Chapter 11
An Assessment of Intra-Regional Infrastructural Inequality of Ranibandh Block, Bankura, West Bengal, India

Pranabpati Karmakar, Sourav Kastha, Priyam Sarkar, and Megha Chakraborty

Abstract The present chapter has tried to examine the inequalities prevalent in different socioeconomic infrastructures of regional development. In other words, regional disparities in infrastructural distribution in Ranibandh CD block of Bankura, West Bengal, have been investigated through some statistical tools. In execution of the key objective, access to education, medical, and transport communication has been taken into consideration. Moreover, some basic but indispensable services such as ATM, public distribution system (PDS), regular market, weekly haat, and electricity are also examined in this backdrop. A diversified outcome that supports the existence of regional maldistribution of public infrastructures has been revealed from the discussion. It is for sure that the extensive study consisting of statistical results carried out in the present chapter will certainly help the researchers as well as policy formulators in future.

Keywords Intra-regional · Infrastructural inequality · Location quotient · Population density zone · Bankura

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11.1 Introduction

Global inequality has been augmented owing to numerous factors. The inequality prevails far and wide in terms of physical and socioeconomic forms in our daily lives and livelihoods and in the social order. Intra-regional and inter-regional inequality of social and economic infrastructures has a crucial role towards the regional diversification. Human beings have often expressed a casual attitude to their surrounding social and economic infrastructures such as mass education, basic healthcare, social security and so on (Keeley 2015). Inequality may be capable of differentiating the developed and underdeveloped regions. These days, intensifying inequality is certainly a shifting state of affairs and people have to take the role of self-savior for their existence and survival (Keeley 2015). Infrastructural advancement is the foundation for the progress of any country. Availability of adequate infrastructural facilities is an important requirement for sustainable economic development (Patra 2011). Infrastructure usually refers to the built environment that includes building, transport, electricity, gas, water, and sanitation. Infrastructure is a wide-ranging expression that denotes "the basic structure, the framework, the system supports the operation of an organization (e.g. the power and water supplies, the transport and communication facilities, the educational amenities), which makes economic development possible, the basic capital investment of a country or district" (Clark 2004). On the other hand, inequality indicates the disparity in opportunities or outcomes between people and groups of people. Inequality refers to the phenomenon of unequal and unjust distribution of resources and opportunities among the members of a given society (International Encyclopedia of Human Geography, second edition 2020).

A lot of research work around the world has been conducted so far on regional inequality in different sectors. The demographic and health surveys could be implicated in examining the influence of inequality on the extensive socioeconomic outcomes, such as healthcare provision, health outcomes, and fertility choice (McKenzie 2005). As per Calderon (2014), infrastructural development positively impacts the poorer households primarily by improving their access to affordable services. Hidayat et al. (2020) also attempted a study describing the evidence that energy infrastructure can reduce inequality in Indonesia. Moreover, the responsible local bodies should formulate the trajectory of some steady policies of development emphasizing the electricity infrastructure especially in rural areas and the areas that are standalone so far. In India, the south Indian state Kerala has been encountered by the massive health inequalities, restrictions in public arenas, undemocratic systems in health sectors in respect of several social indicators such as caste, class, gender, ethnic views, and patriarchy (Thresia 2017). Ali and Chauhan (2020) have revealed that the sickness of maternal healthcare has been greatly improved among several social groups in rural India (as per National Family Health Survey, 2005–2015). Bhatia et al. (2018) have shown the trends of inequality concerning the infant and child mortality from 1992 to 2016 in Indian states which reduced remarkably in the last few decades. An increasing inter-district disparity has been

experienced from 1990 to 2005, and the physical infrastructures have played a dominant role in income distribution among the districts of West Bengal (Raychaudhuri and Halder 2009). Moreover, an inter-block disparity with reference to literacy (2011) in western part of Bengal has shown that the block of Paschim Medinipur has aggregately achieved a remarkable place in the said category (Mandal 2018). Maji and Sarkar (2021) attempted to study the inter-district disparity in Bankura, West Bengal, and concluded that the eastern part of the district is in better situation compared to the western counterpart affected by physical barriers and economic backwardness. Banu and Rawal (2015) have adopted a descriptive approach to show the educational disparity across the districts of West Bengal and concluded that the southern region has experienced the higher level of educational paybacks in comparison to the rest of Bengal. Another study done in Mejhia CD block of Bankura reveals that educational attainment of women is associated positively with overall progress of the society and economy (Sarkar and Mistry 2016). Hence, there is a huge scope of study on several facets of regional disparities. Unfortunately, nothing methodical as well as remarkable has been conducted so far on intra-regional infrastructural inequality in Ranibandh block of Bankura, West Bengal. Therefore, an utmost concern is required in that backdrop aforesaid, and there is an extreme need of carrying out some relevant scientific studies as a lion's share of population of the block belongs to ST (47.07%) and SC (11.45%) population as per the Census of India (2011), and almost half of the population (49.75%) comes below the poverty line (District Human Development Report 2007, Bankura). The key objective of the present chapter is to find out the inequalities in the different infrastructures as well as socioeconomic amenities in village level, based on the population density zones and their regional distributions.

11.2 Study Area

Ranibandh CD block is located in the southwestern part of Bankura district of West Bengal surrounded by Raipur CD block in the east; Khatra and Hirbandh CD blocks in the north; Manbazar-I, Manbazar- II, and Bandwan CD blocks of Purulia district in the west; and Binpur-II CD block of Jhargram district in the south. The geographical extension of the Ranibandh CD block is $86^0 38'30"$ E to $86^0 52'30"$ E and $22^0 45'30"$ N to $23^0 03'00"$ N. There are three subdivisions in Bankura district, which are Bankura Sadar, Khatra, and Bishnupur. Ranibandh CD block is situated in the Khatra subdivision (Fig. 11.1).

A general overview on Ranibandh CD block is tabulated below (Table 11.1):

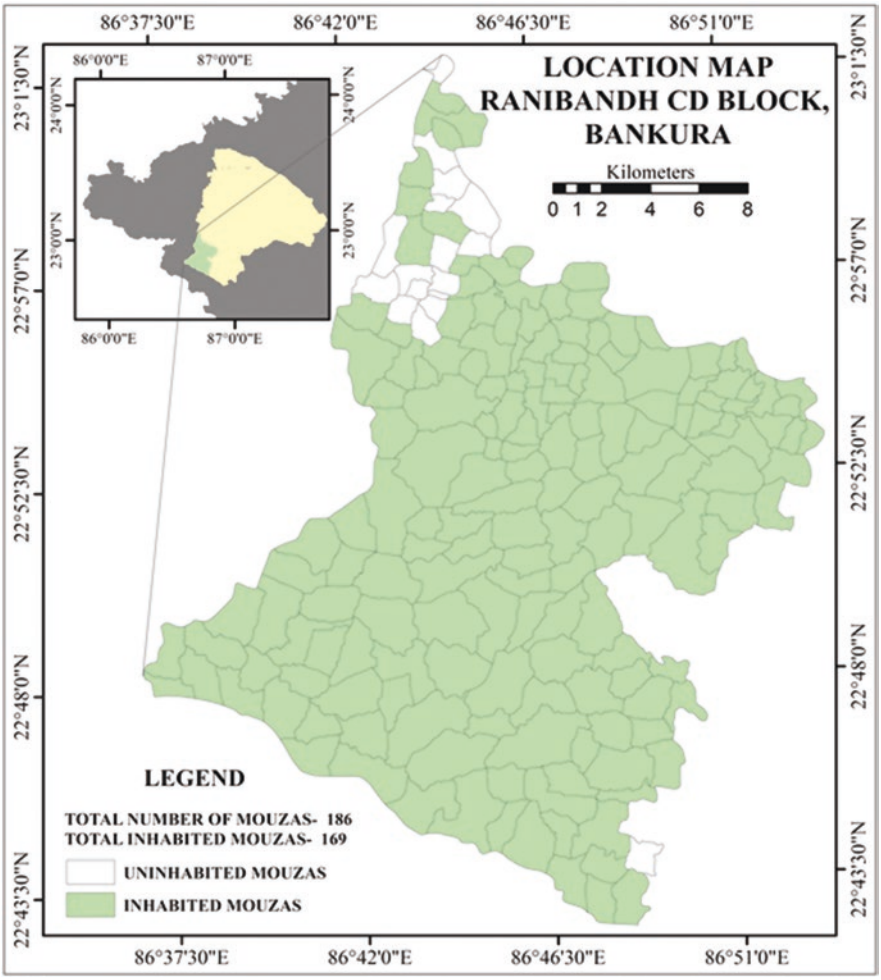

Fig. 11.1 Location map of Ranibandh CD block (computed by authors, 2021)

Table 11.1 A general overview on Ranibandh block, Bankura

Total population[a]	119,089
Total area[b]	427sq km
Population density[c]	280 persons/sq km
Literacy rate[d]	68.53%
SC population[e]	11.45%
ST population[f]	47.07%
Households living below poverty line (BPL)[g]	49.75%

Source: [a, c, d, e, f]: Census of India 2011; [b]: bankura.gov.in; [f]: District Human Development Report (2007), Bankura

Table 11.2 Selected infrastructures for inequality assessment

Infrastructure	Amenities
1. Educational infrastructure	1. Primary school 2. Secondary school 3. Senior secondary school (SSS) 4. Degree college 5. Special school
2. Medical infrastructure	1. Community health center (CHC) 2. Primary health center (PHC) 3. Hospital 4. Dispensary 5. Family welfare center (FWC) 6. MBBS doctors 7. Medicine shop
3. Communication and transport infrastructure	1. Post office 2. Internet café 3. Bus service 4. Railway station 5. Pucca road 6. Kaccha road 7. Mobile coverage
4. Other infrastructure	1. ATM 2. Public distribution system (PDS) 3. Regular market 4. Weekly haat 5. Electricity

Source: Primary Census Abstract 2011, Bankura.

11.3 Materials and Methods

11.3.1 Indicators

This chapter has discussed the inequality in terms of different infrastructures at a regional level of inequality. More or less four different infrastructures are selected in the village level study for inequality assessment. Based on the population density zones, basic socioeconomic amenities have been identified and taken into consideration as well as for measuring the inequality. The following amenities of different infrastructures have been examined based on the mean values of population density zones (Table 11.2).

Information on selected socioeconomic amenities from 169 inhabited villages has been collected and tabulated separately. "Availability of amenities" is assigned by the code "1," which is equivalent to "yes." On the other side, the non-availability of amenities within the villages are represented by different distance range codes viz., "a" for <5 km, "b" for 5–10 km, and "c" for >10 km of the nearest place where the facility is available in Ranibandh CD block. Information obtained from the census is converted to the weightage values as per the requirement of the study. The availability of different amenities found as "a," "b," and "c" has been converted as weightage values of 0.5, 0.25, and 0.125, respectively.

11.3.2 Database

Village-wise population data and different types of socioeconomic amenities data have been used for the measurement of inequalities. All data have been collected from the Census of India (2011). From 169 inhabited villages, several selected amenities data have been obtained and tabulated by one.

11.3.3 Methodologies

Population density: As per the Census of India in 2011, among 186 villages of Ranibandh CD block, 169 villages are inhabited. Hence, those 169 villages have been selected for the study. Population density is noted as the measurement of the number of people living per unit area.

To measure the population density of Ranibandh CD block, the following formula has been used:

$$\text{Population density}: \frac{P}{A}$$

where P is the total population, A is the area per square kilometer.

For classification of the population density, mean (M) and standard deviation (SD) of the population have been used, and five classes have been created as per the Likert scale, i.e., very low, low, moderate, high, and very high. The population densities of villages, lying below mean or average, are recognized as low and very low density zones. On the other hand, the population densities of villages lying above mean or average are considered as moderate, high, and very high density zones.

Location quotient (LQ): To fulfill the key objective, the inequality has been pointed out based on location quotient (LQ) which is also used as regional level inequality assessment in a general point of view. LQ has been measured based on the mean value of particular amenities in individual density zones concerning the total mean value of the block in particular amenities.

$$\text{Location Quotient}\left(\text{LQ}\right): \frac{\text{TM} / \sum \text{TM}}{\text{AM} / \sum \text{AM}}$$

where TM is the total mean of an individual density zone, $\sum$TM is the total mean of the block, AM is the particular amenities mean of an individual density zone, $\sum$AM is the total particular amenities mean of the block.

11.4 Results and Discussion

The results of intra-regional infrastructural inequality in village level based on five population density zones has been analyzed and discussed.

11.4.1 Population Density Zones

The population density of 169 inhabited villages has been computed at the outset. Ambikanagar, Ranibandh, and Nutandihi are revealing very high population density (820 persons per sq. km.). The high population density (576–820 persons per sq. km.) has been found in 17 villages. Mukundapur, Jaynagar, Barkola, Maheshpur, Deuli, Chirkun Kanali, Tamakhun, Dhagra, Puaada, and Kamardanga are some of them, situated in the northern and northeastern part of Ranibandh block. The moderate density zone (332–576 persons per sq. km.) includes northern and eastern parts and some villages in western parts of the study area which is being prevailed in 52 villages, e.g., Kamarkuli, Barda, Hatikheda, Dulalpur, Nischintapur, etc. Low density zones consisted of sparsely distributed populations throughout the Ranibandh block, ranging from 88 to 332 persons per sq. km. in 82 villages, e.g., Kusum Khundi, Banpukhuria, Pareshnath, Gholkuni, Ramdungri, Rajsol, etc. Very low population density zones are being seen in 15 villages, e.g., Gopalpur, Barunia, Gosaindihi, Kajalkura, etc., which indicates less than 88 persons per sq. km. found centrally in the study area (Fig. 11.2).

11.4.2 Educational Infrastructure

Appropriate learning environments are part of the educational infrastructure. This is one of the most basic requirements for ensuring the educational access. This kind of social infrastructure includes the access towards the academic institutions. In this regard, the location quotients (LQ) have been calculated and presented through Table 11.3. The highest LQ values of primary school, secondary school, senior secondary school, degree college, and special school are 1.040, 1.335, 2.098, 1.472, and 1.324, respectively, whereas the lowest LQ values of primary school, secondary school, senior secondary school, degree college, and special school are 0.939, 0.820, 0.748, 0.695, and 0.795, correspondingly. Inequality ranges from moderate to high are being observed particularly in secondary school, senior secondary school, degree college, and special school (e.g., 5.15, 1.350, 0.777, and 0.529) (Table 11.3).

The inequality in the primary schools are somewhat unequal in the moderate and high population density zones and less in the low and very high population density zones of Ranibandh block. In secondary school, moderate inequality is being found in low and very high population density zones, whereas the rest comes under the

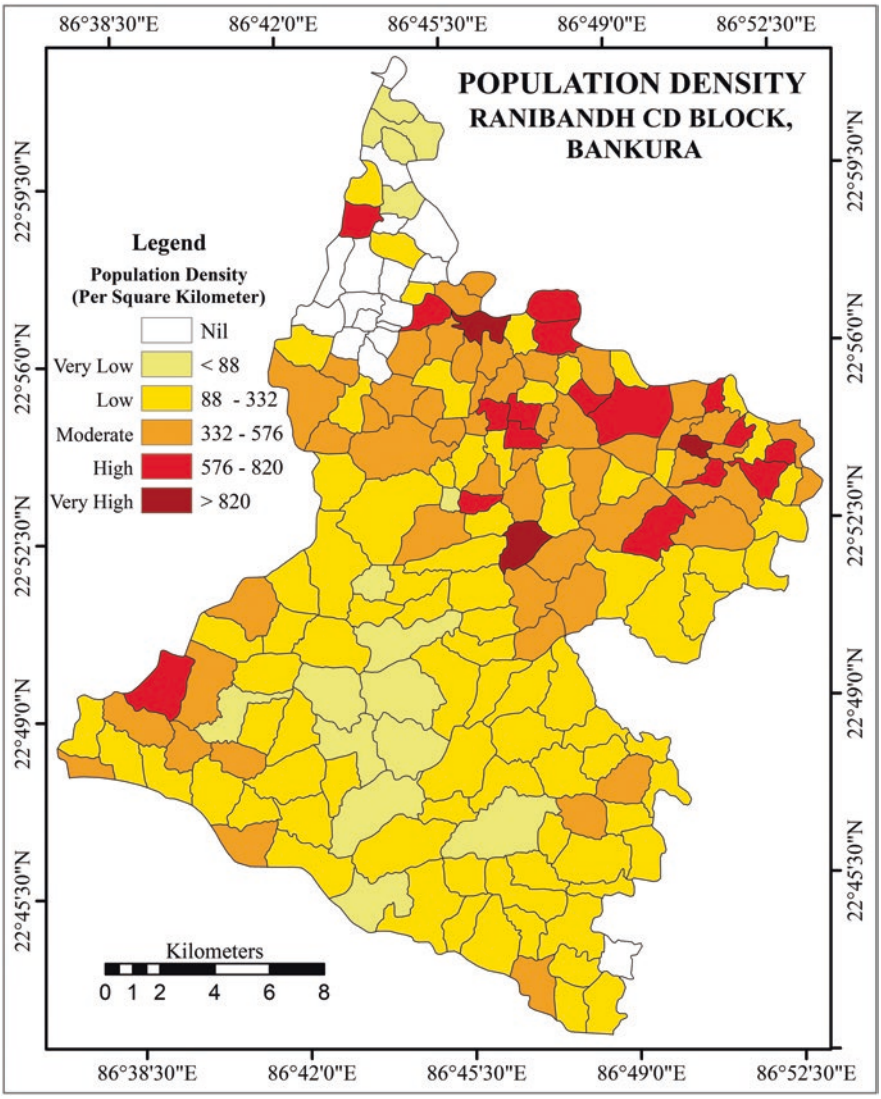

Fig. 11.2 Population density map of Ranibandh CD block

category of low inequality. In the case of senior secondary school, high inequality is found in very low population density zones and moderate inequality in high and low population density zones. On the other side, the rest of the villages lie in the low inequality group, which is found mostly in the northern part of the concerned study area. Moderate inequality is found in high and very high population density zones in the case of special school and degree college. On the contrary, low inequality for special school and degree college are found in low, very low, and moderate population density zones (Figs. 11.3, 11.4, 11.5, 11.6, 11.7, 11.8, 11.9, 11.10, 11.11).

Table 11.3 Mean and location quotient for educational infrastructure

Education infrastructure											
	Mean						Location quotient				
Total mean (TM)	Primary school	Secondary school	Senior secondary school	Degree college	Special school	(TM/∑TM)	Primary school	Secondary school	Senior secondary school	Degree college	Special school
3.58	2.00	0.50	0.83	0.125	0.125	0.315	0.966	1.335	0.748	1.472	1.324
2.37	1.23	0.54	0.37	0.110	0.110	0.209	1.040	0.820	1.112	1.112	0.995
2.29	1.15	0.48	0.40	0.140	0.120	0.202	1.074	0.894	0.995	0.845	0.882
1.90	1.05	0.35	0.27	0.120	0.110	0.167	0.977	1.012	1.219	0.815	0.795
1.21	0.70	0.25	0.10	0.090	0.060	0.107	0.939	0.907	2.098	0.695	0.938
∑11.35	6.13	2.12	1.97	0.585	0.525						

11.4.3 Medical Infrastructure

Infrastructure in the healthcare system boosts effectiveness, safety, timeliness, patient-centeredness, accessibility, and efficiency. Poor healthcare infrastructure restricts access and contributes to poor care and outcomes, especially among the most vulnerable communities. Inequality and LQ value are proportional to each other. Medical services are indispensable in human lives and livelihoods. It has been observed that community health center (2.023), primary health center (1.848), hospital (4.565), dispensary (1.759), family welfare center (1.116), MBBS doctor (6.333), and medicine shop (0.642) consist of higher inequality values in different population density zones. From the inequality assessment, it has been found that access to the community health center and primary health center are highly unequal in very high density population zones, and low inequality is found in 166 villages in Ranibandh block. In the case of hospitals and dispensaries, maximum inequality lies in least populated regions, located in eastern, western and southeastern parts of the study area. Low inequality has also been found in the northern and central parts of the Ranibandh block. The indicator dispensary is also undergoing through the inequality ranging from low to moderate. Moderate inequality was found particularly in three villages, whereas the rest had low variation. Family welfare centers have been encountered with moderate inequality in high and low population density zones which are observed in central and northern parts of the study area. The high inequality concerning the MBBS doctor has been found in moderate and low population density regions covering most of the areas of Ranibandh block. On the contrary, low inequality of occurrence of MBBS doctors has been found in only three villages. Moreover, low inequality as regards the medicine shops is being noticed in 55 villages (Table 11.4, Figs. 11.12, 11.13, 11.14).

11.4.4 Communication and Transport Infrastructure

As they support both internal and external trade, transportation and communication play a crucial role in a region's economic development. Communication and transportation networks contribute to the effective utilization of resources, the mobility of skilled labor, market diversification, fuel supply, and increased agricultural as well as industrial output. Communication plays a crucial role to develop a region. In the present study, some village-wise infrastructures have been chosen. The maximum values of location quotient are being observed in the case of post office, internet cafe, bus service, railway station, kaccha and pucca road, and mobile coverage (i.e., 1.435, 1.278, 1.353, 1.226, 1.220, 1.119, and 1.066, respectively). Inequality ranges from low to very low in different amenities that have prevailed in these rural areas. The low inequality in the case of post offices has been seen in 84 villages of northern and southern parts of the study area. Moderate inequality is found in very

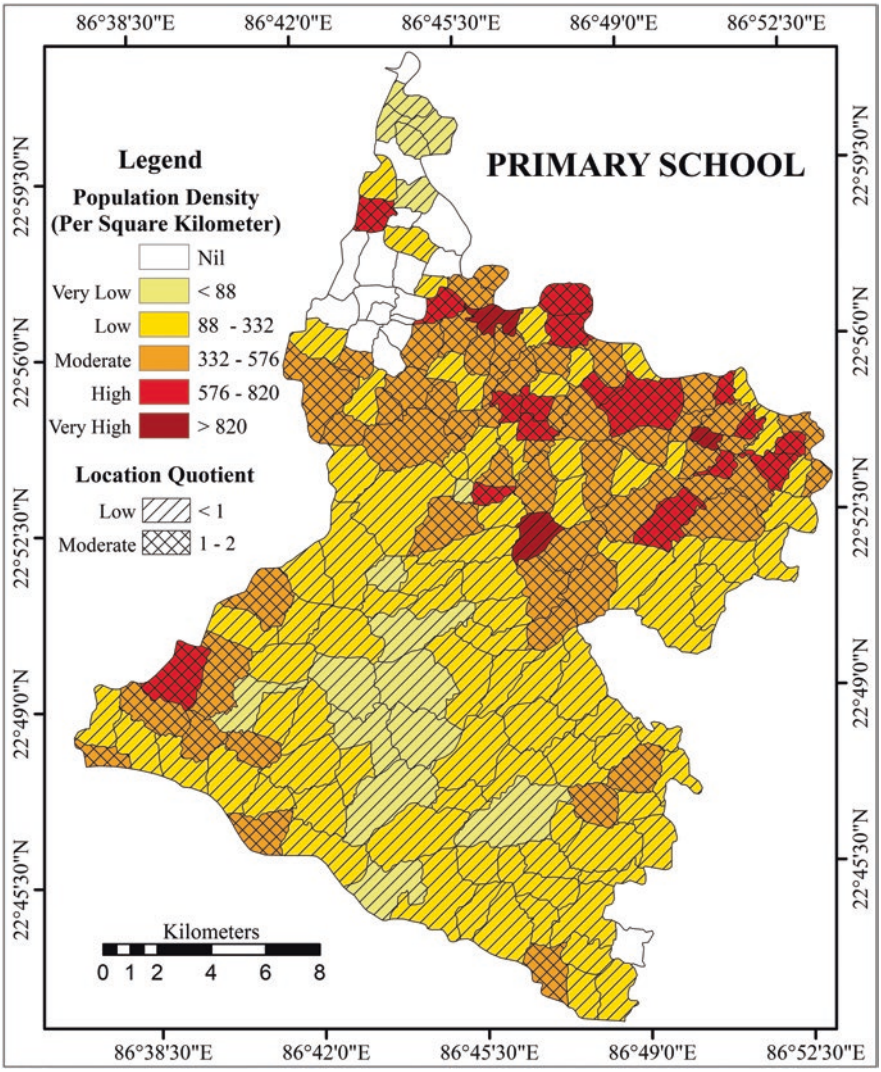

Fig. 11.3 Density zone wise inequality of Primary School

high and low population density zones that include 85 villages. Internet cafes also have a low inequality in 3 villages, whereas 166 are showing moderate inequalities. Bus services also reveals low inequality in high and moderate density zones (55 villages), sited in the northeastern and western parts of Ranibandh block, and 114 villages are revealing moderate inequality. Considering the railway stations, 55 villages have moderate and 114 have low inequalities. Low inequality in pucca road is observed in very high and high density zones (20 villages) of northeastern parts of the area, and moderate inequality has been found in 149 villages. Kachha road and

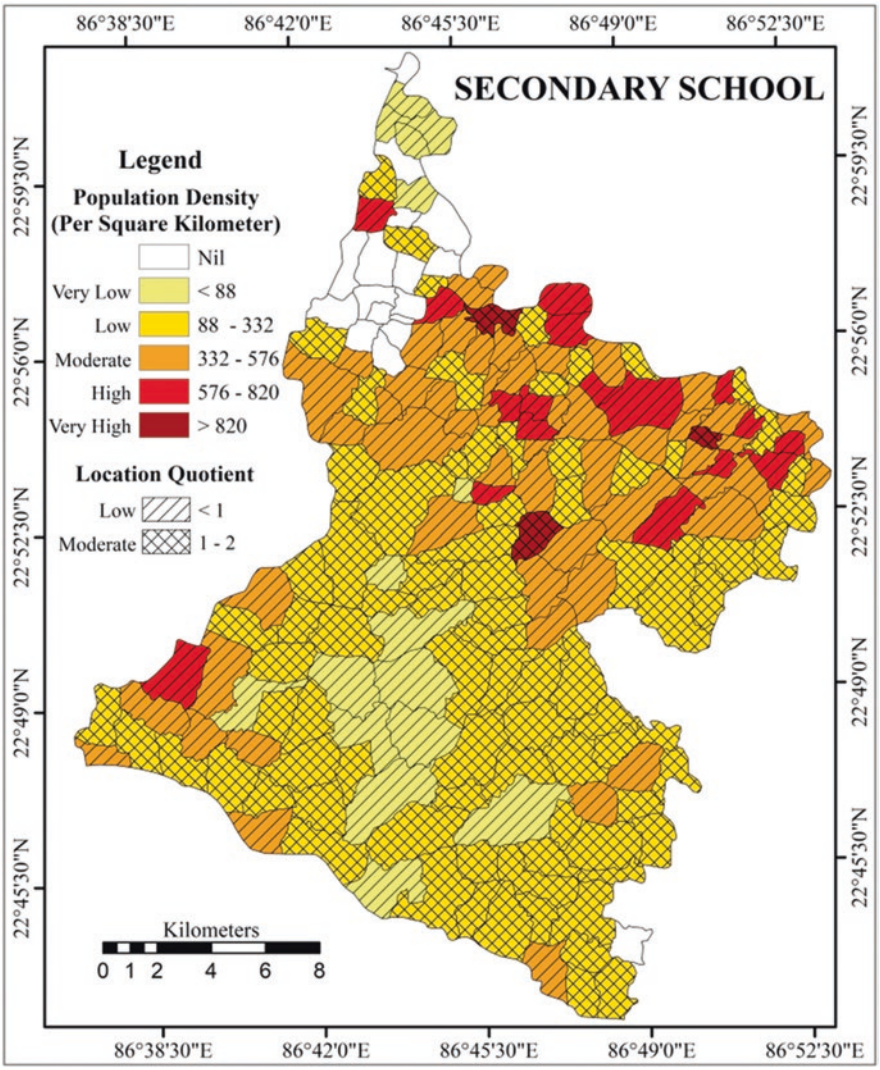

Fig. 11.4 Density zone wise inequality of ATM service

mobile coverage amenities have moderate inequality (72 villages) in very high, high, and moderate density zones of northern and southwestern parts of Ranibandh block. Low inequality (97 villages) in kachha road and mobile coverage has been found in low and very low population density areas (Table 11.5, Figs. 11.15, 11.16, 11.17, 11.18, 11.19, 11.20, 11.21).

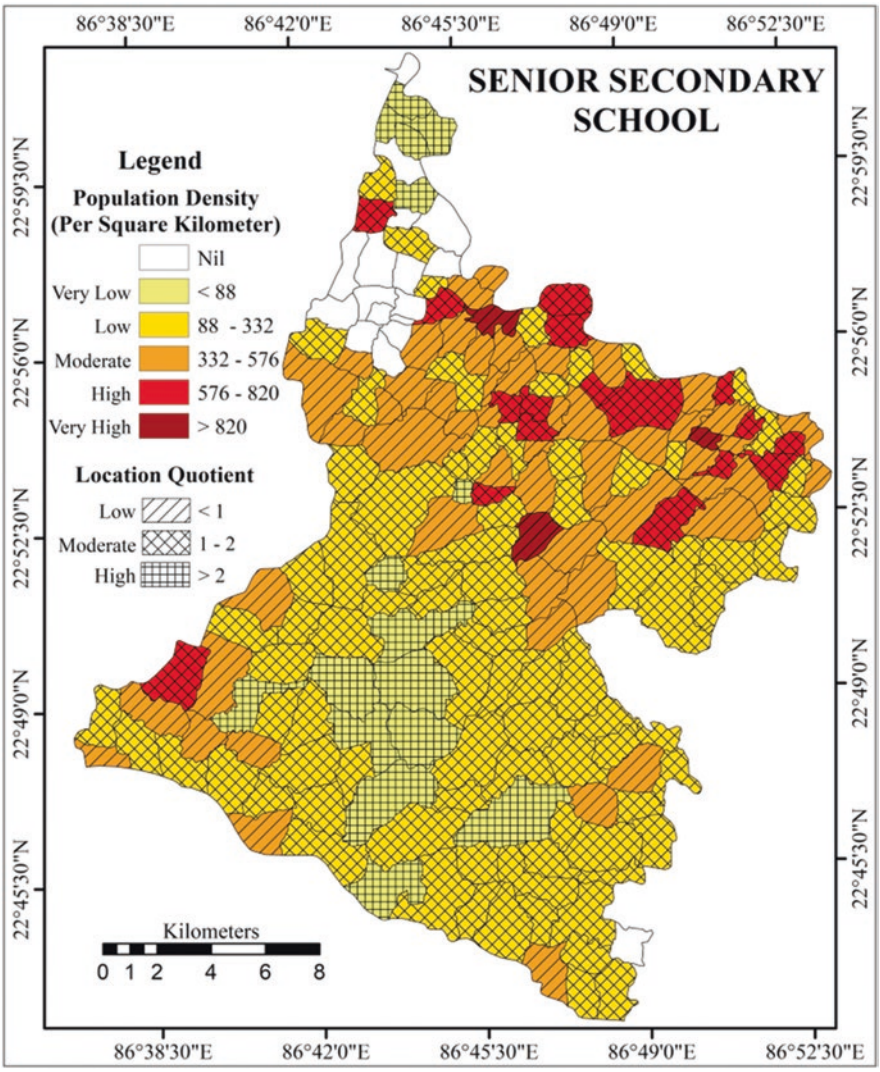

Fig. 11.5 Density zone wise inequality of Senior Secondary School

11.4.5 Other Infrastructures

There are some indispensable infrastructures which aid the local market, economic transaction, and other important facility utilities in a region. From the above calculation of location quotient (LQ) on other infrastructures, higher LQ values are seen in ATM, public distribution system, regular market, weekly haat, and electricity, i.e., 1.641, 1.537, 2.223, 1.394, and 1.567, respectively, whereas the lowest LQ values of ATM, public distribution system, regular market, weekly haat, and electricity are

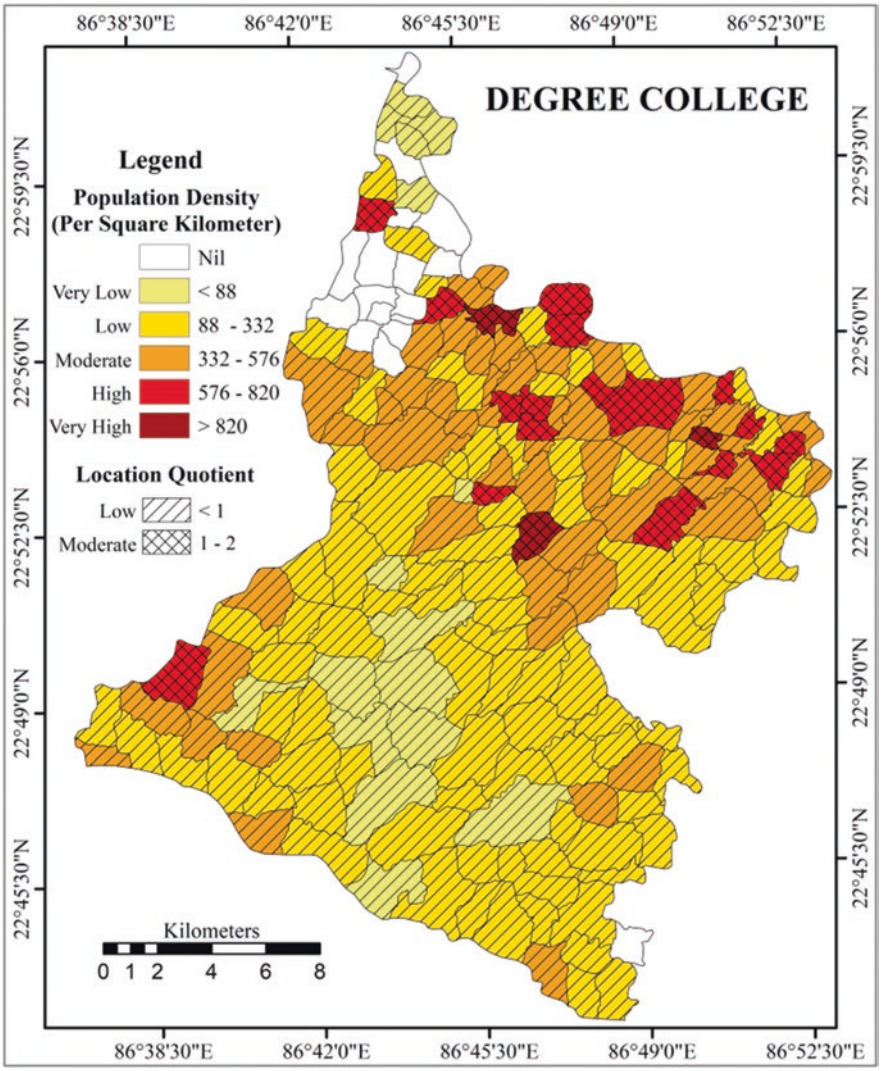

Fig. 11.6 Density zone wise inequality of Degree College

0.633, 0.738, 0.583, 0.669, and 0.532, correspondingly. In addition, ATM facility is moderately unequal in high and very high population density zones in Ranibandh block. Low inequality of ATM facility has been found in the rest of the three population density zones (low, very low, and moderate) (Figs. 11.22, 11.23, 11.24, 11.25, 11.26).

Public distribution system and facility of electricity are moderately unequal in moderate, high, and very high population density zones consisting of 72 villages. The low inequality of public distribution systems and electricity has been observed

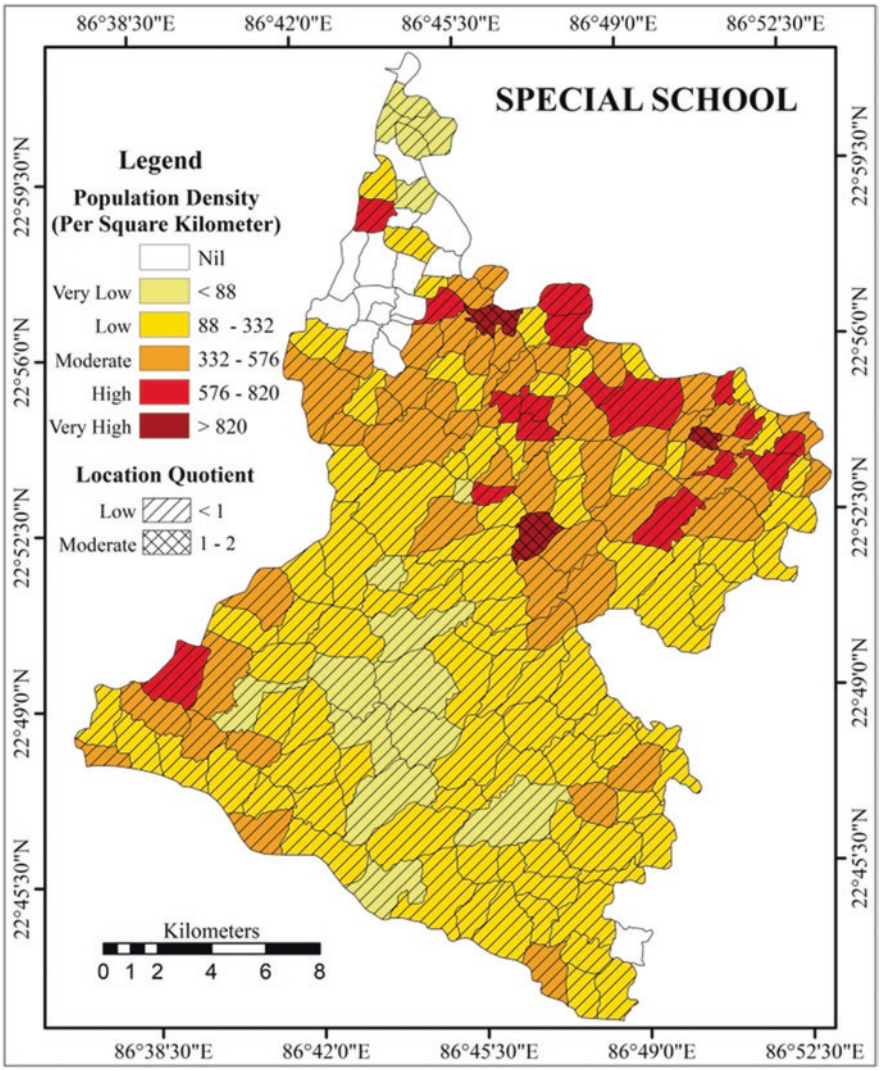

Fig. 11.7 Density zone wise inequality of Special School

in low and very low density zones. High inequality is found in high population density zone in the case of the regular market. Moderate inequality of regular market is observed in low, very low, and moderate population density zones which secured most of the parts of Ranibandh block. On the other hand, low inequality of regular market is present in a very high population density zone which consists of three villages. Considering the weekly haat, the medium inequality is found in moderate and very high population density zones which occupy 55 villages. On the contrary, very less inequality is found in low, very low, and high population density zones (Table 11.6.

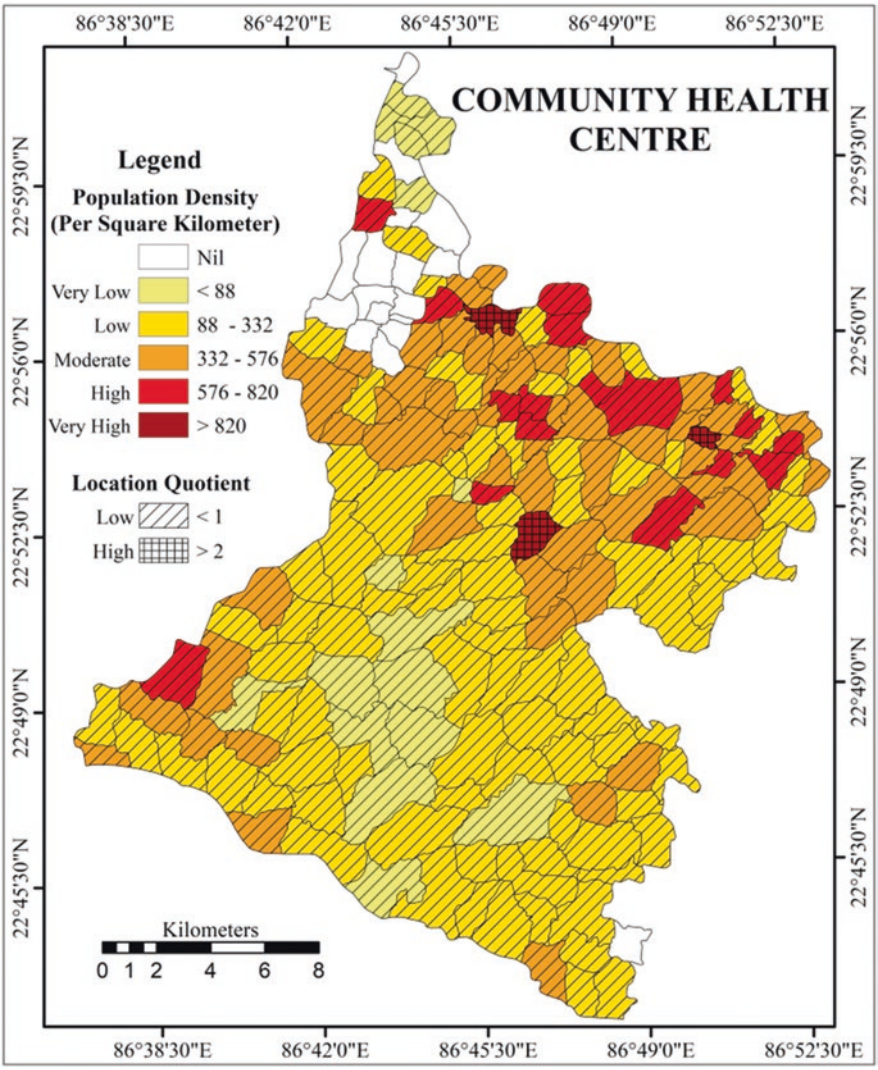

Fig. 11.8 Density zone wise inequality of Community Health Centre

11.5 Limitation of the Study

This study has been carried out for the assessment of intra-regional inequality in different socio economic infrastructures. There are several methods to measure the inequality, e.g., Gini coefficient, Atkinson index, Sopher index, etc. In this chapter, only the location quotient has been used for calculating all the infrastructural inequalities due to its worldwide utilization and acceptance. Moreover, the present study is entirely based on the secondary data obtained from the Census of India in

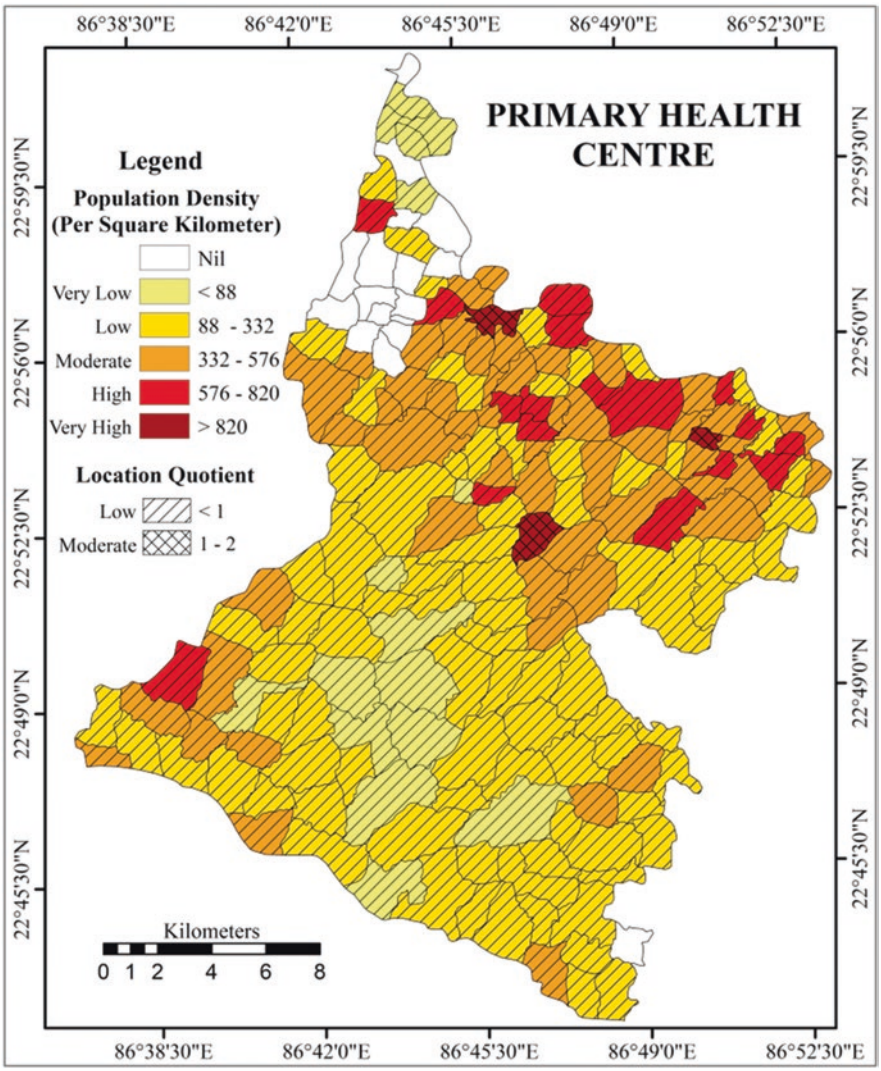

Fig. 11.9 Density zone wise inequality of Primary Health Centre

2011, but it could be validated by some field-based primary sources also. Standing on the current decade, the database is almost 10 years old and that may be another shortfall of this study (Table 11.7).

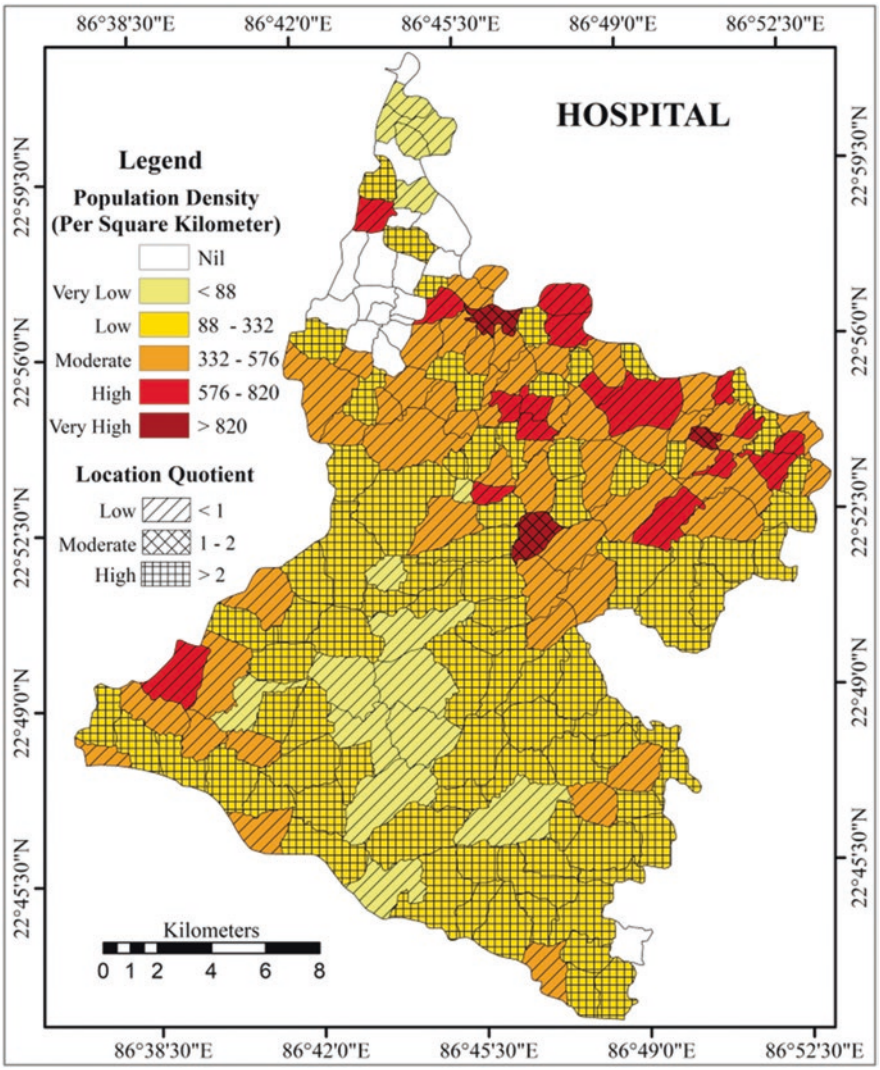

Fig. 11.10 Density zone wise inequality of Hospital

11.6 Conclusions

Backwardness is a cross concept that is based on someone's perception. It varies in terms of time, space, and nature. It also refers to both spatial and structural differences. In this regard, this chapter concluded with the following outcomes of intra-regional infrastructural inequality distribution at the village level. More or less educational infrastructure has well developed in primary education among 169 villages. Although secondary school, senior secondary school, degree college, and

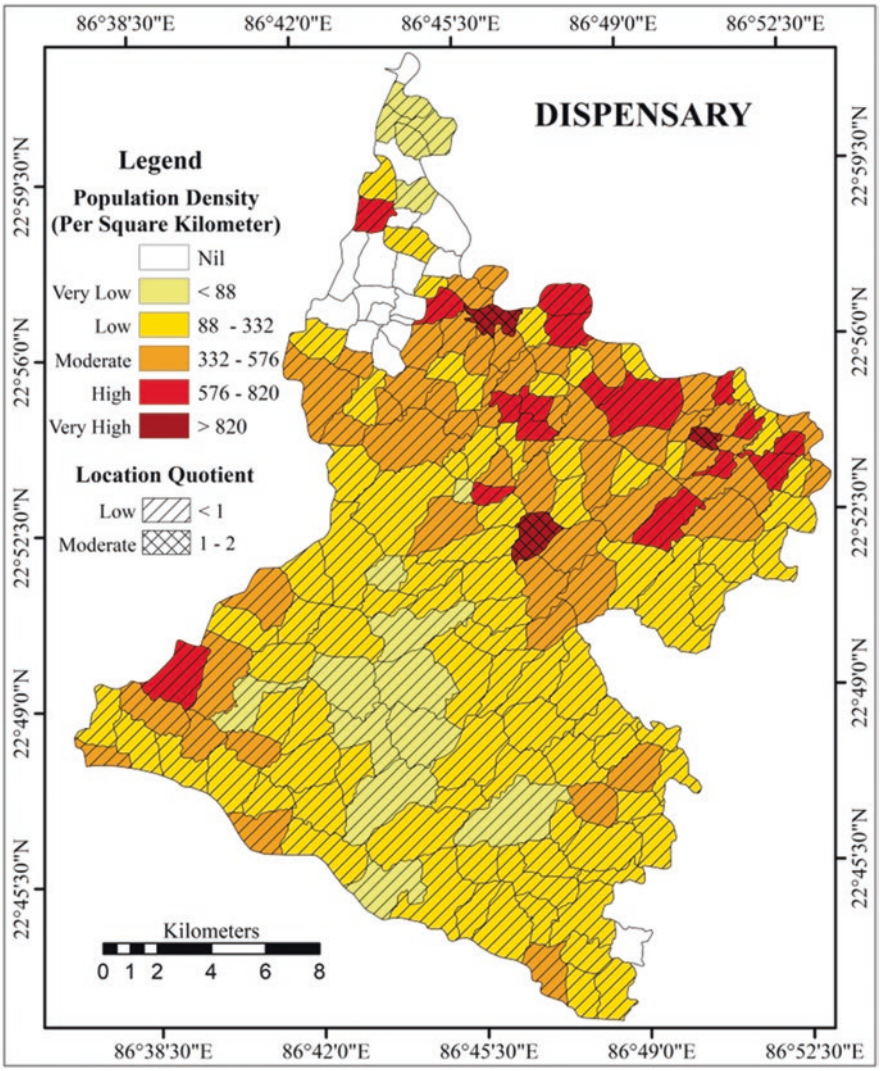

Fig. 11.11 Density zone wise inequality of Dispensary

special school are facing sharp inequalities compared to the primary schools, these educational amenities have to be increased more in the villages in Ranibandh block. Availability of hospitals and doctors are very low and inequality is very high in the maximum villages. Transport and communication facility are more or less in better position than educational, medical, and other infrastructure in the concerned area. The regular market is experiencing high inequality. It can be minimized if more infrastructural development takes place. In Ranibandh CD block, senior secondary school, community health center, primary health center, hospital, dispensary, MBBS

Table 11.4 Mean and location quotient for medical infrastructure

Medical infrastructure															
	Mean								Location quotient						
Total mean (TM)	Community health center	Primary health center	Hospital	Dispensary	Family welfare center	MBBS doctor	Medicine shop	(TM/∑TM)	Community health center	Primary health center	Hospital	Dispensary	Family welfare center	MBBS doctor	Medicine shop
3.793	0.167	0.375	0.375	0.333	0.542	0.667	0.667	0.510	2.023	1.848	1.181	1.759	1.116	0.533	0.642
0.845	0.118	0.279	0.132	0.176	0.140	0	0	0.114	0.640	0.556	0.75	0.745	0.966	0	0
1.271	0.132	0.305	0.149	0.262	0.231	0.019	0.173	0.171	0.859	0.763	0.994	0.750	0.877	6.333	0.206
0.782	0.154	0.227	0.020	0.203	0.166	0.012	0	0.105	0.453	0.629	4.565	0.593	0.750	6.176	0
0.742	0.092	0.175	0.192	0.175	0.108	0	0	0.100	0.719	0.775	0.452	0.658	1.099	0	0
∑7.433	0.663	1.361	0.868	1.149	1.187	0.698	0.840								

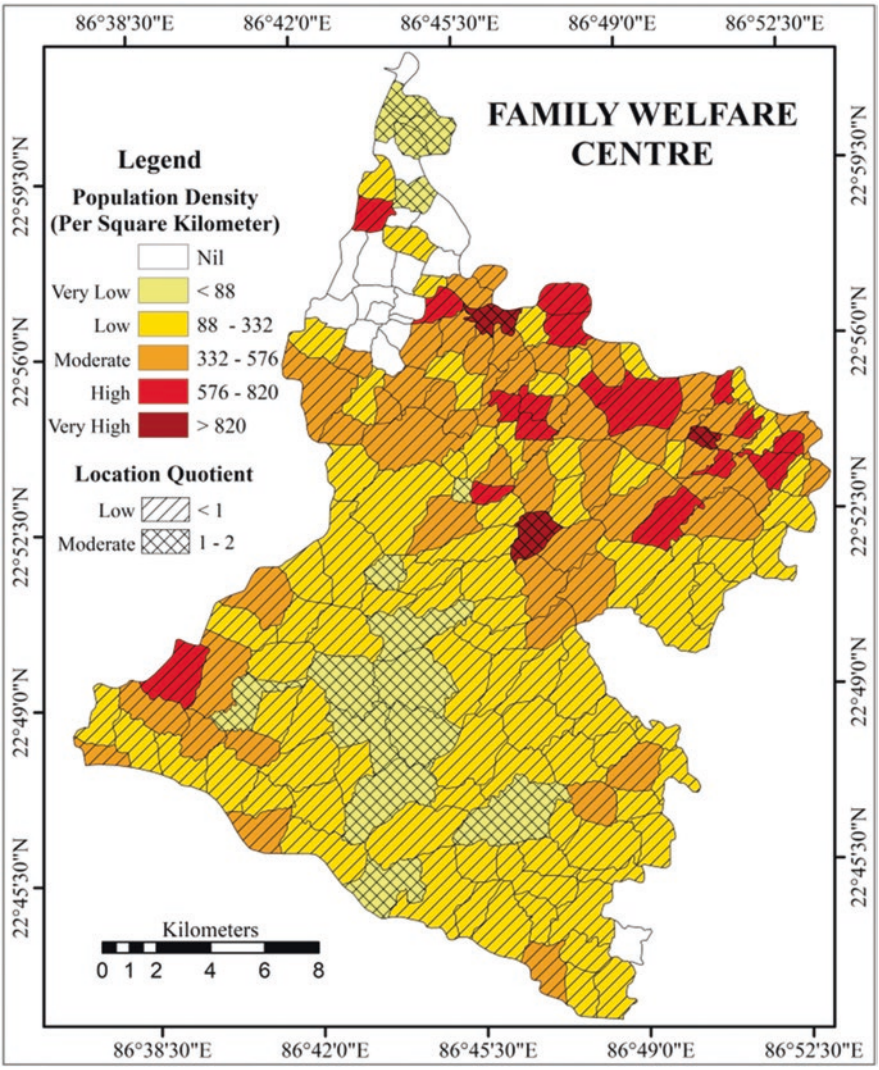

Fig. 11.12 Density zone wise inequality of Family Welfare Centre

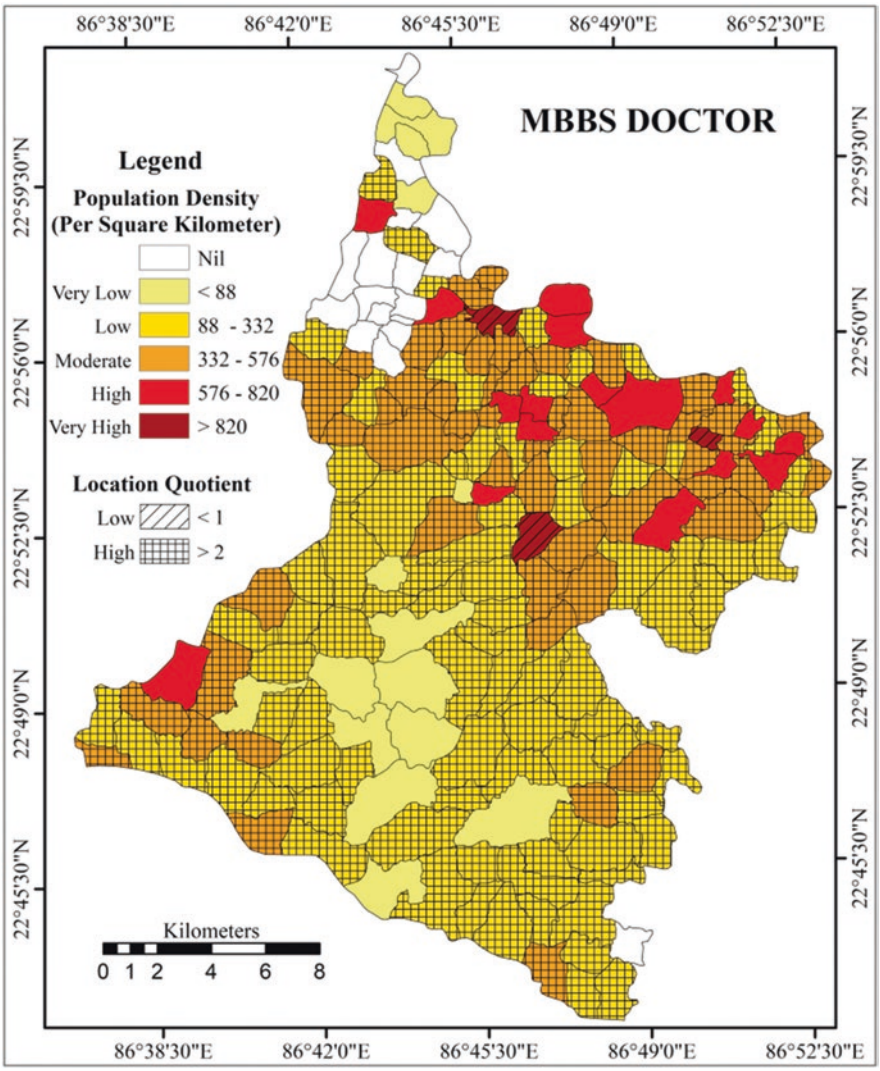

Fig. 11.13 Density zone wise inequality of MBBS Doctor

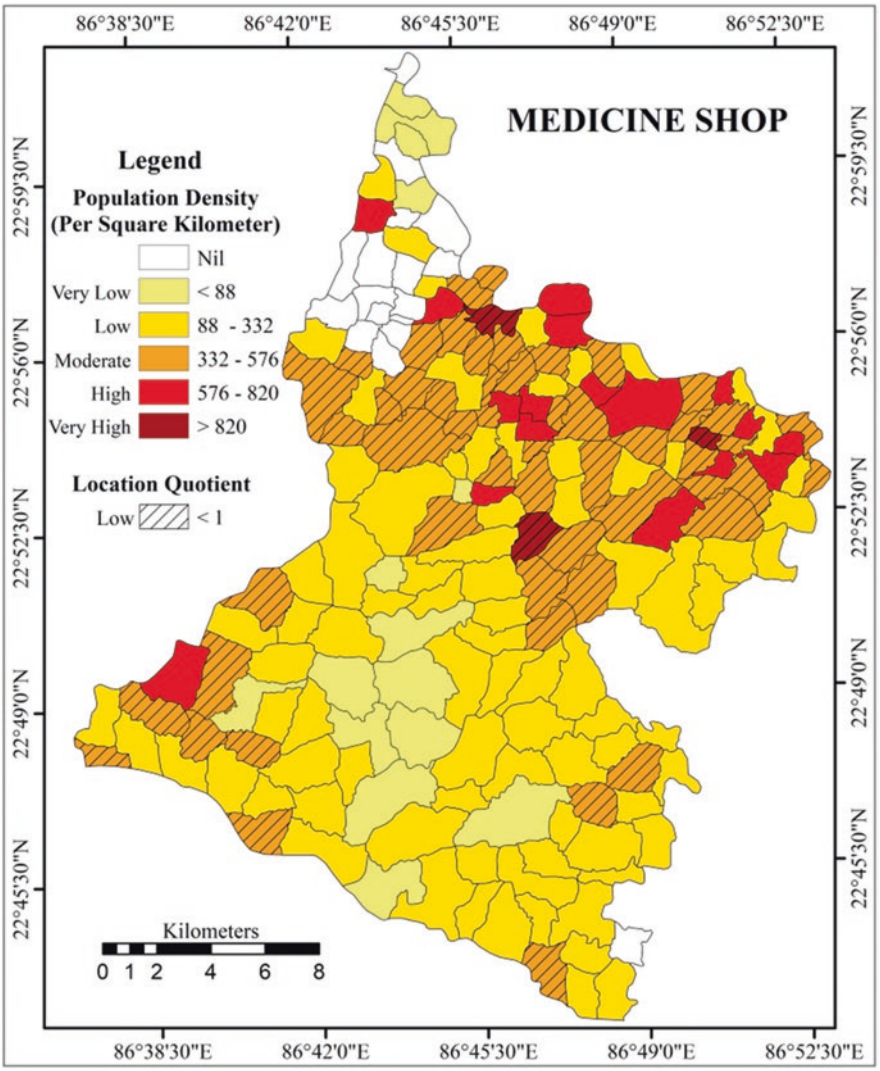

Fig. 11.14 Density zone wise inequality of Medicine Shop

Table 11.5 Mean and location quotient for communication and transport infrastructure

Communication and transport infrastructure															
Total Mean (TM)	Mean								Location quotient						
	Post Office	Internet Café	Bus Service	Railway Station	Pucca Road	Kachha Road	Mobile Coverage	(TM/∑TM)	Post Office	Internet Café	Bus Service	Railway Station	Pucca Road	Kachha Road	Mobile Coverage
4.791	0.375	0.458	1.000	0.125	0.833	1.000	1.000	0.244	1.435	0.709	0.819	1.226	0.924	1.119	1.066
3.875	0.529	0.243	0.588	0.125	0.691	0.868	0.831	0.197	0.821	1.077	1.126	0.990	0.899	1.042	1.037
4.106	0.548	0.255	0.740	0.125	0.650	0.918	0.870	0.209	0.839	1.089	0.946	1.050	1.015	1.045	1.050
3.699	0.393	0.207	0.623	0.127	0.567	0.909	0.873	0.188	1.056	1.205	1.011	0.926	1.044	0.949	0.945
3.159	0.358	0.167	0.400	0.125	0.417	0.900	0.792	0.161	0.988	1.278	1.353	0.809	1.220	0.821	0.890
∑19.63	2.203	1.330	3.351	0.627	3.15	4.595	4.366								

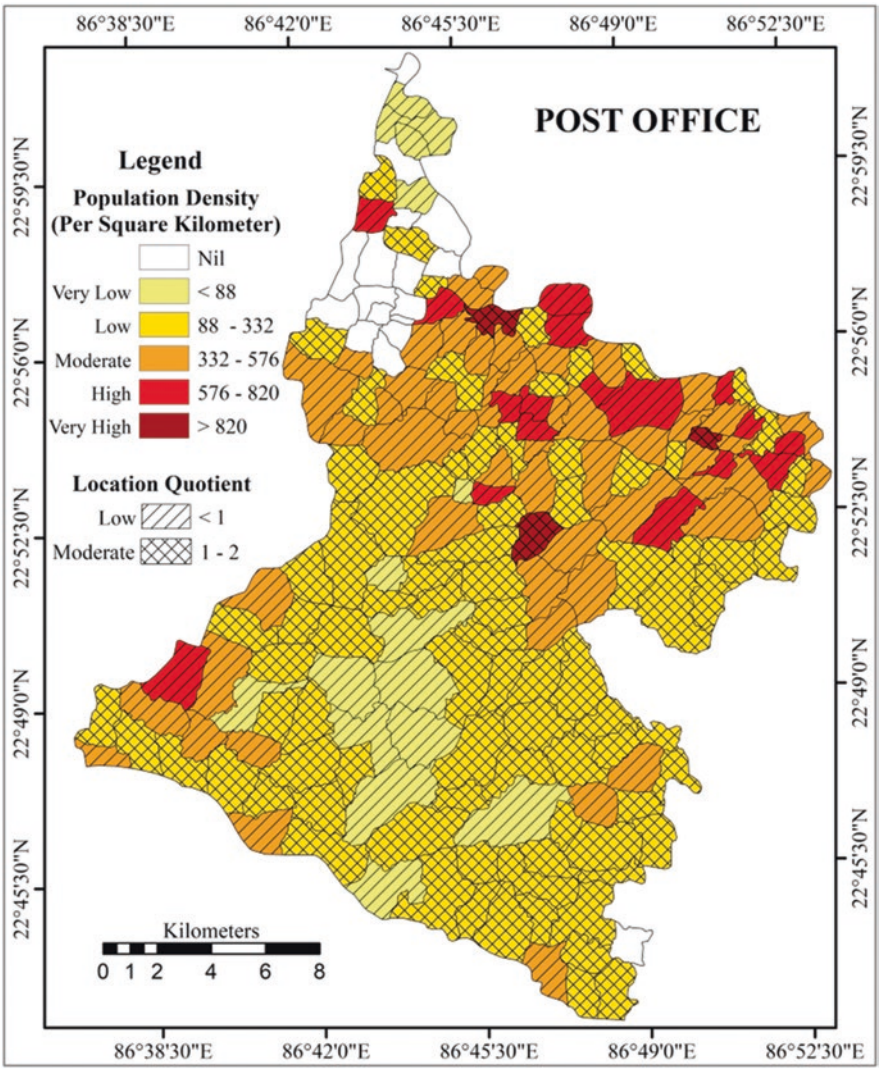

Fig. 11.15 Density zone wise inequality of Post Office

doctors, ATM, regular market, and electricity amenities need more attentions when the issue of development is concerned. The prime concentration is required on hospitals and MBBS doctors with an immediate effect. However, a number of government policies have been declared so far, but the involvement of the local indigenous knowledge should be ensured at the very outset if the holistic development in true sense is required.

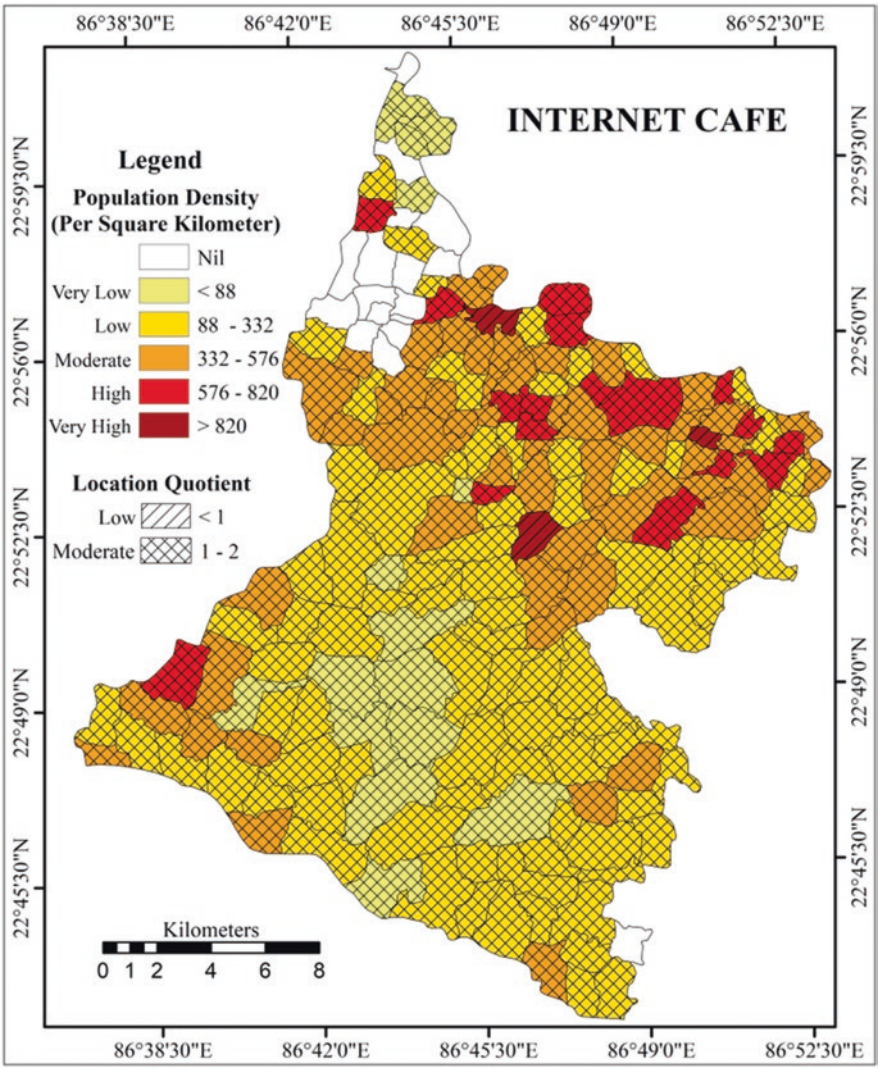

Fig. 11.16 Density zone wise inequality of Internet Cafe

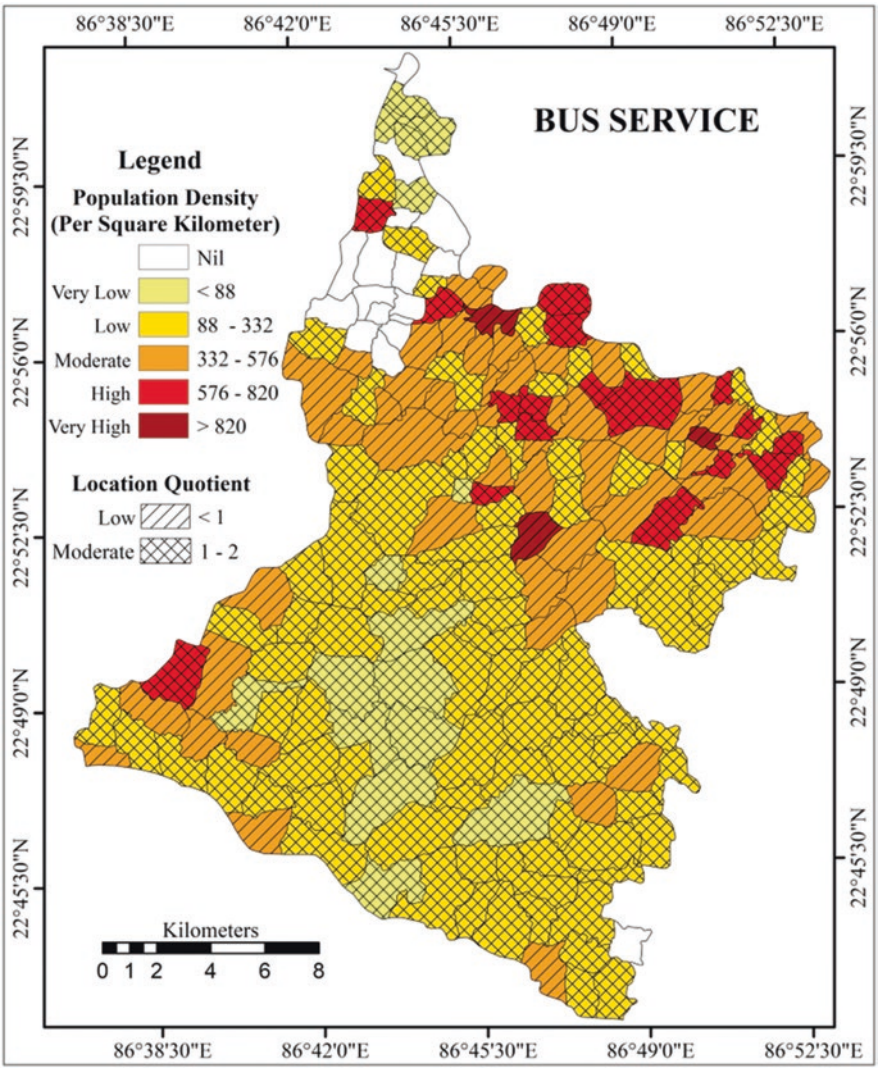

Fig. 11.17 Density zone wise inequality of Bus Service

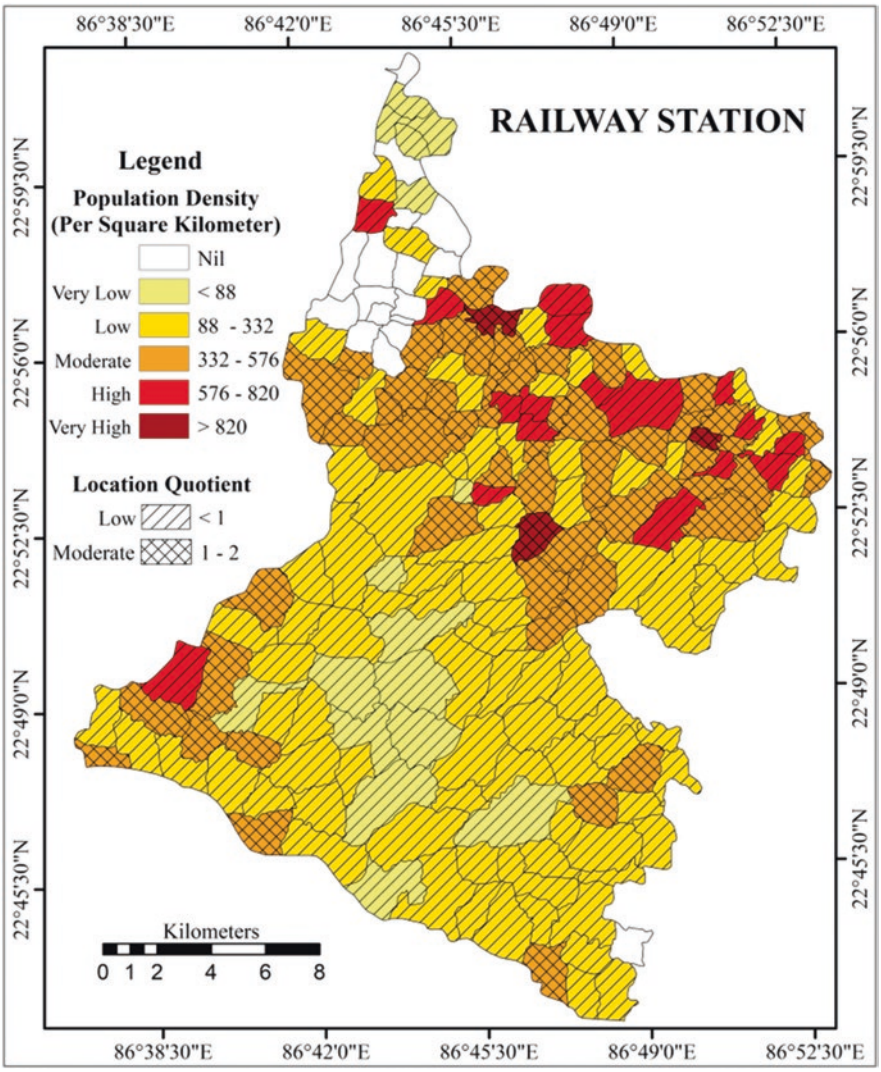

Fig. 11.18 Density zone wise inequality of Railway Station

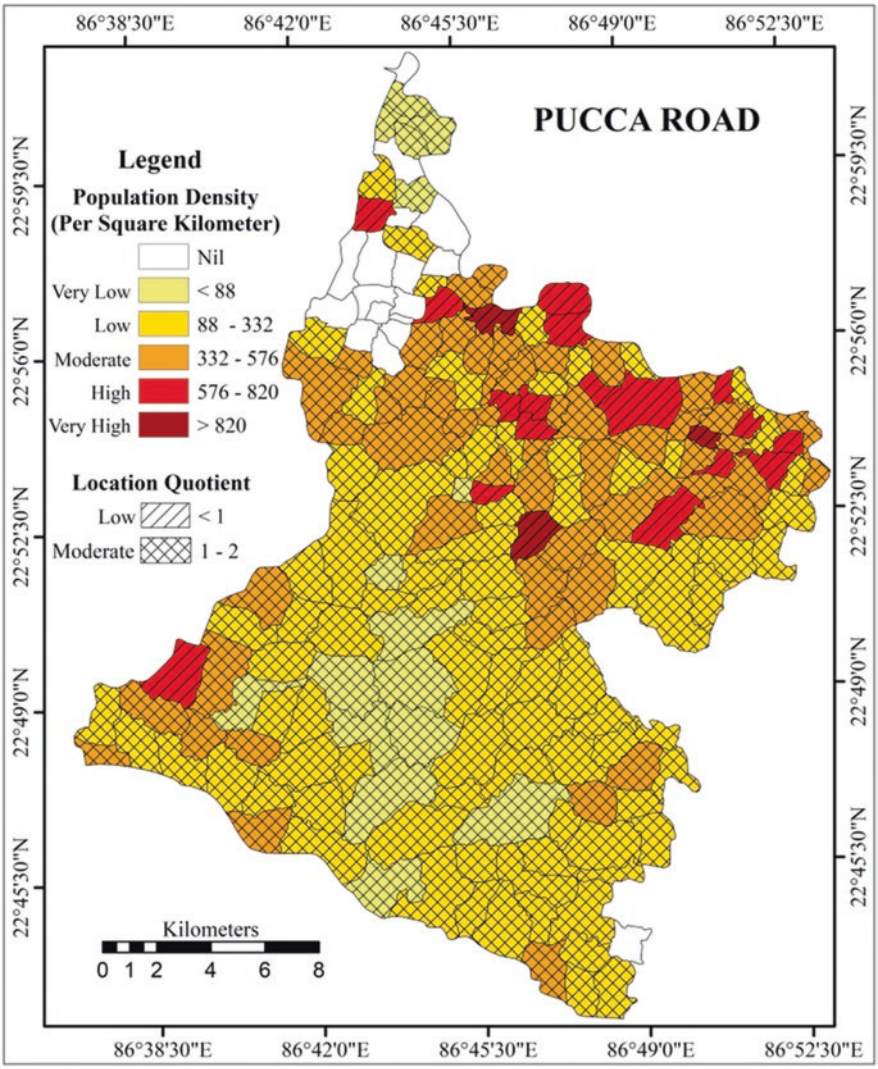

Fig. 11.19 Density zone wise inequality of Pucca Road

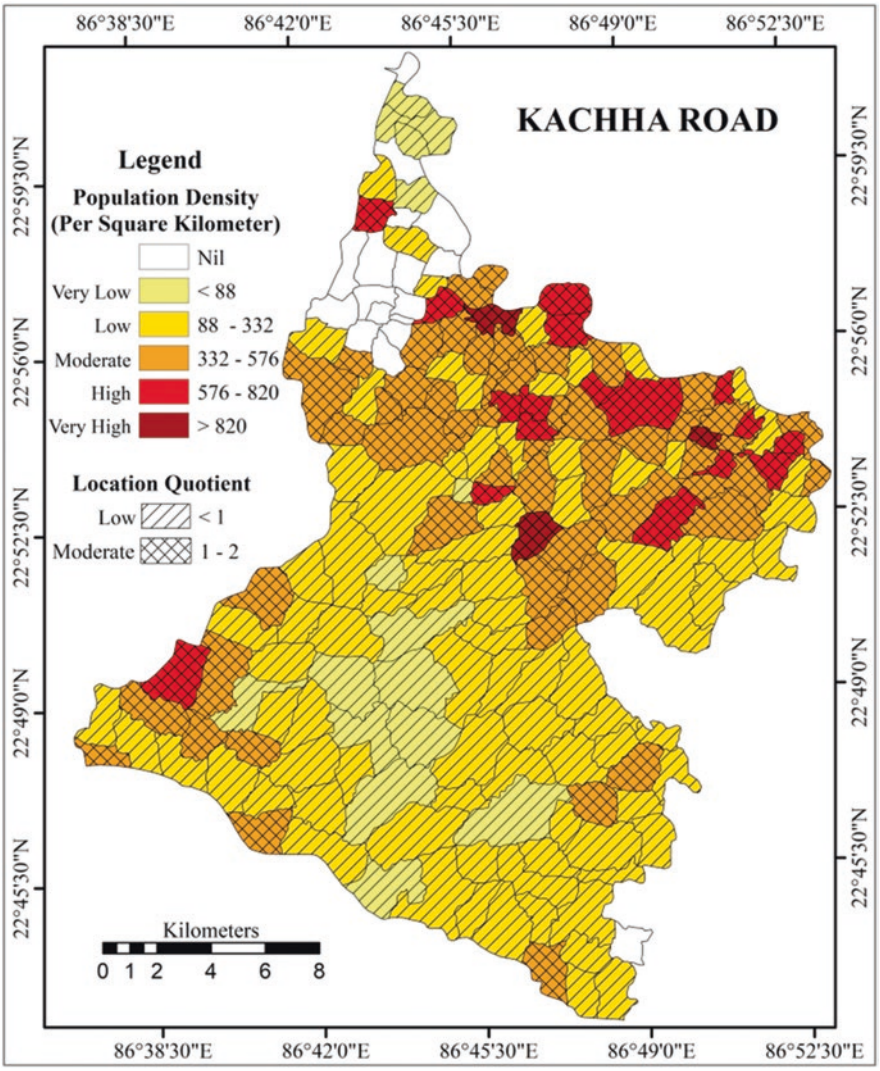

Fig. 11.20 Density zone wise inequality of Kachha Road

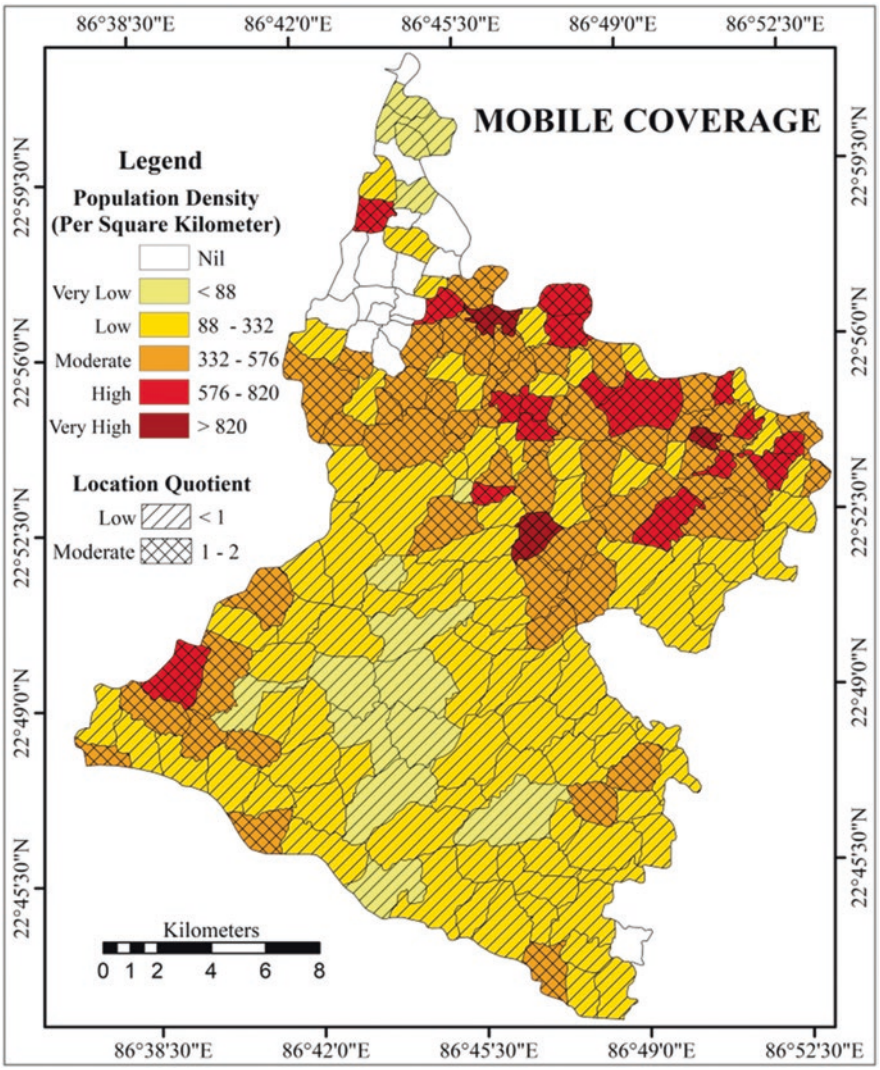

Fig. 11.21 Density zone wise inequality of Mobile Coverage

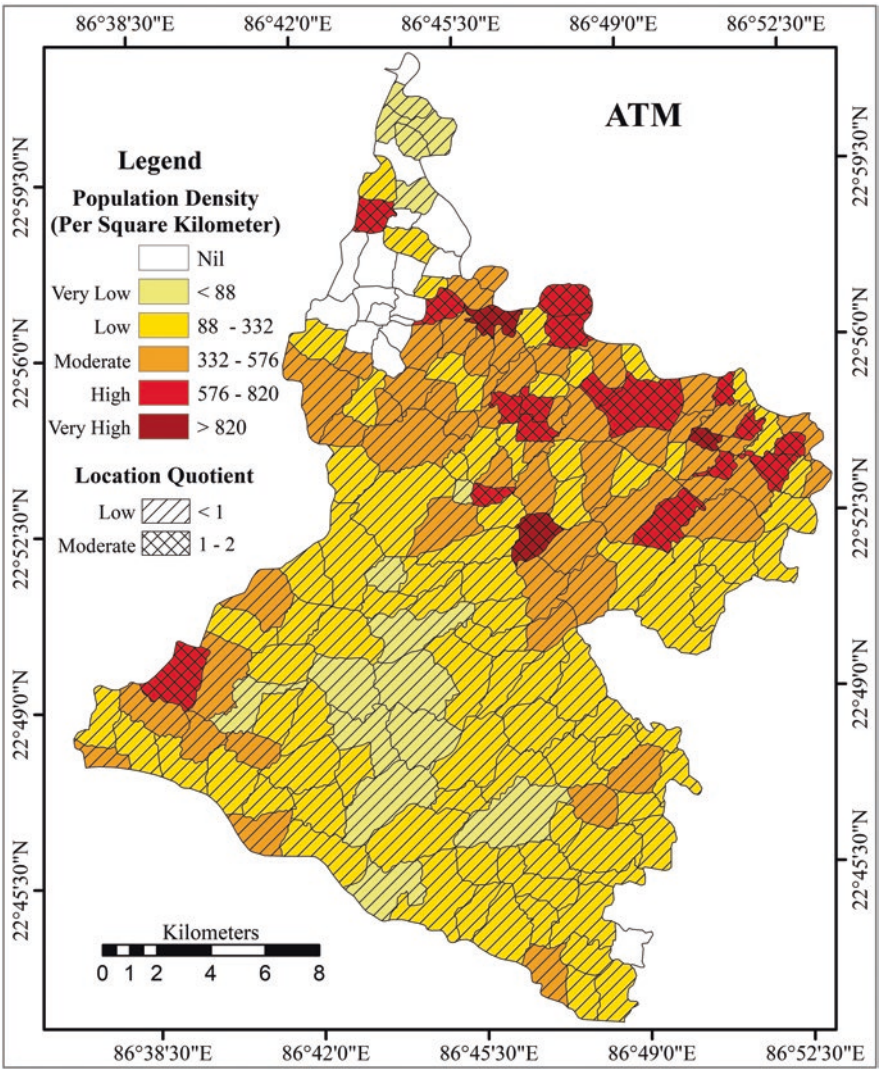

Fig. 11.22 Density zone wise inequality of ATM Service

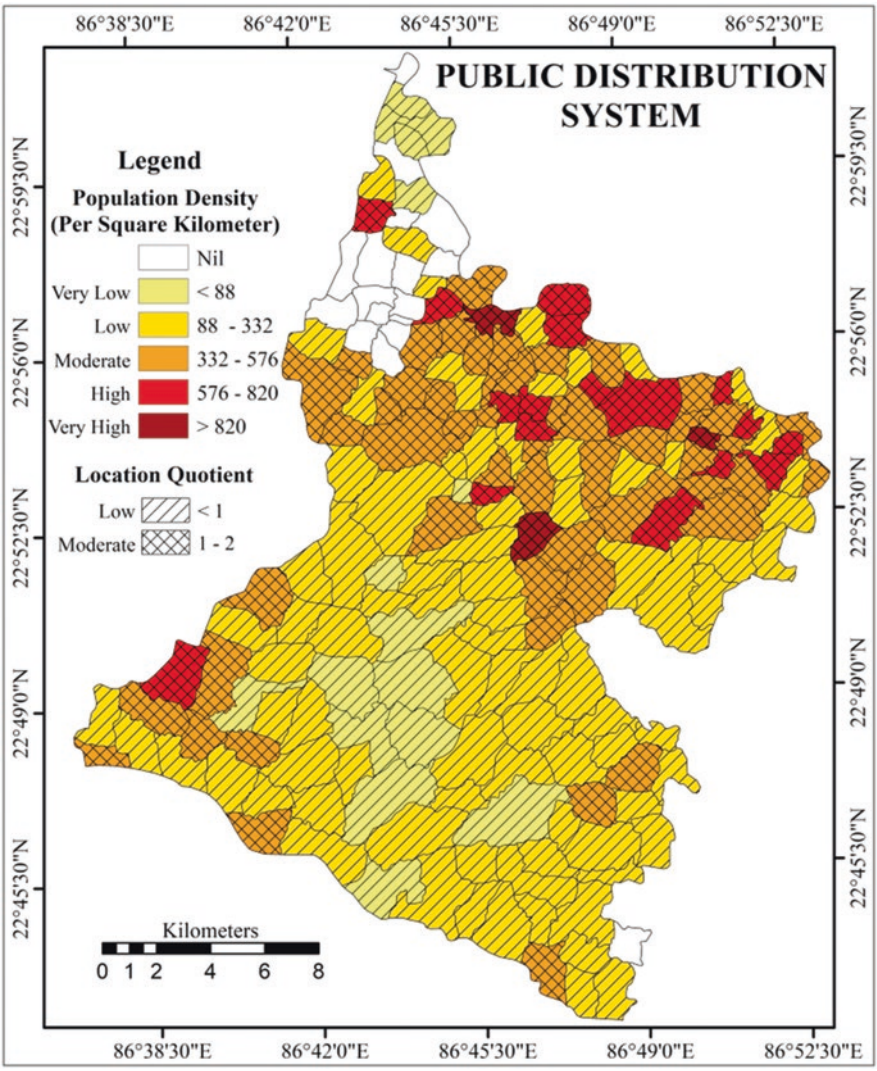

Fig. 11.23 Density zone wise inequality of Public Distribution System

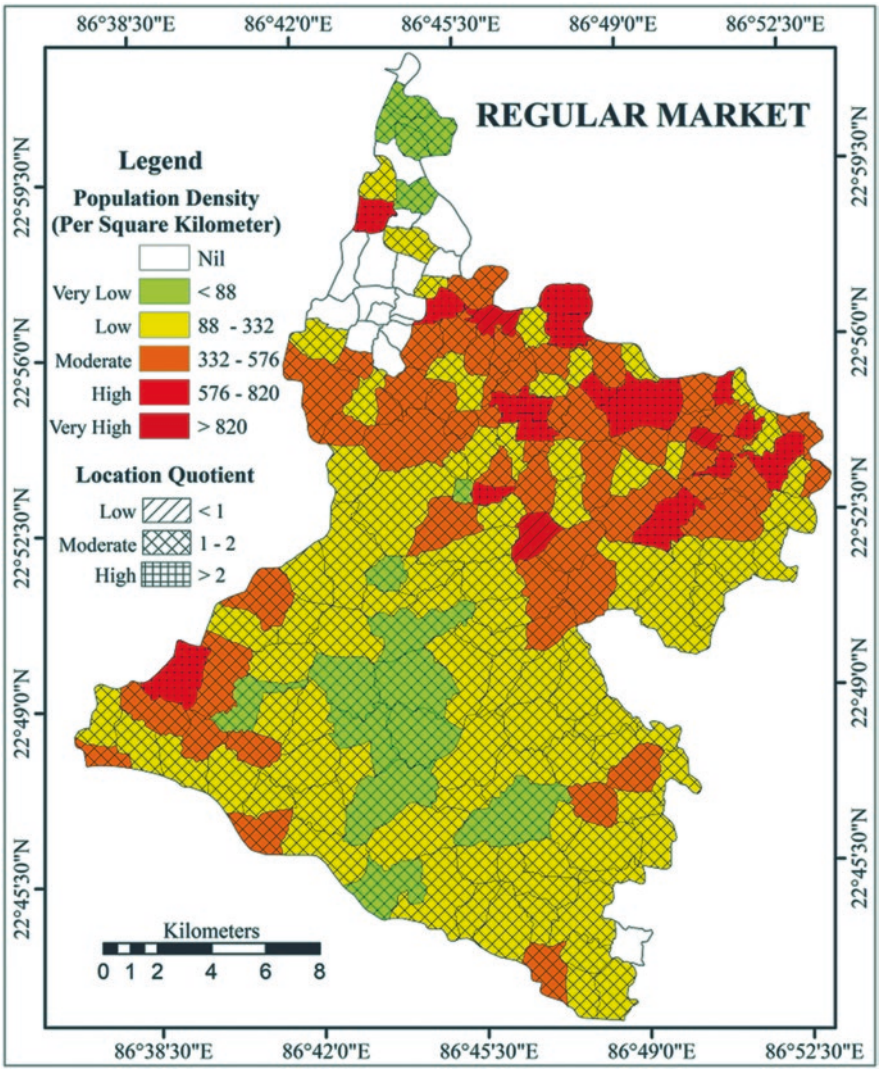

Fig. 11.24 Density zone wise inequality of Regular Market

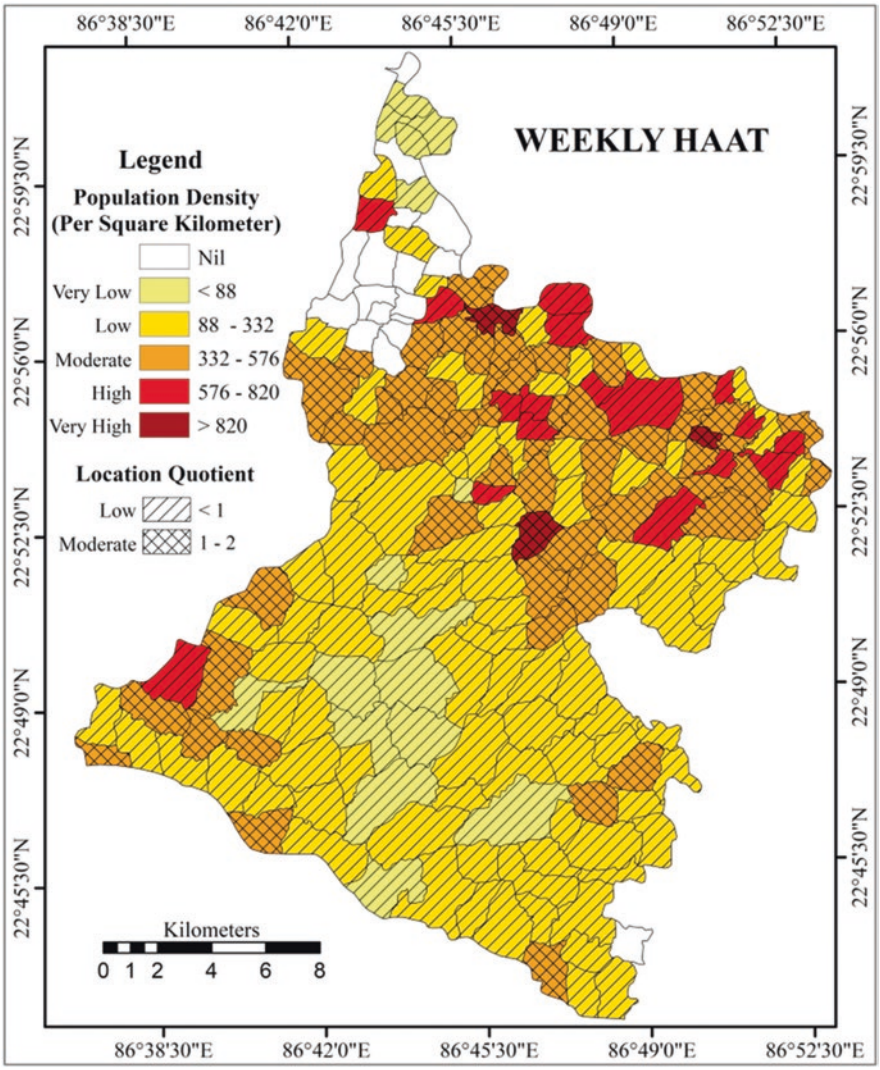

Fig. 11.25 Density zone wise inequality of Weekly Haat

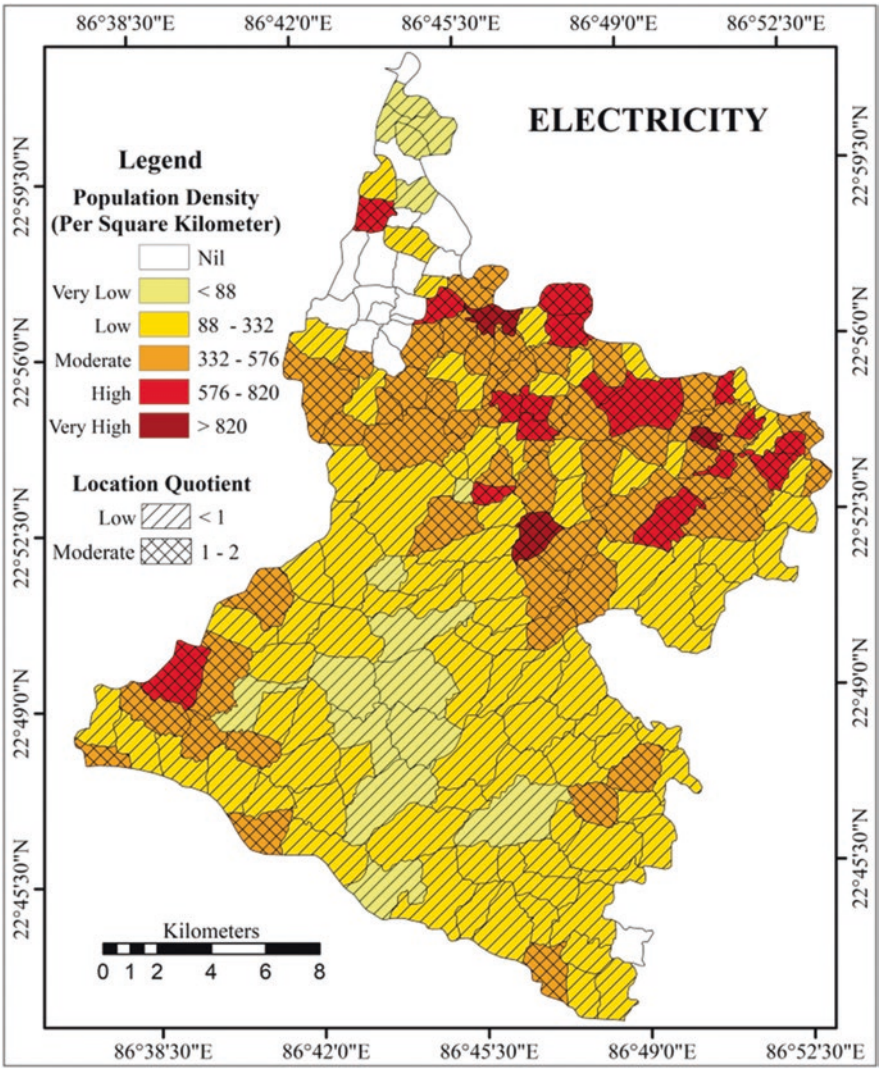

Fig. 11.26 Density zone wise inequality of Electricity

Table 11.6 Mean and location quotient for other infrastructure

Other Infrastructure											
	Mean						Location quotient				
Total mean (TM)	ATM	Public distribution system	Regular market	Weekly haat	Electricity	(TM/∑TM)	ATM	Public distribution system	Regular market	Weekly haat	Electricity
3.58	0.125	1	0.75	0.58	1	0.315	1.641	1.537	0.583	1.394	1.567
2.37	0.125	0.72	0.13	0.60	1	0.209	1.089	1.019	2.223	0.897	1.04
2.29	0.16	0.69	0.21	0.52	0.98	0.202	0.821	1.031	1.338	1	1.025
1.90	0.13	0.60	0.17	0.46	1	0.167	0.835	0.982	1.369	0.933	0.831
1.21	0.11	0.51	0.13	0.41	1	0.107	0.633	0.738	1.139	0.669	0.532
∑11.35	0.65	3.52	1.39	2.57	4.98						

Table 11.7 Infrastructure wise LQ range and inequality level

Infrastructure	Amenities	LQ range	Remarks
Educational	Primary school	0.135	Very low
	Secondary school	0.515	Low
	Senior secondary school (SSS)	1.350	Moderate
	Degree college	0.777	Low
	Special school	0.529	Low
Medical	Community health center (CHC)	1.570	High
	Primary health center (PHC)	1.292	Moderate
	Hospital	4.113	Very high
	Dispensary	1.116	Moderate
	Family welfare center (FWC)	0.366	Very low
	MBBS doctors	6.333	Very high
	Medicine shop	0.642	Low
Communication and transport	Post office	0.614	Low
	Internet café	0.569	Low
	Bus service	0.534	Low
	Railway station	0.417	Very low
	Pucca road	0.321	Very low
	Kachha road	0.298	Very low
	Mobile coverage	0.176	Very low
Others	ATM	1.008	Moderate
	Public distribution system (PDS)	0.799	Low
	Regular market	1.640	High
	Weekly haat	0.725	Low
	Electricity	1.035	Moderate

References

Ali, B., & Chauhan, S. (2020). Inequalities in the utilisation of maternal health Care in Rural India: Evidences from National Family Health Survey III & IV. *BMC Public Health*, *20*(1). https://doi.org/10.1186/s12889-020-08480-4

Banu, N., & Rawal, S. (2015). Regional Disparities in Determinants of Educational Status in West Bengal, India: A Spatial Descriptive Approach. *IOSR Journal Of Humanities And Social Science (IOSR-JHSS*, *20*(4), 32-39.

Bhatia, M., Ranjan, M., Dixit, P., & Dwivedi, L. (2018). Mind the gap: Temporal trends in inequalities in infant and child mortality in India (1992–2016). *SSM - Population Health*, *5*, 201-209. https://doi.org/10.1016/j.ssmph.2018.05.001

CALDERON, C., & SERVEN, L. (2014). INFRASTRUCTURE, GROWTH, AND INEQUALITY AN OVERVIEW. *Policy Research Working Papers*. Retrieved 10 June 2021, from https://openknowledge.worldbank.org/handle/10986/20365.

Census of India: C.D. block Wise Primary Census Abstract Data(PCA). Censusindia.gov.in. (2011). Retrieved 9 September 2021, from http://censusindia.gov.in/pca/cdb_pca_census/Houselisting-housing-WB.html.

Clark, X., Dollar, D., and Micco, A. (2004). Port efficiency, maritime transport costs, and bilateral trade. Journal of development economics, 75(2),417-450

Hidayat, M., Darwin, R., &Hadi, M. (2020). DOES ENERGY INFRASTRUCTURE REDUCE INEQUALITY INTER-REGIONAL IN RIAU PROVINCE, INDONESIA?. *International Journal Of Energy Economics And Policy*, *10*(1), 160-164. https://doi.org/10.32479/ijeep.8658

Keeley, B., (2015). Income Inequality: The gap between Rich and Poor, OECD, ISBN 978-92-64-24601-0, 103-104

Maji, K., & Sarkar, S. (2021). Intra-District Disparities in Primary Education: A Case Study of Bankura District, West Bengal. *Space And Culture, India*, *4*(3), 77-92. https://doi.org/10.20896/saci.v4i3.214

Mandal, S. (2018). DIFFERENCES IN LITERACY: AN INTEGRATED block LEVEL ANALYSIS IN WESTERN PART OF WEST BENGAL. *International Journal Of Social Science And Economic Research*, *3*(8), 3941-3953. Retrieved 28 July 2021.

McKenzie, D. (2005). Measuring inequality with asset indicators. *Journal Of Population Economics*, *18*(2), 229-260. https://doi.org/10.1007/s00148-005-0224-7

Patra, A.K., and Acharya, A. (2011). Regional disparity, infrastructure development and economic growth: an inter-state analysis, 6(2),17-30

Raychaudhuri, A., &Haldar, S. (2009). An Investigation into the Inter-District Disparity in West Bengal, 1991-2005. *Economic And Political Weekly*, *44*(26/27), 258-263. Retrieved 3 March 2020, from https://www.jstor.org/stable/40279789

Thresia, C. (2017). Health Inequalities in South Asia at the Launch of Sustainable Development Goals: Exclusions in Health in Kerala, India Need Political Interventions. *International Journal Of Health Services*, *48*(1), 57-80. https://doi.org/10.1177/0020731417738222