the sex ratio in a negative way in the former and a positive way in the latter. For instance, the group (a) has a sex ratio below 1000 incorporating only one rural district, namely Noakhali (Fig. 3.9). Its female dominance is quite explicable. This is a less urbanized district but as a result of the existence of a number of urban and industrial centres in the adjacent districts, the rural male population have become most mobile causing a high female ratio. Moreover, from Noakhali come most of the mobile religious preachers, and labourers (agricultural and non-agricultural) of East Pakistan who mostly stay out of their home district. Again, many of the seasonal labourers and agricultural migrants, now in process of settling in North Bengal are from Noakhali.

In contrast to this group, others present a somewhat contrasting picture in rural adult sex ratio - distribution.

The second group (b) includes two types of districts: relatively urbanized and less urbanized, and possesses an intermediate degree of masculinity in their rural populations. In the less urbanized districts, comprising most of the districts of North Bengal the sex ratio is relatively high (Table 3.10, Fig. 3.9). The third group (c) closely resembles the second one (b) and the both groups include almost all the districts of North and South Bengal where people are thought to be less mobile and therefore their rural sex ratios are quite high (Table 3.10). This is supported by the distribution of the rates of migration of three broad geographical regions of East Pakistan (Table 3.11) and the differentials in sex ratio

TABLE 3.10

Rural sex ratio by broad age groups and districts, East Pakistan, 1961.

DISTRICTS	CHILDREN (0-14)	ADULTS (15-59)	AGED (60+)
Dinajpur	992	1211	1435
Rangpur	1053	1080	1221
Bogra	1050	1013	1287
Rajshahi	1053	1031	1130
Pabna	1063	1045	1069
Kushtia	1058	1113	1026
Jessore	1059	1092	1090
Khulna	1039	1086	1193
Barisal	1038	1033	1294
Mymensingh	1067	1062	1294
Dacca	1059	1020	1250
Faridpur	1043	1032	1144
Sylhet	1062	1057	1280
Comilla	1062	1076	1258
Noakhali	1086	932	1344
Chittagong	1071	1036	1022
Chittagong Hill Tracts	1043	1261	1300
East Pakistan (Rural)	1058	1069	1214

Source: Calculated from Census of Pakistan, 1961, Bulletin 3.

among them. For Sylhet and Chittagong the case is different because many of the tea-labourers have been included in their rural populations.

TABLE 3.11

Rates of migration and sex ratio differentials in the main geographical regions of East Pakistan, 1951-61.

Regions	Rates of Migration 1951	Rates of Migration 1961	Total Sex Ratio	Adult Sex Ratio
North Bengal	2.0	2.6	1090	1076
South Bengal	2.3	3.3	1067	1034
East/South-East Bengal	2.9	4.4	1068	1020

Coefficients of Correlation:

a) Between rate of migration (1961) and total rural sex ratio = -0.88

b) " " " " " " adult " " " = -0.90

Sources: Calculated from Obaidullah, 1967; and Census of Pakistan, 1951 and 1961 (2 vols).

The last group (d) is characterized by very high sex ratios. In the two districts of this group, the sex ratios were higher than at any time since 1901 (Table 3.9), and therefore, such a sex ratio character is only peculiar to them (Table 3.10, Fig. 3.9), and has been the result of sex-selective death amongst the tribal populations, particularly those in Chittagong Hill Tracts who are also relatively backward in the province. Most of the tribal population and also the rural population are traditional minded, and less responsive to modernization which can encourage their movement outside their respective districts.

FIG. 3.9

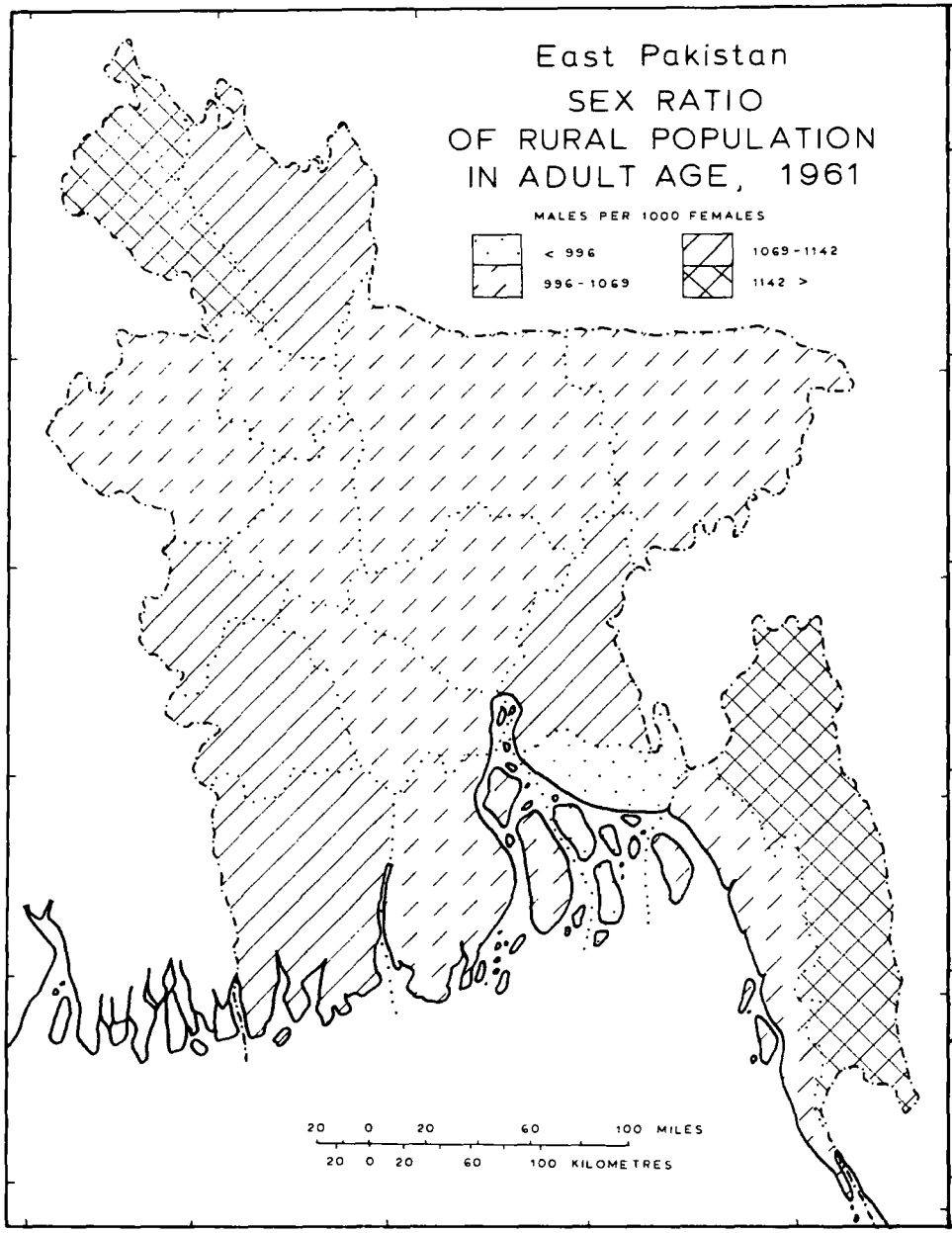
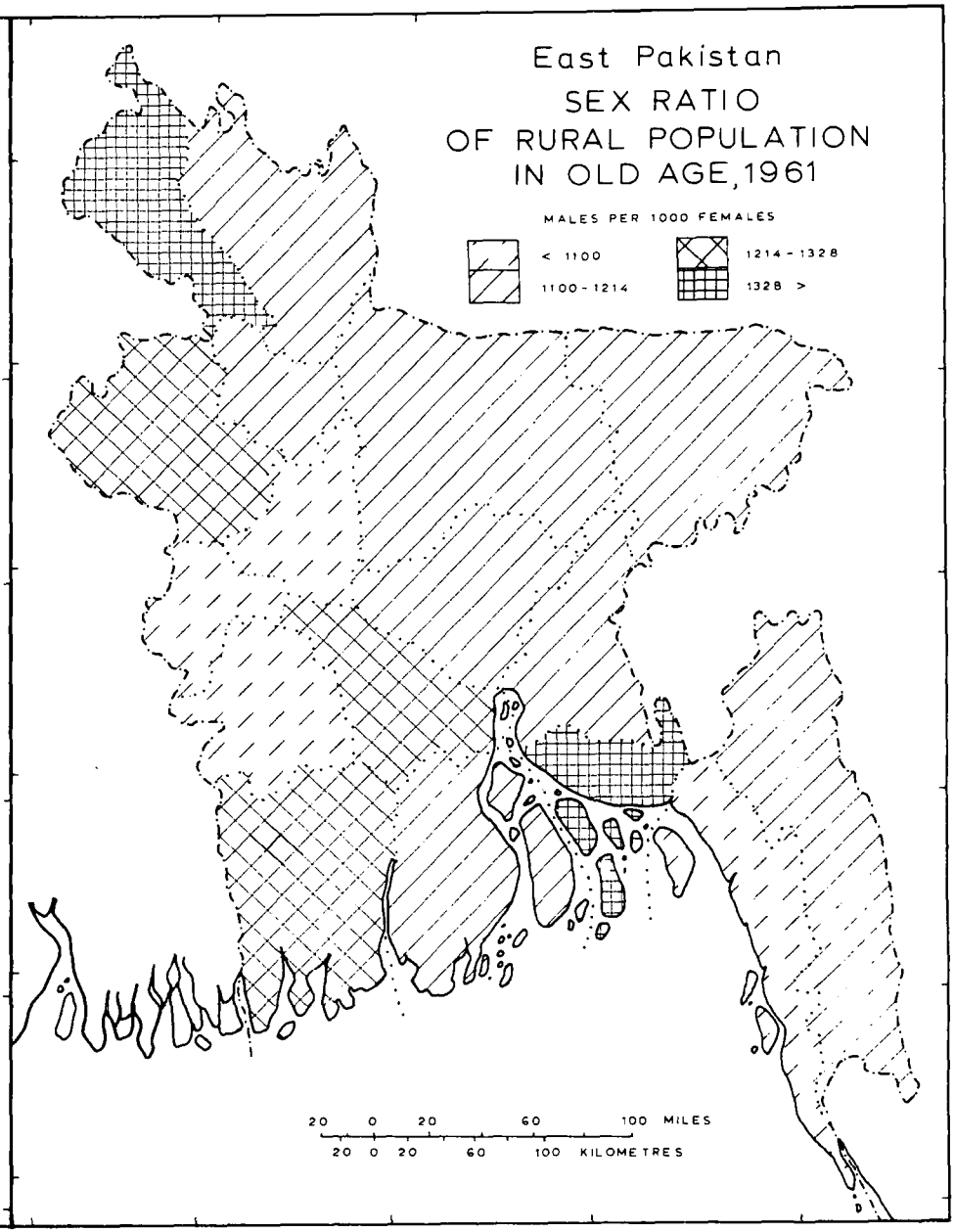


FIG. 3.10



SEX RATIO OF THE RURAL AGED - The sex ratio of the aged population of rural East Pakistan is marked by the excessive dominance of males in all the districts (Table 3.10, Fig. 3.10). The variation between districts has been much higher (range: 413) in the sex ratios of the aged than for those in children and adults (Table 3.10).

The rural aged sex ratios may be divided into four groups on the basis of standard deviation ($\bar{x}$ = 1214, σ = 113.74):

SEX RATIO CHARACTER	SEX RATIO	GROUPS OF DISTRICTS
a) Male Dominant - I	Below 1100	Chittagong, Kushtia, Pabna, Jessore;
b) Male Dominant - II	1100 - 1214	Rajshahi, Faridpur, Khulna;
c) Male Dominant - III	1214 - 1328	Rangpur, Bogra, Barisal, Mymensingh, Dacca, Sylhet, Comilla, Chittagong Hill Tracts;
d) Male Very Dominant	1328 and over	Noakhali, Dinajpur.

The overall male prodominance (Table 3.10, Fig. 3.10) in the rural population of East Pakistan, to a great extent is due to an increase in aged males in the population, partly because in rural areas the degree of female mortality is thought to be greater than in urban areas, and partly because many male migrants return to their rural homes in their old age.

The regional differences of the aged sex ratios are due to differential death rates of the old, and to the differences in the degree of migratory habits of the adult males in the various rural districts. For instance, most of the people of North Bengal and South Bengal are less mobile in their adult age, hence the excess of males in old age is also lower. Very high aged sex

ratio in Dinajpur is the reflection of its overall high sex ratio since the past.

In this connection it may be noted that the general sex ratio of rural population of different regions bears an inverse relationship with the rate of migration from within; the coefficient of correlation is highly significant and negative (-0.88). The adult sex ratio, likewise maintains the same relationship with the rate of migration from within the regions, the coefficient being -0.90.(Table 3.11).

REGIONAL VARIATION OF URBAN SEX RATIO

Since long the imbalance in this province is marked by the excess of males in urban centres largely due, as indicated before, to the sex selective migration engineered by the economic and functional changes that are taking place in this urban society (Table 3.12). It is only in the recent decades that the decline in sex ratio in urban East Pakistan has been the result of general improvement in the medical, sanitary, maternal and other facilities in towns, as well as of current enlightened social change that is taking place in the urban centres in terms of facilities given to the females for education and various occupations suited to them. This has been accentuated by more rapid increase of females than males during the decade ending 1961, and a satisfactory enumeration of females in that census.[27]

As reflected in Table 3.12, the populations of urban areas have been highly masculine (Fig. 3.1, Table 3.12), and in the individual urban centres the magnitude of masculinity differs in degrees (Fig 3.11). It is generally believed that sex ratios

FIG. 3.11

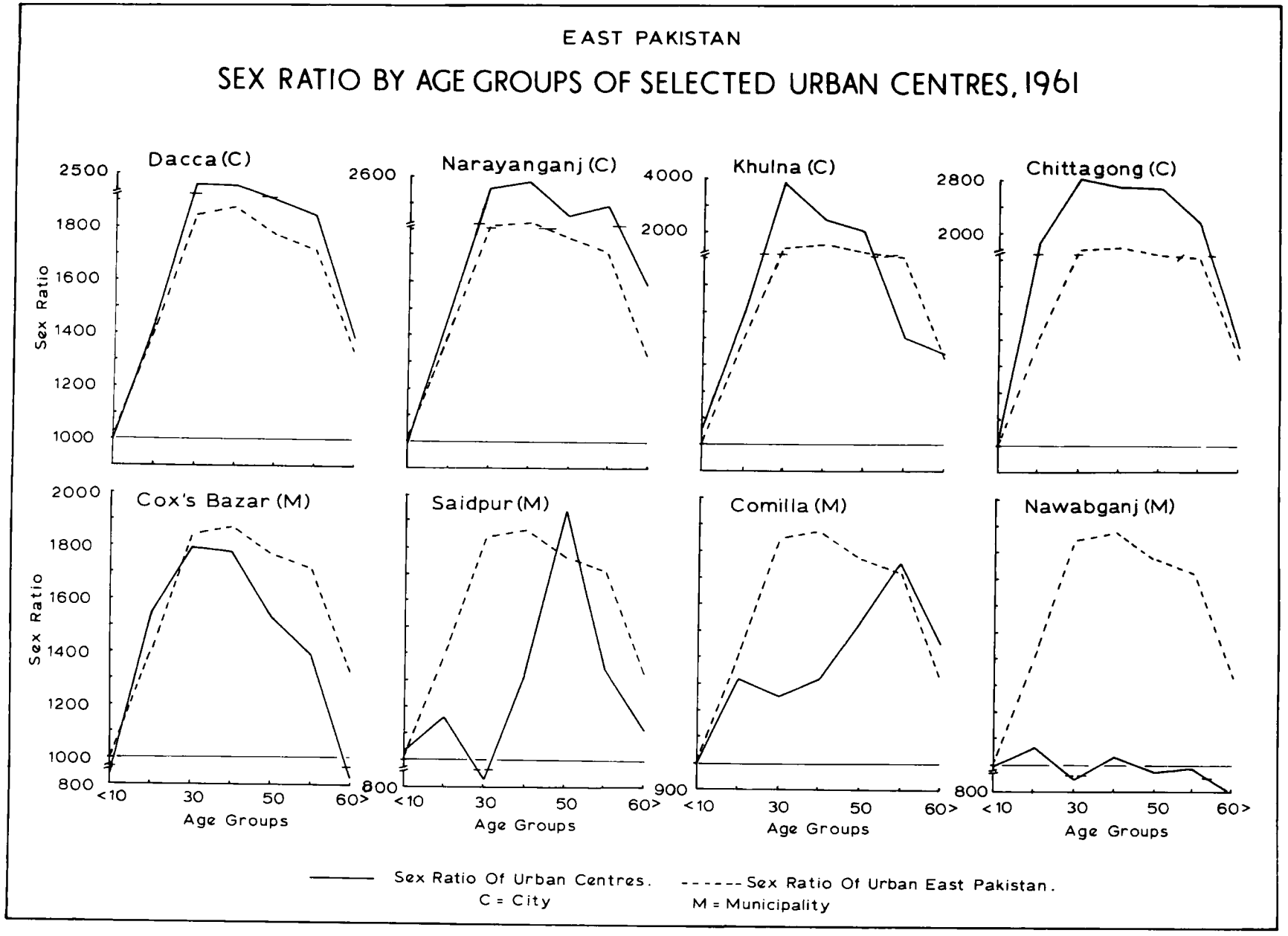

EAST PAKISTAN
SEX RATIO BY AGE GROUPS OF SELECTED URBAN CENTRES, 1961
Dacca (C)
Narayanganj (C)
Khulna (C)
Chittagong (C)
Cox's Bazar (M)
Saidpur (M)
Comilla (M)
Nawabganj (M)
Sex Ratio
Age Groups
<10
30
50
60>
Sex Ratio Of Urban Centres.
Sex Ratio Of Urban East Pakistan.
C = City
M = Municipality

TABLE 3.12

Sex ratio of selected urban centres, East Pakistan, 1901-1961

Urban Centres	1901	1911	1921	1931	1941	1951	1961
Dacca	1248	1389	1292	1342	1367	1587	1499
Chittagong	1623	1880	2024	1934	2061	1795	1880
Narayanganj	2304	2049	1742	1700	1758	1821	1689
Khulna	-	1592	1760	1675	-	1610	1779
Barisal	-	2217	1919	1945	1865	2369	1477
Saidpur	-	1712	1618	1431	-	1236	1144
Rajshahi	-	1261	1285	1277	-	1331	1224
Mymensingh	-	2105	1912	1835	-	1560	1335
Comilla	-	1524	1497	1443	1873	1366	1241
East Pakistan: Urban	1364	1373	1540	1364	1729	1507	1423

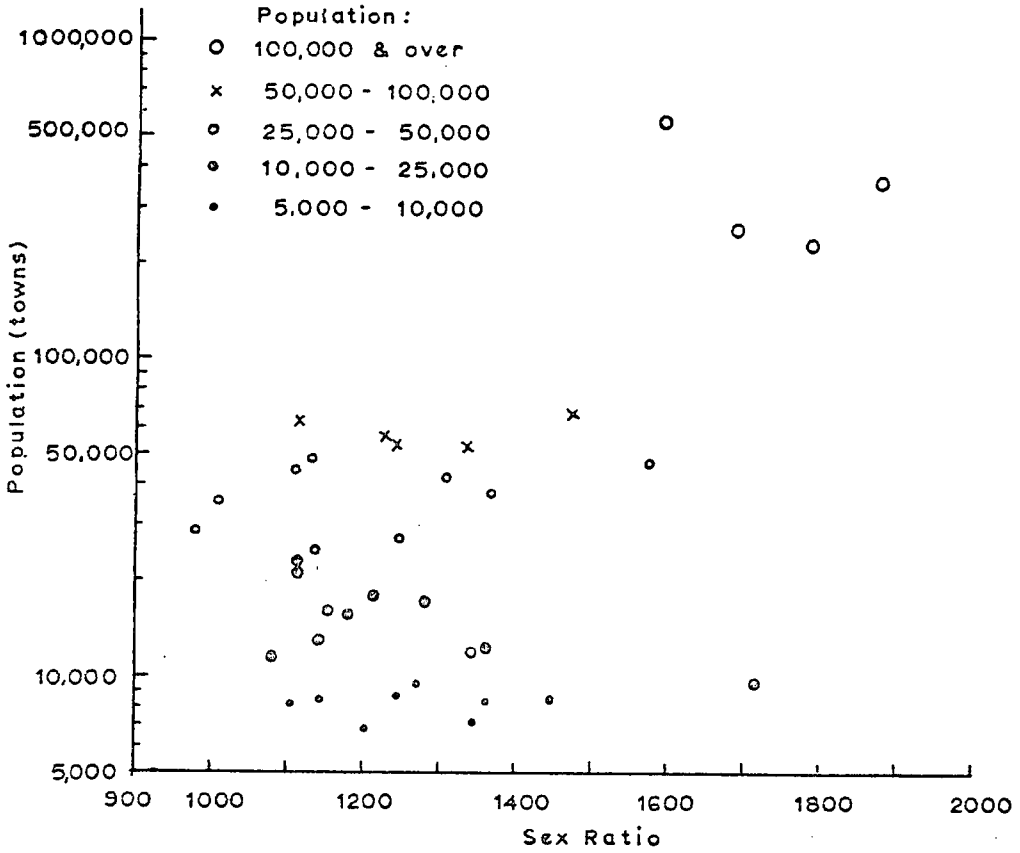
- Not available.

Source: Same as Table 3.1

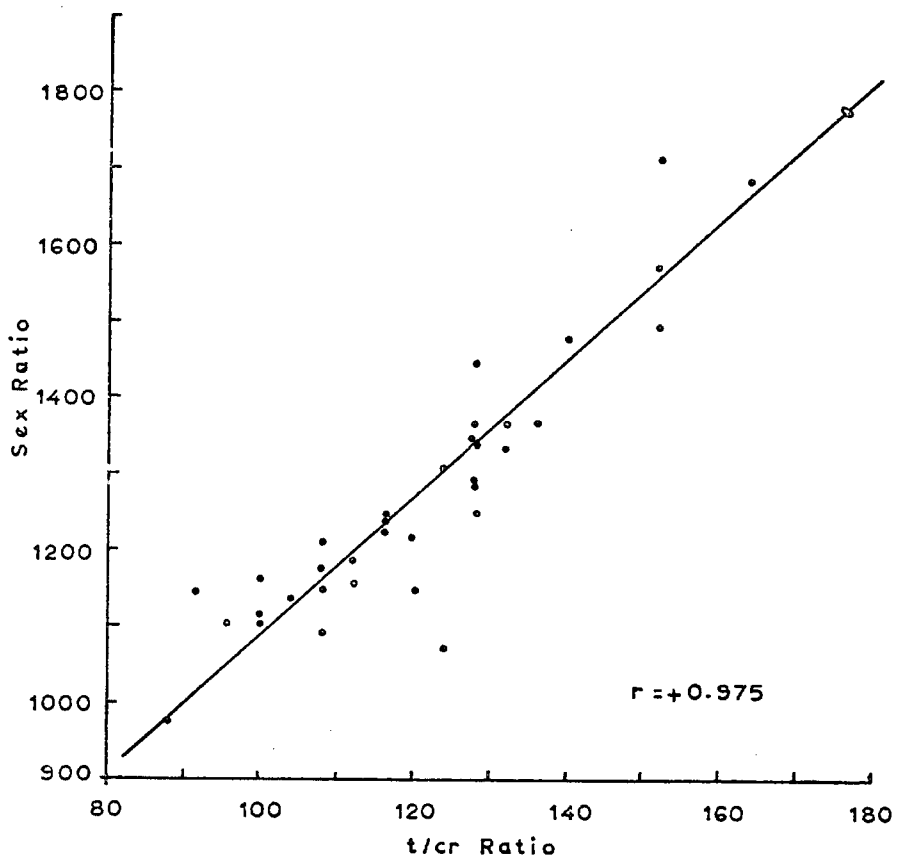
are directly related to the size of towns, but this does not hold true in the case of East Pakistan, as revealed by a scatter-diagram (Fig. 3.12a). The sex ratio is, however closely correlated with the volume of migrants moving into towns from rural areas (Fig. 3.12b). Thus the coefficient of correlation between the sex ratio and the t/cr ratio (for statistical explanation of town-country ratio (t/cr) (see Appendix 3) is +0.975, signifying a close agreement between them. In this connection it may be added that though there is practically no relationship between the size of towns and the proportion of males, the migratory behaviour of the people is influenced by

FIG. 3.12

a) SCATTER-DIAGRAM SHOWING RELATION BETWEEN POPULATION-SIZE AND SEX RATIO OF SELECTED TOWNS, EAST PAKISTAN, 1961



b) SCATTER-DIAGRAM SHOWING RELATION BETWEEN TOWN-COUNTRY RATIO (t/cr) AND SEX RATIO, EAST PAKISTAN, 1961



some other factors. As Obaidullah[28] observed, it is influenced by the density and distance (within the province) giving a highly significant multiple coefficient of +0.745 amongst the three variables (migration, density and distance).

URBAN SEX RATIOS BY BROAD AGE GROUPS AND THE REGIONAL VARIATIONS

The age-sex pyramids of the urban centres of East Pakistan are broad based (see Figs. 2.3 and 2.7 in Chapter on age structure), but less marked in comparison to those in rural areas because of lower birth rate and differentials in age-selective migration (Fig. 3.7). The male side of the pyramids shrinks after 10 years to inflate again in the adult groups. The female side tapers gradually with the increase in age-groups as is normally expected in any age-sex pyramid. This lowers the female ratio by age groups with a marked increase in the male ratio (Fig. 3.11). The variation is well marked in the sex ratios of three broad age groups: children, adult and aged as identified in Table 3.13 (Fig. 3.11).

SEX RATIO OF THE URBAN CHILDREN - Like the total sex ratios of the individual towns, the sex ratios among the children in them vary widely and can be grouped in four distinctive types on the basis of standard deviation ($\bar{x}$ = 1076, σ = 68):

SEX RATIO CHARACTER	SEX RATIO	GROUPS OF TOWNS
a) Female Dominant	Below 1008 (1000)	Naogaon, Munshiganj, Manikganj;
b) Male Dominant - I	1008 - 1076	Rajshahi, Saidpur, Naraynganj, Mymensingh, Comilla, Nilphamari, Rangpur, Gaibandha, Nawabganj, Natore, Netrokona, Tangail, Rajbari, Faridpur, Madaripur, Cox's Bazar;

TABLE 3.13

Sex ratio by broad age groups and t/cr ratio of selected urban centres, East Pakistan, 1961.

Urban Centres		Total	Children (0-14)	Adult (15-59)	Aged (60+)	t/cr ratio t/cr
E. PAK. URBAN		1423	1076	1544	1378	-
Rajshahi	M	1224	1029	1458	1061	116
Saidpur	M	1144	1055	1235	1116	92
Khulna	C	1779	1259	2302	1342	176
Barisal	M	1477	1089	1877	1715	140
Dacca	C	1499	1083	1939	1381	152
Narayanganj	C	1689	1076	2318	1587	164
Mymensingh	M	1335	1033	1643	1517	132
Chittagong	C	1880	1139	2303	1368	176
Comilla	M	1241	1069	1457	1445	128
Thakurgaon	T	1348	1086	1631	1460	128
Nilphamari	T	1277	1038	1507	1515	128
Rangpur	M	1302	1054	1564	1451	124
Gaibandha	M	1218	1045	1465	1198	120
Naogaon	T	1141	999	1246	1706	108
Nawabganj	M	973	1031	938	781	88
Notore	T	1147	1052	1244	1135	108
Serajganj	M	1122	1154	1131	908	100
Meherpur	T	1104	1106	1128	903	96
Jessore	M/Cant.	1570	1116	2138	3021	152
Magura	T	1202	1079	1380	891	108
Bhola	M	1447	1137	1787	1760	128
Patuakhali	M	1362	1102	1618	1675	128
Perojpur	M	1183	1107	1249	1250	112
Netrokona	M	1285	1052	1478	1577	128
Tangail	M	1116	1070	1150	1255	100
Manikganj	T	1089	930	1268	1094	108
Munshiganj	T	1145	893	1473	1615	120
Rajbari	M	1152	1017	1310	1034	112
Faridpur	M	1240	1070	1405	1307	116
Madaripur	M	1131	1057	1203	1206	104
Gopalganj	M	1247	1127	1395	1120	116
Sylhet	M	1366	1083	1634	1645	132
Habiganj	M	1342	1094	1568	1575	128
Brahmanbaria	M	1109	1093	1105	1282	100
Chandpur	M	1074	1135	1602	1504	124
Feni	M	1715	1224	2279	1560	152
Cox's Bazar	M	1364	1022	1768	922	136

C - City, M - Municipality, T - Town, M/Cant - Municipality and Cantonment

Source: Calculated from:
Census of Pakistan, 1961. Bulletin - 3.

c) Male Dominant - II	1076 - 1144	Dacca, Barisal, Chittagong, Thakurgaon, Serajganj, Meherpur, Jessore, Magura, Bhola, Patuakhali, Perojpur, Gopalganj, Sylhet, Habiganj, Brahmanbaria, Chandpur;
d) Male Very Dominant	1144 and over	Feni, Khulna.

Thus the masculinity among the children is quite marked though the differences of their concentration is rather less - since 32 out of 37 selected towns have moderately high sex ratios in the young age groups. They (b & c) include most of the district and subdivisional towns as well as three of the four cities. Only five towns differ from this pattern: three of which (Naogaon, Munshiganj and Manikganj) in group (a) have more females than males; while the others (Feni and Khulna) in group (d) have 'very dominant male' characteristics. Such a difference in sex ratios among the children is primarily explained by sex-selective births and deaths, and movement of male children with their guardians in the later part of this age group for the purpose of education in nearby towns. This is most plausible because of the fact that towns with low sex ratios are those which are situated near a town or city important for educational facilities. For instance, Naogaon is very near to the academic town of Rajshahi; and Munshiganj and Manikganj towns are only 40 and 50 miles away from Dacca city. On the other hand, towns having high child sex ratios (c and d) are either small towns of business and commercial importance with some educational facilities available (as in Feni, Habiganj, Chandpur, Brahmanbaria and few others), or some of the large towns like Khulna, Dacca, Chittagong and Jessore having superior educational facilities

enabling the male children to move with their parents to them. This is more likely in medium sized administrative towns grouped under (c).

SEX RATIO OF THE URBAN ADULTS - The towns of East Pakistan present a wide range of variation in the distribution of adult sex ratio. The towns may be classified into six groups falling between -2 and +3 standard deviations ($\bar{x}$ = 1544, σ = 361.19):-

SEX RATIO CHARACTER	SEX RATIO	GROUPS OF TOWNS
a) Female Dominant	Below 1000	Nawabganj;
b) Male Dominant - I	1000 - 1183	Serajganj, Meherpur, Tangail, Brahmanbaria;
c) Male Dominant - II	1183 - 1544	Rajshahi, Saidpur, Comilla, Nilphamari, Gaibandha, Naogaon, Natore, Perojpur, Netrokona, Manikganj, Munshiganj, Rajbari, Faridpur, Madaripur, Gopalganj, Magura;
d) Male Dominant - III	1544 - 1905	Mymensingh, Thakurgaon, Rangpur, Patuakhali, Sylhet, Habiganj, Chandpur, Barisal, Cox's Bazar, Bhola;
e) Male Dominant - IV	1905 - 2266	Dacca, Jessore;
f) Male Very Dominant	2266 and over	Khulna, Chittagong, Narayanganj, Feni.

As noted in the above classification, Nawabganj is the only town which has recorded more females than males in the adult age groups. The predominance of females is most marked at 20-29 years of age (Fig. 3.11) - in conformity with the general characteristic of the sex ratio in East Pakistan. Males make an astounding recovery in the 30-39 age group and exceed the females. Thereafter, the females again dominate and continue to dominate till the end of the adult age period (Fig. 3.11). The situation may be explained by the fact that the town is near to the border

of India and has been receiving refugees, who generally leave their womenfolk there and go to seek jobs in other places or towns, because the town itself is small and has few opportunities for employment. Group (b) and (e) comprise the largest class with moderately high sex ratio characteristics. They have sex ratios below the average for the towns (1544), and include four small subdivisional towns in (b), and 16 other towns - both district and commercially important subdivisional towns in (c). None of these groups, however include cities and towns with 100,000 inhabitants or over. Another characteristic of these towns is that most of them are also important river ports of East Pakistan, such as, Serajganj, Gaibandha, Perojpur, Manikganj, Munshiganj, Rajbari, Madaripur, Gopalganj, Magura. These groups also include some of the slowly developed urban centres and/or declining towns. For instance, Saidpur has recorded a decrease of 0.6 per cent in its population between 1951-61, while Meherpur has recorded an increase in population below the urban average or even the provincial average increase[29]. The reason for this negative or slow change of population is that they lack a sufficiently strong economic base to support a large population. Therefore, the male population in the adult age groups has moved out in pursuit of employment in other areas, leading to corresponding decrease in sex ratios below the urban average in that particular age-bracket. In this connection, it may be noted that sometimes the movement of male population is affected in the form of step-migration and it is more conspicuous from villages to smaller towns, then from smaller towns to larger ones.

The male ratio in the male dominant towns rises until the

age of 40, after which it declines very slowly until the age of 50, and then drops sharply (Fig. 3.11). In some towns the decline is not so sharp - this is particularly so in the case of smaller towns of group (b). Such a trend in the age-specific sex-distribution is the response of reduced migratory habits of the people from rural areas or smaller urban centres, and reversal of sex selective deaths. This is also the age at which the new seekers of jobs will not come to the towns, and when female mortality decreases and male mortality increases because of a greater share in the stress and strain of life among the males.

Groups (d) and (e) include 13 towns differing in size but more or less similar in character - particularly those in group (d). They have sex ratios higher than the urban average. Most of the towns are either district towns having administrative, commercial and educational importance or commercially and industrially important subdivisional towns (Fig. 3.13). They include some important river ports, such as Chandpur, Barisal; and some fishing ports like Bhola and Cox's Bazar as well. The last is also a sea-side subdivisional town in Chittagong district. With low hill ranges overlooking the longest beach of the Bay of Bengal it is a fast developing tourist town where hotel and fishing industries, and business and commerce are becoming important. The towns of group (e) include Dacca city, and Jessore, with great commercial and educational importance. This gives rise to fairly high sex ratios in their adult age groups (Fig. 3.13, Table 3.13). The urban centres in both these groups

(d and e) resemble each other in one respect, namely the male proportion reaches its peak at the 20-29 age group (Fig. 3.11), when most people are ready to seek jobs and enter life. This is also the age that quite a few males are still unmarried or are recently married. They are not well-settled in life and therefore prefer to leave their wives in the rural homes, thus affecting the sex ratio in these towns. This fact is intensified by the scarcity of accommodation and high rents in the towns, particularly in those in (e) and also in (f).

Three out of four cities and Feni, commercially an important town are included in the group (f) characterized by exceptionally high sex ratios (2302 to 2318 males per 1000 females). The cities are Khulna, Chittagong and Narayanganj. They are the chief industrial and commercial centres of East Pakistan and have registered a phenomenal increase in population from 1951 to 1961. Besides, Khulna and Chittagong are also the main sea-ports of East Pakistan, and Narayanganj is the biggest jute marketing centre in Asia and probably in the world. Therefore, it is normal that they attract male population in large numbers. Like any large urban centres they are characterized by lack of accommodation and high rents of the houses that discourage people to bring their families in and thereby help in the abnormal increase in male ratios in them (Figs. 3.11, and 3.13). Just like the earlier groups, the sex ratio pattern of this group reaches its peak at the 20-29 age group (Fig. 3.11) and rests at that stage until 40 or 45 years of age and then slumps down towards the age of retirement, when most people go back to their respective village-homes to spend the rest of their lives.

FIG. 3.13

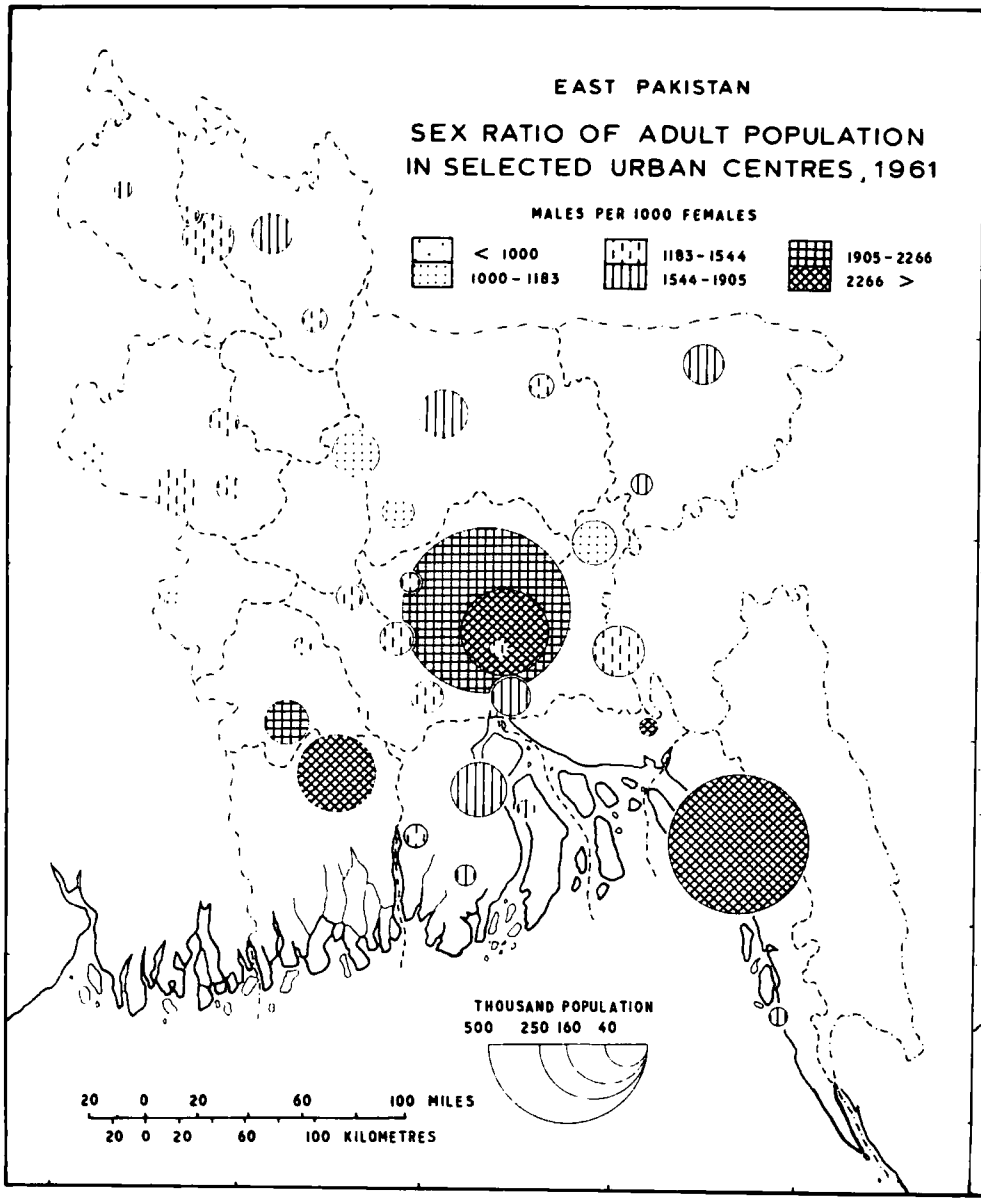
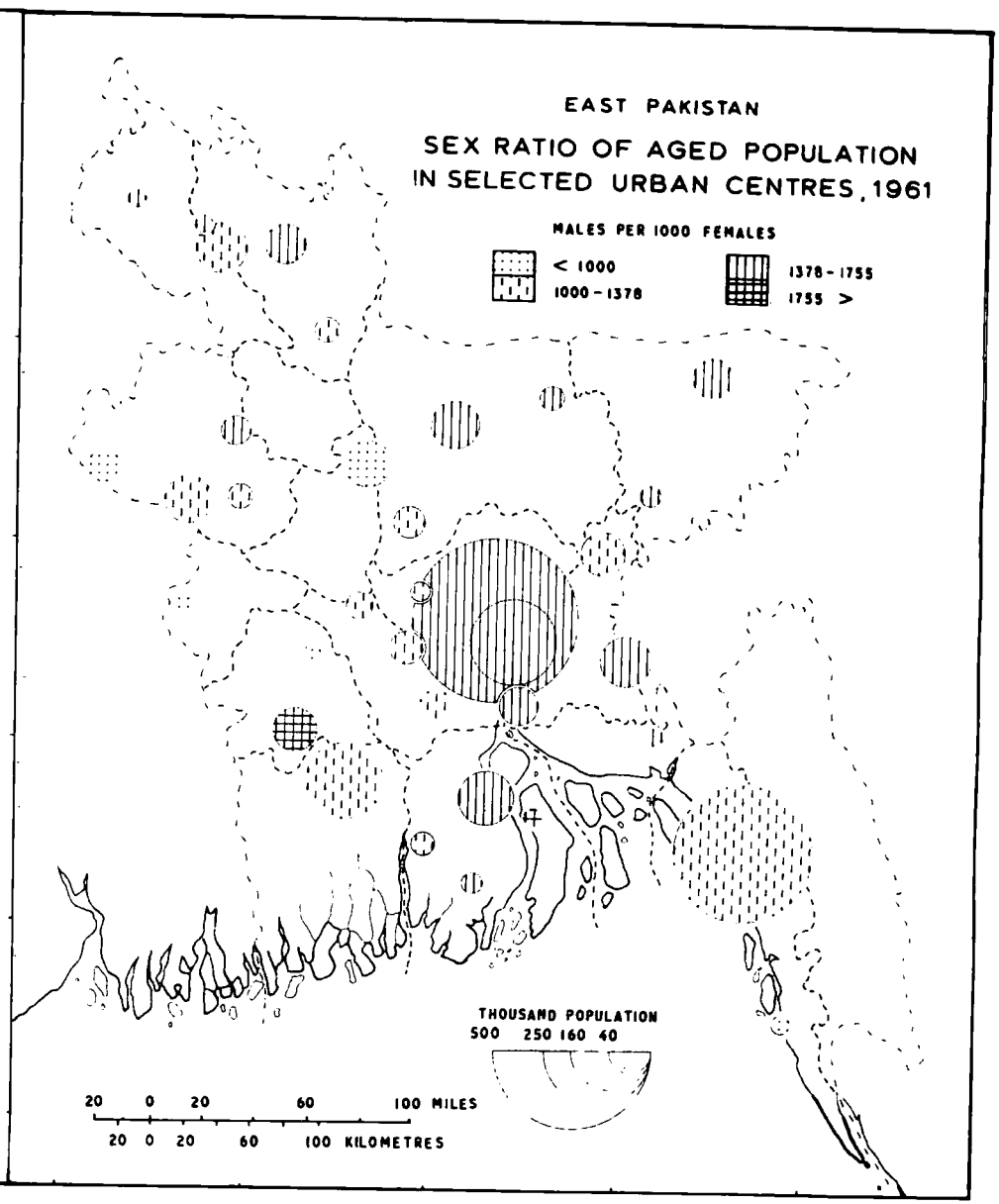


FIG. 3.14



SEX RATIO OF THE URBAN AGED - In all towns of East Pakistan the female ratio improves a little after the age group 50-59. This is the result of almost no migration of aged males to towns as well as retirement of many aged males to rural areas and the higher mortality of aged males. At this age group the death rates of males and females have been about 76 and 64 respectively in 1961.[30] In most of the towns, therefore the proportions of aged male are low and in some of them the aged females outnumber the former (Table 3.13, Fig. 3.14).

In the light of this variation of sex ratios in old age, the urban centres may be divided into four groups, attained by standard deviation ($\bar{x}$ = 1378, σ = 377.46).

SEX RATIO CHARACTER	SEX RATIO	GROUPS OF TOWNS
a) Female Dominant	Below 1000	Nawabganj, Magura, Meherpur, Serajganj, Cox's Bazar;
b) Male Dominant - I	1001 - 1378	Rajbari, Rajshahi, Manikganj, Saidpur, Gopalganj, Natore, Gaibandha, Madaripur, Perojpur, Tangail, Brahmanbaria, Faridpur, Khulna, Chittagong;
c) Male Dominant - II	1378 - 1755	Dacca, Comilla, Rangpur, Thakurgaon, Chandpur, Nilphamari, Mymensingh, Feni, Habiganj, Netrokona, Narayanganj, Munshiganj, Sylhet, Patuakhali, Naogaon, Barisal;
d) Male Very Dominant	1755 and over	Jessore, Bhola.

There are five towns, all subdivisional towns, where females exceed males in the age group 60 years and over (Fig. 3.14, Table 3.13), and three of them, namely Nawabganj, Meherpur and Serajganj,

have recorded an increase of population much below the provincial urban increase. The population of Cox's Bazar has increased considerably between 1951 and 1961, mostly on account of the male migration in the town in the adult age groups. Magura was classed as a town only in 1961 and hence its population variation is not known. The dominance of females in these towns may be explained primarily by sex-selective death of the aged, and secondly, it is likely that these being smaller towns have attracted many females with males in the adult age groups; at the same time there might have been some step-migration of male adults to larger towns from here, that affected the aged sex ratio. Most of these towns have also relatively less masculinity in their adult populations (Figs. 3.13, 3.14).

The Majority of towns have aged sex ratios above the urban average (Fig. 3.14, Table 3.13). 14 towns fall in group (b) which also includes two cities. With a general characteristic of masculinity, the relative improvement in the female ratio is particularly remarkable in the cities and large towns, as they belonged to the 'male very dominant' group in the adult age (Figs 3.13 and 3.14). This is because the health services for females are most available in larger towns and cities giving longer female expectancy of life in them than those in the smaller towns and rural areas.

There are 16 towns in group (c), and two in (d). The latter possess abnormally high sex ratios but the trend closely resembles the former (Fig 3.14, Table 3.13). In the case of group (c), it is easily understood as the predominance of males in the adult age

continues even in the old age. Group (d) may carry an impression that females have decreased from the towns either because of migration or higher female mortality; instead, the female ratio has increased in these towns also, but the percentage increase has been lower. This is reflected in the upward trend of the female ratio in the towns (Fig. 3.11) - but not to such an extent as to surpass the males.

SUMMARY AND CONCLUSION

In this chapter investigations show that, international migration playing almost negative role, there are three main factors which account for the high sex ratio of the population of East Pakistan: (i) excess of male births, mostly in recent decades, (this however exerts less effect on sex ratio than the other two), (ii) greater female-selective deaths, and (iii) sex-selective misenumeration affecting age-specific sex ratios.

Sex ratio differentials in religious groups are also affected in degrees by the above factors; while the rural-urban sex ratio differentials, besides being affected by these three factors, are also greatly determined by age-sex selective rural to urban migration, and vice versa in older age groups.

The regional differences in sex ratios between religious groups and residences (rural and urban) affect many of the population characteristics in East Pakistan. As we shall see later, together with some socio-cultural factors low female ratio is also partly responsible for low mean age at marriage of the females and very high nuptiality rates of the females in the province, which in turn also exert a lowering effect on overall

widowed and divorced rates of females.

On the other hand, it is also noted that the overall sex ratio of the province is gradually declining, owing to improvement of health and environmental conditions of the population. Further intensification of socio-economic measures in the future leading to increased social enlightment will definitely reduce the norm of "male-child preference" by the families, reduce the sex-selective mortality, equalize differences in expectancy of life between the sexes, and minimize underenumeration. Recently introduced family planning measures and greater emphasis on maternal health and child care will definitely reduce the extreme sex-imbalance in adult age groups of the population within a few decades. Adoption and experience of these measures in earlier years have already brought about a lowering trend in sex ratio in the recent decades, and in the near future one can reasonably expect that the sex ratio will tend to reach the normal pattern found in western societies.

A tendency towards balanced sex ratio will influence some of the ascribed and non-ascribed characteristics of population. In particular, it will affect the relative supply of brides and grooms and will require an adjustment in the socio-religious customs related to the marital status of the population. This will particularly be so in districts where the deficit of females is acute. Such a change may lead to either of the following marital conditions: decline in male age at marriage, increase in female age at marriage, decline in differences of age between male and female marriage ages, change in the rate of remarriage and a further decline in divorced and widowed proportions.

These changes are, however, not exclusive, and will also depend on some non-ascribed characteristics, such as literacy and level of education, and other socio-economic and cultural factors.

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C H A P T E R IV

MARITAL STATUS

Marital characteristics of a population are probably the least discussed subject in population geography although they are of great demographic importance in determining and influencing the other aspects of population structures.

Data relating to marital status of the region now forming East Pakistan are available since 1881 and those since 1901 are fairly good and reliable for an interpretative study. Considering the prevailing socio-religious norms and nature of data available, the marital condition of the population has been categorized into three broad groups: (i) single, (ii) married, (iii) widowed and divorced. Sometimes the third group has been divided to indicate their respective roles. Almost all cultures of the world recognize this classification and have highly elaborate descriptions of appropriate behaviour for the persons in each status.[1] To minimize the effect of misreporting of age (note chapter on age structure), the present study will examine 10 year age groups in each category of marital status.

SECTION A

GEOGRAPHY OF MARITAL FORMATION AND ITS DIFFERENTIALS IN EAST PAKISTAN

Due to the absence of an elaborate registration system in East Pakistan, the civil condition is still a religious function coupled with certain social formalities centred around the obligation of parents or guardians: this is so among almost all religious groups.

Marriage is a civil contract among the Muslims, Buddhists and Christians in the province and as such it can be annulled and reinstituted at the instance of either party, or at the death of one party. Thus divorce and remarriage are legal in these three communities. Among the Hindus, marriage is a sacrament which must be attended by certain religious ceremonies and divorce used to be illegal as marriage is viewed as religiously spiritual. But divorce followed by remarriage is not uncommon among low caste Hindus. In the past the Hindus did not permit widow marriage. At present it is practised in all religious groups, including the Hindus, but less than among the others. In this connection it should be noted that in East Pakistan religion is the most decisive factor in the segregation of males and females between communities into categories with respect to nuptiality. Almost all marriages involve partners from the same religious group. This is a reflection of intensity of in-group sanctions on the individual in the religious groups and this has remained practically unchanged.

NOTES ON OTHER FORMS OF NUPTIALITY. In this connection attention should be given to the practice of hypergamy and polygyny in East Pakistan. In all religious groups hypergamy is a custom which has an enormous influence on social and family life, which together with polygyny is particularly important among the high-caste Hindus (mostly Kulin Brahmins) in East Bengal.[2] Their practice developed because of the repressive Hindu laws regarding pre-puberty marriage of girls, failing which in the Hindu patrilocal society, the parents may be outcaste (excommunicated).

On the other hand, preference for more male children for socio-economic reasons might have some effect on the practice of polygyny. Muslims may take upto four wives, provided, according to the Quran and the Hadith, that the husband seeks permission to marry from the existing wife/wives, and treats and provides their maintenance equally, giving the system a limiting force on social, economic and emotional grounds. At present however neither of these religious groups usually practise polygyny, because of legislation (such as in 1869, 1923, 1947 and 1961) against its free practice, except in exceptional cases, such as barrenness of wife, incurable diseases and so on. Its practice is also in disrepute, but the most important reasons for the fast decline in polygynous marriages have been the social and economic changes since last century, the recent expansion of education, and the low proportion of females in the population. Consequently, polygyny shows little effect in the census statistics. According to several of the individual studies in the province's rural and urban areas, the frequency of polygynous marriages in recent years was found to be usually low due largely to economic pressure such marriages ensue.[3]

MARITAL CHARACTERISTICS OF EAST PAKISTAN

As marriage is a socio-religious obligation of every family in East Pakistan, the proportion of single persons decline sharply with increasing age giving one of the lowest proportion single in the world (Tables 4.1, 4.2). Yet, nearly 50 per cent of the population are single and the male single population greatly surpasses that of the females (Table 4.2); this is the result of the young character of population, differences of age at marriage

TABLE 4.1

Percentage distribution of marital status[1] of population aged 10 yrs. and ov
East Pakistan (1961 - 71)

Age groups	ALGERIA S	ALGERIA D	ALGERIA W	INDIA S	INDIA D	INDIA W	IRAQ S	IRAQ D	IRAQ W	JAPAN S	JAPAN D	JAPAN W	TURKEY S	TURKEY D	TURKEY W	U/ S
10 - 20	60.5	2.7	-		0.9	1.0	59.3*	2.5	-	98.6*	0.4	-		0.7	-	69.4
20 - 30	15.9	2.1	7.3		1.0	6.4	20.7	1.1	1.8	44.8	3.0	1.5		0.7	4.3	14.8
30 - 40	5.1	1.7	19.7		0.9	20.7	7.2	1.4	5.4	8.8	3.9	11.3		1.3	13.7	2.9
40 - 50	2.6	1.4	45.9		0.7	45.5	4.2	2.4	14.3	3.0	3.0	22.4		1.2	36.9	1.7
50 - 60[2]	2.3	1.1	70.6		0.5	69.7	2.7	1.5	-	1.7	2.1	41.1		1.2	65.0	0.5
60+	-	0.9	77.9		0.5	71.9	-	1.3	-	-	1.8	56.4		-	-	-
All ages (10yrs +)	22.0	1.7	44.3		0.7	35.9	24.7	1.7	7.1	45.7	2.3	26.5		1.0	30.0	22.9
Mean Age at Marriage: M	25.0				22.0			25.0			27.0			22.5		
F	18.2				13.8			18.5			24.3			20.9		
Mean Difference in Marriage Age:	6.3				8.2			6.5			2.7			1.6		

S - Single, D - Divorced, W - Widowed

1. Married proportions are not shown separately. They form the remainder.
2. Also includes 50 yrs. and over, if otherwise not specified in the next age grou
3. Not available

* 16 - 20 age group.

Sources:
1. Bogue, D.J., 1969;
2. Census of Pakistan, 1961, Bulletin 3;
3. Sadiq, N.M. 1965.

between the sexes and particularly the high sex ratios. This is established by the calculated coefficients of correlation (+0.75) between the percentage of male single and the sex ratio between 1901-61.

There is a relatively narrow age period during which the

TABLE 4.2

Marital status of East Pakistan, 1901-71.

(in percentages)

Years	Single		Married		Widowed and Divorced	
	M	F	M	F	M	F
1901	-	-	44.60	47.00	-	-
1911	-	-	45.00	47.50	-	-
1921	51.80	34.30	44.40	46.00	3.80	19.70
1931	46.90	31.00	49.80	51.40	3.30	17.60
1941	47.96	39.48	49.32	43.82	3.72	16.70
1951	54.96	40.69	42.00	46.58	3.03	12.72
1961	57.34	44.64	40.41	43.69	2.24	11.67
1971 (Est.)	59.00	48.91	39.29	43.31	1.71	7.78

M = Male, F = Female, - not available.

Sources: Calculated from Census reports on Bengal and East Pakistan from 1901 to 1961.

majority of males and females enter their initial marriage, giving a typical marriage pattern for East Pakistan. As noted in Fig. 4.1 (a) (b)[*], with very high nuptiality, the probability of marriage for females reaches its maximum among the age group 15 - 20 years, and thereafter it drops abruptly, while that of

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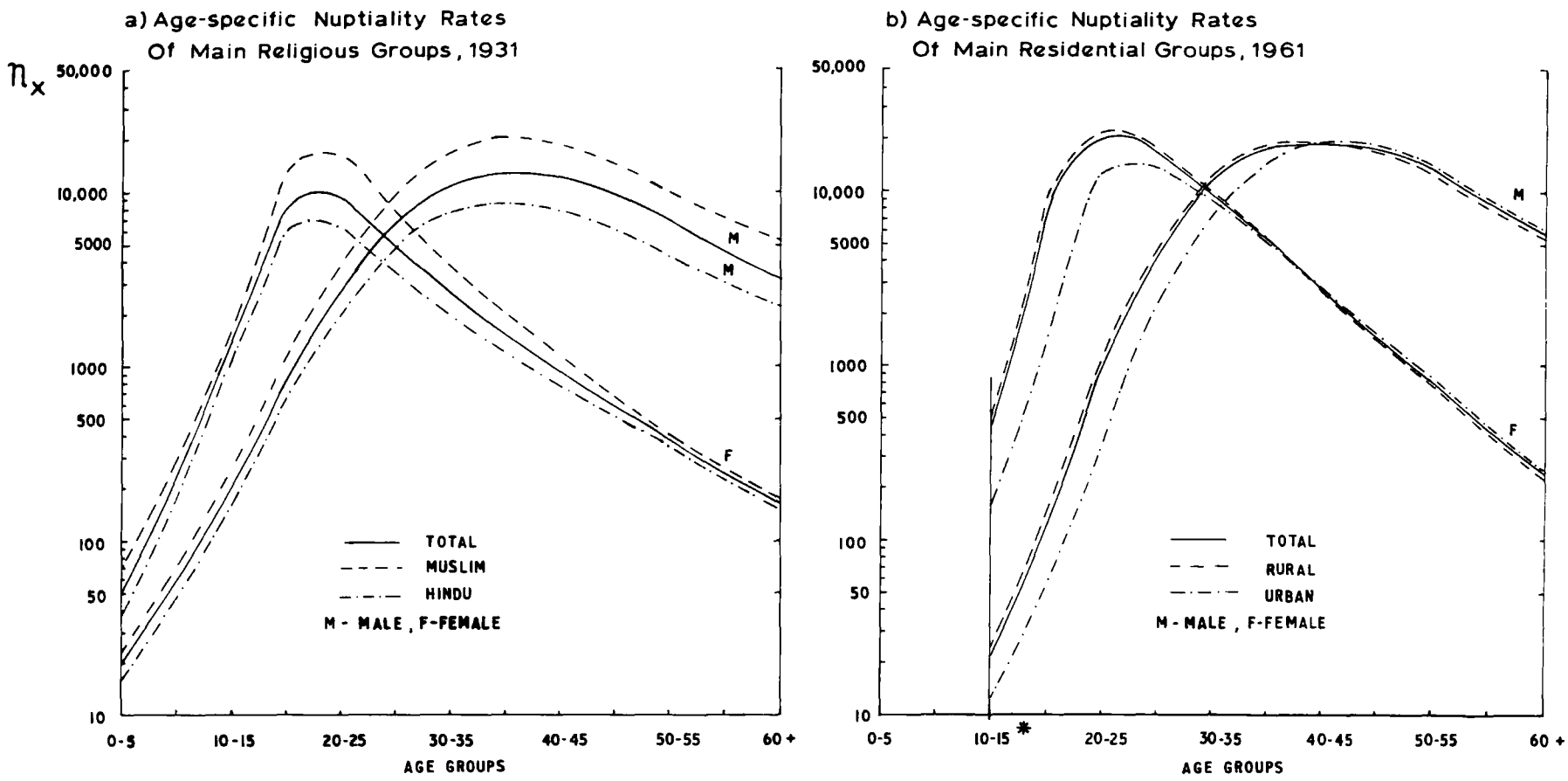
* For statistical explanation of the age-specific nuptiality rates (η_x), see Appendix 3.

FIG. 4.1

East Pakistan
AGE-SPECIFIC NUPTIALITY RATES (η_x)



* NO MARRIAGE WAS RECORDED BELOW 10 YRS. OF AGE.

males rises to a peak in the age group 25-30 years. The later age of males entering nuptiality condition is associated with their greater frequency of remarriage and the wide difference of ages between husbands and wives.

The figures (Fig. 4.1 (a) and (b)) also represent the universal and early marriage pattern of this region which is a basic family practice and which irrespective of religions is deeply embedded in Bengali culture. The reasons for such a marital characteristic are varied and related to religious directives and various social norms. For instance, according to Manusaṁhita, Mahabharata and Dharmasutra, Hindu males must marry and beget children, preferably sons to perform parents' funeral rights etc. and Hindu girls should be given marriage before they reach the age of twelve (or pubescence)[4]. Among Muslims the religious sanctions imply that "when a man marries verily he perfects half his religion ....."[5]. Other reasons for early and universal marriages are: (a) hot, humid climate of this part of Asia leads to early maturity enticing the people to marry at an early age, (b) the traditional seclusions of sexes normally do not allow sublimation of the sexual impulses; thus early marriages ensue, and (c) the social desire to have more children (mainly males) to carry family names and to increase the earning power of the family*. In rural areas, many parents engage their children at an early age; this kind of predetermined relation develops socio-economic interdependence between families leading to

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* A great number of divorces are due to a barren wife, which subsequently lead to remarriage of the male partner.

solemnization of marriage before the conventional ages of the partners. The system, however, is losing importance gradually. Besides, in a patrilocal and extended family system the female children, particularly in rural areas, are looked down upon as an economic burden as they do not directly contribute to the family economy, while the marriages of males do not affect the family because of its joint-economy as well as the prevalence of the dowry-system in the province. Therefore, there is a strong tendency for both males and females to marry as soon as possible. The minority religious groups are also influenced by these norms to make early marriage in the province a natural condition for everyone, and celibacy and the postponement of marriage are thought to be the result of artificial circumstances and are therefore very rare. Although the mean age at marriage is increasing gradually it is still so low as to term it, according to Bogue, child marriage,[6] and this also is the case for India, West Pakistan and many Muslim countries in the Middle East and North Africa (Table 4.1). Still it is not conclusive whether an early marriage is necessarily a factor affecting certain variables of population growth, such as fertility. In fact, there is no statistical relation between fertility ratio and the mean age at marriage of females in East Pakistan as observed by a regressional analysis. There are various reasons for such a discrepancy. According Bengali and Muslim customs, immediately after marriage the girl continues to live in her parents' home for a few years (at least two years) for domestic and marital training. Such a custom is also prevalent in the Muslim societies in Bihar and U.P in India.[7] In addition, frequent visits to her

TABLE 4.3

Mean age at marriage of East Pakistan, 1901-1971.

Years		Mean age at marriage	
		M	F
1891-1900		20.00*	12.50
1921		21.90	12.30
1931		18.70	10.80
1941		21.70	13.40
1951		22.40	14.40
1961	(i)	22.90	13.90
	(ii)	22.60	14.90
1971 (Est.)		23.00	15.00

* approximation and not exceeding 20 years.

Sources: 1. Census of India, 1921, Vol. V, Pt. II;

2. Sadiq, N.M. 1965 and Alam, S.I., 1968.

(For statistical explanation of calculating the mean age at marriage see Appendix 3).

parents' home during child-birth, prolonged lactation and various religious counsels in abstinence from cohabition might have some negative effect on fertility. Thus compared to Western societies although marriage occurs earlier, the fertility difference between the two societies somewhat diminishes at the birth of first child. The fertility differential may be due to contrasts in the span of child-bearing age and to the Bengali cultural norm of desiring more male children. In other words, the fertility ratio is rather dependent on the high proportion of married females during the reproductive periods (77.50 per cent of females aged 10-50 years were married in 1961 in East Pakistan) who were highly exposed

to child-bearing risk.

Despite the fact that the marriage age in East Pakistan is influenced and determined by various socio-religious factors it also acts as a concomitant of certain other specific demographic variables. For instance, it has an inverse relationship with the proportion of widowed and divorced - the coefficient being -0.65. That is since 1901, with increasing age at marriage the proportion of widowed and divorced is declining. This is probably the result of socio-psychological effects of better marital understanding of both the parties married. Proportions married are however not affected by the mean age at marriage ($r = -0.56$). That means they may be determined by some other factors, which are discussed elsewhere.

CHANGES IN MEAN AGE AT MARRIAGE - There is a general trend towards higher age at marriage among males (23 yrs) than females (14 yrs) in East Pakistan, and the customary age at marriage of both the sexes has a significant upward trend since 1901 except for a dip in 1931 and a slight drop in 1961, particularly for the females. The differences between the mean ages at marriage of sexes had narrowed down between 1921-41. In 1921 it was 9.6 years, and the respective figures for 1931 and 1941 were 7.9 and 8.3 years (Table 4.3). After 1951, however the difference has increased due to a slight drop in female age at marriage and an increase in that of males, the gap in 1961 reaching 9.0 years (Table 4.3). In this connection the abnormally low age at marriage in 1931 should be taken as an exception, as a result of the Child Marriage Restraint Act,

enforced on April, 1, 1930.* Between 1929, when the law was passed, and the date of its enforcement there was an enormous increase in the number of those married below the specified ages, as the orthodox Hindus and Muslims (including the orthodox religious leaders) organized campaigns against the act indicating it as interference with religious directives. This resulted into a rush of marriage of minor children. ".... Bengal seems to have been particularly active in this respect, but other parts of India were not far behind."[8] A great many marriages thus took place, particularly in the districts of Dinajpur, Dacca, Chittagong and Barisal, between February and April, 1930. In Bengal the monthly average of marriages of minors registered during 1921-29 was 305. In the four months from January to April, 1930 the respective monthly numbers of Muslim marriages of minors were 419, 1320, 8782 and 4452.[9] According to the 1931 census, the proportion of Muslim child-wives under 10 years of age in Bengal (and in some other provinces) was higher than among Hindus.[10] Subsequent censuses show that although extreme child marriage has declined to minor proportion (Table 4.4), and the legislation was well intentioned and recommendatory in character, it was not immediately effective in practice. Lack of systematic registration of marriages by age group, difficulty in getting information about marriages in remote rural areas, and conservatism and illiteracy of the masses were the main reasons for its ineffectiveness. Positive change in mean age at marriage

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* The law provided penalties for the solemnization of marriages of males under 18 years and of females under 14 years of age. (ref: Census of India, 1931, Vol. V).

particularly after the 1930's seems to be due, in addition to the limited effect of legislation, to increasing literacy,

TABLE 4.4

Percentage distribution of persons married before 10 years of age, East Pakistan, 1881-1961.

Years	Total		Muslim		Hindu	
	M	F	M	F	M	F
1881	0.7	8.8	0.7	7.3	0.7	10.3
1891	0.6	7.5	0.7	6.1	0.5	8.9
1901	0.7	6.6	0.8	5.7	0.6	7.5
1911	0.7	5.5	0.7	4.7	0.7	6.4
1921	0.6	4.2	0.7	3.6	0.6	4.9
1931	4.2	15.3	5.3	17.6	3.0	13.0
1941	0.4	2.6	0.5	2.8	0.4	2.5
1951	0.1	0.7	0.2	0.9	0.1	0.6
1961	a	a	a	a	a	a

a - absent,

Sources: Same as Table 4.2.

social and economic changes and enlightment. Moreover, the famine of 1943 and subsequent epidemic and the associated socio-economic consequences not only depressed the marriage rate but also considerably increased mortality in the younger age group resulting in a smaller 0-9 age group in 1951. This smaller cohort was in the marriageable age group in 1961 and slightly changed the marriage age in this year.[11]

The slight drop in the female marriage age from 14.40 years

in 1951 to 13.90 in 1961 also appears to be due to the effect of unsettled socio-political conditions during the preceding decade (1941-51). Another reason might have been the new marriage law of 1961 before which many marriages were celebrated in the province.[12] High sex ratio between 1941-61 (1100 males per 1,000 females in 1941-51, and 1076 in 1951-61), reduced the supply of brides at the conventional age at marriage without a corresponding reduction in grooms. Therefore, more than the usual proportion of these young girls had been pressed into marriage resulting in a slight decrease in their marriage age.

REGIONAL VARIATIONS IN AGE AT MARRIAGE - Besides socio-religious factors, urbanization, literacy and other factors have great influence in the variations of marriage age in East Pakistan. Since such differences between the districts are too low for clear distinctions, the regional patterns are discussed by taking broad administrative divisions which also correspond to the major geographical regions of East Pakistan. Broadly speaking, there are positive correlations between mean female marriage age, and female literacy and urbanization in the different administrative divisions, while male marriage age is closely correlated with the level of urbanization.

In East Pakistan, both males and females marry earlier in rural areas than in urban areas (Table 4.5). There are differences of 2.5 and 2.1 years of the mean age at marriages of males and females between the two residential regions. The main reason of low marriage age in rural areas is the traditionalism of the population compared to those in urban areas who are more progressive. Level of education among the females is another important factor

delaying their marriage in urban areas. Besides, the rural societies are still characterized by the extended family system, and the overall early marriage does not affect the economy of the family; while there is a growing tendency among males in the urban class to marry after acquiring some degree of economic security in life. They are also inclined to the single family system.

TABLE 4.5

Mean age at marriage by (a) broad administrative divisions and residents, and (b) selected urban centres by religions, East Pakistan 1951-61.

(a) Administrative Divisions, 1961[x]

	Total				Urban		Rural	
	M		F		M	F	M	F
E. Pakistan: total	22.9	(22.4)	13.9	(14.5)	25.2	15.9	22.7	13.8
Rajshahi Division	21.9	(21.9)	13.0	(13.0)	24.3	15.6	21.8	12.9
Dacca "	23.3	(22.9)	13.9	(14.0)	25.5	16.0	23.0	13.8
Chittagong "	23.7	(22.2)	14.8	(16.2)	25.7	16.6	25.5	14.7
Khulna "	22.3		13.6		24.5	15.3	22.2	13.5

(Figures for 1951 are in parenthesis)

(b) Selected Urban Centres, 1951[x]

	Muslim				Hindu		Others	
	M		F		M	F	M	F
E. Pakistan: Urban	22.0		14.1		23.7	15.1	21.1	16.1
Dacca City	24.5	(26.6)	15.3	(16.3)	25.5	15.7	26.4	15.5
Narayanganj City	23.1	(25.3)	15.1	(15.8)	23.9	15.3	23.9	17.7
Barisal Muncipality	23.4	(25.3)	15.8	(17.0)	24.9	17.3	24.9	19.4
Chittagong City	23.9	(25.8)	14.8	(16.3)	25.3	15.7	25.1	20.9

(Figures for 1961 - Total are in parenthe-sis)

M = Male, F = Female.

x Complete breakdown by religious group for 1961 is not available.

Source: Alam, S.I. 1968.

A girl's parents living in an urban area also try to get a husband who has economic stability. In fact, the period when men first marry may be compared with the period when they enter the labour force, while somewhat older age of marriage of urban females is also very likely associated with the fact that women in towns are more likely to prolong their education and engage in some employment before marriage than women in rural areas. Thus among the selected urban centres Dacca city has the highest age at marriage for males which is due to its industrial, commercial and administrative status, and high sex ratio. It is followed by Chittagong city which is also an important industrial and commercial centre. Barisal has the highest female age at marriage (Table 4.5), as a result of its high female literacy, a fact also apparent in Dacca and Chittagong cities. As seem in the Table 4.5(b), both sexes of the Muslims married earlier than Hindus or other religious groups in 1951. Between towns, however, there are deviations from this pattern, particularly between Hindus and other religious groups. Data of this nature for 1961 are not available, so changes after 1951 could not be ascertained, but on the whole the mean age at marriage in the cities of East Pakistan is increasing (note figures in parenthesis in Table 4.5) since the last decade, and more men, as we shall see soon, tend to remain unmarried in towns than in villages. Such a rural-urban differential in marriage age is also affecting the fertility ratio of the country, giving a total fertility ratio of 939.45 and 854.60 in rural and urban areas respectively. Likewise, early marriage and proportionally more married women in the rural areas give a higher child-women ratio (87 to 90) than urban areas

(80 to 85).

PROPORTION OF MARRIAGE DISSOLUTION - The combined proportions of widowed and divorced in East Pakistan do not differ widely from the South Asian countries or other Muslim societies (Table 4.1), but when viewed separately the proportion of widowed in the province is one of the highest in the world, while that of divorced is lower than many countries (Table 4.1). The large proportion widowed is partly due to the early age at marriage and to the disparity of ages between husbands and wives, but the main cause is the widespread prejudice against the remarriage of widows as a mark of social respectability and familial individuality, particularly among the Caste Hindus and many of the Muslim middle class families (Table 4.6). On the other hand, the very low proportion of divorced is the result of the popular condemnation of its practice, which is also restrained by the fact that the husband must return the dowry with the wife, so that there is heavy financial pressure on the husband. Thus Bengali society has never been tolerant to divorce and has looked on it unfavourably. Though it is often at the cost of marital or family harmony, yet the norm is deep rooted because of the problem of remarriage, and the inclination of males to marry virgins.[13] Still, remarriage of widows and divorced - particularly those in the lower age groups is not uncommon, and religious precepts are favourable in this regard.

Since 1901 the proportion of widowed and divorced has declined very fast (Table 4.6). This is highly inconsistent with the popular belief that the growing tendency towards formal education of female and urbanization encourages family break-ups. This is established statistically as during the last six decades

the relationship between widowed and divorced, and urbanization, and between the former and literacy were found to be negative ($r = -0.61$ and -0.62 respectively). Thus contrary to the prevailing view, an increased tendency towards female literacy and urbanization is likely to bring about constructive change towards stable marital formation in the province.

Precise data of remarriage of divorced and widowed are not available for any decade, but the overall low proportion of divorced, with a maximum divorced rate in the age group 10-30 for both sexes (Table 4.6) and thereafter falling sharply, amply demonstrates that divorced persons in these age groups are normally re-married immediately. In general many early marriages end in divorce (and often widowhood) by the time the wives reach the age 15 to 20 or so, and while they are still young and childless they usually find husbands.[14]

As noted in Table 4.6(b) the proportion widowed, particularly widows, increases after middle age and becomes higher as population grows older, largely because with advancing age the widowed proportion becomes mostly made up of those who have been widowed for a long time and have proved their ability to survive. Or in other words, in a population where socio-religious norms dictate that the wives are to be much younger than the husbands, it follows that the proportions of wives once past 40/45 yrs. of age are likely to give more than 60% of the widowed population in the subsequent age groups. As such, as born out in 1961 (Table 4.6) more than 80% of all married women in the age group 60+ were widowed. This greatly affects the age-specific sex ratio and sex distribution in age structure in almost all the districts of

TABLE 4.6

Proportions of widowed and divorced by age group, sex, religion and residents, East Pakistan.

(a) Widowed and divorced* by main religious groups and sex, 1881-1971

	15-40 Age group						All Ages					
	TOTAL		MUSLIM		HINDU		TOTAL		MUSLIM		HINDU	
Years	M	F	M	F	M	F	M	F	M	F	M	F
1881	2.9	20.9	2.2	13.9	3.7	28.0	-	-	-	-	-	-
1891	2.7	19.1	2.2	12.6	3.3	25.7	-	-	-	-	-	-
1901	2.7	18.0	2.3	12.0	3.1	24.0	-	-	-	-	-	-
1911	2.6	16.6	2.2	11.3	3.1	22.0	-	-	-	-	-	-
1921	3.1	17.6	2.6	12.0	3.6	23.2	3.80	19.70	2.70	15.50	5.10	25.40
1931	2.6	16.1	2.1	11.3	3.1	21.0	3.30	17.60	2.20	14.00	4.50	22.60
1941	2.7	14.0	-	-	-	-	3.72	16.70	-	-	-	-
1951	2.5	9.4	2.0	8.1	2.9	19.1	3.03	12.72	2.75	11.75	4.14	16.34
1961	1.8	6.7	1.7	4.3	2.2	9.2	2.24	11.67	1.89	10.77	3.62	15.65
1971(E)	1.7	4.1	1.5	3.0	2.0	5.2	1.60	9.76	1.00	8.20	2.21	11.33

* Percentage of total population, E - Estimated.

- Not available.

(b) Widowed and divorced by age group, sex and residents, 1961

Age groups	DIVORCED						WIDOWED					
	TOTAL		RURAL		URBAN		TOTAL		RURAL		URBAN	
	M	F	M	F	M	F	M	F	M	F	M	F
10 - 20	0.04	0.99	0.05	1.02	-	0.46	0.11	0.52	0.09	0.52	0.33	0.46
20 - 30	0.49	0.90	0.51	0.89	0.30	1.11	1.44	2.98	1.49	2.97	0.90	3.33
30 - 40	0.43	0.68	0.39	0.67	0.88	0.89	2.21	10.98	2.25	10.98	1.77	10.71
40 - 50	0.35	0.68	0.56	0.65	0.72	1.45	3.92	31.90	3.99	31.63	2.88	39.13
50 - 60	0.25	0.65	0.23	0.50	1.28	4.35	6.45	56.76	6.49	56.85	6.41	54.35
60+	0.34	0.42	0.35	0.43	-	-	14.83	82.10	14.87	82.20	11.72	79.54
All ages	0.20	0.50	0.20	0.49	0.13	0.73	2.05	11.16	2.08	11.23	1.55	9.63

Sources: Same as table 4.4

East Pakistan.

Theoretically between the ages 20 and 40 husbands are more likely to be widowed than their wives because of high mortality of females during the reproductive years (this is also reflected in abnormally high sex ratio in adult age groups of the population. For detailed discussion see Chapter III). But the apparent reversal of this situation is due mainly to greater frequency in the liberty to remarry among widowers. Therefore, widows exceed widowers.

As mentioned earlier, in recent decades the decrease in widowed and divorced has been faster than ever. In general Muslims have a lower proportion of widowed and divorced than the Hindus, as the former are in no way against remarriage. Because of recent increasing flexibility in the Hindu religion in East Pakistan and their close association with the Bengali Muslims, the Hindu widowed and divorced rate is decreasing progressively. Despite the decline in overall mortality and the rise in life-expectancy, the lowering trend in the marriage dissolution rate may be regarded as a major constructive social change for all religious groups in the province.

SECTION B

GEOGRAPHICAL DISTRIBUTION OF POPULATION BY MARITAL STATUS IN EAST PAKISTAN

The geographical pattern of marital characteristics of the population of East Pakistan is subject to limited regional variations because of the relative homogeneity in various geodemographic aspects. Because of the degree of ruralism the

marital distribution of the total population closely resembles that of the rural population (Fig. 4.2), while that of the urban population gives a different picture (Fig. 4.2)*. The range of distribution of population by single, married, widowed and divorced between total and rural areas is very narrow and in many cases almost similar (Table 5.7). Consequently, the regional pattern of marital status will be discussed with respect to rural areas and selected urban centres indicating broad residential differences.

MARITAL PATTERNS OF RURAL AREAS

The regional distribution in the proportion of single persons in rural East Pakistan falls within the range of $\pm$ 2 standard deviation ($\bar{x}$ = 50.85, σ = 1.64), giving four sets of districts (Fig. 4.3). The first group with a proportion of single persons less than 49.21 per cent includes four northern districts, namely Dinajpur, Rangpur, Pabna and Rajshahi. They, including Mymensingh have high proportions of married population. The main reasons for their low proportion of single persons and high proportion of married population are their stable economic conditions, as they cover the main jute, tobacco and sugarcane growing belts in the province and are relatively less affected by annual floods and crop failures. As noted earlier, these are the districts where the rates of urbanization and literacy are relatively low and the mean age at marriage is also very low. The combined effects of

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* Because of close similarities of marital characteristics between individual districts, and between towns, separate graphs of individual units (districts or towns) are not shown. Fig. 4.2 gives the comprehensive picture of regional differences.

TABLE 4.7

Percentage distribution of population by marital status of total and rural areas, East Pakistan, 1961.

DISTRICTS	TOTAL												RURAL											
	SINGLE			MARRIED			WIDOWED			DIVORCED			SINGLE			MARRIED			WIDOWED			DIVORCED		
	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F
EAST PAKISTAN:	51.00	57.34	44.64	42.05	40.42	43.70	6.60	2.05	11.16	0.35	0.20	0.50	50.86	57.32	44.40	42.14	40.40	43.88	6.65	2.08	11.23	0.34	0.20	0.49
Dinajpur	48.45	54.62	42.25	44.50	42.20	46.25	6.82	2.98	10.65	0.23	0.20	0.25	48.19	54.46	41.93	44.70	42.30	47.10	6.86	3.01	10.71	0.24	0.23	0.26
Rangpur	49.35	55.58	42.99	43.74	42.03	45.45	6.67	2.18	11.19	0.23	0.20	0.37	49.08	55.44	42.72	43.94	42.20	45.69	6.73	2.18	11.29	0.24	0.18	0.30
Bogra	47.89	53.47	42.32	45.43	43.89	46.95	6.25	2.23	10.18	0.43	0.41	0.45	47.67	53.26	42.09	45.57	44.03	47.12	6.31	2.30	10.32	0.44	0.41	0.47
Rajshahi	48.96	55.04	42.89	44.04	42.64	45.42	6.64	2.12	11.16	0.36	0.20	0.53	48.71	54.76	42.66	44.24	42.92	45.56	6.68	2.11	11.25	0.37	0.21	0.53
Pabna	52.21	58.59	45.84	41.44	39.67	43.21	6.05	1.59	10.51	0.30	0.15	0.44	52.08	58.43	45.74	41.52	39.80	43.25	6.09	1.62	10.56	0.30	0.15	0.45
Kushtia	50.47	57.66	43.29	42.16	40.18	44.12	7.14	2.01	12.28	0.23	0.15	0.31	50.76	57.94	43.58	41.82	39.80	43.85	7.18	2.10	12.26	0.23	0.16	0.31
Jessore	50.42	56.84	44.00	41.54	40.62	42.46	7.82	2.39	13.24	0.22	0.15	0.30	50.37	56.84	43.91	41.71	40.60	42.83	7.68	2.41	12.96	0.22	0.15	0.30
Khulna	49.62	56.15	43.09	42.16	40.98	43.34	7.81	2.67	12.96	0.41	0.20	0.61	49.59	56.24	42.95	42.20	40.84	43.56	7.91	2.72	13.10	0.29	0.20	0.39
Barisal	51.73	57.45	46.02	41.41	40.08	42.72	6.50	2.23	10.76	0.36	0.23	0.50	51.65	57.43	45.87	41.46	40.07	42.85	6.51	2.26	10.77	0.33	0.24	0.51
Mymensingh	50.72	57.12	44.32	42.76	40.86	44.64	6.21	1.82	10.61	0.31	0.20	0.42	50.63	57.07	44.19	42.81	40.86	44.76	6.25	1.87	10.63	0.31	0.20	0.42
Dacca	51.80	58.12	46.05	41.78	40.15	42.87	6.10	1.61	10.59	0.32	0.12	0.49	51.78	58.18	45.39	41.62	39.99	43.26	6.28	1.70	10.86	0.31	0.13	0.49
Faridpur	51.40	58.24	44.56	41.04	39.61	42.46	7.36	2.04	12.68	0.20	0.11	0.30	51.33	58.24	44.43	41.08	39.61	42.55	7.38	2.04	12.72	0.20	0.11	0.30
Sylhet	50.83	57.52	44.14	41.38	39.54	42.22	7.24	2.65	12.84	0.54	0.29	0.80	50.67	57.38	43.97	41.47	39.65	43.29	7.29	2.66	11.93	0.56	0.31	0.81
Comilla	51.81	58.41	45.31	41.80	39.85	43.64	6.06	1.62	10.50	0.33	0.12	0.55	51.77	58.39	45.15	41.32	38.86	43.78	6.08	1.63	10.53	0.33	0.12	0.55
Noakhali	53.28	60.43	46.13	40.52	37.65	43.39	5.80	1.74	9.87	0.40	0.18	0.61	53.28	60.49	46.08	40.54	37.60	43.49	5.77	1.73	9.82	0.39	0.18	0.61
Chittagong	53.18	60.00	46.36	39.36	37.95	40.77	6.87	1.77	11.98	0.58	0.28	0.89	53.37	60.84	45.91	38.95	36.98	40.92	7.06	1.87	12.26	0.61	0.31	0.91
Chittagong Hill Tracts	53.36	55.84	50.87	41.54	40.66	42.42	4.39	2.87	5.92	0.71	0.63	0.79	52.73	54.87	50.59	42.04	41.42	42.66	4.49	3.03	5.95	0.74	0.68	0.80

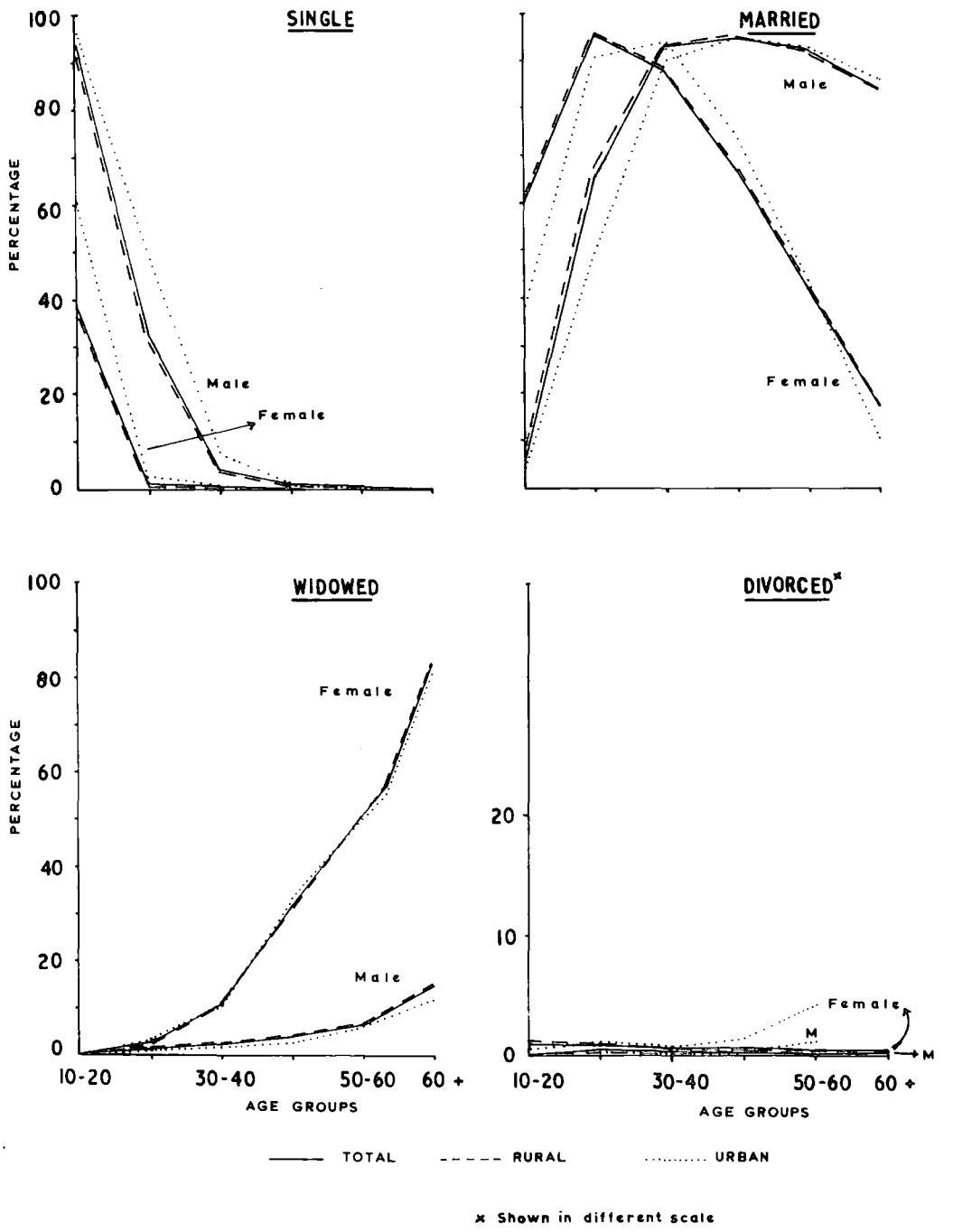
T - total, M - Male, F - female

Source: Calculated from Census of Pakistan, 1961, Bulletin - 3.

FIG. 4.2

East Pakistan

MARITAL CHARACTERISTICS BY AGE GROUPS AND SEX, 1961



these phenomena in an agrarian society tend to encourage the state of marriage with corresponding reduction in single population.

As noted in Figs. 4.3 and 4.4, the choropleth representation of the proportion of married is inversely related with that of single population. With a low range of distribution pattern in married population ($\bar{x}$ = 42.23, σ = 1.58), the factors involved in this regard are not very different from those in the single population.

However, the second group with medium-low proportions of single persons includes the districts of Khulna, Jessore, Kushtia, Mymensingh and Sylhet (below 50.85 per cent). Though they have high sex ratios (1070 to 1080), their effect on marital status is counterbalanced by the effect of low rural literacy of the Muslims (excepting Khulna) and the low level of urbanization (4.65 per cent), exerting a positive influence on the marriage rate, thereby lowering the proportions of single persons. The very high proportion of Hindus in Khulna (39 per cent) might have been encouraging more marriages in its population, lowering the proportion of single.

The remaining two groups have higher proportions of single persons with correspondingly low married populations, and include most of the districts of central and south-eastern East Pakistan, covering major parts of Dacca and Chittagong divisions (Figs. 4.3, 4.4). In these regions the level of urbanization, mean age of marriage and overall sex ratios are high, influencing negatively the proportions married.

FIG. 4.3

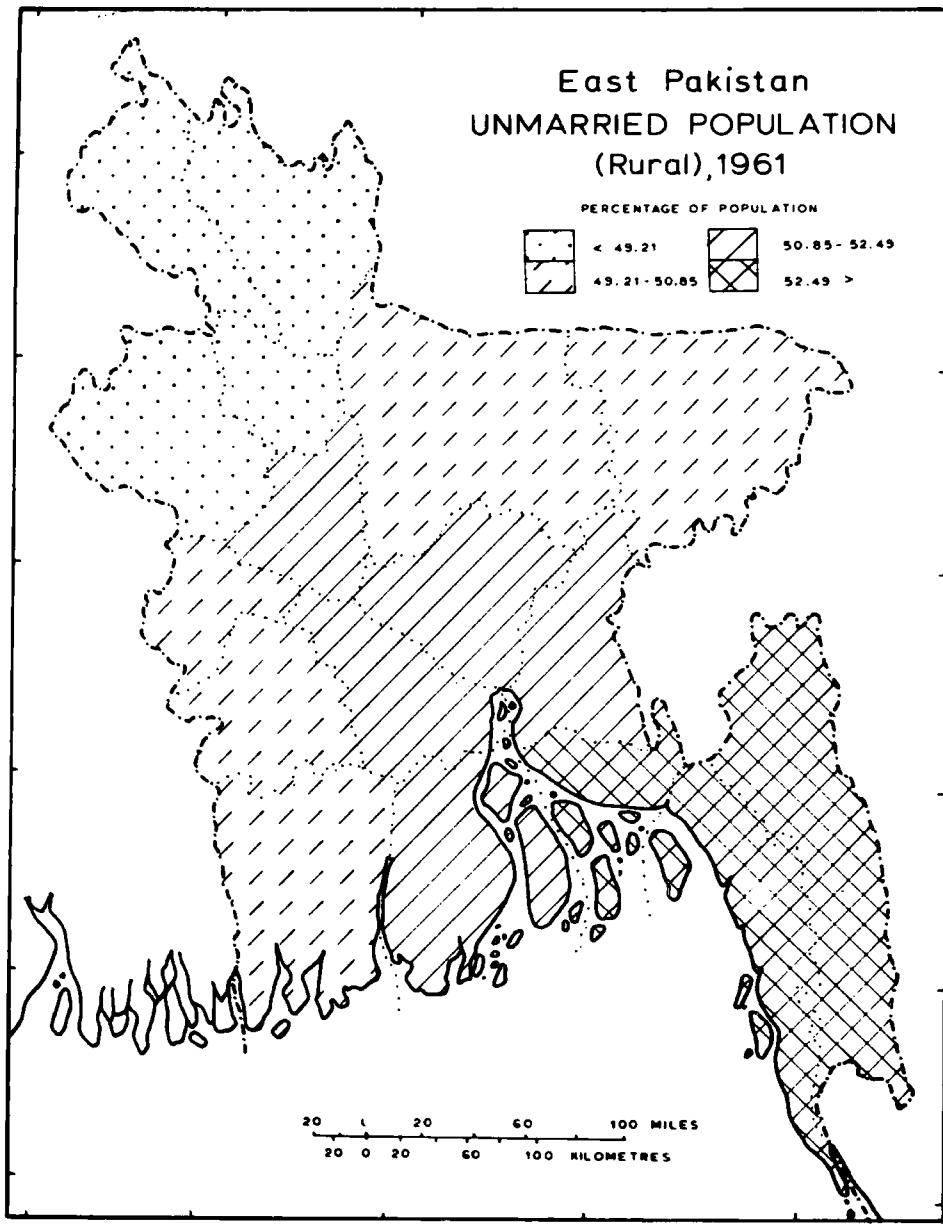
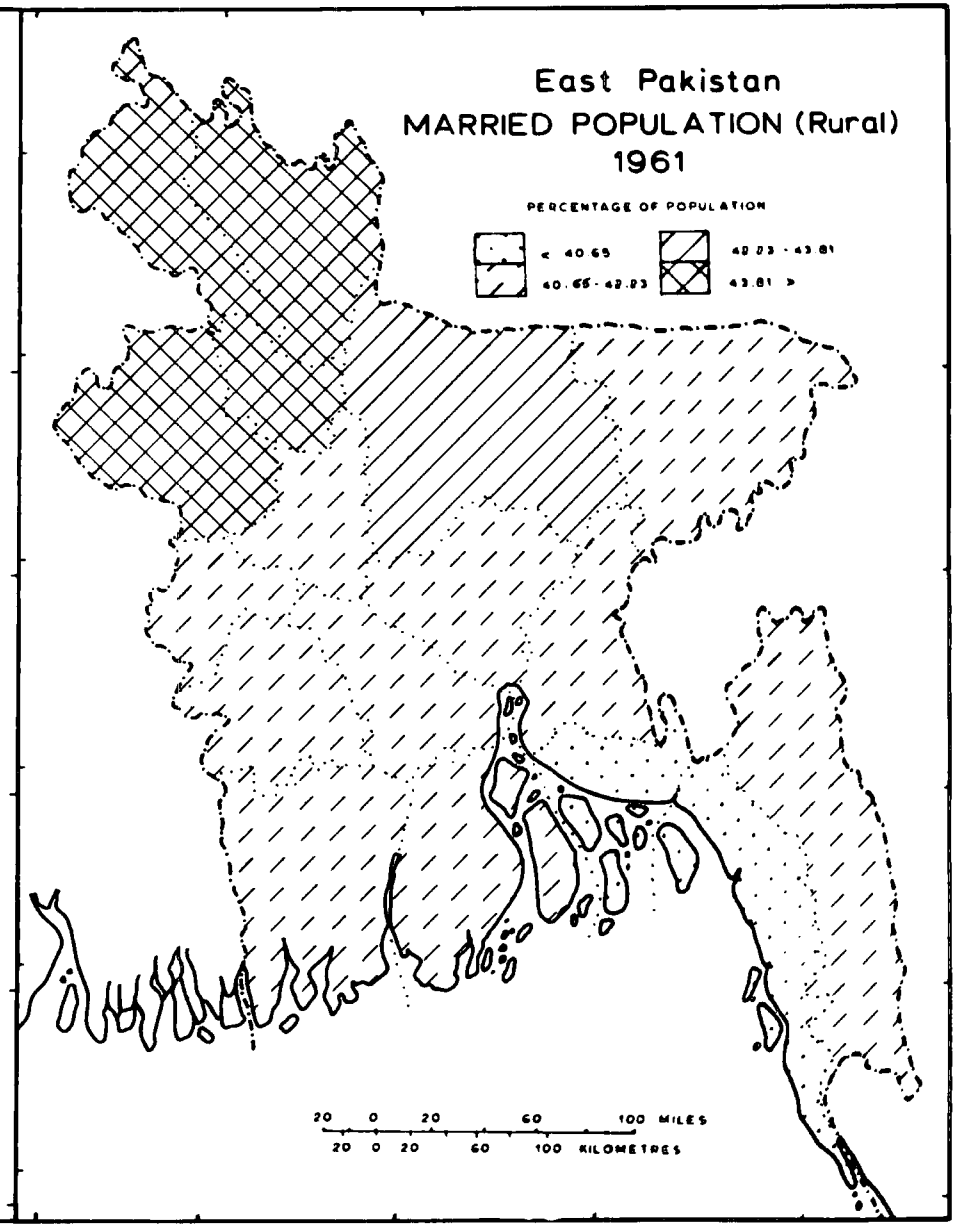

East Pakistan
UNMARRIED POPULATION
(Rural), 1961
PERCENTAGE OF POPULATION
< 49.21
49.21 - 50.85
50.85 - 52.49
52.49 >
20 0 20 60 100 MILES
20 0 20 60 100 KILOMETRES

FIG. 4.4


East Pakistan
MARRIED POPULATION (Rural)
1961
PERCENTAGE OF POPULATION
< 40.65
40.65 - 42.23
42.23 - 43.81
43.81 >
20 0 20 60 100 MILES
20 0 20 60 100 KILOMETRES

In Chittagong Hill Tracts, although the rate of urbanization is very low, the high proportion of single persons is explained by its very high rural sex ratio (1161 - highest in the province), and, as one would expect, the single population is dominated by males.

The regional distribution of the proportion of widowed is affected neither by the proportion of single nor that of married people. More explicitly it is distributed in a different pattern and is related more to religious and social factors, and is in most cases sex selective, due to the facts mentioned before. There are more widows than widowers in all the districts - in most cases they are 4 to 8 times more than the males. In general the greater the Hindu population the higher the proportion of widowed, giving a significantly positive statistical relationship between them ($r = +0.89$); excepting Kushtia where the Muslims are in absolute majority (96 per cent), and Chittagong Hill Tracts which is dominated by Tribal and Buddhist populations. While the proportion of widowed is inversely related with the distribution of Muslim population in the rural districts ($r = -0.87$). Besides the impact of religion on widowhood, its distribution is also related to the overall economic condition and degree of social prejudice against remarriage, particularly of widows, among all religious groups. Thus as noted in Fig. 4.5 representing the geographical distribution of widowed population ($\bar{x} = 6.68$, $\sigma = 0.62$), two districts, namely Chittagong Hill Tracts and Noakhali have the lowest proportion of widowed. They have also low proportions of Hindus. Unlike the Hindus, the Muslims and other religious groups favouring remarriage tend to lower the

proportion of widowed.

In the second group there are seven districts having widowed rates below the provincial rural average (Fig. 4.5). Assuming a uniform mortality condition in the districts, their medium-low widowed rate is the result of the religious outlook of the dominant population group.

The third group has medium high (above the provincial rural average) widowed rate and includes five districts peripheral to the second group (Fig 4.5). These districts have fairly high Hindu populations. In many of them, such as Sylhet and Chittagong, there are numerous upper caste Hindus who are altogether against the remarriage of widows. The Muslims might have been influenced by the same prejudice owing to their century-old coexistence in these districts. Three districts with the highest proportion of widowed (7 to 8 per cent) are Jessore, Faridpur and Khulna, and also have high Hindu populations (17 to 39 per cent) - mainly Caste Hindus. In this connection it should be noted that the towns in these districts also have high widowed rates.

High proportions of widows in all districts is the expression of sex-selective natural death. Once the females pass their child-bearing age period their exposure to death is greatly reduced below the natural deaths of males (see chapter III). This is found among all religious groups in both the residential areas in the province.

The majority of the rural districts registered divorce rates below the provincial average ($\bar{x}$ = 0.36, σ = 0.14). In contrast to the widowed population, the divorced population is

FIG. 4.5

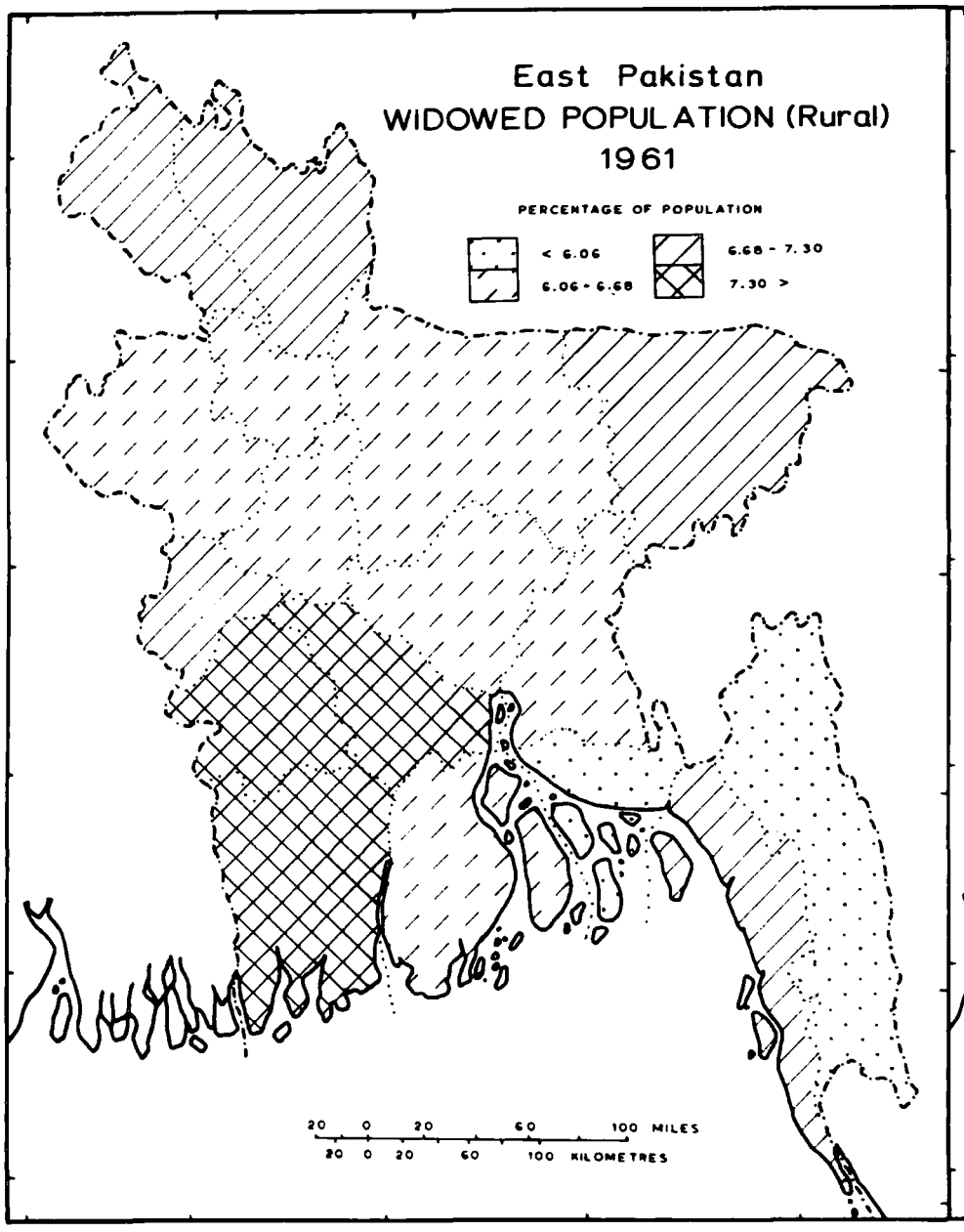
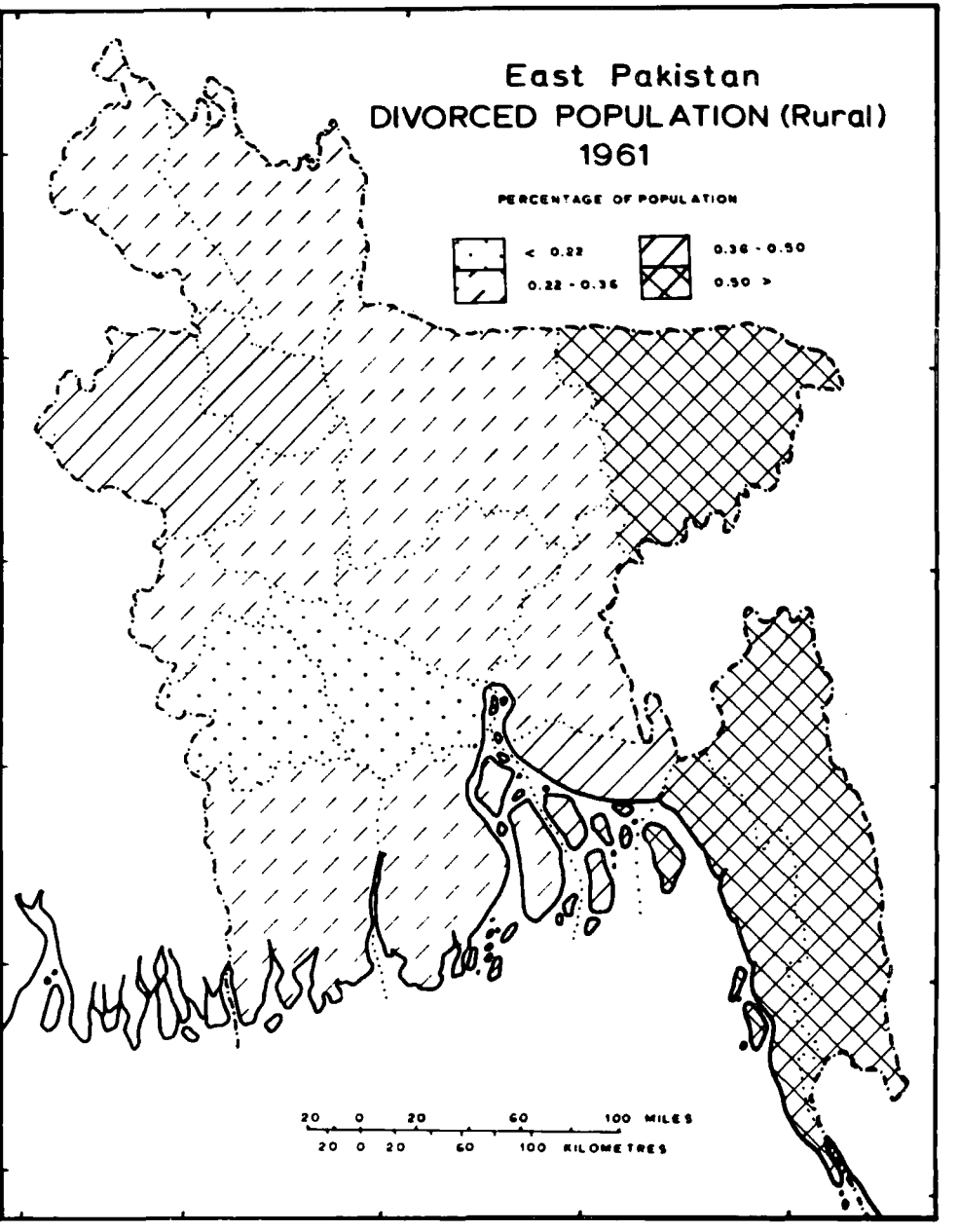

East Pakistan
WIDOWED POPULATION (Rural)
1961
PERCENTAGE OF POPULATION
< 6.06
6.06 - 6.68
6.68 - 7.30
7.30 >
20 0 20 60 100 MILES
20 0 20 60 100 KILOMETRES

FIG. 4.6


East Pakistan
DIVORCED POPULATION (Rural)
1961
PERCENTAGE OF POPULATION
< 0.22
0.22 - 0.36
0.36 - 0.50
0.50 >
20 0 20 60 100 MILES
20 0 20 60 100 KILOMETRES

not closely associated with any particular religious group. But there is some positive relationship between the female population and the divorced rates which is thought to be a universal phenomenon. The overall low proportion of divorced persons is roughly related to rural literacy and urbanization. Only six out of seventeen districts have divorced rates above the provincial rural average (Fig. 4.6). Almost all of them have very high proportions of Muslim population, and in Chittagong and Chittagong Hill Tracts the tribal population is quite tolerant to marriage dissolution which often is not followed by its reinstitution. Despite the high Hindu population, the high divorce rate in Sylhet is the result of the social impact of the Muslims and the tribal population.

Thus in rural areas, the patterns of marital structure are essentially the product of social, economic and religious factors which also equally affect other aspects of province's population.

MARITAL PATTERNS IN URBAN CENTRES

The general pattern of low proportions of married, widowed and divorced, and a high proportion of single persons in urban areas has already been mentioned (Fig. 4.2), but there is a wide range of variations among the towns. This is explained by the very low proportion of urban population in the province. Many urban centres lack absolute urbanism and quite a few lack urban demographic characteristics, so a well defined regional pattern by marital status, like total or rural populations is rather hard to identify in some of them. In many cases, as we shall see, they are influenced sometimes by factors other than the usual traditional and religious variables, such as the quality selective concentration of population in towns with respect to

age, literacy, education level and others. Urban dwellers are also less prejudiced by the traditionalism and socio-religious convictions of the general masses and have a more enlightened outlook on life.

The proportion of single persons is much higher in towns and the regional distribution falls within the range of $\pm$ 2 standard deviation ($\bar{x}$ = 54.78, σ = 1.85). Out of 37 selected towns 19 registered proportions of single persons below the total urban average, which included two types of towns:

a) old and highly settled towns including three of the four cities, and

b) small towns having low magnitude of functional diversity.

In the group (a)the cities of Khulna, Narayanganj and Chittagong, and the district towns of Jessore and few others are very old urban centres. Many of the population probably live with their families lowering the proportion of single persons (Table 4.3). Besides, they also registered very low proportion of population in the younger age groups (see Chapter II). This has also affected remarkably the proportions of single persons. In the second group, most of the towns possess some agrarian characteristics Netrokona, Nawabganj, Meherpur, Naogaon, Patuakhali, Madaripur, Manikganj and Magura. The others (including one declining towns Saidpur), such as Nilphamari, Serajganj, Brahmanbaria and Natore, are important collecting and distributing centres of agricultural goods and are small commercial towns within the close proximity of highly rural areas. The cost of living is influenced by rural areas and the accommodation problem is not serious - thus inviting large numbers of families from rural areas and thereby affecting the proportions of single to married persons in them

TABLE 4.8

Percentage distribution of population by marital status of selected urban centres, East Pakistan, 1961.

URBAN CENTRES	SINGLE			MARRIED			WIDOWED			DIVORCED		
	T	M	F	T	M	F	T	M	F	T	M	F
Rajshahi	56.57	61.19	51.89	37.87	37.19	38.57	5.29	1.50	9.09	0.27	0.12	0.45
Saidpur	52.68	56.78	48.59	42.16	40.87	43.42	5.00	2.16	7.84	0.16	0.18	0.15
Khulna	50.98	53.86	45.87	42.50	44.33	39.25	4.24	1.67	8.79	2.28	0.14	6.09
Barisal	55.10	57.07	53.13	39.38	40.98	37.78	5.20	1.77	8.64	0.32	0.17	0.44
Dacca	55.34	59.43	51.25	39.52	39.40	39.64	4.86	1.09	8.64	0.28	0.07	0.46
Narayanganj	51.20	52.63	49.77	43.37	45.92	40.82	5.05	1.35	8.75	0.37	0.09	0.65
Mymensingh	56.09	59.28	52.91	38.77	38.93	38.60	4.92	1.72	8.12	0.22	0.06	0.36
Chittagong	53.28	55.47	51.01	40.86	42.95	38.77	5.44	1.43	9.55	0.42	0.14	0.67
Comilla	55.78	59.83	51.73	38.75	38.74	38.77	5.04	1.22	8.87	0.43	0.20	0.62
Thakurgaon	56.50	60.30	51.59	39.08	37.50	41.01	4.05	1.78	7.10	0.37	0.42	0.30
Nilphamari	52.75	56.80	48.70	42.12	40.88	43.36	4.95	2.12	7.78	0.18	0.19	0.16
Rangpur	55.56	59.31	51.61	39.50	38.73	40.29	4.72	1.86	7.78	0.22	0.10	0.32
Gaibandha	55.32	60.97	49.67	38.84	37.77	39.91	5.53	1.19	9.88	0.30	0.06	0.54
Naogaon	53.40	58.16	49.20	40.41	39.50	41.52	6.02	2.20	9.06	0.17	0.13	0.22
Nawabganj	52.72	60.46	44.98	40.21	38.33	42.09	6.31	1.08	11.55	0.75	0.13	1.37
Natore	53.62	58.52	48.75	40.24	39.55	40.93	6.02	1.83	10.18	0.12	0.10	0.14
Serajganj	52.14	58.77	44.71	42.12	39.09	45.57	5.47	1.92	9.40	0.27	0.22	0.32
Meherpur	53.64	60.81	46.47	38.98	36.84	41.13	7.17	2.21	12.13	0.20	0.14	0.26
Jessore	53.26	55.40	49.87	34.38	42.82	29.19	12.13	1.64	20.58	0.23	0.14	0.36
Magura	54.70	60.74	48.61	38.84	37.50	40.21	6.19	1.65	10.73	0.27	0.10	0.44
Bhola	56.66	59.23	54.12	37.52	38.59	36.46	5.32	2.05	8.55	0.49	0.12	0.87
Patuakhali	54.08	57.72	50.43	40.07	40.10	40.05	5.61	2.05	9.18	0.23	0.12	0.34
Perojpur	54.16	59.90	48.36	39.17	38.30	40.20	6.48	1.80	11.04	0.18	(0.008)	0.40
Netrokona	52.65	57.58	47.74	41.46	40.34	42.58	5.74	2.06	9.39	0.15	0.01	0.29
Tangail	55.66	61.41	49.92	37.30	36.82	37.78	6.80	1.74	11.86	0.23	0.02	0.44
Manikganj	54.63	58.26	50.95	38.28	39.81	36.56	6.74	1.74	11.76	0.34	0.18	0.73
Munshiganj	59.39	63.24	55.56	34.56	34.34	34.79	5.86	2.37	9.35	0.18	0.04	0.30
Rajbari	54.12	58.80	49.45	39.18	38.79	39.54	6.43	2.24	10.63	0.26	0.16	0.37
Faridpur	55.51	60.07	50.14	38.18	37.71	38.74	6.03	2.08	10.70	0.28	0.14	0.42
Madaripur	54.47	59.92	49.08	38.53	37.92	39.15	6.75	2.09	11.37	0.24	0.07	0.39
Gopalganj	56.92	62.26	51.58	36.62	36.21	37.03	6.45	1.52	11.39	-	-	-
Sylhet	59.05	63.37	54.73	34.96	34.88	35.04	5.59	1.68	9.50	0.39	0.07	0.72
Habiganj	57.08	61.01	51.81	37.78	37.45	38.22	4.95	1.50	9.58	0.19	0.04	0.39
Brahmanbaria	54.64	61.69	47.55	39.14	36.89	41.40	5.96	1.34	10.58	0.26	0.07	0.46
Chandpur	55.06	58.11	52.01	39.70	40.26	39.14	5.01	1.59	8.50	0.23	0.03	0.34
Feni	55.54	59.09	52.00	39.60	39.69	39.51	4.43	1.19	7.68	0.43	0.02	0.80
Cox's Bazar	55.52	59.05	50.73	38.01	39.29	36.26	5.60	1.50	11.19	0.87	0.16	1.82

T - total, M - male, F - female

Source: Same as Table 4.7.

(Table 5.8).

The rest of the 17 towns and one city registered medium high to very high proportions of single persons in 1961 (54.78 to 60 per cent), with correspondingly lower married proportions (Figs. 4.7 and 4.8). Except Dacca city, they have a relatively youthful population - but not as youthful as a rural area. Most of the towns are important commercial and business centres and are undergoing fast change due to expansion of industries and other urban institutions. For instance, the towns of Chandpur, Feni, Bhola, Cox's Bazar and Gaibandha, though small, are important business and local administrative centres and some are also important river ports, while the district towns, such as Rangpur, Rajshahi, Mymensingh, Sylhet and Comilla are undergoing urban expansions since 1947. Again Gopalganj, Thakurgaon and Habiganj are small industrial centres. Until they attain a certain degree of urban stability in terms of function and definite structure, they will continue to draw a large number of single population - mainly males (Table 4.8) from other parts of the province resulting in high proportions of single and fairly low proportions of married persons within them (Figs. 4.7 and 4.8). Their overall high sex ratios and high single populations are reflected ultimately in their high mean age at marriage. The proportion of single population is also accentuated by scarcity of cheap accommodation in most of these towns, while a high proportion of single females compared to rural areas is the result of high literacy and other effects of urbanization. This also increases the mean age at marriage of the females in the urban areas.

FIG. 4.7

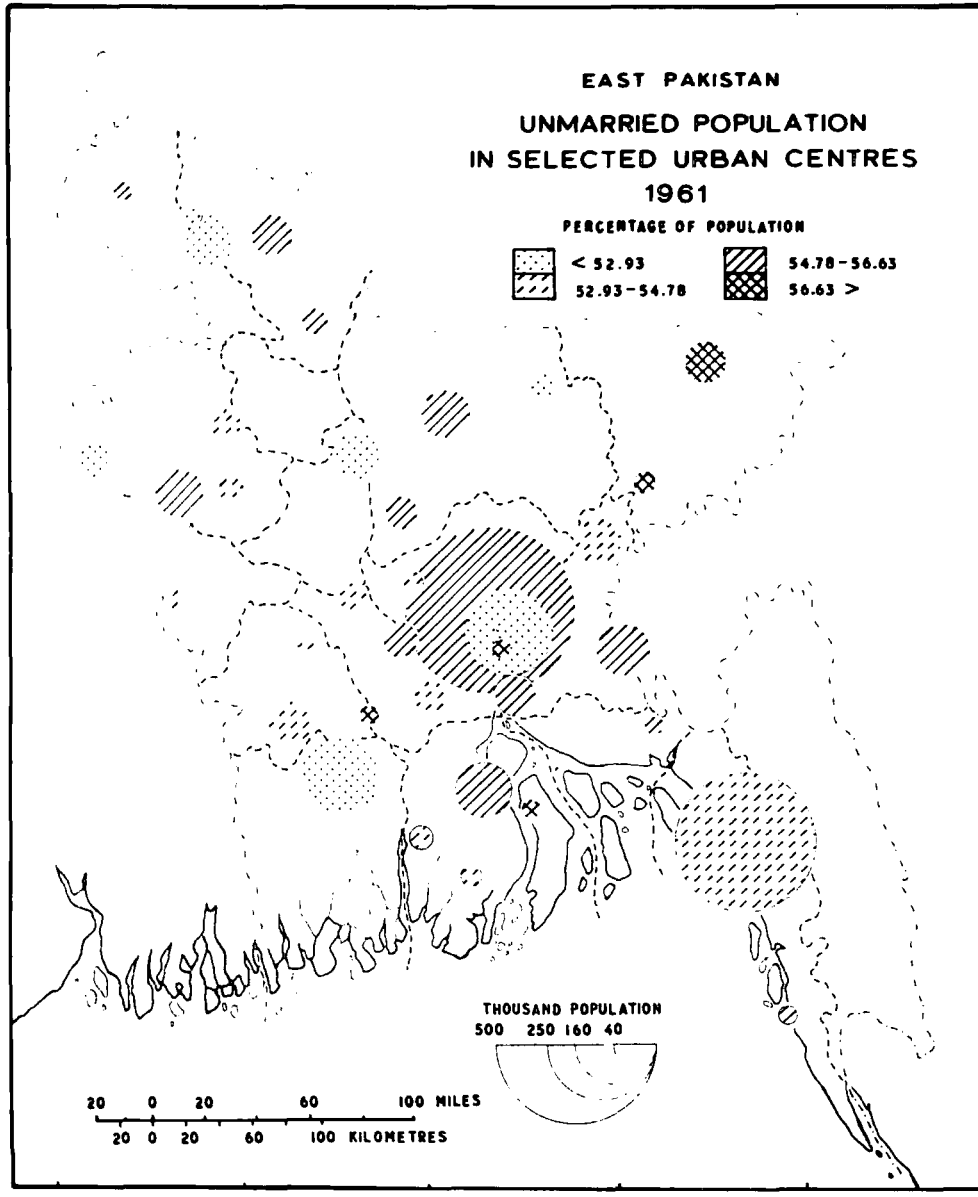
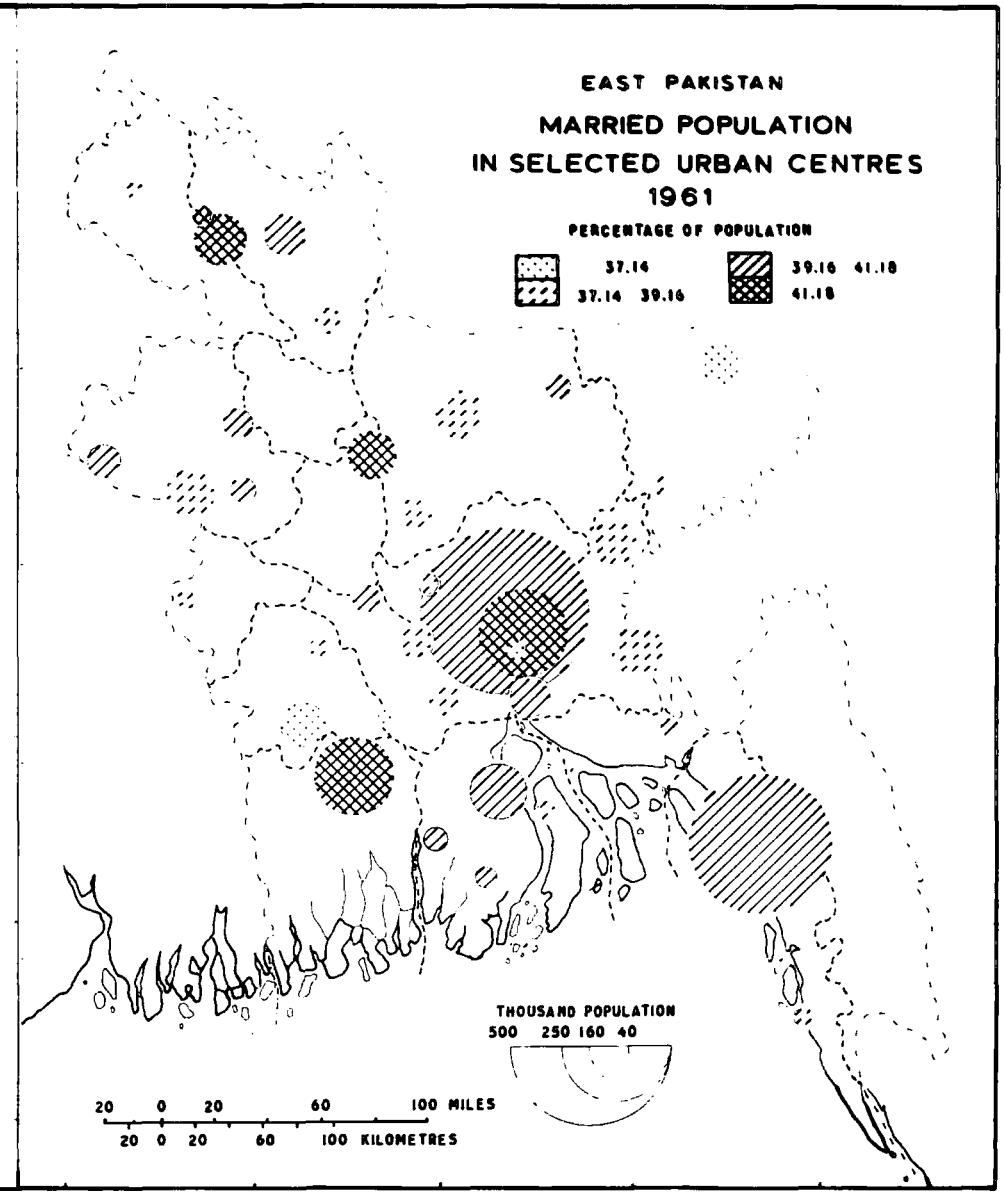

EAST PAKISTAN
UNMARRIED POPULATION
IN SELECTED URBAN CENTRES
1961
PERCENTAGE OF POPULATION
< 52.93
52.93-54.78
54.78-56.63
56.63 >
THOUSAND POPULATION
500 250 160 40
20 0 20 60 100 MILES
20 0 20 60 100 KILOMETRES

FIG. 4.8


EAST PAKISTAN
MARRIED POPULATION
IN SELECTED URBAN CENTRES
1961
PERCENTAGE OF POPULATION
37.14
37.14 39.16
39.16 41.18
41.18
THOUSAND POPULATION
500 250 160 40
20 0 20 60 100 MILES
20 0 20 60 100 KILOMETRES

In contrast to villages, the rate of widowhood is lower in the towns of East Pakistan owing to better health conditions, high literacy and partly to less difference between the ages of husbands and wives. The widowed population is also distributed in a well defined arrangement and is very often the concomitant of the degree of religious diversity in the population. Usually low to medium-low proportions of widowed people are found in the towns of northern, eastern and south-eastern East Pakistan. There are 22 towns in this group, and include almost all the district towns, all cities and the important commercial or industrial centres (Fig. 4.9). In most of these towns the proportions of Muslims are high (more than 70 per cent), which tends to exert a negative effect on overall widowhood by permitting remarriage; while high proportions of widowed (5.79 to 7.00 per cent and more) are found in the towns of west-central East Pakistan, where the proportion of Hindus is quite high, such as in Natore, Naogaon, Faridpur, Magura, Gopalganj, Madaripur and Perojpur (30 to 50 per cent). They are either medium or small sized towns (10,000 to 25,000 and 5,000 to 10,000 populations respectively), and in the 1961 census they were grouped under class III and IV urban centres.[15] In one district town (Jessore), and in Nawabganj, Madaripur and one eastern town of Brahmanbaria though the Muslim population is quite high, the high proportion of widowed, particularly widows, is the result of relatively high proportions of Caste Hindus who usually do not permit remarriage of widows.

The proportion of divorced in urban areas is lower than in rural areas, primarily owing to their enlightened social outlook and to the low proportion married in them. The divorced rate is

FIG. 4.9

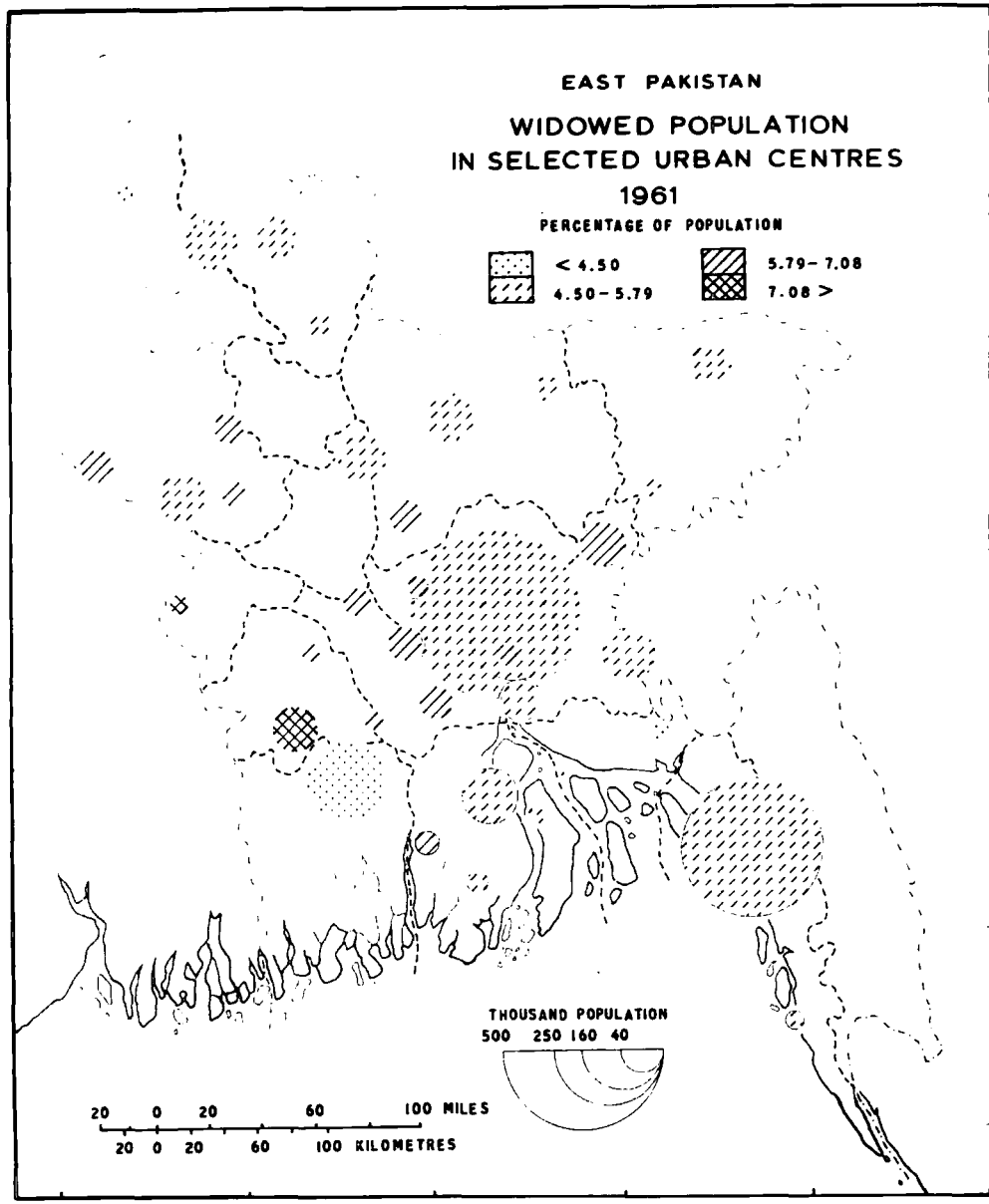
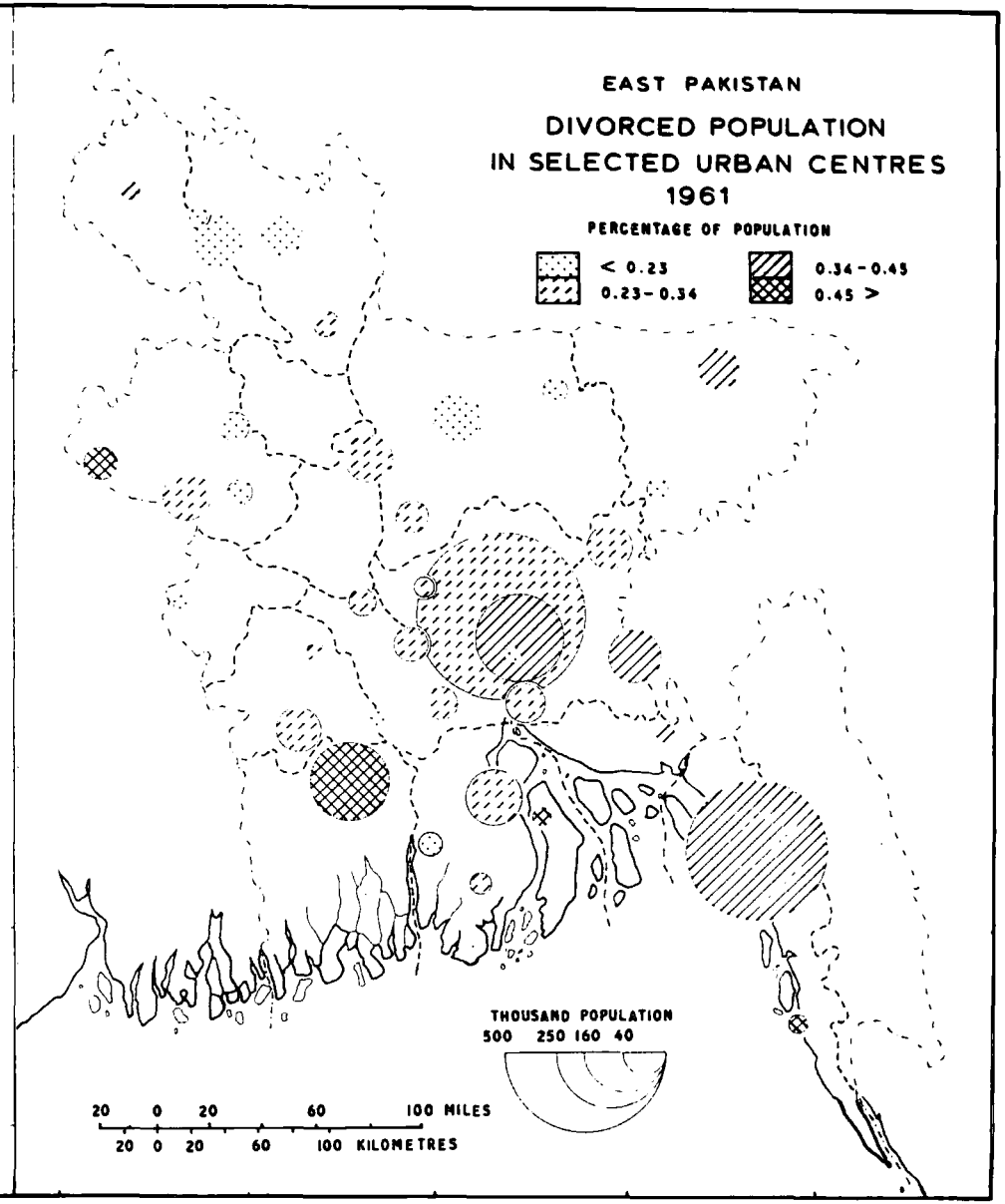


FIG. 4.10



roughly correlated with the size and nature of the urban centres, and in some cases with the proportion of Muslims. However, 27 towns have low divorced rates (less than 0.36 per cent), and include one city (Dacca), most of the district towns and other small towns: both subdivisional and commercial or trading towns (Table 4.10). Only 10 of the selected towns have divorced rates above the total urban average (0.36 per cent), and include three cities and seven towns, most of which are important business or commercial centres. In almost all of the towns the Muslim population is quite high (65 to 80 per cent), and where the Muslim population is low, the proportion of Hindu Scheduled Castes who practise marriage dissolution is rather high. The combined effects of these phenomena have led to high divorced rates in these towns (Fig. 4.10).

SUMMARY AND CONCLUSION

As evident from the preceding discussions, the marital pattern in East Pakistan is affected by three main conditions:

i) the youthfulness of the population, togetherwith high male preponderence (high sex ratio) and unbalanced age structure,

ii) general cultural and religious traditions favouring universal and early marriage on one hand, and limiting marriage dissolution on the other, and

iii) specific characteristics of religious beliefs and practices, literacy and urbanization affecting the social structure.

Consequently, the overall marital structure favours the condition underwhich large proportions of adults are married, thus influencing the high birth rate and related demographic phenomena.

Although the proportions of widowed (particularly the widows) have a certain limiting effect on overall fertility, the effect is rather offset because of their remarriage. As noted earlier, the divorce rate is too low to affect the total rate of reproduction, which again is tempered in most cases by their immediate remarriage.

Although there are certain effects of literacy and urbanization on the mean age at marriage and proportion married, they would not affect the overall reproductive rate of the population of East Pakistan, as their effects are still very local and cover only a limited population section. On the other hand, the basic family structure and socio-religious outlooks are unlikely to change soon - at least for a few more decades, until the society undergoes an intense change in attitudes and in its value systems with the elaboration of urbanization and expansion of mass literacy. Such an attitudinal shift is now being experienced by most of the urban areas of East Pakistan, and awaits further extension to rural areas. Such a change, would undoubtedly be of great benefit to lower the overall fertility rates and thereby to affect the high growth potential of the province's population, and would also lower the infant and maternal mortality rates. The cumulative social and environmental advantages of these phenomena would result in enormous improvement in the quality of future population.

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9. Ibid. P. 231.

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CHAPTER V

LITERACY AND LEVEL OF EDUCATION

Literacy presents one of the convenient indices of the level of development and socio-economic status of a country, for behind the level of literacy and education lie many of the geodemographic conditions of a society. This chapter deals with some of these conditions and indicates the relationship between literacy and population growth and structures in East Pakistan. Despite various socio-economic changes in the present century, the population of East Pakistan is still one of the least literate in the developing world (Table 5.1), a fact which is of immense importance for her future development.

STATISTICAL INFORMATION AND BACKGROUND The available data on literacy in Pakistan are quite good in quality and dependable for interpretation. But sometimes the scale by which the literacy is measured poses certain difficulties, which however are surmountable. For instance, "the ability to read any language" (no matter whether understanding it or not) was the minimum standard of literacy in the 1951 census[1], giving an abnormally inflated literacy for the province (24.73 per cent). On the other hand, only "..... persons who were reported as able to read and write, and able to read with understanding" were classified as literates in the census of 1961.[2] Thus the census of 1951 included a large number of people, especially capable of reading languages like Arabic, Persian etc. (whose role in the practical and professional life is almost nil) without understanding them, who were excluded from the 1961 census category. If the definition of literacy in 1951 is adjusted to the 1961 census, we may arrive at a refined rate of literacy for

TABLE 5.1

Percentage distribution of literates* in selected developing countries and East Pakistan, (1965-71)

Countries	Total	Male	Female
Albania[1]	72.00	82.00	63.50
Burma	60.00	84.00	36.00
Ceylon	72.00	81.00	63.00
Chile	85.00	90.00	80.00
India	27.00	34.00	20.00
Iran	23.00	30.00	15.00
Iraq	22.00	29.00	15.00
Mexico	70.00	75.00	65.00
Morocco	17.00	25.00	9.00
Sudan	16.00	23.50	7.00
Turkey	40.00	58.00	21.00
U.A.R.	22.00	34.00	10.00
Pakistan[2] - '61	19.22	28.00	9.30
West Pakistan[2] - '61	16.30	23.90	7.40
East Pakistan[2] - '61	21.54	31.45	10.65
- '71	27 to 30	-	-

* % of population 15 yrs. and over.

1. " " 9 yrs. " " .

2. " " 5 yrs. " " .

Sources: PRB, Washington, D.C. 1968,
Bogue, D.J. 1969,
Myrdal, G. 1968,
Census of Pakistan 1961 Vols. 2,3.

the former (16.07 per cent), which is comparable to the UNESCO definition of literacy, namely, "the ability to read with understanding and to write any language"[3]. Further it is in accordance with the definition of literacy in the censuses of the pre-Independence decades[4] under study (1901-1941).

SECTION A

DEVELOPMENT OF LITERACY IN EAST PAKISTAN

The literacy in East Pakistan is one of the lowest in South and South-East Asia and in the Muslim countries (Table 5.1). This has been the result of the long continued impact of social and Hindu Caste monopoly in education, rurality, poverty and traditionalism as well as lack of a practical and effective education system in the past.[5] Although education was encouraged during the Muslim period, through the establishment of "Maktabs" and "Madrasahs" (mostly attached to the Mosques) and the royal courts being the sanctuaries of poets, musicians and learned men, the whole system was essentially an elitist evolution in the sense that it mostly flourished in urban areas. Therefore, although this period implemented a re-orientation and breakthrough in the traditional system of learning it never served the purpose of mass education. Later this trend continued during most of the British period in Eastern India, and the educational status of the masses of Bengal (like any other part of Indo-Pakistan Subcontinent) was characterized as one of slow development, and the literacy rate was lower than any French or Dutch colonies in South East Asia.[6]

The present system of education in East Pakistan is essentially a legacy of the British administration of the last

centuries, particularly the late 19th century; with the exception that the development and expansion in the field have been faster. During 1918 to 1947, the Bengali Nationalists made "national education" a part of their movement for Independence and thus this period was one of experimental reorganization of education services through national language and by transforming the education departments to popular control.[7] After 1947, further development was enhanced when three more universities were added to the existing one in Dacca:at Rajshahi, Chittagong and Jahangirnagar in 1953, 1966 and 1970 respectively - one agricultural university in Mymensingh, one engineering university (part of it was an engineering college) in Dacca in 1961, and one post-graduate medical institute in Dacca in 1965-66. Further, four more universities (including one agricultural and one engineering university) are to be set up by 1980. Besides, there are eight (including two to be opened in 1970-71) medical colleges, seven of which were established in post-Independence decades. In the field of primary and secondary educations the progress has however been slow because of various demographic, administrative and operational reasons. But almost all of the existing schools have been developed and expanded, and by 1967 four public schools, and seven comprehensive high schools, on a new model, were added to the existing ones.[8] In addition, the degree colleges have been affiliated to the universities of East Pakistan depending on their geographic locations, and most of the private colleges (at least one in each district and in some subdivisions) have been provincialized to be administered by the Education Directorate of the Government of East Pakistan. Nevertheless, it must be admitted that the educational level and expansion in the province

are still in their infancy, which are reflected in the overall low literacy rate.

Unfortunately, the population of East Pakistan being very young and the school-population expansive, due attention has not been paid to elementary education. For instance, the increase in the number of elementary schools has not been proportional to the increase in the enrolments. Between the period 1950-51 and 1965-66 the number of primary schools increased from 26,352 to 27,730, while the enrolment from 2.29 million to 4.24 million. The respective figures for secondary schools and enrolments were 3,507, 3,960, and 514,512 and 949,78.[9] They clearly indicate the slower development in the school facilities despite the massive increase in enrolments. Both the Constitutions of Pakistan of 1956 and 1964 (now abrogated)[¤], and the new education policy of 1969-70 (Appendix 4) admit the constitutional right of universal free primary education and the administrators responsible in this respect calculated a 70 per cent enrolment of the young population in the primary classes by 1970, and 100 per cent in the secondary classes by 1985,[10] which at present seem unlikely. Besides, the formulation of compulsory primary education (to be achieved by 1975), first for the five years of education and then extending to eight years,[11] has not materialized in a true sense. This is because, in practice, for the majority of the primary students primary education is complete

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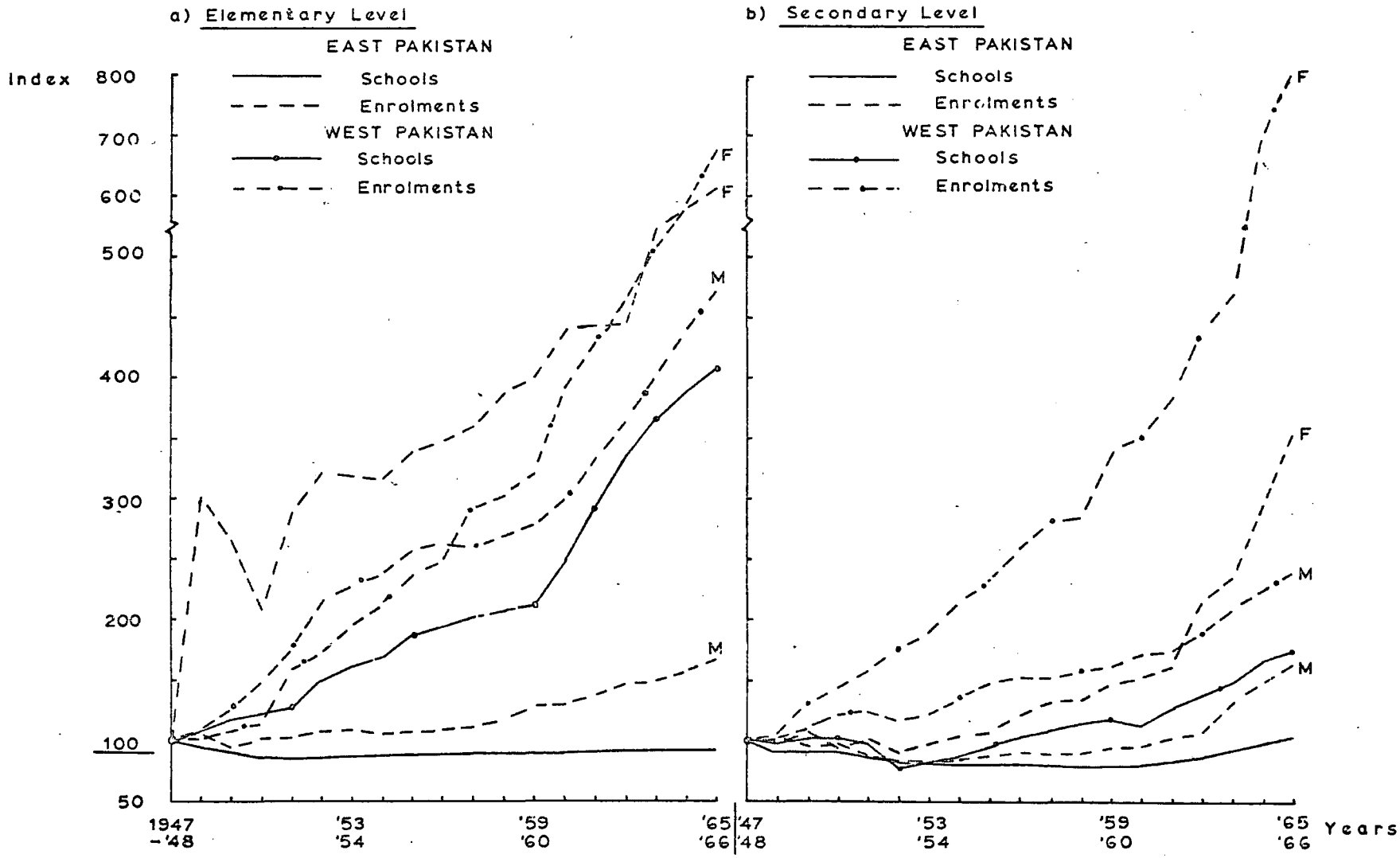
¤ Constitutional basis of elementary education - Policy and Administration:

1. Article 28(b): "The state shall endeavour to remove illiteracy and provide free and compulsory education within the minimum possible period". (Constitution of Pakistan).
2. Primary education in East Pakistan will be governed by:
   a) Bengal Primary Education Act, 1919, as amended in 1952;
   b) Bengal (Rural) Primary Education Act, 1930, as amended by the East Bengal Act, XX of 1951; and
   c) East Bengal Ordinance, XVIII of 1951.

in itself as they leave school prematurely to take up a vocation. But for those primary school leavers (who are in increasing proportion since 1947) who go for secondary education and for whom the primary course is closely related to the secondary one, the number and distribution of secondary schools is not at all sufficient, and are not proportional to the increase in enrolment. These aspects of elementary education have been elaborated in section B of this chapter. In contrast to East Pakistan, the trends in the expansion of elementary schools have been highly positive in West Pakistan[12] (Fig. 5.1). Inequality in the duration of compulsory education between the two wings of Pakistan has also exerted a certain retarding influence in the spread of elementary education among the masses of the eastern part. Again, education expansion, though related to the commitment of the Central Government, is primarily a provincial matter and hence implementations of specific projects involving capital expenditure are not always possible out of its limited funds.[13] The present educational expenditure in Pakistan is less than 2 per cent of the G.N.P., which is much lower than the UNESCO recommendation (4 per cent), but in the Fourth Five Year Plan period (1970-75) it is expected to be about 3.6 per cent. Again only a very small amount of the expenditure incurred by the Central Government on education is allocated to East Pakistan - most is spent in the other wing. Therefore, unless capital investment is increased for this sector in East Pakistan the target of achieving universal enrolment in elementary schools may not be realized in the near future. The shortfall is likely to be a persistent phenomenon because of two facts, namely, the infant and child mortality is dropping very quickly, and the birth rates, as mentioned earlier

FIG. 5.1

INDICES OF ELEMENTARY SCHOOLS AND ENROLMENTS
IN THE PROVINCES OF PAKISTAN, 1947/48—1965/66
(1947/48 = 100)



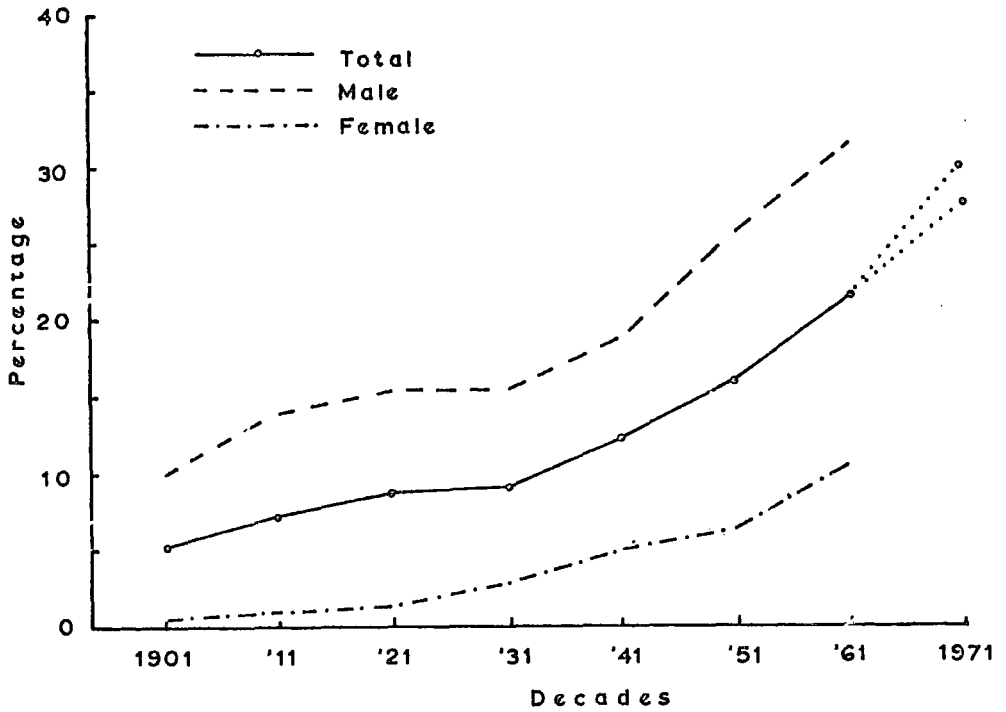
M - male, F - female

will continue to be high for at least some more decades, thereby supplying more population in the school-age groups at the end of the century.

Table 5.2 and Fig. 5.2 give the growth of literacy in East Pakistan. In 1901, the total literacy was a little over 5 per cent. The increase in literacy has been slow until 1921-31 due to the combined consequences of poverty, slower rate of educational development in the past centuries, differing attitudes of the people, and to the famine and epidemics from which this part of India suffered most. The next decades (1931-1961) are marked by an accelerated growth in the literacy rate, when it reached 21.54 per cent in 1961, from 9.09 per cent in 1931. That means, the increase in the literacy rates during the first three decades ending 1931 was about 74 per cent, while for the next three decades it was about 126 per cent (or 60 per cent between 1947 and 1961). Such a phenomenal increase, even in a situation of political instability in East Bengal during 1930-47, had been due mainly to regeneration of the Bengali middle-classes and to the change in their outlook. This change would have been greater if in the mean-time many of the Hindu teachers had not migrated to India immediately after Independence, creating a sudden vacuum in the academic field of the province. The situation could not immediately be met, because of shortage of trained and experienced teachers. The problem appeared to be acute as the areas now forming East Pakistan have been more rurally inhabited by conservative Muslims who were also mostly illiterate. This was again aided by certain demographic consequences; the proportion of children increased by more than 45 per cent between 1951 and 1961,[14] a massive numerical addition

FIG. 5.2

LITERACY IN EAST PAKISTAN,
1901 — 1971



of population for which adequate schooling was not immediately possible. For instance, there had been an increase of more than 40 per cent in enrolment in the primary classes during this period, with only 1 per cent increase in the schools. While for the rest of Pakistan the respective figures for the same period were 123 per cent and 92 per cent (see also Section B). This explains the over-crowded nature (and open-air classes) of primary schools in East Pakistan. The same picture was also noticeable with respect to the enrolment and establishment of secondary schools (Appendix 5). Such a disparity in the establishment of schools might have affected the literacy rate in East Pakistan in a negative manner. On the other hand, because of the practical absence of adult education, elementary education is the main concomitant of functional literacy in the province. Therefore, the former needs appropriate attention for the expansion of literacy.

TABLE 5.2

Percentage distribution of literates* in East Pakistan, 1901-1961, and its projection upto 1980-81.

Years	Total	Male	Female
1901	5.17	10.00	0.55
1911	7.45	13.90	1.00
1921	8.81	15.35	1.73
1931	9.09	15.45	2.89
1941	12.06	18.80	5.00
1951[1]	16.07	25.80	6.32
1961	21.54	31.45	10.65
1970-71 (Est.)	27.00 to 30.00	-	-
1980-81 (Est.)	36.00 to 40.00	-	-

* Per cent of population aged 5 yrs and over.

1 Adjusted to 1961 Census and UNESCO definition of literacy. Figures without adjustment are: 21.11, 11.30 for total and female respectively.

Sources: Census of India, 1901-1941, (5 vols. on Bengal).

Census of Pakistan, 1951, Vol. 3.

Census of Pakistan, 1961, Vol. 2.

GEOGRAPHICAL DISTRIBUTION OF LITERATES IN EAST PAKISTAN

The literates in East Pakistan are not uniformly distributed. From the beginning of this century the central districts of East Pakistan, namely Kushtia, Pabna and Mymensingh and one south-eastern district, namely Chittagong Hill Tracts have registered low literacies and slow percentage change throughout the decades. In general, two northern districts of Dinajpur and Bogra and the south-central districts of Khulna, Barisal, Dacca, Comilla and Noakhali togetherwith Chittagong have always had

a high literacy rate in the province, because of their greater concentration of elementary schools.[15] The districts with low literacy rates have long been the economically depressed regions of Bengal; in particular Kushtia, Pabna (and Faridpur) have long been populated by Muslim cultivators without facilities for education.[16] Besides, their conservatism and indifference towards modern education might have caused low literacy in the past and that is also reflected in the present time. The low literacy in Chittagong Hill Tracts is easily traceable. The physiographic diversity of the district inhabited by tribal-nomadic people is by far the immediate cause of its low literacy. Until recently, the majority of people were not keen on education and habitually lived on a subsistence system of shifting cultivation under a primitive way of life. These people constituted 73 per cent of the total population of the district in 1931 and 78 per cent (including Buddhists) in 1961. The impact of their habitat and cultural norm explain the low literacy even at the present time, although it is changing very fast.

Despite the local variability mentioned above, the regional distribution of the literates in East Pakistan falls within the range of ± 2 standard deviation ($\bar{x} = 21.37$, $\sigma = 3.84$ for total literates, and $\bar{x} = 10.22$, $\sigma = 2.54$ for females; male literacy closely follow the total). Amongst the districts having high and medium-high literacy, Khulna ranks first with 27.19 per cent literates, followed by Chittagong, Dinajpur, Comilla, Barisal, Dacca, Noakhali and Bogra (Table 5.3). In these districts both male and female literacies are also high. For male literacy, Dinajpur ranks first (40.16 per cent), followed by Khulna, Chittagong, Noakhali and Comilla; and the lowest is Kushtia

TABLE 5.3

Percentage distribution of literates* of East Pakistan by districts, 1911-1961.

	1911			1921			1931			1941			1951			1961		
	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F
EAST PAKISTAN	7.45	13.90	1.00	8.81	15.35	1.73	9.09	15.45	2.89	12.06	18.80	5.00	16.07	25.80	6.32	21.54	31.45	10.65
Dinajpur	6.93	12.54	0.45	9.00	16.05	0.97	7.43	12.96	1.11	9.74	-	-	17.90	-	-	25.89	40.16	9.47
Rangpur	4.92	8.89	0.38	6.79	12.09	0.76	6.87	11.95	1.16	12.68	-	-	14.60	-	-	18.86	29.09	7.51
Bogra	7.05	13.10	0.55	9.89	17.89	1.27	11.20	19.12	2.72	15.73	-	-	18.80	-	-	23.04	32.17	10.93
Rajshahi	5.42	9.98	0.58	6.16	10.87	1.05	7.71	12.66	2.16	13.22	-	-	14.10	-	-	19.95	29.66	9.58
Pabna	6.50	11.81	0.88	7.62	13.41	1.72	7.04	11.68	2.10	11.20	-	-	14.50	-	-	17.08	24.12	9.56
Kushtia	6.54	11.40	1.60	7.31	12.00	2.34	6.85	10.77	2.63	10.24	-	-	10.80	-	-	15.42	22.40	7.65
Jessore	7.97	14.40	1.10	8.62	15.05	1.60	7.62	12.67	2.04	12.16	-	-	14.30	-	-	20.74	31.12	9.21
Khulna	9.86	17.58	1.27	12.23	19.19	1.94	10.01	16.82	2.37	14.59	-	-	20.10	-	-	27.19	39.02	13.77
Barisal	9.94	17.99	1.34	13.38	23.43	2.61	14.41	24.42	3.73	18.35	-	-	20.70	-	-	24.78	35.17	13.64
Mymensingh	5.52	9.95	0.65	6.11	10.26	1.21	7.67	11.86	3.01	10.89	-	-	13.10	-	-	17.25	24.78	8.89
Dacca	11.21	15.78	1.95	9.90	16.71	2.70	10.85	16.82	4.60	14.59	-	-	16.50	-	-	23.00	32.22	12.50
Faridpur	7.29	13.22	1.21	9.10	15.63	2.20	9.10	14.89	2.97	13.03	-	-	16.10	-	-	17.79	26.83	8.17
Sylhet	6.29	11.45	0.76	-	-	-	-	-	-	11.85	-	-	17.30	-	-	20.04	29.17	10.01
Comilla	8.38	15.37	0.90	10.15	17.95	1.79	9.26	16.48	1.51	15.45	-	-	19.30	-	-	24.83	36.23	12.72
Noakhali	7.37	14.16	0.69	8.94	16.70	1.09	13.09	23.03	3.13	24.12	-	-	17.30	-	-	24.72	36.55	12.54
Chittagong	7.99	15.85	0.85	8.38	16.02	1.32	10.39	18.20	3.10	15.86	-	-	20.13	-	-	26.40	38.20	12.77
Chittagong Hill Tracts	7.45	13.28	0.52	6.36	11.25	0.55	4.95	8.63	0.55	4.92	-	-	6.60	-	-	15.30	24.20	3.92

* Per cent of population aged 5 years and over.
Figures by sexes for 1941 and 1951 are not available

Source: Same as Table 5.2.

(22.40), followed by Chittagong Hill Tracts and Pabna. With respect to female literacy, (Fig. 5.4) Khulna ranks first (13.77 per cent), followed by Barisal and Chittagong; and Chittagong Hill Tracts registered the lowest (Table 5.3). In general, the districts with high literacy rates (both male and female, and above the provincial average) are those having better economic conditions with a relatively large Hindu population, particularly in the pre-Independence decades, with a large number of elementary schools as in Bogra, Khulna and Dacca, and also those which are more urbanized and industrialized or commercially important, such as the above districts and Comilla, Barisal and Chittagong. But this does not mean that the overall literacy in East Pakistan is essentially related to urbanization and industrialization, as by a regressional analysis the coefficients were found to be statistically non-significant. The reasons for this character have been elaborated elsewhere.

DIFFERENTIAL LITERACY IN EAST PAKISTAN

In East Pakistan there are great differences in literacy between sexes and between different religious groups as well as between the two main residential areas (urban and rural). All of them are more or less interrelated to each other to account for the low literacy in the province.

A) SEX DIFFERENTIALS IN LITERACY - As in many other Muslim countries, female education in the modern sense has always greatly lagged behind the males in East Pakistan. Tables 5.2, 5.3 and 5.4, and Fig. 5.2 represent the comparative pictures of male and female literacies. During 1901-21 most of the literates were male, females accounting for less than 2 per cent (Table 5.2). More precisely, in 1911, 13.90 percent of the male population

aged 5 and over were literates. The corresponding figure for the female was only 1.00 per cent. The situation did not change until 1931, when the female literacy reached 2.89 per cent. It is since 1941 that the change has been remarkable, female literacy reaching 6.32 per cent in 1951, while the male literacy was 25.80 per cent. The trend was maintained in the subsequent decades and in 1961 the respective figures became 10.65 and 31.45, but still, the female literacy has not reached even 50 per cent of the males.

The factors responsible for low female literacy in the province are many, and they evolved very slowly - particularly during the past few centuries to be embodied in the characteristic conservatism of the society, in which housekeeping is the main occupation of the females for which formal education is not essential. On the functional side, when the modern system of education came into existence, and the traditional Maktabs, Madrasahs and Pathshalas were degenerating, girls who were unable to continue their education for such a long time slowly withdrew from participation. Moreover, this was again particularly correlated with the traditional low age at marriage of the females in the province. The coefficient of correlation between mean age at marriage of the females and their literacy (1901-1961) was found to be highly positive (+0.877). Early marriage in all communities has put the young girls in such a vicious circle that their childhood is spent in a domestic training and religious preparation for marriage only, where the place of formal education seems to be irrelevent. The whole system gradually became ubiquitous in a society of elaborate practice of female seclusion, when it was confronted with the insufficiency of

female schools and lack of female teachers - particularly in the rural areas.

TABLE 5.4

Percentage distribution of Literates* by religious groups and sex, East Pakistan, 1911-61.

Years	Muslim			Hindu			Others		
	T	M	F	T	M	F	T	M	F
1911	4.71	8.46	0.21	13.29	23.81	2.30	5.40	9.89	0.98
1921	5.83	10.76	0.53	14.66	26.00	3.81	6.18	7.31	1.07
1931	6.48	11.34	1.59	15.32	26.44	4.62	6.53	9.02	2.88
1941	9.80	-	-	18.00	-	-	9.88	-	-
1951	13.84	21.78	5.90	23.05	36.90	9.20	13.16	21.00	5.00
1961	21.24	30.16	11.82	26.44	39.00	13.85	15.80	24.90	6.68

T - Total, M - Male, F - Female

* Percentage of population aged 5 yrs and over.

Sources: same as table 5.2.

Sometimes the "Purdah" system prevalent in the Bengal societies, mostly among the Muslims, is criticzed for being one of the variables of the backwardness of female education. To a certain extent this is true, though there is no Quranic sanction for this practice (Quran, XXIV - 31); it was more prevalent by weight of customary force, accentuated by the immense influence enjoyed by the religious leaders. In fact, the Islamic precepts put emphasis on learning for both males and females.* It was

---

* In the Hadith the Prophet declares: "Seeking Knowledge is the duty of every male and female Muslim," Elsewhere he mentions: "Seek knowledge even it is (as far as) in China". (ref. Al-Ghazali, Bali-al-Ilm, tr. Ihya-Ulmal-Din).

during the 18th and 19th centuries that the "Mullahs" and some orthodox religious leaders misinterpreted and misused the religious precepts to safeguard the Arabic-Persian education in indigenous schools and to discourage the expansion of English education. The effect turned out to be low literacy and the masculine tradition in educational institutions. The social practice in this regard has become so deep rooted that in most parts of India and Pakistan there are, even today separate schools and colleges for boys and girls and parents prefer to send their daughters to the institutions exclusively for females as a matter of observance of "Purdah". And where co-education is prevalent a strict rule of conduct is maintained.

On the technical side, education in earlier times did not attract females for it was intended only for male vocations. Female educational developments with respect to medicine, domestic sciences, fine and liberal arts, and music, are of very recent origin in East Pakistan. Although there exists the general segregation of females in education, co-education is widely prevalent in lower stages (primary classes), and in higher stages, namely in the Universities and many of the colleges, in later cases, where female colleges are limited and/or accommodation insufficient.

Among the different communities, Hindu females have the highest literacy rate (Table 5.4), as the Hindus welcomed modern education before any other communities. There is little difference in literacy between the Muslims and 'others', though in the former the change has been faster. In the province in general, the Muslim female literacy between 1911 and 1961 increased from 0.21 to 11.82 per cent and that of males from 8.46 and 30.16

per cent respectively. During this period the Hindu female literacy increased from 2.30 to 13.85 per cent and that of male from 23.81 to 39.00 per cent (Table 5.4). In the 1951-61 decade the absolute increase in the Muslim literacy (both sexes) has been greater than the other religious groups, but it has not yet surpassed that of the Hindus, who are still the most literate in the province.

Among the districts, the female literacy characteristically accounts for less than half the males in all decades (Table 5.5). Besides, in the districts where the male literacy is high, the females are found to be more literate. This is because of the varied level of social change affecting the districts, as well as the relative inclination and opportunity of the sexes to obtain education. Fig. 5.4 gives the regional distribution of female literates for 1961, which indicates a close relationship with the ~~total~~ in Fig. 5.3.

B) RELIGIOUS DIFFERENTIALS IN LITERACY - A cursory glance with respect to religious differentials in literacy has been given in the above discussion. The differences resulted from differing opportunities of and responsiveness to modern education by various religious groups in the past. At first, the Muslims showed aloofness towards modern and English education, while the Hindus advanced. Consequently, the state of education during the last century in the Muslim majority districts of East Bengal was very disappointing (Appendix 6). This was intensified by the lack of Muslim institutions in many of the districts, such as Dinajpur, Rangpur, Mymensingh, Barisal, Dacca, Rajshahi and a few others.[17] On the other hand, the higher classes of Muslims disliked Sanskrit-based curricula in schools and the association

FIG. 5.3

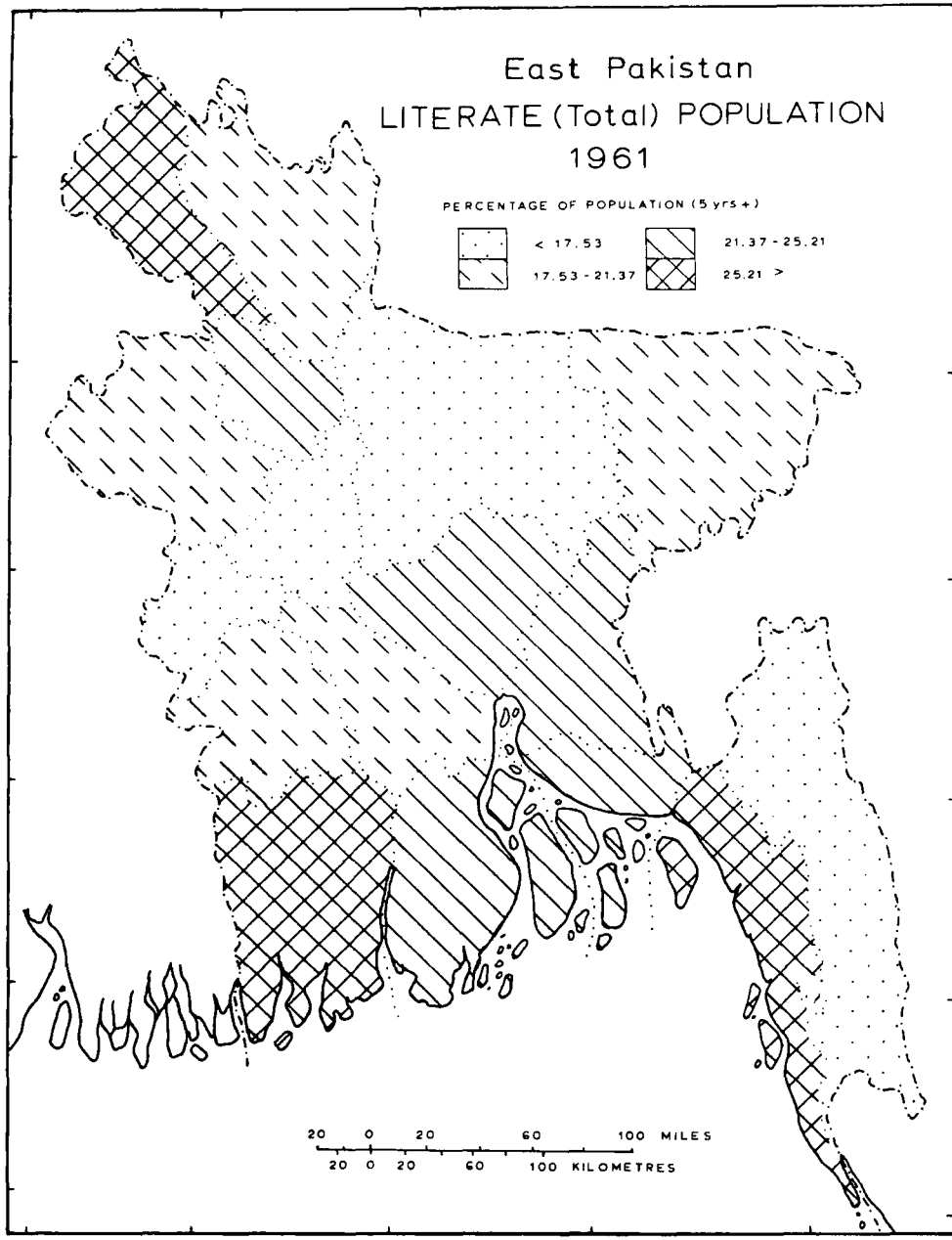

East Pakistan
LITERATE (Total) POPULATION
1961
PERCENTAGE OF POPULATION (5 yrs +)
< 17.53
17.53 - 21.37
21.37 - 25.21
25.21 >
20 0 20 60 100 MILES
20 0 20 60 100 KILOMETRES

FIG. 5.4

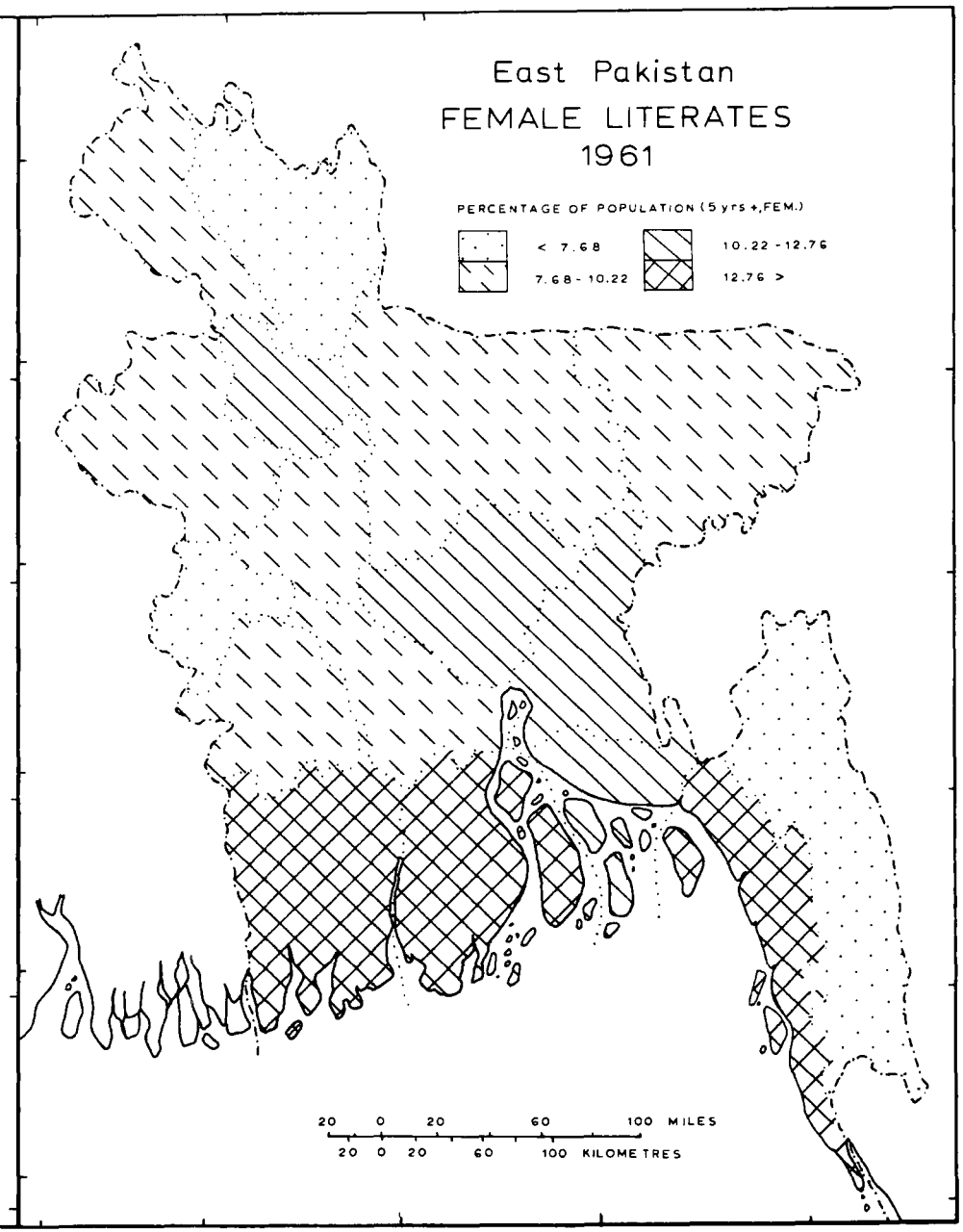

East Pakistan
FEMALE LITERATES
1961
PERCENTAGE OF POPULATION (5 yrs +, FEM.)
< 7.68
7.68 - 10.22
10.22 - 12.76
12.76 >
20 0 20 60 100 MILES
20 0 20 60 100 KILOMETRES

TABLE 5.5 Percentage distribution of literates* by religious groups and sexes by districts, East Pakistan, 1911 - 1961.

Districts	1911						1921						1931					
	MUSLIM		HINDU		OTHERS		MUSLIM		HINDU		OTHERS		MUSLIM		HINDU		OTHERS	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Dinajpur	14.56	0.32	11.87	0.63	0.25	-	19.20	0.83	14.74	3.86	0.41	0.02	15.71	0.99	10.85	1.28	0.45	0.16
Rangpur	5.32	0.14	12.32	0.79			9.59	0.36	16.84	1.56			9.86	0.72	16.68	1.60		
Bogra	11.51	0.19	20.29	1.90			16.12	0.74	26.41	3.97			17.97	2.25	24.54	5.06		
Rajshahi	7.24	0.11	19.77	2.39			8.01	0.29	21.74	3.86		-	10.65	1.42	26.20	4.77	0.77	-
Pabna	6.79	0.18	25.78	2.90			7.86	0.42	30.71	4.82			7.17	1.24	26.49	4.79		
Kushtia	5.13	0.13	20.51	3.45			4.86	0.51	22.92	4.87			5.28	0.63	19.58	5.67		
Jessore	8.76	0.21	23.78	2.44			9.42	0.65	24.36	3.04			7.47	0.74	21.30	4.08		
Khulna	10.92	0.27	24.25	2.21			14.73	0.55	28.06	3.24			11.72	1.04	21.76	3.59		
Barisal	11.45	0.24	32.59	3.64			15.66	0.63	41.62	7.00		-	14.68	1.65	32.92	8.39		
Mymensingh	5.52	0.13	21.85	2.09	1.35	0.03	6.01	0.35	23.06	3.79	3.46	0.37	8.62	2.26	21.88	5.31	11.34	7.18
Dacca	7.37	0.28	30.86	4.65			8.28	0.53	32.66	7.07			10.86	2.95	28.65	7.55		
Faridpur	5.13	0.15	26.85	2.86			7.21	0.42	30.45	5.05			8.29	2.18	26.56	4.27		
Sylhet	5.94	0.16	17.95	1.43									n.a.					
Comilla	9.60	0.25	30.13	2.51			12.01	0.75	34.68	4.66			7.79	1.04	42.91	2.91		
Noakhali	9.51	0.28	28.52	2.01			11.65	0.43	38.25	3.33			20.13	1.51	32.99	8.88		
Chittagong	9.70	0.26	33.00	2.23	25.30	1.49	9.89	0.41	34.39	3.73	13.14	2.45	12.90	2.25	33.72	5.79	23.28	2.78
Chittagong Hill Tracts	-	-	17.79	0.45	11.65	1.18	-	-	12.33	0.41	11.23	0.46	-	-	17.44	1.00	6.33	0.41

1951 I						1961 I					
MUSLIM		HINDU		OTHERS		MUSLIM		HINDU		OTHERS	
M	F	M	F	M	F	M	F	M	F	M	F
22.70	7.50	23.10	9.40	18.80	10.80	34.85	9.39	30.82	3.92	21.20	7.54
15.60	5.40	23.70	9.40	37.30	30.00	22.77	6.18	29.17	4.87	24.80	10.33
19.80	7.50	25.20	11.40	44.10	34.80	27.63	8.58	32.60	10.34	32.34	18.17
14.50	5.20	19.00	8.25	16.20	12.70	23.60	7.35	27.93	9.51	11.72	3.97
12.90	5.20	25.25	13.25	34.20	34.10	18.00	6.52	21.82	14.78	17.56	15.32
10.10	4.00	22.40	12.15	29.10	37.70	17.42	5.59	29.21	11.40	15.33	13.03
15.90	6.10	24.35	11.70	27.00	25.70	23.50	6.39	30.90	9.82	18.04	11.60
22.80	11.20	29.75	14.35	37.00	29.70	29.54	10.74	37.45	11.74	26.12	18.66
24.30	13.40	33.15	16.30	39.20	25.10	26.63	10.12	39.30	14.03	42.37	27.27
16.80	11.20	24.60	12.20	20.10	12.10	18.49	6.28	35.22	13.23	29.12	13.30
21.30	13.30	25.80	12.80	49.80	51.00	25.00	9.33	34.90	13.00	50.62	54.04
15.00	6.30	28.50	13.70	27.50	24.30	18.71	5.32	31.63	10.11	32.40	22.54
23.90	18.70	23.60	12.95	25.10	11.90	21.56	6.06	32.29	14.04	12.63	8.28
22.20	12.90	26.50	11.60	23.00	10.20	27.51	8.96	43.40	18.18	41.86	14.28
24.00	14.30	29.90	12.65	49.00	44.50	27.43	9.37	46.85	15.61	54.09	19.45
31.80	23.50	27.70	13.25	32.70	16.80	29.62	8.30	39.58	19.19	6.56	3.36
23.50	12.90	9.70	2.05	8.50	1.30	36.73	12.28	26.21	7.15	16.05	1.91

M - Male, F - Female, - Not significant.

* Percentages of population aged 5 yrs and over

Sources: Same as Table 5.2.

I Due to absence of data of population by religions by age groups for the districts literacy rates could not be computed in relation to population aged 5 yrs and over. 1951 and 1961 figures are percentages of total population of respective religious groups. 1951 figures are for total and female population. Data for total male population by religion were not available for this year.

of their sons with the Hindus in vernacular schools, and they rather preferred the educational curricula of Muslim law and literature, along with English, which however were not available.[18] Moreover, the principle of untouchability, rigidly maintained by the Hindus during this period, was also applied to the Muslims. Therefore, the schools dominated or administered by the Hindu teachers deliberately used to restrain the Muslim students from gaining admission. On the economic side, the Muslims in East Bengal were mostly engaged in agriculture and their economic hardship due to over taxation and related phenomena[19] probably damaged their academic aptitudes. The situation did not change appreciably until the late 19th century, when as a result of the initiatives of Nawab Abdul Latif and Haji Mohammad Mohsin, the government recognized the Muslim classical languages with English in certain Madrasahs (1871-72), and decided to appoint Muslim teachers in schools for the Muslims.[20] But in the mean-time the Hindu population had made an amazing progress in modern education and their literacy was much higher than the Muslims (Table 5.6). It is in relatively recent decades that the Muslim literacy is showing a definite positive change in East Pakistan (Table 5.4).

The lowest literacy among the Muslim was found in Kushtia, Faridpur, Pabna and Mymensingh districts. The reasons for this phenomenon has already been mentioned. Besides, the districts of Rangpur, Jessore, Rajshahi, Dacca and Sylhet registered literacies below the provincial Muslim average (Table 5.5). The highest Muslim literacy was found in the districts of Khulna, Dinajpur and Chittagong Hill Tracts. The reason of high Muslim literacy in Chittagong Hill Tracts may be due to the influx of educated Muslims from other districts holding employments.

TABLE 5.6

Percentage distribution of literates (male) by religions and castes, Bengal, 1901 and East Pakistan, 1961.

Religion/castes	Total literacy		English literacy	
	1901	1961	1901	1961
Total	10.00	25.98	0.90	3.00
1. Muslim	6.80	23.99	x	-
2. Hindu: Upper Castes	57.52	45.49	21.00	-
a) Brahmin	63.90	-	15.70	-
b) Kayastha	56.00	-	14.70	-
c) Baidya	64.80	-	30.30	-
d) Subarnabanik	51.90	-	26.80	-
e) Ghandhabanik	51.00	-	17.50	-
3. Hindu: Lower Castes	x	25.64	x	-
4. Other religions	-	24.02	-	-

x less than 0.5%

- not recorded.

Sources: Census of India, 1901, Vol. 4, Pt. 1;
Census of Pakistan, 1961, Vol. 2.

Likewise, the lowest Hindu literacy was found in Rangpur, Chittagong Hill Tracts, Rajshahi, Pabna and Kushtia. In most of these districts most of the Hindus belonged to lower castes and were long underprivileged. The same was true with the districts of Jessore, Faridpur and Bogra to a certain extent - where the literacy rates were marginal to the Hindu provincial average. The other districts had fairly high Hindu literacy with highest in Noakhali, Chittagong and Comilla where the Hindu population

mostly belonged to upper castes.

Literacy in the "other" religious groups (i.e. Buddhist, Tribal and Christian) is less uniformly distributed. In the districts such as Noakhali, Dacca, Barisal and Comilla, where the Christian or Buddhist population, whatever the case may be, is high, the literacy is also high. The low literacy districts in the "others" group have been those with relatively large tribal populations, such as in Rajshahi, Chittagong and Chittagong Hill Tracts.

The distributions of female literacies in different religious groups closely follow those of males.

C) RESIDENTIAL DIFFERENTIALS IN LITERACY - Rural-urban differentials in literacy during pre-Independence decades or earlier are not known owing to lack of data, but so far as rural areas are concerned, where Muslims were in the great majority, a good picture of literacy is evident from the discourse on differential literacy by religious groups. It is agreed that during the British period the towns had been the focal points of all the literary and cultural development as a result of the emergence of a group of urban elites and of concentration of wealth from the villages. Therefore, whenever the question of any social development arose such as educating the rural people (even in older methods), it was never taken seriously.[21] For instance, in 1844, out of 101 new vernacular schools set up by the Board of Revenue, about 38 to 40 were in about 20 towns of East Bengal, the rest were in West Bengal towns and Calcutta region. None was set up in rural areas. Undoubtedly the villages near to these towns benefitted, but the scheme failed

due to inadequacy of teachers and inability of parents to pay monthly fees.[22]

In the eastern districts (East Bengal), as noted earlier, the inter-class and caste prejudices among the Hindus, and between them and the Muslims had been most acute in the past, particularly in the rural areas and where the landlords were the class-conscious Hindus. These conditions continued to be typical for this region until the late 19th century giving rise to very slow progress in rural literacy. The urban areas, on the other hand, had better educational facilities, relatively lesser caste or class prejudices and therefore enjoyed high literacy condition.

Data on rural literacy during the early part of the present century in East Bengal are not available, but the extent of total literacy (Tables 5.2 and 5.3) largely signifies the conditions of rural areas. Table 5.7 shows the rural and urban literacies of East Pakistan for the recent decades, and it is observed that in 1961 in urban areas 45.71 per cent of the population aged 5 years and over were literate, more than twice the literacy rate of rural areas (20.16). Togetherwith the apathy of the rural Muslim population towards education, such a low literacy in the present time has been due to the indifference on the part of the parents who have had little or no school experience in the past. This is a more fundamental factor operative against changing the attitude toward formal education. The negative motivation is more prevalent in the poorer parts of the province where it is a correlative of poverty and extreme conservatism. On the part of the students at all levels, the males in both urban and rural areas formed the majority of literates and the females in rural

TABLE 5.7

Percentage distribution of literates in rural and urban areas by sex, East Pakistan, 1951 and 1961.

	1951*			1961*		
	Total	Male	Female	Total	Male	Female
All areas	16.07	25.80	6.32	21.54	31.54	10.65
Urban	35.92	50.00	22.20	45.71	54.80	31.94
Rural	13.30	20.81	6.00	20.16	29.90	9.65

* estimated to the definition of literacy in the 1961 census.

Sources: Census of Pakistan, 1951 and 1961 (2 vols).

areas constituted a smaller number of literates compared to their counterparts in towns.

During the post-independence decades the literacy rates of urban and rural areas have imporved markedly, though not uniformly. For instance, the overall improvement in literacy since last decade has been greater in urban areas and female literacy has also increased sharply in towns. In rural areas the change has been rather slow, and has been the result of fresh attempts to develop and expand elementary schools in villages after centuries of failure.

(i) Literacy in Rural Areas - In the rural areas though the number of schools is improving it has not been fast enough to bring about a swift change as in towns. For instance, the average number of primary schools per 100 villages in the province has been 31.69 in 1961 - the average population of a village being 740-750. The highest number of primary schools was in Chittagong villages (51.28 per 100 villages) and the lowest in Rajshahi (20.90 per

100 villages) (Table 5.8). The literacy of the rural population is also positively correlated with the number of schools; and in general, the villages of Khulna division (with few exceptions in Kushtia) have better facilities for education while those in Rajshahi have the worst. In this connection it should be noted that in most of the districts these schools fall short of the expected value, as revealed by a regressional analysis.

With respect to higher schools (middle and secondary), the rural districts resemble each other. Compared to primary schools, these schools in rural areas number only 4.75 per 100 villages, while in towns they are more numerous. This disequilibrium in the availability in formal education in two residential areas in the province results in wide differences in literacy.

The districts of Rangpur, Rajshahi, Pabna, Kushtia, Mymensingh, Dacca, Sylhet and Chittagong Hill Tracts having rural literacy below the provincial-rural average (20.16 per cent) have also few primary and middle/high schools per 100 villages. The exceptionally low rural literacy of Chittagong Hill Tracts (12.62 per cent) has been due to the habitat and other geographical conditions under which its tribal population is living. The schools in this district have been established only very recently, even though there were no secondary schools in 1961. In earlier decades only a few elementary schools were established by some Christian missionaries. The expansion of education of this particular district was handicapped by the fact that the language, even in primary stage was foreign to the tribal students, as well as by the diversities of inter-tribal languages and habitat. In earlier centuries their literary attainment was negligible as they were looked down upon as exterior castes and no contact was

TABLE 5.8

Number of schools per 100 villages and rural literacy by districts, East Pakistan, 1961.

Districts	Primary Schools	Middle & High Schools	Rural Literacy (%)		
E. Pakistan: Rural	31.69	4.75	20.16	29.90	9.65
Dinajpur	28.71	1.39	25.05	39.40	8.48
Rangpur	31.33	3.55	17.73	27.90	6.52
Bogra	30.00	3.52	22.10	33.43	10.12
Rajshahi	20.90	2.94	18.68	28.41	8.45
Pabna	28.78	2.53	15.77	22.55	8.55
Kushtia	31.64	2.69	13.49	20.30	6.32
Jessore	33.44	3.46	19.88	30.20	8.63
Khulna	40.18	4.84	25.83	37.62	6.83
Barisal	47.86	9.80	24.02	34.40	13.05
Mymensingh	25.17	4.49	16.45	23.88	8.24
Dacca	26.56	4.22	19.02	27.50	9.78
Faridpur	33.34	5.42	17.07	26.04	7.64
Sylhet	21.47	0.57	19.19	28.32	9.38
Comilla	27.14	6.07	24.01	35.38	12.06
Noakhali	30.77	10.20	24.33	36.17	12.28
Chittagong	51.28	7.65	23.10	34.61	10.96
Chittagong Hill Tracts	29.24	3.69*	12.62	20.99	3.13

* no high schools in 1961.

Sources: Calculated from: Census of Pakistan, 1961, Vol. 2; Khan, M.R. 1967.

maintained by the caste Hindus. The Hindus also systematically refused admission to some of the advanced tribes (such as, Chakma

and Mongh) in their schools in relatively developed areas. The same case applies to the rural tribes in other districts of East Pakistan. Recently the situation is changing as a result of the governmental planning and incentives providing educational facilities in the tribal areas. In the province only seven districts registered rural literacy above the provincial rural average.

In rural areas both the male and female literacies are very low. The reasons of low female literacy in the province in general are particularly applicable for rural areas (see above). And the relatively low male literacy in the rural districts compared to towns is, as mentioned earlier due to insufficiency of elementary schools, conservatism and the subsistence nature of their economic life. Because of the favorable physical conditions of the province and the agrarian nature of the population farming activities continue practically all the year round and for which the farmers primarily depend on the family supply of labour. An early start of the children in these activities is essential for the rural society, since this is the stage when they act as apprentices. For this reason, the parents often cannot spare their children for formal schooling, which is not immediately remunerative. Such an attitude towards education is the expression of the long-term fixity of their social status which does not permit them to realize the functional advantages of learning owing to heavy reliance on their inherited economic practices. This is again intensified by the current educational system, which as we shall see later, is highly remote from the basic economic practice of the population. Particularly in remote villages and fishing areas the parents

prefer their children to follow the ancestral occupation rather than go to schools, which they think tends to alienate their children. This is true in the sense that once they are able to read and write, they tend to leave the village to work in nearby towns in industries, transport and businesses. This sudden shift in attitude among the young rural generation in terms of a contempt for manual work is also common throughout South Asia.[23] This attitude undoubtedly has contributed to qualitative degeneration of literacy attainment while the overall arithmatic literacy rate is increasing, and is, to a certain extent, the underlying fact of the recent problem of the "educated unemployment" or "under-employment" in towns. In South Asia, including East Pakistan (Pakistan as well), "... there is broad inverse correlation between the severity of this prejudice and the level of education and literacy: the prejudice tends to be stronger in those countries where popular education is least advanced."[24] This is possibly more intensified because the older peasants had no occasion to learn in the past. Therefore, to improve the situation and to bring about an attitude-change towards the purpose of formal education there must be a determined effort to educate adults parallel to the expansion of educational facilities for their children. For this purpose an elaborate expansion of village schools and community welfare institutions is required. At the sametime a more practical selection of knowledge should be given by providing vocational curricula with respect to the socio-economic structure of the society. This, if effected will undoubtedly have far reaching effects in instituting improved agricultural methods, family planning measures and associated planning programmes.

(ii) Literacy in Urban Areas - The urban population has the highest literacy rate in the province, and the highest male and female literacies in the whole of Pakistan. In 1961 the urban literacy was 45.71 per cent, and the male and female literacies were 54.80 per cent and 31.94 per cent respectively (Table 5.7). This is an overall increase of about 10 per cent over 1951. The distribution of literacy of the selected towns falls within the range of $\pm$ 2 standard deviation ($\bar{x}$ = 46.08, σ = 6.95), and in general the administrative towns and certain subdivisional towns have higher literacy than the cities and industrial towns (Fig. 5.5). Thus Feni ranked first with 59.70 per cent of population aged 5 years and over being literate. It was followed by Mymensingh (59.25), Sylhet (57.81) and Habiganj (56.36). Most of the commercially important administrative towns registered medium high literacy (46.08 to 53.03 per cent) as well as three out of four cities of the province. Serajganj occupied the lowest position with only 29.00 per cent of its population literate (Table 5.9, Fig. 5.5), followed by Meherpur, Brahmanbaria and Manikganj. The male literates also closely follow this distribution. With respect to female literacy, Habiganj topped the list (47.85 per cent) followed by Mymensingh and Sylhet, while the lowest rate was in Serajganj (18.79) followed by Meherpur and Brahmanbaria (Table 5.9).

Thus 16 of the 37 selected urban centres registered literacy below the urban average of the province, and 7 of them are small subdivisional towns, mostly highly rural orientated in function; while the river ports and the commercial centres are mainly populated by uneducated labourers from nearby rural areas, thereby making their literacies lower. Narayanganj city in this group

FIG. 5.5

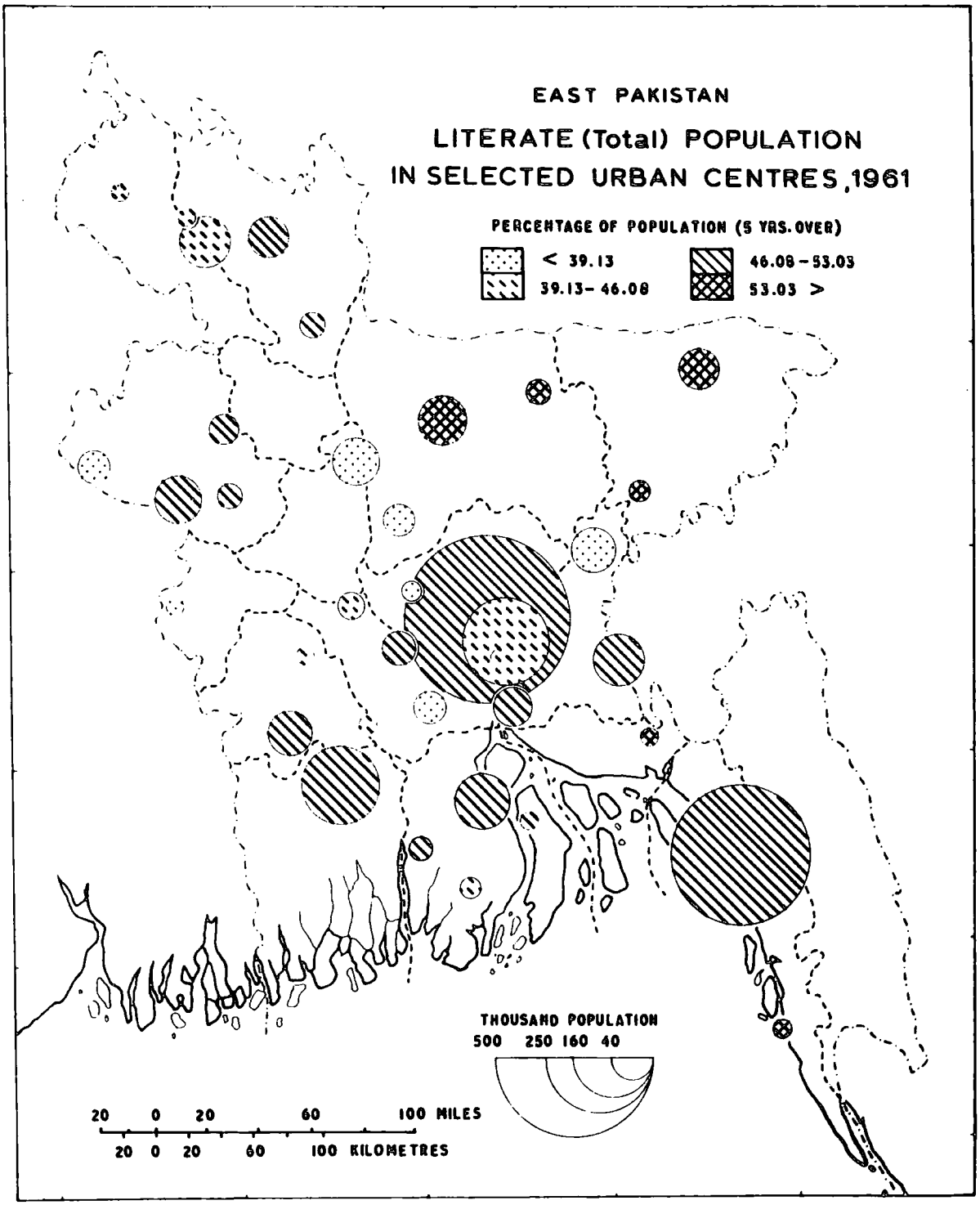

EAST PAKISTAN
LITERATE (Total) POPULATION
IN SELECTED URBAN CENTRES, 1961
PERCENTAGE OF POPULATION (5 YRS. OVER)
< 39.13
39.13 - 46.08
46.08 - 53.03
53.03 >
THOUSAND POPULATION
500 250 160 40
20 0 20 60 100 MILES
20 0 20 60 100 KILOMETRES

TABLE 5.9

Percentage distribution of literacy* of selected Urban centres, East Pakistan, 1961.

Urban Centres	Total	Male	Female
East Pakistan: Urban	45.71	54.80	31.94
Rajshahi	48.85	58.03	37.13
Saidpur	41.81	52.90	28.73
Khulna	46.13	54.64	29.53
Barisal	49.25	55.49	39.42
Dacca	46.94	55.19	33.64
Narayanganj	41.51	50.08	25.72
Mymensingh	59.25	68.09	46.81
Chittagong	47.97	56.37	30.56
Comilla	49.87	60.76	35.86
Thakurgaon	43.80	52.49	31.25
Nilphamari	41.38	53.62	29.29
Rangpur	47.05	56.18	36.20
Gaibandha	46.66	62.77	40.38
Naogaon	50.58	59.24	34.88
Nawabganj	38.00	47.37	30.54
Natore	48.18	57.35	36.29
Serajganj	29.00	39.52	18.79
Meherpur	35.70	44.09	23.77
Jessore	48.34	41.35	33.16
Magura	39.99	49.77	27.14
Bhola	49.99	59.59	39.74
Patuakhal	46.00	56.23	31.37
Perojpur	46.43	61.10	37.11
Netrokona	54.00	58.07	37.81
Tangail	39.00	43.50	37.21
Manikganj	37.00	48.83	27.56
Munshiganj	42.50	52.77	30.32
Rajbari	44.28	56.88	33.26
Faridpur	47.08	58.66	34.45
Madaripur	38.57	51.23	25.09
Gopalganj	40.00	54.56	28.61
Sylhet	57.81	65.59	45.72
Habiganj	56.36	68.32	47.85
Brahmanbaria	36.58	46.63	25.31
Chandpur	52.74	64.62	42.06
Feni	59.70	68.33	43.64
Cox's Bazar	55.70	57.26	26.10

* Percentage of population aged 5 years and over.

Source: Calculated from: Census of Pakistan. 1961, Vol. 2.

is an exception, as it is one of the most important jute marketing centres of the world and one of the most industrialized areas of East Pakistan, drawing factory labourers from different parts of the province. Most of them lack formal literary attainment, which is not needed for the nature of their works. Saidpur is a declining town with practically no functional diversity, and has acted as a focal place of migrants from India. Many of them, particularly the literate ones, have started spreading out in other large towns for economic reasons. This might have lowered the literacy of the town in recent decades.

The rest of the 21 towns are mostly district towns, a few subdivisional headquarters and some commercial centres, and are better equipped with various educational facilities. Lower living costs make these towns more conducive to the diffusion of literacy where parents can afford to bring their children from villages. Moreover, these towns, being the centres of social, intellectual and commercial life provide better environments for social change. This does not mean that literacy in East Pakistan is essentially the response to urbanization or industrialization, though "such relationship is found in many countries of the world".[25] In fact, the process of urbanization in East Pakistan is still in its infancy, and literacy and social change are only in a transitional stage. This is established by regressional analyses between (i) literacy and urban-size, and (ii) literacy and non-agricultural labour force of the urban centres, which were found to be non-significant. There is, nevertheless a positive relationship between female literacy and urbanization in the urban centres with 100,000 inhabitants and over, and in the district towns. This is undoubtedly due to

better educational facilities and some employment opportunities for females in these towns. In conclusion, it may be noted that many of the towns in East Pakistan do not possess highly diversified functions and some are insufficiently urbanized to affect some of the ascribed characteristics of the population, such as literacy. This is true of many of the towns of South and South East Asia, and most of the Muslim countries of North Africa.[26]

A successful departure from this trend in the country is expected to take place by about a few decades when educational facilities and items will be elaborated more purposefully depending on the regional needs of the province. This, however, also depends on the successful adoption of the recommendations of the new education policy (1969-70).

AGE-SPECIFIC LITERACY AND STUDENTS BY RESIDENTIAL AREAS

Table 5.10 shows the age-specific percentage distribution of literates and students in urban and rural areas of East Pakistan for 1961. As data of this nature are not available prior to 1961, discussion is confined to this year. The highest proportions of both the literates and students, both male and female in the total population are found in the age groups 10 to 20 years. Very low proportions of students occur in the higher age groups (20 years and over), as a result of the entrance to matrimony (marriage) (mostly females) and employment (mostly males). On the other hand, the process of adult education is not elaborate in the province, particularly in rural areas, which also lowers the proportion of students in this age group and subsequently negatively affects the overall literacy.

Thus from the table certain remarkable features concerning

TABLE 5.10

Percentage distribution of age-specific literacy* and students* by sex and residence, East Pakistan, 1961.

A. LITERACY

Age-groups	Urban			Rural		
	T	M	F	T	M	F
5 - 9	24.71	27.59	19.74	12.11	15.55	8.52
10 - 14	54.59	56.69	51.84	31.37	39.39	21.10
15 - 19	55.15	60.95	46.25	35.65	38.15	14.45
20 - 24	55.93	64.06	40.07	23.11	36.48	11.48
25 and over	46.87	59.14	25.51	19.78	31.74	6.29
All ages (5 yrs +)	45.71	54.80	31.94	20.17	29.91	9.65

B. STUDENTS

5 - 9	25.68	29.11	22.17	14.02	17.53	10.34
10 - 14	40.91	44.94	35.62	21.46	29.20	11.56
15 - 19	22.27	28.58	12.58	7.97	15.17	1.20
20 - 24	9.02	12.14	2.94	2.54	4.98	0.41
25 and over	1.28	1.66	0.61	0.42	0.69	0.12
All ages (5 yrs +)	13.95	15.30	11.91	6.80	9.55	3.82

* Percentages in the age group
T = Total, M = Male, F = Female.

Source: Calculated from: Census of Pakistan, 1961, Vol. 2.

regional differences in literacy and formal educational attainment have become evident. Firstly, the position of females aged 15 years and over is, as expected, definitely worse than that of males. Secondly, the educated are concentrated in urban areas, and lastly, the proportion of adult population with formal

education is very small and smaller in rural areas. Lastly, the educational attainment of the adult age group is mainly the product of past elementary education. As we shall see in the next section, in East Pakistan a considerably longer period of formal schooling including adult education is needed so as to attain better literacy.

SECTION B

CURRENT PROBLEMS ASSOCIATED WITH THE DEVELOPMENT OF LITERACY AND EDUCATIONAL PLANNING IN EAST PAKISTAN

The socio-economic and other geographic variables that are likely to affect the progress of literacy and associated phenomena in East Pakistan can now be summed up under the following broad headings:

1) Elementary Education - primary and secondary education,

2) Higher Education - college and university education.

1) ELEMENTARY EDUCATION - Since the turn of the present century, although the public opinion has been in favour of compulsory elementary education, it has not materialized. Therefore many children (and some adults) have been educated at home by their parents, guardians or other educated members of the family - at least upto the primary stage, thence they are sent to the secondary schools. Strong family ties, scattered and limited number of schools and economic considerations account for this situation. In 1951 the proportion of literates without formal schooling was 49.08 per cent (Table 5.11). The females characteristically formed a greater proportion (65.23 per cent) because of the traditionalism and shortage of girls' schools. The proportion of males was rather low (43.96 per cent). These proportions sharply declined to 16.19, 17.33 and 15.85 per cent

TABLE 5.11

Percentage distribution of literates by levels of education, East Pakistan, 1951-1961.

Educational Attainments		Percentage* 1951 Total	Percentage* 1951 Urban	Percentage* 1961 Total	Percentage* 1961 Urban	Variations 1951-61 Total	Variations 1951-61 Urban
1. ELEMENTARY EDUCATION:							
Without formal Schooling	T	49.38	36.59	16.19	17.91	- 33.19	-18.68
	M	43.96	27.81	15.85	15.71	- 28.11	-12.11
	F	65.23	45.38	17.33	20.12	- 47.90	-25.17
Primary	T	33.90	33.05	63.50	48.72	+ 29.60	+15.67
	M	35.48	29.70	60.11	40.64	+ 24.63	+10.94
	F	29.30	36.41	74.49	56.81	+ 69.81	+20.40
Secondary	T	12.97	20.92	16.50	21.88	+ 3.53	+ 0.96
	M	15.72	25.06	19.32	24.96	+ 3.60	- 0.10
	F	4.98	16.78	7.35	18.81	+ 2.37	+ 2.03
2. HIGHER EDUCATION:							
Matriculation	T	3.19	8.67	2.76	6.37	- 0.43	- 2.30
	M	4.14	14.40	3.43	10.19	- 0.71	- 4.21
	F	0.42	2.95	0.57	2.56	+ 0.15	- 0.39
Intermediate	T			0.59	1.95	-	-
	M			0.37	3.18	-	-
	F			0.14	0.73	-	-
Graduate	T	0.47	1.69	0.31	0.99	- 0.16	- 0.70
	M	0.60	2.95	0.39	1.77	- 0.21	- 1.18
	F	0.05	0.44	0.06	0.26	+ 0.01	- 0.18
Higher Degree	T	0.09	0.48	0.09	0.28	-	- 0.28
	M	0.09	0.62	0.10	0.47	+ 0.01	- 0.15
	F	0.007	0.35	0.01	0.09	+ 0.08	- 0.26

T - Total, M - Male, F - Female.

* Percentages of total literate population. Breakdowns for rural areas are not available.

Source: Same as Table 5.10.

respectively in 1961 (Table 5.11), as a result of expansion of schools and a favourable change in social outlook in the province. This change has equally affected all the districts of East Pakistan (Appendix 7), particularly the southern ones (where the literacy condition was fiarly good since the beginning of this century),

followed by the northern and eastern districts. The overall decline of educated persons in this group between 1951-61 is reflected in the abrupt increase in the proportion of those educated in primary and some in secondary stages (Table 5.11). The whole situation, though encouraging, is in no way up to expectations. As mentioned earlier, in the recent years which were supposed to be the period of maximum socio-economic development in Pakistan, the numerical increases in elementary schools and corresponding enrolments were very slow when compared with the rest of Pakistan (Fig. 5.1, Appendix 5). To meet the deficiency, the Third Five-Year Plan envisaged an increase of 4.2 million enrolment in 1965 and to 7.2 million in 1970. But according to a recent official estimate the total enrolment has reached about 5.6 million by 1970, and the short fall has equally affected the secondary level. To make up the gap, the Fourth Five-Year Plan (1970-75) envisages opening 1,310 new primary schools (of which 874 were supposed to be set up by 1970), 1,020 schools will receive grants for technical and vocational education, and 47 of the existing secondary schools will be provincialized.[27] The success of these measures, as we shall soon see will greatly depend on the supply and availability of capital and trained manpower.[27a]

The current educational policy and measures of literacy expansion in Pakistan are conducted upon a guide line drawn by the Karachi Plan (1959) and the Asian Model of Educational Development of UNESCO (1966),[28] where it was agreed for seven years of compulsory universal and free schooling as a target for 1980. This no doubt initiated a policy shift for educational planning in Pakistan, and recently the numerical enrolments are

increasing very progressively. Still if the Karachi Plan's objective of compulsory universal primary education is to be achieved in the foreseeable future, then the enrolment ratios should increase at the rate given in table 5.12(b) for the future decades in order to accommodate the additional demographic growth (Fig. 5.6). In short, the regional systems of education are currently characterized by inefficiency in attracting more students, and must expand at more accelerated rates than the highly developed systems in the Western world.[29]

Relatively low elementary school enrolment ratios, currently prevailing in the country, with rapid rate of growth of population lead to some closely allied educational problems, the important of which is the sustenance of illiteracy. It is assumed that under the conditions of rapid population growth and stable age structure the total number of illiterates within the population will continue to increase, all other things being equal (Fig. 5.6). In turn it must be recognized that the continued high illiteracy rates will have feed-back repercussions on low enrolment ratios.[30] Besides, the illiteracy burden will pose additional problems in the country by limiting the size of the pool of ability, constricting the potential economic contribution of a large segment of the population,[31] and also exerting a retarding effect on various social and economic changes. Secondly, rapid population growth is likely to worsen the literacy differentials between sexes, unless emphasis is placed upon expansion of female education. Inequalities of this scale have obvious implications upon future enrolment ratios and the continued transfer of cultural-traditional values through time. Female enrolment ratios in elementary levels could be improved vastly by various

TABLE 5.12

Teacher-student ratios, and enrolment ratios in East Pakistan, 1950 - 1985.

A. Teacher-Student Ratios: 1950-51 to 1965-66

	1950-51			1955-56			1960-61			1965-66		
	T	M	F*	T	M	F*	T	M	F*	T	M	F*
Primary Level	25.37	29.63	159.24	36.76	27.64	380.31	41.36	30.52	537.70	43.83	31.27	572.41
Secondary Level	21.72	21.03	34.14	20.78	19.46	51.98	21.79	20.18	49.13	26.63	23.99	61.25

B. Enrolment Ratios: 1960 to 1985

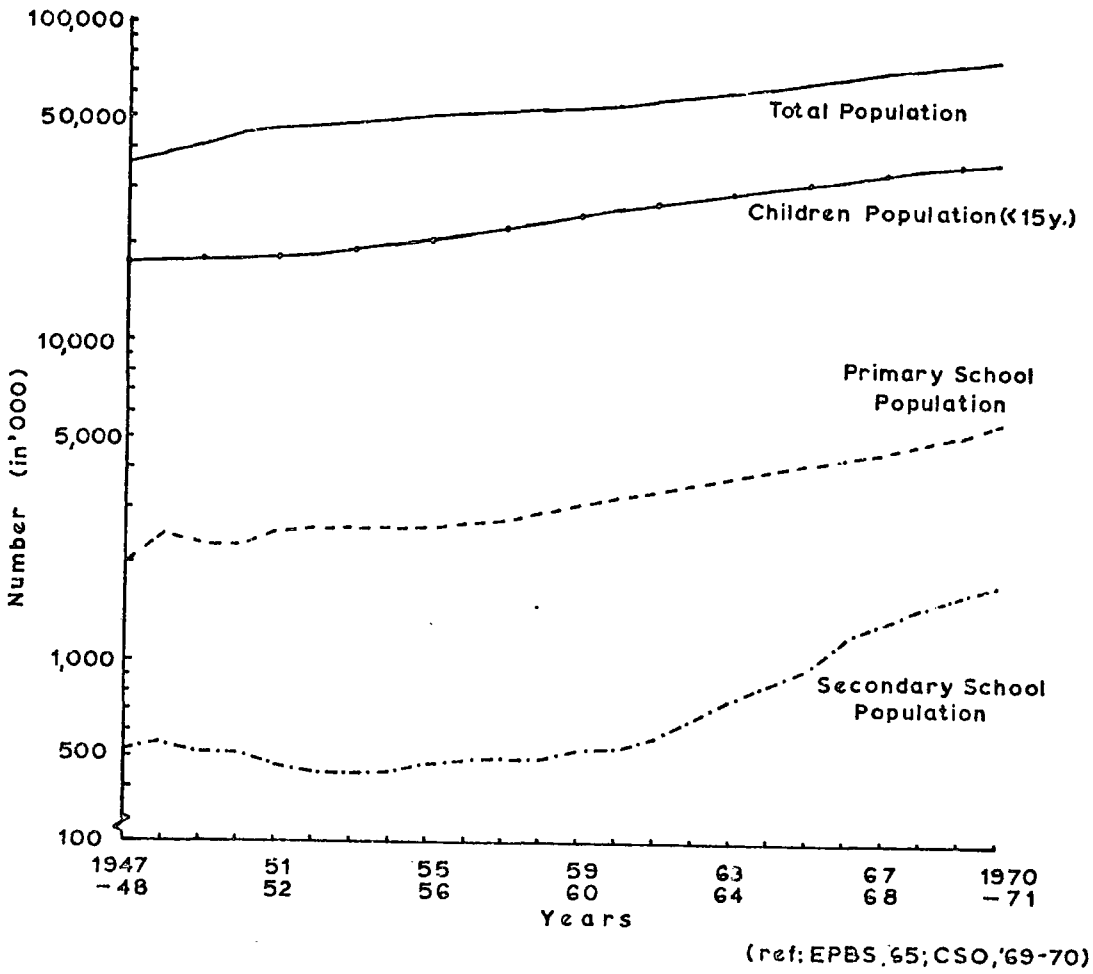
		ACTUAL		PROJECTED			
		1960	1965	1970	1975	1980	1985
Primary Level (5-10 yrs age group approx)	T	0.367	0.395	0.532	0.629	0.724	0.815
	M	0.536	0.547	0.688	0.764	0.850	0.929
	F	0.195	0.239	0.369	0.487	0.592	0.697
Secondary Level (10-15 yrs age group approx)	T	0.088	0.099	0.228	0.317	0.408	0.495
	M	0.153	0.168	0.297	0.385	0.477	0.564
	F	0.021	0.028	0.158	0.246	0.336	0.423

T - Total, M - Male, F - Female.

* Primary schools are mainly mixed institutions, where the number of female teachers is very low. This gives rise to abnormally high teacher-student ratios.

Sources: Calculated from: 1. Govt. of Pakistan, C.S.O., Pakistan Statistical Yearbook; 1965-66,
2. Bean, L. and Khan, M.R. and Rukanuddin, A.R. 1966;
3. Khan, M.R. 1967.

FIG. 5.6 NUMERICAL GROWTH OF TOTAL, CHILDREN AND ELEMENTARY SCHOOL POPULATIONS, EAST PAKISTAN, 1947 – 1971



(ref: EPBS '65; CSO, '69-70)

social and economic incentives.

Although co-education in primary schools has eased the problem of insufficient teachers and schools, most female teachers prefer to work in schools exclusively for girls. Many of them give up their jobs after their marriage. The periodic fluctuations in the number of female teachers (Appendix 5) are mainly the results of their entrance in matrimony, and of popular family traditions discouraging married females' participation in outside employment. This situation may well be improved by giving more practical incentives for female employments in teaching services and training.

On the other hand, there is some reluctance on the part of the young people to become teachers because of the alleged low economic status.[32] Low salaries of teachers are a reflection of traditionally low social status of school teachers, perpetuating poor and unacademic conditions, reducing recruitment and performance, and lowering the quality of students. For the sake of improved literacy, this vicious circle must be broken. One obvious and immediate starting point is to raise their financial conditions - thereby their economic and social status. This is quite possible, as in Pakistan the expenditure in the education sector (in relation to GNP) is very low (1.2 per cent during 1957-60) and the lowest among the South Asian countries.[33] It is also much lower than the UNESCO recommendation (4 per cent of the GNP). In the New Education Policy of 1969-70 attention has been given in these respects for the first time[34] and the situations may be expected to improve in the near future. But viewing the general trend of educational expenditure in the country, it is still regarded as competing with economic measures which bring returns on investment in the short term. What is required most is to increase in investment on educational budgeting as a measure of human resource and national development. Secondly, there is another way to increase the teacher-output to meet existing enrolment and its numerical increase in future, that is to utilise educated citizens in other professions on a part-time teaching service, and the exploitation of "educated married females" for full-time teacher-training. It is essential that initial teachers' training institutions be continuously involved in service training if quality of the teachers is to be maintained and improved - a fact recently given serious attention in Iran.[35] Further, the

shortage of teachers could be met by introducing centralized teaching programmes by regional radio and TV systems which can face the challenge of gradually increasing school population and the shortage of schools, and even could be used for adult education in remote rural areas.

There are certain qualitative problems which are affecting the student community at large. The first problem arises out of the multi-lingualism of the education media and curricula, which give emphasis on mother tongue (Bengali), and Arabic in the primary stage; thereafter Urdu or Arabic and English are added in the secondary stage. Because of pressures of learning different languages in various elementary classes, the students naturally lose interest in other fields of study and it often leads to retardation, dropping out and repetition in these stages[*]. In East Pakistan, the multi-lingualism of the school system is indeed a serious road block to educational progress. This problem could be solved by evaluating the maximum applicability of particular languages in the socio-economic life of the population, and adopting one throughout the academic course. This would definitely lead to improved literacy in a linguistically homogeneous country.

Secondly, though the distribution of primary schools all over the province is more or less uniform, the secondary schools

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[*] In East Pakistan, it is estimated that as many as 50 to 60 per cent of all pupils in the Class - I (post-preparatory class in the primary school) drop out before the end of the year. For instance, only 18 per cent of the 1958 - Class - I generation reached Class - V (final class in the primary school) in 1962 (ref. Govt. of Pakistan, Planning Commission. The Third Five Year Plan, 1965-70, Rawalpindi, 1965, P.27).

are not: particularly in the rural areas. On the other hand, in the secondary schools, pupils mainly come from the upper and middle classes. This new pattern in education, though a successful departure from the pre-twentieth century Hindu Caste - Monopoly in education, has kept the rural masses relatively unenlightened. To effect a non-monopolistic education system, the distribution of different types of schools should be made more uniform.

Thirdly, the subject-matter of the educational curricula is still too general with little vocational and technical importance - though agriculture is the principal economic activity of the population it is not taught at any school level on a practical basis. Again there are significant differences of this phenomenon between the residential areas and the sexes in the province (Table 5.13). The Planning Commission (1965-70) of the Govt. of

TABLE 5.13

Percentage distribution of students by types of education of urban and rural areas, East Pakistan, 1961.

Types of education	Total		Urban		Rural	
	M	F	M	F	M	F
General	92.10	92.33	91.62	93.62	92.48	91.32
Technical	1.55	0.08	2.75	0.12	0.19	0.04
Religions	6.07	7.11	5.62	6.26	7.32	8.63

M - Male, F - Female

Source: Same as Table 5.10.

Pakistan also perceived that the allocation in the field of technical education have not been geared adequately to the manpower requirements of future development with the result that

very little has been spent so far and that too not always on technical education of the right kind. Consequently, the whole education system is still non-technical and highly generalized (Appendix 8).

Lastly, the problems of wastage, drop-outs and repeaters in elementary levels are also slowing down the measures of educational and literacy development and expansion by obviously exerting an additional financial burden upon educational systems. Unless this problem is properly tackled, it may lead to enlargement of an under-educated and semi-literate population which will ultimately intensify the under-employment problems. Data on rates of student-wastages are absent, but such wastages are widely prevalent phenomena in the province.

From the administrative side, a final form of wastage which is rather invisible, occurs through non-congruence of an educational system. Such a phenomenon is partially the result of past failure to plan educationally within the framework of socio-economic planning, and it has partially accrued from educational systems which have become administratively inured to change and conservative in policy.* Often this situation is the outcome of social pressure upon educational systems to supply a product or maintain a trend which is a status symbol of the past.[36] The result is found in the peculiarities in higher education and the extent of underemployment in the country. Reconstructions of curricula, teacher training programmes and expansion of vocational curricula at all educational levels are some of the important

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* Since Independence there were about three educational policies which were never introduced successfully in the country.

measures to fight the non-congruence. The lack of detailed manpower surveys, and the inability of governments to reorientate social aspirations to attune them more closely with national goals are stumbling-blocks in the achievement of congruence.[37]

On the other hand, the present educational planners seem to support the idea of some Western economists[38] of the undesirability of over-expanding the primary system with compulsory free elementary education for all, and of the eradicating illiteracy among the adult population, before achieving some stage of economic development ("take off" stage?). Their views, however, are refuted by the experience of Japan where primary and adult education programmes were universalized in 1871 - long before her economic "take-off". Similar evidence may be obtained from the USSR, China, Cuba and recently in Iran.[39] Solow[40] estimated that of the increase in out-put per man-hour in the USA from 1909-49, not more than 13 per cent was due to increase in physical capital, whereas 87 per cent or more was due to technological progress. If creativity through education and research ceased and capital formation were limited to producing additional machinery and equipment, increase in output per capita would probably decline to zero within two decades. As noted by Habib,[41] the five areas of investment in education which do not seem to receive adequate recognition and attention in many developing countries - primary education, adult education, teachers' training, administration and research - are probably typically true to East Pakistan.

2) HIGHER EDUCATION - Despite various development in the higher education sector after the Independence, only about 4 per cent of

the total literates were found to be educated at higher levels in 1961. Most of the literates educated at higher levels were intermediate and graduate degree holders (Table 5.11). The proportions educated at these levels including the post-graduates have however decreased since 1951, despite the absolute increase in number. To a certain extent, it may be due to drop-outs and stagnation of students in matriculation and post-matriculation (higher secondary) grades, and is partly because in 1951 the intermediate degree holders were enumerated with the graduates - thereby inflating their proportions (Table 5.11). This, however, was not done in 1961, In 1961, if they are added together the proportion would show an overall increase over 1951.

The proportions of population holding higher degrees are not distributed in the province very uniformly, not even in towns. As noted in Appendix 7, only 8 districts showed a slight increase in the proportions holding higher degrees which was offset by a decrease in the other 9 districts. The urban areas, nevertheless showed a relative improvement in the proportion. In all areas females constituted a very small proportion holding higher degrees (Appendix 7). This is highly correlated with their mean age at marriage, as they give up study when they enter matrimony. In rural areas their proportions are almost nil owing to both low age at marriage and lack of opportunity for higher education. For the males, low proportions of higher degree holders are related to the taking up of jobs by them. In addition, many poor students cannot afford the college and university expenses and prefer to enter employment. This is intensified by the obligation of the male educated members toward the family, and entering upon an employment is considered a crucial financial advantage for the

family. On the other hand, East Pakistani (or Pakistani) Colleges or Universities do not offer a large number of grants or other forms of large-scale financial help to the students, nor do they allow the rural students to pay the fees etc. during or after the harvesting seasons when they are financially well off. Besides, recently the expenditure on education incurred by the government of East Pakistan has decreased, and that has affected certain particular sectors, such as scholarships, college and university education.[42]

Owing to lack of vocational education at the secondary levels, the enrolments in higher levels are towards general education (Tables 7.13, 7.14). The gap between the proportions studying in general and specialized technical branches, and between sexes have increased very sharply in recent years. On the other hand, Universities are unable and unwilling to develop applied subjects at a high level, because of the high cost involved and of various administrative limitations. In many ways the science subjects are still remote from industry and commerce and so many science graduates flock in the administrative jobs. The primary requirement to change this traditional set-up is to expand vocational education at the lower levels. Secondly, technical education at higher levels is limited as well as expensive, for which greater capital input is an utmost necessity (this is one of the reasons why many students from middle and lower middle class families join the general branches of education). Lastly, the overall low proportion of literates having higher degrees is accentuated by the lack of provision of part-time education in the universities denying such opportunity to many interested students - therefore an effective part-time education system

TABLE 5.14

Numbers* of Higher Educational Institutions and Enrolments for Selected Years, East Pakistan.

	Pre-1950		1955		1960		1965	
	INS	ENR	INS	ENR	INS	ENR	INS	ENR
COLLEGES : ALL	50	-	76		92		181	
General	48	-	69	23.22	81	47.84	162	127.23
Medical	1		1	0.84	3	1.13	7	2.04
Law	x	x	x	x	2	0.78	5	1.35
Engineering[I]	1		1	0.79	1	0.92	1	0.21
Commerce	x	x	2	0.52	2	0.60	2	1.76
Agriculture[I]	x	x	2	0.22	2	0.48	1	0.22
Fine Arts	x	x	1	0.15	1	0.12	1	0.17
Home Economics	x	x	x	x	x	x	1	0.17
Social Sciences	x	x	x	x	x	x	1	0.06
UNIVERSITIES : ALL	1	2.08	2	3.35	2	3.97	5	9.00[3]
General	1	2.08	2	3.35	2	3.97	3	-
Technical[1]:-	x	x	x	x	x	x	2	2.00[3]
i) Agriculture	x	x	x	x	x	x	1	-
ii) Engineering	x	x	x	x	x	x	1	-

* INS. - Institutions in actual number
ENR. - Enrolments in thousand.

1. Decrease in the figures of enrolments is due to establishment of universities (Engineering and Agricultural).
2. Established since 1961.
3. Estimated.

x absent, - not available.

Source: Same as Table 5.10.

should be introduced.

On the administrative side, the teacher-student ratio in the colleges and universities is one of the highest in East Pakistan - it is about 1:22. In general branches it is much higher (in the U.K. the ratio is 1:6.5 to 1:7.7, in Japan 1:9.0 to 1:11.0). Scarcity of teachers is one of the immediate factors of this condition which is the result of out-migration of university teachers after the Independence[43], and of competition from government and industrial establishments which offer higher salaries. Because of lack of ample research facilities and financial incentives often the academic potentials of teachers remain unexploited, especially the foreign-trained scholars, who therefore decide to stay and pursue their careers abroad. There is also migration of medical and engineering teachers to the Middle-East, East Africa, U.S.A. and West European countries. This sort of wastage of skilled manpower which is assuming a serious brain-drain phenomenon(Appendix 9) should be checked by providing them with proper incentives, both economic and academic. Moreover, educationalists should be given more academic freedom and greater participation in decision making affairs of the education issues. This will minimize the effect of academic unrest caused by authoritarianism of the administrators[*] and will definitely improve the quality of higher education and the overall literacy.

Thus the problems related to literacy and education in

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[*] e.g. widespread campus unrest during the language movement in 1951-52, and also in 1961-62, 1968-69 and 1969-71.

East Pakistan are of both quantitative and qualitative. In the province there is a great need for the spread of educational institutions among the districts, rural-urban areas and the two sexes, and even in some particular age groups (such as among the adults). At the same time, a sustained and high capital input and an improvement in the subject matter are very important for achieving quality in the future literacy and education levels. Under a condition of sustained population growth, highly stable age structure and some traditionalism such orientations in the education system would break the barrier between an urban-oriented entrenched upper class including some middle class, and the great majority of people who live in the rural areas.

SUMMARY AND CONCLUSION

Despite some progress in education in the recent decades, the population of East Pakistan is one of the least literate in South and South East Asia. The school population is also lower than many developing countries. The low enrolment ratio and the high wastage rate, on the other hand, are limiting the school population to a significant extent. A high fertility and a declining mortality are further depressing the potential size of school population. The situation is also accentuated by the insufficient educational facilities - particularly in the villages.

There are significant differences in literacy and educational attainment between the rural and urban areas, the main religious groups and the male and female populations, as well as between the districts. The literacy differentials are associated with the availability of educational institutions, while the male-female differentials in the literacy and educational status are related to various geodemographic conditions of the province.

As such the overall literacy of the province appears to have negative relationship with fertility, age-sex structures and some of the marital characteristics of the population.

On the other hand, the education in East Pakistan is generalized, non-vocational and remote from the socio-economic structure of the society. While, the teacher-student ratios in the lower levels are very high because of shortage of teaching personnel, schools; and the proportion of literates educated at the higher levels is very low. Besides the obvious demographic factors, the limited investment on education and the traditionalism in the education planning are thought to be the main reasons for such phenomena. These have wider implications in the national manpower planning and education development programmes in the near future. Beeby[44] indicated that a population growth in a young age structure condition could cause a reversion in the quality and expansion of education. From preceding discussions some such reversal is quite evident in East Pakistan. The below-target achievement of enrolments during the recent planning periods, the high teacher-student ratios, drop-outs and retardations, the shortage of teachers and insufficient teacher-training programmes, the problem of various non-congruences, the non-practical approach of education system and so on may be thought to be some of the symptoms of such reversal.

It has been estimated that to raise the enrolment ratio in the age group 5-10 (primary level) from 0.53 in 1970 to 0.81 in 1985 (see Table 5.12b) the enrolments are to increase from 5.9 million in 1970 to 15.7 million in 1985. The enrolment figures for 10-15 age group (secondary level) are to increase from

2.3 million to 8.2 million during the same period. Still these will leave about 3.7 million and 8.5 million of school populations in the age groups 5-10 and 10-15 respectively unattended in the province. These indicate that the target for achieving universal elementary schooling for the children population will remain unfulfilled even at the end of this century. Because of the reasons mentioned earlier, the females and the rural populations will be affected more by such a short fall than the male and urban population groups. As the existing age structure will not be affected by fertility declining measures for the next few decades, while the mortality will further decline, and as there is no set plan for the expansion of adult education; and under the constraint of limited funds and resources available for educational investments, the size of illiterates is likely to be a persistant phenomenon in the province during the coming decades.

In order to change this trend, it should be realized that education is a form of long-term investment which must compete with other sectors yielding more immediate returns, and since education both produces high-level manpower and consumes high-level manpower ... its needs must be balanced with demands from other sectors of an economy.[45] But in Pakistan, it is estimated that the total investment on education had decreased from First Five Year Plan to the Second by nearly 50 per cent.[46] This is a sad development for a country with limited physical resources except abundant manpower .... It is hard to visualize any dramatic break-through in the industrial or agricultural sector without a major investment in human resources,[47] and without which many of the necessary socio-psychological changes

are rather remote.

Unlike East Pakistan (or Pakistan), other Asian countries such as Taiwan, Malayasia, Philippines, Singapore and recently Ceylon (where the investment on education has been fairly high) despite the demographic conditions comparable to East Pakistan, are all mearing the targets of universal compulsory elementary education and universal literacy, and are at a take-off stage in educational development. Their rates of population increase can be absorbed within the educational system strategies suggested by the Asian Model (UNESCO)[48].

In East Pakistan while following the UNESCO recommendations (see section B), some more strategies which have not received any attention in many developing countries could be adopted in order to achieve quick expansion in literacy and education. They are: a) employment of soldiers, priests, civil servants and married educated females (Iranian experiment), and employment of all educated persons on part-time teach-in services in elementary level and adult education programme (Cuban and Chinese model);

b) provision of vocation-schools and correspondence courses and expansion of education through radio and TV media;

c) introduction of vocational training programmes by large commerce and industrial concerns; and

d) introduction of part-time educational facilities in the universities.

In fact, in the matter of achieving universality in education and mass-literacy involving large populations like East Pakistan, the above strategies have been inadequately analysed and appreciated by the planners, and should be viewed seriously.

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Strumilin, S. The economics of education in the USSR. International Social Science Journal, Vol. 14, (4), 1962.

40. Solow, R. Technical change aggregate production function. Review of Economics and Statistics, Vol. 39, (Aug.), 1957 (quoted by Habib, 1965).

41. Habib, H. op.cit. Pp. 172-179.

42. Govt. of Pakistan, C.S.O. op.cit. Table 185. P. 486.

43. Bessaignet, P. (ed.). Social research in East Pakistan. Dacca, 1960, Pp. 56-59.

44. Beeby, C.F. The quality of education in developing countries. Harvard, 1966.

45. Johnstone, J.A. op.cit. Pp. 134-157.

46. Rashid, M. op.cit. Pp. 151-155.

47. Ibid. Pp. 151-155.

48. UNESCO, AMED. op.cit. Pp. 134-157.

* See list of abbreviations for relevant references.

C H A P T E R VI

ECONOMIC CHARACTERISTICS

Most societies recognize that some parts of the population do not participate in the working force or the economically active population group, which tend to become consumers. In studying economic characteristics, therefore, the total population is classified into groups of the working force (producers) and those outside it (consumers or dependents). In such cases, a great many geodemographic elements become involved. In this chapter, these elements are identified and the regionalization of three main aspects of economic structures of the population of East Pakistan are studied: (a) proportion of economically active population, (b) main occupational character, and (c) employment status.

STATISTICAL INFORMATION AND BACKGROUND - The available data on economic structures of the population of East Pakistan for pre-independence decades are not very reliable because of various qualitative and technical limitations. In contrast to earlier decades, when more importance was given to the "means of livelihood" of the population, the post-independence censuses of Pakistan provided data on broad economic categories of different population groups which are comparable with some of the international figures. With these references in mind the economic composition of the population of East Pakistan will be discussed mainly in relation to the 1951 and 1961 censuses, and the changes thereafter.

The census of Pakistan primarily classifies population into: (a) economically active or civilian labour force (CLF) - both working and not working, (b) not in civilian labour force (NCLF), and (c) dependents.[1] As such, this classification including the

subclasses is near to the U.N. definition of economically active population of:

> "..... all persons of either sex who furnish the supply of labour available for the production of goods and services. It includes both persons employed and unemployed ... The employed comprise all persons, including family workers, who are at work or who have jobs during some specified periods, whether they are full time workers or part time workers, provided that the latter work at least a minimum period (to be set by each country, sufficiently low to exclude those whose contributions are negligible). The unemployed consist of all persons above a specified age who during the reference period are not working and are seeking work for pay or profit, including those who never worked before. The total economically active population is the sum of the civilian economically active population and the armed forces. However, members of the armed forces should be a separate category of the economically active population....."*2

In this connection it should be noted that in view of excessive sex differentials in the participation of labour force, the Pakistan census authorities have created a separate category for the "housewives" under the NCLF. Other categories of NCLF are population in the defence services, pensioners, rent receivers, and other self supporting persons (beggars, prisoners etc.). As an indicator of the economic character of the population, the total CLF is divided into: (i) agricultural (ALF), and (ii) non-agricultural (NALF) labour forces. The ALF is further classified into 7 occupational groups and the NALF into 10 main groups and 68 minor occupational types (Appendix 10); but in the present study only the main groups have been studied (see section B of this chapter).

Before analysing the data it should be noted that the censuses of 1951 and 1961 differed in two respects. First, the

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* Proportions of population in armed forces are rarely specified in a separate category in any country. In Pakistan they are excluded from the civilian labour force (CLF) group. Besides, the proportion of East Pakistanis in the armed forces is indeed very low.

minimum age limit to be regarded as economically active was lowered from 12 years in 1951 to 10 years in 1961. The 1961 census, however, gave detailed figures for lower age groups (10 to 11 and 12 to 14 years) to facilitate comparison with the 1951 census. Secondly, the occupational groups of ALF and NALF were rather generalized in 1951, and made more specific in 1961. Despite the reorganization of definition and classification of data on the economic characteristics of the population to improve their quality in the recent decades, they suffer from certain obvious limitations due to low literacy, sex selectivity in the participation of labour force and to the problem of distinguishing between the economically active population and the unemployed in an agrarian economy where the nature of work varies depending on various factors[3]. Besides, the 1961 census was undertaken in a season (winter) when agriculture was relatively sluggish, which might have caused some underenumeration of the ALF[4], while the one week time-interval during which occupations of the NALF have been determined might have included some seasonal workers taking up some non-agricultural activities for a short period. There are also reasons to believe that there had been some misreporting of women in the labour force, in view of the fact that in East Pakistan there was "strong objection of females against being termed as 'inactive'", - and subsequently they were classed as "housewives"[5].

With these limiations in mind the present study will cover economic structures of the districts and of nine selected urban centres of East Pakistan, in order to indicate their regional distributional patterns.

SECTION A

THE CIVILIAN LABOUR FORCE (CLF) AND THE LABOUR PARTICIPATION RATES IN EAST PAKISTAN

Of East Pakistan's total 50.84 million people in 1961, 34.3 per cent were economically active and were included in the CLF. International comparison of labour participation rates is difficult owing to varying attitudes towards employment by age group and sex, and to different ascribed characteristics of the population, but East Pakistan has certainly one of the lowest proportions of economically active population, and has a high proportion in agriculture (Table 6.1). Such activity rates are found in countries having young and unbalanced age structures, with a large proportion of population in the young age group, a small proportion in the old, and a rather low proportion in the intermediate age group. Therefore, since the beginning of this century the province's proportion of economically active population has been very low (Table 6.2). In general the CLF declined slowly between 1901 and 1921. A sharp decline in 1931 could be due to misenumeration because of civil disobedience in the subcontinent; otherwise the proportions of the CLF varied between 30 to 35 per cent during the six decades ending in 1961. The overall low level of the economically active population is primarily attributed to highly stable and broad based population structure due to high fertility. Such a pattern is also noticeable in India and few other countries.[6] The other factors are low female participation and relatively high mortality togetherwith low expectancy of life, which are showing positive changes only in very recent years.

The pattern of economically active population can be divided

TABLE 6.1

Economically active population (CLF), and agricultural manpower of selected developing countries and East Pakistan (1961-71).

Countries	Civilian Labour force (%)			% Agricultural Population
	Total	Male	Female	
Algeria	37.4	55.1	20.4	60
Brazil	40.6	63.4	16.6	50
Ceylon	36.9	53.1	18.9	50
India	43.0	57.1	27.9	70
Mexico	32.4	53.4	11.6	52
Sudan	37.4	66.7	7.5	77
Thailand	51.0	52.3	49.7	78
Turkey	45.1	51.0	38.9	73
U.A.R.	30.0	55.1	4.8	55
Pakistan	33.5	55.7	8.8	73
West Pakistan	32.4	55.0	6.1	59
East Pakistan-'61	34.3	56.2	10.8	85
-'71	34.5	56.8	11.0	85

Sources: 1. U.N.O. Demographic Aspects of Manpower, Report I, New York, 1962.

2. I.L.O.,(U.N.O), Yearbook of labour statistics, 1968 and 1969 (2 vols).

3. F.A.O (U.N.O), Production Year Book, Vol. 22, 1968,

4. Census of Pakistan, 1961, Vol. 1 and 2.

TABLE 6.2

Civilian labour force of East Pakistan, 1901-1965 and its projection upto 1985.

(percentages)

Years	Total	Male	Female
1901	33.3	60.6	5.1
1911	31.6	57.5	4.6
1921	31.7	56.4	5.7
1931	25.2	45.0	4.2
1941	-	-	-
1951	30.7(31.6)	54.2	5.0
1961	34.3	56.2	10.8
1965	34.2*	-	-
1970-71	34.5	56.8	11.0
	32.2*	-	-
1980-85 (Est.)	34.6	57.0	11.3

* Manpower Survey (Yasin, 1965)

Figures in the parenthesis is the CLF for 1955 given by I.L.O's Manpower Survey in East Pakistan.

Sources: 1. Census of India, Vols on Bengal, 1901-1931,
2. Census of Pakistan, 1961 Vol. 2,
3. Farooq, G.M. 1968,
4. Yasin, M. 1965.

into two phases over time to indicate certain significant changes: (i) 1901-1931 or 1941 - period of decline in the CLF; (ii) 1951-1971 - period of increase in the CLF.

The decline in the CLF during 1901-41 was the result of slow population growth (particularly until 1921) due to high mortality which later was intensified by some out-migration of active population from East Bengal to other parts of India. During this

period East Bengal lacked sufficient non-agricultural occupations because of limited urbanization and industrialization, while pressure on agriculture was beginning to buildup. Moreover, the gradual development of the industrial and commercial complex in lower West Bengal (Hooghly Valley) was attracting population from different parts of India including the nearest neighbour East Bengal. Some migrated to Burma and to the mining areas of Bihar and Orissa, and many farmers moved into the Brahmaputra Valley in Assam and the tea gardens of Northern West Bengal and Assam.[7] These migrations exerted a negative effect on the labour participation rates within East Bengal.

Legislation of compulsory primary education and the expansion of elementary education during 1921 to 1931 perhaps further lowered the labour participation rates by reducing child labour and by initiating a positive motivational change towards increasing years of schooling.

Between 1951 and 1961 the proportion of the CLF increased from 30.7 per cent to 34.3 per cent, and in 1971 the estimated CLF was almost the same as in 1961. These were on a par with 31.4 per cent CLF in 1955 arrived at by the Manpower Survey of I.L.O. (U.N.O., 1955). This gradual increase has primarily been due to rapid decline in mortality, increase in expectancy of life and to the return of migrants who left East Bengal before Independence. On the other hand, the increase was also influenced by the change in the definition of the CLF in the 1961 census, when the lower age limit of economically active population was reduced to 10 years from 12 years in 1951. If the 12 years age limit is considered for 1961 the corresponding proportion becomes 32.4 per cent, proportional to the overall growth of adult population

in the province. The increase in the female CLF also aided the overall improvement in the total CLF, but the female CLF is very low compared to many developing and Muslim countries (Tables 6.1 and 6.2) because of popular taboo on female participation in the labour force, very low female literacy and socio-religious seclusion of women. This aspect of the labour force is discussed later in this section, but it should be noted that the unpaid housewives who are supposed to form a large part of the "potential labour force" are an important aid to the agrarian economy of East Pakistan.

As may be seen in subsequent sections, although there are regional variations in the distribution of the CLF, their proportions will continue to decline or remain somewhat stable (as a result of the current pattern of age structure of the population, the future expansion of educational opportunity and slow urbanization and industrialization) until the present demographic trends change. Under these circumstances, it is difficult to establish definite trends for the labour force in East Pakistan and its future projection, especially as only the 1961 census contained comprehensive data on economic activities of the population. For the immediate future, changes in fertility will have little effect on the potential labour force, because by 1980-85, only the population aged 10-14 would be affected under the current assumption of fertility decline. Therefore, as estimated by Bean[8] under the assumption of (i) constant fertility and declining mortality, the total labour force of the province will reach 34.5 per cent in 1971; and assuming (ii) declining fertility and mortality conditions of the population

in 1985, the proportion may reach 34.6 in that year (Table 6.2). CIVILIAN LABOUR FORCE BY AGE GROUP AND SEX. The extent of labour participation rates in lower age groups (particularly 10 to 15 years) is very significant in the province - particularly in the agricultural sector (Table 6.3), and there is a highly positive and linear correlation between the proportions of male agricultural labour force and civilian labour force aged 10 to 15 years ($r = + 0.878$). The children in this age group act as apprentices in the family farms in rural areas. Besides this age group, the proportions of the CLF in all age groups in East Pakistan are considerably higher than in Pakistan as a whole. When the individual economic categories are viewed it is evident that the percentage of agricultural labour force (ALF) is also higher in East Pakistan, but that of non-agricultural labour force (NALF) is lower because of its lower level of urbanization and industrialization. The same pattern is distinguished in all districts of East Pakistan (Appendix 11), and only a few towns depart from this trend. From Table 6.3 another characteristic emerges, that is the extreme male selectivity in the labour force, both ALF and NALF, resulting in more female dependents (about 89 per cent). On the male side the proportion of the NALF is higher in the early age groups which is at the expense of the ALF. In the later age groups the pattern is reversed, when many of the NALF (who migrated to towns in earlier age groups) return to villages and take up agricultural work. This gives high positive relationship between male ALF and CLF aged 60 years and over in the districts ($r = +0.701$). Females, however, do not show the above pattern. Moreover, the small proportions of females engaged in agriculture (about 10 per cent) are in marked contrast

TABLE 6.3

Economic characteristics of population by broad age group and sex, Pakistan and East Pakistan, 1961

(Percentages)

Economic Categories	Total		Age groups							
			10-11		12-14		15-59		60+	
	M	F	M	F	M	F	M	F	M	F
A. PAKISTAN										
(a) Civilian Labour Force:	55.65	8.80	38.09	7.38	56.25	10.32	91.21	14.96	83.54	10.78
i) ALF	40.47	7.50	33.38	6.49	46.39	9.06	65.21	14.19	65.71	8.72
ii) NALF	15.18	1.30	4.71	0.89	9.86	1.26	26.00	2.41	17.53	2.06
(b) Dependents & others	44.35	91.20	61.91	92.62	43.75	89.68	8.79	98.83	16.46	89.22
B. E. PAKISTAN										
(a) Civilian Labour Force:	56.17	10.78	47.92	10.55	64.83	14.49	93.16	18.53	87.25	13.58
i) ALF	47.26	9.88	43.99	9.56	58.33	13.42	77.64	16.74	77.79	12.15
ii) NALF	8.91	0.90	3.93	0.99	6.50	1.07	15.52	1.79	9.46	1.43
(b) Dependents & others	43.83	89.22	52.08	89.45	35.17	85.51	6.84	81.47	12.75	86.42

M = Male, F = Female.

Source: Calculated from: Census of Pakistan, 1961. Bulletin - 5.

with many South and South-East Asian countries.

EFFECTS OF MIGRATION ON THE CHANGES WITHIN LABOUR FORCE.

The impact of return migration from towns to villages which takes place among later age groups of the NALF should be noted, as the temporary nature of the rural-urban migrants is striking. The traditional family and agricultural systems accept such return population from towns or non-agricultural sectors, which migrants take as insurance against retirement (or unemployment), and subsequently they are absorbed somehow or other in the family reservoir of labour. Under a condition of very high rural density, and low per capita land holding the situation is intensifying the phenomenon of overpopulation in both economic and physical senses in almost all of the districts of East Pakistan (Table 6.4). Unfortunately, the actual extent of agricultural unemployment is not known and none of the censuses has specified this aspect of the ALF in the province. Nevertheless, one survey by the World Health Organization estimated the rural unemployment rate of East Pakistan (1954-56) at 4.8; similar unemployment rate was found by the Manpower Survey of the Govt. of Pakistan (1957)[9]. This problem of labour force pattern is in no way novel to East Pakistan and is a persistent phenomenon in many of the agrarian societies of South and South-East Asia.[10] As one would expect, this is associated with low per capita income, low per capita production and low standard of living which are in strong contrast to the levels in the urban areas (Table 6.4). This situation is likely to persist so long as the basic functional patterns of agrarian economy of the rural areas are not changed and the non-agricultural sector is not expanded sufficiently. Some remedial measures in this connection have been noted at the end of this chapter.

TABLE 6.4

Some economic indices of East Pakistan, 1949-1964.

Years	Per capita GPP(Rs)*	Per capita rural income	Per capita urban income	Rural income as % of urban income	Net per capita land holding (acre)I	Cropping intensity %	Total agricultural value (Rs per acre)	Rural density (p.p. sq.m)
1949-51	287	272	614	44	0.56	127.7	404	1177
1954-56	272	256	607	42	0.51	129.2	404	-
1959-61	275	256	631	41	0.45	130.6	449	1398
1961-63	285	262	683	38	0.43	131.6	470	-
1963-64	305	279	755	37	0.41	133.7	503	1500(Est.)

* 100 Rupees (Rs) = £ 8.40 approx. I - one Acre = 0.405 hectare. Est. Estimated
GPP - Gross provincial product

Sources:
1. EPBS Dacca, 1966.
2. Khan, T.M. and Bergan, A. 1966.
3. Govt. of Pakistan, Ministry of Finance, Rawalpindi, 1968
4. Pakistan Census of Agriculture, 1960, Vol. I

THE PATTERN OF FEMALE PARTICIPATION IN THE LABOUR FORCE: SOME OBSERVATIONS. The female CLF in East Pakistan is one of the lowest in the developing world. Among the districts in East Pakistan Pabna registered the lowest proportion of female CLF (0.82 per cent), Noakhali (20.92 per cent) fairly high, and only in Chittagong Hill Tracts did the female CLF exceed 40 per cent as the tribal population and the Buddhists in this district practise equality of sexes in social and economic matters. Broadly speaking the extent of the female CLF bears positive and linear relationships with the proportions of Muslim population, illiteracy and urban population in the districts. More precisely, as far as East Pakistan is concerned, male-selectivity in the labour force depends on the apparent traditional seclusion of females from participating in outside work as a matter of observance of "Purdah" and thereby safe-guarding individual family prestige. These social outlooks vary in degrees between residential areas, religions and different socio-economic strata. For instance, although rural areas are inhabited mostly by illiterate and traditional minded population, females do participate in some of the farm activities, and this gives the high proportions of female CLF in the rural areas (Table 6.5). On the other hand, despite higher female literacy and enlightment the females in towns are less active (4.79 per cent), because they mostly belong to middle, upper middle, and some upper socio-economic strata: the middle class families seclude the females from working outside in order to display their superior status, while those in the upper class despise female participation in work altogether. And in both cases females rarely take any work beyond household activities, which again are

usually left to the house servants. This means the female CLF

TABLE 6.5

Percentage distribution of population by economic categories in rural and urban areas, East Pakistan, 1961.

Economic Categories	Rural			Urban		
	T	M	F	T	M	F
CLF	34.23	56.09	11.06	35.76	57.54	4.79
NCLF	28.47	7.46	50.73	33.40	16.00	58.15
Dependents	37.30	36.45	38.21	30.84	26.46	37.06

T - Total, M - Male, F - Female.
Source: Census of Pakistan, 1961, Vol. 2.

in the towns of East Pakistan is even lower than in Malaya (12.3 per cent), Burma (14.5 per cent) and India (7 to 10 per cent)[11].

The higher proportions of female labour force in rural areas were partly due to male selective out-migration, and occasional economic distress which call for added attention to increase family income by employing family labour. This probably is more true in the case of south-central districts of the province from where there had been considerable out-migration of males and where the density of population has long been high (see chap. I). The proportions of non-Muslim populations in some districts are also an important factor related to female CLF.

In towns the female participation in such activities as business and administrative organisations is still greatly restricted Despite the provisions of equal pay and other benefits, the entry of females into the labour force is limited by socio-religious views of the population as a whole. Over the last six decades the change has been somewhat slow despite the gradual increase in female literacy and social enlightenment, which should now be

complemented by attitudinal change of the population.

GEOGRAPHICAL DISTRIBUTION OF CHANGES IN POPULATION BY MAIN ECONOMIC CATEGORIES IN EAST PAKISTAN

(i) Districts

(a) CLF: Between 1951 and 1961 the ALF increased from 24.60 per cent to 27.54 per cent in East Pakistan, although five out of seventeen districts, namely Jessore, Barisal, Comilla, Khulna and Dacca registered declines in ALF of -0.04 to -5.21 per cent (Table 6.6). Excepting Dacca and Khulna the others also registered declines in NALF. The decreases in ALF in Dacca and Khulna were due to movement of labour force from agriculture to non-agricultural occupations as these districts provided a wide range of non-agricultural activities in their industrial and commercial centres. They are also some of the most urbanized districts of East Pakistan. This gave rise to greater increase in NALF in them (more than +1.0 per cent) (Table 6.6). Because of low urbanization and limited non-agricultural functions in Barisal, Jessore and Comilla some ALF and NALF might have moved into neighbouring districts for both agricultural and non-agricultural employments. Three districts, namely Rajshahi, Pabna and Faridpur registered only marginal increase in ALF (Fig. 6.1), possibly because of the poor agricultural and general economic conditions of the Western districts. Togetherwith a few others, they registered low proportions of NALF (Table 6.6), which are also indicative of their low urbanization and industrialization. It is probable that a good proportion of the CLF has left for other districts in pursuit of employment. The rest of the districts (Bogra, Rangpur, Dinajpur, Sylhet, Mymensingh, Chittagong, Chittagong Hill Tracts, Noakhali and Kushtia) registered greater increases in the ALF

TABLE 6.6

Percentage distribution and change in population by economic status, East Pakistan, 1951 and 1961.

A. DISTRICTS	1961			1951			Percentage Changes, 1951-61.		
	CLF			CLF			CLF		
	ALF	NALF	NCLF/Dep	ALF	NALF	NCLF/dep	ALF	NALF	NCLF/Dep.
EAST PAKISTAN: TOTAL	27.54	4.82	67.64	24.60	4.99	70.41	+ 2.94	- 0.17	- 2.77
Dinajpur	29.11	2.97	67.92	24.84	3.75	71.42	+ 4.24	- 0.77	- 3.50
Rangpur	28.76	2.34	68.90	24.92	3.23	71.85	+ 3.84	- 0.89	- 2.95
Bogra	25.10	3.07	71.83	23.57	3.32	73.11	+ 1.53	- 0.25	- 1.28
Rajshahi	24.83	3.43	71.74	24.76	4.13	71.11	+ 0.07	- 0.70	+ 0.63
Pabna	20.77	5.38	73.85	20.40	6.58	73.02	+ 0.37	- 1.20	+ 0.83
Kushtia	22.23	6.94	70.83	19.59	5.32	75.09	+ 2.64	+ 1.62	- 4.26
Jessore	23.88	4.42	71.70	23.94	5.00	70.96	- 0.06	- 0.58	+ 0.74
Khulna	22.74	5.80	71.46	23.96	4.78	71.26	- 1.22	+ 1.02	- 0.20
Barisal	23.25	3.41	73.34	23.39	4.57	72.04	- 0.04	- 1.16	+ 0.13
Mymensingh	33.31	3.23	63.46	27.74	3.24	69.02	+ 5.57	- 0.01	- 5.56
Dacca	17.14	10.46	72.40	22.35	9.40	68.25	- 5.21	+ 1.06	+ 4.15
Faridpur	24.16	3.54	72.30	23.49	4.29	72.22	+ 0.67	- 0.75	+ 0.08
Sylhet	31.76	3.74	64.50	30.15	4.05	65.80	+ 1.61	- 0.31	- 1.30
Comilla	25.26	3.12	71.62	25.40	3.70	70.90	- 0.14	- 0.58	+ 0.72
Noakhali	32.57	3.43	64.00	25.84	3.31	70.85	+ 6.73	+ 0.12	- 6.85
Chittagong	24.09	11.63	64.28	21.31	11.03	67.66	+ 2.78	+ 0.60	- 3.38
Chittagong Hill Tracts	47.04	5.82	47.14	28.49	2.00	69.51	+18.55	+ 3.82	-22.37
B. SELECTED TOWNS									
EAST PAKISTAN: URBAN	6.23	29.50	64.27	3.95	27.95	68.11	+ 2.25	+ 1.62	- 3.84
Saidpur	2.45	22.59	74.96	0.73	27.08	72.19	+ 1.72	- 4.49	+ 2.77
Rajshahi	12.71	9.71	77.58	3.45	25.64	70.19	+ 9.26	-15.93	+ 6.67
Khulna	1.57	33.45	64.98	4.50	27.16	68.34	- 2.93	+ 6.29	- 3.36
Barisal	9.35	17.42	73.23	5.21	28.30	66.49	+ 4.14	-10.88	+ 6.74
Mymensingh	25.07	11.39	63.54	4.26	27.73	68.09	+20.83	-16.34	- 4.47
Dacca	0.81	29.86	69.33	3.92	28.68	67.40	- 3.11	+ 1.18	+ 1.93
Narayanganj	0.52	32.41	67.07	3.20	32.79	64.01	- 2.68	+ 0.38	+ 3.06
Comilla	3.77	21.35	74.88	5.54	24.25	70.21	- 1.77	- 2.90	+ 4.67
Chittagong	1.64	33.32	65.04	4.77	30.50	64.73	- 3.13	+ 2.42	+ 0.31

Sources: Calculated from: Census of Pakistan, 1961, Bulletin - 5,
Census of Pakistan, 1951. Vol. 3.

(Table 6.6, Fig. 6.1), some with corresponding decline in the proportion of the NALF (Table 6.6, Fig. 6.2), because of their stable agricultural conditions, and partly of the return of some NALF to the agricultural sector. The northern districts in this group also received agricultural migrants from southern districts (see chapter II). Chittagong, Noakhali, Chittagong Hill Tracts and Kushtia registered increases in both ALF and NALF indicating a balanced growth in total CLF (Table 6.6, Figs 6.1, 6.2).

(b) NCLF and Dependents: Between 1951 and 1961, ten out of seventeen districts of East Pakistan registered declines in the NCLF including dependents,[*] of which nine, namely Dinajpur, Sylhet, Bogra, Rangpur, Chittagong, Chittagong Hill Tracts, Mymensingh, Noakhali and Kushtia experienced a marked decline (more than 1.0 per cent). These were the districts which indicated positive change in the ALF and many showed increase in the NALF as well (Table 6.6). That is to say their overall increase in the CLF has lowered the proportion in the NCLF and dependents. Only one district showed marginal decline in the proportion of NCLF and dependents, namely Khulna. The remaining seven districts, namely Faridpur, Barisal, Rajshahi, Comilla, Pabna, Jessore and Dacca registered increases in NCLF and dependent proportions, owing to decreases in ALF and in some cases NALF. In all cases, however the dependents and others were highly female selective.[12] The male proportion in the NCLF and dependents ranged from 37 per cent in Chittagong Hill Tracts to 46 per cent in Pabna, while that of female ranged

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[*] Regional variations in dependents have been discussed in detail under the section 'employment status' in this chapter.

FIG. 6.1

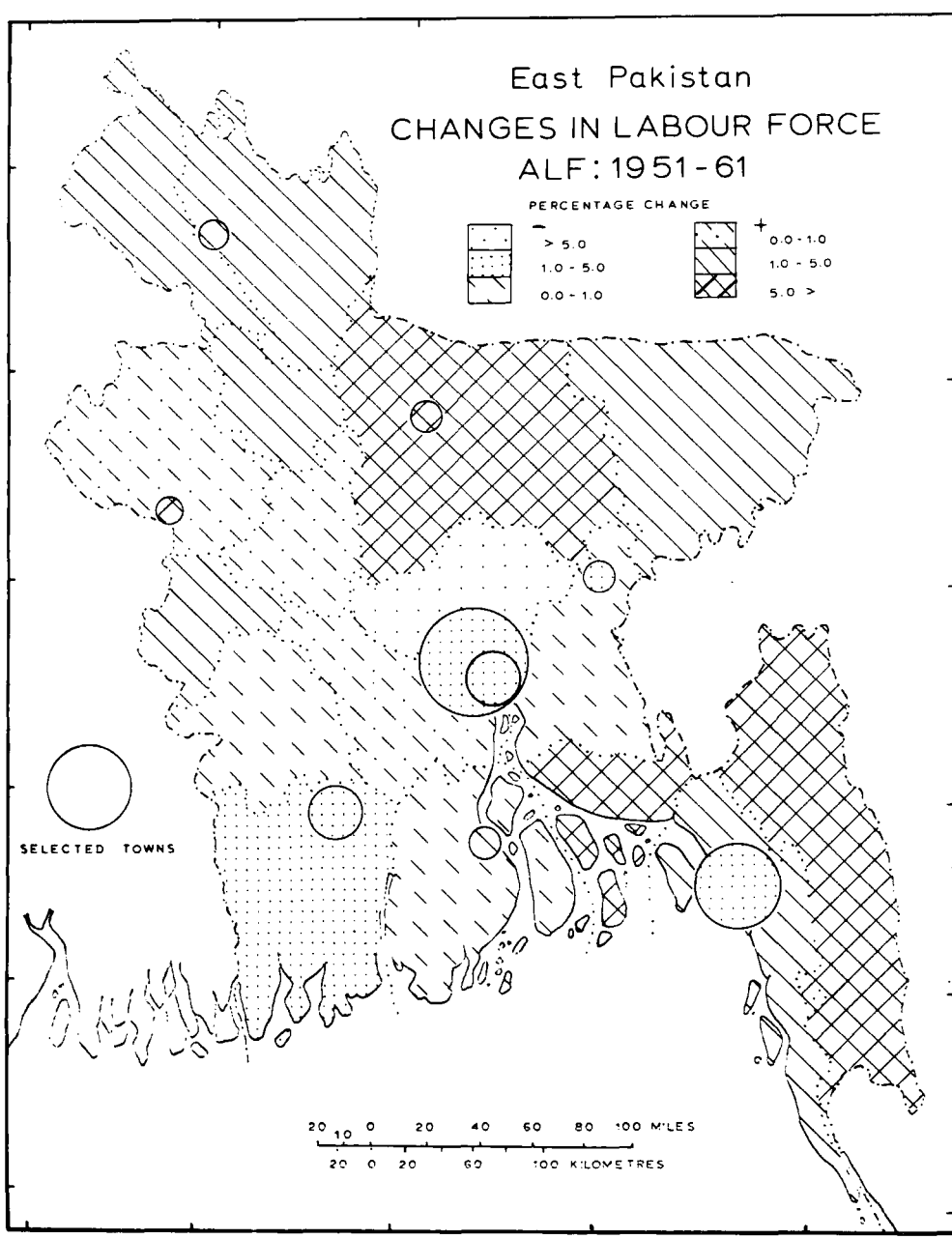
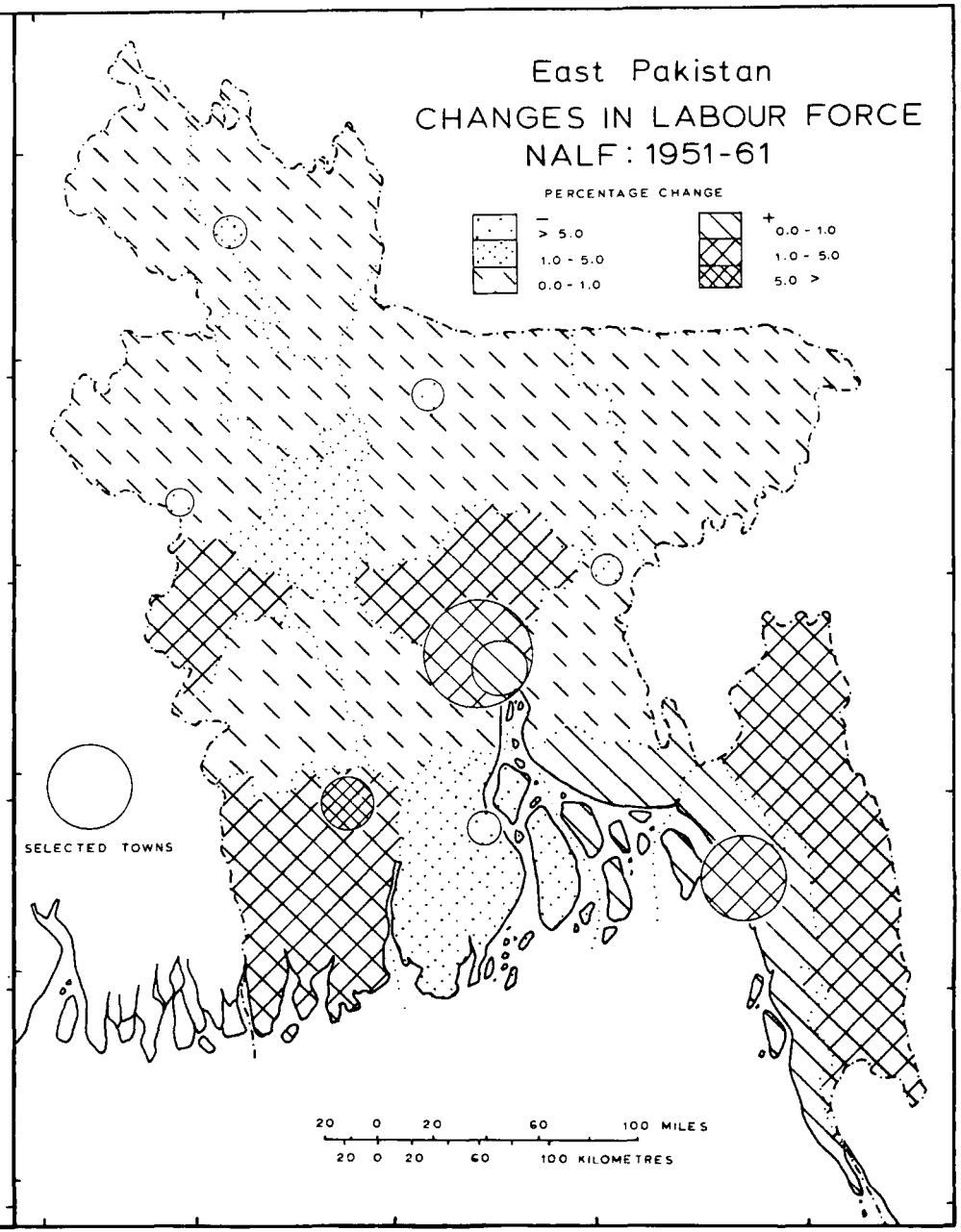

East Pakistan
CHANGES IN LABOUR FORCE
ALF: 1951-61
PERCENTAGE CHANGE
− > 5.0
1.0 - 5.0
0.0 - 1.0
+ 0.0 - 1.0
1.0 - 5.0
5.0 >
SELECTED TOWNS
20 10 0 20 40 60 80 100 MILES
20 0 20 60 100 KILOMETRES

FIG. 6.2


East Pakistan
CHANGES IN LABOUR FORCE
NALF: 1951-61
PERCENTAGE CHANGE
− > 5.0
1.0 - 5.0
0.0 - 1.0
+ 0.0 - 1.0
1.0 - 5.0
5.0 >
SELECTED TOWNS
20 0 20 60 100 MILES
20 0 20 60 100 KILOMETRES

from 82 per cent in Chittagong to 99 per cent in Pabna (Appendix 11). In Chittagong Hill Tracts the female NCLF and dependents were rather low (53 per cent) with correspondingly high female CLF (47 per cent). The reasons have been mentioned elsewhere (Appendix 11).

(ii) Selected Towns

(a) CLF: Data on labour force participation rates for all towns were not available for any decade. However the 1951 and 1961 censuses gave data for nine towns. Due to the absence of separate data for rural areas labour force participation rates for all towns could not be calculated even indirectly. Because of these limitations, analysis of economic characteristics of urban population of East Pakistan will be confined to nine towns including four cities.

Although the percentage of urban population in East Pakistan in 1961 was only 5 per cent, nearly 36 per cent of it was CLF which was higher than the province as a whole (Table 6.5). Of the total CLF in urban East Pakistan, NALF constituted 29.50 per cent and ALF only 6.23 per cent. Since 1951 the proportions of NALF and ALF had increased by 1.62 and 2.25 per cent respectively with corresponding decrease in NCLF and dependents. As noted in Table 7.6 this has been the general pattern of change in almost all the towns, although the change in NCLF and dependents has been less uniform. The cities and large towns such as Khulna, Dacca, Narayanganj, Chittagong and a few others registered massive increases in NALF which were reflected in their respective total CLF. Expansion of non-agricultural activities in them, attracting more migrants from outside, was the main reason for such increases. For instance, between 1951 and 1961

the increase in population in Dacca was 66 per cent, in Narayanganj 137 per cent and in Khulna 209 per cent.[13] The smaller towns and those peripheral to rural areas registered decreases in NALF possibly because of migration of NALF to larger towns and also return migration of population. This was the case of Saidpur, Rajshahi and Mymensingh whose activities are also related to agriculture.

The overall smaller increase in NALF (1.62 per cent) in the urban areas of East Pakistan was the result of a slow rate of industrialization and greater concentration of NALF in some particular urban centres. Another characteristic of labour force of urban East Pakistan is that female participation is very low (Table 6.5) - lower than the province as a whole, which besides the reasons mentioned earlier, is the result of very high sex ratios in the towns, and the preponderances of male migrants.

(b) NCLF and Dependents: The proportions of NCLF and dependents were lower in towns than in the province as a whole (Tables 6.5 and 6.6). Between 1951 and 1961 their proportions declined by about 3.87 per cent, which was more than the decrease in the province as a whole. In one aspect both the total and urban areas resembled each other, that is the proportions of NCLF and dependents were female selective (Table 6.5). Thus among the urban centres one city and most of the medium sized towns registered very high proportions of NCLF and dependents, in which the housewives constituted the major segment. Some of these towns also had lower sex ratios (Rajshahi, Saidpur etc.). As one would expect, the cities had low proportions of NCLF because of their nature of functions and higher proportions of active male populations.

SECTION B

OCCUPATIONAL STRUCTURES OF LABOUR FORCE IN EAST PAKISTAN

The two components of the agricultural labour force (ALF) and the non-agricultural labour force (NALF), are both subdivided into certain numbers of occupational groups. Because of obvious limitations of data these groups are studied in relation to the 1951 and 1961 censuses only.

(i) Occupational Structures of the ALF: The occupational groups of the ALF are given below and their respective proportions and distributions have been identified in Table 6.7.

I. Cultivators and agricultural labourers.
II. Orchard, nursery workers; aesthetic gardeners (malis), and market gardeners,
III. Tea plantation workers,
IV. Institutional farming: dairy, poultry, animal breeders, bee-keepers, sericulturists, and other breeders.
V. Drivers of farm tractors and machines,
VI. Hunters and trappers (excluding fishermen),
VII. Other agriculturists (unclassified).

In East Pakistan the overwhelming majority (98.19 per cent) of the ALF fall into category I - cultivators and agricultural labourers (Table 6.7) - the remainder being in a variety of other agricultural works: (II) orchard, nursery etc. 0.25 per cent, (III) tea workers 0.49 per cent, (IV) dairy, poultry and related workers 0.59 per cent, (V) workers in mechanized farming 0.02 per cent, (VI) hunters and trappers 0.45 per cent, and (VII) others only 0.01 per cent. Since 1951 there had been slight decreases in the proportions of cultivators and agricultural

labourers, tea labourers and other workers with corresponding increases in orchard, nursery and garden workers, and dairy, poultry and breeding workers.

The distribution of the labour force in category I varied only little between the districts in 1961, and was more uniformly distributed than any other group (Fig. 6.3). This category had the highest proportions in Barisal and Faridpur (99.9 per cent), followed by Mymensingh, Dacca and Chittagong Hill Tracts, and the lowest in Khulna (87.31 per cent). Ten districts had proportions of ALF engaged in orchard, nursery etc. above the provincial average (0.25 per cent): Rangpur, Bogra, Rajshahi, Pabna, Jessore, Khulna, Dacca, Sylhet, Noakhali and Chittagong, producing mango, bananas, pineapples, papayas, coconuts, oranges, and a few other tropical fruits as well as various winter (Rabi) crops. In Jessore, Noakhali, Faridpur and Chittagong there were about 52,000 coconut nurseries-cum-orchards during the 1960's.[14] Tea plantation labourers were confined to Sylhet, Chittagong and Comilla where nearly 50 plantations produced about 59 million pounds of tea in an area of 78 thousand acres in 1961-62.[15] The existence of some tea labourers in other districts was rather ambiguous as they did not possess any tea estates. It is possible that some workers, mainly the temporary ones, left their work in the tea-districts and went back to their respective home districts where they were returned as tea labourers in the censuses. The tea-labourers of north Bengal probably left the plantations in Assam and Darjeeling in West Bengal immediately after the partition of Bengal. Excepting Barisal and Comilla the proportions of workers engaged in dairy, poultry, livestock breeding, bee keeping and sericulture had increased markedly in all districts since 1951. Khulna registered the highest proportion of workers in this group followed by

TABLE 6.7

Occupational structures of agricultural labour force, East Pakistan, 1951 and 1961.

DISTRICTS	1961 I	II	III	IV	V	VI	VII	1951 I	II	III	IV	V	VI	VII
	Percentages													
E. PAK. TOTAL	98.19	0.25	0.49	0.59	0.02	0.45	0.01	98.51	0.03	0.56	0.24		0.63	0.03
Dinajpur	98.93	0.08	0.03	0.62	0.01	0.33	-	99.94	-	-	0.06		-	-
Rangpur	98.29	0.25	-	1.31	0.01	0.13	0.01	99.85	-	-	0.12		0.03	-
Bogra	97.68	0.86	0.09	1.06	0.09	0.07	0.15	99.84	0.01	-	0.15		-	-
Rajshahi	98.00	0.87	0.05	1.03	0.03	-	0.02	99.67	0.01	-	0.30		0.02	-
Pabna	97.94	0.84	0.05	1.07	0.04	0.03	0.03	99.70	0.02	-	0.26		0.02	-
Kushtia	98.99	0.11	0.01	0.43	-	0.46	-	99.60	0.03	-	0.28		0.09	-
Jessore	97.95	0.51	-	0.38	-	1.16	-	99.52	0.02	-	0.30		-	0.16
Khulna	87.31	0.71	-	3.81	0.07	8.10	-	99.54	0.01	-	0.30		0.14	0.01
Barisal	99.99	-	-	-	-	-	0.01	99.69	-	-	0.15		0.16	-
Mymensingh	99.75	0.11	0.01	0.10	0.02	0.01	-	98.93	0.02	-	0.02		1.03	-
Dacca	99.21	0.39	0.01	0.38	0.01	-	-	98.46	0.03	-	0.08		1.43	-
Faridpur	99.99	-	-	-	-	-	0.01	99.67	-	-	0.20		0.13	-
Sylhet	93.58	0.32	5.85	0.24	0.01	-	-	92.17	0.01	6.02	0.65		1.05	0.10
Comilla	95.95	-	0.01[x]	-	-	-	4.04[x]	98.66	-	0.02	0.40		0.88	0.04
Noakhali	98.23	0.50	0.11	0.79	0.09	0.28	-	99.02	-	-	0.01		0.82	0.15
Chittagong	97.22	0.60	0.32	1.28	0.09	0.49	-	97.04	0.22	0.56	0.86		1.05	0.27
Chittagong Hill Tracts	99.83	0.03	-	0.10	-	0.04	-	99.52	-	-	0.15		0.24	0.09

x Tea labourers were probably included in unclassified groups.

Sources: Same as Table 6.6.

Chittagong and all the northern districts. Almost all districts give attention to cattle breeding which is closely associated with the indigenous agricultural practice, and forms the secondary financial source and security of the rural population of the province. Bee-keeping in the southern districts, and sericulture in Rajshahi, Khulna and a few other districts occupy a secondary place after cattle breeding. Column V of table 6.7 represents an important traditional character of agriculture and the agricultural labour force in East Pakistan. Only 0.02 per cent of the ALF were returned as workers engaged in mechanized cultivation. In general, mechanized cultivation is not yet popular in the province in view of the fact that it leads to unemployment and labour redundancy in a labour-surplus agricultural economy; but there is still scope for its expansion with proper planning and policy. Mechanized cultivation was practically absent in the 1950's, and at present it is mostly confined to the government sponsored experimental farms and a few co-operative holdings in most of the districts.[16] The proportions of hunters and trappers (excluding fishermen) were very low, unevenly distributed in districts and had declined since 1951. In Khulna 8.10 per cent of the ALF were hunters and trappers because of the location of the biggest forest area (tidal forest of Sundar Ban). It was followed by its neighbouring districts of Jessore and Kushtia. Chittagong also registered a relatively high proportion of ALF in this group as it is nearer to the forest area of Chittagong Hill Tracts. Finally, the proportions of ALF engaged in minor agricultural practices (unclassified), which probably included underemployed or unemployed, were very low and unevenly distributed within the province. In this connection it should

FIG. 6.3

CUMULATIVE PERCENTAGES OF OCCUPATIONAL GROUPS AND ALF
EAST PAKISTAN, 1961

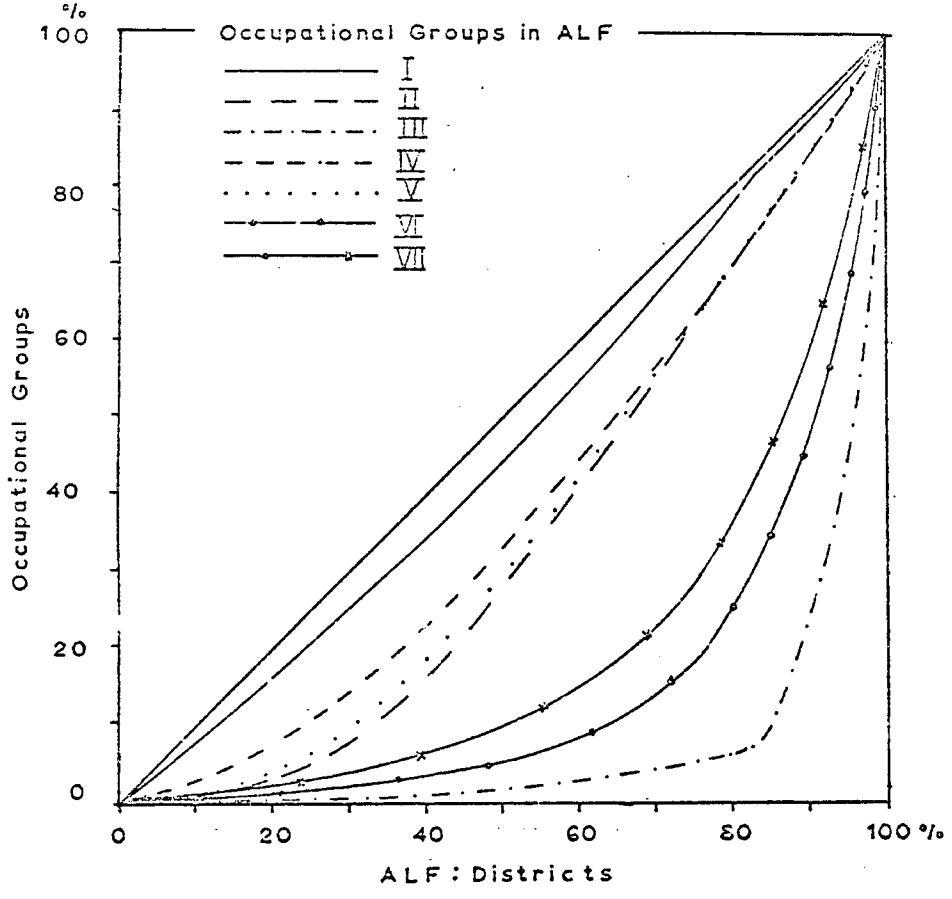
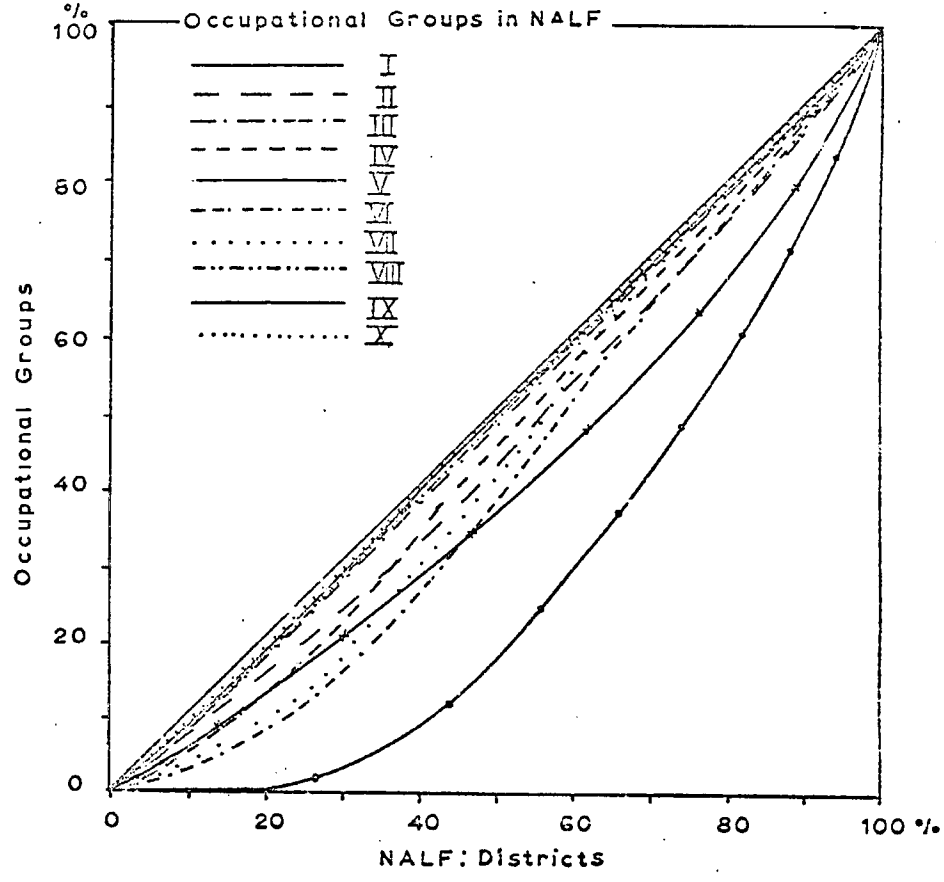


FIG. 6.4

CUMULATIVE PERCENTAGES OF OCCUPATIONAL GROUPS AND NALF
EAST PAKISTAN, 1961



be mentioned that the actual extent of unemployment in the ALF is hard to determine* as in the 1961 census ".... in the case of bulk of the ALF, the data regarding unemployment were not collected because their working status was not ascertained with reference to any specific period....."[17]. This also accounted for a decline in the proportions in the 'others' group since 1951, but probably underenumeration was another factor in the sense that the extended family system usually supports the unemployed labour force, many of whom are often engaged in household work and might not have been returned as unemployed at all. The village family pattern acting as insurance for the ALF against scarcity of jobs is one of the reasons for the lack of any large-scale rural to urban flow which is so typical in African and Latin American countries. More precisely, the shared economy in rural areas is still preventing a strong "push" of population from villages to towns.

(ii) Occupational Structures of the NALF: Like the ALF, the NALF is also divided into certain main occupational groups as follows:

I. Professional, technical and related occupations,
II. Managerial, administrative, clerical and related work,
III. Sales and related occupations,
IV. Agriculture, fishing, trapping and logging,
V. Mine, quarry and related occupations,

---

* The Planning Commission of the Govt. of Pakistan, however recognized this problem and focussed "... attention on the need to accelerate the programme especially in East Pakistan, where unemployment is most widespread...". (ref. Govt. of Pakistan, The Third Five-Year Plan, 1965-70, Rawalpindi, 1967. p.26).

VI. Transport and communication,

VII. Manufacturing, construction and general works,

VIII. Service, sport, entertainment and recreation,

IX. Unclassified workers, and

X. Unemployed (but looking for work).

Each of these groups has a number of subclasses which have been presented in Appendix 10. Since 1951 the proportions of NALF working in I, VI, VII and VIII categories had increased, while those in others had decreased (Table 6.8). In 1961, the majority of the NALF were engaged in manufacturing, construction and general works, followed by sales and related occupations and service, sport and recreation. Fig. 6.4 indicates the distributional patterns of different occupation groups of the NALF between the districts. Categories I, III, IV, VIII and X were more or less uniformly distributed in the districts, while those in V, VI and VII indicated clustering in their distribution (Fig. 6.4).

As may be noted in Table 6.8, a majority of the northern districts have proportions of professional, technical, sales, agricultural, fishing, trapping, logging, service and recreation workers above the provincial averages, while the proportions of unemployed and those in unclassified groups were lower than the provincial average. The reasons for high proportions of NALF in primary activities and low proportions in tertiary and secondary activities are not far to seek. Low industrialization and slow change in non-agricultural functions because of agricultural intensity togetherwith influx of agricultural migrants from south-eastern and central districts (see chapter I) explain the situation.

TABLE 6.8

Occupational structures of non-agricultural labour force, East Pakistan, 1961.

(Percentages)

A. DISTRICTS	I	II	III	IV	V	VI	VII	VIII	IX	X
E. PAKISTAN: TOTAL	7.35 (5.56)	7.88 (9.58)	20.55 (23.14)	4.98 (9.00)	0.04 (0.04)	5.70 (5.32)	37.03 (22.78)	11.65 (4.46)	2.47 (5.95)	2.35 (14.17)
Dinajpur	11.62	9.93	20.72	0.19	0.01	5.38	33.26	14.27	2.87	1.74
Rangpur	11.85	10.63	22.23	0.97	-	8.12	28.44	13.62	2.20	1.84
Bogra	8.69	7.18	19.47	1.50	0.01	4.59	37.57	13.14	0.03	1.80
Rajshahi	7.51	6.49	20.80	8.95	0.05	4.98	36.42	12.04	0.65	2.11
Pabna	4.97	4.97	17.85	8.64	-	3.79	49.05	7.52	2.23	0.98
Kushtia	5.01	6.57	18.46	2.39	-	3.51	48.65	10.84	1.76	2.81
Jessore	8.95	6.85	24.62	2.39	0.02	4.13	38.68	10.55	1.93	1.88
Khulna	6.85	7.49	22.13	1.43	0.05	5.17	39.54	11.96	2.52	2.86
Barisal	12.39	6.04	25.69	5.68	0.02	7.02	28.62	10.95	0.95	2.64
Mymensingh	9.23	6.98	26.85	6.86	-	4.88	30.29	11.39	1.86	1.66
Dacca	3.96	8.99	18.15	3.57	0.02	5.32	43.76	10.72	3.79	1.72
Faridpur	9.34	6.84	24.26	10.47	0.02	5.25	30.96	10.48	1.11	1.27
Sylhet	10.55	7.24	21.63	12.93	0.09	3.66	27.73	11.17	1.29	3.71
Comilla	8.70	6.73	23.41	6.19	0.03	5.72	33.19	10.19	2.24	3.60
Noakhali	10.64	7.65	17.01	3.80	0.02	6.17	35.13	12.46	2.51	4.61
Chittagong	5.46	9.43	16.53	3.21	0.12	9.22	36.77	14.24	2.32	2.70
Chittagong Hill Tracts	4.27	11.36	14.73	0.72	-	5.01	43.48	18.80	1.86	0.85
B. SELECTED TOWNS										
E. PAKISTAN: URBAN	5.33	13.26	19.84	0.64	0.08	9.29	30.72	15.46	1.84	3.54
Saidpur	2.35	9.02	17.22	0.07	-	19.36	39.08	10.69	0.07	1.64
Rajshahi	9.73	17.18	22.38	0.49	0.47	6.12	21.09	20.39	0.02	2.13
Khulna	2.45	10.26	14.48	0.92	0.01	5.46	48.17	12.41	2.83	3.01
Barisal	8.42	15.04	17.99	1.23	0.05	12.12	21.12	14.51	1.05	8.47
Mymensingh	7.28	11.66	17.66	0.10	-	8.76	27.17	21.19	1.63	4.55
Dacca	4.53	15.98	16.76	0.18	-	6.58	31.94	17.59	3.95	2.49
Narayanganj	1.77	11.03	13.70	0.37	0.01	6.04	55.87	8.96	1.49	0.76
Comilla	7.46	14.90	21.62	0.13	-	8.73	22.05	19.56	2.03	3.52
Chittagong	2.98	15.27	13.99	1.24	0.11	9.78	32.46	18.08	1.78	4.31

Figures in parenthesis are for 1951.
Districtwise figures for 1951 were not available

Sources: Same as Table 6.6.

The southern districts registered proportions of workers in secondary and tertiary occupation groups above the provincial averages, which were the outcome of the location of industrial and quite a few important commercial centres in Khulna, Jessore, and some in Kushtia and Faridpur. They drew labour force from rural areas which partially explain their high unemployment rates (more than 2.35 per cent). The NALF engaged in primary activities, though fairly high, were less numerous.

In the central districts the proportions in most primary and tertiary groups were higher than the respective provincial averages (Table 6.8). Only Dacca registered high proportions of labour force in secondary and tertiary occupation groups; because of the multiplicity of functions this district registered an unemployment rate (1.72 per cent) below the provincial average (Table 6.8).

In the eastern and south-eastern districts the secondary occupation groups were most important, followed by the tertiary and primary groups. Most of the districts in this part of East Pakistan registered high unemployment rates (above 2.35 per cent), owing to their high rural densities, most probably led to excess of transference of rural population in the non-agricultural sectors.

Mining and quarrying occupy insignificant proportions in the NALF of the province (0.04 per cent). Most of the mining and quarry labourers were found in the limestone areas of Sylhet and Chittagong, natural gas fields in Sylhet and Comilla, and sea-salt works in the coastal districts. In Rajshahi, Khulna and a few other districts sand quarrying occurs, while some are

engaged in peat extraction in Faridpur and Barisal districts.

In the towns, the occupational patterns of the NALF were more specific, depending on their respective ecology. The northern towns, such as Saidpur and Rajshahi which lacked industrial and commercial importance, were characterized by high proportions of workers in professional, technical, managerial, administrative, transport and communications. In contrast, towns in the southern districts, such as Barisal and Khulna, supported workers in agriculture, fishing, logging, managerial, administrative transport, communication and some in manufacturing and construction establishments (Table 6.8). The towns in the central districts such as Narayanganj and Dacca, which are important industrial commercial as well as administrative centres, registered high proportions of labour force in both secondary and tertiary sectors. Eastern and south-eastern towns registered more or less uniform distribution of NALF in different occupational groups. In all towns NALF in the primary sector were very low.

Unemployment was a common feature in the urban areas of the province. Most of the selected towns registered proportions of unemployed above the provincial urban average (3.54 per cent). Very high unemployment rates were found in larger towns, such as Barisal and Mymensingh, and in some cities (4 to 9 per cent). The very low unemployed rates in Narayanganj city is difficult to explain. Smaller towns had proportions of unemployed below the urban average (Table 6.8).

SECTION C

EMPLOYMENT STATUS OF THE POPULATION OF EAST PAKISTAN

The employment status of the population represents the actual

working population included in the CLF and the various categories dependent upon them. In the 1961 census the employment status of the population of East Pakistan was grouped under the following headings:

1.	Working	CLF
2.	Unemployed, but looking for work	CLF
3.	Housewives	NCLF
4.	Dependent children (below 10yrs.)	NCLF
5.	Other dependents (above 10 yrs.)	NCLF

Out of the provincial CLF of 34.3 per cent of the total population, 34.1 per cent were returned as working and only 0.2 per cent as unemployed (Table 6.9). The respective figures for urban areas were 35.76, 34.78 and 0.98 per cent. In this connection it should be noted that the unemployed rates as known from the census do not give a true picture because usually tne unemployed and first job seekers live on the financial assistance of the family and probably reported themselves as dependent. This is evident in the high dependency ratios of the population aged 10 years and over in the province and in the urban areas (Table 6.9). This group togetherwith children aged 10 years and less, and housewives were classed as NCLF. The distribution of different employment groups varies considerably between the districts as well as between the towns depending on various geographic and demographic factors (Table 6.9, Fig. 6.5).

(i) Districts

The districts of East Pakistan ranged between -1 to +2 standard deviation ($\bar{x}$ = 34.5, σ = 7.08) in the distribution of working population (Fig. 6.6). Almost all of the northern and

FIG. 6.5

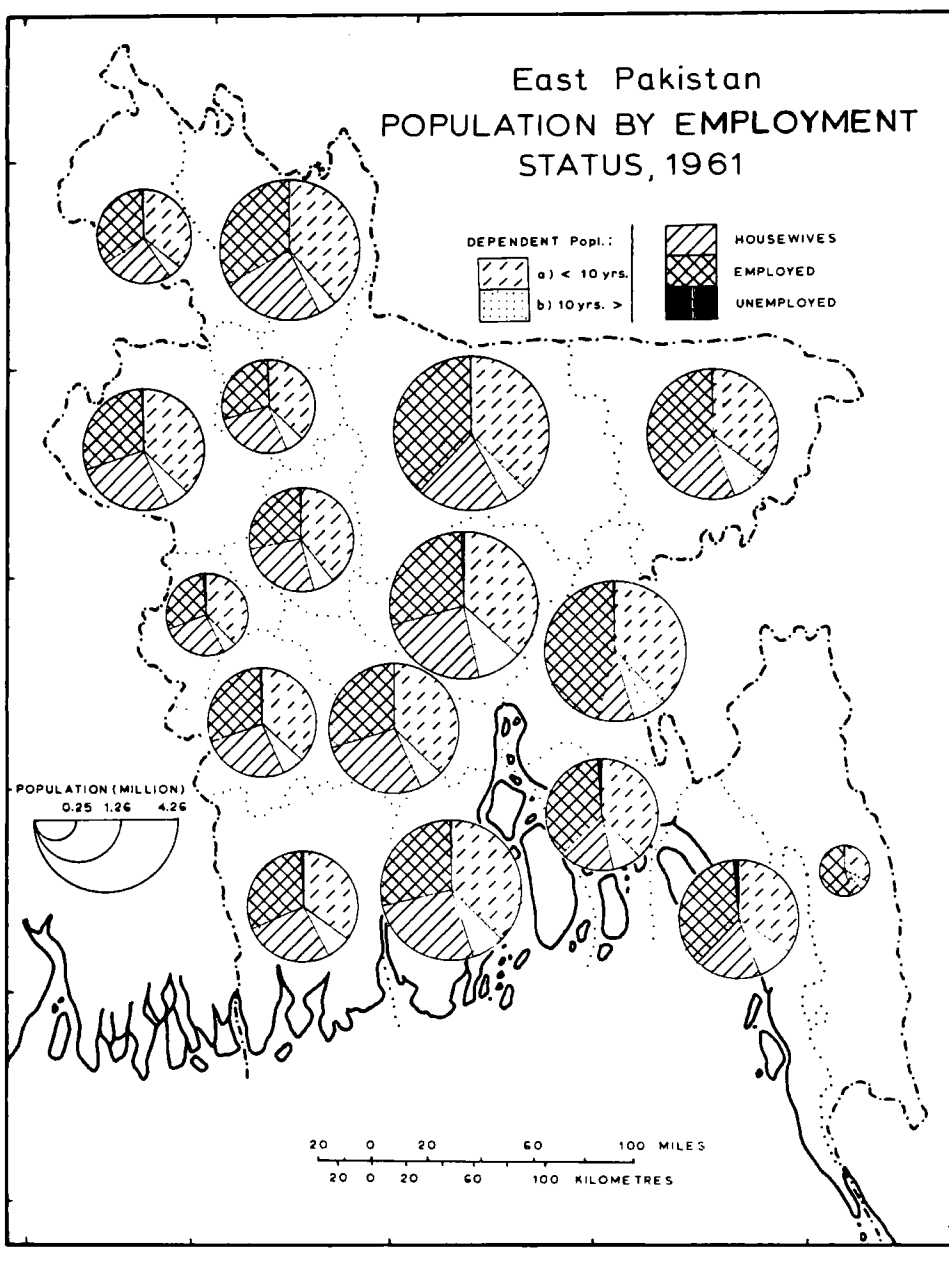

East Pakistan
POPULATION BY EMPLOYMENT STATUS, 1961
DEPENDENT Popl.:
a) < 10 yrs.
b) 10 yrs. >
HOUSEWIVES
EMPLOYED
UNEMPLOYED
POPULATION (MILLION)
0.25 1.26 4.26
20 0 20 60 100 MILES
20 0 20 60 100 KILOMETRES

FIG. 6.6

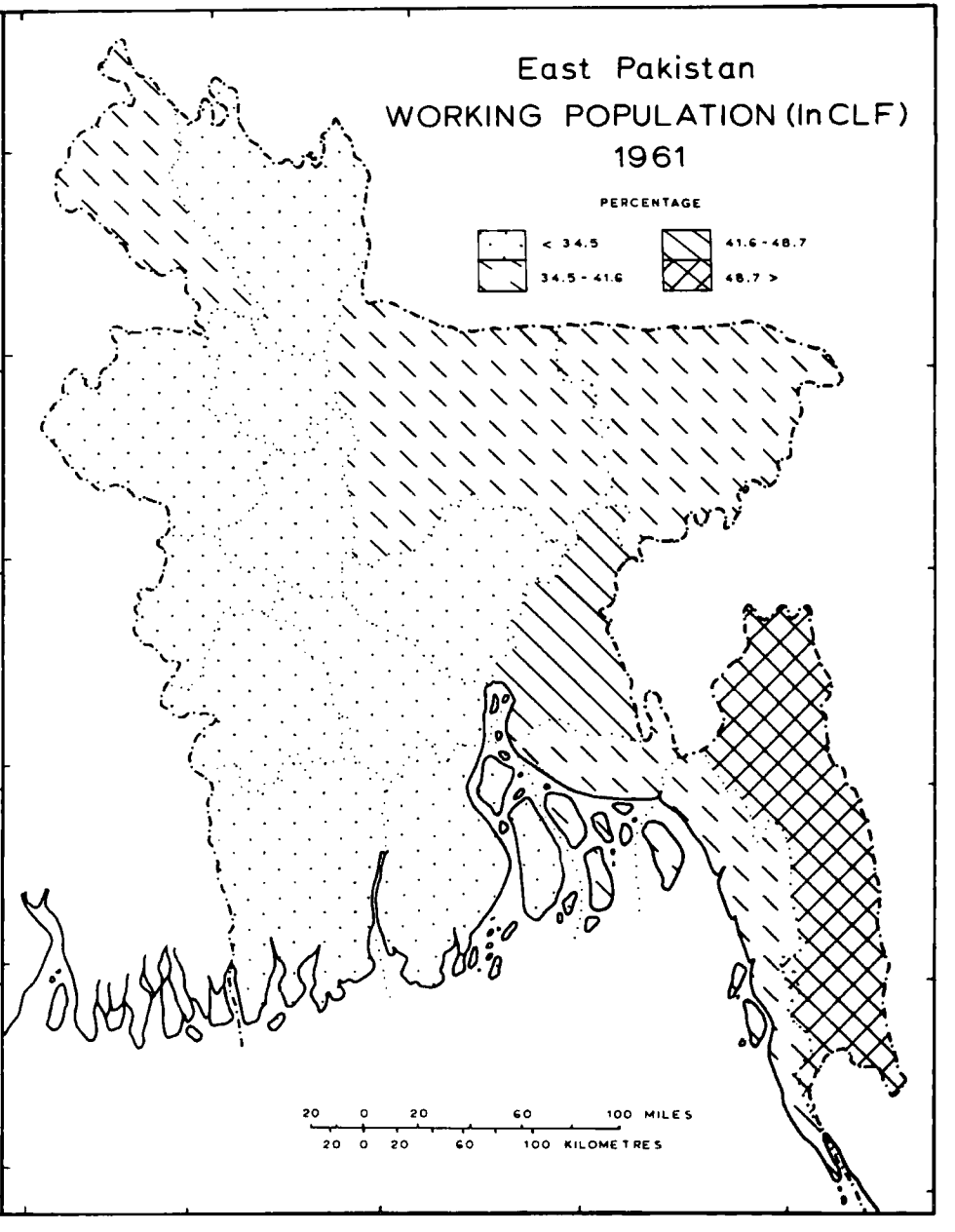

East Pakistan
WORKING POPULATION (In CLF)
1961
PERCENTAGE
< 34.5
34.5 - 41.6
41.6 - 48.7
48.7 >
20 0 20 60 100 MILES
20 0 20 60 100 KILOMETRES

TABLE 6.9

Employment status of the population of East Pakistan, 1961.

Percentages

A) DISTRICTS		CLF		NCLF		
		WORKING	UNEMPLOYED	HOUSEWIVES	DEPENDENTS	DEPENDENTS
	T	34.1	0.2	21.8	6.9	37.0
EAST PAKISTAN:	M	55.9	0.3	-	8.0	35.8
TOTAL*	F	10.8	-	45.3	5.8	38.1
Dinajpur		34.6	0.1	25.3	4.3	35.7
Rangpur		33.1	0.1	24.3	4.2	38.3
Bogra		29.5	0.1	27.0	6.4	37.0
Rajshahi		30.1	0.1	26.8	6.1	36.9
Pabna		28.1	0.1	26.2	6.5	39.1
Kushtia		31.0	0.3	26.1	5.3	37.3
Jessore		30.2	0.1	26.5	6.6	36.6
Khulna		30.8	0.2	26.5	7.2	35.3
Barisal		28.4	0.1	26.4	7.5	37.6
Mymensingh		38.5	0.1	19.5	4.4	37.5
Dacca		29.5	0.2	23.8	9.8	36.7
Faridpur		29.3	0.1	27.2	6.2	37.2
Sylhet		37.2	0.1	18.3	9.2	35.2
Comilla		46.4	0.2	8.2	7.5	37.7
Noakhali		36.7	0.5	16.4	8.1	38.3
Chittagong		37.1	0.7	17.9	10.1	34.2
Chittagong Hill Tracts		55.8	0.1	5.8	5.9	32.4
B) SELECTED TOWNS	T	34.78	0.98	22.00	11.79	30.45
EAST PAKISTAN:	M	58.82	1.75	-	13.53	25.90
URBAN*	F	7.64	0.05	44.00	11.41	36.90
Dacca		35.8	0.8	17.4	15.8	30.2
Chittagong		43.1	1.9	16.4	12.7	25.9
Narayanganj		41.6	0.4	18.0	11.7	28.3
Khulna		43.4	1.2	19.6	9.1	26.7
Barisal		32.1	0.3	18.3	19.5	29.8
Saidpur		25.4	1.4	24.2	14.0	35.0
Rajshahi		25.2	0.8	19.3	20.8	33.9
Comilla		26.9	0.8	18.4	22.2	31.7
Mymensingh		42.1	0.7	13.1	12.5	31.6

* To indicate the sex selectivity in employment of the labour force detail figures by sex for total and urban East Pakistan has been given.

Source: Same as table 6.5.

south-western districts, namely, Rangpur, Bogra, Pabna, Rajshahi, Kushtia, Jessore, Faridpur, Khulna, Barisal, and one central district, namely Dacca, registered low working populations (Fig. 6.6). The rest of the districts, occupying eastern and central East Pakistan, had medium high to high working populations. In both of these groups females constituted a very small proportion of working population. The highest proportion of working population was found in Chittagong Hill Tracts where many females were returned as working in 1961.

The distribution of unemployed proportions also falls within the range of -1 and +2 standard deviation ($\bar{x} = 0.19, \sigma = 0.16$). Eleven out of seventeen districts registered low unemployed rates and included districts having high working populations, such as Dinajpur, Mymensingh, Sylhet and Chittagong Hill Tracts, as well as low working population as in Rangpur, Faridpur, Bogra, Rajshahi, Jessore and so on (Figs. 6.6, 6.7).

The low proportions of working and unemployed population in many of the northern and western districts were due primarily to high proportions of housewives ($\bar{x} = 21.9$, $\sigma = 6.45$) (Fig. 6.5). Many of these districts also registered high proportions of dependents which bear positive relationship with the total dependency ratios (see chapter II).

Comilla, Chittagong, Noakhali and a few other districts had fairly high working as well as unemployed proportions with low proportions of housewives (Figs. 6.5, 6.6 and 6.7). This was because of greater participation of females in the labour force as well as some increase in both the ALF and CLF since 1951.

The distributional pattern of dependents varied more than

FIG. 6.7

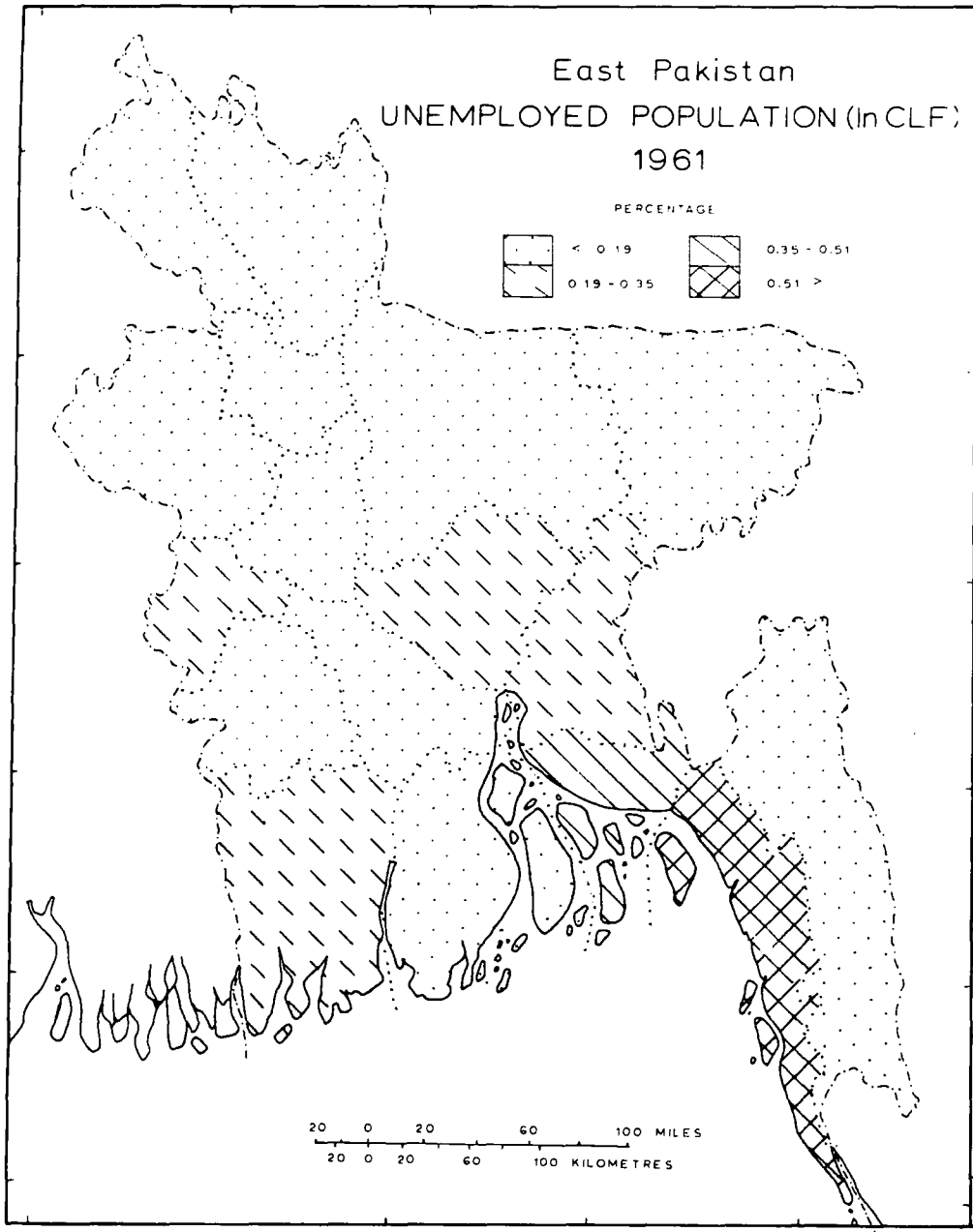
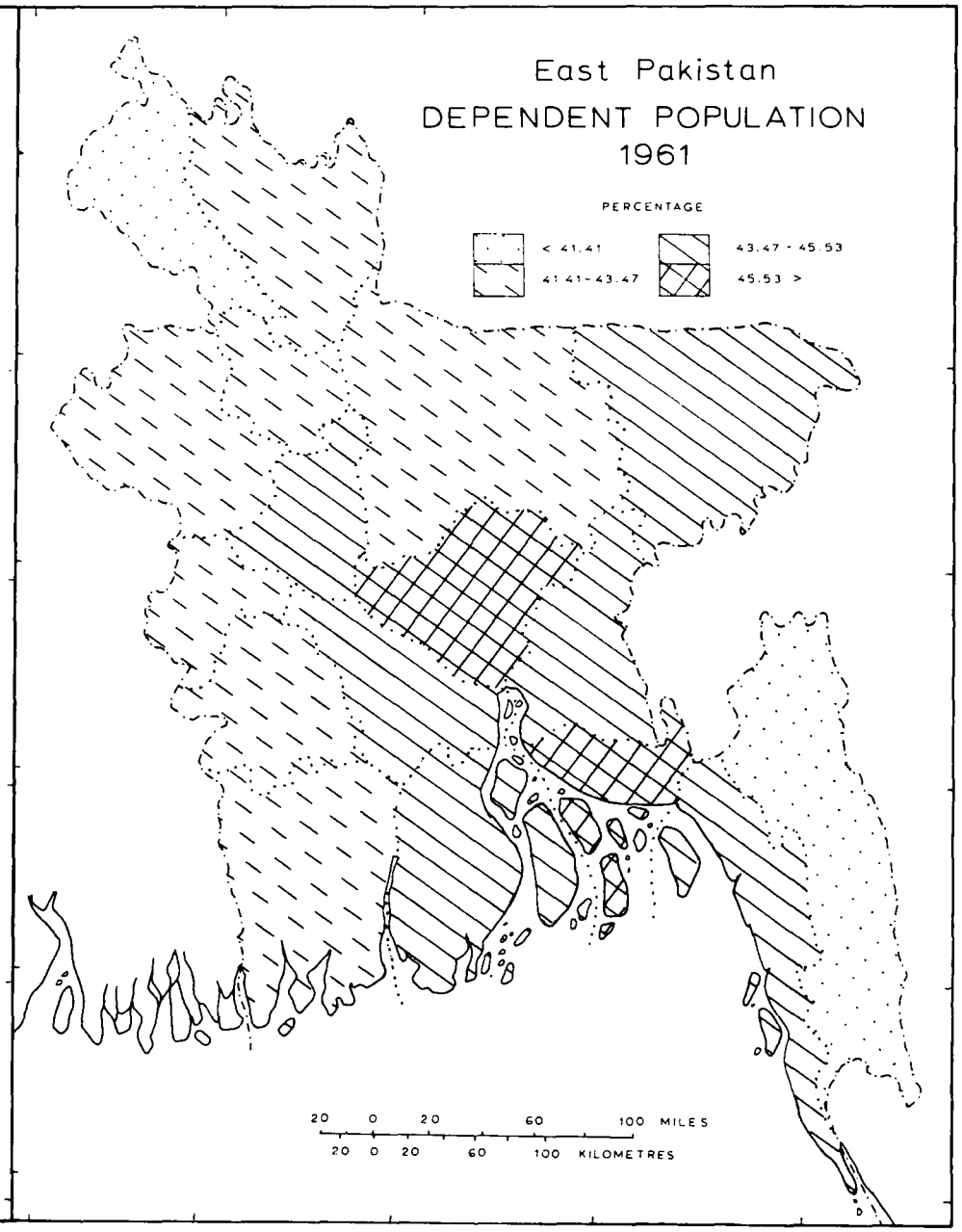

East Pakistan
UNEMPLOYED POPULATION (In CLF)
1961
PERCENTAGE
< 0.19
0.19 - 0.35
0.35 - 0.51
0.51 >
20 0 20 60 100 MILES
20 0 20 60 100 KILOMETRES

FIG. 6.8


East Pakistan
DEPENDENT POPULATION
1961
PERCENTAGE
< 41.41
41.41 - 43.47
43.47 - 45.53
45.53 >
20 0 20 60 100 MILES
20 0 20 60 100 KILOMETRES

any other employment groups and the range of variation was within ± 2 standard deviation ($\bar{x}$ = 43.47, σ = 2.06). Their distribution was not necessarily associated with the distribution of employed or unemployed, and in fact many districts, such as Dacca, Pabna, Barisal and Faridpur, having high proportions of housewives also have high proportions of dependents, while districts with low proportions of housewives have low proportions of dependents. But there are still few exceptions from this pattern (Fig. 6.5). The dependent proportions bear a significantly positive relationship with mean size of household in the districts. In this connection it should be noted that most of the districts having high proportions of dependency also registered medium to high positive change in ALF between 1951 and 1961 and the two variables maintained a linear relationship, indicating the influence of agricultural population on the former.

(ii) Selected Towns

In contrast to the province as whole, the urban areas have higher working populations. The individual towns have patterns of employment different from those of the districts. All the four cities, namely Dacca, Chittagong, Narayanganj and Khulna; and two larger towns, namely Barisal and Mymensingh registered very high working proportions (32 to 43 per cent) - mostly males. They have fairly low proportions of housewives (below 22.5 per cent) because of their very high sex ratios and more balanced age structures. Another characteristic found in connection with the working proportion was that they have significantly positive correlation with literacy and NALF.

Only four urban centres, namely Chittagong, Khulna, Saidpur and Comilla showed high unemployment rates (more than 0.8 per cent),

mostly because of greater influx of migrants from the countryside as well as from the smaller urban centres, although the situation in Saidpur is rather different, it being a declining town lacking diversified urban functions. In this connection it should be noted that, the unemployment rates returned in the census appear to be underenumeration for various social and administrative reasons mentioned earlier. Both the 1955 and 1957 Manpower Surveys of the Planning Commission indicated that a much higher percentage of the labour force was unemployed in larger urban cnetres in East Pakistan, with fairly high unemployment rates in small urban centres. The rural areas had, however, low unemployment rates. In urban areas the unemployment rates in those years were 8.2 and 3.2 per cent respectively with wide range of variability between towns, as against 3.1 and 1.5 per cent respectively in rural areas.[18]

Saidpur, Comilla and Rajshahi had low proportions of working population because of their marginal changes in NALF. They also registered high proportions of housewives and dependents. Since they are all medium-sized towns of administrative importance with low cost of living compared to larger towns, the working population can afford to bring their families into them, thereby increasing the proportions of children and housewives. Out-migration of some working population might also have some effect on the proportions of children and housewives in some towns, as in Saidpur (Table 6.9).

Because of obvious limitations in unemployment rates, they should be read with caution. These rates when added togetherwith dependents aged 10 years and over, probably give a more reasonable

picture. This situation has been further elaborated in the concluding section of this chapter.

SUMMARY AND CONCLUSION

The salient features of the economic structures of the population of East Pakistan may be summarized now. East Pakistan, as evident in this study, is predominantly agricultural and its agricultural labour force is one of the highest in the world, giving a smaller proportion of non-agricultural labour force. Over the last decades there has been an increase in agricultural labour force and a slight decrease in the non-agricultural sector in the province.

Because of an unfavourable age structure and sex selectivity in the active participation in labour force, the size of the economically active population (CLF) has been very low for a long time. Still a comparison with overall economic characteristics of the population of all Pakistan indicates that East Pakistan has a higher proportion of labour force despite a younger population. This is explained partly by higher female participation in the labour force in this province than in West Pakistan, as well as some participation of younger population (10-15 years) in the labour force.

The higher proportion of labour force in urban areas of East Pakistan is due to age-sex selective migration of population from rural areas - most of which is temporary in nature - one of the immediate causes of slow urban development in this province.

Higher labour participation rates, mostly male and agricultural, are found in the age groups 15 to 59. Children below 15 years of age (10-15) also constitute a sizeable proportion of the ALF in the province, because of the peculiarities of family

structure and agrarian economy of the province; yet the size of the dependent population is extremely high, which is the result of a persistent high fertility, lowering infant mortality and the very young nature of the population. This situation is intensified by the overall female seclusion from participation in the labour force in almost all the districts.

Statistically at least, unemployment does not seem to be a problem for East Pakistan. There is no apparent unemployment in rural areas. This is common to many South and South-East Asian countries. But there are reasons to believe in the existence of 'disguised unemployment' which is over-shadowed by the extended family system, joint rural economy and shared poverty. This fact was not returned in the census in statistical form. For a high density - agrarian society this type of underemployment is probably more vicious than true unemployment, because of difficulties in eliminating the former on an economic principle.*

However, the visible unemployment rates in 1955 and 1957 were 17.0 and 10.8 per cent respectively[19], and there is no reason to think that the situation has improved much. The urban areas, on the other hand have much higher unemployment rates which are due to influx of many unskilled and semi-literate population from

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* The WHO (UNO) and the Manpower Survey of Pakistan (CSO) have estimated the rate of unemployment in rural East Pakistan for 1954-56/57 at 4.8 and 5.0 per cent (5.6 per cent in total population) respectively. This signifies the extent of 'disguised unemployment which was unreported in the unemployment figures in the censuses (WHO, First Report on the World Health Situation, 1954-56, Official Records of the WHO, No. 94, Geneva, 1959, P.337; and C.S.O., Govt. of Pakistan, National Manpower Survey, 1957, Planning Commission, Karachi, 1960).

rural areas. According to a sample survey by Dacca University (1956) in four regions of East Pakistan, assuming 250 man-days as the annual potential labour supply per active male, the visible unemployment varied between 11.5 per cent in Rangpur and 45.2 per cent in Feni.* In rural areas, the proportion of population completely unemployed throughout the year (but seeking employment) was less than 1.0 per cent of the ALF in each sample region. Subsequent studies also indicated visible unemployment in rural areas, with reported redirection of the labour force from the urban to the rural areas during the peak season.[20] Thus, to relieve the burden and dependence on agriculture, a proposal for the transfer of the ALF to the urban areas, where unemployment and related problems are more acute, is suspect unless there is to be a technical reorganization of agriculture. As noted by Myrdal,[21] only agriculture can absorb the steadily rising labour force; it can not be done by labour moving out of agriculture. In fact, the problems associated with agriculture are caught in a cycle of poverty not because of surplus of labour, but because of low productivity and efficiency.[22] Other remedial measures for reducing unemployment and underemployment would be the elaboration of non-agricultural functions in both rural and urban areas, expansion of industries, and the increased application of female participation in the labour force, for which expansion of literacy, availability of jobs for females and social encouragement in this direction should be initiated.

On the other hand, the size of total CLF for the future decades may be influenced by changing participation rates affecting

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* Visible unemployment was estimated in this study as the difference between potential man-days and actual utilization of man-days expressed as a percentage of potential man-days, and as such differed from the census definition but gives a better picture of unemployment

some definite population groups: (a) males and females in the lower age groups, (b) males in the older age groups, and (c) females in the adult age groups. Since male participation rates are universally high in the province little change may be expected for this group. Besides, the compulsory elementary education programmes would have an important impact on the future size of CLF although recent low proportions in allocation of funds for education (Chapter V) make it unlikely that the educational targets will be achieved by 1985.[23] Again, the reduction in the participation rates of the older population by lowering the age of retirement, and of the younger age groups by raising the age of entry into labour force, may be offset by increases in female labour force.[24] Considering these facts, although there will be a rather slower increase in the proportions of CLF during 1961-80/85, this will be equivalent to a massive numerical addition of labour force (i.e. from 17.44 million in 1961 and 23.60 million in 1971 to more than 34.50 million in 1980/85). As a result of East Pakistan's large base population unfortunately, any decline in fertility in the near future will not make much difference in the total size of labour force during the rest of this century, because those who will be entering the labour force 15 or 20 years hence are already born or will soon be born under a sustained fertility condition. Consequently, they will contribute to the absolute (numerical) increase in the labour force, which will pose a serious problem for future manpower planning, especially in view of the existing age-sex structures, and the unemployment and the dependency rates of the population of East Pakistan.

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C H A P T E R VII

POPULATION REGIONS : A QUANTITATIVE ANALYSIS

In this chapter an attempt has been made to analyse objectively the pattern of internal contrasts and the overall unity in population structures of East Pakistan. In doing so, besides the pure population variables many of the socio-economic variables of the two main residential areas (rural and urban) have been taken under consideration, and used for a quantitative analysis, called factor or multivariate analysis. This is probably the first time that quantitative methods have been used to determine the regional patterns of rural and urban areas of East Pakistan on the basis of geodemographic and related socio-economic variables.

SECTION A

THE ANALYTICAL PROCEDURE OF FACTOR ANALYSIS. The choice of factor analysis was based on certain considerations. A regional study of population involves a large number of demographic, social and economic characteristics. Inter-relation between them is a problem of a multivariate nature, which requires simplification and determination of the significant and independent elements. Factor analysis provides one of the most powerful methods to meet problems of this nature;[1] and can show both how the variables combine to account for the variability of the data and also how the individual units respond in terms of the first few factors to be extracted. This provides a very useful means for establishing, on the basis of the most important variables, the significant differences between the areas or other units used in the analysis.[2] As such the technique has been widely used

by contemporary social scientists (especially psychologists), and recently by geographers in order to arrive at a "basic-pattern" of a region by employing many variables.[3]

In the present study 40 and 25 variables for each of 17 rural districts and 37 urban centres[*] respectively (Appendix 12) have been synthesized to obtain their respective "basic-patterns". And the extraction and synthesis of the main geodemographic elements have formed a basis for typification and regionalization of population in East Pakistan.

The variables in the analyses are primarily taken from the different aspects of population structure studied individually in earlier chapters, along with some socio-economic variables (Appendix 13).

The detailed statistical procedure of factor analysis is rather complex and in fact outside the scope of this thesis, but the basic assumption behind the analysis is that in the matrix of intercorrelated variables there are some common factors running through the data. These common factors are extracted and expressed in the form of different "factors" or "components".[4] The main outline of the procedure in bringing out these "factors" is given here in brief:

1) analysis of data matrix containing measurements on m - variables for each of n - units of observations (areas),

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[*] Labour force data for 37 towns under study were not available. These were, however, available for larger urban centres (50,000 inhabitants and over). A separate factor analysis (results only) incorporating 38 variables including labour force data for these urban centres is presented in Appendix 16 to indicate their regionalization.

2) computation of m x m intercorrelated matrix (r) of the areas,

3) principal component analysis of the correlation matrix (R) of the m-transformed variables,

4) rotation of the resulting eigenvectors to a normal varimax position,

5) computation of the factor scores of the areas (n) on the rotated factors,

6) grouping of the n - observations (areas) in a way that at every step maximum internal homogeneity of group is ensured.

In this connection, it should be noted that the main components analysis yields a first component (Factor I) that accounts for maximum variance, while the subsequent ones account for decreasing proportions of the total variance.

The entire factor analysis in this chapter was done on the University of Durham's IBM 360/30 Computer System, by using the FORTRAN programming language, the programme being written for the IBM 360/30 Computer by Klovan, Department of Geology, University of Calgary (Canada).[5] Under this programme various descriptive statistics of the variables (Appendix 13) and correlation matrices for rural and urban areas were computed (Appendices 14 and 15). The interpretation of correlation coefficient (r) is self-evident in the matrices. Values of r with $\pm$ 0.500 and over are of particular importance in this study of factorization providing a convenient way of describing the mass of rs in the matrices. The correlation matrices were then subject to principal axes solution which yielded seven eigenvectors

(Tables 7.1 and 7.4), which were rotated to normal varimax position (Tables 7.2 and 7.5), which ultimately resulted into seven factors for classifying the areas chosen into regions[*] (Tables 7.3 and 7.6).

The resultant factors yielding regionalizations of population of rural and urban areas in East Pakistan are discussed individually in the following sections.

SECTION B

SPATIAL DISTRIBUTION OF PRINCIPAL FACTORS YIELDING POPULATION REGIONS, EAST PAKISTAN

(a) RURAL DISTRICTS OF EAST PAKISTAN. From Appendices 13 (i) and 14 seven factors for regionalization of rural districts were derived (Table 7.1). Loadings and scores of the seven factors are presented in Tables 7.2 and 7.3 respectively. In Table 7.2 the column showing communality indicates that almost all of the 40 variables for rural areas are fully represented, so that the extent to which the components account for differences between the areas varies less than between the variables. On the other hand, it is also noted that the variables which are summarized by the seven factors, are fairly large to explain the desirable features of the population.

In this connection it should be noted that the first three factors are by far the most important and well explain the basic

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[*] Although the number of factors to be rotated may be specified by the user of the programme, it is actually determined on the basis of a specified minimum for the eigenvalues (λ) and/or the factor loadings; and a cut-off criterion of λ may be preset. This, however, was not done in the present study and the ultimate values of the λ in the eigenvectors were taken in order to cover almost 100 per cent of the total variance (also see Klovan, 1968).

FIG. 7.1

East Pakistan

DISTRIBUTION OF FACTORS AND EIGENVALUES
BY RESIDENTIAL AREAS

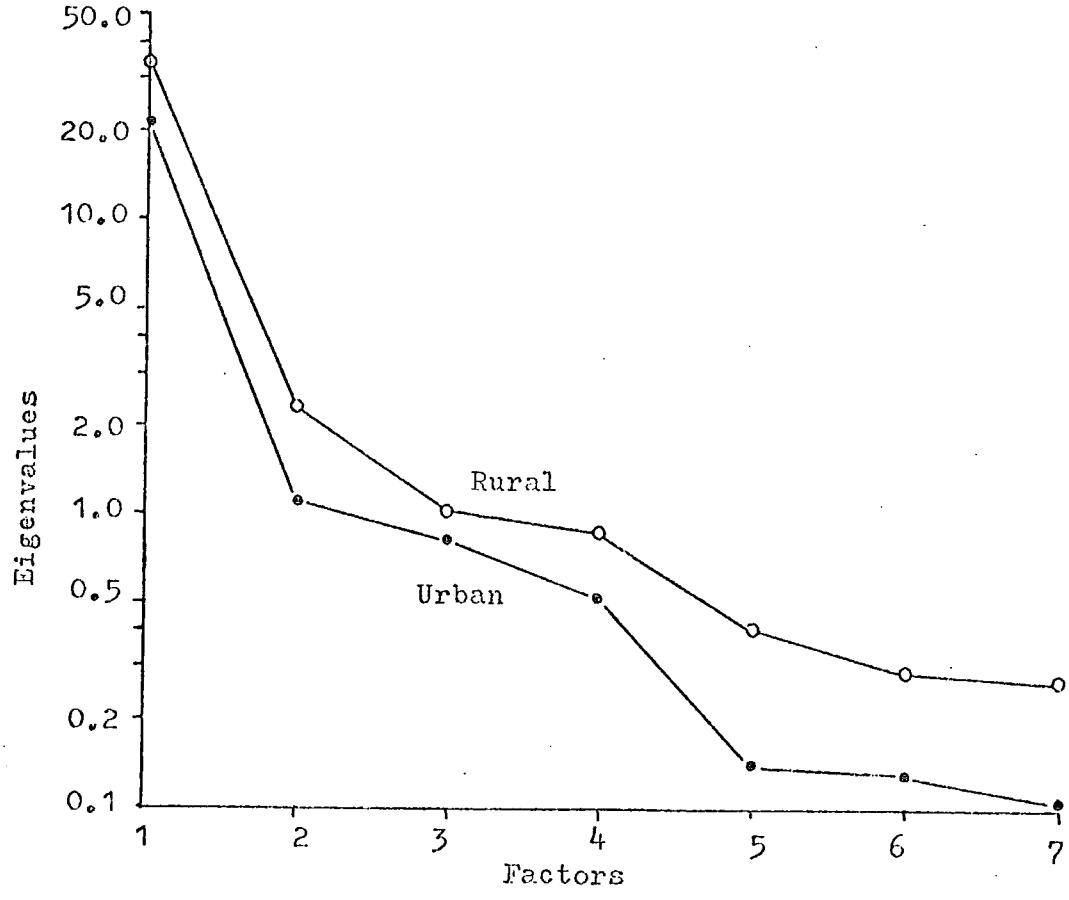


TABLE 7.1

Percentage of total variance explained by each factor, Rural Districts of East Pakistan.

Factors	Eigenvalues	Per cent of total variance	Cumulative per cent of total variance
1	34.471	86.18	86.18
2	2.246	5.61	91.79
3	1.091	2.73	94.52
4	0.888	2.22	96.74
5	0.439	1.10	97.84
6	0.296	0.74	98.58
7	0.172	0.43	99.01

pattern of population regions in East Pakistan. From Fig. 7.1 it can be seen that after the third factor, each additional factor adds little to the level of explanation. The first three factors account for more than 94 per cent of the variance of all variables. The inter-relationships of these factors are represented in Fig. 7.2. The characteristics of individual factors are discussed below.

FACTOR - I. The first factor accounts for 86.18 per cent of the total variance (Table 7.1) and as such should be considered as the most important single dimension of variation in rural populations in East Pakistan. The factor is identified with rurality population change, age structure, sex structure, marital characteristics, proportions of Muslim and Hindu populations, dominant linguistic groups and family size - in fact almost all of the major characteristics of a population. All these variables registered highly positive factor loadings, and the

TABLE 7.2

a) Principal Component Factor Matrix
Rural Districts, East Pakistan

	VARIABLES	COMM.	FACTORS 1	2	3	4	5	6	7
1	'TCP'	0.9849	0.8936	-0.1951	0.0425	-0.0692	0.3713	0.0520	0.0347
2	'PRP'	0.9996	0.9949	-0.0363	-0.0841	-0.0282	-0.0121	-0.0159	-0.0148
3	'PDN'	0.9742	0.9395	0.0114	0.2907	0.0219	0.0213	-0.0717	-0.0287
4	'PCH'	0.9651	0.9507	-0.0113	-0.1735	0.0521	-0.0795	-0.0765	-0.1275
5	'PPC'	0.9991	0.9961	-0.0472	-0.0549	-0.0063	-0.0152	-0.0267	-0.0260
6	'PPD'	0.9992	0.9965	-0.0159	-0.0747	0.0075	-0.0077	-0.0078	-0.0076
7	'PPG'	0.9934	0.9898	-0.0950	-0.0559	0.0121	0.0058	-0.0309	-0.0216
8	'ACR'	0.9878	0.8760	-0.2104	-0.0901	-0.1186	0.3895	0.0270	0.0381
9	'DPR'	0.9973	0.9955	-0.0413	-0.0532	-0.0198	-0.0145	-0.0342	-0.0019
10	'MDA'	0.9980	0.9954	-0.0213	-0.0700	0.0359	-0.0240	-0.0023	0.0056
11	'FRT'	0.9986	0.9922	-0.0614	-0.0743	0.0037	-0.0258	-0.0459	-0.0447
12	'SXRT'	0.9996	0.9960	-0.0157	-0.0806	0.0102	-0.0096	-0.0103	-0.0204
13	'SXRD'	0.9991	0.9941	0.0028	-0.0977	0.0228	-0.0183	-0.0184	-0.0059
14	'SXRG'	0.9934	0.9920	-0.0206	-0.0854	-0.0185	0.0118	0.0316	0.0070
15	'MRM'	0.9991	0.9940	-0.0361	-0.0946	0.0127	-0.0065	-0.0151	-0.0222
16	'MRF'	0.9993	0.9947	-0.0426	-0.0847	-0.0022	-0.0104	-0.0042	-0.0290
17	'SNM'	0.9989	0.9976	-0.0373	-0.0392	-0.0078	-0.0116	-0.0200	-0.0157
18	'SNF'	0.9989	0.9975	0.0009	-0.0528	0.0009	-0.0078	-0.0292	-0.0152
19	'WDH'	0.9884	0.9759	0.0696	-0.1532	0.0224	-0.0508	0.0009	0.0682
20	'WDF'	0.9966	0.9859	-0.1414	-0.0303	0.0060	-0.0104	-0.0430	0.0414
21	'LTN'	0.9871	0.9830	-0.0925	-0.0001	-0.0231	-0.0688	0.0541	0.0632
22	'LTF'	0.9773	0.9677	-0.1602	0.0883	-0.0851	-0.0000	-0.0115	-0.0024
23	'CLFT'	0.9992	0.9857	0.1548	-0.0547	-0.0152	0.0100	0.0131	-0.0114
24	'CLFM'	0.9993	0.9961	-0.0064	-0.0816	0.0118	-0.0065	-0.0126	-0.0102
25	'CLFF'	0.9946	0.6496	0.7331	0.0691	-0.1161	0.0716	0.1077	-0.0114
26	'NCLT'	0.9934	0.8678	0.0490	0.4329	-0.2021	-0.0250	-0.0945	0.0110
27	'NCLM'	0.9521	0.8822	0.0227	0.2743	0.0525	-0.0981	-0.2582	0.1379
28	'NCLF'	0.9784	0.7511	0.0519	0.5382	-0.3454	-0.0318	0.0377	0.0137
29	'ALFT'	0.9991	0.9742	0.1729	-0.1117	-0.0756	0.0207	0.0379	-0.0096
30	'ALFM'	0.9981	0.9863	-0.0193	-0.1484	-0.0513	0.0002	0.0083	-0.0100
31	'ALFF'	0.9964	0.6066	0.7657	0.0497	-0.1309	0.0845	0.1241	-0.0026
32	'MGRR'	0.9498	0.8438	-0.0966	-0.0056	-0.2898	-0.3081	0.2153	-0.0559
33	'PMSL'	0.9990	0.9666	-0.2213	0.0016	-0.0555	0.0172	-0.0210	-0.1088
34	'PHND'	0.9944	0.9105	-0.1294	-0.1380	0.0798	-0.1018	0.1283	0.3104
35	'PCTH'	0.9833	0.2837	0.9024	-0.2035	0.1550	-0.0170	-0.1473	0.0313
36	'PBNG'	0.9995	0.9957	-0.0496	-0.0681	-0.0109	-0.0096	-0.0231	-0.0160
37	'PURD'	0.9789	0.7696	-0.0338	0.2339	0.5047	-0.0226	0.2711	-0.0458
38	'PENG'	0.9714	0.9113	0.0544	0.2577	0.2628	0.0339	0.0360	-0.0018
39	'PURB'	0.9834	0.8392	0.0078	0.2553	0.4585	0.0187	-0.0427	-0.0388
40	'FMSZ'	0.9984	0.9964	-0.0258	-0.0581	0.0006	-0.0129	-0.0307	-0.0180
	VARIANCE		86.178	5.615	2.728	2.220	1.097	0.741	0.431
	CUM. VAR		86.178	91.792	94.520	96.740	97.837	98.578	99.009

b) Varimax Factor Matrix
Rural Districts, East Pakistan

	VARIABLES	COMM.	FACTORS 1	2	3	4	5	6	7
1	'TCP'	0.9849	0.7580	0.0637	0.3367	0.2627	0.4731	-0.0066	0.0051
2	'PRP'	0.9996	0.8868	0.2314	0.2907	0.2641	0.0727	-0.0063	-0.0019
3	'PDN'	0.9742	0.6544	0.2247	0.5390	0.4310	0.0973	-0.0631	-0.0534
4	'PCH'	0.9651	0.8866	0.2453	0.1718	0.2733	-0.0299	-0.0276	-0.1139
5	'PPC'	0.9991	0.8766	0.2174	0.3039	0.2934	0.0672	-0.0175	-0.0165
6	'PPD'	0.9992	0.8740	0.2497	0.2794	0.2987	0.0747	-0.0104	0.0064
7	'PPG'	0.9934	0.8815	0.1704	0.2910	0.3060	0.0888	-0.0286	-0.0165
8	'ACR'	0.9878	0.8123	0.0597	0.2526	0.1567	0.4855	-0.0163	0.0024
9	'DPR'	0.9973	0.8749	0.2230	0.3132	0.2798	0.0696	-0.0298	0.0034
10	'MDA'	0.9980	0.8701	0.2421	0.2703	0.3241	0.0591	-0.0138	0.0228
11	'FRT'	0.9986	0.8873	0.2033	0.2846	0.2900	0.0510	-0.0281	-0.0378
12	'SXRT'	0.9996	0.8765	0.2501	0.2731	0.2985	0.0707	-0.0085	-0.0058
13	'SXRD'	0.9991	0.8771	0.2681	0.2545	0.2985	0.0589	-0.0219	0.0070
14	'SXRG'	0.9934	0.8747	0.2478	0.2781	0.2783	0.1032	0.0237	0.0303
15	'MRM'	0.9991	0.8864	0.2315	0.2607	0.2938	0.0735	-0.0122	-0.0089
16	'MRF'	0.9993	0.8855	0.2249	0.2755	0.2885	0.0731	0.0035	-0.0115
17	'SNM'	0.9989	0.8673	0.2260	0.3167	0.2996	0.0728	-0.0159	-0.0059
18	'SNF'	0.9989	0.8624	0.2637	0.3013	0.2985	0.0706	-0.0270	-0.0086
19	'WDH'	0.9884	0.8685	0.3315	0.2086	0.2674	0.0283	-0.0237	0.0887
20	'WDF'	0.9966	0.8805	0.1214	0.3191	0.3053	0.0821	-0.0572	0.0399
21	'LTN'	0.9871	0.8519	0.1644	0.3543	0.3096	0.0431	0.0354	0.0987
22	'LTF'	0.9773	0.8240	0.0912	0.4464	0.2821	0.1060	-0.0001	0.0027
23	'CLFT'	0.9992	0.8092	0.4106	0.2954	0.2854	0.0832	0.0080	0.0051
24	'CLFM'	0.9993	0.8739	0.2593	0.2716	0.2983	0.0735	-0.0149	0.0025
25	'CLFF'	0.9946	0.3141	0.8741	0.3019	0.1502	0.0970	0.0329	0.0142
26	'NCLT'	0.9934	0.5458	0.2325	0.7459	0.2741	0.0687	-0.0685	-0.0243
27	'NCLM'	0.9521	0.6244	0.2111	0.5254	0.3848	-0.0424	-0.2972	0.0590
28	'NCLF'	0.9784	0.4061	0.2016	0.8505	0.1869	0.0905	0.0788	0.0160
29	'ALFT'	0.9991	0.8240	0.4337	0.2739	0.2126	0.0983	0.0434	0.0151
30	'ALFM'	0.9981	0.9039	0.2538	0.2459	0.2197	0.0862	0.0196	0.0108
31	'ALFF'	0.9964	0.2773	0.8975	0.2765	0.1181	0.1072	0.1066	0.0259
32	'MGRR'	0.9498	0.7756	0.1241	0.4431	0.0806	-0.1627	0.3133	0.0725
33	'PMSL'	0.9990	0.9774	0.0407	0.3592	0.2760	0.1096	0.0232	-0.0984
34	'PHND'	0.9944	0.8460	0.1203	0.1786	0.3150	0.0285	0.0087	0.3636
35	'PCTH'	0.9833	0.0792	0.9497	-0.1446	0.0868	-0.1070	-0.1875	-0.0095
36	'PBNG'	0.9995	0.8824	0.2168	0.2954	0.2842	0.0741	-0.0168	-0.0063
37	'PURD'	0.9789	0.4852	0.1316	0.1702	0.8199	0.0534	0.1399	0.0502
38	'PENG'	0.9714	0.6022	0.2568	0.3724	0.6258	0.1013	-0.0475	0.0063
39	'PURB'	0.9834	0.5430	0.1847	0.2548	0.7506	0.0505	-0.1445	-0.0515
40	'FMSZ'	0.9984	0.8717	0.2381	0.2980	0.2962	0.0671	-0.0259	-0.0106
	VARIANCE		61.561	10.981	12.293	11.120	1.766	0.795	0.493
	CUM. VAR		61.561	72.542	84.835	95.955	97.721	98.515	99.008

TABLE 7.3

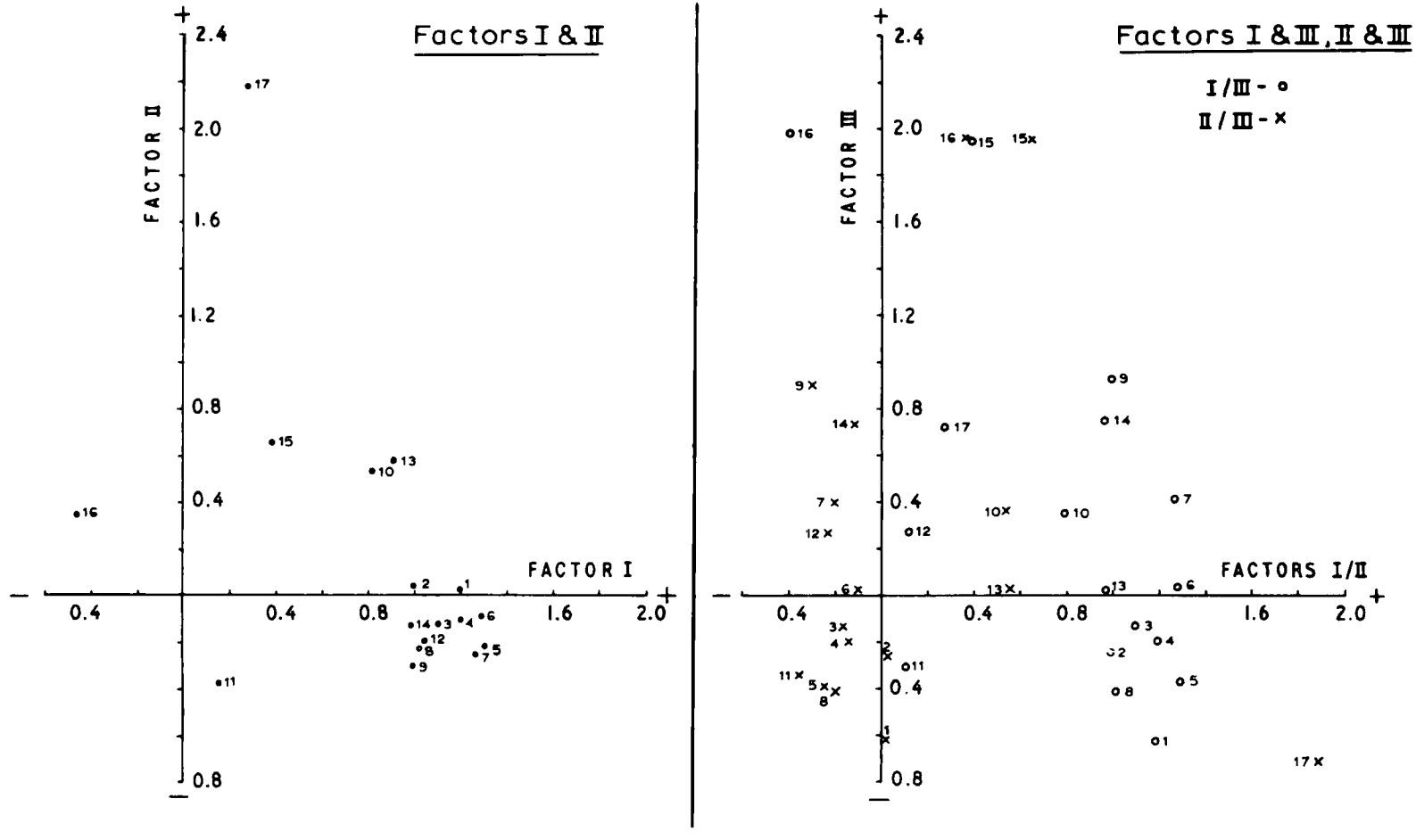
VARIMAX FACTOR SCORE MATRIX

Rural Districts, East Pakistan

FACTOR	1	2	3	4	5	6	7
DISTRICTS							
1	1.2042	0.0285	-0.6354	0.7531	-0.6743	1.6524	1.0318
2	1.0610	0.0558	-0.2548	0.4449	0.5380	1.3429	-0.7909
3	1.1405	-0.1717	-0.1484	0.2727	-0.3656	-0.0160	-1.0820
4	1.2503	-0.1468	-0.2098	-0.0849	0.2186	-0.3912	-0.4692
5	1.3002	-0.2465	-0.3903	0.1600	-0.6350	0.2308	-1.3390
6	1.2951	-0.1301	0.0269	-0.1502	-1.1996	-0.7451	-1.7839
7	1.2706	-0.2602	0.4187	-0.1385	-1.2952	-1.0440	1.0889
8	1.0914	-0.2324	-0.4151	0.7622	-0.3270	-0.1242	2.2518
9	1.0082	-0.3078	0.9246	-0.5427	0.8064	-1.7300	0.3786
10	0.8131	0.5693	0.3726	-0.5056	2.9834	0.1020	-0.5689
11	0.1724	-0.3818	-0.3335	3.3187	0.7226	-0.0131	-0.4630
12	1.1686	-0.2120	0.2731	-0.4308	0.4003	-0.7507	0.7772
13	0.9236	0.5603	0.0245	-0.0909	1.0840	0.8960	1.1496
14	0.9865	-0.1500	0.7776	-0.2242	0.3604	-0.1682	-0.1116
15	0.3900	0.6502	2.5898	-0.5621	-0.8033	2.2015	-0.1222
16	-0.4604	0.3754	2.6499	1.7928	-0.1086	-0.9545	0.0159
17	0.2830	3.9023	-0.7121	0.2769	-0.4749	-0.7375	-0.0398

FIG. 7.2

DISTRIBUTION OF DISTRICTS
BY INTER-FACTORIAL RELATIONSHIPS
(Main Factors)



NUMBERS ARE IDENTICAL TO DISTRICTS IN APP. 12

resultant scores indicated a clear regional differentiation between the districts west of the Brahmaputra - Lower Padma rivers (Fig. 7.3) which have very high factorial values with a high degree of homogeneity in their population characteristics, and those east of the Brahmaputra - Padma axis where the factorial values fall into three groups of districts: medium-high, low, and one negative value (Chittagong) factor scores (Fig. 7.3). Such a distribution in this region is attributable to population mobility and greater functional interaction between their rural and urban areas as well as between the districts. Such a pattern in these districts was also identified in the preceding chapters. This factor represents the regional homogeneity or the degree of compactness of population in East Pakistan.

FACTOR - II. In the second factor high loadings were associated with total and female CLF, female ALF, proportions of population in minor religious groups and a few others. This factor combined the peripheral rural districts of East Pakistan together, in which the highest factor score was registered in Chittagong Hill Tracts, followed by Mymensingh, Sylhet and Noakhali (Fig. 7.3). Three of their neighbouring districts registered medium-high scores; while ten districts in western, south-west and central East Pakistan registered negatively weighted (lack of) scores, which are indicative of the low effect of the above variables in these districts. The economic activities and various aspects of population structures (such as age, sex, labour force etc.) in them were found to be rather male dominated. This factor may be identified as one with male/female regional differentiation in relation to labour force as well as minor religious groups.

FIG. 7.3

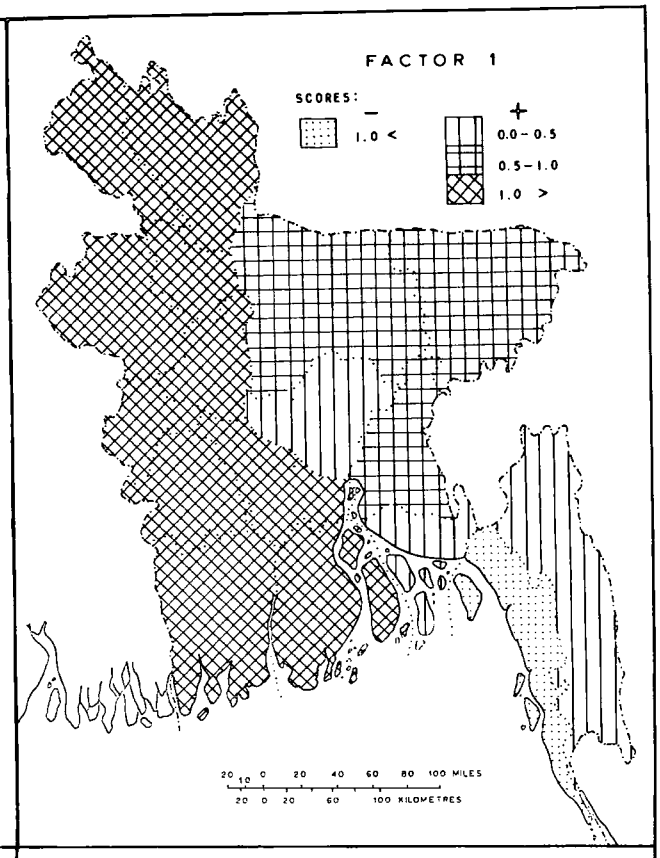
East Pakistan

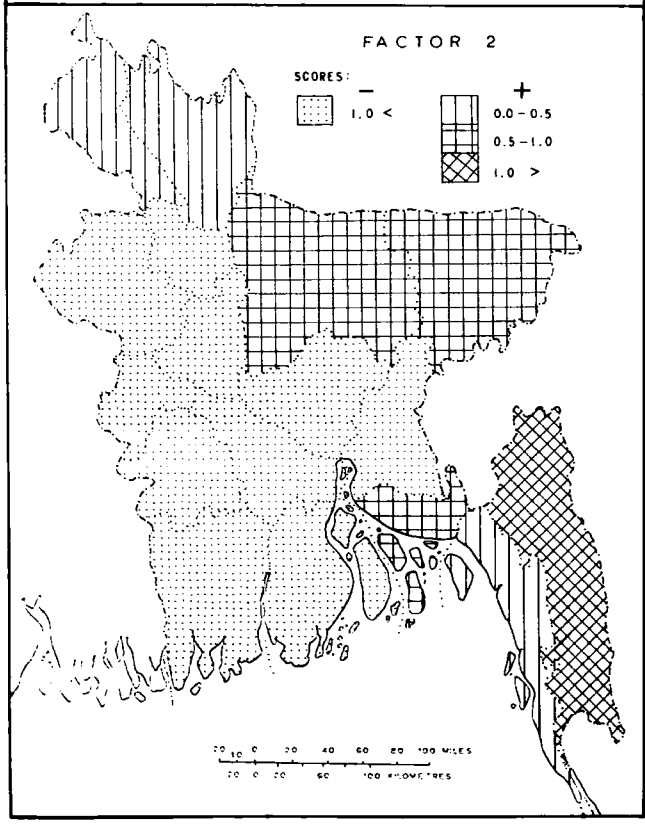
POPULATION REGIONS (RURAL)

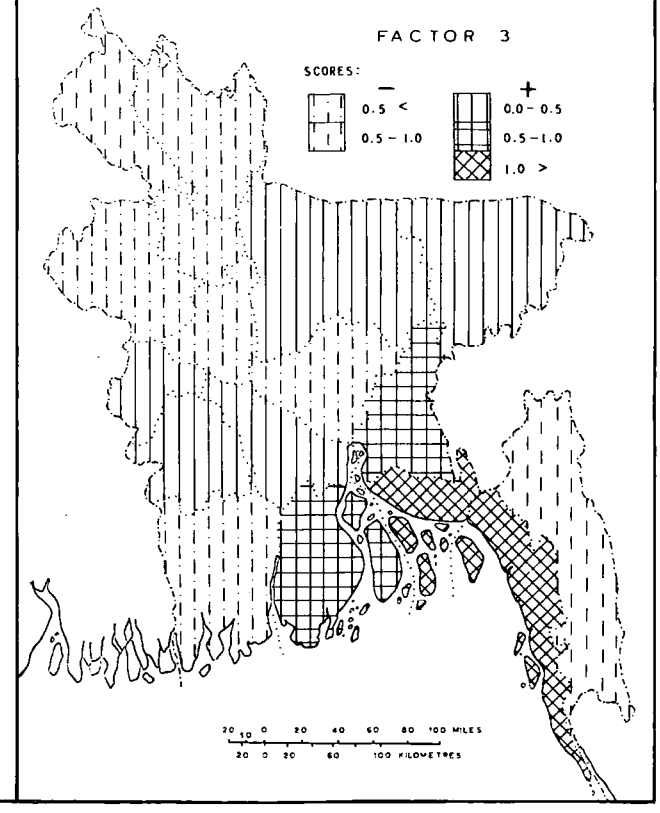
DISTRIBUTION OF FACTORS

PERCENTAGE OF TOTAL VARIANCE EXPLAINED BY EACH FACTOR

Factors	Eigenvalues	Variance Explained %	Variance Explained cum. %
1	34.47	86.18	86.18
2	2.24	5.61	91.79
3	1.09	2.73	94.52
4	0.89	2.22	96.74
5	0.44	1.10	97.84
6	0.29	0.74	98.58
7	0.17	0.43	99.01







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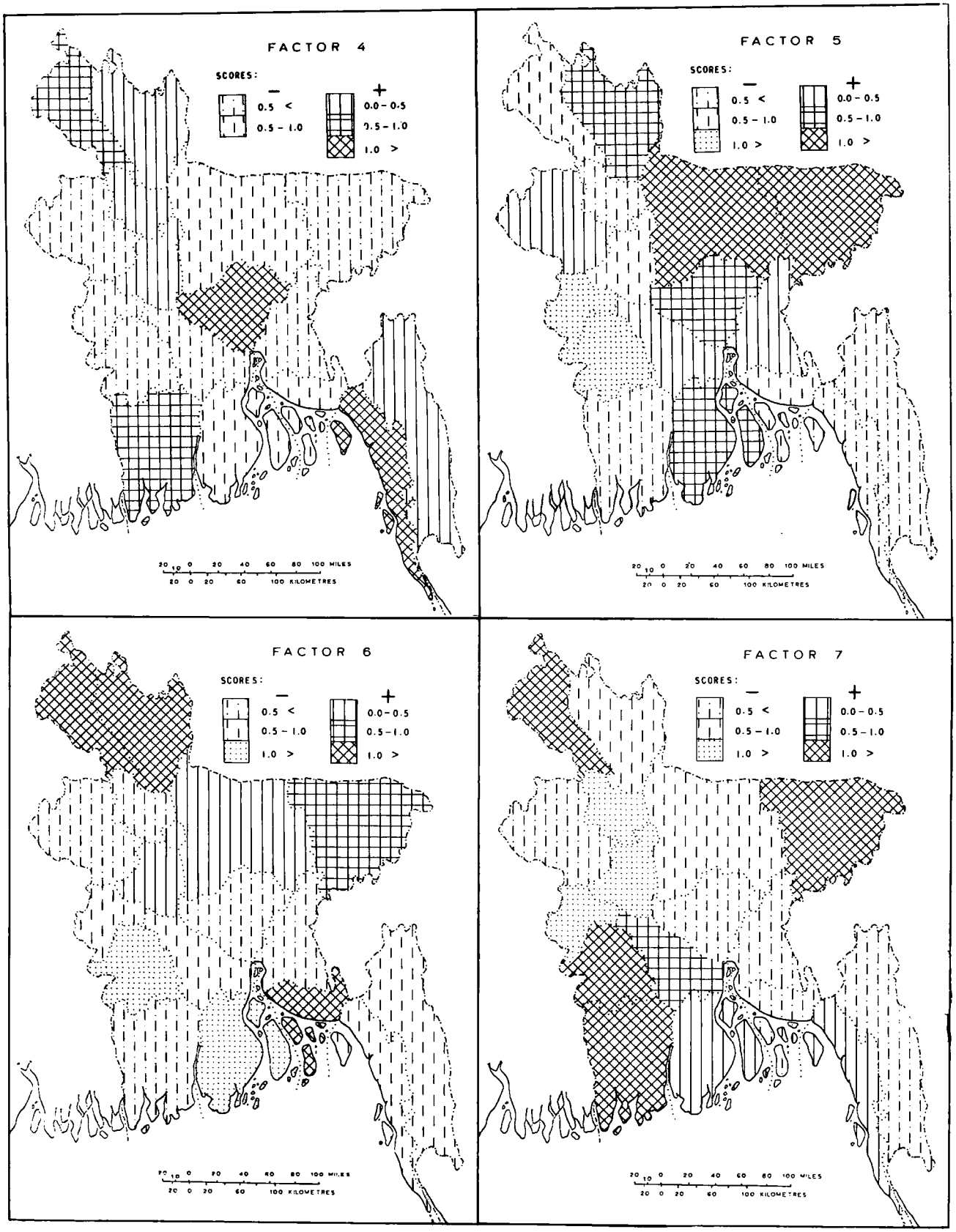

FACTOR 4
SCORES:
−
0.5 <
0.5 – 1.0
+
0.0 – 0.5
0.5 – 1.0
1.0 >
20 10 0 20 40 60 80 100 MILES
20 0 20 60 100 KILOMETRES
FACTOR 5
SCORES:
−
0.5 <
0.5 – 1.0
1.0 >
+
0.0 – 0.5
0.5 – 1.0
1.0 >
20 10 0 20 40 60 80 100 MILES
20 0 20 60 100 KILOMETRES
FACTOR 6
SCORES:
−
0.5 <
0.5 – 1.0
1.0 >
+
0.0 – 0.5
0.5 – 1.0
1.0 >
20 10 0 20 40 60 80 100 MILES
20 0 20 60 100 KILOMETRES
FACTOR 7
SCORES:
−
0.5 <
0.5 – 1.0
1.0 >
+
0.0 – 0.5
0.5 – 1.0
1.0 >
20 10 0 20 40 60 80 100 MILES
20 0 20 60 100 KILOMETRES

FACTOR - III. Factor III represented high factor loadings in variables such as rural density, labour force, and also total population, dependency ratio, unmarried population, literacy and migration rates. Regionally, the northern districts and a few isolated ones gave fairly high negatively weighted factor scores, while the rest registered positive scores. Noakhali and Chittagong gave the highest positive scores (Fig. 7.3) indicating their degree of association with the above variables. This factor indicates the rural orientation of the regional population of East Pakistan.

As suggested earlier, the analysis proceeds by bringing out the most salient dimensions of variance, then proceeds steadily towards the description of smaller and smaller dimensions. Because of this fact, the rest of the factors (IV, V, VI and VII) as they explain only about 6 per cent of total variance, are of lesser importance. In other words, in the case of first few factors, the weights are greater and therefore, the association stronger. The others, though counting for decreasing proportions of the total variance, add bit by bit to complete the actual picture of regionalization.[6] The regionalizations of minor factors are given in Fig. 7.3.

(b) URBAN CENTRES OF EAST PAKISTAN. Like the rural districts the urban centres of East Pakistan have been regionalized on the basis of factors covering 25 variables. The descriptive statistics and the correlation matrix are presented in Appendices 13 (ii) and 15 respectively. Table 7.4 gives the eigenvalues for seven factors, for which the factor matrix and rotated factor matrix were derived (Table 7.5). Table 7.4 shows that the first four factors cover the population's regional description of nearly 98 per cent of the

TABLE 7.4

Percentage of total variance explained by each factor, Urban Centres of East Pakistan.

Factors	Eigenvalues (λ)	Percent of total variance	Cum. % of total variance
1	21.924	87.70	87.70
2	1.137	4.55	92.25
3	0.844	3.38	95.63
4	0.521	2.08	97.71
5	0.140	0.56	98.27
6	0.133	0.53	98.80
7	0.108	0.43	99.23

total variance, and are therefore the most important of all the factors (Fig. 7.1). In Table 7.5 the factors are rotated and standardized, which fully represented the variables (note the high values of communality). The main factors represent significant spatial patterns of population in the towns of East Pakistan (Fig. 7.1); and their interrelationships are also representative of the degree of homogeneity in population patterns in towns (Fig. 7.4, Table 7.6).

The individual characteristics of the main factors are elaborated below.

FACTOR - I. The first factor accounted for 87.70 per cent of the total variance (Table 7.4) and was identified with highly positive factor loadings in almost all of the variables. As such it represented the relative homogeneity within the different structures of population and related socio-economic variables. The regionalizations (Table 7.6, Fig. 7.5) gave the large towns

TABLE 7.5

a) Principal Component Factor Matrix

Urban Centres, East Pakistan

VARIABLES		FACTORS							
		COMM.	1	2	3	4	5	6	7
1	'TCP'	0.9963	0.4866	0.7609	0.1196	-0.3852	-0.0533	0.1298	0.0142
2	'RNK'	0.9972	0.8720	-0.3709	0.0027	0.0528	-0.1833	0.1688	0.1854
3	'PCH'	0.9978	0.6397	0.4764	0.0608	0.5913	-0.0458	0.0495	-0.0379
4	'PPC'	0.9965	0.9927	-0.0727	-0.0346	-0.0258	-0.0500	-0.0146	-0.0352
5	'PPD'	0.9983	0.9979	0.0301	0.0020	-0.0198	0.0172	-0.0286	-0.0010
6	'PPG'	0.9886	0.9655	-0.1183	-0.1268	-0.0599	-0.0566	0.0462	-0.1318
7	'PPM'	0.9977	0.9917	0.0899	0.0381	0.0129	0.0440	-0.0132	0.0479
8	'DPR'	0.9963	0.9836	-0.1165	-0.0730	-0.0492	-0.0646	0.0089	-0.0566
9	'MDA'	0.9987	0.9977	0.0409	-0.0046	-0.0040	0.0190	-0.0260	-0.0223
10	'SXRT'	0.9958	0.9927	0.0798	0.0299	0.0102	0.0266	-0.0219	0.0437
11	'SXRD'	0.9951	0.9824	0.1187	0.0575	0.0335	0.0592	-0.0256	0.0857
12	'SXRG'	0.9792	0.9708	0.0362	-0.0385	0.0462	0.1282	-0.0586	0.1034
13	'MRM'	0.9979	0.9962	0.0130	-0.0131	-0.0040	-0.0057	-0.0247	-0.0237
14	'MRF'	0.9954	0.9942	-0.0205	-0.0400	-0.0307	-0.0449	-0.0142	-0.0434
15	'SNM'	0.9966	0.9968	-0.0431	-0.0234	-0.0384	-0.0213	-0.0146	-0.0222
16	'SNF'	0.9988	0.9980	-0.0288	-0.0161	-0.0371	0.0073	-0.0183	-0.0003
17	'WDM'	0.9743	0.9783	-0.0900	-0.0575	-0.0009	-0.0674	-0.0344	0.0086
18	'WDF'	0.9406	0.9616	-0.0294	0.0016	0.0455	-0.0060	-0.0095	-0.1142
19	'LTM'	0.9890	0.9925	-0.0249	-0.0177	-0.0240	0.0425	-0.0087	0.0217
20	'LTF'	0.9824	0.9817	-0.0285	-0.0569	-0.0305	0.1012	-0.0348	0.0467
21	'TCRR'	0.9977	0.9917	0.0899	0.0381	0.0129	0.0440	-0.0132	0.0479
22	'PWSL'	0.9993	0.9829	0.0716	-0.0160	-0.0284	-0.1074	-0.1245	-0.0035
23	'PHND'	0.9981	0.9207	-0.2243	-0.0872	-0.0075	0.1882	0.2300	-0.0645
24	'PCTH'	0.9995	0.4174	-0.2189	0.8807	-0.0149	0.0087	-0.0037	-0.0381
25	'FMSZ'	0.9968	0.9942	-0.0560	-0.0451	-0.0331	-0.0264	-0.0305	-0.0242
	VARIANCE		87.696	4.548	3.377	2.084	0.562	0.534	0.431
	CUM. VAR		87.696	92.244	95.621	97.705	98.267	98.801	99.232

b) Varimax Factor Matrix

Urban Centres, East Pakistan

VARIABLES		FACTORS							
		COMM.	1	2	3	4	5	6	7
1	'TCP'	0.9963	0.2461	0.9507	0.0402	0.1795	-0.0001	0.0014	0.0129
2	'RNK'	0.9972	0.8779	-0.0898	0.2311	0.0914	-0.3945	0.0320	-0.0043
3	'PCH'	0.9978	0.3853	0.2170	0.0721	0.8925	-0.0209	0.0117	-0.0005
4	'PPC'	0.9965	0.9502	0.1677	0.1627	0.1912	-0.0443	-0.0137	-0.0167
5	'PPD'	0.9983	0.9183	0.2462	0.1755	0.2447	-0.0077	0.0033	0.0609
6	'PPG'	0.9886	0.9626	0.1387	0.0830	0.1354	-0.0251	0.0483	-0.1211
7	'PPM'	0.9977	0.8816	0.2811	0.1941	0.2993	-0.0248	0.0190	0.1146
8	'DPR'	0.9963	0.9642	0.1424	0.1345	0.1486	-0.0567	0.0024	-0.0540
9	'MDA'	0.9987	0.9160	0.2450	0.1676	0.2634	0.0060	0.0093	0.0457
10	'SXRT'	0.9958	0.8880	0.2733	0.1888	0.2922	-0.0282	0.0033	0.1032
11	'SXRD'	0.9951	0.8579	0.2915	0.2034	0.3266	-0.0299	0.0107	0.1587
12	'SXRG'	0.9792	0.8935	0.1942	0.1261	0.2835	0.0063	0.0274	0.2144
13	'MRM'	0.9979	0.9256	0.2236	0.1656	0.2506	-0.0111	-0.0025	0.0280
14	'MRF'	0.9954	0.9398	0.2105	0.1470	0.2123	-0.0291	-0.0130	-0.0166
15	'SNM'	0.9956	0.9444	0.1987	0.1674	0.1950	-0.0324	-0.0005	0.0120
16	'SNF'	0.9988	0.9393	0.2088	0.1706	0.2017	-0.0268	0.0099	0.0473
17	'WDM'	0.9743	0.9437	0.1336	0.1400	0.1967	-0.0736	-0.0441	0.0105
18	'WDF'	0.9408	0.8977	0.1576	0.1856	0.2677	0.0307	0.0258	-0.0485
19	'LTF'	0.9890	0.9310	0.2033	0.1664	0.2114	-0.0269	0.0355	0.0813
20	'LTF'	0.9824	0.9331	0.1895	0.1266	0.1949	0.0027	0.0495	0.1391
21	'TCRR'	0.9977	0.8816	0.2811	0.1941	0.2993	-0.0248	0.0190	0.1146
22	'PWSL'	0.9993	0.9042	0.2709	0.1468	0.2523	-0.0139	-0.1502	0.0190
23	'PHND'	0.9981	0.9210	0.0369	0.1325	0.1174	-0.0518	0.3382	0.0059
24	'PCTH'	0.9995	0.2408	0.0426	0.9684	0.0406	-0.0054	0.0094	0.0132
25	'FMSZ'	0.9968	0.9512	0.1801	0.1489	0.1907	-0.0274	-0.0139	0.0106
	VARIANCE		75.501	7.635	6.167	7.960	0.714	0.597	0.658
	CUM. VAR		75.501	83.136	89.303	97.264	97.977	98.574	99.232

TABLE 7.6

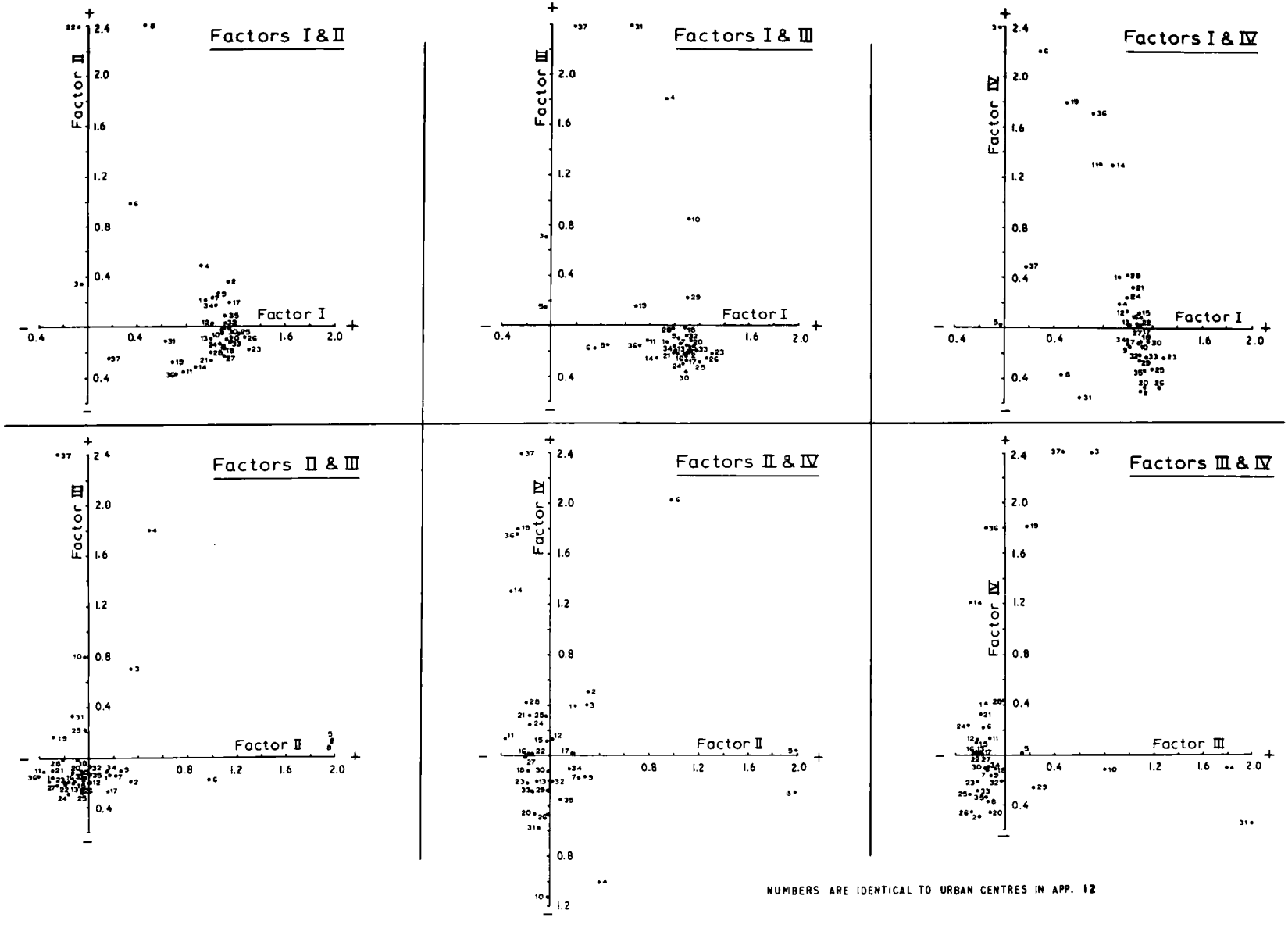
VARIMAX FACTOR SCORE MATRIX

Urban Centres, East Pakistan

FACTOR	1	2	3	4	5	6	7
URBAN CENTRES							
1	0.9617	0.2112	-0.1589	0.4132	1.1845	-0.4718	-0.2259
2	1.1506	0.3556	-0.2066	-0.5499	1.1786	-2.5042	-0.1641
3	-0.0528	0.3674	0.7082	4.1214	0.6819	0.1724	-0.7363
4	0.9360	0.4928	1.8035	-1.0821	2.0377	-0.2854	1.4366
5	-0.0693	4.8894	0.1481	0.0651	-1.2095	0.0767	-0.6694
6	0.3499	0.9040	-0.1838	2.2101	0.5530	1.1381	0.2214
7	1.0865	0.2200	-0.1542	-0.1590	1.0867	0.0596	1.1714
8	0.4514	3.2352	-0.1596	-0.3769	-0.1447	-0.0873	1.0348
9	1.0640	0.2616	-0.1156	-0.1776	1.2318	-0.3030	0.7107
10	1.1141	-0.0342	0.8340	-1.1545	-1.6457	-1.2521	1.3432
11	0.7859	-0.3760	-0.1216	1.3672	-1.5971	-0.9383	0.2130
12	1.0391	0.0791	-0.2286	0.1302	0.4597	-1.0143	0.7066
13	1.0807	-0.1012	-0.2071	0.0622	-0.0208	-0.2039	0.2827
14	0.8880	-0.3373	-0.2761	1.2821	-0.2469	0.4683	-0.4187
15	1.1017	-0.0096	-0.2274	0.1271	0.5776	-1.3722	-1.7433
16	1.1167	-0.1731	-0.2394	0.0958	-0.4634	0.9297	-0.5804
17	1.1656	0.1951	-0.2838	0.0370	1.0469	-0.9863	-2.3486
18	1.1377	-0.1898	-0.0816	-0.1272	-1.6652	-1.9113	-1.2296
19	0.6920	-0.2737	0.1656	1.8213	1.1460	-0.8178	2.0179
20	1.1631	-0.1108	-0.1378	-0.4606	-1.8077	0.4077	-0.4760
21	1.0446	-0.2790	-0.2095	0.3233	-1.5197	0.7382	1.0875
22	1.1106	-0.1781	-0.2343	0.0055	-0.7178	0.1839	0.8416
23	1.3267	-0.1994	-0.2214	-0.2122	0.5647	0.8511	-1.0829
24	1.0953	-0.1659	-0.3081	0.2387	-0.1761	1.0476	0.3720
25	1.2222	-0.0501	-0.2882	-0.3127	0.3696	0.5318	-0.7430
26	1.2677	-0.0964	-0.2662	-0.4735	-0.5663	0.3887	-1.0147
27	1.1061	-0.2432	-0.2374	0.0142	-1.5305	-0.4148	0.4784
28	1.0327	-0.2021	-0.0230	0.4335	-0.3473	-0.2659	-0.8108
29	1.1162	-0.0058	0.2197	-0.2614	0.4947	0.0322	-0.0478
30	1.1586	-0.0401	-0.1773	-0.1155	0.3236	1.1240	-1.0758
31	0.6431	-0.1187	3.2414	-0.5767	-0.2725	1.9239	-0.6817
32	1.1282	0.0653	-0.0961	-0.2083	0.7446	-0.4055	1.2446
33	1.1747	-0.1425	-0.2189	-0.2838	-0.4778	2.1541	1.0024
34	1.0904	0.1617	-0.1668	-0.1093	0.9500	0.9372	-1.0533
35	1.1372	0.0869	-0.1576	-0.3412	0.6542	1.4896	0.7080
36	0.7222	-0.3867	-0.1656	1.7863	-1.3362	-0.5950	1.3148
37	0.1986	-0.2534	4.5652	0.4648	-0.4554	-0.9068	-0.3805

FIG. 7.4

DISTRIBUTION OF URBAN CENTRES
BY INTER-FACTORIAL RELATIONSHIPS
(Main Factors)



NUMBERS ARE IDENTICAL TO URBAN CENTRES IN APP. 12

and cities low scores indicating the diversities within their population elements, while the majority of the medium and smaller towns were grouped together to ensure maximum homogeneity (Fig. 7.5). The subdivisional towns were found to be characteristically alike presumably owing to their lack of functional multiplicity and the similarity in population characteristics, as observed in earlier chapters.

FACTOR - II. The second factor indicated the qualitative characteristics and the degree of compactness in the distribution of some variables among the individual urban units. The factor registered positive loadings in such variables as population change, proportions of adult and male populations, median age, total and adult sex ratios, proportions of overall married population and single female, male literacy, volume of migration and proportion of Muslim population. This factor roughly follows the spatial pattern of the first factor (Fig. 7.5), except the cities, which registered high positive scores. Lower scores were recorded by almost all of the district towns and a few commercially important urban centres, while the smaller towns and a few district towns of south - western and western East Pakistan registered negative scores, reflecting lack of compactness in their population characteristics (Fig. 7.5).

FACTOR - III. Factor III reflected the spatial differentiations of the variables and registered high positive values in variables such as rank size of urban centres, adult sex ratio and population in minor religious groups. In general south-central towns indicated the unity in character with positive factor scores. A large number of towns (29 out of 37) registered negative scores indicating their areal dissociation from the former with respect

FIG. 7. 5

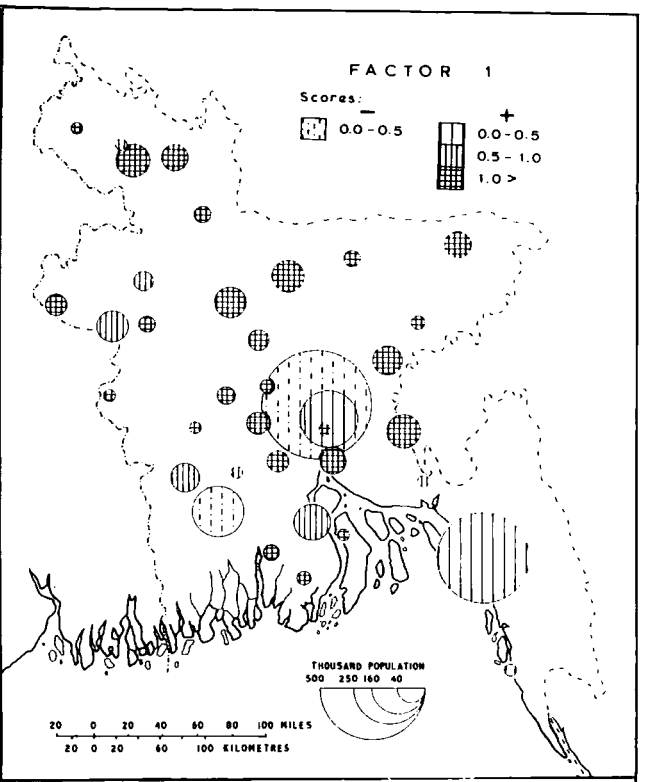
EAST PAKISTAN

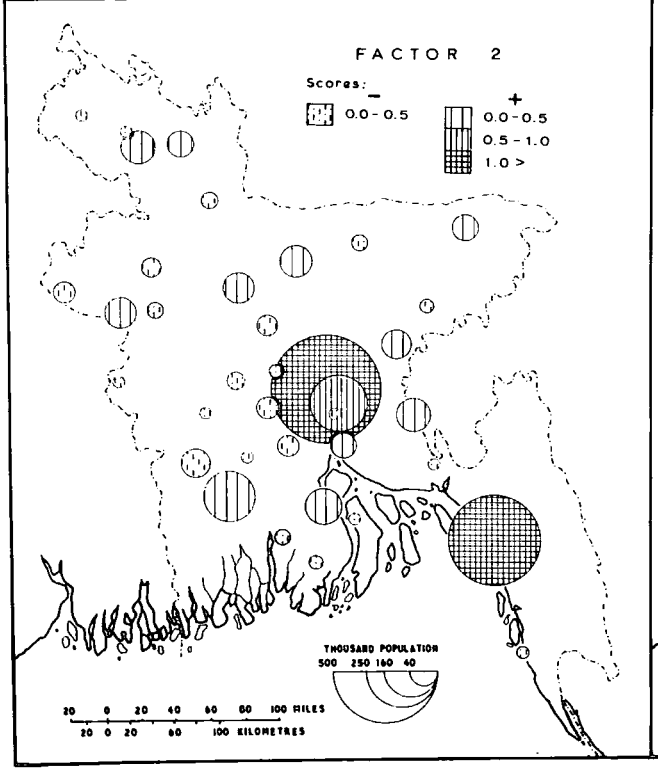
POPULATION REGIONS (URBAN)

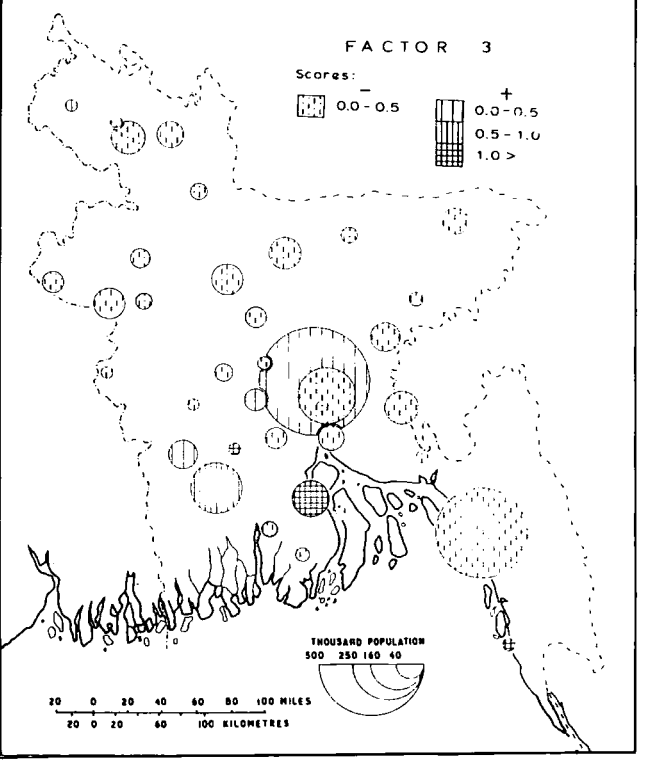
DISTRIBUTION OF FACTORS

PERCENTAGE OF TOTAL VARIANCE EXPLAINED BY EACH FACTOR

Factors	Eigenvalues	Variance Explained	
		%	cum. %
1	21.92	87.70	87.70
2	1.14	4.55	92.25
3	0.84	3.38	95.63
4	0.52	2.08	97.71
5	0.14	0.56	98.27
6	0.13	0.53	98.80
7	0.11	0.43	99.23







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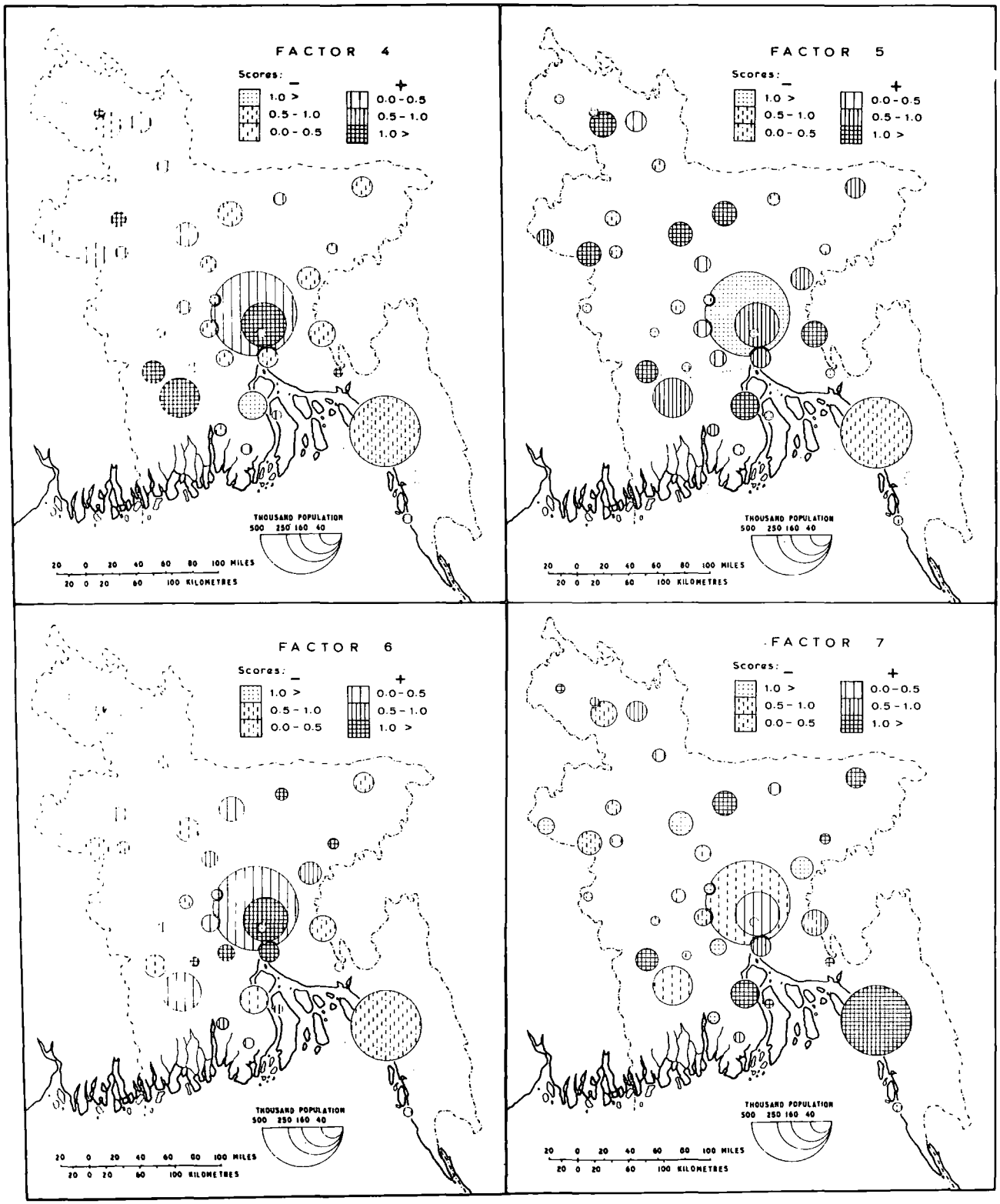
FACTOR 4
Scores:
−
1.0 >
0.5 - 1.0
0.0 - 0.5
+
0.0 - 0.5
0.5 - 1.0
1.0 >
THOUSAND POPULATION
500 250 160 40
20 0 20 40 60 80 100 MILES
20 0 20 60 100 KILOMETRES
FACTOR 5
Scores:
−
1.0 >
0.5 - 1.0
0.0 - 0.5
+
0.0 - 0.5
0.5 - 1.0
1.0 >
THOUSAND POPULATION
500 250 160 40
20 0 20 40 60 80 100 MILES
20 0 20 60 100 KILOMETRES
FACTOR 6
Scores:
−
1.0 >
0.5 - 1.0
0.0 - 0.5
+
0.0 - 0.5
0.5 - 1.0
1.0 >
THOUSAND POPULATION
500 250 160 40
20 0 20 40 60 80 100 MILES
20 0 20 60 100 KILOMETRES
FACTOR 7
Scores:
−
1.0 >
0.5 - 1.0
0.0 - 0.5
+
0.0 - 0.5
0.5 - 1.0
1.0 >
THOUSAND POPULATION
500 250 160 40
20 0 20 40 60 80 100 MILES
20 0 20 60 100 KILOMETRES

to the above variables.

FACTOR - IV. The fourth factor is identified mainly with the variables of population mobility in relation to male - female differentiations, and as such maintained positive factor loadings in variables such as population change, age structure, adult sex ratio and male index, proportions of married males, single females as well as female widowed and divorced populations, male literacy, volume of rural to urban migration and proportion of population in the main religious group. This factor resulted in six groups of towns, most of which are either slowly developing towns or some declining towns registering high negative factor scores (Table 7.6, Fig. 7.5). Many of them were in northern and western East Pakistan, while eastern and some northern towns including one city (Dacca) scored positive values. The rest of the six urban centres including two cities registered very high positive scores indicating high mobility-response and male-female differentiations in their populations.

As mentioned earlier, these four factors are the most important regarding the regionalization of towns in East Pakistan. The rest of the three factors are less important as they explain only about 2 per cent of the total variance, and it is difficult, in such a situation, to give them proper identities.[7] Therefore, they are not discussed individually, although their areal patterns are presented in Fig. 7.5.

As seen in Fig. 7.5, the regional patterns of population characteristics in the urban centres are not as distinct as in rural areas. This may be explained by two facts: (i) the very low proportion of total urban population in the province, and (ii) the process of urbanization in East Pakistan is at an early

and transitional stage. Consequently, the northern, south-western and some eastern towns of East Pakistan have showed regionally distinct patterns in almost all factors. In view of the low level of urbanization there is a fairly good consistency in the pattern of factors which make up the composite explanation of the variety of population structures of urban centres in the province.

SUMMARY AND CONCLUSION

The above analysis enables the interdependence of variables to be examined and the main features of population characteristics of East Pakistan to be ascertained. The results could be used not only for studying human geography but also in regional planning where areal division is needed as a basis. This particular quantitative method is of special advantage in describing areas where control is difficult by visual observation alone, and thus it has high geographic quality. On the other hand, since the selection of variables is by no means full and leaves scope for addition, the study opens opportunity for further work of this nature in the future. Moreover it may be done for every census, and different decades may be compared in order to identify any variations in regional or residential socio-econonomic development and population characteristics. This study also combines many of the findings of preceding chapters and provides some of the major characteristics of rural and urban populations in East Pakistan in terms of major similarities and dissimilarities within each of two population groups.

One major finding of the above study is that over 90 per cent of variances of rural districts and urban centres on 40 and 25

variables respectively are accounted for by three of the seven dimensions, indicating the degree of regularity in the factors and the variables covered by them (Fig. 7.1).

The controlling variables as identified by the major factors to explain the regional patterns in populations in each of the residential areas may now be brought out. For rural populations they have been : firstly, (i) sizes of rural population in the districts, (ii) percentage population changes, 1951-61, (iii) age and sex structures, (iv) marital characteristics, (v) major religious groups, and (vi) family sizes; secondly, (i) female and total CLF, (ii) ALF, (iii) minor religious groups; and thirdly, (i) rural density, (ii) size of labour force (CLF), (iii) dependency ratio, (iv) single population, (v) literacy, and (vi) migration rates. Inter-factorial relationships and regionalization of rural districts are presented in Figs. 7.2 and 7.3. They resulted in about three well defined areal patterns: (a) northern or north-western, (b) south-central, and (c) others falling in an intermediate group, sometimes overlapping with (a) and (b) depending on their weights of factorial values (Fig. 7.3).

For urban populations the influence of the variables was more varied, and the factorial patterns were more diversified. The main factors were concerned with: (i) age structure, (ii) marital characteristics, (iii) literacy, (iv) main religious groups, and (v) family sizes; secondly, (i) percentage population changes, 1951-61, (ii) adult and male populations (male indices), (iii) median age, (iv) total and adult sex ratios, (v) married and single females, (vi) male literacy, (vii) volume of migration, and (viii) proportions of Muslim population; and thirdly, (i) rank size of the urban centres, (ii) adult sex ratios and (iii)

population in minor religious groups. Spatial arrangements of urban centres on these factors were more varied. A broad regional differentiation was, however, identified between: (a) northern, (b) south-eastern, and (c) some eastern towns, as well as between (a) smaller towns, (b) medium sized and district towns, and (c) larger towns and cities (Fig. 7.5). Roughly the same spatial arrangement was identified in the urban centres in relation to individual aspects population structure studied in earlier chapters.

Thus the population and geographic variables of the northern and north-western districts, and almost all of their urban centres in them present more or less uniform patterns. In contrast, those in south-central and eastern (and a few in south-west) East Pakistan indicate rather more dynamism in the regional population characteristics because of more urban growth and industrialization. These districts (in south-central and eastern) are also densely populated in the province, and the increase in population and associated phenomena in them is now affecting the northern and some north-western districts. This is identified by the movement of population from the former to the northern and north-western districts, particularly in the agricultural sector, during the recent decades. At the same time, because of their slow and limited development in industry or other non-agricultural sector, the urban centres in north / north-western East Pakistan are growing rather slowly and very often act as agents of step-migration to larger urban centres mostly located in the eastern part. If this pattern of population movement goes on for significant length of time the north and north-west

districts may well pose some of the most severe demographic problems in the near future, as their capacity of absorbing additional population is very limited, both areally and economically. In fact considering the overall high density in East Pakistan, it may be deduced that any redirection, redistribution or adjustment of population by inter-district migration would not provide a solution for her population pressure, and some other alternative would, therefore, have to be adopted. On the other hand, given no change in the vital conditions and the resultant population structures in East Pakistan during the immediate future, there is every likelihood that the individual population characteristics will remain more or less stable; and their regionalizations as identified by the factor analysis are unlikely to change under present conditions. The geodemographic outlook in relation to economic growth with reference to Pakistan as a whole have been observed in the concluding chapter of this thesis.

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C H A P T E R VIII

CONCLUSION

The aim of this thesis has been to study the spatial differences and changes in various aspects of population structure in their socio-economic and regional contexts, and in quantitative terms. In the first part of this chapter the main geodemographic conditions and the principal findings of the study of the population structure have been drawn; in the second section, these phenomena are observed in the light of the overall economic condition of Pakistan; while in the last section, the outlook and future strategy for the population geographic planning in East Pakistan are briefly examined.

In the preceding chapters it has been noted that despite some changes in socio-economic conditions during the period under study, the general structural patterns of the population have remained virtually unchanged in both time and space, and the growth of population has been characterized by its:

a) massive size within a limited geographical area,
b) very high CBR with limited regional and ethno-religious differentials,
c) fast declining CDR, particularly in recent years,
d) high rate of population increase, particularly in the recent decades,
e) geo-politically isolated population concentration perpetuated by a post-Independence "demographic divide" and characterized by the absence of international or intra-national migration of any demographic significance,
f) traditional agrarian economy self-reliant in nature, with very high rural density per unit area,

g) very small proportion of urban population with slow non-agricultural or industrial development, and

h) ethno-religious, cultural and linguistically homogeneous population which provides a group-force to act and counteract for or against any socio-economic and demographic changes and processes.

Until the mass refugee movements of 1971 (after March) (for an observation on this incidence see Chapter I), East Pakistan was almost a closed population. As one of the largest population concentrations in South and South East Asia it has a very high growth potential, but because of low living standard, slow economic development and high population pressure all efforts of current socio-economic welfare are felt to be less effective or inadequate. This is accentuated by the traditionally extreme forms of various ascribed and non-ascribed characteristics of the population, of which the important ones are:

a) the large proportion of children, smaller proportion of adult population who comprise most of the economically active population group, and consequently high total dependency ratio,

b) imbalance in sex ratio and its abnormal imbalance in the urban areas,

c) universal marriage pattern with low mean and modal age at marriage, and overall low rate of marriage dissolution both of which affect the fertility level and the labour force participation rate,

d) low rates of literacy and educational level, which are rather remote from the socio-economic needs of the population,

e) low proportion of CLF which is male dominated, with a high dependency load,

f) high rates of unemployment and underemployment,

g) considerable immobility of population,

h) low manpower efficiency, and

i) fairly significant intra-regional differences in the distribution of some of the population structures in the province.

The recent surge in the rate of population growth indicates the probability of massive population build-up in future decades with corresponding pressure on existing resources, as well as the continuation of the traditional pattern of population structures in East Pakistan. Under these conditions of relatively unchanged demographic characteristics and very slowly changing social traditions and attitudes, the way in which the size of population and different population structures affect various regions of East Pakistan has been discussed in Chapters I to VI, and has been analysed quantitatively in Chapter VII. The quantification of population regions revealed two or three major sets of areas with differences within various aspects of population structures. For rural population there are areas of : (i) change and mobility, and (ii) traditionality. The changing areas are less uniform in aspects of population structure and include most districts of south-central and south-eastern East Pakistan; while the traditional areas maintained almost stable patterns, particularly the northern and some north-western districts where the populations have been less mobile, less urbanized and less industrialized. Few districts exhibit an

intermediate pattern. The urban centres in their respective areas have also followed more or less the same patterns. Some marginal towns were also noticeable as a result of low proportion of overall urbanization and industrialization in the province as well as the greater concentration of urban populations in the towns of south-central and south-eastern East Pakistan.

The one respect in which all the regions resemble each other is fast declining mortality while fertility has remained fairly high and stable. The level of fertility in East Pakistan is the most important single factor that has been influencing almost all the aspects of population structure, and which also, to a great extent, affects the level of economic development of the province, while the mortality rates have declined so rapidly as to further magnify the demographic significance of the level of fertility.* The level of fertility, as previously observed, affects the age distribution of the population directly and thereby most ascribed and non-ascribed characteristics of the population.

Under such circumstances, although a decline in fertility is much desired, it would have no substantial influence on the age structure of East Pakistan for about a generation, nor would there be a marked positive change in the proportion in the economically active age group and thereby the size of the total labour force and few other population characteristics (such as

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* Significant are the drop in the infant mortality from above 180 in the pre-Independence decades to less than 130 in 1971, and the rise in the expectancy of life at birth ($^{o}e_{o}$) from 32 to about 60 during the same period.

the level of education and literacy, and marital status). Such implications would be felt particularly in the districts where fertility rates, the proportion of children and the dependency load are highest and the proportions of labour force and literates are low, as in some of the central, northern and south-eastern districts of the province.

THE GEODEMOGRAPHIC CONDITIONS OF EAST PAKISTAN IN RELATION TO THE OVERALL ECONOMIC DEVELOPMENT IN PAKISTAN. The uniqueness of geodemographic conditions in East Pakistan means that they do not readily conform to the theory of "demographic transition". The present demographic evolution in East Pakistan may well be labelled as "pseudo-transitional", which is characterized by a rapid drop in the death rates unaccompanied by any appreciable change in the level of fertility or age structure, and secondly by the existence of a significant time-lag between economic growth and demographic change. This deviation from the hypothetical model of "demographic transition" is not unique to East Pakistan, and various exceptions from this model have been observed by Concepción and Murphy[1] in many European countries during the last century and even later. The resulting high population growth rates in East Pakistan impose further burdens on an already over-burdened economy indicating the necessity to generate high rates of economic growth merely to keep up with rapid population growth, or alternatively to check the growth-rate of population.

In this connection, the consequences of current geodemographic conditions as revealed by this study and the state of economic development in East Pakistan are worth reviewing as they are likely to have some far reaching implications on the economic

and demographic planning of the country. Applying Myrdal's[2] concept of cumulative concentration and differential regional growth in relation to spatial interaction between the growing and stagnant (less developed) regions, corresponding to West Pakistan and East Pakistan respectively, we may arrive at some interesting conclusions which tend to intensify the magnitude of the population problem within the latter region. It has been observed by various authorities that there has been a continuous capital outflow (unaccompanied by significant population out-migration) from East to West Pakistan. Power[3] has estimated that between 1948 and 1961, the capital outflow amounted to more than 2 per cent of East Pakistan's average annual income per year. In addition, if East Pakistan's share of the foreign capital inflow into West Pakistan is considered, the capital-transfer would be almost doubled.[4] On the other hand, in view of West Pakistan's lesser population pressure and increasingly superior economic infrastructure, it is likely that the inter-wing economic and related social disparity will be accentuated.[5*] Further, the

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* There are reasons to believe that this rate of capital outflow has remained persistent. As pointed out by Khan, although East Pakistan has been a highly self-reliant economy, earned more than half the foreign exchange for Pakistan and had a surplus in its trade (excepting 1963/64 and 1964/65 due to trade ban with India) with rest of the world, the province used up between a quarter and a third of imports into Pakistan. Besides the total capital inflow into East Pakistan in recent years has remained less than 20 per cent of investment and it has almost entirely been in terms of goods and services from West Pakistan and not in terms of "precious" foreign exchange. During the Third Five-Year Plan period (1965-70) of the total foreign private investment only 30.12 per cent was allocated for East Pakistan. It is also forecast that East Pakistan's foreign exchange gap will increase rather sharply and more than proportionately as income and investment increase during the Fourth Five-Year Plan period (1970-75) affecting both private and public sectors of development (ref. Khan, A.R. 1969, Pp. 144-211; and Focus on Pakistan, New Commonwealth, Vol. 7, 1970, P.45).

long-term effect of the sudden disruption of economic life in the region under study as a result of the Civil War of 1971 is yet to be seen in its geodemographic perspective. The sudden out-movement of more than 5 million inhabitants following the Civil War might give the impression of some kind of beneficial effect on the population problems of East Bengal. But in actuality, it still leaves nearly 70 million people within a 55,000 sq. mile area and it is questionable whether it will have any appreciable demographic effect. Furthermore, as mentioned earlier, many of the migrants are likely to return as soon as the situation improves, and there is some evidence of the beginning of such a return (August, 1971). Still one obvious effect of the sudden dislocation of population within East Pakistan which is likely to have an immediate bearing on the future urbanization and the development of non-agricultural sector, is the unparalleled movement of population from urban to rural areas. For instance, it has been reported that most of the medium and small sized towns, and a few larger ones have lost more than half of their populations between March and July, 1971. There is no knowing how soon these urban centres will recover their populations and resume their normal functional activities. Meanwhile, the hardpressed rural sector will have to bear the additional burden of population from the urban areas.

Looking at the overall demographic situation in East Bengal, it is perceived that in geographical regions where political boundaries and physical location restrict normal population movement to the neighbouring areas or even to other parts of the same country and where population dynamics are greatly influenced by political policies, various social norms and traditionalism,

the population groups and various aspects of population structure become more distinctive. And these are very often reflected in the maladjustment in economic development within a country. In most regionally diversified countries people tend to move from poorer areas to relatively developed areas. In Pakistan it has not been so (this is a departure from Myrdal's theory) and it is rather unlikely because of physical separation, different cultural and social traditions, lack of administrative planning and encouragement, and alleged misconception of the problems of East Pakistan by the Central Government.* And in recent decades these aspects of population pressure, economic development and inter-wing economic disequilibrium have assumed the proportion of a great geo-political problem within the country.

Thus the stereotype of East Bengal as a high density, demographically isolated, unbalanced and immature rural society seems likely to persist, with the continued picture of economic unviability and second class economic status within the country.**

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* The long term consequences of the recent economic and political discontent leading to the Civil War and the subsequent military action in East Bengal (1971) may well make the possibility of a normal and spontaneous population movement between East and West Pakistan, particularly from the former to the latter, rather remote

** The per capita income in East Pakistan is lower than in West Pakistan and is almost stagnant (between 1960-63 the rate of disparity in per capita income between East and West Pakistan was between 1.30 to 1.34 per cent), the difference between provincial growth rates is increasing, and Pakistan appears to have already become a two-economy country. It is suggested that efforts should be made at the highest official level to approach the problem of East Pakistan from a more autonomous perspective in relation to her economic and demographic situation (ref. Govt. of Pakistan, NIC Interim Report on Income Disparity, 1964; Papanek, G.F. 1967, Pp. 317-378, 386-390 and 147; Rahman, A. 1968, relevant sections; and Far Eastern Economic Review, vol. 41, 1963, Pp. 535-539).

The crux of the problem facing East Pakistan at present is the rate of population growth and its consequences rather than size alone, the state of overall social and economic development, and the absence of significant out-migration. In the obvious absence of the possibility of large-scale out-migration, the expansion of industrialization and elaboration of non-agricultural functions will evidently be important as a measure of breakthrough in the traditional economy and to combat inter-wing economic disparity. At the same time a sustained increase in agricultural output is also vital in order to support the growing population, particularly in a situation like East Pakistan where natural conditions for agriculture are most favourable and where agricultural output requires less investment funds and foreign exchange than industry, provided the appropriate planning and technical know-how are used.[6] Agricultural development during the 1960's substantiated these views.[7] According to various authorities, the current rate of population increase would call for at least 5 per cent annual growth in income per head,[8] which in view of the developmental nature of inter-wing economic disparity is practically feasible and should be given serious consideration. East Pakistan admittedly is one of the poorest countries of the world with one of the highest population concentrations per unit area and one of the smallest non-agricultural sectors in terms of employment and output, while the agricultural sector is still under-invested both technologically and financially. Although underemployment and unemployment in agriculture are becoming more evident, the limited capacity for absorption of labour in the non-agricultural sector (because of its small size and slow development) is producing large urban

unemployment and underemployment. Assuming, however, a further intensification of agricultural, non-agricultural and other related development plans during the current and future plan - periods which would give East Pakistan a breathing spell, it seems most unlikely that she could afford the present level of fertility and the resultant increment of population. The economic and other geodemographic advantages of a decline in fertility being admittedly cumulative, the sooner it occurs the greater the cause for optimism. For East Pakistan, the assumption must be, under the current geo-political, social, economic and demographic conditions, that the present trend in the patterns of population structure and growth if not reversed is bound to offset all development efforts, despite the attempts to eliminate inter-wing disequilibrium in economic development within Pakistan, and may lead ultimately to a progressive deterioration of overall economic growth, level of living and related human and environmental conditions.

OUTLOOK AND FUTURE STRATEGY. It is evident from this study that the problems of economic development posed by East Pakistan's rapidly growing population, with all its peculiarities of the patterns of population structures, are of a kind and dimension hardly encountered in any other part of the world at this moment.[9] The whole problem in East Pakistan appears to fall into three distinct segments: population growth and growth potential (which undoubtedly exceeds the optimum), level of economic development, and lack of well coordinated planning in order to trigger off economic and demographic orientation and mobility - at the national and provincial (or regional) levels. In a strict sense, they

are all independent of each other, but normally each trend magnifies the others and that is what has happened in East Pakistan in the recent decades. In this situation it is doubtful if East Pakistan can absorb current annual increments of population (which are more than 3.0 per cent) for another generation or so before any radical reform in demographic behaviour and geographic planning need be formulated. As far as economic change is concerned, there is no lack of self-fulfilling projections and prophecies for the province.[10] On the other hand, there is much ambiguity and misconception concerning the actual geodemographic conditions, problems and policy by the relevant administrative departments.[11] At any rate it is clear that the province will achieve a population larger than the 1961-census population of whole Pakistan (between 90 to 111 million) by the year 1981 giving an overall density of about 2000 persons per sq. mile with no significant change in age, sex and few other aspects of population structure.[12] Despite the inevitability of this situation, we are, at this moment, lacking sufficient well defined conceptual frame works for reliable long-term population planning strategy.

Confronting these problems, three strategies may be devised for East Pakistan's geodemographic planning:

a) Evaluation of a series of studies of East Bengal, as a separate unit rather than taking Pakistan as a whole, to ascertain the geographic dimension and measure of geodemographic load during recent decades: size and various densities (agricultural, residential etc.), peculiarities in the patterns of population structure and growth, result of extreme population build-up with particular reference to crowding, stress, and the phenomena

of "demographic divide";

b) Observation of geographic conditions for the immediate future, assuming that present demographic processes remain basically unchanged for a few more decades, thus affecting socio-economic growth potentials. Such an observation would lead to the assumption of necessary changes in current socio-political phenomena and various ascribed characteristics of population (such as literacy, level of education, urbanization, orientation in economic characteristics etc.) along with some radical shifts in attitudes, such as popular traditions and norms, affecting demographic, economic and ecological practices;

c) Formation of a series of informed, imaginative studies of feasible geographies for the new set-up (developed out of strategy (b)). This would enable the country in exploring optimal population ranges and modelling new spatial structures. This strategy would also call for greater cooperation and coordination of other social sciences and enable the maintenance of an effective system of surveillance for monitoring geodemographic conditions and the human ecosystem.

The prevailing socio-economic conditions in East Bengal would, in turn, provide a somewhat favourable ground for planning these strategies, as: (i) more than 92 per cent of the population still live in rural areas with more or less favourable and recuperative agricultural conditions; (ii) industrialization and associated urban evolution have not yet started on a large scale; and (iii) there are possibilities to arrest and plan future migration patterns, particularly rural to urban (inter-residential)

and inter-territorial, through dispersal of non-agricultural institutions as well as expansion of the agricultural sector. The execution of the plans would also be favoured by certain other human and ecological phenomena: (a) although the socio-religious life of the population is rather puritanical by Western standards, it is highly community conscious; (b) standards of living are in general low and non-materialistic; (c) the province is small in size; (d) the population is dense, and homogeneous ethno-linguistically and culturally; and (e) there was a strong post-Independent emergence of nationalistic feeling for the development of the province. The combined effect of these human and ecological conditions may well lead to a very quick movement of various development ideas and innovations (for instance, literacy, population control measures, agricultural innovations and so on) relevant to the strategy (b), which may be of enormous geodemographic importance in future decades.

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12. See Chapter I, and the main findings in different chapters.

Addendum

Appendices

Bibliography

ADDENDUM

The 1971 population figure noted in this study indicates the estimated population of the province after July, 1970 which is supported by various independent institutions as well as official authorities. This figure has not been adjusted to the sudden out-migration of population following the Civil War of 1971 in East Pakistan, as no official figure was released by the Pakistan government which could be compared with the Indian or other International sources, nor had the migration altogether stopped even as recently as Spetember, 1971. While the magnitude of the population dislocation in the form of mass migration is still not recognized by the Pakistan military government, it does however admit some return of migrants into East Bengal in recent months. Although this is in conformity with the trends in earlier political migration in this part of South Asia, no conclusive opinion could be presented about this phenomenon at this particular stage until some detailed individual studies are made in the near future. Therefore, any observation with reference to the effect of Civil War on the population of East Pakistan in this study should be taken provisionally.

APPENDIX 1

Selected features of agriculture in East Pakistan, 1961-63/64.

Districts	Cropped area ('000 acres)	Production per acre Rice (tons)	Jute* ('000bales)	Total yield Rs per acre
Dinajpur	1219	0.48	140	212
Rangpur	2273	0.48	784	221
Bogra	945	0.58	206	216
Rajshahi	2163	0.41	365	212
Pabna	1071	0.41	308	179
Jessore	1357	0.45	294	196
Kushtia	840	0.40	126	186
Khulna	1186	0.51	55	202
Barisal	4087	0.55	116	292
Faridpur	1908	0.38	551	185
Mymensingh	4087	0.46	1602	292
Dacca	1746	0.48	470	292
Comilla	2064	0.44	676	237
Sylhet	2072	0.44	101	270
Noakhali	950	0.48	80	230
Chittagong	1001	0.52	0.3	176
Chittagong Hill Tracts	252	0.45	0.5	172

* Bales of 400lb each.

Sources : Ahmed, N. An Economic Geography of East Pakistan, London, 1968.
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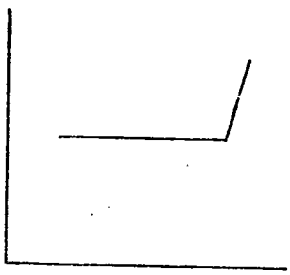
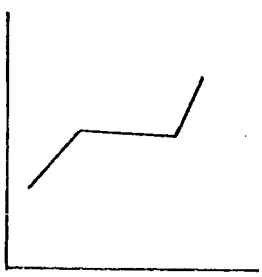
APPENDIX 2

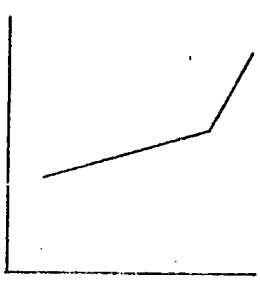
DEVELOPMENTAL MODEL OF CITY-SIZE DISTRIBUTIONS BY BERRY

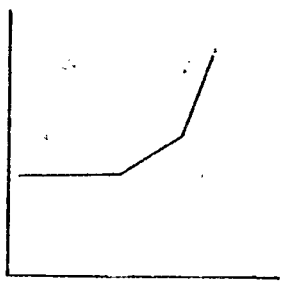
First Pattern (Primate)



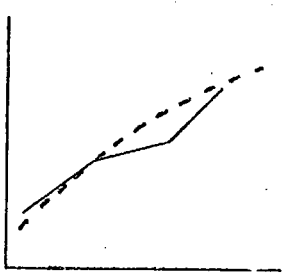
Second Pattern (Intermediate-1)

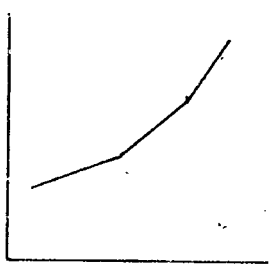






Third Pattern (Intermediate-2)





Fourth Pattern (Log-normal)

(Ref. Berry, 1960-61)

APPENDIX 3

Statistical explanations of different ratios and indices used in this thesis.

1. Child Index = $\frac{\text{Population below 15 yrs. of age}}{\text{Population aged 15 yrs. \& over}}$.

2. Aging Index = $\frac{\text{Population aged 60 yrs. \& over}}{\text{Population aged 0-59 yrs.}}$.

3. Total Dependency Ratio (TDR) = $\frac{\text{Children + Aged}}{\text{Adults}}$,

where, Children = population below 15 yrs. of age,
Aged = population aged 60 yrs. and over,
Adults = population between age group 15 and 59 yrs.

4. Median Age ($\tilde{\mu}$) = $l + \frac{i}{f}\left(\frac{n+1}{2} - c\right)$,

where, l = the lower limit of median group,
i = the class interval,
f = the frequency of the median group,
n = the total number of frequency,
c = the cumulative frequency of group previous to the median group.

5. Total Fertility Ratio (TFR) = $\frac{\text{Children below 5 yrs. of age}}{\text{Females in 15-44 yrs. age groups}}$ X1000.

6. t/Cr Ratio = $\frac{am}{bm}$ X 100,

where, t/Cr = Town-country Ratio (indicating the volume of rural-urban migration),
am = the percentage of the male population in 15-59 age groups in urban centres,
bm = the same for the rural areas of the province as a whole.

The ratio has been slightly modified from its original form as devised by Browning (1961) as to suit East Pakistan's condition.

7. Sex Ratio = $\frac{M(t)}{F(t)}$ X 1000,

where, M(t) = total male population in a given period,
F (t) = total female population in a given period.

8. η_x = $\frac{\text{Nos. of marriages (male or female) in x year of age}}{\text{Nos. of single, widowed, divorced (male or female) in x year of age}}$ X 1000

where, η_x = Age-specific Nuptiality Rate.

9. Mean Age at Marriage :

(i) $$\bar{\bar{x}} = d + \frac{\sum_{x=d}^{D} {}_{n}s_{x} - (D - d)\, s_{D}}{1 - s_{D}},$$

where, $\bar{\bar{x}}$ = Singulate Mean Age at Marriage,

${}_{n}s_{x} = \frac{{}_{n}S_{x}}{{}_{n}P_{x}}$, where ${}_{n}S_{x}$ and ${}_{n}P_{x}$ are the number of single and total populations between the ages x to x+n ; and ${}_{n}s_{x}$ is proportion in age group x to x+n,

d = earliest age at which marriage takes place,

D = maximum age at which marriage takes place (in this case 50 yrs.),

s_{D} = proportion of single at exact age D; as the population is given in 5 yrs. age group, this was estimated by taking average and is equal to :

$$\frac{5\,{}^{s}45 + 5\,{}^{s}50}{2}.$$

(ref. Sadiq, 1965)

(ii) $$\bar{\bar{x}} = d + \frac{\sum_{x=d}^{D} S_{x} - (D - d)\, S_{D}}{1 - S_{D}},$$

where, $\bar{\bar{x}}$ = Mean Age at Marriage,

S_{x} = ratio of never married persons to total population at exact age x,

d = 10 yrs., assumed minimum age at marriage,

D = 50 yrs., assumed maximum age at marriage,

$S_{D} = \frac{S_{48} + S_{49} + S_{50} + S_{51} + S_{52}}{2}$ = proportion of single at exact age 50.

(ref. Alam, 1968)

The mean age at marriages calculated by the above formulas, however do not differ much from each other.

APPENDIX 4

The highlights of the new education policy of Pakistan, 1969-70.

1. The two national languages (Bengali and Urdu) to be made medium of instruction.

2. English to be replaced as official language by Bengali and Urdu in the East and West Pakistan Governments, respectively, by 1974, and at the Centre by 1975.

3. Government servants to acquire, compulsorily, a working knowledge of both national languages by 1973.

4. English to be taught as an optional subject while both Bengali and Urdu are to be compulsory from Class VI to X in the provinces.

5. No pre-primary or kindergarten school to be allowed to teach in English.

6. A 'National Literacy Corps' to be created on the basis of conscription from amongst students between ages 18 and 22. The conscripts will be given military training for three months by army personnel, training in teaching for the next three months and will teach in rural areas for 18 months.

7. Foreign missionary educational institutions to be nationalised.

8. Public examinations at Class VIII, Class XII, and the degree levels.

9. Divisions and positions in examinations to be abolished.

10. Students making three unsuccessful attempts in an examination to be passed automatically.

11. No fee at primary level and free education for girls upto VIII class.

12. School education to be divided into two stages — elementary school from Class I to Class VIII, and high school from Class IX to Class X.

13. At secondary stages 60% students to go for vocational education on the basis of a national aptitude test and the remaining for general education.

14. By 1980 the new policy to produce 30 million persons educated upto primary level, 12 million upto the middle school level, 0.7 million upto matric (agricultural), 0.5 million (industrial), 0.4 million inter (agricultural), 0.2 inter (industrial), 41000 professional graduates and 0.5 million university graduates.

15. An adult education programme to be launched to produce 68 million adult literates by 1980.

16. All schools whether of Government, local bodies or private bodies to be placed under the administrative control of District School Authorities and District School Advisory Committees.

17. Teachers no longer to be placed in Class I or Class II etc. A National Pay Scale to be established with various segments related to qualifications, experience and ability. Teachers be disallowed private tuition.

18. A legislation to be passed on conditions of service of teachers in private schools which would be taken over if found violating the law.

19. Fee at all levels to be frozen at January '69 level. Compulsory levies not to exceed 25% of the fee.

20. Madrasah students to be taught some of the modern subjects and equated with Western educational system's various grades so as to have equal job opportunities.

21. Only three designations at all college and university levels : Professor, Associated Professor, and Assistant Professor. Present designations of Lecturers, Readers etc. to be abolished.

22. All colleges whether Governments or otherwise, to be administered by their own governing bodies.

23. A law to be framed to force private colleges to maintain certain standards.

24. Colleges known for their superior staff and excellence in teaching to be allowed to follow their own cources and conduct their examinations for which degrees may be granted by the affiliating universities.

25. Students' elected representatives at all levels to have a say in all matters concerning them.

26. A new University Ordinance to replace the existing one.

27. Governors no longer to be Chancellors of the Universities. The Chancellors to be elected by syndicates for an unrenewable term of three years.

28. Vice-Chancellors not to have more than one term of three years.

29. East Pakistan to have five more universities -- one in Khulna Division, one agricultural university in the Northern region, one Central University equivalent to Islamabad University and two new affiliating universities.

30. West Pakistan to have five more universities -- three purely affiliating universities at Quetta, Multan, and Sargodha, a technical university at Karachi, two new agricultural universities at Peshawar and Tandojam.

31. All medical colleges to be upgraded to the status of universities except at Lahore where both colleges are to be constituents of the same university.

32. A university grants commission to be set up in each of the province under a law.

APPENDIX 5

(i) Elementary schools and enrolments in East and West Pakistan, 1947-1966.

Years	Schools*(in thsnd)				Enrolments (in million)							
	Primary		Secondary		Primary				Secondary			
	E.P.	W.P.	E.P.	W.P.	E.P.		W.P.		E.P.		W.P.	
					M	F	M	F	M	F	M	F
1947-8	29.63	8.41	3.84	2.60	1.81	0.21	0.45	0.09	0.48	0.04	0.46	0.05
1948	28.98	9.07	3.55	2.56	1.90	0.63	0.50	0.09	0.50	0.04	0.46	0.05
1949	26.99	9.41	3.55	2.60	1.77	0.56	0.57	0.10	0.47	0.05	0.51	0.06
1950	26.35	10.38	3.51	2.67	1.83	0.46	0.67	0.11	0.47	0.04	0.55	0.07
1951	26.15	11.18	3.34	2.58	1.87	0.61	0.79	0.14	0.43	0.05	0.57	0.08
1952	26.26	12.67	3.14	2.02	1.98	0.67	0.99	0.16	0.41	0.04	0.53	0.08
1953	26.23	13.68	3.10	2.17	1.98	0.67	1.03	0.18	0.40	0.04	0.57	0.09
1954	26.00	14.16	3.08	2.26	1.94	0.67	1.08	0.19	0.41	0.04	0.62	0.10
1955	26.22	15.84	3.10	2.57	1.94	0.71	1.17	0.21	0.42	0.05	0.68	0.11
1956	26.28	16.44	3.08	2.67	1.98	0.73	1.19	0.22	0.44	0.05	0.70	0.12
1957	26.58	16.93	3.03	2.82	2.04	0.75	1.17	0.26	0.43	0.06	0.70	0.14
1958	26.69	17.54	3.06	2.97	2.17	0.81	1.21	0.28	0.43	0.06	0.71	0.14
1959	26.58	17.90	3.05	3.04	2.34	0.84	1.26	0.29	0.46	0.06	0.74	0.17
1960	26.66	20.91	3.14	2.97	2.40	0.92	1.35	0.35	0.47	0.07	0.79	0.17
1961	26.75	24.93	3.25	3.31	2.50	0.92	1.52	0.39	0.50	0.07	0.79	0.19
1962	27.15	28.34	3.38	3.59	2.66	0.97	1.66	0.42	0.56	0.09	0.87	0.23
1963	27.56	30.95	3.58	3.84	2.71	1.14	1.83	0.47	0.65	0.10	0.96	0.28
1964	27.65	32.59	3.83	4.32	2.83	1.21	2.00	0.53	0.72	0.13	1.03	0.34
1965-6	27.74	34.31	3.96	4.47	2.95	1.28	2.15	0.61	0.79	0.15	1.08	0.40

* Schools by sex are not available. M - Male, F - Female.

Source : C.S.O. 1968.

(ii) Number* of schools, teachers and enrolments in the elementary grades for selected years, East Pakistan, 1944-1966.

Years	Schools		Teachers		Enrolments	
	P	S	P	S	P	S
1944[1]	-	0.98	-	-	-	-
1947-48	29.63	3.84	75.62	24.36	2021.76	526.02
M	-	-	72.70	23.42	1812.33	481.91
F	-	-	2.92	0.94	209.37	44.10
1950-51	26.35	3.51	64.81	23.69	2292.76	514.51
M	-	-	61.94	22.45	1835.24	472.24
F	-	-	2.87	1.24	457.52	42.27
1955-56	26.22	3.10	71.97	22.77	2646.25	473.12
M	-	-	70.11	21.85	1937.73	425.30
F	-	-	1.86	0.92	708.52	47.82
1960-61	26.66	3.14	80.52	24.45	3330.58	532.90
M	-	-	78.80	23.10	2405.19	466.22
F	-	-	1.72	1.35	925.39	66.68
1965-66	27.73	3.96	96.63	35.65	4236.03	949.48
M	-	-	94.39	33.12	2951.54	794.59
F	-	-	2.24	2.53	1284.49	154.89

* Figures in thousand.

1 - Chatterjee, 1949. P - Primary, S - Secondary. - Not available.

Source : C.S.O. 1968.

APPENDIX 6

Main findings of Adam's Report on the state of education in Bengal at the beginning of the 19th century.

1. Bengali was the medium of instruction. It was the language of Musalmans as well as of the Hindu population, and though the Hindustani or Urdu was the current spoken language of the educated Musalmans of Bengal and Bihar, it was never employed in the schools as the medium or instrument of written instruction.

2. Arabic and Persian were the main mediums of instruction in Muslim instructions.

3. The schools were most often held in some rooms in private houses and not unoften in the open. There were very few school houses built exclusively for this purpose, and they were mostly thatched cotteges each of which, in addition to the personal labour of the pupils, was erected at a cost averaging Rs 1/4/- to Rs 10/-.

4. As regards the teachers, only a very few gave their instructions gratuitously as they had independent means of support. But in general, the salary of the teachers was very poor. The average monthly professional income of the vernacular teachers of Bengal and Bihar was about Rs 3/-, less than half of what was usually given in Calcutta to the lowest menials or domestic servants.

5. The number of pupils was overwhelmingly Hindu. Whereas the Hindu population (in Greater Bengal) was to the Musalman in the proportion of about 2 to 1, the Hindu scholars enjoying the benefit of elementary indigenous education were to the Musalman scholars in the proportion of about 18 to 1.

6. The subjects of instruction consisted mostly of reading, writing and some amount of arithmetic to enable the pupil to keep accounts. The students generally spent about 6 to 7 years to learn these things. Some students continued beyond this for a period of about 2 years. The accounts briefly and superficially in the preceding stage were now taught more thoroughly and at greater length, and these were accompanied by the composition of business letters, petitions, grants, leases, acceptances, notes or bonds etc. togetherwith the forms of addresses belonging to the different grades of rank and station.

7. The use of printed books (excepting those in Arabic and Persian) in the native language appears hitherto to have been almost wholly unknown. In many old THANAS, even manuscript text books were unknown. All that the scholars were acquired from the oral dictation of the master. The literary texts mostly consisted of hymns addressed to different gods and goddesses, and stories, based on the epics, like Datakarna.

8. The scheme of descipline may be truly characterised as throughout a reign of terror. Caning was the most normal. ... Other ingenious modes of punishment were also regularly followed. The result was that the school was regarded by the pupils as a sort of dungeon or grievous prison house to escape from which was the chiefest of all things and the desire to do so was the most powerful of all instinct.

9. The aggregate average number of the pupils for all the district was no more than $7\frac{1}{4}$ % and the aggregate average of adult population who could read or write was no more than $5\frac{1}{2}$ %.

10. As regards female education, it was practically unknown, and there was no public institution for this purpose. In all those localities of which a census was taken, no adult females were found to possess even the lowest grade of instruction, a few probable exception being the daughters of Zamindars or some of religious sects.

APPENDIX 7

Percentage distribution of population by educational levels and sex, East Pakistan, 1951 and 1961.

(i) Districts

Districts		1951 W	P	S	M	I	G	H	1961 W	P	S	M	I	G	H
EAST PAKISTAN	M	43.96	35.48	15.72	4.14		0.60	0.09	15.85	60.11	19.32	3.43	0.73	0.39	0.10
	F	65.23	29.30	4.98	0.42		0.05	0.01	17.33	74.49	7.35	0.57	0.14	0.06	0.02
Dinajpur	M	43.88	40.50	12.23	2.70		0.39	0.03	17.55	65.89	13.24	2.18	0.35	0.19	-
	F	53.91	39.47	6.05	0.68		0.04	-	19.35	70.97	6.04	0.43	0.04	0.02	-
Rangpur	M	39.64	40.40	14.39	3.74		0.42	0.04	15.49	63.46	17.31	2.78	0.39	0.24	0.05
	F	51.35	40.54	6.48	0.46		0.04	-	17.91	73.39	6.52	0.56	0.03	0.007	-
Bogra	M	43.81	37.62	15.71	2.85		0.36	0.06	11.45	65.56	18.50	2.69	0.57	0.31	0.01
	F	56.25	37.50	5.21	0.41		0.05	-	14.03	79.10	6.71	0.35	0.10	0.02	-
Rajshahi	M	38.97	40.81	16.71	3.72		0.58	0.07	16.33	59.77	19.83	2.43	0.82	0.45	0.08
	F	48.39	43.55	6.77	0.51		0.05	-	16.67	70.47	10.47	0.76	0.26	0.05	-
Pabna	M	34.22	39.57	21.39	5.02		0.60	0.08	19.39	53.03	22.22	3.36	0.31	0.31	0.04
	F	45.09	41.06	5.88	0.45		0.02	-	21.35	64.38	10.96	0.86	0.20	0.001	-
Kushtia	M	39.24	32.91	21.52	5.54		0.72	0.06	14.03	59.46	20.72	3.81	0.53	0.35	0.07
	F	51.38	42.05	6.10	0.41		0.04	-	14.03	76.47	6.65	0.48	0.15	0.23	-
Jessore	M	43.39	36.77	15.70	3.51		0.51	0.09	14.05	60.14	21.65	2.94	0.57	0.27	0.06
	F	59.32	37.29	4.07	0.22		0.01	-	17.45	74.02	6.19	0.36	0.09	0.03	-
Khulna	M	45.24	34.19	16.70	3.34		0.46	0.05	14.35	59.80	21.29	3.28	0.65	0.31	0.07
	F	58.88	36.45	4.20	0.23		0.02	-	15.92	76.92	6.15	0.35	0.06	0.02	-
Barisal	M	43.20	38.34	15.02	3.00		0.25	0.03	10.67	65.40	19.90	2.96	0.48	0.21	0.04
	F	63.13	32.63	3.60	0.21		-	-	11.87	80.78	6.16	0.33	0.09	0.01	-
Mymensingh	M	48.65	30.54	16.62	3.90		0.34	0.06	23.63	53.14	18.42	3.60	0.52	0.29	0.08
	F	74.60	22.09	2.95	0.21		-	-	25.94	67.76	4.54	0.35	0.07	0.04	0.007
Dacca	M	41.87	33.74	16.87	6.13		1.22	0.40	22.03	49.44	19.41	4.74	1.71	0.97	0.26
	F	63.42	29.57	5.83	0.62		0.12	0.03	22.49	65.57	9.83	1.20	0.42	0.19	0.06
Faridpur	M	40.21	37.80	17.69	3.75		0.53	0.05	10.69	63.79	21.17	2.96	0.40	0.22	0.05
	F	57.29	37.50	4.79	0.21		0.02	-	11.41	79.61	6.31	0.21	0.04	0.01	0.007
Sylhet	M	47.00	35.70	12.17	4.05		0.81	0.10	11.93	67.95	16.36	2.49	0.55	0.27	0.07
	F	69.44	23.41	6.07	0.61		0.07	-	11.34	79.71	7.97	0.57	0.12	0.07	0.02
Comilla	M	43.68	33.94	16.59	5.48		0.56	0.08	15.18	59.94	20.18	3.11	0.73	0.31	0.05
	F	65.41	28.75	5.00	0.58		0.15	-	16.78	75.90	6.82	0.38	0.07	0.02	-
Noakhali	M	43.19	36.62	15.23	3.99		0.70	0.09	12.21	58.61	18.61	3.45	0.51	0.29	0.08
	F	66.88	26.11	6.65	0.20		0.01	-	19.75	75.83	3.93	0.21	0.04	0.003	0.003

Chittagong	M	51.67	28.29	14.73	4.71	0.63	0.07	14.80	56.89	17.71	6.35	1.22	0.77	0.16
	F	75.10	19.50	4.98	0.58	0.04	-	12.60	75.51	8.84	1.05	0.09	0.02	-
Chittagong	M	52.00	36.80	11.20	2.26	0.03	0.03	17.61	56.82	15.91	3.23	0.45	0.36	0.10
Hill Tracts	F	70.00	37.43	6.66	0.62	-	-	15.52	84.00	12.10	0.90	0.22	0.10	0.04
(ii) Selected Urban Centres														
Urban Centres														
E. Pakistan:	M	27.81	29.70	25.06	14.40	2.95	0.62	15.70	40.64	24.96	10.19	3.18	1.73	0.47
Urban	F	45.38	36.41	16.78	2.95	0.44	0.35	20.12	56.81	18.81	2.56	0.73	0.26	0.09
Saidpur	M		n.		a.			33.80	39.21	18.85	7.54	0.91	0.35	0.09
	F							49.79	42.66	9.83	1.34	0.23	-	-
Khulna	M	28.57	28.58	30.00	12.85	3.95	0.47	13.82	42.75	28.80	10.02	2.34	1.24	0.39
	F	40.00	40.00	16.54	1.68	0.25	-	16.03	62.73	18.09	1.97	0.45	0.20	0.02
Barisal	M	16.13	32.26	35.48	14.58	1.65	0.31	4.18	49.90	28.85	13.07	4.03	0.84	0.41
	F	33.33	44.44	22.22	2.19	0.15	-	18.09	52.11	25.88	3.43	1.23	0.24	0.11
Dacca	M	28.89	22.89	22.96	14.81	4.22	1.25	20.11	36.17	24.21	9.32	5.37	3.29	0.95
	F	55.36	28.57	13.57	2.14	0.42	0.11	21.96	51.62	20.06	3.77	1.44	0.69	0.23
Mymensingh	M	26.66	26.66	26.66	20.66	3.41	0.74	5.25	44.44	24.11	18.04	2.23	2.64	0.79
	F	43.33	38.33	21.66	2.30	0.40	-	13.53	60.77	17.66	4.07	0.28	0.18	0.09
Chittagong	M	46.73	28.97	13.08	7.47	1.00	0.10	8.54	46.28	24.79	3.21	2.14	0.54	0.02
	F	73.02	29.05	4.76	1.25	0.15	-	12.88	59.73	15.62	0.81	0.38	0.11	-
Narayanganj	M			N.		a.		28.64	41.18	24.48	4.17	0.85	0.42	0.12
	F							24.32	62.75	15.16	0.62	0.11	0.01	0.01
Comilla	M	28.57	36.71	19.28	14.28	2.56	0.60	16.39	31.87	21.87	15.51	4.08	2.23	0.73
	F	40.00	34.28	13.71	8.15	1.31	0.35	15.59	62.42	20.86	3.21	0.58	0.19	0.04
Rajshahi	M	19.16	25.83	26.96	16.16	3.88	0.91	10.63	34.00	28.66	10.83	6.68	4.08	0.80
	F	32.61	40.20	25.00	2.98	0.39	-	8.89	56.50	26.12	3.84	1.92	0.46	0.05

- Not significant, n.a. Not available, M Male, F Female. (Figures are in percentages of total literates)

W Without formal schooling, P primary (5 yrs+), S Secondary (9 yrs+), M Matric (14 yrs+), I Intermediate, G graduate, H Higher degree. (The rest of the percentages refer to the literates in the oriental and religious educations).

Sources: Calculated from Census of Pakistan, 1951, Vol. 3, and
Census of Pakistan, 1961. Bulletin - 4.

APPENDIX 8

Percentage* of students by types of education, East Pakistan, 1961.

(i) Rural and Urban Areas

Districts		Total		Rural		Urban	
		M	F	M	F	M	F
E. Pakistan	G	92.10	92.40	92.48	91.32	91.62	93.62
	T	1.63	0.09	0.19	0.04	2.75	0.12
	R	6.27	7.61	7.33	8.64	5.63	6.26
Dinajpur	G	93.97	91.43	94.75	91.18	93.20	91.78
	T	0.19	-	0.09	-	0.30	-
	R	5.84	8.57	5.16	8.82	6.50	8.22
Rangpur	G	90.30	87.36	92.53	89.83	87.65	84.90
	T	0.62	-	0.07	-	1.16	-
	R	9.08	12.63	10.39	10.17	11.18	15.10
Bogra	G	92.54	92.12	92.35	89.86	92.73	94.65
	T	0.62	0.27	0.14	0.27	1.06	-
	R	6.84	7.61	7.51	9.87	6.21	5.35
Rajshahi	G	92.55	90.85	93.77	90.79	91.35	89.39
	T	1.45	-	0.22	-	2.59	-
	R	6.00	9.15	6.01	9.21	16.06	10.61
Pabna	G	92.10	93.49	90.00	91.44	94.20	94.97
	T	0.86	-	0.29	-	1.42	-
	R	7.04	6.51	9.71	8.56	4.38	5.03
Kushtia	G	95.81	96.45	96.13	95.46	95.50	97.45
	T	0.37	-	0.33	-	0.40	-
	R	3.82	3.55	3.54	4.54	4.10	2.55
Jessore	G	95.18	95.86	95.38	95.43	94.99	96.11
	T	0.28	0.12	0.10	0.12	0.46	-
	R	4.54	4.02	4.52	4.34	4.55	3.89
Khulna	G	96.35	97.05	96.79	96.71	96.82	97.60
	T	0.82	0.30	0.09	-	1.56	0.30
	R	2.83	2.65	3.12	3.29	1.62	2.10
Barisal	G	92.82	94.50	90.79	88.62	94.86	96.48
	T	0.26	-	0.15	-	0.37	-
	R	6.92	5.50	9.06	11.38	4.77	3.52
Mymensingh	G	90.47	92.41	90.42	87.89	90.53	95.05
	T	1.32	0.29	0.33	-	2.31	0.29
	R	8.21	7.30	9.25	12.03	7.16	4.65
Dacca	G	91.27	93.39	93.86	92.08	88.62	94.72
	T	3.51	0.81	0.52	0.15	6.58	0.21
	R	5.22	6.41	5.62	7.76	4.79	5.07
Faridpur	G	93.45	94.30	95.23	94.13	91.66	94.47
	T	0.40	-	0.05	-	0.75	-
	R	6.15	5.70	4.72	5.87	7.59	5.53
Sylhet	G	94.08	95.91	92.75	94.68	95.41	97.15
	T	1.31	0.27	0.26	0.04	2.36	0.52
	R	4.61	3.82	6.99	5.28	2.23	2.33
Comilla	G	88.75	87.20	89.73	87.82	87.68	86.58
	T	1.95	0.08	0.23	0.08	3.70	-
	R	9.30	12.72	10.04	12.10	8.62	13.42
Noakhali	G	94.73	95.94	91.65	93.19	95.81	98.69
	T	0.08	-	0.09	0.08	2.06	-
	R	5.19	4.06	8.26	6.73	2.13	1.31

continued ...

Chittagong	G	92.82	93.41	90.62	92.48	93.98	94.35
	T	0.58	0.08	0.12	-	1.04	0.08
	R	6.61	6.51	9.26	7.52	4.98	5.57
Chittagong	G	98.82	99.39	99.42	99.19	98.51	99.51
Hill Tracta	T	0.28	-	-	-	0.28	-
	R	0.90	0.61	0.58	0.81	1.21	0.49

(ii) Selected Urban Centres

Urban Centres		Total	Male	Female
E. Pak. Urban	G	92.62	91.62	93.62
	T	1.44	2.75	0.12
	R	5.95	5.63	6.26
Rajshahi	G	91.90	90.45	93.35
	T	3.02	6.04	-
	R	5.08	3.51	6.65
Saidpur	G	Not available		
	T			
	R			
Barisal	G	96.58	96.47	96.69
	T	0.21	0.42	-
	R	3.21	3.11	3.31
Mymensingh	G	95.16	92.91	97.42
	T	3.00	5.24	0.76
	R	1.84	1.85	1.82
Dacca	G	89.90	86.08	93.72
	T	4.23	8.19	0.27
	R	5.87	5.73	6.01
Comilla	G	70.64	70.58	70.69
	T	5.03	10.06	-
	R	24.33	19.36	29.31
Chittagong	G	94.04	93.84	94.24
	T	0.58	1.08	0.08
	R	5.38	5.08	5.68
Narayanganj	G			
	T	Not available		
	R			

G - General (Liberal arts and sciences), T - Technical and sciences, R - Religious studies.

* Percentage of total students.

Sources : Calculated from: Census of Pakistan, 1961, Vol. 2, East Pakistan.

APPENDIX 9

Survey on the extent of Brain Drain from Pakistan (main findings).

Recently a survey on the 'Brain Drain' from Pakistan in the USA has been sponsored by the Pakistan Students' Association of America (1969). The main findings of the survey are as follows :

1. Years (average) stayed abroad - 4.5 years.

2. Qualifications of the respondants -

Post-graduates	-	37.3 %
Ph. D.	-	35.9 %
Medical Graduates	-	23.0 %
Graduates	-	3.8 %

3. Profession of the respondants -

Medicine	-	23.0 %
Pure Science	-	31.0 %
Social Science	-	24.3 %
Engineering	-	20.5 %
Liberal Arts	-	1.2 %

(average professional experience - 3.8 to 4.0 years).

4. Causes of staying abroad -

Professional appreciation and creative work	-	55.5 %
Good salary	-	19.3 %
Others	-	25.2 %

5. Causes of not-returning to Pakistan -

Absence of meaningful works and lack of appreciation of qualified persons	-	43.5 %
Authoritarian attitude	-	27.0 %
Subodination to Civil Servants		24.3 %
Inadequate salary	-	5.2 %

6. Inclined to return IF given -

Opportunity to research/innovation	-	59.4 %
Participation in decision making	-	32.4 %
Security of job and high salary	-	8.2 %

(ref. The Pakistan Times Magazine, 6th July, 1969, Pp. 1 - 8).

Almost the same results have been found in an enquiry of the East Pakistani students in London, Durham and Newcastle (1970) with only difference that about 15 % showed inclination towards security of job and good salary (togetherwith academic and professional freedom) when they return to East Pakistan.

APPENDIX 10

(i) Occupational structures of the Agricultural Labour Force (ALF), East Pakistan, 1951-61.

Main classification of the ALF :

1. Cultivators and agricultural labourers,
2. Orchard and nursery workers, aesthetic gardeners (Malis) and market gardeners,
3. Tea planatation labourers,
4. Institutional farming : dairy, poultry, animal breeders, bee keepers, seri-culturists and other breeders,
5. Drivers of farm tractors and machines,
6. Hunters and trappers (excluding fisherman),
7. Other agriculturists (unclassified).

(ii) Occupational structures of the Non-agricultural Labour Force (NALF), East Pakistan, 1951-61.

Main classification of the NALF :

1. Professional, technical and related occupations: architects, surveyers, engineers; chemist, physical scientists; veterinary surgeons, biologists and related scientists; physicians, surgeons, dentists and medical specialists; nurses and midwives; professional medical workers and medical scientists; teachers; priests and members of religious order etc.; lawyers, judges and magistrates; other professional, technical and related workers (social workers, artists, sculptors etc.);
2. Managerial, administrative, clerical and related workers: proprietors, directors, managers and administrators in commercial, industrial and business concerns; governmental and public service administrators and officers; clerical and other non-gazetted officials;
3. Sales and related occupations: retail traders; insurance agents, brokers and auctioneers; commercial travellers, canvassers and manufacturers' representatives; salesman and shop assistants, hawkers and street vendors; stall holders; selling occupations;
4. Agriculture, fishing, trapping and logging occupations: non-working land owners; persons engaged in specialized cultivation; other non-cultivating agriculturists; forestry occupations, fisherman;
5. Mine, quarry and related occupations: all type of coal workers; metal ore workers; salt producers; stone, slate mining and quarrying; clay, sand, gravel and pit workers; oil and natural gas labourers; other skilled workers in mineral procuring enterprises;
6. Transport and communication occupations: all officers and pilots; boatmen and crew of ships; aircraft pilot, navigator, engineers; railway drivers, firemen etc.; road transport workers - drivers of cars, coaches, rickshaws, motor rickshaws, bullock carts etc.; specialized occupations in railway; traffic and transport workers (white collar); tele-communication operators; messengers (excluding peons, postmen); others in transport and communication occupations;

7. Manufacturing, construction and general workers: (a) foremen:- manufacturing, repair and food products; liquors and beverages; tobacco products; rubber products; furriers; leather and leather products; textiles, textile goods and garments; wood products; pulp, paper and paper products; printing, publishing and book binding; metal, electro-plate and electrical products; non-metallic mineral products; chemicals; miscellaneous manufacturing; electric lights, power productions; (b) general construction workers (skilled); specialized construction occupations; general labourers;

8. Service, sport, entertainment and recreation: fire-men, police, security officers and related occupations; workers - domestic, hospitals, hotels, clubs, restaurants etc.; caretakers, cleaners and related occupations; hairdressers, beauticians and barbers etc; launderers, cleaners and pressers, sport, entertainment, recreation and related occupations; photographers and other camera operators; service occupations;

9. Unclassified workers ;

10. Unemployed (not working but looking for work).

Source: Census of Pakistan, 1961. Vol. 2, East pakistan, and Vol. 5, Non-agricultural labour force (East Pakistan).

APPENDIX 11

Economic characteristics of population by broad age groups and sex, East Pakistan, 1961.

Districts		Total*		Below 15 yrs.				Over 15 yrs.			
				10 - 11		12 - 14		15 - 59		60 +	
		M	F	M	F	M	F	M	F	M	F
Dinajpur	C	60.37	6.04	57.48	6.64	76.18	5.43	94.90	10.96	92.42	12.45
	i	55.18	5.23	56.42	6.22	73.61	4.89	86.28	9.55	87.04	11.12
	ii	5.19	0.79	1.06	0.42	2.57	0.54	8.62	1.41	5.38	1.33
	N/D	39.63	93.96	42.52	93.36	23.82	94.57	5.10	89.04	7.58	87.55
Rangpur	C	57.52	6.81	55.90	6.11	69.50	8.91	95.42	12.43	92.33	14.71
	i	53.13	6.44	54.48	5.09	66.94	8.46	87.78	11.78	87.69	13.74
	ii	4.39	0.37	1.42	1.02	2.56	0.45	7.64	0.65	4.64	0.97
	N/D	42.48	93.19	44.10	93.89	30.50	91.09	4.58	87.57	7.67	85.29
Bogra	C	56.66	1.27	42.89	3.49	58.09	1.16	94.20	2.28	89.51	2.18
	i	51.34	2.41	40.95	0.25	54.11	0.28	85.01	0.58	83.62	0.58
	ii	5.32	0.86	1.94	3.24	3.98	0.88	9.19	1.70	5.89	1.60
	N/D	43.34	98.73	57.11	96.51	41.91	98.84	5.80	97.72	10.49	97.82
Rajshahi	C	56.85	2.28	65.63	2.08	61.16	3.67	93.64	4.18	89.04	4.48
	i	50.59	1.53	62.25	1.62	55.03	2.95	82.68	2.75	80.91	2.45
	ii	6.26	0.75	3.38	0.46	6.13	0.72	10.96	1.43	8.13	2.03
	N/D	43.15	97.92	34.37	97.92	38.84	96.33	16.36	95.82	10.96	95.52
Pabna	C	53.86	1.04	58.89	1.17	69.84	1.20	91.94	1.96	82.46	1.75
	i	43.72	0.22	52.98	0.38	59.69	0.30	73.52	0.38	68.91	0.32
	ii	10.14	0.83	5.91	0.79	10.15	0.90	18.42	1.58	13.55	1.43
	N/D	46.14	98.96	41.11	98.83	30.16	98.80	8.06	98.04	17.54	98.25
Kushtia	C	57.49	2.91	57.69	1.88	73.39	2.57	94.34	5.73	87.89	5.94
	i	45.68	0.94	51.34	0.69	64.32	1.16	73.62	1.83	73.93	2.02
	ii	11.81	1.97	6.35	1.19	9.07	1.41	20.72	3.90	13.96	3.92
	N/D	42.51	97.09	42.31	98.12	26.61	97.43	5.66	94.27	12.11	94.06
Jessore	C	55.88	2.60	41.38	2.10	58.78	2.62	93.67	4.82	86.49	4.92
	i	47.93	1.57	38.43	1.65	53.25	1.92	79.75	2.85	75.31	2.92
	ii	7.95	1.03	2.95	0.45	5.53	0.70	13.92	1.97	10.18	2.00
	N/D	44.12	97.40	58.62	97.90	41.22	97.38	6.33	95.18	13.50	95.08
Khulna	C	57.27	1.95	49.48	5.88	65.66	2.42	91.22	3.33	84.15	2.58
	i	46.03	1.13	39.19	4.46	56.25	1.38	73.07	1.84	73.21	1.36
	ii	11.24	0.82	10.19	1.42	9.41	1.04	18.15	1.49	9.94	1.22
	N/D	42.73	98.05	50.52	94.12	34.34	97.58	8.78	96.67	15.85	97.42
Barisal	C	54.49	0.99	51.85	1.25	66.97	1.25	91.81	1.94	85.71	1.54
	i	48.18	0.42	50.42	0.37	63.19	0.40	79.67	0.95	77.75	0.98
	ii	6.31	0.57	1.43	0.88	3.78	0.85	12.14	0.99	7.96	0.56
	N/D	45.51	99.01	48.15	98.75	33.03	98.75	8.19	98.06	14.89	98.46
Mymensingh	C	58.63	17.06	60.54	16.35	73.15	30.46	95.46	27.68	92.01	21.37
	i	52.84	16.37	57.69	15.66	69.03	29.67	85.36	26.40	84.45	19.93
	ii	5.79	0.69	2.85	0.69	4.12	0.79	10.10	1.28	7.56	1.44
	N/D	41.37	82.94	39.46	83.65	26.85	70.04	4.54	72.32	7.99	78.63
Dacca	C	53.99	2.50	29.05	2.40	55.83	2.39	90.15	4.74	85.47	5.01
	i	34.10	1.07	20.36	1.48	40.23	0.50	57.84	2.17	67.07	3.39
	ii	19.89	1.43	8.69	0.92	15.60	1.89	32.31	2.57	18.40	1.60
	N/D	46.01	97.50	70.95	97.60	44.17	97.61	9.85	95.26	14.53	94.99
Faridpur	C	56.09	1.24	45.00	1.19	62.36	1.47	95.27	2.23	87.76	2.31
	i	49.43	0.68	42.33	0.58	58.61	0.79	83.51	1.27	78.23	1.26
	ii	6.66	0.56	2.67	0.61	3.75	0.68	11.76	0.96	9.53	1.05
	N/D	43.91	98.76	55.00	98.81	37.64	98.53	4.73	97.77	12.24	97.69

continued ...

Sylhet	C	56.82	16.31	43.81	14.16	66.16	18.57	91.88	25.61	80.13	14.95
	i	49.76	15.70	39.88	12.27	60.87	17.87	80.06	24.64	73.01	14.43
	ii	7.06	0.61	3.93	1.89	5.29	0.70	11.82	0.97	7.12	0.52
	N/D	43.18	83.69	56.19	85.84	33.84	81.43	8.12	74.39	19.87	85.05
Comilla	C	54.60	38.13	52.65	38.73	67.94	53.00	91.33	63.77	89.14	49.79
	i	48.94	37.42	50.26	38.08	63.55	52.09	81.10	62.56	83.59	49.02
	ii	5.66	0.71	2.39	0.65	4.39	0.91	10.23	1.21	5.55	0.77
	N/D	45.40	61.87	47.35	61.27	32.06	47.00	8.67	36.23	10.86	50.21
Noakhali	C	51.97	21.87	26.95	32.56	60.95	24.28	92.40	37.25	87.31	23.44
	i	45.95	20.90	24.19	31.45	57.37	23.25	80.90	35.58	81.38	22.45
	ii	6.02	0.97	2.76	1.11	3.58	1.03	11.50	1.67	5.93	0.98
	N/D	48.03	78.13	73.05	67.44	39.05	75.72	7.60	62.75	12.69	76.56
Chittagong		55.77	17.47	29.61	11.42	52.07	19.08	91.09	30.21	66.33	18.95
	i	34.70	14.97	24.47	9.72	39.51	15.83	55.38	25.88	61.42	15.35
	ii	21.07	2.50	5.14	1.70	12.56	3.35	35.71	4.33	4.91	3.60
	N/D	44.23	82.53	70.39	88.58	47.93	80.82	89.91	69.79	33.67	81.05
Chittagong Hill trcts		63.34	46.77	55.77	46.76	72.45	71.34	94.29	76.02	83.21	37.76
		51.98	46.41	54.27	46.59	47.33	70.74	77.04	75.40	77.95	37.74
	ii	11.36	0.36	1.50	0.17	5.12	0.60	17.25	0.62	5.26	0.02
	N/D	36.66	53.23	44.23	53.24	27.55	28.66	5.71	23.98	16.79	62.24

* Per cent of population aged 12 years and over.

C - CLF, i - ALF, ii - NALF, N/D - NCLF and dependents and others.

Sources : Calculated from: Census of Pakistan, 1961, Bulletin 5, Economic characteristics.

APPENDIX 12

(i) List of districts used in Factor Analysis, East Pakistan.

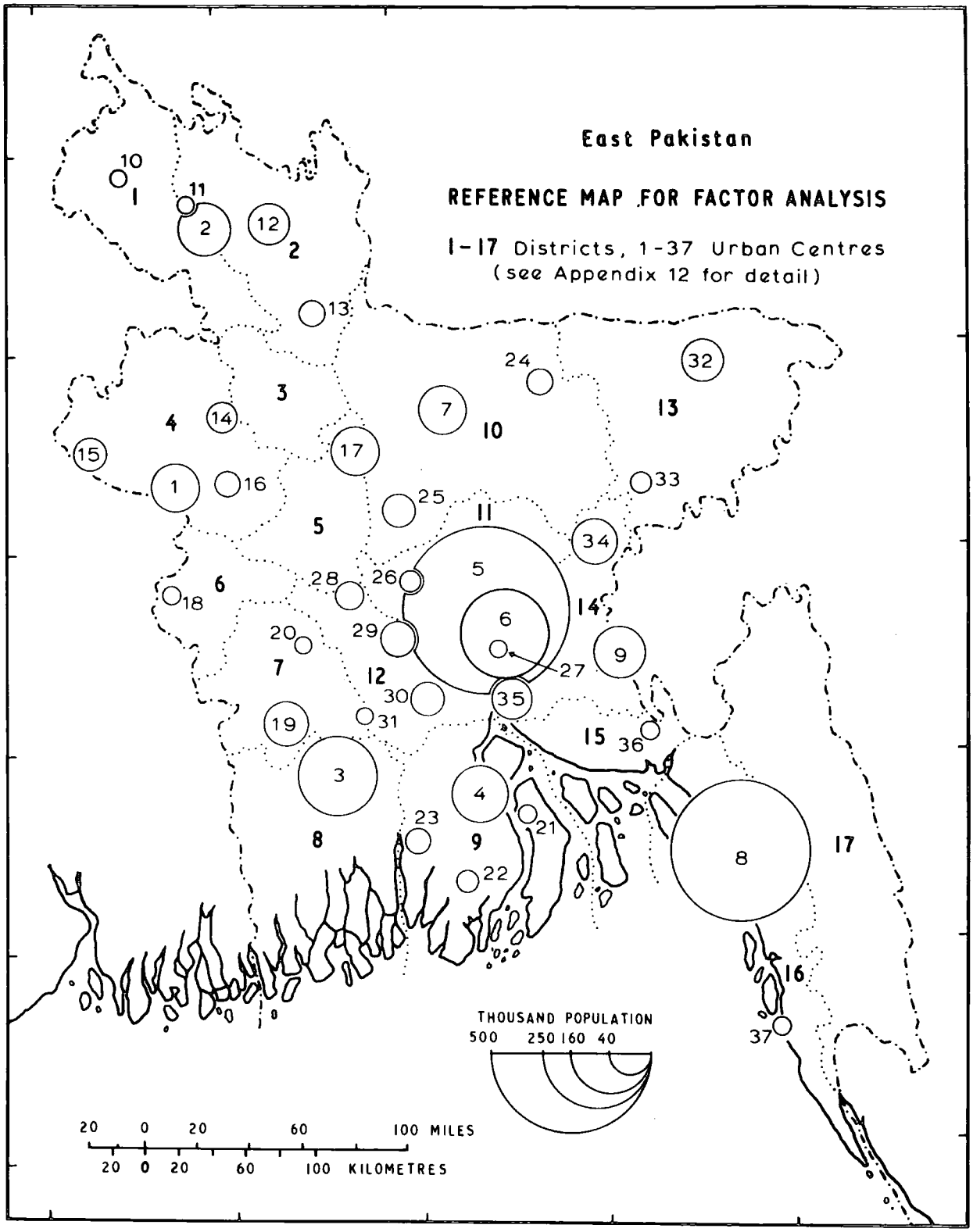
Number	Districts*	Administrative units (Geographical regions)
1	Dinajpur	Rajshahi Division (North Bengal)
2	Rangpur	
3	Bogra	
4	Rajshahi	
5	Pabna	
6	Kushtia	Khulna Division (South/West Bengal)
7	Jessore	
8	Khulna	
9	Barisal	
10	Mymensingh	Dacca Division (Central Bengal)
11	Dacca	
12	Faridpur	
13	Sylhet	Chittagong Division (Eastern/South-East Bengal)
14	Comilla	
15	Noakhali	
16	Chittagong	
17	Chittagong Hill Tracts	

* As found in 1968.

(ii) List of selected urban centres used in Factor Analysis, East Pakistan

Number	Urban Centres	Status
1	Rajshahi	M
2	Saidpur	M
3	Khulna	C
4	Barisal	M
5	Dacca	C
6	Narayanganj	C
7	Mymensingh	M
8	Chittagong	C
9	Comilla	M
10	Thakurgaon	T

(APP. 12)


East Pakistan
REFERENCE MAP FOR FACTOR ANALYSIS
1-17 Districts, 1-37 Urban Centres
(see Appendix 12 for detail)
THOUSAND POPULATION
500 250 160 40
20 0 20 60 100 MILES
20 0 20 60 100 KILOMETRES

11	Nilphamari	T
12	Rangpur	M
13	Gaibandha	M
14	Naogaon	T
15	Nawabganj	M
16	Natore	T
17	Serajganj	M
18	Meherpur	T
19	Jessore	M/Ct
20	Magura	T
21	Bhola	M
22	Patuakhali	M
23	Perojpur	M
24	Netrokona	M
25	Tangail	M
26	Manikganj	T
27	Munshiganj	T
28	Rajbari	M
29	Faridpur	M
30	Madaripur	M
31	Gopalganj	M
32	Sylhet	M
33	Habiganj	M
34	Brahmanbaria	M
35	Chandpur	M
36	Feni	M
37	Cox's Bazar	M

C - City, M - Municipality, T - Town, M/Ct - Municipality and Cantonment.

APPENDIX 13

(i) Descriptive Statistics : 40 Variables Observed in 17 Rural Districts of East Pakistan.

Variables	Notations	$\bar{X}$	σ	Covar
1. Total population	TOP	2834.59	1472.39	0.52
2. Rural population (%)	PRP	95.03	0.34	0.36
3. " " density	PDN	1397.65	594.50	0.42
4. Population change,51-61(%)	PCH	21.59	6.27	0.29
5. Children, 0-14 yrs. (%)	PPC	46.18	1.43	0.03
6. Adults, 15-59 yrs. (%)	PPD	48.66	1.71	0.03
7. Aged, 60+ yrs. (%)	PPG	5.18	0.49	0.09
8. Cultivable land (acres)	ACR	1.61	0.87	0.54
9. Total dependency ratio	DPR	1.06	0.06	0.06
10. Median age (yrs.)	MDA	17.37	1.11	0.06
11. Fertility ratio	FRT	942.55	59.83	0.06
12. Total sex ratio	SXRT	1073.18	39.85	0.04
13. Adult " "	SXRD	1069.41	72.85	0.07
14. Aged " "	SXRG	1213.94	113.74	0.09
15. Married male (%)	MRM	40.44	1.74	0.04
16. " female (%)	MRF	43.85	1.64	0.04
17. Single male (%)	SNM	57.06	1.99	0.03
18. " female (%)	SNF	44.53	2.02	0.04
19. Widwd & divorced male (%)	WDM	2.55	0.60	0.24
20. " " female (%)	WDF	11.83	0.16	0.01
21. Male literacy, 5+ yrs. (%)	LTM	29.82	5.77	0.19
22. Female " " (%)	LTF	8.83	2.40	0.27
23. CLF -total, 10+ yrs. (%)	CLFT	31.68	6.30	0.19
24. " male, " (%)	CLFM	54.66	2.37	0.04
25. " female, " (%)	CLFF	8.67	11.11	1.28
26. Not in CLF - total, " (%)	NCLT	0.27	0.18	0.66
27. " male, " (%)	NCLM	0.26	0.16	0.59
28. " female ," (%)	NCLF	0.26	0.25	0.98
29. ALF - total, 10+ yrs. (%)	ALFT	26.81	6.55	0.24
30. " male, " (%)	ALFM	45.86	5.35	0.18
31. " female, " (%)	ALFF	7.81	11.18	1.43
32. Migration ratio, 51-61	MGRR	2.95	1.89	0.64
33. Muslim population (%)	PMSL	76.35	18.04	0.24
34. Hindu " (%)	PHND	18.69	8.22	0.44
35. Others " (%)	POTH	4.93	17.75	3.60
36. Bengali speaking popl. (%)	PBNG	97.39	2.11	0.02
37. Urdu " " (%)	PURD	1.23	1.09	0.89
38. English " " (%)	PENG	0.77	0.39	0.51
39. Urban population (%)	PURB	5.01	3.47	0.69
40. Family size (average)	FMSZ	4.50	0.18	0.04

(ii) Descriptive Statistics : 25 Variables Observed in 37 Selected Urban Centres of East Pakistan.

Variables	Notations	$\bar{X}$	σ	Covar
1. Total population	TOP	56.12	104.31	1.86
2. Urban rank order	RNK	18.95	10.61	0.56
3. Population change, 51-61 (%)	PCH	33.00	42.50	1.29
4. Children, 0-14 yrs. (%)	PPC	44.41	3.62	0.08
5. Adults, 15-59 yrs. (%)	PPD	51.29	4.14	0.08
6. Aged, 60+ yrs. (%)	PPG	4.28	1.00	0.23
7. Male index	PPM	30.95	5.32	0.17
8. Total dependency ratio	DPR	0.93	0.13	0.14
9. Median age (yrs.)	MDA	18.49	1.56	0.08
10. Total sex ratio	SXRT	1298.35	208.55	0.16
11. Adult " "	SXRD	1544.22	361.19	0.23
12. Aged " "	SXRG	1377.89	377.46	0.27
13. Married male (%)	MRM	38.92	2.47	0.06
14. " female (%)	MRF	39.27	2.81	0.07
15. Single male (%)	SNM	59.10	2.32	0.04
16. " female (%)	SNF	50.69	2.90	0.06
17. Widw'd & divorced male (%)	WDM	1.87	0.36	0.20
18. " " female (%)	WDF	1.11	0.32	0.29
19. Male literacy, 5+ yrs. (%)	LTM	55.34	7.12	0.13
20. Female " " (%)	LTF	33.57	6.71	0.20
21. Volume of migration (T/Cr)	TCRR	123.78	21.29	0.17
22. Muslim population (%)	PMSL	70.47	12.19	0.17
23. Hindu " (%)	PHND	28.52	12.08	0.42
24. Others " (%)	POTH	0.87	1.95	2.25
25. Family size (average)	FMSZ	4.51	0.31	0.07

APPENDIX 14

Correlation Matrix of 40 Variables

Rural Districts, East Pakistan

VARIABLES		V A R I A B L E S													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	'TCP'	1.000	0.887	0.850	0.806	0.889	0.883	0.898	0.983	0.887	0.876	0.883	0.883	0.873	0.892
2	'PRP'	0.887	1.000	0.912	0.960	0.993	0.999	0.994	0.882	0.998	0.997	0.997	0.999	0.997	0.996
3	'PDN'	0.850	0.912	1.000	0.835	0.923	0.916	0.920	0.789	0.919	0.916	0.915	0.915	0.909	0.908
4	'PCH'	0.806	0.960	0.835	1.000	0.959	0.961	0.946	0.823	0.956	0.960	0.965	0.966	0.967	0.948
5	'PPC'	0.889	0.999	0.923	0.959	1.000	0.998	0.996	0.879	0.998	0.996	0.999	0.998	0.996	0.994
6	'PPD'	0.883	0.999	0.916	0.961	0.998	1.000	0.993	0.876	0.997	0.999	0.996	0.999	0.999	0.995
7	'PPG'	0.898	0.994	0.920	0.946	0.996	0.993	1.000	0.885	0.995	0.992	0.996	0.993	0.989	0.988
8	'ACR'	0.983	0.882	0.789	0.823	0.879	0.876	0.885	1.000	0.879	0.867	0.875	0.877	0.868	0.884
9	'DPR'	0.887	0.998	0.919	0.956	0.998	0.997	0.995	0.879	1.000	0.995	0.997	0.997	0.995	0.992
10	'MDA'	0.876	0.997	0.916	0.960	0.996	0.999	0.992	0.867	0.995	1.000	0.994	0.998	0.997	0.994
11	'FRT'	0.883	0.997	0.915	0.965	0.999	0.996	0.996	0.875	0.997	0.994	1.000	0.997	0.995	0.990
12	'SXRT'	0.883	0.999	0.915	0.966	0.998	0.999	0.993	0.877	0.997	0.998	0.997	1.000	0.999	0.994
13	'SXRD'	0.873	0.997	0.909	0.967	0.996	0.999	0.989	0.868	0.995	0.997	0.995	0.999	1.000	0.993
14	'SXRG'	0.892	0.996	0.908	0.946	0.994	0.995	0.988	0.884	0.992	0.994	0.990	0.994	0.993	1.000
15	'PRM'	0.883	0.999	0.908	0.966	0.998	0.999	0.994	0.880	0.996	0.998	0.997	0.999	0.998	0.995
16	'PRF'	0.886	0.999	0.911	0.964	0.998	0.999	0.994	0.881	0.997	0.997	0.997	0.999	0.997	0.995
17	'SAM'	0.891	0.998	0.929	0.955	1.000	0.998	0.996	0.878	0.999	0.996	0.998	0.998	0.996	0.993
18	'SAF'	0.884	0.998	0.926	0.957	0.999	0.998	0.993	0.872	0.997	0.997	0.997	0.998	0.997	0.994
19	'WDH'	0.828	0.981	0.873	0.949	0.974	0.985	0.964	0.829	0.976	0.985	0.971	0.983	0.988	0.980
20	'WDF'	0.898	0.989	0.915	0.942	0.991	0.988	0.992	0.890	0.993	0.987	0.991	0.987	0.984	0.981
21	'LTN'	0.874	0.981	0.919	0.924	0.981	0.982	0.976	0.856	0.979	0.983	0.975	0.979	0.977	0.982
22	'LTF'	0.904	0.965	0.933	0.891	0.968	0.961	0.968	0.877	0.964	0.961	0.961	0.957	0.950	0.962
23	'CLFT'	0.851	0.980	0.911	0.944	0.977	0.984	0.964	0.840	0.979	0.981	0.972	0.984	0.985	0.980
24	'CLFM'	0.881	0.998	0.914	0.964	0.998	1.000	0.992	0.875	0.997	0.998	0.996	1.000	0.999	0.995
25	'CLFF'	0.480	0.614	0.624	0.583	0.605	0.628	0.566	0.454	0.612	0.619	0.588	0.627	0.635	0.626
26	'NCLT'	0.780	0.832	0.938	0.759	0.840	0.832	0.826	0.727	0.845	0.827	0.828	0.828	0.818	0.821
27	'NCLM'	0.767	0.851	0.902	0.829	0.864	0.855	0.854	0.716	0.869	0.860	0.862	0.855	0.855	0.835
28	'NCLF'	0.686	0.711	0.857	0.594	0.719	0.708	0.702	0.621	0.724	0.699	0.699	0.702	0.687	0.713
29	'ALFT'	0.844	0.974	0.881	0.939	0.967	0.976	0.951	0.844	0.968	0.971	0.961	0.976	0.977	0.976
30	'ALFM'	0.880	0.996	0.883	0.963	0.991	0.995	0.984	0.886	0.991	0.992	0.990	0.994	0.994	0.994
31	'ALFF'	0.442	0.572	0.578	0.541	0.561	0.586	0.521	0.419	0.568	0.576	0.543	0.583	0.593	0.585
32	'MGRM'	0.712	0.849	0.758	0.812	0.848	0.835	0.833	0.694	0.845	0.832	0.846	0.839	0.833	0.840
33	'PMSL'	0.910	0.973	0.909	0.930	0.977	0.968	0.982	0.899	0.974	0.964	0.978	0.968	0.960	0.963
34	'PHND'	0.802	0.915	0.798	0.854	0.911	0.918	0.912	0.803	0.916	0.925	0.906	0.915	0.918	0.920
35	'PCTH'	0.052	0.265	0.239	0.304	0.255	0.285	0.211	0.050	0.254	0.284	0.248	0.287	0.310	0.278
36	'PDNS'	0.890	1.000	0.918	0.959	1.000	0.999	0.996	0.883	0.999	0.997	0.998	0.999	0.997	0.994
37	'PURD'	0.676	0.728	0.778	0.720	0.744	0.752	0.743	0.603	0.732	0.769	0.738	0.752	0.749	0.746
38	'PERS'	0.810	0.876	0.931	0.814	0.889	0.890	0.893	0.740	0.868	0.898	0.862	0.886	0.884	0.875
39	'PURB'	0.732	0.801	0.879	0.782	0.822	0.820	0.825	0.664	0.817	0.829	0.821	0.822	0.822	0.796
40	'FPSZ'	0.888	0.998	0.923	0.958	1.000	0.998	0.995	0.876	0.998	0.996	0.998	0.998	0.997	0.993

		15	16	17	18	19	20	21	22	23	24	25	26	27	28
1	'TCP'	0.883	0.886	0.891	0.884	0.828	0.898	0.874	0.904	0.851	0.881	0.480	0.780	0.767	0.686
2	'PRP'	0.999	0.999	0.998	0.998	0.981	0.989	0.981	0.965	0.980	0.998	0.614	0.832	0.851	0.711
3	'PDN'	0.908	0.911	0.929	0.926	0.873	0.915	0.919	0.933	0.911	0.914	0.624	0.938	0.902	0.857
4	'PCH'	0.966	0.964	0.955	0.957	0.949	0.942	0.924	0.891	0.944	0.964	0.583	0.759	0.829	0.594
5	'PPC'	0.998	0.998	1.000	0.999	0.974	0.991	0.981	0.968	0.977	0.998	0.605	0.840	0.864	0.719
6	'PPD'	0.999	0.999	0.998	0.998	0.985	0.988	0.982	0.961	0.984	1.000	0.628	0.832	0.855	0.708
7	'PPG'	0.994	0.994	0.996	0.993	0.964	0.992	0.976	0.968	0.964	0.992	0.566	0.826	0.854	0.702
8	'ACR'	0.860	0.881	0.878	0.872	0.829	0.890	0.856	0.877	0.840	0.875	0.454	0.727	0.716	0.621
9	'DPR'	0.996	0.997	0.999	0.997	0.976	0.993	0.979	0.964	0.979	0.997	0.612	0.845	0.869	0.724
10	'MDA'	0.998	0.997	0.996	0.997	0.985	0.987	0.983	0.961	0.981	0.998	0.619	0.827	0.860	0.699
11	'FRT'	0.997	0.997	0.998	0.997	0.971	0.991	0.975	0.961	0.972	0.996	0.588	0.828	0.862	0.699
12	'SXRT'	0.999	0.999	0.998	0.998	0.983	0.987	0.979	0.957	0.984	1.000	0.627	0.828	0.855	0.702
13	'SXRD'	0.998	0.997	0.996	0.997	0.988	0.984	0.977	0.950	0.985	0.999	0.635	0.818	0.855	0.687
14	'SXRG'	0.995	0.995	0.993	0.994	0.980	0.981	0.982	0.962	0.980	0.995	0.626	0.821	0.835	0.713
15	'PRM'	1.000	1.000	0.997	0.997	0.982	0.988	0.980	0.959	0.979	0.999	0.609	0.820	0.848	0.692
16	'PRF'	1.000	1.000	0.998	0.997	0.981	0.988	0.983	0.963	0.979	0.999	0.608	0.826	0.846	0.703
17	'SAM'	0.997	0.998	1.000	0.999	0.975	0.991	0.981	0.969	0.980	0.998	0.616	0.848	0.869	0.729
18	'SAF'	0.997	0.997	0.999	1.000	0.980	0.986	0.978	0.962	0.986	0.998	0.641	0.843	0.868	0.720
19	'WDH'	0.982	0.981	0.975	0.980	1.000	0.960	0.969	0.924	0.980	0.985	0.666	0.785	0.826	0.655
20	'WDF'	0.988	0.988	0.991	0.986	0.960	1.000	0.980	0.971	0.951	0.986	0.530	0.833	0.872	0.716
21	'LTN'	0.980	0.983	0.981	0.978	0.969	0.980	1.000	0.977	0.954	0.979	0.568	0.853	0.855	0.754
22	'LTF'	0.959	0.963	0.969	0.962	0.924	0.971	0.977	1.000	0.923	0.955	0.522	0.887	0.867	0.794
23	'CLFT'	0.979	0.979	0.980	0.986	0.980	0.951	0.954	0.923	1.000	0.986	0.755	0.841	0.849	0.725
24	'CLFM'	0.999	0.999	0.998	0.998	0.985	0.986	0.979	0.956	0.986	1.000	0.634	0.828	0.855	0.703
25	'CLFF'	0.609	0.608	0.616	0.641	0.666	0.530	0.568	0.522	0.755	0.634	1.000	0.641	0.572	0.598
26	'NCLT'	0.820	0.826	0.848	0.843	0.785	0.839	0.853	0.887	0.841	0.828	0.641	1.000	0.904	0.957
27	'NCLM'	0.848	0.846	0.869	0.869	0.826	0.872	0.855	0.867	0.849	0.855	0.572	0.904	1.000	0.764
28	'NCLF'	0.692	0.703	0.729	0.720	0.655	0.716	0.754	0.794	0.725	0.703	0.598	0.957	0.764	1.000
29	'ALFT'	0.972	0.972	0.969	0.976	0.979	0.936	0.945	0.911	0.995	0.977	0.766	0.819	0.814	0.710
30	'ALFM'	0.995	0.996	0.990	0.991	0.985	0.978	0.976	0.949	0.979	0.995	0.622	0.802	0.819	0.683
31	'ALFF'	0.566	0.565	0.572	0.598	0.629	0.483	0.525	0.475	0.719	0.591	0.998	0.598	0.525	0.563
32	'MGRM'	0.833	0.843	0.848	0.838	0.807	0.831	0.862	0.847	0.818	0.833	0.516	0.763	0.730	0.716
33	'PMSL'	0.971	0.974	0.975	0.966	0.919	0.981	0.962	0.977	0.921	0.965	0.474	0.840	0.831	0.732
34	'PHND'	0.916	0.915	0.913	0.908	0.927	0.931	0.935	0.873	0.882	0.917	0.483	0.703	0.779	0.591
35	'PCTH'	0.273	0.261	0.259	0.300	0.376	0.163	0.194	0.108	0.422	0.295	0.786	0.183	0.265	0.097
36	'PDNS'	0.999	0.999	0.999	0.998	0.978	0.992	0.982	0.967	0.978	0.998	0.604	0.836	0.858	0.713
37	'PURD'	0.748	0.746	0.748	0.746	0.726	0.743	0.767	0.728	0.735	0.750	0.455	0.646	0.705	0.543
38	'PERS'	0.881	0.881	0.897	0.897	0.856	0.885	0.878	0.881	0.870	0.888	0.632	0.840	0.577	0.723
39	'PURB'	0.816	0.812	0.827	0.826	0.781	0.824	0.802	0.783	0.809	0.822	0.516	0.747	0.836	0.604
40	'FPSZ'	0.997	0.997	0.999	0.999	0.976	0.989	0.978	0.963	0.981	0.998	0.620	0.838	0.868	0.714

		29	30	31	32	33	34	35	36	37	38	39	40
1	'TCP'	0.844	0.880	0.442	0.712	0.910	0.802	0.052	0.890	0.676	0.810	0.732	0.888
2	'PRP'	0.974	0.996	0.572	0.849	0.973	0.915	0.265	1.000	0.728	0.876	0.801	0.998
3	'PDN'	0.881	0.883	0.578	0.758	0.909	0.798	0.239	0.918	0.778	0.931	0.879	0.923
4	'PCH'	0.939	0.963	0.541	0.812	0.930	0.854	0.304	0.959	0.720	0.814	0.782	0.958
5	'PPC'	0.967	0.991	0.561	0.848	0.977	0.911	0.255	1.000	0.744	0.889	0.822	1.000
6	'PPD'	0.976	0.995	0.586	0.835	0.968	0.918	0.285	0.999	0.752	0.890	0.820	0.998
7	'PPG'	0.951	0.984	0.521	0.833	0.982	0.912	0.211	0.996	0.743	0.893	0.825	0.995
8	'ACR'	0.844	0.886	0.419	0.694	0.899	0.803	0.050	0.883	0.603	0.740	0.664	0.876
9	'DPR'	0.968	0.991	0.568	0.845	0.974	0.916	0.254	0.999	0.732	0.888	0.817	0.998
10	'MDA'	0.971	0.992	0.576	0.832	0.964	0.925	0.284	0.997	0.769	0.898	0.829	0.996
11	'FRT'	0.961	0.990	0.543	0.846	0.978	0.906	0.248	0.998	0.738	0.882	0.821	0.998
12	'SXRT'	0.976	0.994	0.585	0.839	0.968	0.915	0.287	0.999	0.752	0.886	0.822	0.998
13	'SXRD'	0.977	0.994	0.593	0.833	0.960	0.918	0.310	0.997	0.749	0.884	0.822	0.997
14	'SXRG'	0.976	0.994	0.585	0.840	0.963	0.920	0.278	0.994	0.746	0.875	0.796	0.993
15	'PRM'	0.972	0.995	0.566	0.833	0.971	0.916	0.273	0.999	0.748	0.881	0.816	0.997
16	'PRF'	0.972	0.996	0.565	0.843	0.974	0.915	0.261	0.999	0.746	0.881	0.812	0.997
17	'SAM'	0.969	0.990	0.572	0.848	0.975	0.913	0.259	0.999	0.748	0.897	0.827	0.999
18	'SAF'	0.976	0.991	0.598	0.838	0.966	0.908	0.300	0.998	0.746	0.897	0.826	0.999
19	'WDH'	0.979	0.985	0.629	0.807	0.919	0.927	0.376	0.978	0.726	0.856	0.781	0.976
20	'WDF'	0.936	0.978	0.483	0.831	0.981	0.931	0.163	0.992	0.743	0.885	0.824	0.989
21	'LTN'	0.945	0.976	0.525	0.862	0.962	0.935	0.194	0.982	0.767	0.878	0.802	0.978
22	'LTF'	0.911	0.949	0.475	0.847	0.977	0.873	0.108	0.967	0.728	0.881	0.783	0.963
23	'CLFT'	0.995	0.979	0.719	0.818	0.921	0.882	0.422	0.978	0.735	0.890	0.809	0.981
24	'CLFM'	0.977	0.995	0.591	0.833	0.965	0.917	0.295	0.998	0.750	0.888	0.822	0.998
25	'CLFF'	0.766	0.622	0.998	0.516	0.474	0.483	0.786	0.604	0.455	0.632	0.516	0.620
26	'NCLT'	0.819	0.802	0.598	0.763	0.840	0.703	0.183	0.836	0.646	0.840	0.747	0.838
27	'NCLM'	0.814	0.819	0.525	0.730	0.831	0.779	0.265	0.858	0.705	0.877	0.836	0.868
28	'NCLF'	0.710	0.683	0.563	0.716	0.732	0.591	0.097	0.713	0.543	0.723	0.604	0.714
29	'ALFT'	1.000	0.980	0.734	0.825	0.908	0.874	0.436	0.969	0.692	0.848	0.753	0.970
30	'ALFM'	0.980	1.000	0.582	0.845	0.961	0.915	0.284	0.993	0.706	0.842	0.763	0.991
31	'ALFF'	0.734	0.582	1.000	0.481	0.425	0.444	0.805	0.560	0.414	0.586	0.467	0.576
32	'MGRM'	0.825	0.845	0.481	1.000	0.846	0.795	0.086	0.845	0.569	0.689	0.570	0.846
33	'PMSL'	0.908	0.961	0.425	0.846	1.000	0.866	0.062	0.976	0.720	0.859	0.790	0.971
34	'PHND'	0.874	0.915	0.444	0.795	0.866	1.000	0.170	0.915	0.731	0.807	0.751	0.911
35	'PCTH'	0.436	0.284	0.805	0.086	0.062	0.170	1.000	0.253	0.186	0.281	0.265	0.278
36	'PDNS'	0.969	0.993	0.560	0.845	0.976	0.915	0.253	1.000	0.739	0.885	0.815	0.999
37	'PURD'	0.692	0.706	0.414	0.569	0.720	0.731	0.186	0.739	1.000	0.884	0.914	0.744
38	'PERS'	0.848	0.842	0.596	0.689	0.859	0.807	0.281	0.885	0.884	1.000	0.952	0.892
39	'PURB'	0.753	0.763	0.467	0.570	0.790	0.751	0.265	0.815	0.914	0.952	1.000	0.826
40	'FPSZ'	0.970	0.991	0.576	0.846	0.971	0.911	0.278	0.999	0.744	0.892	0.826	1.000

APPENDIX 15

Correlation Matrix of 25 Variables
Urban Centres, East Pakistan

VARIABLES		VARIABLES													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	'TCP'	1.000	0.157	0.464	0.434	0.511	0.393	0.546	0.405	0.512	0.538	0.556	0.467	0.492	0.474
2	'RNK'	0.157	1.000	0.424	0.890	0.850	0.874	0.831	0.901	0.842	0.836	0.815	0.822	0.857	0.869
3	'PCH'	0.464	0.424	1.000	0.587	0.638	0.530	0.682	0.547	0.653	0.675	0.699	0.647	0.641	0.609
4	'PPC'	0.434	0.890	0.587	1.000	0.987	0.977	0.971	0.896	0.987	0.974	0.956	0.954	0.992	0.995
5	'PPD'	0.511	0.850	0.638	0.987	1.000	0.959	0.995	0.947	0.999	0.995	0.986	0.971	0.998	0.993
6	'PPG'	0.393	0.874	0.530	0.977	0.959	1.000	0.934	0.986	0.961	0.933	0.913	0.907	0.967	0.979
7	'PPM'	0.546	0.831	0.682	0.971	0.995	0.934	1.000	0.954	0.994	0.998	0.997	0.973	0.990	0.979
8	'DPR'	0.405	0.901	0.547	0.896	0.947	0.986	0.954	1.000	0.976	0.958	0.936	0.941	0.982	0.989
9	'MDA'	0.512	0.842	0.653	0.987	0.999	0.961	0.994	0.976	1.000	0.995	0.986	0.970	0.997	0.993
10	'SXRT'	0.538	0.836	0.675	0.974	0.995	0.939	0.998	0.958	0.995	1.000	0.996	0.971	0.991	0.982
11	'SXRD'	0.556	0.815	0.699	0.956	0.986	0.913	0.997	0.936	0.986	0.996	1.000	0.971	0.980	0.965
12	'SXRG'	0.467	0.822	0.647	0.954	0.971	0.907	0.973	0.941	0.970	0.971	0.971	1.000	0.968	0.951
13	'MRP'	0.492	0.857	0.641	0.992	0.998	0.967	0.990	0.982	0.999	0.991	0.980	0.968	1.000	0.996
14	'MRF'	0.474	0.869	0.609	0.995	0.993	0.979	0.979	0.989	0.993	0.982	0.965	0.951	0.996	1.000
15	'SNM'	0.463	0.880	0.595	0.998	0.994	0.976	0.981	0.993	0.993	0.983	0.968	0.960	0.995	0.996
16	'SNF'	0.473	0.874	0.601	0.995	0.996	0.969	0.986	0.988	0.995	0.987	0.975	0.965	0.996	0.994
17	'WDM'	0.402	0.890	0.580	0.984	0.972	0.961	0.957	0.981	0.972	0.960	0.943	0.947	0.978	0.980
18	'WDF'	0.430	0.842	0.625	0.956	0.957	0.929	0.945	0.952	0.958	0.947	0.932	0.937	0.959	0.949
19	'LTM'	0.467	0.867	0.607	0.986	0.991	0.960	0.984	0.976	0.990	0.984	0.973	0.960	0.989	0.989
20	'LTF'	0.452	0.850	0.567	0.975	0.980	0.948	0.974	0.965	0.979	0.973	0.964	0.965	0.977	0.974
21	'TCRR'	0.546	0.831	0.682	0.971	0.995	0.934	1.000	0.954	0.994	0.998	0.997	0.973	0.990	0.979
22	'PMSL'	0.531	0.827	0.642	0.980	0.986	0.945	0.977	0.967	0.985	0.980	0.969	0.956	0.986	0.985
23	'PHND'	0.289	0.876	0.483	0.924	0.909	0.935	0.891	0.933	0.909	0.890	0.872	0.891	0.913	0.916
24	'PCTH'	0.146	0.437	0.209	0.402	0.412	0.324	0.426	0.375	0.404	0.421	0.431	0.361	0.403	0.387
25	'FMSZ'	0.445	0.681	0.588	0.998	0.991	0.978	0.976	0.994	0.990	0.979	0.963	0.953	0.993	0.995

		15	16	17	18	19	20	21	22	23	24	25
1	'TCP'	0.463	0.473	0.402	0.430	0.467	0.452	0.546	0.531	0.289	0.146	0.445
2	'RNK'	0.880	0.874	0.890	0.842	0.867	0.850	0.831	0.827	0.876	0.437	0.681
3	'PCH'	0.595	0.601	0.580	0.625	0.607	0.587	0.682	0.642	0.483	0.209	0.588
4	'PPC'	0.998	0.995	0.984	0.956	0.986	0.975	0.971	0.980	0.924	0.402	0.998
5	'PPD'	0.994	0.996	0.972	0.957	0.991	0.980	0.995	0.986	0.909	0.412	0.991
6	'PPG'	0.976	0.969	0.961	0.929	0.960	0.948	0.934	0.945	0.935	0.324	0.976
7	'PPM'	0.981	0.986	0.957	0.945	0.984	0.974	1.000	0.977	0.891	0.426	0.976
8	'DPR'	0.993	0.988	0.981	0.952	0.976	0.965	0.954	0.967	0.933	0.375	0.994
9	'MDA'	0.993	0.995	0.972	0.958	0.990	0.979	0.994	0.985	0.909	0.404	0.990
10	'SXRT'	0.983	0.987	0.960	0.947	0.984	0.973	0.998	0.980	0.890	0.421	0.979
11	'SXRD'	0.968	0.975	0.943	0.932	0.973	0.964	0.997	0.969	0.872	0.431	0.963
12	'SXRG'	0.960	0.968	0.949	0.937	0.960	0.965	0.973	0.950	0.891	0.361	0.959
13	'MRP'	0.995	0.996	0.978	0.959	0.989	0.977	0.990	0.986	0.913	0.403	0.993
14	'MRF'	0.996	0.994	0.980	0.949	0.989	0.974	0.979	0.985	0.916	0.387	0.995
15	'SNM'	1.000	0.998	0.980	0.958	0.992	0.981	0.981	0.983	0.924	0.406	0.999
16	'SNF'	0.998	1.000	0.979	0.959	0.994	0.983	0.986	0.982	0.924	0.409	0.997
17	'WDM'	0.980	0.979	1.000	0.936	0.968	0.952	0.957	0.965	0.909	0.378	0.979
18	'WDF'	0.958	0.959	0.936	1.000	0.942	0.934	0.945	0.942	0.890	0.407	0.954
19	'LTM'	0.992	0.994	0.968	0.942	1.000	0.993	0.984	0.972	0.924	0.405	0.990
20	'LTF'	0.981	0.985	0.952	0.934	0.993	1.000	0.974	0.959	0.920	0.366	0.981
21	'TCRR'	0.981	0.986	0.957	0.945	0.984	0.974	1.000	0.977	0.891	0.426	0.976
22	'PMSL'	0.983	0.982	0.965	0.942	0.972	0.959	0.977	1.000	0.842	0.381	0.982
23	'PHND'	0.924	0.924	0.909	0.890	0.924	0.920	0.891	0.842	1.000	0.360	0.922
24	'PCTH'	0.406	0.409	0.378	0.409	0.405	0.366	0.426	0.381	0.360	1.000	0.389
25	'FMSZ'	0.999	0.997	0.979	0.954	0.990	0.981	0.976	0.982	0.922	0.389	1.000

APPENDIX 16

Factor Analysis of larger urban centres (pop. 50.000 & over) incorporating 38 variables : main results.

(a) Percentage of total variance explained by each factor

Factors	Eigenvalues (λ)	Per cent of total variance	Cumulative per cent of total variance
1	32.811	86.34	86.34
2	1.820	4.79	91.13
3	0.950	2.50	93.63
4	0.857	2.26	95.89
5	0.651	1.71	97.60
6	0.446	1.17	98.77
7	0.261	0.69	99.46

(b) Varimax factor score matrix

Urban centres	Factors						
	1	2	3	4	5	6	7
Rajshahi	1.808	-0.211	-0.294	-0.064	0.097	-0.521	-1.199
Saidpur	0.249	-0.335	-0.206	2.874	-0.405	-0.351	-0.149
Khulna	-0.362	-0.379	1.070	0.614	2.317	0.506	0.302
Barisal	0.942	0.041	2.672	-0.094	-0.611	-0.319	-0.037
Dacca	0.088	2.575	0.098	0.361	-0.062	0.574	-0.993
Narayanganj	0.953	0.469	-0.592	-0.209	1.731	-0.901	-0.303
Mymensingh	1.017	-0.437	-0.242	0.066	0.045	2.650	-0.069
Chittagong	0.267	1.257	-0.059	0.321	0.067	-0.006	2.139
Comilla	1.643	-0.165	-0.439	-0.167	-0.235	-0.224	1.348

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