Infrastructure Development in the Border and Non-Border Districts of Punjab

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Abstract- Infrastructure Development is regarded as a prerequisite for rapid transformation of an economy. Some regions on account of their location disadvantages face some inherent problems regarding development. The present study is an effort to compare the infrastructure development in the border and non-border districts of Punjab. The study compares the infrastructural development in terms of health, education, economic, physical and social sector parameters. The study covers time period from 2002 to 2012. The study revealed that the with the passage of time, the gulf between border and non-border districts with respect to infrastructural development instead of narrowing down, appears to have widened further.

Keywords: Infrastructure Development, rapid transformation, border and non-border.

I.   INTRODUCTION

The concept of equity and justice is based upon the principle that all the regions should develop equally leading to efficiency in allocation and distribution of resources in the economy. Some regions on account of their locational disadvantages face some inherent problems regarding development. The areas/ districts which fall on international border face lots of locational disadvantage. In the state of Punjab there are three districts i.e., Gurdaspur, Amritsar and Ferozpur which lie on the international border and of these Gurdaspur has maximum area along the international border. These districts in the past faced two Indo-Pak wars and faced a long spell of cross border terrorism. Dawn to dusk curfew , lack of stability,   fear of evacuation, intermittent firing across the border area are some important factors leading to uncertainties and hardship of the masses and ultimately causing poor overall socio-economic development of a region. The development of social sector lays down the foundation of economic development and intensifies the process of human capital formations. The Government of India as well as Government of Punjab through their various development programme have come up with different strategies and plans for the upliftment of border districts of Punjab. Starting from Vth plan (1974-79) it was observed that though this plan did not contain any special mention of social sector development in the border districts in Punjab, yet it emphasized on reduction in overall economic disparities among different region of the state.

In the VIth plan (1980-85) also though there was no categorical mention of some specific plan for the border district, yet introduced a new idiom seeking transformation of Punjab into a model state, emphasized over improvement in overall quality of life which could be achieved through education and reduction in rural-urban and caste based disparities in the state. The VIth five year plan emphasized on expansion of health services and consolidation of the health infrastructure and quality of services in the state. During this period, provisions of building for medical institution's and machinery and equipment required for these institutions were the major priorities of Punjab Government. It was particularly from the year 1981 onwards that under Development of Backward Area Sub-Plan, the border areas received a special focus. The major objective of this policy was to remove regional imbalances in the state by narrowing down the economic disparities by raising the level of income of the inhabitants of the border areas. As education is the crucial determinant of development, improvement of primary education and up gradation of educational institutions was given special attention under this plan. The seventh plan (1985-90) promised growth with Justice. A major thrust was envisaged for correction of distortions that may have crept in during the preceding plan periods. As far as social sector development is considered it emphasized over improvement in delivery of educational and health facilities particularly to the border areas. Punjab has been covered under Border Area Development Programme along with other states from the year 1993-94 onwards. Under this programme emphasis is laid on the balanced development of remote and inaccessible border areas, while ensuring effective administrative and people's involvement in development schemes to strengthen their resilience. During the eight plans the border districts which were the major victim of state wide militancy came under special focus of development strategies. In addition to other sectors, human resource development through education, health and training were the major focus areas. In order to provide better health care services to women and children, the national child survival and safe mother-hood programmes were continued during 8th five year plan. Certain specific programmes to control and eradicate communicable diseases were also started during this plan period. Further, vigorous thirst to power sector was the major objective of ninth five year plan (1997-02). It is necessary to foster the development of the various infrastructure modes in an integrated manner that will lead to the realization of an efficient, sustainable, safe, and regionally balanced system. To keep this thing in mind Government of Punjab emphasized on infrastructure Development during X (2002-07) and XI (2007-2012) Plan.

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A major thrust was on correction of distortions that might have crept in during the preceding plan periods plan for border districts, yet introduce a new idiom seeking transformation of Punjab into a model state. It was particularly from the year 1981 onwards that under development of backward area sub-plan, the border area received a special focus. The major objective of this policy was to remove regional imbalances in the state by narrowing down the economic disparities by raising the level of income of inhabitants of the border areas. The border districts which were major victims of state wide militancy came under special focus of infrastructural development strategies. Again promotion of infrastructural development was identified as an effective route to the realization of this objective.

II. OBJECTIVE AND METHODOLOGY

Here in view of this background it is important that an analysis of infrastructural sector development in the Broder districts of Punjab should be carried on. It is important to know that what is the level of infrastructure sector development in these districts vis-à-vis the non-border districts of the state. How with the passage of time social has responded with respect to Governments initiatives remains to be seen. How wide was the gulf between border and non-border districts with respect to various infrastructure development indicators in the past and what the present position needs is an immediate analysis? It must be mentioned here that a comparison between the border and the non-border districts does not in any way implies that the selected non-border districts are the target or are the 'ideal', in fact a comparison between the two groups is just an effort to know that how the border districts are placed vis-à-vis the non-border districts .The time period selected for this purposes includes the year 2002-2012.This is the post reform period and normalcy had returned by the beginning of this period in the state. With a view to have a clear picture of infrastructure development a comparison is made between the average values of social sector indicators of border and non-border districts. For this purposes three non-border districts i.e. Patiala, Roopnagar, Sangrur are purposely selected as these are centrally located and did not have any direct proximity to the border. Though there are certain other districts like Jullundhar and Ludhiana also which are centrally located but in view of their exceptionally high level of agricultural, Industrial, infrastructure activity, they were not taken as the representative sample of non-border districts, with whom a fair comparison could be made. Thus, finally border districts covered the averages of infrastructure sector indicators pertaining to Gurdaspur, Amritsar and Ferozpur taken together and non-border districts covered the averages of Roopnagar, Sangrur and Patialal. With a view to compare infrastructure sector development thirty eight indicators are selected. Though it is difficult to conceptualise 'infrastructure', however, it will be useful to define it as the physical capital and institutions or organizations, both public and private, which provide economic services to and which have significant effect directly or indirectly upon the economic functioning. The importance of infrastructure facilities in spearheading the

pace and direction of economic development of an economy can hardly be overemphasized. It's volume and quality determine, to a large extent the soundness of the foundation as well as the superstructure of the edifice of an economy. Not only this, it has direct interface on determining the quality of life in terms of the facilities like water, sanitation, housing, transport power etc that people enjoy. Thus provision of infrastructure plays a vital role in influencing the level and nature of economic and socio- cultural activities. The world Development Report 1994 even extends the indispensability of infrastructure for the fulfillment of some other objective as well. According to the report, the growth of infrastructure not only facilitates the achievement of the goal of economic growth but also helps in eradicating poverty and maintaining environment sustainability. Infrastructure is an umbrella term used for many activities referred to as 'social overhead capital' by most of the development economists like Paul RosesteinRodan,RagnerNurrkseand Albert Hirschman. One can not undermine the importance of catalytic role that infrastructure plays in the process of both economic and social development. Apart from providing better links to different areas through transport and communication facilities it also assists in enhancing accessibility to country sides. Hence, inter-district comparisons would probably remain incomplete without giving the weightage to these aspects in geographical space. Expenditure on education, health, sanitation and some of the welfare activities was earlier treated as mere consumer outlay but is now considered as an important growth-promoting factor with important consequences for earnings of individuals, personal income distribution, allocation of resources, and conduct of public finance. This expenditure are not merely consumer outlay aimed at satisfying only current needs, they have long term favourable effects on efficiency of human beings as productive agents, in a manner similar to the investment in material capital. Taking this argumentation as the basic, the following 38 indicators have been chosen to exhibit the development of infrastructure in the different districts.

D_1 Number of Medical doctors per 100 Sq. km, D_2 Number of medical doctors per lakh of populations, D_3 Number of para medical staff per 100 Sq. km, D_4 Number of para medical staff per lakh of population ,D_5 Number of hospital beds per lakh of population, D_6 Number of medical institutions per lakh 100 square km, D_7 Number of medical institutions per lakh of population, D_8 Number of primary schools per 100 Sq. km, D_9 Number of primary schools per lakh population , D_{10} Number of middle/secondary schools per 100 Sq.km, D_{11} Number of middle/secondary schools per lakh population, D_{12} Number of higher/senior secondary schools per 100 Sq. km, D_{13} Number of higher/senior secondary schools per lakh population, D_{14} Teacher students- ratio, D_{15} Number of technical institutions per 100 Sq. km, D_{16} Number of technical institutions per lakh population, D_{17} Number of Post offices per lakh population, D_{18} Number of Post offices per 100 Sq. km , D_{19} Number of commercial banks per 100 Sq. km, D_{20} Number of commercial banks per lakh population , D_{21} Deposit per

capita, D_{22} Credit per capita, D_{23} Credit-deposit ratio , D_{24} Total road length per 100 Sq. km , D_{25} Total road length per lakh of population , D_{26} Percentage of inhabited villages linked with pucca road.,D_{27} Number of registered motor vehicles per lakh of population, D_{28} Number of goods vehicles per lakh of population , D_{29} Number of telephone connections per 100 Sq. km, D_{30} Number of telephone connections per lakh of population

D_{31} Percentage of households having permanent house in rural area, D_{32} Percentage of households having semi-permanent house in rural area, D_{33} Percentage of households having toilet facilities in rural area, D_{34} Percentage of households having drinking water facilities in rural area, D_{35} Percentage of households having permanent house in urban area , D_{36} Percentage of households having semi-permanent house in urban area, D_{37} Percentage of households having toilet facilities in urban area, D_{38} Percentage of households having drinking water facilities in urban area.

The above mentioned indicators have been divided into five broad categories namely, health (D_1 to D_7), education (D_8 to D_{16}), economic (D_{17} to D_{23}), physical (D_{24} to D_{30}) and social (D_{31} to D_{38}) infrastructure. The physical infrastructure includes all such activities which provide general facilities for carrying economic activities. Such facilities usually take the form of physical capital formation and may include the long testing engineering structure, equipment and facilities, and the services they provide, that are used in economic production and by household.It takes shape in the form of public utilities like telecommunication, and public works as dams, canal work for irrigation, road and other transport sector such as railway, urban transport, ports and water way and airport. Social infrastructure usually refers to these facilities which improve the quality of human life. This often encompasses housing, toilet and drinking water and sanitation facilities etc. Investment in social infrastructure leads to human capital formation.

Housing is an important factor of social infrastructure. It is the quality of housing infrastructure which ultimately matters. It is important to know that how many households in an area are living in permanent and semi-permanent, temporary serviceable/non-serviceable houses. As far as information regarding permanent/Semi–permanent and temporary serviceable/non-serviceable houses is concerned this was for the first time collected by Population Census 1991 only.

Another important form of social infrastructure is the availability of safe drinking water. If the source of drinking water is tap, hand pump or tube well then it has been termed as safe drinking water .It may be noted that this definition is not comprehensive.

Institutional infrastructure (economic infrastructure) consists of administrative and financial infrastructure including banking and non-banking financial institution, insurance and co-operative institutions. These institutions provide different kinds of services to encourage investment and conducive environment for economic activities.

The data for different infrastructure sector indicators was mainly collected from the Department of Economic and Statistics of Punjab (2001 to 2012), Punjab Development Reports (2004)and Census of India (2001-02& 2011-2012). Further with a view to make the indicator unit free, Z scores are calculated having mean value zero and standard deviation equal to unity .Z scores are calculated as follows:

$$Z = \frac{X_{ij} - X_i}{S_i}$$

Where (i) refers to the indicator (i= 1,2,3---------100) and 'j' refers to Border district (j=1,2,----------------6), 'X_i' refers to the mean value of ith indicator and 'S_i' is the standard deviation.

In the present study weight has been calculated for each indicator with the help of principle component analysis and composite scores are obtain as follow.

$$Zbjt = \sum_{z-1}^{n} WibZijt$$

Where Wib is the weight assigned to i^{th}infrastructure sector indicator and Z_{ijt} is Z score value of ith indicator of jth border district in year 't' where Z_{bjt} is the sum of weighted Z scores of infrastructure sector indicators for j^{th} district during the time period 't'.

Further to have a clearer picture of infrastructure sector development exponential growth rate of different indicators, have also been calculated.

$$Y_i = a_o{}^* bi^{\ t}$$
$$In (Y_i) = In (a_o) + t^* In (bi)$$
$$G = (b-1)$$

Here, Y_1 is the value of Ith indicator, a_0 is constant, bi is the regression coefficient of ith indicator and t is the time period. In the common log value and 'g' is the growth rate.

III.   ANALYSIS AND INTERPRETATIONS

Keeping in view the basic importance of infrastructural facilities, the present paper is devoted to the analysis of these facilities in the border and non-border districts of Punjab from 2002 -2012.The performance of various border and non-border districts (Table 1.1 to 1.5) revealed that it was in twenty five (out of thirty eight) indicators, that the non-border districts on an average performed better vis-à-vis the border districts as a whole.

As far as health infrastructure is concerned (Table 1.1),there was higher number of paramedical staff per 100 square km (251) and per lakh of population (495) in the border districts than the non-border ones (115 and 231 respectively). Similarly number of hospital beds per lakh of population also more in the border districts (113) than in the non-border districts (79). The reason behind that during this time period, National Rural Health Mission

Sanjivani Health Care Schemes were launched. Under Sanjivani Health Care schemes 5.73 lakh members of the cooperative societies have been enrolled as members.

On the contrary, the number of doctors per lakh of population stood more in the non-border districts vis-à-vis the border districts. Reluctance of doctors to serve in the border districts due to lack of modern amenities is the most probable reason attributable to this reduction.

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Table 1.1
Indicators Relating to Health Infrastructure (2002-2012)

Districts	No. of Medical Doctor per 100 squarekm		No. of Medical Doctor per lakh of Population		No. of Paramedical Staff per 100 squarekm		No. of Paramedical Staff per Lakh of Population		No. of Hospital Beds per Lakh of Population		No. of Medical Institutions per 100 squarekm		No. of Medical Institutions per Lakh of Population	
	X	g	X	G	X	G	X	G	X	G	X	G	X	g
Mean of Border Districts	30	2.76*	61	0.44**	251	5.53	495	3.88	113	-0.86	5	-	8	-1.08*
Mean of Non-Border District	33	4.06*	72	2.05*	115	4.01*	231	1.45*	79	-0.07*	5	0.2	9	-0.33
Combined Mean of B.D & N.B.D	32		67		183		363		96		5		9	
PunjabState	31	2.87**	67	0.87	78	10.2**	292	8.27*	83	-2.72**	6	0.13*	7	-0.69**

Source: Compiled from various Relevant Issue of Statistical Abstract of Punjab Published by Economic Adviser to Govt. Note:** significant at 5 % level and * significant at 1 % level. g Growth rate (%)

As far as educational infrastructure is concerned, with respect to availability of primary and middle/secondary schools both in terms of area and population, border districts were better placed than non-border districts (Table 1.2). Though, number of primary schools in terms of population recorded an absolute fall in both the border and non-border districts, yet this fall was more pronounced in the latter group (-7.86 per cent) than in the former (-2.59 per cent). There could be a number of reasons for the same.

Table 1.2
Indicators Relating to Education Infrastructure (2002-2012)

Districts	No. of Primary schools per 100 square km		No. of Primary schools per lakh of Population		No. of Middle /Secondary schools per 100 square km		No. of Middle / Secondary schools per Lakh of Population		No. of Higher /senior secondary schools per 100 square km		No. of Higher /senior secondary schools per lakh of population		Teacher – Student ratio		No. of Technical Institution per 100 square .km		No. of Technical Institution per lakh of population	
	X	G	X	g	X	g	X	g	X	G	X	g	X	G	X	g	X	g
Mean Of Border Districts	32	1.12*	549	-2.59	5	0.20	89	3.57*	7	0.84*	137	2.25*	31	-0.43*	0.29	1.26	6	0.80
Mean of Non-Border District	27	-0.21*	511	-7.86*	4	0.13	83	3.79*	7	0.34*	150	0.93*	30	-1.36*	0.44	1.42	9	0.98
Combined Mean of B.D & N.B.D	30		530		5		86		7		144		30		0.36		8	

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PunjabState	25	0.34*	492	-0.27**	6	2.59*	85	-0.67**	6	1.03**	184	2.69*	30	-0.89*	0.18	-0.68	8	0.56
C.V (%)	41.11		29.52		25.49		12.90		24.66		10.53		9.50		50.00		36.78	

Source and notes as per table 1.1

Firstly, this could be due to fast growing popularity of private English medium schools, more so in rural areas, on account of which very few new government primary schools were started. Secondly, with passage of time some of the primary schools might have been promoted as high schools. Thirdly, over a period of time the state outlay, on education has also declined, which also must have affected the opening up of new schools in different districts (Punjab Development Report, 2004, p.596). However, in case of senior secondary schools (in terms of population) and technical institution (both area and population wise) there emerged a different picture. The non-border districts had more institutions both in terms of population and area. Further, teacher-student ratio also marginally more favourable in the non- border districts (1:30) than the border districts (1:31). In case of economic infrastructure (Table 1.3), it was with respect to five indicators that the non-border districts recorded higher mean values than the border ones.

Table 1.3
Indicators Relating to Economic Infrastructure (2002-2012)

Districts	No. of Post offices per Lakh of population		No. of Post offices per 100 squarekm		No. of Commercial banks per 100 squarekm		No. of Commercial banks per Lakh of Population		Deposit per capita (Rs)		Credit per capita (Rs)		Credit-Deposit ratio	
	X	g	X	G	X	G	X	G	X	G	X	G	X	g
Mean of Border Districts	21	-1.66	12	0.09	8	0.98*	12	-0.86	12974	16.2	4049	12.9*	34.89	-0.11
Mean of Non-Border District	19	-1.44**	9	0.79	9	1.09	14	0.21*	15506	18.9*	7542	15.8	48.49	-2.83
Combined Mean of B.D & N.B.D	21		10		7		12		14240		5795		41.69	
PunjabState	15	-1.28**	8	0.19*	6	2.34*	13	-2.24*	21264	13.7**	8554	19.5*	38	-1.71*

Source and note as per table 1.1

Deposit per capita (Rs.15506), credit per capita (Rs. 7542) and credit-deposit ratio (48.49 per cent) turned out to be 19 per cent, 53 per cent and 39 per cent more in the non-border districts vis-à-vis the border districts. In addition, number of commercial banks per 100 square km and per lakh of population, turned out to be 12 per cent and 17 per cent more than the border districts respectively.

As far as physical infrastructure in concerned (Table 1.4),Like the other sector in physical infrastructure also the non-border districts recorded higher road length per 100 square km (130 km) and per lakh of population (270 km). The road length per 100 square k.m and per lakh of population in the non-border districts stood respectively 50 per cent and 23 per cent more than the border.

Table 1.4
Indicators Relating to Physical Infrastructure (2002-2012)

Districts	Total road length per 100 squarekm		Total road length per lakh of population		Percentage of inhabited village linked with pucca road		Number of Registered motor vehicles per Lakh of Population		Number of Goods vehicles per lakh of population		Number of telephone connections per 100 squarek.m		Number of telephone connections per lakh of population	
	X	g	X	G	X	G	X	g	X	G	X	G	X	G

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Mean of Border Districts	100	0.1	188	-2.13*	96.8	0.27	7839	5.6*	207	2.92*	2815	25.8*	5667	2.54*
Mean of Non-Border District	130	1.3*	270	-0.18	98.90	0.06*	7762	7.35*	377	5.42*	3240	28.7*	7064	1.63*
Combined Mean of B.D & N.B.D	142		229		97.6		7800		292		3027		6146	
PunjabState	150	0.56	198	-1.4*	96.9	0.2	8896	5.23*	392	5.62**	3946	22.9*	8013	3.92*

Source and note as per table 1.1

Similarly, there were large numbers of goods vehicles per lakh of population (377) in the non-border districts. Also number of goods vehicles per lakh of population which were 82 per cent more than the border districts. Percentage of inhabited villages linked with pucca roads also stood more in the non-border districts (98.90 per cent). Similarly, number of telephone connections per 100 square km and per lakh of population which were 15 per cent and 19 per cent more in the non-border districts vis- a-vis the border districts.

Realizing importance of social infrastructure, for the first time certain information regarding the permanent and semi-permanent houses, availability of drinking water and toilet facilities was collected by Population Census 1991. Therefore, four indicators each for both urban and rural areas were added and hence analysedon the basis of 2001-02 to 2011-12 census information (Table 1.5).

Table 1.5
Indicators Relating to Social Sector (2002-2012)

District	Percentage of households having permanent house in rural area		Percentage of households having semi-permanent house in rural area		Percentage of households having toilet facility in rural area		Percentage of households having drinking water facility in rural area		Percentage of households having permanent house in urban area		Percentage of households having semi-permanent house in urban area		Percentage of households having toilet facility in urban area		Percentage of households having drinking water facility in urban area	
	X	g	X	g	X	g	X	g	X	g	X	G	X	G	X	g
Mean of Border Districts	73.21	1.38*	10.63	-4.86*	22.69	3.54**	97.2	1.91	85.88	0.81	8.67	-4.42*	78.37	1.25**	98.29	0.02*
Mean of Non-Border District	84.3	1.80*	10.2	-4.96	22.11	2.06**	93.61	0.86	92.43	0.66	4.34	-7.85*	84.54	0.65	98.5	1.93
Combined Mean of B.D & N.B.D	78.75		10.43		22.4		95.38		89.15		6.5		81.45		98.39	
Punjab State	83.4	1.34*	10.24	-5.32*	38.9	3.68*	96.9	0.64	91.3	0.98	6.34	-3.89*	86.5	1.34*	98.5	0.86

Source and notes as per table 1.1

Out of four indicators of rural social sector infrastructure, in three, non-border districts performed better vis-à-vis the border districts. As far as the availability of permanent/semi permanent houses is concerned, rural areas of non-border districts (94.5 per cent) were better placed than those of border districts (83.84 per cent). Meaning thereby, that as against 5.5 per cent of rural households in the non-border districts, 16.16 per cent of rural households in the border districts lived in temporary serviceable/non serviceable houses. One of the most visible outcomes of the green revolution has been remarkable transformation of village settlements, particularly by the way of conversion of kucha houses into pucca houses. Secondly, introduction of 'Unnat Gram' scheme by the Punjab Govt. during the ninth plan also must have helped in increasing the number of permanent houses in the rural areas. Further, higher

percentage of rural households in the border districts, had toilet (22.69 per cent) and drinking water (97.2 per cent) facilities as compared to their counterparts in the non-border districts (22.11 per cent and 93.61 per cent respectively).

Further, as compared to the rural areas, in urban areas higher percentage of population lived in permanent houses in both the group of districts. But it was the other way round in case of semi-permanent houses. As compared to urban areas, higher percentage of population lived in semi-permanent houses in rural areas of all the districts.

An analysis of urban social infrastructure revealed that there was only a marginal difference in percentage of urban households having drinking water facilities in the border (98.29 per cent) and non-border districts.

But with respect to toilet facilities, there was a big gap in urban areas of the border (78.37 per cent) and non-border districts (84.54 per cent). An analysis of growth rate reveals that, in twenty six indicators (out of thirty eight), that the non-border districts on an average recorded higher/more desirable rate of growth vis-à-vis the border districts taken as a whole.

As far as health infrastructure is concerned, out of seven indicators, it was in three indicators i.e. number of doctors per 100 square km (4.06 per cent) and per lakh of population (2.05 per cent) and number of medical institutions per 100 square km (0.2 per cent), that the non-border districts recorded higher rate of growth than the border ones.

On the other hand, number of paramedical staff in terms of area (5.53per cent) and population (3.88 per cent), continued to register higher rate of growth in the border districts than the non-border districts. Number of medical institutions per lakh of population also recorded a fall in both the groups, but this fall was more pronounced in the border districts (-1.08 per cent) than the non-border ones (-0.33 per cent). Probably during the reform period the financial allocation to health have declined, and this also must have been a reason for these falling growth rate.

In educational infrastructure, number of technical institutions per 100 square km (1.42 per cent) and per lakh of population (0.98 per cent) increased at a higher rate in the non-border districts than the border one. Similarly, number of middle/secondary schools in terms of population (3.79 per cent), also increased at a higher rate in the non-border districts. On the other hand, number of higher/senior secondary schools per 100 square km (0.84 per cent) and per lakh of population (2.25 per cent) increased at a higher rate in the border districts.

As far as economic infrastructure is concerned, number of post offices per lakh of population recorded an absolute fall in both the groups, but this fall was observed to be marginally more in the border districts (-1.66 per cent) than the non-border ones (-1.44 per cent). Further, credit-deposit ratio also recorded an absolute fall in both the border (-0.11 per cent) and the non-border (-2.83 per cent) districts. Because of number of private banks open in rural areas as compared to cooperative and commercial banks. Secondly, in post office government has closed different schemes like

Indira vikaspatr, kisanvikas part. Further on Fixed deposits Govt has increased the time period from five to eight years,due to this people was disharted and move to other institutions. Thirdly, the role of internet reduced theuse of post office in common man life.Fourth, post office employees are not a good serviceprovider as compare to private institutions.

Another way to explain the impact of Government policies on infrastructure development can be that what has happened to growth rate in the both border and non-border districts. Coming to rate of growth of physical infrastructure, total road length per 100 square km (1.3 per cent), number of registered motor vehicles (7.35 per cent) and number of goods vehicles per lakh of population (5.42 per cent) and number of telephone connections per 100 square km (28.7 per cent), recorded higher rate of growth in the non-border districts vis-à-vis the border districts. However, road length expressed in terms of population recorded an absolute fall in both non-border (-0.18 per cent) and border districts (-2.13 per cent).

As far as percentage of household having permanent houses (0.81 per cent) and toilet facilities (1.25 per cent) are concerned, they expanded at a faster pace in the border districts than in the non-border districts (0.68 per cent and 0.65 per cent respectively).

An analysis of rate of growth of rural social infrastructure revealed that percentage of households having permanent houses and drinking water facilities increased at a higher rate (respectively 1.38 per cent and 1.91 per cent respectively) in the border districts than the non-border ones. This is mainly because of under Border Area Development Programme, Punjab Nirman Programme for various works , municipal committees, water supply schemes and repair/rejuvenation of tubewells. Similarly, toilet facilities increased at the faster pace in the border districts (3.54 per cent) than in the non-border ones (2.06 per cent).During XI Plan (2007-2012), Punjab Government constructed, 80,000 individual toilets in rural areas at an estimated cost of Rs.20 Cr.

IV. WEIGHTS ASSIGNED

The weights assigned to various indicators have been presented in Table 1.6. It is observed that weight assigned to social sector recorded lowest weights among different sector of infrastructure development. Number of technical institutions per 100 square k.m (0.99450) and number of paramedical staff per 100 square k.m (0.99270) recorded maximum weight. On the other hand, percentage of household having permanent house in rural area (0.22103), percentage of household having toilet facilities (0.28755) and percentage of household having permanent semi-permanent house (0.37803) in rural area recorded lowest weight.

Table 1.6

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Weights Assigned to Different Indicators of Infrastructural Development

Health Indicators		No. of Medical Doctor per 100 squarekm	No. of Medical Doctor per lakh of Population	No. of Paramedical Staff per 100 squarekm	No. of Paramedical Staff per Lakh of Population	No. of Hospital Beds per Lakh of Population	No. of Medical Institutions per 100 squarekm	No. of Medical Institutions per Lakh of Population
	2002-2013	0.93574	0.92331	0.99270	0.91799	0.98498	0.96308	0.90407
Education Indicators		No. of Primary schools per 100 squarekm	No. of Primary schools per lakh of Population	No. of Middle /Secondary schools f per 100 squarekm	No. of Middle / Secondary schools per Lakh of Population	No. of Higher /senior secondary schools per 100 squarekm	No. of Higher /senior secondary schools per lakh of population	Teacher – Student ratio
	2002-2013	0.94943	0.84670	0.95981	0.77268	0.94356	0.91228	0.92515
Economic Indicators		No. of Post offices per Lakh of population	No. of Post offices per 100 squarekm	No. of Commercial banks per 100 squarekm	No. of Commercial banks per Lakh of Population	Deposit per capita	Credit per capita	Credit-Deposit ratio
	2002-2013	0.28621	0.80479	0.97983	0.82861	0.99033	0.94139	0.95951
Physical Indicators		Total road length per 100 squarekm	Total road length per lakh of population	Percentage of inhabited village linked with pucca road	Registered motor vehicles per Lakh of Population	Goods vehicles per lakh of population	Number of telephone connections per 100 squarek.m	Number of telephone connections per lakh of population
	2002-2013	0.99038	0.91625	0.23032	0.94485	0.93531	0.52071	0.36756
Social Sector Indicators		Percentage of household having permanent house in rural area	Percentage of household having semi-permanent house in rural area	Percentage of household having toilet facility in rural area	Percentage of household having drinking water facility in rural area	Percentage of household having permanent house in urban area	Percentage of household having semi-permanent house in urban area	Percentage of household having toilet facility in urban area
	2002-2013	0.22103	0.37803	0.28755	0.69038	0.82304	0.93571	0.98745

Source: compiled on the basis of data collected from different sources mention in table 1.1

In table 1.7 composite index of infrastructure development over a period of time is exhibited. It reveals that the composite index of non-border districts (20.2467) is far ahead than border districts (9.6747).

Table1.7Composite indices of Infrastructure Development

Composite Index 2002-2012	
Border Districts	9.6747
Non-Border Districts	20.2467

Source: As per table1.6

The result of the study revealed that the gap between border and non-border districts with respect to infrastructure development has not declined. Meaning thereby, that with the passage of time, the gulf between border and non-border districts with respect to infrastructural development instead of narrowing down, appears to have widened further. Inspite of Government has introduced many programmes for the development of the border areas. In order to achieve the optimum resource allocation the border districts require efforts with a vital force. Further, "BorderFactor", which appears to be more determinant factor behind infrastructural development of a district.

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