

SPATIAL AND TEMPORAL VARIATION IN AVAILABILITY OF ELECTRICITY IN RURAL AREAS OF HARYANA (2001-2011)

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Abstract: Electricity is an integral part of modern society. Haryana is the first 100 percent electrified state of India but still some households in rural areas of the state are in shortage of electricity. Due to rapid growth of population, social and economic factors the growth of electrified households in spatial and temporal point of view are uneven on the state. This study attempts to provide a brief insight into the concept of spatial and temporal variation in the availability of electricity in rural Haryana.

Keywords: Spatial; Temporal; Variation; Electricity; Rural Areas; Percent Point Change; Compound Growth Rate.

Introduction: Energy is very essential part of rural life. In rural areas where people have to spend their maximum time at their farms but electricity is very necessary for very activities. Here energy is concerned with Electricity: up to 2011 all the rural parts of the state including all villages are electrified but still in rural part of the state house holds use other then electricity for lighten their houses. So we have chosen Electricity as a source of energy in the households.

Methodology: This study is based on secondary data which are published in the statistical abstracts of Haryana and Census of India 2001 and 2011. This data is used to analyze the spatial and temporal variation in the availability of electricity in rural Haryana. To show the change percent point change and compound growth rate are calculated.

Spatial variation in availability of (Electricity) Energy:

Table 1, 2 show spatial variation in availability of electricity in rural Haryana. In 2011 78.50% households are electrified in rural Haryana. Except eastern southwestern, eastern lower and one Tehsil in central part, all parts have highest percent of households use electricity as a source of energy. Southern parts have lowest percent of households in this respect.

Tehsiles of district Ambala, Yamunanagar, Kurukshetra, Kaithal, Hisar, Jind, (except, Safidon) Karnal, Panipat, Sonipat, Rothak, Bhiwani, Mahendergarh, Rewari, Gurugram and Faridabad have above 70% of electric energy.

Table 1: Haryana (Rural) Availability of Electricity (2011)

Sr. No.	Category	Tehsil	No. of Tehsils
1	Below 60	Nuh, Ferozpur jhirkha, Hathin,	3
2	60 to 70	Siwani, Dabwali, Sirsa, Ellenabad, Assandh, Palwal, Rania	7
3	-Above 70	Faridabad, Rewari, Mahendergarh, Narnaul, Bawani khera, Bhiwani, Fatehabad, Hisar, Hansi, Narnaund, Bawal, Panchkula, Ballabgarh, Gurugram, Tosham, Dadri, Kosli, Naraingarh, Pehowa, Meham, Rohtak, Bahadurgarh, Safidon, Barara, Chhachhrauli, Guhla, Panipat, Tohana, Jhajjar, Pataudi, Thanesar, Jind, Kalka, Ambala, Karnal, Sonipat, Gannaur, Gohana, Hathin, Loharu, Narwana, Ratia, Jagadhari	43

Tehsil Siwani in central part and palwal in eastern part 60-70% households have electricity as a source of energy. In southern part tehsils (Nuh, Hathin and Ferozepur jhirkha) have below 60% electricity. Table 2 shows that the houses of tehsil Ambala in Northeastern part have highest (90.34%) of electricity and tehsil Ferozepur jhirkha have lowest (29.35%) electrified houses in 2011.

Table 2: Haryana (Rural) Electricity (2011)

Tehsil	Households in percent	Tehsil	Households in percent
Ferozepur Jhirkha	29.35	Kaithal	80.70
Nuh	42.30	Gurugram	80.94
Hathin	45.26	Panchkula	81.60
Ellenabad	63.22	Narnaund	81.68
Siwani	64.73	Hansi	81.79
Palwal	64.84	Panipat	82.51
Rania	65.30	Karnal	82.84

Assandh	65.44	Gohana	82.98
Dabwali	65.80	Guhla	83.29
Sirsa	69.79	Bhiwani	83.82
Ratia	72.64	Gannaur	83.85
Fatehabad	72.85	Jind	84.33
Narnaul	73.20	Jhajjar	84.60
Mahendergarh	74.64	Ballabgarh	84.60
Tosham	75.21	Dadri	85.21
Loharu	75.78	Bahadurgarh	85.75
Chhachhrauli	77.05	Jagadhri	86.64
Bawal	77.73	Meham	87.50
Safidon	78.37	Kalka	87.66
Rewari	78.58	Rohtak	88.34
Narwana	78.59	Naraingarh	88.36
Bawani khera	78.65	Sonipat	88.37
Tohana	79.31	Barara	89.44
Pataudi	79.40	Pehowa	90.00
Kosli	79.45	Thanesar	90.23
Faridabad	80.23	Ambala	90.34
Hisar	75.06	Haryana rural (average)	78.50

Temporal change in availability of energy (Electricity):

Table 3 and 4 presents the percent point change in availability of electrified households over the period 2001 to 2011 in rural parts of the state there is 15.315 percent points change, showing the increase in percent of electrified households.

**Table 3: Haryana (Rural) Availability of Electricity
(Percent Point change 2001-2011)**

Tehsil	Percent point change	Tehsil	Percent point change
Rania	-2.95	Rewari	16.00
Ellenabad	3.50	Narnaul	17.15

Sirsa	6.22	Pehowa	17.18
Ferozpur Jhirkha	6.74	Bawani khera	17.23
Ratia	6.94	Barara	17.25
Assandh	7.11	Jagadhari	17.61
Faridabad	7.18	Hisar	18.05
Dabwali	7.99	Panchkula	18.14
Gannaur	8.33	Safidon	18.67
Bahadurgarh	9.12	Loharu	19.02
Gurugram	9.69	Meham	19.26
Ballabgarh	9.95	Gohana	19.84
Nuh	10.76	Tosham	19.85
Kalka	10.77	Narwana	20.03
Sonipat	10.93	Pataudi	20.50
Panipat	11.06	Dadri	20.51
Fatehabad	11.22	Bhiwani	22.03
Palwal	11.23	Hansi	22.09
Hathin	11.34	Jind	22.67
Kosli	12.00	Naraingarh	22.79
Ambala	12.23	Mahendergarh	23.52
Jhajjar	13.20	Kaithal	24.50
Rohtak	13.51	Narnaund	25.08
Karnal	13.86	Bawal	25.09
Thanesar	13.93	Chhachhrauli	32.02
Tohana	14.23	Guhla	37.23
Siwani	14.77	Haryana rural (average)	15.31

Table 3 shows that in central part (Bhiwani), southern part (Mahendergarh and Bawal) and in northwestern part tehsil (Naraingarh and Kaithal) have 21 to 28 percent point change over the period of 2001 to 2011 in the availability of electricity. South western part (Meham, Safidon and Gohana), in west (Hisar), in North West (Tohana), in east and north eastern (Jagadhri and Panchkula) and in southern part (Narnaul, Rewari, and Patudi) have 14 to 21 percent point change over the period of 2001 to 2011 in the availability of electricity.

All eastern parts (Karnal, Thanesar, Assandh Bahadurgarh, Panipat, Gannaur, Sonipat), in southern part (Gurugram, Nuh, Hathin, and Kosli), in central part (Rohtak and Jhajjar), in western part (Dabwali and Fatehabad) and in north eastern and northern part (Ambala and Kalka) have 7 to 14 percent point change in availability in electricity. In western part (Rania, Ellenabad, Sirsa and Ratia) and southern tehsil of Ferozpur Jhirka have below 7 percent point change in availability of electrified households over the period of 2001-2011.

Table 3 also shows that tehsil in North eastern part Guhla have highest 37.23 percent and Tehsil Ellenabad in western part lowest 3.5 percent point change and tehsil Rania have negative percent point change shows the decrease in percent of house holds having electricity as a source of energy.

Table 4: Haryana (Rural) Availability of Electricity Compound Growth Rate Category Wise (2001-2011)

Sr.No.	Category	Tehsil	No. of Tehsils
1	Below 0	Rania	1
2	0 to 2.5	Gannaur, Nuh, Bawani khera	3
3	2.5 to 5	Kalka, Naraingarh, Jagadhari, Pehowa, Guhla, Karnal, Assandh, Panipat, Sonipat, Gohana, Meham, Rohtak, Jhajjar, Bahadurgarh, Ballabgarh, Palwal, Rewari, Safidon, Ratia, Tohana, Hansi, Dabwali, Sirsa, Ellenabad, Faridabad, Bawal, Kosli	27
4	5 to 7.5	Ambala, Barara, Thanesar, Kaithal, Hathin, Pataudi, Gurugram, Ferozpur Jhirka, Mahendergarh, Narnaul, Dadri, Narwana, Jind, Fatehabad, Hisar, Narnaund, Loharu	17
5	Above 7.5	Panchkula, Chhachhrauli, Bhiwani, Siwani, Tosham	5

Table 4 and 5 shows the compound growth rate in availability of electricity over the period 2001 to 2011. In rural Haryana electricity households grow at an average of 4.73 percent per year (2001 to 2011).

Table 4 shows that in south western part electrified households grow at the rate of above 7 percent and in western part it is in negative below 0. It indicates that there is decrease in percent of electrified households in western part.

Table 5: Haryana (Rural) Electricity Compound Growth Rate (2001-2011)

Tehsil	Compound Growth Rate	Tehsil	Compound Growth Rate
Rania	-0.30	Rewari	4.63
Bawani khera	1.15	Hansi	4.75
Nuh	2.05	Safidon	4.80
Gannaur	2.42	Ambala	5.03
Bahadurgarh	2.79	Narnaul	5.17
Kalka	3.07	Kaithal	5.27
Assandh	3.13	Fatehabad	5.47
Sonipat	3.20	Narnaund	5.47
Faridabad	3.21	Dadri	5.48
Sirsa	3.28	Thanesar	5.51
Ellenabad	3.30	Panipat	5.57
Ratia	3.38	Pataudi	5.62
Bawal	3.41	Jind	5.71
Dabwali	3.41	Barara	5.77
Naraingarh	3.53	Narwana	5.78
Jhajjar	3.67	Hathin	6.08
Guhla	3.79	Hisar	6.11
Maham	3.82	Ferozpur Jhirkha	6.53
Gohana	3.83	Mahendergarh	6.86
Pehowa	3.93	Loharu	7.31
Rohtal	4.06	Gurugram	7.44
Tohana	4.13	Tosham	8.19
Kosli	4.16	Bhiwani	8.48
Ballabgarh	4.25	Chhachhrauli	8.58
Karnal	4.30	Panchkula	9.45
Jagadhari	4.57	Siwani	9.65
Palwal	4.58	Haryana rural average	4.75

Southern and south western part, western part, north western, north eastern part have moderate growth rate (5 to 7.5 percent) and all eastern part, western part have low growth rate (2.5-5 percent) and other areas of the state have very low rate of growth in electrified households. Tehsil Siwani has highest compound growth rate (9.65 percent) and Tehsil Rania has lowest compound growth rate (-0.3 percent) in availability of electrified households. Its clearly shows that number of electrified households decreases here over the period of 2001 to 2011.

Conclusion:

Energy (Electricity) is very important for rural development. Haryana is among the hundred percent- electrified states but still in rural areas there is a lack of electrified housrholds. An average of 78.5 percent of households in rural areas is electrified. Tehsil Ferozpur Jhirkha has 29.35 percent households with electricity (lowest) and with 90.34 percent households with electricity tehsil Ambala is at the top. Tehsils in western and southern most parts have below state average households which are below 70 percent. Remaining rural areas have above 70 percent households with electricity.

References:

- [1] Vijaiya Kumar K., Chattopadhyya Kumar S., “Energy use in Rural Households- a Case of Velland Village Kerala”, The National Geographical Journal of India, 107-112, March 1988.
- [2] Dr. Parsad R., “Fuel wood Based Energy Scenario and its Impact on Natural Forests in India”, July 1999.
- [3] Government of Haryana, “Statistical Abstract”, 2001.
- [4] Government of Haryana, “Statistical Abstract”, 2011.
- [5] Government of India, Census, 2001.
- [6] Government of India, Census, 2011.