

SYNOPSIS

**SPATIAL PATTERN OF POPULATION
GROWTH AND HUMAN DEVELOPMENT :- AN
ENQUIRY IN BANKURA DISTRICT OF
WEST BENGAL**

*Thesis submitted for the degree of
Doctor of Philosophy in Geography
Vidyasagar University*

Submitted by
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Research Scholar

DECEMBER, 2016

Department of Geography and Environment Management
Vidyasagar University,
Midnapore, West Bengal

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Introduction

Population Geography has changed its outlook from time to time with the new approaches of population study but never can it ignore the spatio-temporal perspective of population change like growth, birth rate, death rate, migration, mortality, fertility, health, education, human development etc. This research work attempts to unfold the spatiality of population growth and its relation with human development of Bankura district of west Bengal which is apparently silent in population growth and low response in human development compared to other districts of West Bengal.

Conceptual Framework

It is true that concentration of population in West Bengal has increased tremendously after the partition of India. The refugee influx from 1947 onwards along the bordered districts coupled with internal migration from the neighboring states like Bihar, Uttar Pradesh and Orissa has added huge population in almost all the districts except Birbhum, Bankura and Purulia. Of these relatively three low growth districts in respect of population, Bankura is the only exception which has no connection either with the international border or the state border. For this reason, growth of population of Bankura is basically an internal growth. At the same time, the

district has a low concentration of urban population. Of the total population, most of the people belong to rural segment. More than 90% of the rural population reflects the identity of the district with a rural one. Rural population is less migratory in nature and therefore changing pattern of spatial population is less dynamic, but a specific pattern of population can be observed in relation to physiographic dynamics. At the same time, urban population at least two patches have significantly altered the spatial pattern of population.

In terms of Human Development, the district is occupying 11th position according to 2004 estimates. This position is not a better one rather depressive in comparison to other districts. This low rank of human development index is due to its physiographic barrier, limitation of soil productivity, absence of large size industries as well as significant amount of rural population. In respect of human development, Western and North-Western blocks are showing poor performance basically due to their physiographic constraints. Northern blocks presently are experiencing satisfactory HDI index due to mining and industrial development. On the other hand, Eastern and South-Eastern portion are showing better results because of its agricultural prosperity. The whole analysis of this enquiry thus has been cropped up in terms of spatial pattern of population growth from 1951 onwards and human development for the last one decade also.

This research work is an investigation to glean out the demographic dynamics over space and time and also attempts to analyze spatio-temporal demography with human development of Bankura district

The other aspect of this enquiry focuses on the inter-blocked variation of the population size and density over two time periods. First period covers the decadal growth rate between 1951 to 1981 while the second one stems from 1981 to 2011. To crop up the inter-blocked disparity of growth system component analysis is taken into deep investigation. In order to achieve this perspective, allometric growth is taken into consideration

Statement of the Problem

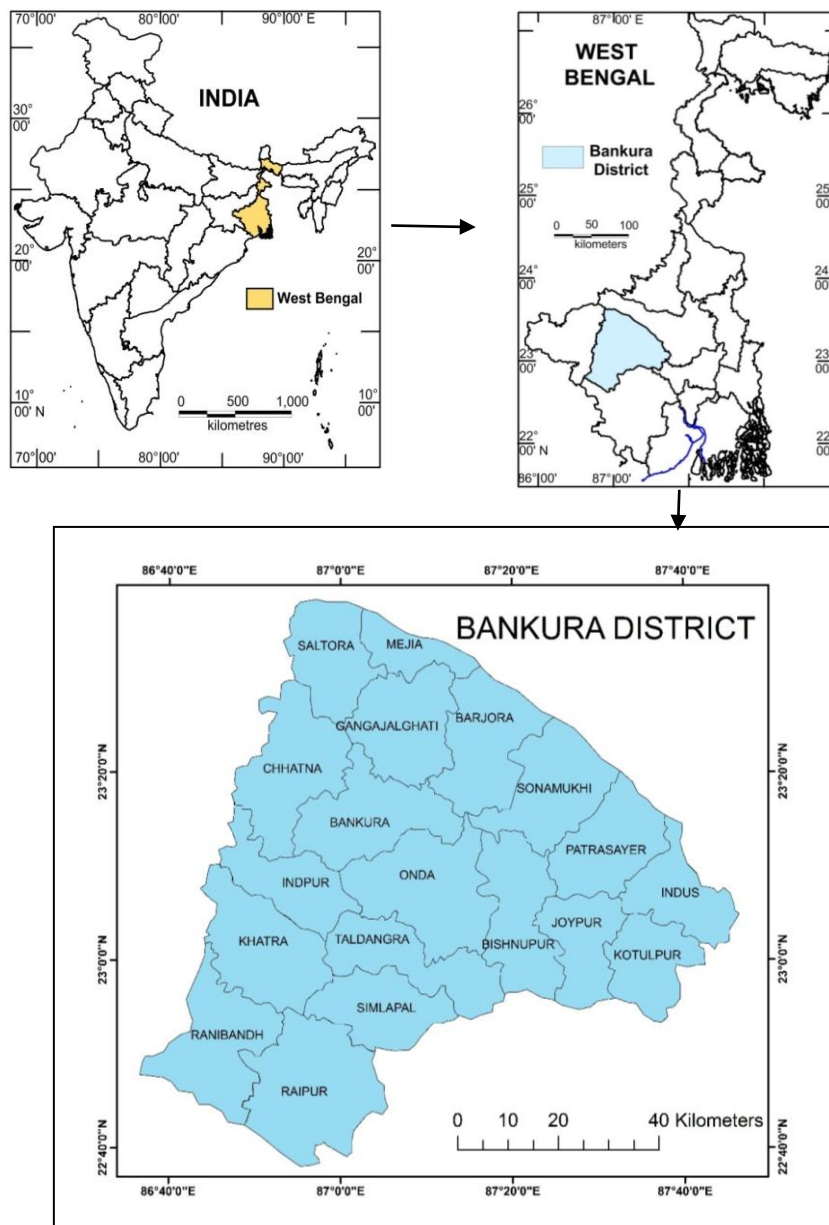
Though the oldest settlement of Bengal is marked in Bankura district, the growth of population of the district and most of its blocks have never experienced high growth or growth rate as compared to the most of the districts and their blocks. Poor agrarian perspective, low urban function, has never attracted the people from outside. But the spatio-temporal demography has been influenced by epidemic, Raj dynasty, and variable proportion of backward cast people.

Such an apparently silent demography raises its voice in relation to physical barrier, social inertia and recently rejuvenated urban industrial function and seeks to understand the reasons behind the socio-spatial mosaic and its rational tuning with human development.

Location of the Area under Study

Bankura, occupying the central position in the western part of West Bengal, is the true representative of *Rarh Bengal*. The District is located between $22^{\circ}38'$ and $23^{\circ}38'$ North latitude and between $86^{\circ}36'$ and $87^{\circ}46'$ East longitude with the shape of an isosceles triangle. The total area coverage of the District is 6882 sq. km. The whole District

is divided into three subdivision namely-Bankurasadar, Khatra and Bishnupur subdivision consisting of 22 blocks. The District is bounded by Burdwan in the North and North-East, separated by the Damoder River, on the South-East by Hooghly District, on the South by Midnapur and on the West by Purulia District.



Location of the Study Area

Objectives of the Study

Present enquiry has specific as well as clear focus concentrating on population growth and its reflection on spatial pattern and to underline the common goal-the perspective of human development. Therefore, the major objectives of this enquiry can be pointed up as follows:

- ❖ To assess the population growth over time,
- ❖ To assess the nature of spatial distribution and the rationale behind it,
- ❖ To segregate the District in terms of population dynamics,
- ❖ To find out the spatial attributes of population in relation to factors of development and backwardness,
- ❖ To correlate the human development with human desire.

Hypothesis Built up

Developing the research problems, questions, objectives and literature survey, the initial hypothesis taken for the present research is as follows:

‘spatial mosaic of population growth and human development varies not only in accordance with topographic sequence of north-west to south-east conditioned by soil fertility, arable land but also socio-economic status of the blocks’.

An Outlook to Enquiry

The whole enquiry will be unfolded in ten chapters of which eight chapters are very much important. The first chapter under the head of introduction provides structural framework and primary conception about the work. The second chapter is the

foremost important in highlighting methodology of research work, wherein different quantitative techniques subsequently employed. We have placed spatial emphasis on the parameters of different types of regression equation which aim to highlight varied aspect of spatio-temporality of the population composition. The kind of relationship emerging out of the intercepts of size and density would be as curious and intriguing as those obtaining from the rate of change of the same aspect in view of the different spatio-temporality of growth. Each statistical techniques of mean, standard deviation, coefficient of variation and standard scores discussed with allusion to its relevance to this study. System component analysis is justified to grasp the totality of the reality. This is enriched with literature survey from difference sources.

Third chapter attempts to unfold physical setup of the study area in terms of different factors of physical environment that certainly influenced demographic processes as well as socio-cultural outlook and economy of the study area.

Forth chapter tries to focus on the back drop of the thesis relating socio environmental status as well as the demographic perspective of the District. It is perhaps the most important jacket in guiding the future course of work.

Fifth chapter relates to population composition and growth of population. These are two important factors of demography which is the integral part of resource- population relationship as well as area-resource relationship which will subsequently be employed in spatial planning in the later section of the enquiry. This chapter concerns with a panoramic view of the decadal growth of the population size during the 1951-2011 period of each of the

blocks in its first section. The second part of the chapter involves an identical examination of the density growth. The third section of the chapter is concerns with different segments of the society.

Sixth chapter aims to look into the spatial impact of temporal growth. This chapter focuses on the level of spatio-temporal concordance of the size and density.

Seventh chapter's major focus is regional mosaic analysis, where size and density of population is explained in terms of threshold and growth, as most important attributes of dimensions of demographic attribute. This promotes us to initiate a study of the change in demographic relief in the time span of 1951 to 2011.

Eighth chapter is very important to study the blocks in the system-component perspective where blocks are the component and district as the system. It also attempts to analyze area population relationship of the blocks indicating pressure of population on land over time.

Ninth chapter attempts to unfold human development in relation to socio-economic development with selected variables. It conclusively determines segregation of developed, partially developed and under developed blocks of the district.

The last chapter tries to scrutinize the essence of investigation and concluding remarks.

Methodological Design

Methodological design refers to the entire process of planning to carry out the research work. Here the whole methodological design has been represented by schematic diagram. It begins with the selection of research problem followed by

successive steps-schematization, conceptual frame work, literature review, objectives, organization of chapters, stages of enquiry with collection and arrangement of data and lastly report writing with critical appreciation.

Data Base

The present research work concerns mainly block level analysis of population growth and human development. Secondary and tertiary data base from census of India, development report, Gazetteer, human development report, computed data of the researchers, district statistical handbook etc. are immense importance, though to glean out the reality of livelihood and human development primary data has been collected from nine villages. The whole data base of this inquiry can be classified into four broad groups namely:

- (i) Historical data base,
- (ii) Qualitative data at macro scale,
- (iii) Quantitative data at macro-scale,
- (iv) Qualitative and quantitative data base at micro scale through questionnaires and
- (v) Perception oriented data.

Techniques of Data Processing

Processing and treatment of data is of vital importance in the demographic analysis. Therefore, the quantitative data and in some cases qualitative data have been treated in different types of statistical and mathematical techniques to find out the spatial-temporal reflection of population change.

Dimension of review of literatures

At present review of literature in population geography considers a wide variety, in terms of population growth, pattern, spatiality, livelihood, welfare, problems, migration, health, mortality, morbidity, food security, housing, slums, urban population dynamics, rural population dynamics and a lot of other. But present investigation opts to analyses basically spatio-temporal growth of population of Bankura district after independence. Therefore review of literatures considers mainly spatio-temporal growth of population, spatial pattern of population growth, system component growth perspective of population and ultimately population growth and human development.

Literatures Related to Population growth and spatial pattern

Guchhait, S. K. (2005) has outlined the population growth and its spatial pattern in West Bengal from 1901 to 2001 in which aspect of growth, spatiality of growth and attributes of population dynamics has been widely discussed in terms of different quantitative techniques. Present investigation opts for such analysis in terms of aspect of population growth and also the system component growth but a district level study cannot be systematically represented without the structure and composition of population and its spatial pattern. Apart from basic unit of study here are the blocks; therefore, next lower order has been taken into consideration for the system component perspective of population growth.

In analyzing the relation between Resources and population Ehrlich, R. and Ehrlich, H. (2016) have critically analyses the

population where crisis and growth of present day economy and environmental challenges are widely discussed.

Portraying the spatial pattern of population growth a handful of techniques have been incorporated from Coffey, W (1981). 2.5.2. Literature Related to Human Development

Seminal paper of Ranis, G. (2004) is an important source of perceiving economic growth and human development. Ranis have critically discussed the human development in relation to economic growth. Thesis has therefore incorporated economic development perspectives considering different variables and thereafter correlation is ascribed with human development.

The research work was started with notion of investigating spatial pattern of demography and its relation with human development. It was initially assumed that the district Bankura, mainly located in the infertile tract of *Rarh* Bengal pronounced with rocky uplands of plateau fringe at the west, lateritic tract with rocky out crop at the middle and east and fertile plain at south-eastern corner has the little scope for agricultural development. Therefore it is ascertained that level of human development based on agricultural economy is not up to the mark (Ray. A. P. 2013). There is a clear dichotomy between the western hill terrain and the rest of the portion, in terms of forest, soil, tribal concentration. As a result either in population growth or in human development index, western portion voices in a lower tune than that of the other areas. But recent time mining and industrialization in the central portion of northern blocks have gained newer momentum in respect of population growth as well as human development. This sort of strategic change has occurred within the last 20-30 years with the

introduction of consequence with mining in Mejia, industrialization in Barjora and some portion of Gangajalghati. The south-eastern corner associated with fertile plain is showing mark difference in terms of both population growth and human development. All these realizations are cropped up in the ultimate stage of discussion in the form of **essence of observation, critical findings, strategic points and concluding remarks with suggestions.**

Essence of Observations

Essence of observation is the extract of chapter five, six, seven, eight and nine concerning population growth dynamics, spatial pattern of population growth and human development.

Population growth has been analyzed in chapter five and six. It is revealed that the index of growth is not so much alarming but for some blocks it is undoubtedly alarming. It maintains a steady growth for the district, but few blocks are showing moderate to high growth rate of population. Though the growth rate of population has a declining trend (initially in 1961 it was 26.17% and in 2011 it shows 12.65% only), the threshold is higher for alluvial tract (for Kotulpur, Joypur and Patrasayer), moderate for lateritic tract (for Bishnupur, Joypur, Barjora, Onda, Taldangra and Simlapal) and substantially low for rocky plateau tract (for Ranibandh, Raipur, Khatra and Saltora). In terms of rate of growth of population size, urban and industrial blocks (Bankura, Barjora and Mejia) are showing higher rate while Kotulpur, Indus, Bishnupur, Joypur, Patrasayer are showing moderate response. Density threshold on the other hand is high for the blocks pronounced with urbanization and industrialization and moderately

high for the blocks of alluvial tracts. Being located at the plateau tract, Chhatna and Khatra are standing apart with high size threshold, moderate density threshold and moderate rate of growth of density as well as size due to its long historical process of growth.

Critical Findings

At the penultimate stage of the thesis, it is necessary to crop up the critical finding about the population growth and human development of the district within the time frame of 1951 to 2011. The whole findings are encapsulated under three heads, viz.-nature of population growth, spatial pattern of population growth and human development.

Nature of Population Growth

In term of nature of population growth the district as a whole and most of the blocks are showing steady decline of population growth with few exceptions for some blocks in 1981 and 2001. The blocks of Ranibandh, Khatra, Chhatna and Indpur with huge concentration of tribes are showing low growth rate within this period and slower rate of decrease compared to other blocks. For other blocks the initial growth rate (1961) has come down to half, more than half and even one third of the end point(2011). For the blocks of transitional plain like Kotulpur, Indus and plain-plateau transitional block of Bishnupur and Joypur have come down to more than one third and sometime very close to one forth of initial growth rate (1951).

Spatial Pattern of Population Size, Density and Composition

Spatial pattern of size and density are clearly depicting three tier division-blocks with high threshold and high rate of growth signifying huge growth of population in future; blocks with moderate threshold and moderate growth rate prompting steady growth in future. Bankura block with dominant can be singled out as the block with high threshold and high rate of growth, where as Ranibandh, Mejhia, Taldangra and Simlapal are showing low threshold and low growth rate. All other blocks are showing moderate threshold and moderate growth rate for population size. Density reflects almost the same but for low threshold and low growth rate; Indpur and Indas are added with this list.

In terms of composition of population, the district and the blocks except the Bankura and Bishnupur are overwhelmed with rural population. But more alarming is the steady decline of sex-ratio of all the blocks which is not an exceptional scenario, but the general picture of West Bengal and India.

Human Development

Human development perspective of the blocks are tuning at the same scale as it is found for growth perspective and composition of the population. Blocks of the plain-plateau transition like Kutulpur, Indus, Bishnupur, Sonamukhi and urban blocks of Bankura are showing high index under the consider parameter, whereas Ranibandh, Raipur, Khatra, Indpur and Chhatna are loaded with low index. Other blocks are showing moderate value.

Confirmation of Hypothesis

Initial hypothesis was built up in the form of 'spatial mosaic of population growth and human development varies not only in accordance with topographic sequence of north-west to south-east conditioned by soil fertility, arable land but also socio-economic status of the blocks'.

After the entire investigation the thesis is not absolutely confirmed. It is true that in general idea variations of population growth and human development vary in accordance with topographic sequence of north-west to south-east, but particularly urban dominated block of Bankura and urban function of Bishnupur are diluting this trend to some extent.

Suggestions and Concluding remarks

At the end stage of this enquiry it can be concluded that population growth of four blocks of Bankura District are high enough (Kotulpur, Bankura, Indas and Barjora). For other blocks, it is not so alarming in terms of size and density. In terms of socio-economic development through PCA a clear dichotomy between east and west is clear. And about the variables taken into consideration, agriculture variables like arable land and irrigation are being marginalized. Therefore society need development in non agricultural sector which is gradually going to be established in the northern blocks like Mejhia, Brajora, Saltora with the introduction of mining and industries.

In the concluding paragraph it must be clearly specify that Ranibandh, Raipur, Indpur, Saltora and Khatra must be given emphasis especially in terms of gross output, sanitation that is

reflected by the investigation of HDI in the present enquiry. It is very difficult to increase gross output by agriculture or industry. Forest resource has some potential but its prospect is not at all high and moderate. Therefore, employment generation, through MGNREGA and water shed planning (Madal, P. 2012) by proper development plan may be the alternative by which east-west dichotomy may to a considerable extent be avoided.

Signature of the Scholar