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Analyzing Importance Performance Analysis (IPA) and Socio-Economic Development Rank at Block Level Services: A spatial determinant approach

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Abstract

This article aims to draw the attention of social stability at different Blocks of Purba Medinipur district. There are disparities in socio-economic condition as well as socio-economic development of it. 25 Community Development Blocks (CDB) are scattered over this district and disparity is prominent among these blocks through time. This study comprises 29 variables out of which 9 variables are related to social condition, 5 variables related to economic condition and 15 variables are related to infrastructural condition respectively. Primarily "Z score" has been applied for standardization of variable attribute. Later on Composite Mean Z-score from Z-score value has been computed for different variables. After that, rank of segregated blocks are assumed as per their concentration and Importance Performance Analysis (IPA) model which assumed level of development estimation. Important and significant result revels that, Panskura Block (Overall Socio-economic development 0.468) is stepped at high level of socio-economic development followed by the Tamluk, Bhagawanpur-II, Potashpur-I, Contai-III, Khejuri-I and Sutahata Block, while Nandigram-I Block (Overall socio-economic development -0.629) are found to be less socio-economic developed followed by Egra-I, Haldia, Deshapran, Nandakumar, Khejuri-II and Egra-II Blocks. The rank and performance of Kolaghat, Sahid Matangini, Mahishadal, Moyna, Potashpur-II, Ramnagar-I, Ramnagar-II, Bhagawanpur-I, Chandipur, Nandigram-II, Contai-I Blocks shows moderate level of socio-economic development. Satisfaction of societal service and infrastructure were not equally provided for all considered blocks, so that demography and level of affordability directly separate them. This analysis had significantly played a role for disparity denomination and it will help for planners in future.

Keyword: Disparities; Socio economic development; Standard score; Composite mean Z-score

1. Introduction

Development is typically thought of as a condition of improvement. However, it has been interpreted variously in a variety of situations, including social, political, biological, scientific and technological, as well as literary and linguistic. Development in the socioeconomic sense refers to raising people's standards of living through improved access to jobs, training, education, and income. Based on societal, cultural, and environmental elements, it is a process of economic and social transition. The process of social and economic development in a society is known as socio-economic development. In order to achieve the highest level of human development feasible, it serves to sustain the nation's and its citizens' social and material well-being.

Socio-economic development is a highly complex and multi-faceted phenomenon. It's not measurable directly and comprises a series of elements associated with both economic and societal development. The latter itself should be seen

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as a sequence of directed and irreversible changes in the structures of objects, i.e., systems (Krajewski, 1977). Economic development comprises some structural as well as other changes that accompany economic growth (Kemerschen, McKenzie, Nardinelli, 1991). It's a process of quantitative and qualitative change in an economy (Gondek, 2016). Development is a dynamic concept and has different meaning for different people. It is used in many disciplines at present. The notion of development in the context of regional development refers to a value positive concept which aims to enhance the levels of living of the people and general conditions of human welfare in a region. Socio-economic developments have become one of the most important glaring and growing problems not only in developing countries but also in the most advanced countries of the World. Since some regions are economically developed but backward socially, whereas some other are developed socially and remained backward economically. Historically, India has been observing inter-state variations as far as the socio-economic, political and geographical aspects are concerned (Siddiqui, 2012).

2. Materials and methods

The present study is insights from census data's, collected from Purba Medinipur District Census Handbook, Purba Medinipur Statistical Handbook, Census of Purba Medinipur, 2011 respectively. The composite score techniques has been applied for analysis of block-wise disparity among socio-economic development. The considered 29 variables which are specified in three categories, such as social condition, economic condition, infrastructural condition so on. The stepwise attainment of methodologies are stated below:

2.1. The Z Score and Composite Mean Z Score

Primarily census data has been employed through the "Z Score" and "Composite Mean Z Score" pathway for measuring disparities of socio-economic development at block level. On the faith of census handbook publication, all data are used here as corresponding them. Synthesized of the data have processed through following steps.

$$Zi = \frac{X - \bar{X}}{\sigma} \qquad \text{(i)}$$

Where, Zi = Standard Score (Z-Score) of the variable, X = Individual observation,

$\bar{X}$ = Mean of the variable and σ = Standard Deviation of series (SD).

$$C.S = \frac{\sum Zij}{N} \qquad \text{(ii)}$$

Where, C.S = Composite Mean Z-Score, Zij = Z-Score of an indicator j in the area (Block) i,

N = Number of variables.

As per procedure of the above calculation, Mean and standard deviation values are earnestly required in this phase. To make the categorization of the calculated values, only 50 percent of standard deviation value is added to mean and meet the high category consequently 50 percent of the rest value of standard deviation be subtracted from mean to meet the low category. Moreover, range of high and low categories specified for medium portion. Thereafter, each blocks having with corresponding values are lies or spread for selected three categories respectively.

2.2. Location Quotient (L.Q)

Spatial distribution of the socio economic status is specified through the simplified properties of Location Quotient techniques. Basically, location of numbers of primary health center and health sub- centers distribution has been recognized by this method. The attribute of the rational values remain unit less for this cases. Here, the demographic characteristics of any element in different places of that particular region are positioned relative to a region. Balance of equality of locational distribution of health centers has been recognized followed by the level configuration scale (1, <1 and >1). Computational technique is stated below:

$$\text{L.Q} = \frac{hb/pb}{Hd/Pd} \qquad \text{(iii)}$$

Where, L.Q is the Location Quotient, hb is the number of the health centers (PHC, HSC) in individual block, pb is the population of the respective block, Hd is the total number of health centers (PHC, HSC) in the considered district, Pd is the total population of the same district.

2.3. Pearson's Correlation Coefficient:

Properties of the considered data are bivariate in nature, so that product moment correlation coefficient analysis has been employed after Karl Pearson method. The residual correlation considered here as "r" and neutral, positive or negative relationship be determination by the following formula. Each parameter under social condition, economic condition, infrastructural condition and overall socio economic development.

$$\mathbf{r}\pm = \frac{n\sum x.y - \sum x.\sum y}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}} \quad \textbf{(iv)}$$

Where r = Pearson product moment correlation, n = number of pairs of scores, ∑x.y = sum of the products of paired scores, ∑x = sum of x scores, ∑y = sum of y scores, ∑x^2 = sum of squared x scores, ∑y^2 = sum of squared y scores respectively.

2.4. Lorenz Curve and Gini's coefficient

The proportion of the overall distribution of health centers corresponding to the primary health sub centres of their connecting percentile estimated through this method. The extent to which any equation deviates from a uniform distribution can be easily shown with the help of the Lorenz Curve. Linearly expressed cumulative percentile curve indicates positional disparity among them. Mainly spatial disparity be assumed and coefficient value significantly pointed out any anomalies over these spatial distinction (Corrado Gini, 1912). Gini coefficient, moreover known as the Gini index or Gini ratio. Deviation from the equal distribution region of any calculated Lorenz Curve respectively. The Gini Coefficient (G) has been computed by this formula:

$$G = \frac{\sum XiYi+1 - \sum YiXi+1}{100 * 100} \quad (v)$$

Gini-Coefficient is always positive in nature but whenever its value obtained less than 0 (zero) follows asymmetric distribution of the statistic and Gini-Coefficient value close to 0 (zero) suggests equal distribution of variables. Also, if it's deterministic value is undeniable 0 (zero), then the data is completely equally distributed, and in that case the Lorenz Curve line lies on the equal distribution line.

2.5. Chi-Squared test

To make proportional relation between observed and expected data set, Chi- Squared test applied over these data set. The aim of this test is to recognize whether a disparity between actual and predicted value is present or not. The considered hypothesis be rejected or accepted depends upon this Goodness of fit method, when calculated value is greater than the tabulated value, then the hypothesis is rejected and its revers situation make sure the hypothesis is accepted. Following is the formula of this non-parametric test.

$$\mathbf{x^2} = \sum\left\{\frac{(O-E)^2)}{E}\right\} \quad \textbf{(vi)}$$

Where, $\mathbf{x^2}$ = Chi-Squared test, $\boldsymbol{O}$ = Observed value, $\boldsymbol{E}$ = Expected value.

2.6. Importance Performance Analysis (IPA)

Measuring of service quality tress free application like IPA was applied in this study. This robust diagnostic tool could prove the optimal characterization of considered elements (Martilla and James, 1977) in between performance network. Two dimensional graphical presentations reveal the service performance attainment by four sectional quadrants plot. In addition, IPA provides average value of importance and performance under specific co-ordinate classes where the horizontal axis represents performance, and the vertical axis represents importance. Importance–Performance Analysis provides a useful and easily understandable guide for identifying the most crucial product or service attributes in terms of their need for managerial action, as a means to develop successful marketing programs to achieve advantage over competitors (Abalo, Varela, & Manzano, 2007). The attainment of the performance could exist priority of allocating limited resources (Fig-01). The four quadrant of Importance Analysis model typically identified "Keep up the good work" (Q1), "possible overkill" (Q2), "low priority" (Q3) and "concentrate here" (Q4) respectively. Prioritization of allocated limited resource relating to socio-economic indicators presented separately in association of total population of each block here.

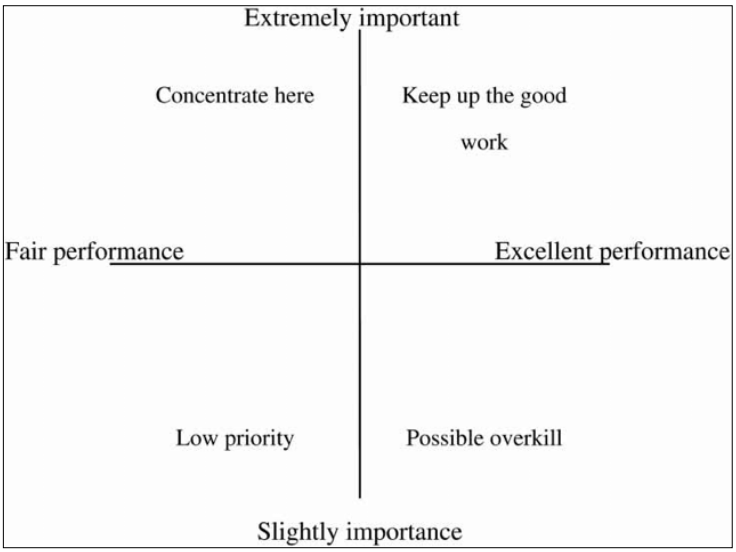


Figure 1 Quadrant of Importance Analysis model (Lin et al, 2009)

2.7. Considered Variables

Three resource limitations category are employed through social indicators, economic indicators and infrastructural indicators respectively for 29 set of facilities (Table-01).

Table 1 Considered service facilities**.**

Variables Type	Variables	Symbol
Social Conditions	1. Density of Population	S_i
	2. Sex Ratio	S_{ii}
	3. Child Sex Ratio	S_{iii}
	4. Total Literacy Rate	S_{iv}
	5. Male Literacy Rate	S_v
	6. Female Literacy Rate	S_{vi}
	7. Gap in male female Literacy Rate	S_{vii}
	8. Percentage of Scheduled Castes population to Total Population	S_{viii}
	9. Percentage of Scheduled Tribes population to Total Population	S_{ix}
Economic Conditions	1.Percentage of total worker	E_i
	2. Percentage of female worker	E_{ii}
	3. Percentage of Agricultural worker	E_{iii}
	4. Percentage of irrigated area to total cultivable area	E_{iv}
	5. Percentage of cultivable area to total area	E_v
Infrastructural Conditions	1.No. of Primary School per 10000 population	I_i
	2. No. of primary School teacher per 100 Student	I_{ii}
	3. No. of High School per 10000 population	I_{iii}
	4. No. of High School teacher per 100 Student	I_{iv}
	5. No. of Higher Secondary School per 10000 population	I_v
	6. No. of Higher Secondary School teacher per 100 Student	I_{vi}
	7. No. of College per 10000 population	I_{vii}

	8. No. of College teacher per 100 Student	I_{viii}
	9. No. of medical institution per 10000 population	I_{ix}
	10. No. of beds per 10000 population	I_{x}
	11. No. of doctor per 100000 population	I_{xi}
	12. No. of family welfare sub centre per 10000 population	I_{xii}
	13. No. of bank (Commercial and Gramin) per 10000 population	I_{xiii}
	14. No. of Co-Operative Society per 10000 population	I_{xiv}
	15. Road density per Square Km.	I_{xv}

2.8. Study area

The study area lies in between coastal district of South Bengal. This district is surrounded by the Bay of Bengal in the south, by Paschim Medinipur district in the west and north, by the Hooghly River and South 24 Parganas district in the east, by the Rupnarayan River and Howrah district in the north-east. Coordinate of this district located 21º 36' 35" N latitude and 88º 12' 40" E longitude. Area coverage of this district is 4713 square km and the population exists 5,095,875 after 2011 census, Govt. of India. 25 community development blocks are distributed having with average population density 1082 persons/square km.

3. Results and discussion

3.1. Level of Social Condition

The social development discourse primarily focused on economic growth through regional perspective. Communities and part of population remain marginalized always and even directly included by the economic growth of the entire society. This exercise includes 9 variables from social condition are considered and computed statistically by Z score method and compared it by composite mean Z score method. The deviation of individual values from mean are categorised into three specific range recognized by "High > 0.168", "Moderate - 0.168 to 0.168)" and "Low < - 0.168" respectively (Table-3). Blocks indicate high ranges are recognized favourable and adjustable population density, sex ratio, child sex ratio, total literacy rate, male literacy rate and female literacy rate respectively. Often balanced societal development blocks lies between moderate category and low ranges blocks indicates are unfavourable condition in respect of considered social variables or indicators.

Table 2 Z Score Values of Social variables

C. D. Block	**S_i**	**S_{ii}**	**S_{iii}**	**S_{iv}**	**S_v**	**S_{vi}**	**S_{vii}**	**S_{viii}**	**S_{ix}**	**Composite Score**
Panskura	-0.102	0.730	0.230	-1.619	-1.025	-1.861	1.873	-0.513	4.440	0.239
Kolaghat	2.133	-1.336	-0.176	-1.183	-0.805	-1.373	1.331	-0.684	-0.128	-0.247
Tamluk	1.526	-0.303	1.565	-0.028	0.043	-0.089	0.185	-0.524	-0.463	0.212
Sahid Matangini	2.364	-1.106	0.578	-0.053	0.130	-0.211	0.469	-0.960	-0.419	0.088
Nandakumar	0.986	-0.188	-0.293	-0.684	-0.926	-0.451	-0.255	-0.131	-0.229	-0.241
Mahishadal	0.437	-0.188	0.172	-0.425	-0.661	-0.222	-0.339	-0.415	-0.396	-0.226
Moyna	0.624	-1.910	-0.293	-0.263	-0.130	-0.378	0.463	0.980	-0.340	-0.139
Potashpur-I	-0.796	-0.533	-0.757	-0.302	-0.043	-0.466	0.692	-0.113	0.252	-0.230
Potashpur-II	-1.081	-0.188	-0.118	-0.224	-0.124	-0.275	0.306	-0.343	0.386	-0.185
Bhagawanpur-II	-0.612	0.041	0.230	1.968	1.764	1.921	-1.195	0.205	-0.407	0.435
Bhagawanpur-I	0.244	-0.877	-0.641	0.696	0.754	0.579	-0.128	-0.127	-0.296	0.023
Chandipur	0.311	-0.533	-1.163	0.466	0.084	0.685	-0.996	-0.520	-0.374	-0.227
Sutahata	0.891	0.960	1.681	-0.836	-1.186	-0.500	-0.448	1.552	-0.463	0.183

Haldia	0.710	-0.073	-1.221	-0.488	-0.748	-0.256	-0.375	-0.773	-0.173	-0.378
Nandigram-I	-0.376	0.615	-1.337	-1.066	-2.035	-0.268	-1.702	0.329	-0.419	-0.695
Nandigram-II	-0.308	0.730	-0.699	1.063	0.540	1.353	-1.575	-0.218	-0.318	0.063
Khejuri-I	-0.756	0.271	-1.163	0.950	0.505	1.185	-1.346	-0.216	-0.352	-0.102
Khejuri-II	-0.768	1.878	1.855	-0.777	-0.944	-0.554	-0.110	4.021	0.229	0.537
Contai-I	-0.505	0.041	0.636	1.156	1.302	0.945	-0.134	-0.172	-0.441	0.314
Deshapran	-0.704	0.041	0.230	0.818	0.702	0.823	-0.568	-0.538	-0.430	0.042
Contai-III	-0.867	0.615	0.172	1.435	1.406	1.333	-0.640	-0.230	-0.396	0.314
Egra-I	-1.290	-0.762	-1.105	-2.020	-1.463	-2.231	2.000	-0.615	1.257	-0.692
Egra-II	-0.913	-0.992	0.462	-0.239	0.390	-0.687	1.494	0.468	-0.229	-0.027
Ramnagar-I	-0.201	2.796	-0.931	0.471	0.909	0.194	0.644	-0.307	-0.005	0.397
Ramnagar-II	-0.949	0.271	2.087	1.185	1.562	0.807	0.354	-0.155	-0.285	0.542

Source: Computed by the author

Table 3 Level of social condition

Range	**Blocks**	**No. of Blocks**
High (> 0.168)	Panskura, Tamluk, Bhagawanpur-II, Sutahata, Khejuri-II, Contai-I, Contai-III, Ramnagar I, Ramnagar-II	9
Moderate (- 0.168 to 0.168)	Sahid Matangini,Moyna,Bhagawanpur-I,Nandigram-II, Khejuri-I,Deshapran,Egra-II	7
Low (< - 0.168)	Kolaghat, Nandakumar, Mahishadal, Potashpur-I, Potashpur-II,Chandipur, Haldia, Nandigram-I, Egra-I	9

Source: Computed by the author

3.2. Level of economic condition

The result reveals that there is quite disparity in economic condition over different considered blocks. As per stratigraphy after Z score, 5 blocks remain above mean level, another 10 blocks result indicate almost close mean value and remain 10 blocks left far from mean value. Reason for forwardness of Panskura, Tamluk, Patashpur-I, Egra-I and Moyna blocks because of high percentage of total worker, cultivable area, irrigated area etc are favourable for society. On the other hand it could be stated that, the considered factors are strongly correlated to each other. Moreover, it is seen that economically high developed areas are located in the western part and less developed area are situated in the southern, eastern part (along the coast of the Bay of Bengal) of the district (Shown in Table-04 & 05).

Table 4 Z score Values of Economic variables

C.D. Blocks	**E_i**	**E_{ii}**	**E_{iii}**	**E_{iv}**	**E_v**	**Composite Score**
Panskura	2.462	2.756	0.019	0.253	0.850	1.268
Kolaghat	0.103	-0.275	-1.835	1.385	0.745	0.025
Tamluk	0.984	1.086	-0.394	2.473	1.838	1.197
Sahid Matangini	-0.323	-0.862	-1.793	1.669	0.916	-0.079
Nandakumar	0.497	0.701	-0.609	0.862	-0.481	0.194
Mahishadal	-0.546	-0.596	-1.133	1.260	1.153	0.028
Moyna	0.224	0.542	0.882	0.633	0.730	0.602

Potashpur-I	1.401	1.360	1.662	0.847	0.737	1.201
Potashpur-II	0.115	-0.290	1.461	0.043	-0.135	0.239
Bhagawanpur-II	0.022	0.155	0.661	0.258	0.080	0.235
Bhagawanpur-I	0.341	0.488	0.582	0.006	-0.700	0.144
Chandipur	-0.488	-0.340	-0.334	-0.647	0.181	-0.326
Sutahata	-1.651	-1.301	-0.942	-0.674	0.322	-0.849
Haldia	-0.368	-0.471	-0.674	0.209	-1.146	-0.490
Nandigram-I	-1.774	-1.389	0.020	-0.731	0.564	-0.662
Nandigram-II	-0.864	-0.777	0.884	-0.705	-2.011	-0.695
Khejuri-I	0.170	0.415	-0.006	-0.116	1.002	0.293
Khejuri-II	-1.173	-0.714	-0.169	-0.814	-0.350	-0.644
Contai-I	-0.491	-0.654	-0.615	-1.020	0.204	-0.515
Deshapran	0.010	0.064	-0.488	-1.432	-0.030	-0.375
Contai-III	1.068	1.150	-0.564	-1.139	0.661	0.235
Egra-I	1.780	1.356	2.057	-1.351	-1.773	0.414
Egra-II	-0.068	-0.386	1.134	-0.051	-0.727	-0.019
Ramnagar-I	-1.020	-1.166	-0.360	-0.510	-0.678	-0.747
Ramnagar-II	-0.410	-0.850	0.555	-0.710	-1.950	-0.673

Source: Computed by the author

Table 5 Level of economic condition

Range	**Blocks**	**No. of Blocks**
High (> 0.309)	Panskura, Tamluk, Potashpur-I, Egra-I, Moyna	5
Moderate (- 0.309 to 0.309)	Kolaghat,Sahid Matangini, Nandakumar,Mahishadal, Egra-II, Conati-III,Potashpur-II,Bhagawanpur-II,Bhagawanpur-I,Khejuri-I	10
Low (< - 0.309)	Chandipur,Sutahata,Haldia,Nandigram-I,Nandigram-II,Khejuri-II,Contai-I,Deshapran, Ramnagar-I, Ramnagar-II	10

Source: Computed by the author

3.3. Level of infrastructural condition

Except infrastructural condition, development is meaningless. No. of primary school, high school, higher secondary school, college, students, teachers, bank, co-operative society, family welfare sub centre, medical institutes, beds, doctors etc. are directly or prominent aspect for infrastructural condition of welfare society. In this case 15 important regulatory variables are considered for rectification the status level. According to gradation of deviated disparity, high developed, moderately developed and low developed blocks remain 7, 11 and 7 respectively in number. The scenarios of most high developed blocks (4) are situated in the middle part of the study area (shown in Table-6 & 7).

Table 6 Z score Values of Infrastructural variables

C.D. Blocks	I_i	I_{ii}	I_{iii}	I_{iv}	I_v	I_{vi}	I_{vii}	I_{viii}	I_{ix}	I_x	I_{xi}	I_{xii}	I_{xiii}	I_{xiv}	I_{xv}	Composite Score
Panskura	-0.749	-0.484	-0.276	1.844	0.098	0.573	0.158	-0.426	0.076	0.182	-0.754	-0.262	0.260	-1.632	-0.155	-0.103
Kolaghat	-0.707	-0.916	-1.390	-0.462	0.457	-0.497	0.355	4.568	1.328	1.097	-0.515	0.797	0.569	-1.160	0.819	0.290
Tamluk	0.142	-1.176	-0.495	-0.422	0.956	0.250	-0.926	-0.426	-0.115	-0.132	-1.041	1.005	-0.121	0.043	0.187	-0.152
Sahid Matangini	-1.115	-0.552	-0.466	-0.313	-0.185	0.030	-0.926	-0.426	1.993	1.181	0.246	1.616	0.924	-1.184	-0.438	0.026
Nandakumar	-0.963	-0.282	-1.334	-0.425	-0.188	-0.554	0.242	-0.153	-1.057	-0.655	-0.045	-0.720	-0.957	-1.437	-0.083	-0.574
Mahishadal	-0.669	-0.155	0.295	-0.509	0.320	0.210	2.151	0.269	-0.384	0.234	0.064	-0.977	-0.980	-0.946	0.565	-0.034
Moyna	0.061	0.442	-0.631	2.269	0.632	-0.872	0.468	-0.037	-0.545	-0.500	-1.345	0.243	-0.580	-0.892	-1.032	-0.155
Potashpur-I	0.723	-0.352	0.330	-0.596	-0.754	-0.262	0.913	0.341	-0.049	-0.446	-0.794	0.648	-0.220	0.729	0.484	0.046
Potashpur-II	0.017	-0.294	0.188	-0.692	1.303	0.210	-0.926	-0.426	-0.535	-0.493	-0.245	-0.415	-0.710	0.752	-1.775	-0.269
Bhagawanpur-II	1.459	0.193	0.169	-0.001	1.373	0.600	0.672	0.142	1.107	0.630	-0.962	-0.888	0.428	2.148	-0.100	0.465
Bhagawanpur-I	0.331	-0.614	-0.864	-0.677	-0.171	-0.442	0.453	0.024	0.053	-0.320	-0.874	0.004	-0.317	1.355	0.962	-0.073
Chandipur	-0.071	-0.623	1.222	0.029	0.620	-0.399	-0.926	-0.426	2.162	2.484	-0.563	0.187	-0.368	-0.290	0.175	0.214
Sutahata	-0.214	2.081	0.404	-0.097	1.680	1.428	1.663	0.236	1.363	2.635	0.624	1.630	4.114	0.261	-0.439	1.158
Haldia	-1.346	-1.718	1.549	0.851	-1.581	3.734	-0.926	-0.426	-0.003	-0.596	0.647	2.327	-0.291	0.550	-0.409	0.157
Nandigram-I	-1.250	-0.663	-0.438	-0.945	-0.564	-0.302	0.594	0.542	-1.082	-0.496	0.302	-1.233	-0.686	-1.158	-0.563	-0.529
Nandigram-II	1.237	-0.482	1.218	0.110	1.715	0.655	-0.926	-0.426	-0.358	-0.384	2.446	0.562	-0.190	-0.578	2.326	0.462
Khejuri-I	1.574	0.352	2.884	-0.474	-1.073	-0.608	1.383	-0.061	-1.069	-0.188	0.333	-0.963	-0.016	1.526	1.093	0.313
Khejuri-II	-0.514	3.197	0.267	-1.042	-2.426	-1.210	-0.926	-0.426	-0.626	-0.005	-0.543	-1.957	-0.609	-0.614	0.794	-0.443

Contai-I	1.373	0.526	0.259	2.989	-0.512	-0.024	-0.926	-0.426	-0.897	-0.840	0.111	0.120	-0.657	1.152	-0.614	0.109
Deshapran	-0.075	0.667	-0.839	0.081	-0.188	-0.462	-0.926	-0.426	-0.897	-1.211	0.111	0.115	-0.283	0.152	-1.151	-0.355
Contai-III	2.013	0.689	-0.382	-0.511	-0.541	0.378	1.020	-0.426	-0.797	-1.190	-0.383	-0.719	-0.064	0.678	2.261	0.135
Egra-I	-0.849	-0.339	0.046	-1.028	-0.758	-0.891	-0.926	-0.426	-0.461	-0.953	-0.159	-1.081	-0.223	-0.482	-0.570	-0.607
Egra-II	-1.024	0.538	-0.661	-0.069	0.250	-1.260	-0.926	-0.426	-0.567	-0.277	-0.879	-0.073	-0.039	0.508	-0.505	-0.361
Ramnagar-I	1.292	0.103	-1.602	-0.026	0.390	0.248	-0.926	-0.426	1.704	0.888	2.533	-0.401	1.049	0.353	-1.336	0.256
Ramnagar-II	-0.675	-0.138	0.547	0.115	-0.854	-0.535	1.042	0.089	-0.344	-0.646	1.684	0.435	-0.032	0.167	-0.496	0.024

Source: Computed by the author

Table 7 Level of infrastructural condition

Range	Blocks	No. of Blocks
High >0.196	Kolaghat,Bhagawanpur-II,Chandipur,Sutahata,Nandigram-II,Khejuri-I,Ramnagar-I	7
Moderate(-0.196 to 0.196)	Panskura, Tamluk, Sahid Matangini, Ramnagar-II, Mahishadal, Contai-I,Contai-III, Moyna, Potashpur-I, Bhagawanpur-I, Haldia	11
Low(<-0.196)	Nandakumar, Potashpur-II,Nandigram-I,Khejuri-II, Deshapran,Egra-I, Egra-II	7

Source: Computed by the author

The composite score values and the sum of corresponding rank values of all the indicators are indicating overall level of relative or associated socio-economic development for the considered blocks. So as a supplement, rank denomination precise sectional development scale for corresponding blocks. In fact, ranking values calculates the relativity of areal composite rank score followed by units. Respective accordant sections are as follows:

3.4. High developed Blocks:

Hierarchy of development has been estimated by applying composite mean Z score (Table-8). This category incorporates seven blocks of Purba Medinipur district, specifically Panskura (0.468), Tamluk (0.419), Bhagawanpur-II (0.378), Potashpur-I (0.339), Contai-III (0.228), Khejuri-I (0.168) and Sutahata (0.164) respectively. In general, these seven blocks are much progressed in terms of socio- economic development after the prominence of this model. As per results revels for composite development, Potashpur-I & II Blocks (-0.230) significantly shows backward status in social condition, at the same testimony proves their overall composite score not satisfied in respect of others. Similarly, Sutahata and Tamluk blocks indicates low level of economic condition (-.849) and low infrastructural condition (-0.152) respectively.

3.5. Moderate developed Blocks

There are eleven blocks namely Moyna (0.103), Bhagawanpur-I (0.031), Kolaghat (0.022), Sahid Matangini (0.012), Contai-I (-0.031), Ramnagar-I (-0.031), Ramnagar-II (-0.036), Nandigram-II (-0.057), Potashpur-II (-0.072), Mahishadal (-0.078), Chandipur (-0.113) falls under this category. Although, Socio-economic development levels of these blocks are moderate, contrasts have been seen in the various development conditions (social condition, economic condition and infrastructure condition). For precedent, social development condition in Ramnagar-II Block (0.542) is excellent, but

economic condition (-0.673) is relatively distressed. Moreover, economic condition in Moyna block (0.602) is excellent, but infrastructure condition (-0.155) is not sufficiently at desire level.

3.6. Low developed Blocks

Less potential isolated blocks refers as less developed status. In view of socio economic aspect, underdeveloped blocks are Egra-II (-0.163), Khejuri-II (-0.183), Nandakumar (-0.207), Deshapran (-0.230), Haldia (-0.237), Egra-I (-0.295), Nandigram-I (-0.629) respectively. The existing level of social condition, economic condition and infrastructure condition remains very low for them. Partial observation meets that social dvelopment condition of Khejuri-II Block (0.537) is very high, economic condition of Egra-I block (0.414) is satisfactory, infrastructure condition of Haldia block (0.157) is favourable in condition. It is also seen that Nandigram-I block is backward block in respect of 24 blocks of Purba Medinipur district.

Table 8 Composite Mean Z Score for overall development

C.D. Blocks	Social Condition	Economic Condition	Infrastrucural Condition	Overall Socio-Economic Development	Rank
Panskura	0.239	1.268	-0.103	0.468	1
Kolaghat	-0.247	0.025	0.290	0.022	10
Tamluk	0.212	1.197	-0.152	0.419	2
Sahid Matangini	0.088	-0.079	0.026	0.012	11
Nandakumar	-0.241	0.194	-0.574	-0.207	21
Mahishadal	-0.226	0.028	-0.034	-0.078	17
Moyna	-0.139	0.602	-0.155	0.103	8
Potashpur-I	-0.230	1.201	0.046	0.339	4
Potashpur-II	-0.185	0.239	-0.269	-0.072	16
Bhagawanpur-II	0.435	0.235	0.465	0.378	3
Bhagawanpur-I	0.023	0.144	-0.073	0.031	9
Chandipur	-0.227	-0.326	0.214	-0.113	18
Sutahata	0.183	-0.849	1.158	0.164	7
Haldia	-0.378	-0.490	0.157	-0.237	23
Nandigram-I	-0.695	-0.662	-0.529	-0.629	25
Nandigram-II	0.063	-0.695	0.462	-0.057	15
Khejuri-I	-0.102	0.293	0.313	0.168	6
Khejuri-II	0.537	-0.644	-0.443	-0.183	20
Contai-I	0.314	-0.515	0.109	-0.031	12
Deshapran	0.042	-0.375	-0.355	-0.230	22
Contai-III	0.314	0.235	0.135	0.228	5
Egra-I	-0.692	0.414	-0.607	-0.295	24
Egra-II	-0.027	-0.019	-0.361	-0.136	19
Ramnagar-I	0.397	-0.747	0.256	-0.031	13
Ramnagar-II	0.542	-0.673	0.024	-0.036	14

Source: Computed by the author

Table 9 Level of Socio-Economic Development

Range	Blocks	No. of Blocks
High >0.125	Panskura,Tamluk, Potashpur-I, Bhagawanpur-II, Sutahata, Contai-III, Khejuri-I	7
Moderate(-0.125 to 0.125)	Kolaghat, Sahid Matangini, Mahishadal,Moyna, Potashpur-II,Ramnagar-I,Ramnagar-II,Bhagawanpur-I, Chandipur, Nandigram-II, Contai-I	11
Low(<-0.125)	Nandigram-I, Haldia, Nandakumar, Khejuri-II, Deshapran, Egra-I,Egra-II	7

Source: Computed by the author

Table-10 indicates therefore correlation among the major developmental variables through matrix format. The result divulges that social condition, economic condition, infrastructural condition as well as overall socio economic development are positively and significantly correlated with each other as per consideration parameters. Statistically significant Alpha level considered at 0.05 level of significance. Probable significant value is 0.628 for economic condition flowing by overall socio economic development therefore it is higher than calculated value. There is a strong positive correlation between economic conditions corresponding to overall socio-economic development. Some minute observation reveals that infrastructural condition has quasi association with overall socio economic development. On the other hand, social condition has an insignificant negative relation with economic condition and at negligible for overall socio economic development status.

Table 10 Correlation Matrix between Socio-economic domain.

Condition	Social Condition	Economic Condition	Infrastructural Condition	Overall Socio-Economic Development
Social Condition	1			
Economic Condition	-0.143	1		
Infrastructural Condition	0.353	-0.256	1	
Overall Socio-Economic Development	0.518	* 0.628	0.472	1

Source: Computed by the author; * Correlation is significant at the 0.05 level

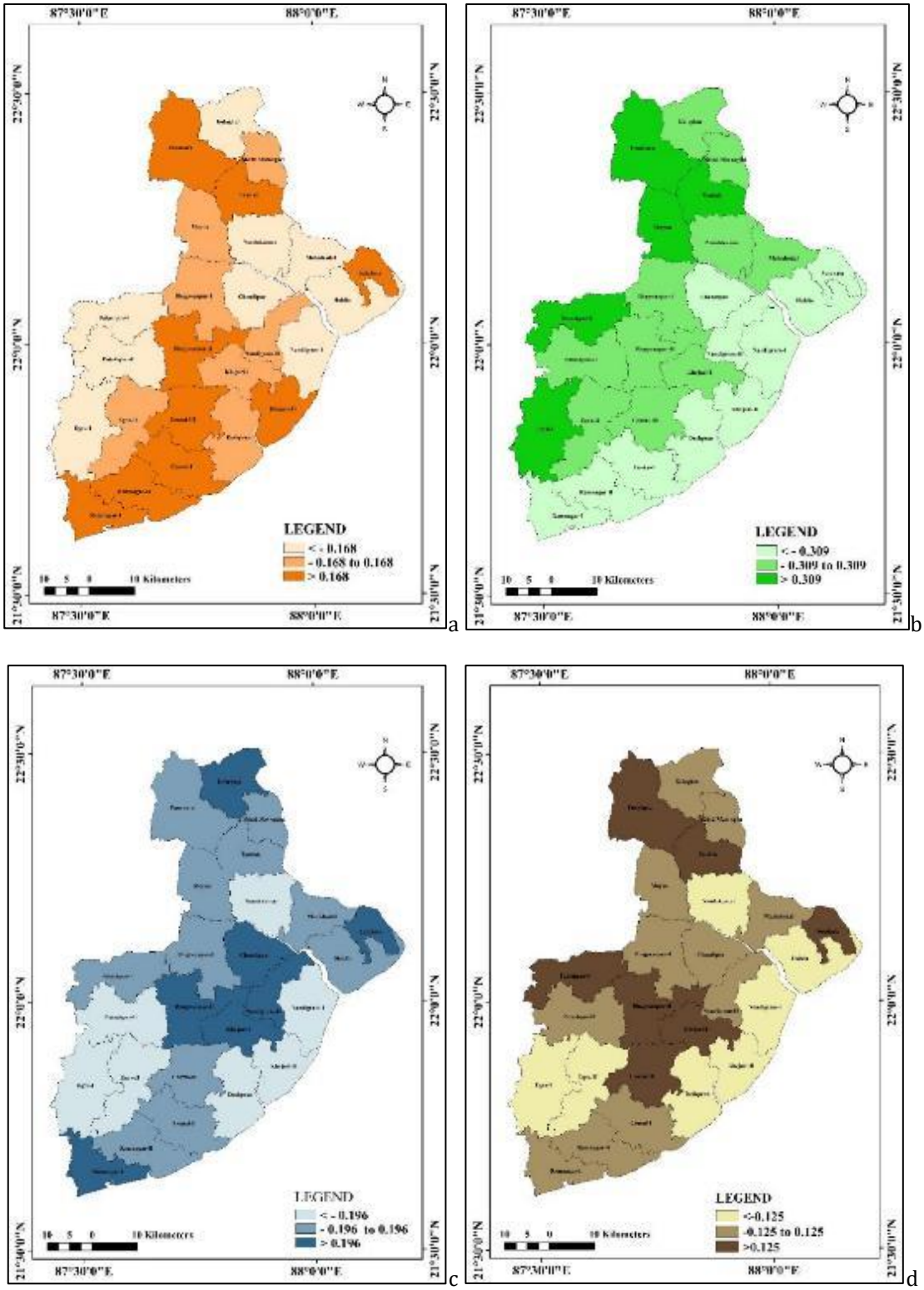


Figure 2 Block wise inequalities of Purba Medinipur district: a) Social Condition b) Economic Condition c) Infrastructural condition d) Overall Socio-economic development

Disparity depict by the Location Quotient (LQ) method (Fig-3), therefore understanding the spatial deviation of health centers establishment over the considered blocks. According to this disparity clustering, Primary Health Centers (PHCs) in Sutahata (2.209), Haldia (1.861), Ramnagar-II (1.753), Ramnagar-I (1.643), Egra-II (1.530), Nandigram-II (1.480), Bhagwanpur-I (1.167) and Contai –III (1.156) blocks indicates very high LQ value respectively. Easy accession is satisfactory for those PHCs by good communication network. Actually these blocks are adequate by more number of

PHCs as per population density. Egra-I (1.091), Contai-I (1.067), Potashpur-II (1.042), Deshpran (1.034), Chandipur (0.969), Bhagwanpur-II (0.949), Sahid Matangini (0.915) and Nandigram-I (.878) blocks have LQ value very close to 1. So these blocks have sufficient and evenly distributed PHCs facilities with population. Whereas Mahishadal (0.442), Potashpur-I (0.526), Kolaghat (0.628), Panshkura-I (0.644), Khejuri-I (0.685), Khejuri-II (0.654), Nandakumar (0.693), Moyna (0.803) and Tamluk (0.837) blocks are far away from LQ magnitude of balance level they need more supports in this regard.

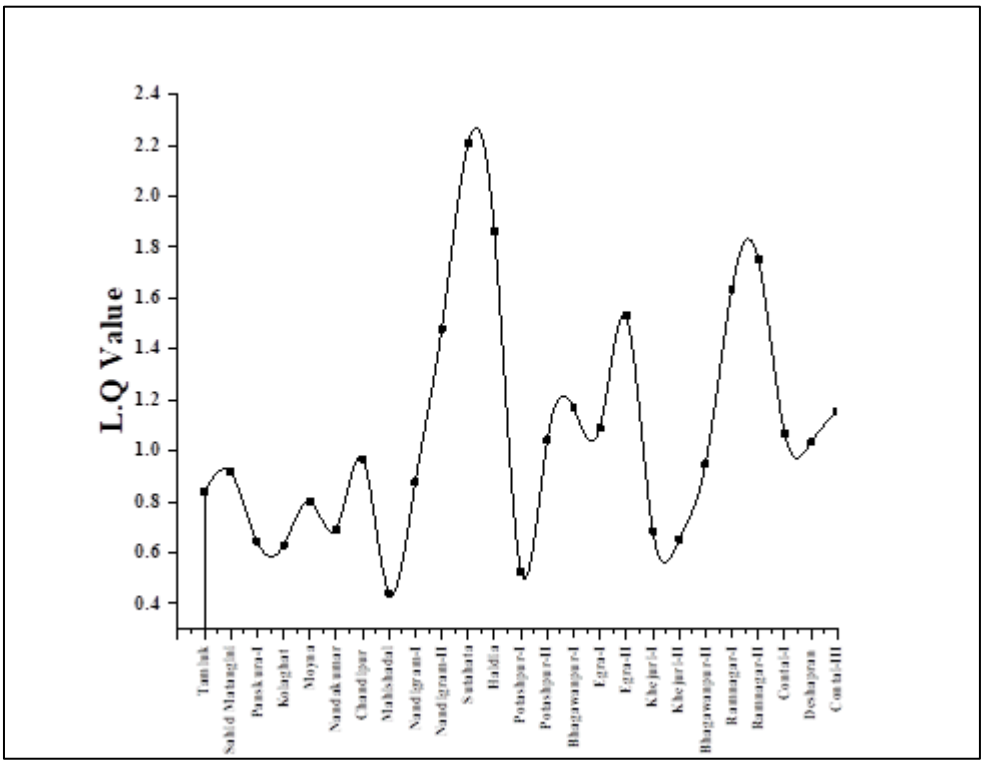


Figure 3 Block Wise L.Q distribution of PHC

Secondary level of health infrastructure like Health Sub Centres (HSC) disparity assessment is also evaluated by LQ here. Graphical presentation is shown in Fig-4. Almost evenly distribution is prominent for this area. The result reveals that the LQ value of the blocks like Haldia (1.142), Sutahata (1.064), Ramnagar-II (1.055), Contai-I (1.040), Egra-II(1.032), Tamuk (1.028), Potashpur-I (1.026), Sahid Matingini (1.025), Panskura-I (1.023), Moyna (1.016), Potashpur-II (1.016), Nandigram-II(1.015), Deshapran (1.008), Nandakumar (1.002), Contai-III (1.002), Bhagawanpur-II (0.994), Khejuri-I (0.990), Egra-I (0.985), Ramnagar-I (0.984), Bhagawanpur-I (0.983), Chandipur (0.980), Mahishadal (0.958), Nandigram-I (0.951), Khejuri-II(0.944), Kolaghat (0.885) is close to or around 1. Haldia block indicates highest LQ value. It means that Haldia block get most HSCs facilities over the entire district. Moreover, the LQ value of Kolaghat block is lowest, so people of Kolaghat block get the least facilities of HSCs compared to other blocks of Purba Medinipur district.

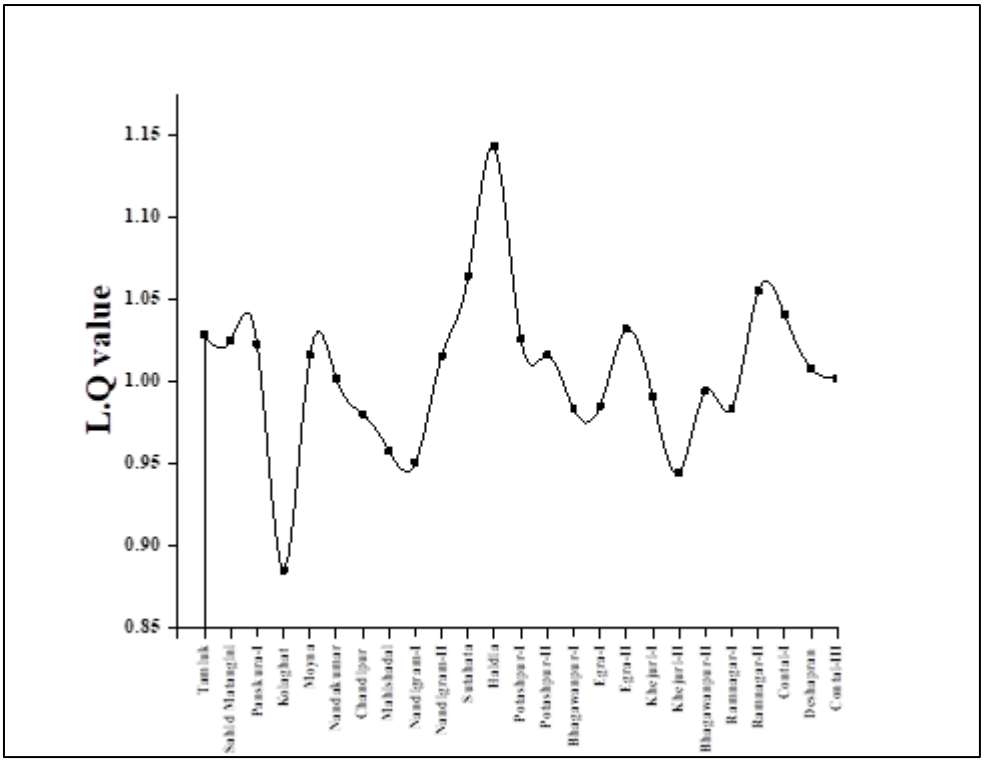


Figure 4 Block Wise L.Q distribution of HSC

Correlation coefficient method was used to assess the relationship between volumes of population in respect to number of health centres. Now if notice at the Table -11, the value of r meet at 0.9839, proves there is 98.39 % highly positive correlation between total population and number of HSCs of Purba Medinipur district. There are very weak relationship (0.0314) between total population and PHCs.

Table 11 Correlation between population, PHCs and HSCs

	Total population	**No. of PHC**	**No. of HSC**
Total population	1		
PHCs	0.031461	1	
HSCs	0.98392	0.077722	1

Table 12 Regression Analysis of population and PHCs & population and HSCs

Regression Statistics	**Total Population and PHCs**	**Total Population and HSCs**
Multiple R	0.031461256	0.98392
R Square	0.000989811	0.968099
Adjusted R Square	-0.04244542	0.966712
Standard Error	0.623842626	1.242224
Observations	25	25

Source: Computed by the author

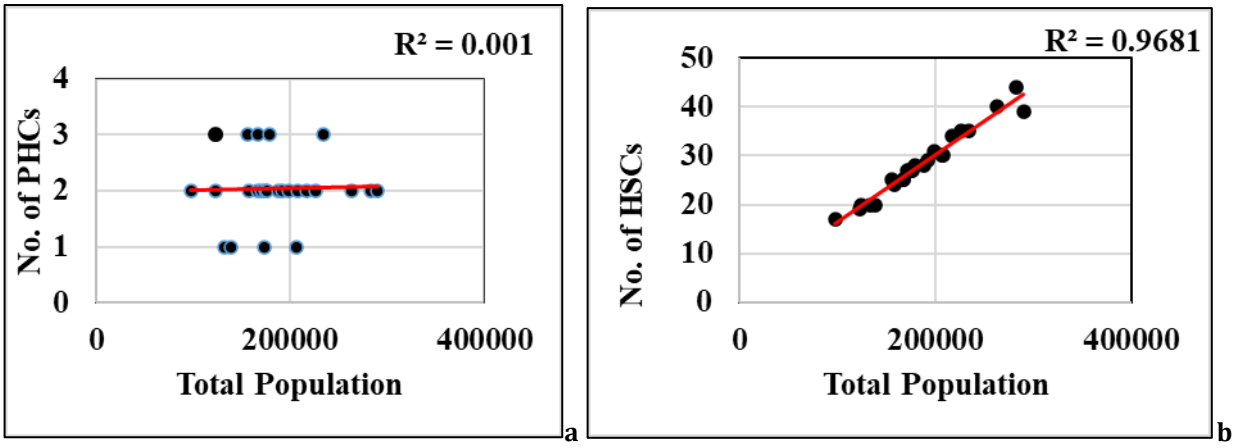


Figure 5 Linear Relationship between- a.) Population and number of PHCs b.) Population and number of HSCs

Table 13 Calculation for Lorenz Curve & Gini's Coefficient for- a.) PHCs b.) HSCs

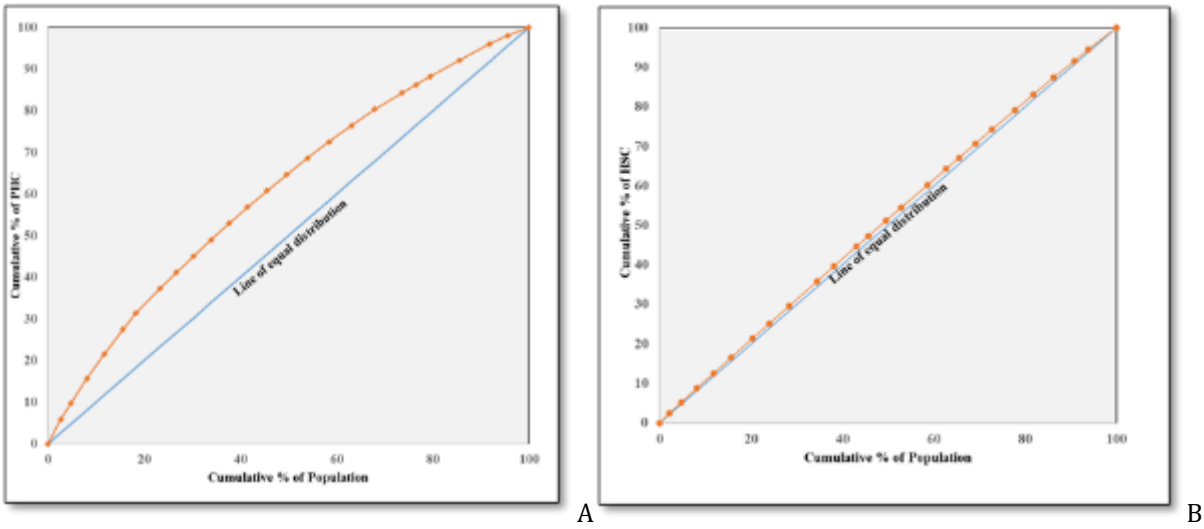
Blocks A	Cumulative % of X	Cumulative % of Y	XiYi+1	YiXi+1
Sutahata	0	0		
Haldia	2.66	5.88	26.10	28.06
Ramnagar-II	4.77	9.80	74.82	79.67
Ramnagar-I	8.13	15.69	175.27	183.93
Egra-II	11.73	21.57	321.87	335.83
Nandigram-II	15.57	27.45	488.47	500.17
Bhagawanpur-I	18.22	31.37	678.80	729.80
Contai-III	23.26	37.25	957.87	993.08
Egra-I	26.66	41.18	1202.15	1245.66
Contai-I	30.25	45.10	1482.92	1530.05
Potashpur-II	33.93	49.02	1796.15	1847.66
Deshapran	37.69	52.94	2143.29	2196.33
Chandipur	41.49	56.86	2521.71	2589.09
Bhagawanpur-II	45.53	60.78	2946.20	3018.87
Sahid Matangini	49.67	64.71	3408.40	3490.87
Nandigram-I	53.95	68.63	3914.01	4009.21
Tamluk	58.42	72.55	4467.41	4578.13
Moyna	63.10	76.47	5073.06	5198.82
Nandakumar	67.98	80.39	5732.04	5920.17
Khejuri-I	73.64	84.31	6353.36	6450.13
Khejuri-II	76.50	86.27	6750.14	6858.92
Panskura-I	79.50	88.24	7326.58	7552.45
Kolaghat	85.59	92.16	8223.78	8463.17
Potashpur-I	91.83	96.08	9003.37	9181.58

Mahishadal	95.56	98.04	9556.34	9803.92
	100.00	100.00	84624.10	86785.57

Blocks B	**Cumulative % of X**	**Cumulative % of Y**	**XiYi+1**	**YiXi+1**
Haldia	0	0		
Sutahata	2.11	2.41	11.05	11.49
Ramnagar-II	4.77	5.24	41.89	42.59
Contai-I	8.13	8.78	102.44	103.64
Egra-II	11.80	12.61	195.58	197.25
Tanluk	15.65	16.57	334.65	336.93
Potashpur-I	20.33	21.39	512.59	514.59
Sahid Matangini	24.06	25.21	712.25	714.63
Panskura-I	28.34	29.60	1015.74	1019.47
Poptashpur-II	34.44	35.84	1365.80	1369.02
Moyna	38.20	39.66	1704.51	1708.69
Nandigram-II	43.08	44.62	2038.22	2040.52
Deshapran	45.73	47.31	2338.50	2343.08
Contai-III	49.53	51.13	2700.86	2706.03
Nandakumar	52.92	54.53	3185.77	3194.40
Bhagawanpur-II	58.58	60.20	3766.90	3775.09
Khejuri-I	62.71	64.31	4210.33	4216.62
Egra-I	65.57	67.14	4634.57	4643.76
Ramnagar-I	69.17	70.68	5133.61	5143.06
Bhagawanpur-I	72.77	74.22	5761.46	5774.96
Chandipur	77.81	79.18	6469.28	6481.05
Mahishadal	81.85	83.14	7153.51	7174.56
Nandigram-I	86.29	87.39	7907.91	7931.90
Khejuri-II	90.76	91.64	8574.68	8592.45
Kolaghat	93.76	94.48	9376.00	9447.59
	100.00	100.00	79248.11	79483.38

Source: Computed by the author

Percentile curve is also applied for this analysis. The horizontal axis (X) of this curve is depicted by Cumulative Percentage (CP) of Population and the vertical axis (Y) by Cumulative Percentage (CP) of Health Centres (PHC & HSC). Gini coefficient value is 0.2162 of PHC for public service at block level. Figure- 6 shows its position (Lorenz Curve) is a bit far from the line of equal distribution. Hence the determinant value (0.2162) of PHCs indicates that 21.62 percentages of PHCs are unevenly distributed among them. Figure -6, indicates gap between the two lines of Lorenz curve and line of equal distribution of HSCs but their difference is negligible. Which, means there are slight inequality condition over the distribution of HSCs. The Gini's coefficient value of HSCs is 0.0235 which indicates 2.35 probable inequality present.



A B

Figure 6 Lorenz curve showing unequal distribution of – A) PHCs B) HSCs

3.7. Block wise Importance Performance Matrix (IPM)

IPA grid obtain in the present study clearly discriminates better performance of the society under considered parameters. Here, importance performance analysis method has been fitted to estimate the level of development of different blocks based on selected socio-economic variables. It is a simple graphical tool commonly used to evaluate the importance and performance of each feature for any of the social status. 29 variables exist on the vertical axis indicating for importance and block wise populations are exist on horizontal axis indicating for performance proficiency measurement. Each block occupies own location in the graph based on importance and performance coordinate scale. The inter section divide the graphs into four quadrants (quadrant-I, quadrant-II, quadrant-III, quadrant-IV) and each quadrant shows their level of performance and importance indices respectively. Moreover, median location or allotment of block is associated with balanced importance and balanced performance proficiency. The location of each block represents its own level of development based on their importance and performance provider.

Separately revealed graph show the relationship between population along with 29 considered variables for Importance Performance Matrix(IPM) of them (Figure -7.1 to 7.29). According to the Figure-7.1, Panskura, Kolaghat, Tamluk, Shahid Matangini, Nandakumar, Mahishadal, Moyna Bhagwanpur-I and Chandipur blocks are exhibit at 'quandrant-I', ultimately their level shows 'keep up the good work'; Sutahata, Haldia and Ramnagar-I blocks are concurrent the 'quadrant –II' for 'concentrated here' level; Potashpur-I, Potashpur-II, Khejuri-I, Khejuri-II, Contai-I, Contai-III, Egra-I and Ramnagar-II blocks indicates at the 'quadrant-III' for 'low priority' level; Bhagwanpur-II, Nandigram-I and Egra -II blocks coherent for 'quadrant –IV' and they call for 'possible overkill' level; Nandigram-II, Deshapran blocks are dropped at the 'median location' merely for balanced developed level for them. Figure- 7.2 shows, Panskura, Bhagwanpur-II and Nandigram-I blocks are positioned in the 'quandrant-I' grid; Sutahata, Nandigram-II, Khejuri-I, Khejuri-II,Contai-I,Contai-III, Ramngar-I and Ramnagar-II blocks are in 'quadrant –II' grid; Potashpur-I,Potashpur-II and Egra-I blocks are in the 'quadrant-III' grid; Kolaghat, Tamluk, sahid Matangini, Nandakumar, Mahishadal, Moyna, Bhagwanpur-I, Chandipur, and Egra-II blocks are in 'quadrant –IV' grid; Haldia and Deshapran blocks are in the 'median location'. So, their positional development level is clear after this application (Figure -7.3). Panskura, Tamluk, Sahid Matangini, Mahishadal, Bhagwanpur-II and Egra-II blocks are lying in the 'keep up the good work' grid; Sutahata, Khejuri-II,Contai-I,Contai-III, and Ramnagar-II blocks are in the 'concentrated here' grid; Potashpur-I, Haldia, Nandigram-II, Khejuri-I, Ramnagar-I and Egra-I blocks are in the 'low priority' grid; Kolaghat, Nandakumar, Moyna, Bhagwanpur-I, Chandipur, and Nandigram-I blocks are in the 'possible overkill' grid; Potashpur-II and Deshapran blocks are in the 'median location'. Figure -7.4 displays that Tamluk, Sahid Matangini, Bhagwanpur -I, Bhagwanpur-II and Chandipur blocks are falls in 'quandrant-I' grid; Khejuri-I, Contai –I, Contai-III,Nandigram-II, Ramnagar -I and Ramnagar-II blocks are in 'quadrant –II'grid; Potashpur-I, Sutahata, Haldia, Khejuri-II, and Egra-I blocks are in 'quadrant-III'grid; Panskura, Kolaghat, Nandakumar, Mahishadal Moyna, Nandigram-I blocks are in the 'quadrant –IV'grid; Potashpur-II, Deshapran, and Egra-II blocks are in the 'median location'. According to the Figure -7.5 Sahid Matangini, Bhagwanpur -I, Bhagwanpur-II, Chandipur, Egra-II blocks are located at the 'quandrant-I'; Nandigram-II, Khejuri-I, Contai –I, Contai-III, Ramnagar -I and Ramnagar-II blocks are at in to 'quadrant –II'; Potashpur-I,Potashpur-II, Sutahata, Haldia, Khejuri-II, and Egra-I blocks are at 'quadrant-III; Panskura, Kolaghat, Nandakumar, Mahishadal Moyna and Nandigram-I blocks are at the 'quadrant –IV'; Tamluk and Deshapran, blocks are at the 'median location'. Figure -7.6 exhibits that Tamluk, Bhagwanpur -I, Bhagwanpur-II and Chandipur blocks are falls in the

‘quandrant-I; Nandigram-II, Khejuri-I, Contai –I, Contai-III, Ramnagar -I and Ramnagar-II blocks are in the ‘quadrant –II; Potashpur-I,Potashpur-II, Sutahata, Haldia, Khejuri-II, and Egra-I blocks are in ‘quadrant-III; Panskura, Kolaghat, Nandakumar, Moyna, Nandigram-I and Egra-II blocks are in ‘quadrant –IV; Sahid Matangini, Mahishadal and Deshapran, blocks are in the ‘median location’. Figure -7.7 describes that, Panskura, Kolaghat, Tamluk, Sahid Matangini Moyna and Egra-II blocks are positioned in the ‘keep up the good work’ grid; Potashpur-I, Potashpur-II, Khejuri-II,Egra-I, Ramnagar -I and Ramnagar-II blocks are in ‘concentrated here’ grid ; Sutahata, Haldia, Nandigram-II, Khejuri-I and Contai-III blocks are into ‘low priority’ grid; Nandakumar, Mahishadal, Bhagwanpur-II, Chandipur,Nandigram-I blocks are in the ‘possible overkill’ grid ; Bhagwanpur-I, Contai-I and Deshapran, blocks are in ‘median location’ position. Figure -7.8 highlights here Nandakumar, Moyna, Bhagwanpur –I, Bhagwanpur-II, Nandigram-I, and Egra-II blocks are lying in the ‘quandrant-I’grid; Potashpur-I,Sutahata, Khejuri-II,Contai-I and Ramnagar-II blocks are in ‘quadrant –II’grid; Potashpur-II, Haldia, Egra-I and Ramnagar-I blocks are in ‘quadrant-III’ grid; Panskura, Kolaghat, Tamluk, Sahid Matangini, Mahishadal and Chandipur, blocks are in ‘quadrant –IV’ grid; Nandigram-II, Khejuri-I, Contai-III and Deshapran, blocks in ‘median location position accordingly.

Figure -7.9 shows that Panskura, Kolaghat, Nandakumar, Bhagwanpur –I, and Egra-II blocks are located in ‘keep up the good work’ grid; Potashpur-I, Potashpur-II, Haldia , Khejuri-II, Egra-I, Ramnagar-I and Ramnagar-II blocks are in ‘concentrated here’ grid; Sutahata, Khejuri-I, Contai-I and Contai-III blocks are in the ‘low priority’ grid; Tamluk, Sahid Matangini, Mahishadal, Moyna, Bhagwanpur-II, Chandipur and Nandigram-I blocks are in ‘possible overkill’ grid; Nandigram-II and Deshapran, blocks are in ‘median location’ position. Figure -7.10 represents Panskura, Kolaghat, Tamluk, Nandakumar, Moyna and Bhagwanpur –I blocks are falls in ‘quandrant-I’ grid; Potashpur-I, Potashpur-II, Khejuri-I,Contai-III and Egra-I blocks are in ‘quadrant –II’ grid; Sutahata, Haldia, Nandigram-II, Khejuri-II, Contai-I,Ramnagar-I and Ramnagar-II blocks are in ‘quadrant-III’ grid; Sahid Matangini, Mahishadal, Chandipur, Nandigram-I and Egra-II blocks are in ‘quadrant –IV’grid; Bhagwanpu-II and Deshapran, blocks are in ‘median location’ position. Panskura, Kolaghat, Tamluk, Nandakumar, Moyna, Bhagwanpur –I and Bhagwanpur-II blocks are falls under ‘keep up the good work’ grid; Potashpur-I, Khejuri-I,Contai-III and Egra-I blocks are in the ‘concentrated here’ grid; Sutahata, Haldia, Nandigram-II, Khejuri-II, Contai-I, Ramnagar-I and Ramnagar-II blocks are in the ‘low priority’ grid; Sahid Matangini, Mahishadal, Chandipur, Nandigram-I and Egra-II blocks are in ‘possible overkill’ grid; Potashpur-II and Deshapran, blocks are in ‘median location’ respectively as shown in Figure -7.11. From Figure-7.12, it is clearly noticed that Panskura, Moyna, Bhagwanpur –I, Bhagwanpur-II, Nandigram-I and Egra-II blocks are positioned in the ‘quandrant-I; Potashpur-I, Potashpur-II, Nandigram-II, Khejuri-I, Egra-I and Ramnagar-II blocks are in ‘quadrant –II’; Sutahata, Haldia, Contai-I, Contai-II and Ramnagar-I blocks are in ‘quadrant-III’; Kolaghat, Tamluk, Sahid Matangini, Nandakumar, Mahishadal and Chandipur, blocks are in ‘quadrant –IV’; Khejuri -II and Deshapran, blocks are in the ‘median location’ position respectively. Figure -7.13 reveals that Panskura, Kolaghat, Tamluk, Sahid Matangini, Nandakumar, Mahishadal, Moyna, Bhagwanpur –I and Bhagwanpur-II blocks are in ‘keep up the good work’ level; Potashpur-I, Potashpur-II and Haldia blocks are in the ‘concentrated here’ level; Sutahata,Nandigram-II, Khejuri-I, Khejuri-II, Contai-I,Contai-III, Egra-I Ramnagar-I and Ramnagar-II blocks are in the ‘low priority’ level; Chandipur and Nandigram-I blocks are in the ‘possible overkill’ level; Deshapran and Egra-II blocks are in the ‘median location’ position respectively. Figure -7.14 explains that Panskura, Kolaghat, Tamluk, Sahid Matangini, Mahishadal, Moyna and Nandigram-I blocks are falls under ‘quandrant-I’; Potashpur-I, Sutahata, Khejuri-I, Contai-I and Contai-III blocks are in the ‘quadrant –II’; Potashpur-II,Haldia, Nandigram-II, Khejuri-II, Egra-I Ramnagar-I and Ramnagar-II blocks are in ‘quadrant-III’; Nandakumar, Potashpur-II,Bhagwanpur-I and Egra-II blocks are in the ‘quadrant –IV’; Deshapran and Chandipur blocks are in the ‘median location’ position respectively. Figure -7.15 illustrates that, Tamluk, Moyna, Bhagwanpur-I and Bhagwanpur -II, blocks are located in ‘keep up the good work’; Potashpur-I, Potashpur-II, Nandigram-II, Khejuri-I, Contai-I ,Contai-III and Ramnagar –I blocks are in ‘concentrated here’; Sutahata, Haldia, Khejuri-II, Egra-I and Ramnagar-II blocks are in ‘low priority’; Panskura, Kolaghat, Sahid Matangini, Nandakumar, Mahishadal, Nandigram-I and Egra-II blocks are in the ‘possible overkill’ level; Deshapran and Chandipur blocks are in the ‘median location’. Figure -7.16 indicates that Mahishadal , Moyna, Bhagwanpur-II and Egra-II blocks are seated in the ‘quandrant-I’; Sutahata, Khejuri-I,Khejuri-II, Contai-I ,Contai-III, Ramnagar –I and Ramnagar-II blocks are in ‘quadrant –II; Potashpur-I, Haldia,Nandigram-II and Egra-I blocks are in ‘quadrant-III’; Panskura, Kolaghat, Tamluk, Sahid Matangini, Bhagwanpur-I, Chandipur and Nandigram-I blocks are in the ‘quadrant –IV’; Nandakumar, Potashpur –II And Deshapran blocks are in ‘median location’ position respectively.

Figure -7.17 shows that Mahishadal , Bhagwanpur-II and Chandipur blocks are lying in the ‘keep up the good work’grid ; Potashpur-I, Potashpur-II,Sutahata,Haldia, Nandigram-II, Khejuri-I,Khejuri-II, Contai-I and Ramnagar-II blocks are in the ‘concentrated here’ grid; Contai-III and Ramnagar—I blocks are in ‘low priority’ grid; Panskura, Kolaghat, Tamluk, Sahid Matangini, Nandakumar, Moyna, Bhagwanpur-I, Nandigram-I and Egra-II blocks are in ‘possible overkill’ grid; Egra-I and Deshapran blocks are in ‘median location’ position respectively. Figure -7.18 presents that Panskura, Moyna, Bhagwanpur-II, Chandipur and Egra-II blocks are positioned in ‘quandrant-I’; Sutahata,Haldia, Nandigram-II, Contai-I,Ramnagar-I and Ramnagar-II blocks are in the ‘quadrant –II’; Potashpur-I, Potashpur-II,Khejuri-I, Khejuri –II, Contai-

III and Egra-I blocks are in the 'quadrant-III'; Kolaghat, Tamluk, Nandakumar, Mahishadal ,Bhagwanpur-I, and Nandigram-I blocks are in the 'quadrant –IV'; Sahid Matangini and Deshapran blocks are in the 'median location' position respectively. According to Figure -7.19 Panskura, Kolaghat, Tamluk, Mahishadal, Moyna, Bhagwanpur-II, Chandipur and Egra-II blocks are falls under the 'quandrant-I'; Potashpur-II, Sutahata, Nandigram-II, and Ramnagar-I blocks are in the 'quadrant –II'; Potashpur-I, Haldia, Khejuri-I, Khejuri –II, Contai-I, Contai-III, Egra-I and Ramnagar-II blocks are in the 'quadrant-III'; Nandakumar, and Nandigram-I blocks are in the 'quadrant –IV'; Sahid Matangini, Bhagwanpur-I and Deshapran blocks are in the 'median location' position respectively. Figure-7.20 describes Panskura, Tamluk, Sahid Matangini, Mahishadal and Bhagwanpur-II blocks are located in the 'keep up the good work' grid; Potashpur-II, Sutahata,Haldia, Nandigram-II,Contai-I, Contai-III and Ramnagar-I blocks are in 'concentrated here' grid ; Khejuri-I, Khejuri –II, Egra-I and Ramnagar-II blocks are in 'low priority' grid; Kolaghat, Nandakumar, Moyna, Bhagwanpur-I, Chandipur, Nandigram-I and Egra-II blocks are in 'possible overkill' grid; Potashpur-I and Deshapran blocks are in 'median location' position respectively.Figure -7.21 exhibits that Kolaghat, Nandakumar, Mahishadal, Moyna, Bhagwanpur-I,Bhagwanpur-II and Nandigram-I blocks are lying in the 'quandrant-I'; Potashpur-I, Sutahata,Khejuri-I, Contai-III and Ramnagar-II blocks are in the 'quadrant –II'; Potashpur-II, Haldia , Nandigram-II,Khejuri-II, Contai-I, Egra-I and Ramnagar-I blocks are in the 'quadrant-III';Tamluk, Sahid Matangini, Chandipur and Egra-II blocks are in the 'quadrant –IV'; Panskura and Deshapran blocks are in the 'median location' position respectively. Figure -7.22 highlights that Kolaghat, Nandakumar, Mahishadal, Moyna, Bhagwanpur-I,Bhagwanpur-II and Nandigram-I blocks are seated in the 'keep up the good work' grid; Potashpur-I, Sutahata,Khejuri-I and Ramnagar-II blocks are in the 'concentrated here' grid; Panskura,Kolaghat,Sahid Matangini, Potashpur-II, Chandipur, Haldia, Nandigram-II, Khejuri-II, Contai-I,Contai-III, Egra-I, Egra-II, Ramnagar-I and Deshapran blocks are in the 'median location' position respectively.Figure-7.23 describes that Panskura, Kolaghat, Tamluk, Sahid Matangini, Bhagwanpur-I, Bhagwanpur-II and Chandipur blocks are positioned in the 'quandrant-I'; Potashpur-I, Sutahata, Haldia, Ramnagar- I and Ramnagar-II blocks are in the 'quadrant –II'; Potashpur-II, Khejuri-I, Khejuri-II, Contai-I, Contai-III and Egra-I blocks are in the 'quadrant-III'; Nandakumar, Mahishadal, Moyna, Nandigram-I and Egra-II blocks are in 'quadrant –IV'; Nandigram-II and Deshapran blocks are in 'median location' position respectively. Figure-7.24 represents that Panskura, Kolaghat, Tamluk, Sahid Matangini, Mahishadal, Bhagwanpur-II Chandipur and Egra-II blocks are falls under in the 'keep up the good work' grid; Sutahata, Khejuri-I, Khejuri-II, and Ramnagar- I blocks are in the 'concentrated here' grid; Potashpur-I, Potashpur-II, Haldia, Nandigram-II, Contai-I,Contai-III, Egra-I and Ramnagar-II blocks are in 'low priority' grid; Nandakumar, Moyna and Nandigram-I blocks are in the 'possible overkill' grid; Bhagwanpur-I and Deshapran blocks are in the 'median location' position respectively.

Figure -7.25 displays that, Sahid Matangini, Nandakumar, Mahishadal and Nandigram-I blocks are located in the 'quandrant-I'; Sutahata,Haldia, Nandigram-II, Khejuri-I,Contai-I, Ramnagar-I, and Ramnagar- II blocks are in the 'quadrant –II'; Potashpur-I, Potashpur-II,Khejuri-II and Contai-III blocks are in the 'quadrant-III'; Panskura, Kolaghat, Tamluk, Moyna, Bhagwanpur-I, Bhagwanpur-II, Chandipur and Egra-II blocks are in the 'quadrant –IV'; Egra -I and Deshapran blocks are in the 'median location'. From Figure -7.26 it is clearly noticed that Kolaghat, Tamluk, Sahid Matangini, Moyna, Chandipur blocks are positioned in the 'quandrant-I'; Potashpur-I, Sutahata, Haldia, Nandigram-II, Contai-I and Ramnagar- II blocks are in the 'quadrant –II'; Potashpur-II,Khejuri-I,Khejuri-II, Contai-III, Egra-I, and Ramnagar-I blocks are in the 'quadrant-III'; Panskura, Nandakumar, Mahishadal, Bhagwanpur-II, Nandigram-I and Egra-II blocks are in the 'quadrant –IV'grid; Bhagwanpur-I and Deshapran blocks are in the 'median location' position respectively. Figure -7.27 shows that Panskura, Kolaghat, Tamluk, Sahid Matangini, Bhagwanpur –II and Egra-II blocks are lying in the 'quandrant-I'; Sutahata, Nandigram-II, Khejuri-II ,Contai-IIII, Ramnagar-I and Ramnagar- II blocks are in the 'quadrant –II'; Potashpur-II, Haldia ,Khejuri-II and Contai-I blocks are in the 'quadrant-III'; Nandakumar, Mahishadal,Moyna, Bhagwanpur-I, Chandipur and Nandigram-I blocks are in the 'quadrant –IV'; Potashpur-I, Egra-I and Deshapran blocks are in the 'median location' respectively. In Figure -7.28 Bhagwanpur –I, Bhagwanpur –II and Egra-II blocks are lying in the 'quandrant-I'; Potashpur –I, Potashpur –II, Sutahata, Haldia, Khejuri-I,Contai –I, Contai-IIII, Ramnagar-I and Ramnagar- II blocks are in the 'quadrant –II'; Nandigram-II, Khejuri-II and Egra-I blocks are in the 'quadrant-III'; Panskura, Tamluk, Kolaghat, Sahid Matangini, Nandakumar, Mahishadal, Moyna, Chandipur and Nandigram-I blocks are in the 'quadrant –IV' grid; only Deshapran blocks are in 'median location'. Figure -7.29 displays that Kolaghat, Tamluk, Nandakumar, Mahishadal, Bhagwanpur –I, Bhagwanpur –II and Chandipur blocks are falls in 'quandrant-I'; Potashpur –I, Nandigram-II, Khejuri-I, Khejuri-II and Contai-IIII blocks are in the 'quadrant –II';Potashpur-II,Sutahata, Haldia, Contai-I,Egra-I, Ramnagar-I, Ramnagar-II blocks are in the 'quadrant-III'; Sahid Matangini, Moyna, Nandigram-I and Egra- II blocks are in 'quadrant –IV'; Panskura and Deshapran blocks are in 'median location' respectively.

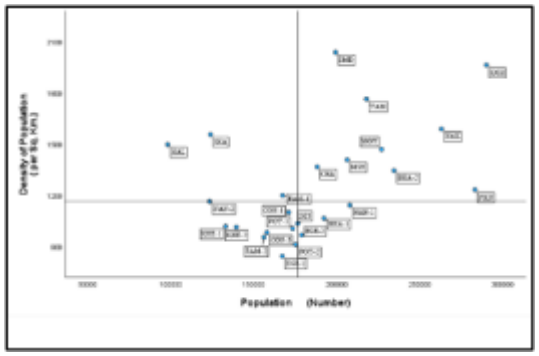


Figure 7.1 Performance analysis matrix between block wise Total population & Density of population

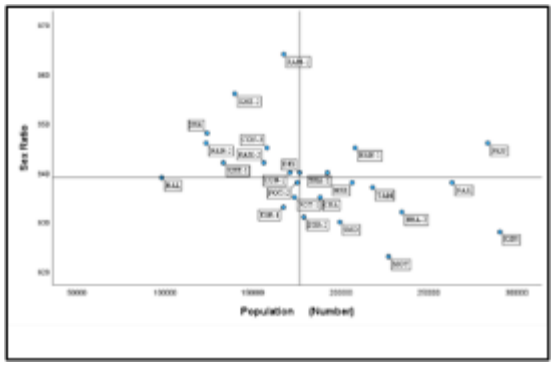


Figure 7.2 Performance analysis matrix between block wise Total population & sex ratio

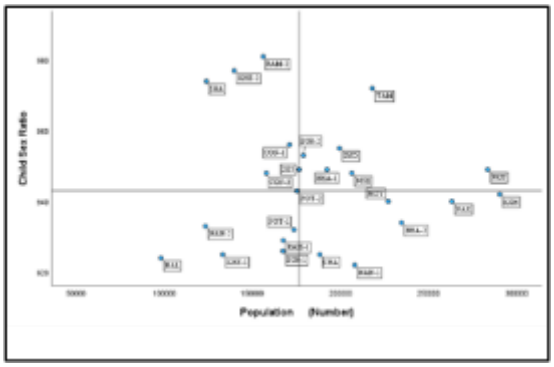


Figure 7.3 Performance analysis matrix between block wise Total population & child sex ratio

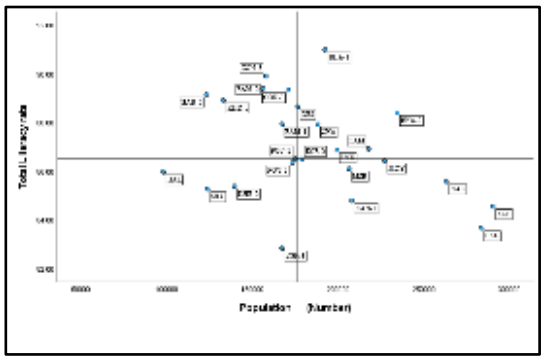


Figure 7.4 Performance analysis matrix between block wise Total population & total literacy rate

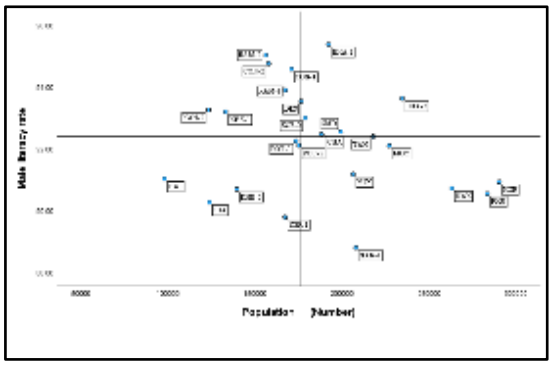


Figure 7.5 Performance analysis matrix between block wise Total population & male literacy rate

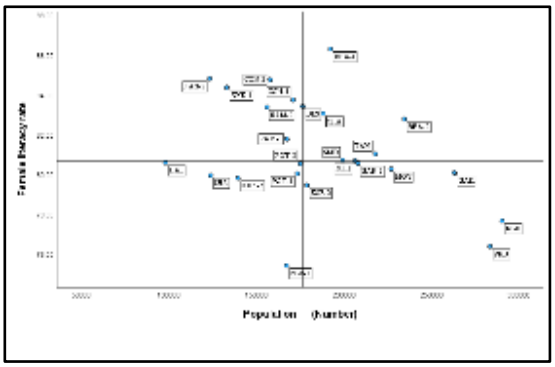


Figure 7.6 Performance analysis matrix between block wise Total population & female literacy rate

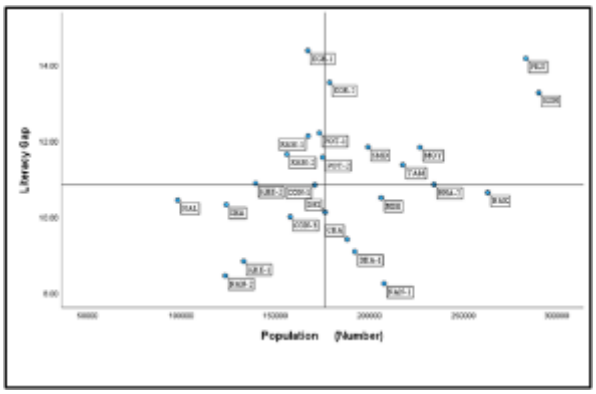


Figure 7.7 Performance analysis matrix between block wise Total population & gender literacy gaps

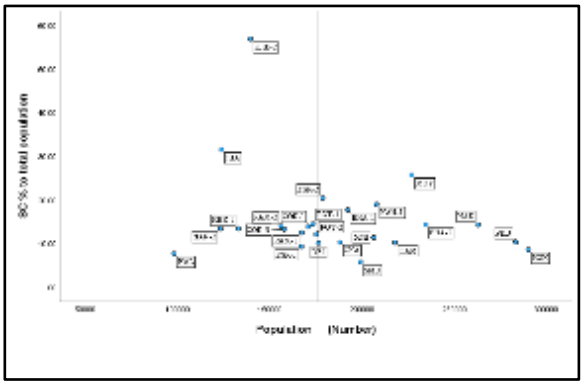


Figure 7.8 Performance analysis matrix between block wise Total population & % of SC population

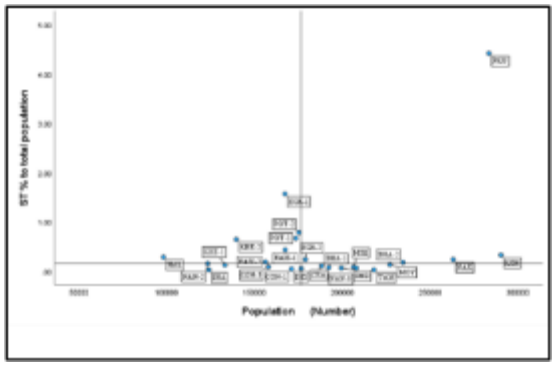


Figure 7.9 Performance analysis matrix between block wise Total population & % of ST population

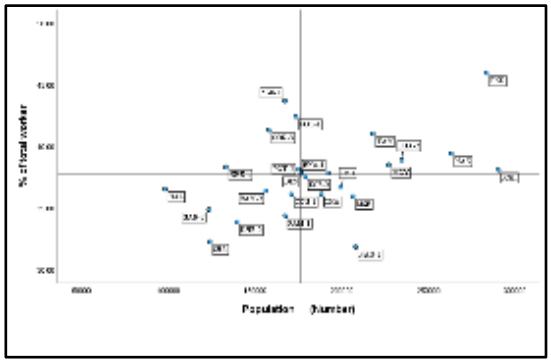


Figure 7.10 Performance analysis matrix between block wise Total population & % of total worker

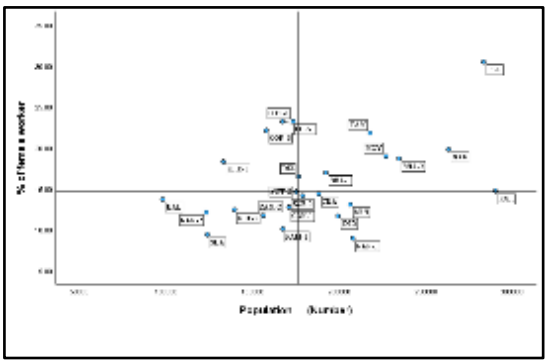


Figure 7.11 Performance analysis matrix between block wise Total population & % of female worker

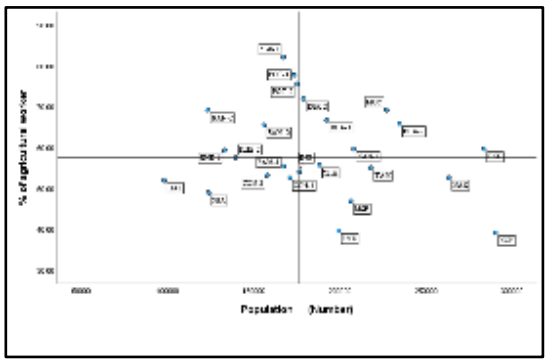


Figure 7.12 Performance analysis matrix between block wise Total population & % of agricultural worker

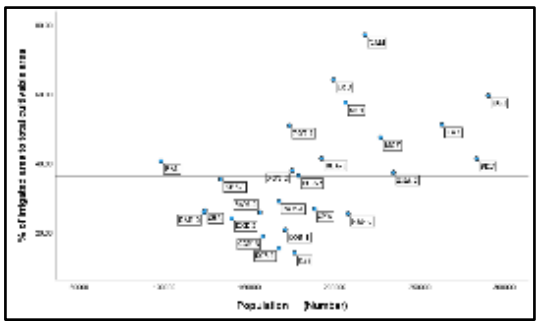


Figure 7.13 Performance analysis matrix between block wise Total population & % of irrigated area to cultivable area

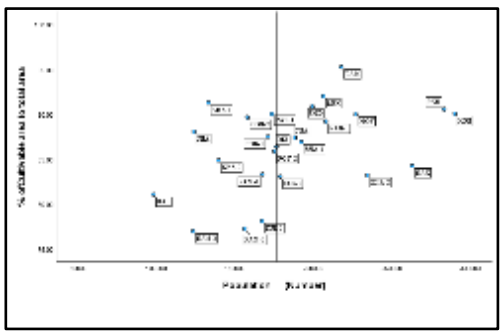


Figure 7.14 Performance analysis matrix between block wise Total population & % of cultivable area to total area

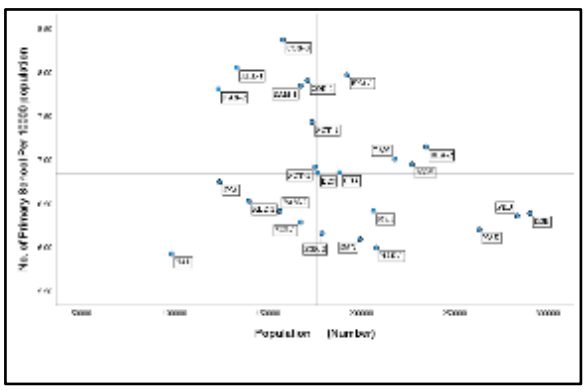


Figure 7.15 Performance analysis matrix between block wise Total population & primary school per 10000 populations

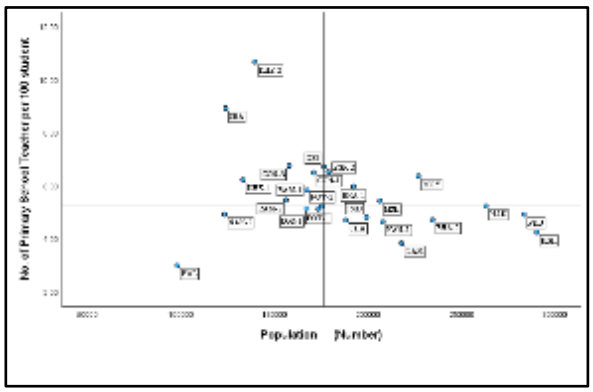


Figure 7.16 Performance analysis matrix between block wise total population & primary school teacher per 100 student

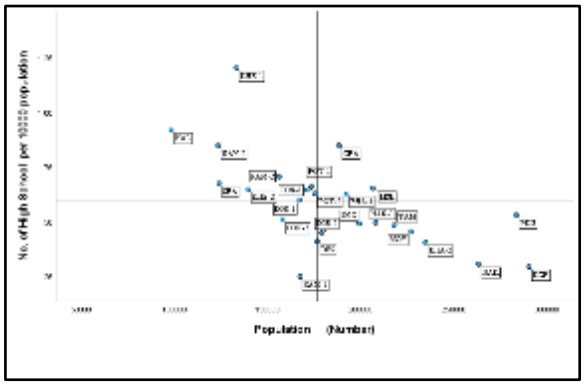


Figure 7.17 Performance analysis matrix between block wise Total population & high school per 10000 populations

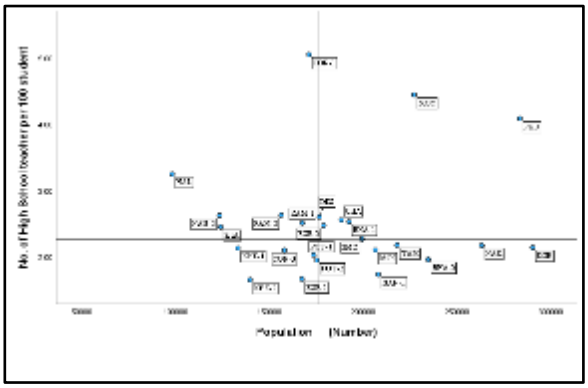


Figure 7.18 Performance analysis matrix between block Wise total population & high school teacher per 100 student

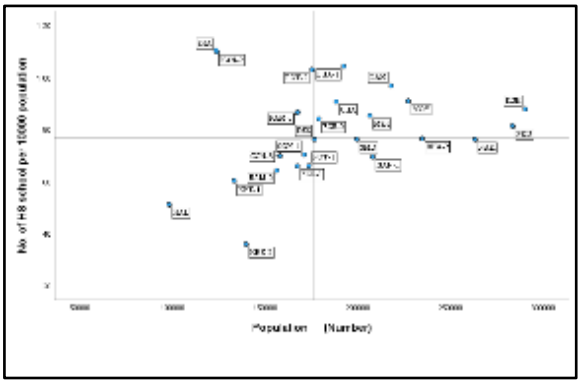


Figure 7.19 Performance analysis matrix between block wise Total population & H.S school per 10000 populations

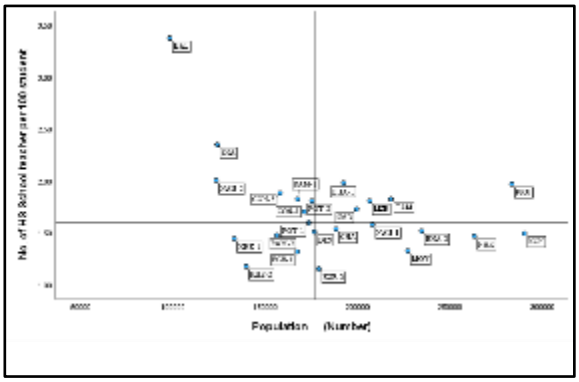


Figure 7.20 Performance analysis matrix between block wise total population & H.S school teacher per 100 student

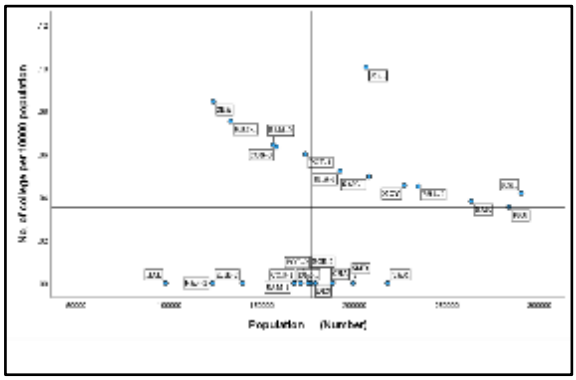


Figure 7.21 Performance analysis matrix between block wise population total population & college per 10000 populations

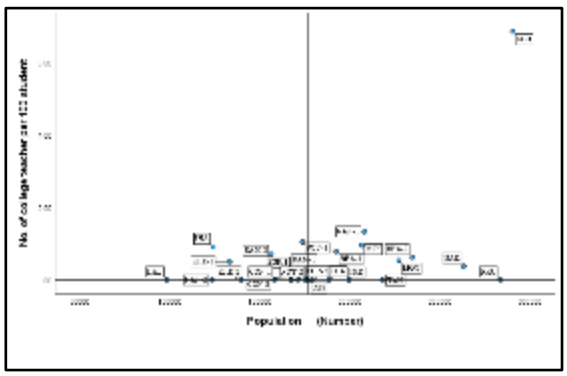
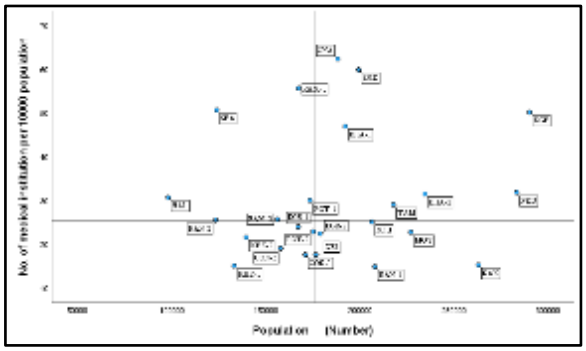


Figure 7.22 Performance analysis matrix between block wise total population & college teacher per 100 student



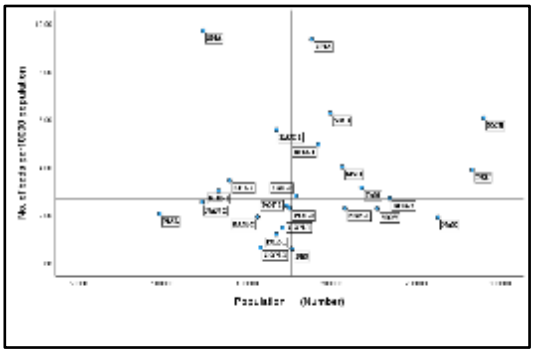


Figure 7.23 Performance analysis matrix between block wise population & medical inst. per 10000 populations

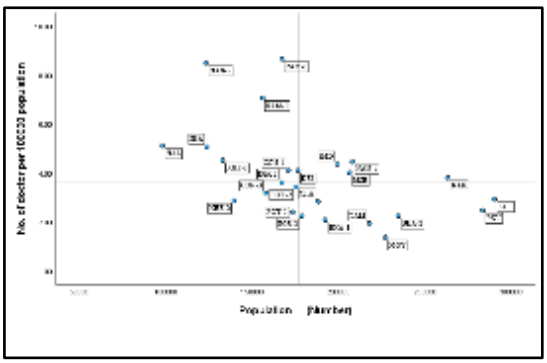


Figure 7.24 Performance analysis matrix between block wise population & no. of beds per 10000 population

Figure 7.25 Performance analysis matrix between block wise population & doctor per 10000 populations

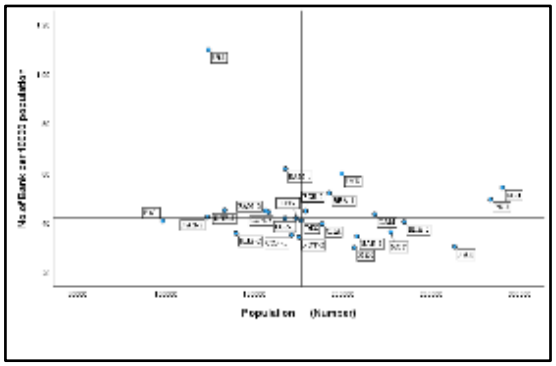


Figure 7.26 Performance analysis matrix between block wise population & FWSC per 10000 populations

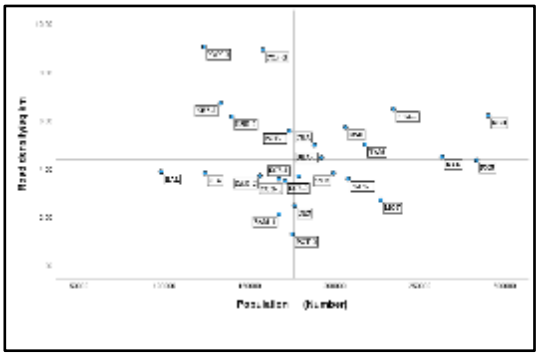


Figure 7.27 Performance analysis matrix between block wise population & bank per 10000 populations

Figure 7.28 Performance analysis matrix between block wise population & co-operative society per 10000 population

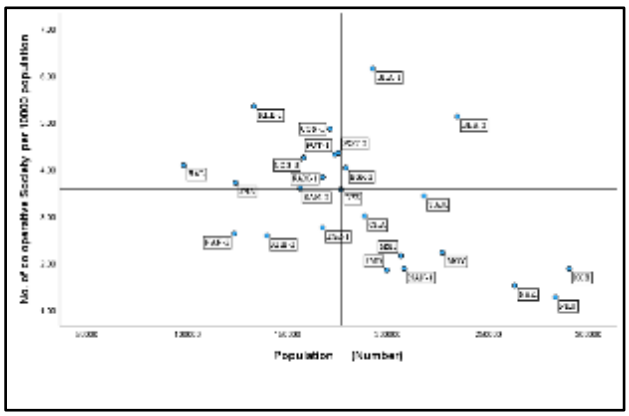


Figure 7.29 Performance analysis matrix between block wise Total population & road density per square km

Figure 7 Performance Analysis Matrix of Socio-economic variables

Table 14 Block wise Importance Performance Matrix based on selected variables

RAM-2	3	2	2	2	2	2	2	2	2	3	3	2	3	3	3	2	2	2	3	3	2	2	2	3	2	2	2	2	3
RAM-1	2	2	3	2	2	2	2	3	2	3	3	3	3	3	2	2	3	2	2	2	3	M	2	2	2	3	2	2	3
EGR-2	4	4	1	M	1	4	1	1	1	4	4	1	M	4	4	1	4	1	1	4	4	M	4	1	4	4	1	1	4
EGR-1	3	3	3	3	3	3	2	3	2	2	2	2	3	3	3	3	M	3	3	3	3	M	3	3	M	3	M	3	3
CON-3	3	2	2	2	2	2	3	M	3	2	2	3	3	2	2	2	3	3	3	2	2	M	3	3	3	3	2	2	2
DES	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
CON-1	3	2	2	2	2	2	M	2	3	3	3	3	3	2	2	2	2	2	3	2	3	M	3	3	2	2	3	2	3
KHE-2	3	2	2	3	3	3	2	2	2	3	3	M	3	3	3	2	2	3	3	3	3	M	3	2	3	3	3	3	2
KHE-1	3	2	3	2	2	2	3	M	3	2	2	2	3	2	2	2	2	3	3	3	2	2	3	2	2	3	2	2	2
NAN-2	M	2	3	2	2	2	3	M	M	3	3	2	3	3	2	3	2	2	2	2	3	M	M	3	2	2	2	3	2
NAN-1	4	1	4	4	4	4	4	1	4	4	4	1	4	1	4	4	4	4	4	4	1	1	4	4	1	4	4	4	4
HAL	2	M	3	3	3	3	3	3	2	3	3	3	2	3	3	3	2	2	3	2	3	M	2	3	2	2	3	2	3
SHA	2	2	2	3	3	3	3	2	3	3	3	3	3	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	3
CHA	1	4	4	1	1	1	4	4	4	4	4	4	4	M	M	4	1	1	1	4	4	M	1	1	4	1	4	4	1
BHA-2	1	4	4	1	1	1	M	1	1	1	1	1	1	4	1	4	4	4	M	4	1	1	1	M	4	M	4	1	1
BHA-1	4	1	1	1	1	1	4	1	4	M	1	1	1	4	1	1	1	1	1	1	1	1	1	1	4	4	1	1	1
POT-2	3	3	M	M	3	3	2	3	2	2	M	2	2	3	2	M	2	3	2	2	3	M	3	3	3	3	3	2	3
POT-1	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	3	2	3	3	M	2	2	2	3	3	2	M	2	2
MOY	1	4	4	4	4	4	1	1	4	1	1	1	1	1	1	1	4	1	1	4	1	1	4	4	4	1	4	4	4
MSH	1	4	1	4	4	M	4	4	4	4	4	4	1	1	4	1	1	4	1	1	1	1	4	1	1	4	4	4	1
NAK	1	4	4	4	4	4	4	1	1	1	1	4	1	4	4	M	4	4	4	4	1	1	4	4	1	4	4	4	1
SMD	1	4	1	1	1	M	1	4	4	4	4	4	1	1	4	4	4	M	M	1	4	M	1	1	1	1	1	4	4
TAM	1	4	1	1	M	1	1	4	4	1	1	4	1	1	1	4	4	4	1	1	4	M	1	1	4	1	1	4	1
KGH	1	4	4	4	4	4	1	4	1	1	1	4	1	1	4	4	4	4	1	4	1	1	1	1	4	1	1	4	1
PKU	1	1	1	4	4	4	1	4	1	1	1	1	1	1	4	4	4	1	1	1	M	M	1	1	4	4	1	4	M
BLOCK	S_i	S_{ii}	S_{iii}	S_{iv}	S_v	S_{vi}	S_{vii}	S_{viii}	S_{ix}	E_i	E_{ii}	E_{iii}	E_{iv}	E_v	I_i	I_{ii}	I_{iii}	I_{iv}	I_v	I_{vi}	I_{vii}	I_{viii}	I_{ix}	I_x	I_{xi}	I_{xii}	I_{xiii}	I_{xiv}	I_{xv}

KEY:PKU= Panskura, KGH= Kolaghat, TAM=Tamluk, SMD= Sahid Matangini, NAK= Nandakumar, MSH =Mahishadal, MOY= Moyna, POT-1= Potashpur-I, POT-2= Potashpur-II, BHA-2= Bhagwanpur-I, BHA-1 = Bhagwanpur-II, CHA= Chandipur, SHA= Sutahata, HAL= Haldia, NAN-1= Nandigram-I, NAN-2= Nandigram-II, KHE-1= Khejuri-I, KHE-2= Khejuri-II, CON-1= Contai-I, DES= Deshapran, CON-3= Contai-III, EGR-1= Egra-I, EGR-2 = Egra-II, RAM-1= Ramnagar-I, RAM-2=Ramnagar-II. Source: Computed by the author

1,2,3,4 represents the quadrants.1= Keep up the good work (Highly developed), 2= Concentrated here (Moderate developed), 3= Low priority (least developed), 4= Possible overkill (Less developed), M= Median location (Balanced developed)

Table 15 Highest weightage Ranking of Importance Performance of different blocks.

Quadrant **Blocks**	**Keep up the good work**	**Concentrated here**	**Low priority**	**Possible overkill**	**Median location**	**Total indicator**
Panskura	16			10	3	29
Kolaghat	15			14		29
Tamluk	17			10	2	29
Sahid Matangini	13			12	4	29
Nandakumar	10			18	1	29
Mahishadal	13			15	1	29
Moyna	15			14		29
Potashpur-I		16	11		2	29
Potashpur-II		10	14		5	29
Bhagwanpur-II	22			6	1	29
Bhagwanpur-I	16			9	4	29
Chandipur	11			15	3	29
Sutahata		18	11			29
Haldia		10	17		2	29
Nandigram-I	7			22		29
Nandigram-II		14	10		5	29
Khejuri-I		18	10		1	29
Khejuri-II		9	18		2	29
Contai-I		15	12		2	29
Deshapran					29	29
Contai-III		15	12		2	29
Egra-I		5	20		4	29
Egra-II	12			14	3	29
Ramnagar-I		17	11		1	29
Ramnagar-II		19	10			29

Source: Computed by the author

Table-14 represents the block wise Importance Performance Matrix based on considered variables. The values of Table-15 are obtained from Table-14. The development scenario has been calculated from highest weightage ranking (table - 15) and finalized in table - 16.

Panskura, Kolaghat, Tamluk, Sahid Matangini, Moyna, Bhagwanpur-II and Bhagwanpur-I fall under Quadrant-I that is corresponding to high importance and high performance. These blocks are highly developed because high ratio between percentages of total worker to irrigated area, cultivable area, number of primary school, number of bank, road density with total population.

Potashpur-I, Sutahata, Nandigram-II, Khejuri-I, Contai-I, Contai-III, Ramnagar-I and Ramnagar-II blocks fall under Quadrant-II that is related to high importance and low performance. These blocks are moderate developed, because moderate ratio between sex ratio, literacy rate, irrigated area, cultivable area, number of bank, road density with total population.

Potashpur-II, Khejuri-II, Haldia and Egra-I blocks fall under Quadrant-III that is related to low performance and low importance. These are assigned as least developed blocks having very low ratio between literacy rate, irrigated area, no. of bank, road density with total population. Actually these blocks are most backward of the district according to Importance Performance Analysis.

Nandakumar, Mahishadal, Chandipur, Nandigram-I, and Egra-II blocks fall under Quadrant-IV that is related low importance but high performance. These blocks have chance for development in future. It is interesting that, only Deshapran block located at the balanced developed level into graphical chart and it's quite different from others.

Table 16 Block wise level of development based on Importance Performance Analysis (IPA)

Quadrant	**Nature of importance and performance**	**Level of development**	**Blocks**
I- Keep up the good work	High importance High performance	Highly developed	Panskura, Kolaghat,Tamluk Sahid Matangini,Moyna, Bhagwanpur-II, Bhagwanpur-I,
II- Concentrated here	High importance Low performance	Moderate developed	Potashpur-I, Sutahata, Nandigram-II, Khejuri-I, Contai-I, Contai-III, Ramnagar-I, Ramnagar-II
III- Low priority	Low importance Low performance	Least developed	Potashpur-II, Khejuri-II, Haldia, Egra-I
IV- Possible overkill	Low importance High performance	Less developed	Nandakumar Mahishadal, Chandipur, Nandigram-I, Egra-II
Median Location	Balanced importance Balanced performance	Balanced developed	Deshapran

Source: Computed by the author

4. Conclusion

Disparity and variability is quite prominent over this study area that is realized after application of IPA tool. The study divulges that 7 blocks, namely Egra-II, Khejuri-II, Nandakumar, Deshapran, Haldia, Egra-I, Nandigram-I blocks are mostly underdeveloped due to insufficiency of service providers. On the other hand, Panskura, Tamluk, Bhagawanpur-II, Potashpur-I, Contai-III, Khejuri-I and Sutahata blocks are highly developed in terms of social stability and service maintenance. Moreover, this analysis makes a push for development criteria for under developed blocks of Purba Medinipur district. Simultaneously, it should be already identified that those services are quite poor for the scattered blocks. The attainment of Govt service will enhance them for rich development and this analysis be helped for different planners.

Compliance with ethical standards

Disclosure of conflict of interest.

Authors have declared that no competing interests exist.

References

[1] Abalo, J., Varela, J., & Manzano, V. (2007). Importance values for Importance–Performance Analysis: A formula for spreading out values derived from preference rankings. *Journal of Business Research*, *60*(2), 115–121. https://doi.org/10.1016/j.jbusres.2006.10.009

[2] Agarwala, A.K., & Hazarika, P.L. (2002). Regional Disparities in Economic Development of Assam: A District level Study. Indian Journal of Regional Science, Vol.34, No. 2, pp. 121-133.

[3] Angadi, D.P. (2012) Regional Disparities in Agriculture Development, A case study of Bengaum District in Karnataka state, India, Regional Symbiosis Vol.20, pp. 68-86.

[4] Banarjee, B. (1984) Changing Cultural Scenario and economic development of India, Geographical Review of India, Vol. 46, Number 2, June 1984, pp. 516.

[5] Banerjee, Smith (1992) Disparities in development of socio-economic infrastructure in rural areas of selected districts of Uttar Pradesh. Geographical review of India.Vol. 54. March 1992, No. I, pp. 31, Calcutta

[6] Bhatia, V. K. and Rai, S.C (2003-04). Indian Society of Agricultural Statistics IASRI Campus, Library Avenue, Pusa New Delhi - 110 012 (2003 – 2004)

[7] Chandna, R. C. and Sidhu M.S. (1980) Introduction to Population Geography, New Delhi.

[8] Ch, B. (2013). Role of socio-economic factors on imbalanced regional development in West Bengal, India. Journal of Geography and Regional Planning, 6(1), 10–18. https://doi.org/10.5897/jgrp12.003

[9] Das, A. (1999). Socio-Economic Development in India: A Regional Analysis. Development and Society, Vol.28, No.2, pp. 313-345.

[10] District Census Handbook, Purba Medinipur, 2011

[11] District Statistical Handbook, Purba Medinipur, 2011

[12] Feng, M., Mangan, J., Wong, C., Xu, M., & Lalwani, C. (2014). Investigating the different approaches toimportance–performance analysis. The Service Industries Journal, 34(12), 1021-1041.

[13] Gondek, A. (2016). Economic development and the absence of social inequalities – about combining the necessary with the impossible. Scientific Papers of the Polish Economic Society in Zielona Gora, No. 4, pp. 80-92. Available at: http://ptezg.pl/Files/files/zn4/gondek.pdf.

[14] Hoque, J., Najmul, S., Hashmi, I., & Scholar, R. (2023). Regional Variation in the Level of Socio-Economic Development in Uttar Dinajpur District, West Bengal. In *International Journal of Research Publication and Reviews Journal homepage: www.ijrpr.com* (Vol. 4). www.ijrpr.com

[15] Karmakar, S., Barman, B., & Roy, R. (2019). Block-Wise Disparities in Socio-Economic Condition of Koch Bihar District, West Bengal. *Journal of Global Resources*, *06*(01), 122–128. https://doi.org/10.46587/jgr.2019.v06i01.019

[16] Kamerschen, D.R., McKenzie, R.B., Nardinelli, C. (1991). Economics. Gdansk: Economic Foundation of NSZZ "Solidarity".

[17] Krajewski, W. (1977). The concept of development and progress. In: J. Kmita (ed.), Theoretical assumptions of research on historical development (pp. 12-45). Warsaw: PWN.

[18] Martilla, J. A., & James, J. C. (1977). Importance-performance analysis. The journal of marketing, 77-79.

[19] Minocha A.C (1983). Regional disparities in India: some basic issues. Social Scientist, 11(5), 51-57.

[20] Rao, Hemlata. (1984). Regional Disparities and Development in India. Ashish Publishing House, New Delhi, p. 01.

[21] Ray, M., & Rahaman, M. (2017). Disparity of socio-economic development in Cooch Behar district, West Bengal, India: A CD block level appraisal. Indian Journal Of spatial Science, 8(2), 45-51

[22] Siddiqui, S. (2012). Regional analysis of socio-economic development in Uttar Pradesh. African Jour. of Social Science. 2: 120-130.