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Geographical Analysis of Regional Disparities in Level of Women Education: A Case study of Hadoti Region, Rajasthan

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Abstract: *This paper presents a spatial and temporal analysis of women education in geographical unit of Hadoti region. For the representation of spatial disparities in women education composite quotient index has been calculated at the tehsil level. The findings reveal's that the level of education among women at tehsil level is highly dispersed despite all the tehsils belong to same geographical unit. Paper shows the importance of regional geography in the women education, every region has uniqueness and, in that line, it requires a target-oriented solution. Conclusively, to achieve the aim of sustainable development in all aspects there is need to have synergy among all stakeholders involved in formulating, implementing and evaluating educational policies.*

Keywords: Regional disparities, Women education, Composite quotient index, Geographical unit

I. INTRODUCTION

Education is tool which can change women's position in the society, but still large section of women are deprived of education. Looking India on a larger scale we find dispersed pattern of women education throughout, these regional disparities show that there is need to understand geographical region in a wider sense.

Formulating educational policies at a national level partially fulfills the objective because every region is unique in its physical and cultural settings. Because of the regional variations their level of development will be different at a given point of time.

Studying regional dimension in is important for at least two major reasons. Firstly, regional study will help to identify which region needed to be taken for the development on the priority basis. Secondly, it will help in providing equal opportunities and facilities irrespective of physical or cultural constraints. Organization of educational facilities will be in such a manner that everyone can get benefit from it under same conditions.

Hadoti region geographically, falls in south eastern region of Rajasthan, which is bordered by Malva plateau on the east, Aravalli range on the west and Marwar region on the south west. The region is drained by Chambal River and its tributaries like Kalisindh, Parvati, Chakan etc. Due to fluvial topography region constitutes alluvial soil with the mixture of black soil. The region is on the windward side of Aravalli rages i.e., on southeast, it receives good amount of precipitation through south west monsoon. Region constitutes 4 districts i.e., Kota, Bundi, Jhalawar and Baran. On the west of the region, it is surrounded by Mewar region, in northwest of it there is Ajmer district, in the south it is bordered with Malva plateau and on the east Gird region of Madhya Pradesh is bordered. The region lies within the Hindi speaking belt. But Rajasthani language with Hadoti dialect is spoken commonly. The economy of the region is mainly derived out of agriculture, chemical and fertilizer industries, along with naturally occurring Kota stone and other minerals. In the recent times Kota has emerged as education hub which is being contributing in the region's economy.

II. OBJECTIVE AND RESEARCH METHODOLOGY OF THE RESEARCH PAPER

Objective: To study level of women educational development in Hadoti region, through temporal and spatial analysis.

Research Methodology: For the representation of the temporal data bar graph are used. And for spatial data representation Arc GIS software is used to produce tehsil level map of Hadoti region. Sources of data is Directorate of economics and statistics, Rajasthan and Census of India.

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For showing the spatial disparities in women education composite quotient index has been calculated. Method of calculation: Different attributes are taken like number of women enrolled in educational institution at different level of educational hierarchy i.e., university, college, vocational college, senior secondary and secondary school, upper primary school, primary school, vocational school and literacy rate of women at tehsil level.

With the help of this method, individual values of various indicators with different unit of measurement are converted into unit-less value.

CI= X1/X*1 +X2/X*2 +X3/X*3+…+Xi/X*i

$\sum_{i=1}^{n} \frac{Xi}{X*i}$, … … …

Where Xi represents i^{th} value of variable X and X*i is mean of the same variable.

Individual Quotient Value= Individual attribute value/ Mean attribute value

Composite Quotient Index= Summation of individual quotient values

Higher the score of composite quotients higher the level of women educational development, lower the score lower the level of women educational development.

III. TEMPORAL DATA ANALYSIS OF WOMEN EDUCATION LEVEL

For temporal analysis, data has been collected from Directorate of economic and statistics, Rajasthan. Women enrolled in primary school, senior secondary and secondary school and college/university; trend has been shown from 1995 till 2019 of Hadoti region's four districts i.e., Kota, Bundi, Baran and Jhalawar.

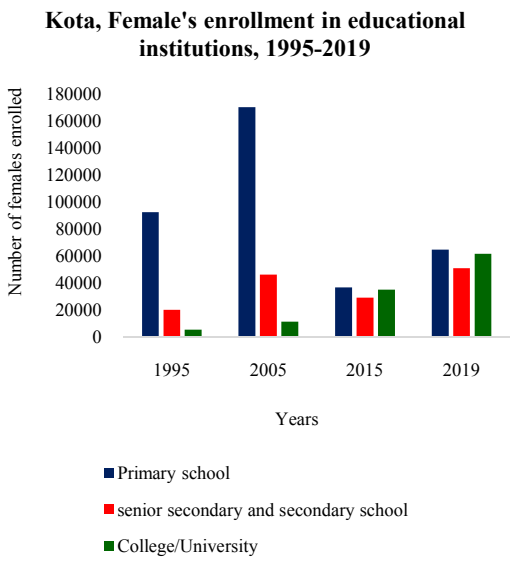

Figure: 1

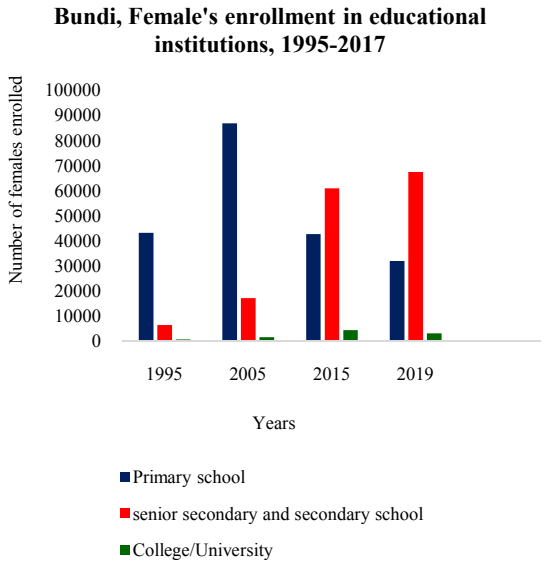

Figure: 2

As per figure:1, depicts data of Kota district, it shows that females enrolled in primary education has been drastically decreased after 2005 and in 2019 it started increasing but it has not reached to 2005 level. Female's enrollment in senior secondary and secondary school has shown fluctuating trends but has increased in 2019 as compared to 1995. Female enrolled in college/university has shown increasing trend.

In 2019 female enrollment in all three educational level has reached to an equal level.

Figure: 2, shows the data of Bundi district, female's enrollment in primary school has shown decreasing trend, whereas there is increasing trend in enrollment in senior secondary and secondary school. And there is very marginal increase in enrollment in college/university.

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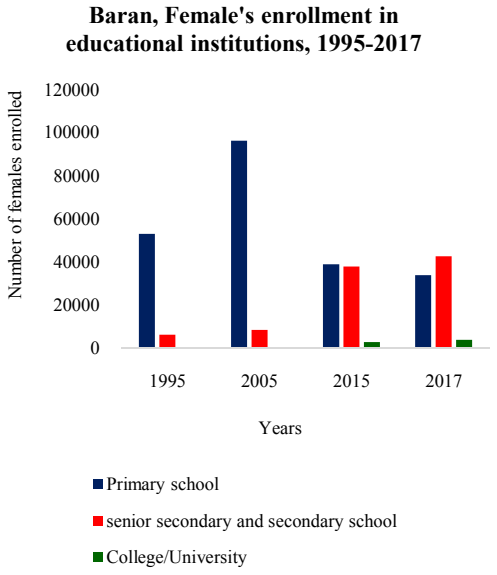

Figure:3

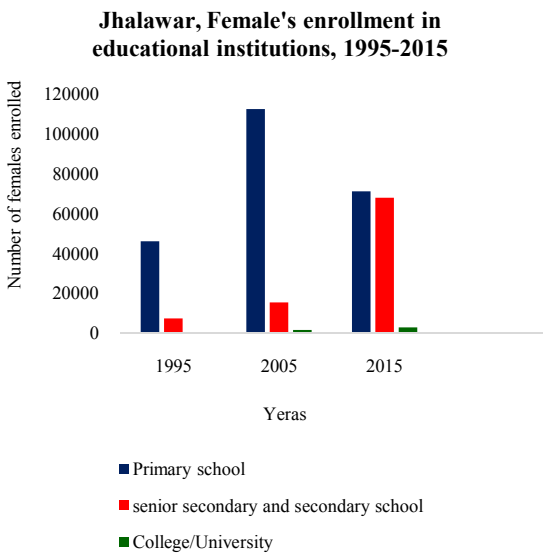

Figure: 4

In figure: 3, shows the data of Baran district, female's enrollment in primary school is showing decreasing trend after 2005. Enrollment has increased over the years in senior secondary and secondary schools. At college/university level there are very few females enrolled.

In figure:4, it depicts the data of Jhalawar district, female's enrollment in primary school is showing fluctuating trends, in 2005 there was increase in enrollment but in 2015 it got decreased. Whereas enrollment in senior secondary and secondary school has shown increasing trend. There are very few females enrolled at the college/university level.

If we look overall picture of Hadoti region, maximum enrollment of female in all educational level is in Kota district, since earlier times Kota city has remained the focal point of Hadoti region, which has attracted majority of the facilities which has eventually increased the level of development of the city and nearby area of the Kota district. When we look the worst performing district that is Baran district has recorded the lowest female enrollment in all three level of educational institution. Reason of poor performance of Baran district can be linked to the tribal culture of Baran district and low accessibility to educational institutions. Bundi and Jhalawar district has moderately performed. In case of higher education except Kota district no other district performance is satisfactory. This shows that after secondary education most of the girls' dropout the school hence their enrollment in higher education gets severely affected.

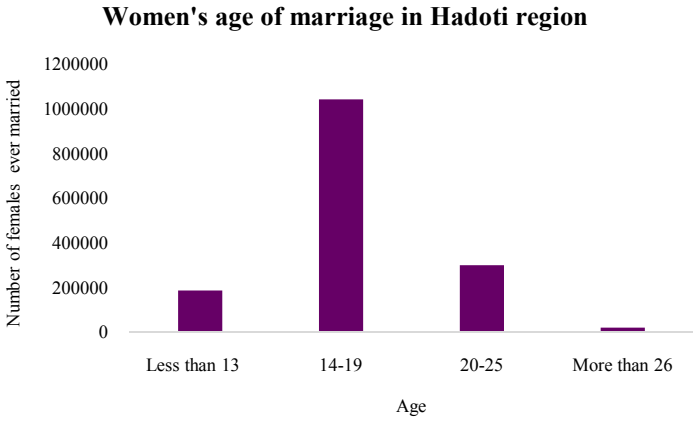

Figure: 5

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Form figure: 5, data is collected from census of India, 2011.It is very much clear that majority of females in Hadoti region got married before 19 years of age, which severely affect their higher education. Due to the prevalence of rural economy and tribal culture child marriages are also witnessed in the region.

As a result of early marriages dropout rate of girls is very high, therefore very few girls get enrolled in higher education. With the help of female's enrollment statistics in various educational institution and age of women marriage we can see that there is positive correlation between two. That means marriages after age of 20 will result in more females in higher education.

IV. SPATIAL DATA ANALYSIS OF WOMEN EDUCATION LEVEL

Spatial dataanalysis has been done by calculating composite quotient index of all the tehsils in the Hadoti region. After calculation results are:

Table 1: Tehsil-wise composite quotient index for women education.

Tehsils in Hadoti region	Composite Quotient Index	Tehsils in Hadoti region	Composite Quotient Index
Pipalda	1.097	Atru	1.393
Digod	1.088	Chhabra	1.399
Ladpura	5.908	Chhipabarod	1.179
Ramganj mandi	1.471	Antah	1.884
Sangod	1.824	Mangrol	1.18
Hindoli	1.446	Khanpur	1.487
Nainwa	1.515	Jhalrapatan	4.66
Indragarh	1.767	Aklera	1.018
Keshoraipatan	2.137	Manohar thana	1.241
Bundi	4.099	Pachpahar	1.587
Baran	2.652	Pirawa	1.496
Kishanganj	1.317	Gangdhar	1.284
Shahbad	1.732		

To have better understanding composite quotient index has been classified into three categories i.e., low, medium, high. Which signifies that higher the composite quotient value higher the level of women education and lower the value means lower the level of women education.

Table 2: Level of women's education in Hadoti region

Composite Quotient Index	Level of women education	Tehsils
Less than 1.400	Low	Kishanganj, Atru, Chhabra, Chhipabarod, Mangrol, Pipalda, Digod, Aklera, Manohar thana, Gangdhar
1.400 – 2.00	Medium	Shahbad, Antah, Ramganj mandi, Sangod, Khanpur, Pachpahar, Pirawa, Hindoli, Nainwa, Indragarh
More than 2.00	High	Ladpura, Jhalrapatan, Keshoraipatan, Bundi, Baran

As per figure:6, Tehsils with lower level of composite index lies on the western side of the Hadoti region. Lower level of development of women education can be linked with poor spread effect from the core region that is Kota city. Lower performing tehsils borders Madhya Pradesh and the region is drained by Chambal River which forms badland topography and the region is very much dominated by the tribal cultural practices and majority of rural population resides here. And these tehsils are far away from the focal city of the region i.e., Kota so, delivery of services becomes inaccessible for women.

Tehsils with medium level of women education, maximum tehsils lies around the focal city of Hadoti region i.e., Kota in the central and northern part of the Hadoti region. These tehsils are in the close proximity of district headquarters like Kota, Bundi, Baran, Jhalawar. It increases the accessibility to upper primary education and higher education for the women.

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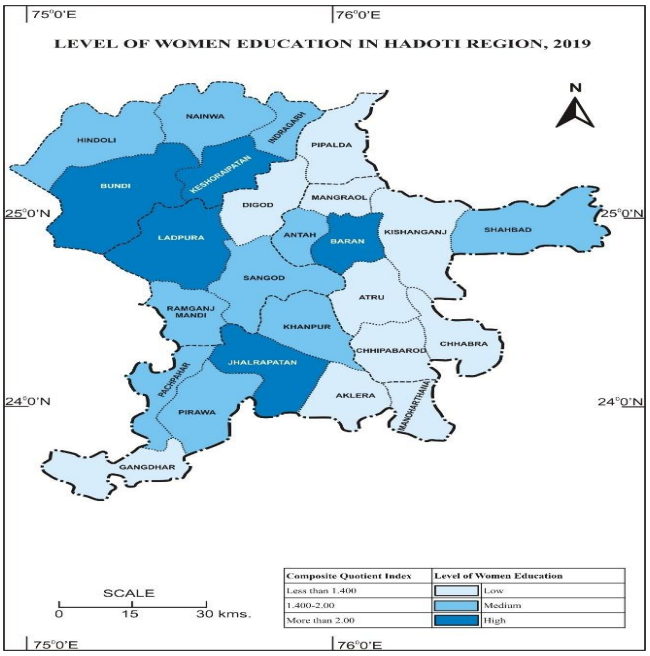

Figure: 6

Tehsils with high level of women education are the tehsils in which district headquarter are located. These tehsils are dominated by urban population. Region also has highest level of facilities and services within the Hadoti region. There is one single university in Kota, Ladpura tehsil and majority of female enrolled in university belongs to Ladpura tehsil due to which maximum number of women are enrolled in higher education are from Ladpura tehsil.

V. RECOMMENDATIONS

The possible best solutionto empower women is through education so, that their contribution in the economic and social aspects can be increased. Based on the findings obtained in this paper it shows that there are very few women who are perusing highereducation, this means if their share is low in educational institution which implies that their participation in top decision-making position will always below to the level of their male counterpart.

For the reduction of regional disparities in women education following can be done:

Firstly, there is need to arrange the special data in a manner through which poorly performing areas in women education can be highlighted.

Secondly, identifying the existing available infrastructural facilities.

Thirdly, regional plan for increasing educational level of women should be prepared with par to the nation which should include all the stakeholders. While formulating such plans cultural practices and local people sentiments should be kept in mind so, that people centric education policy could be formulated.

Lastly, to solve the problem of accessibility of education for women can be solved to some extent with help of modern technologies like availability of internet in remote tribal area of Hadoti region. Apart from it, regional awareness program me can be run by government with the help of NGOs. Which will help in eliminating the gender-based discrimination in education and mass sensitization of people can be achieved. For achieving the success from education policy, it is very necessary to have proper implementation and evaluation of that policy.

VI. CONCLUSION

Study concludes, that role of women in a society is very important to have holistic development of a region and at country level for this there is need that women should be empowered so, that they can take their decisions by themselves. Women empowerment through education will improve their economic and social status in the society. Specially with Hadoti region the cultural and social practices are very much similar throughout the region, due to which the region has developed well assured system of reciprocity and mutuality of obligation. So, it is very important for the policy maker to consider local population while formulating women specific education policy through which balanced level of women education can take place throughout the Hadoti region.

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APPENDIX

Figure 1: Kota, Female enrolment in educational institutions, 1995-2019

Years	Primary school	Senior secondary and secondary school	College/University
1995	92583	19897	5178
2005	170393	46213	11145
2015	36708	28926	34896
2019	64756	50939	61647

Figure 2: Bundi, Female enrolment in educational institutions, 1995-2019

Years	Primary school	Senior secondary and secondary school	College/University
1995	43080	6239	486
2005	86817	16992	1447
2015	42528	60818	4220
2019	31900	67445	2936

Figure 3: Baran, Female enrolment in educational institutions, 1995-2017

Years	Primary school	Senior secondary and secondary school	College/University
1995	52946	6128	0
2005	96176	8302	0
2015	38760	37705	2635
2017	33768	42581	3723

Figure 4: Jhalawar, Female enrolment in educational institutions, 1995-2015

Years	Primary school	Senior secondary and secondary school	College/University
1995	46025	7266	369
2005	112590	15251	1404
2015	71203	68015	2748

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Figure 5: Women's age of marriage in Hadoti region, 2011

Age of women marriage	Kota	Bundi	Baran	Jhalawar	Total women ever married
Less than13	42432	62005	26418	56573	187428
14-19	328404	197213	233166	283952	1042735
20-25	133964	43833	60109	63270	301176
More than 26	12722	2833	3039	3213	21807

Figure 6: Calculation of Composite Quotient Index

Tehsils	Number of females enrolled in educational institutions							Literacy rate 2011	Composite Quotient Index
	University	College	Vocational college	Senior secondary and Secondary school	Upper primary school	Primary school	Vocational school		
Pipalda	0	0.018	0	0.114	0.057	0.099	0	0.809	1.097
Digod	0	0	0	0.018	0.055	0.087	0.058	0.87	1.088
Ladpura	1	0.943	1	0.457	0.44	0.309	0.651	1.108	5.908
Ramganj mandi	0	0.02	0	0.179	0.235	0.181	0	0.856	1.471
Sangod	0	0.017	0	0.139	0.21	0.321	0.28	0.857	1.824
Hindoli	0	0	0	0.188	0.171	0.263	0	0.824	1.446
Nainwa	0	0	0	0.17	0.257	0.209	0	0.879	1.515
Indragarh	0	0	0.593	0.074	0	0	0.058	1.042	1.767
Keshoraipatan	0	0	0.239	0.293	0.297	0.159	0	1.149	2.137
Bundi	0	1	0.166	0.272	0.272	0.368	0.941	1.08	4.099
Baran	0	0.855	0.264	0.147	0.124	0.068	0	1.194	2.652
Kishanganj	0	0	0	0.084	0.113	0.245	0	0.875	1.317
Shahbad	0	0.084	0.343	0.085	0.154	0.159	0	0.907	1.732
Atru	0	0	0.049	0.113	0.124	0.054	0	1.053	1.393
Chhabra	0	0.023	0	0.125	0.178	0.162	0	0.911	1.399
Chhipabarod	0	0	0	0.136	0.17	0.021	0	0.852	1.179
Antah	0	0	0.343	0.234	0.129	0.088	0	1.09	1.884
Mangrol	0	0.036	0	0.072	0.005	0.004	0	1.063	1.18
Khanpur	0	0	0	0.148	0.119	0.055	0	1.165	1.487
Jhalrapatan	0	0.721	1	0.368	0.368	0.393	0.67	1.14	4.66
Aklera	0	0	0	0.043	0.021	0.01	0.142	0.802	1.018
Manohar thana	0	0	0	0.118	0.162	0.209	0	0.752	1.241
Pachpahar	0	0.278	0	0.055	0.025	0.01	0.164	1.055	1.587
Pirawa	0	0	0	0.149	0.173	0.131	0.021	1.022	1.496
Gangdhar	0	0	0	0.116	0.128	0.189	0	0.851	1.284