Electrical Assets of Female-headed Households in Rural Haryana: A Geographical Analysis

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Abstract

Among the many groupings of homes with female heads, the household's facilities is a sign of socioeconomic standing. This essay aims to investigate the socioeconomic situation of rural Haryana homes with female heads of family. In order to determine the state of the districts at the level of rural Haryana, data for each district for the year 2011 on five chosen indicators, including radio, television, internet services, mobile phones, and bicycles, was collected, collated, processed, and utilised. The "composite Z score" was created by adding the "Z scores" of each of the four factors that were chosen. The district-level quality of living conditions for female-headed families in rural Haryana has been determined using composite Z scores. In rural Haryana, the northern section has a considerably higher socioeconomic position while the southern part has a lower status. Gurugram district received the greatest score at the district level (1.04), followed by Ambala (0.79) while Mewat received the lowest score (-2.38) succeeded by Palwal (-1.67) across all 4 indicators.

Keywords: Electrical Assets, Radio, Television, Mobile, Internet, & Female-Headed Households

Introduction

Assets are a crucial gauge of a household's financial health. These offer a level of living and social security in female homes and are acquired by parents, given as presents (including dowry), and purchased with collected money. At the macro level, research have shown that asset and income disparity hamper growth. Piketty (2014) argued that inherited assets passed down through generations are a significant factor in maintaining inequality of wealth and income throughout the world (Benabou, 1996). Internet, mobile phones, bicycles, radios, and television are the many home possessions used for the standard of living measurement.

Among rural Haryana, the distribution of assets is not strictly based on categorization in families with female heads of home. The assets of a household reflect the quality of life inside it. For example, radio and transistor technology provide more interments, education, and news, while the internet connects people to the rest of the globe and provides access to a cleaner environment and better health.

According to Gary Becker (1991), the sex of the family members determines who engages in domestic production and who engages in the market sector. Most racial and ethnic minority groups, as well as female-headed households with children, are known for having high rates of poverty (Jones and Kodras 1990). "Additionally, approximately 76% of HHs have access to clean water, 67% have access to electricity, and 63% have access to telephone services. On the other hand, just 18% of HHs have a closed drainage system, while approximately 53% of HHs lack toilet facilities on their property, 42% lack a bathroom, 32% lack a separate kitchen, and 31% lack a bathroom" (Census of India, 2011).

Growing inequality in asset distribution in rural Haryana families with female heads of home provides insight into the pattern of asset availability. We want for a district-level asset distribution pattern that reflects the uneven distribution of assets, similar to the 2011 radio, television, bicycle, internet, and mobile-based census.

According to Thorat (2002), social prejudice and economic exclusion are closely connected and have a significant impact on the distribution of assets. According to Table 1.7, the average asset holding of families with a female head of home is substantially lower than the average asset holding of all households. The amount of income and the distribution of savings for investments in the standard of living in families are determined by the percentage of assets in households led by women.

Study Area

Haryana's precise location is between latitudes 270 39' and 300 55' 05' north and longitudes 740 27' 08' and 770 36' 05' east. It occupies a 44,212 km2 area, or 1.37 percent of the entire land area of the nation. The 2011 census indicates that there are 253 million people living in Haryana. Out of a total population of 253 million people, 153 million are men and 118 million are women, making up 2% of the population. The lowest sex ratio in India, at 877 females for every 1,000 men, was reported in Haryana. The literacy rate in Haryana is 76.64 percent on average. The state now has 119 blocks, 74 tehsils, 44 sub-tehsils, 21 districts, 4 divisions, and 57 subdivisions. There are 154 cities and 6841 villages in the state of Haryana. Figure 1.1 depicts the geography of the Indian state of Haryana and the split of its government in 2011.

Map 1: Location of the Study Area

Objective

This study's primary goal is to map the distribution of families in rural Haryana with female heads of household's electrical assets at the district level.

Database and Methodology

For the purpose of this paper, district-level census data from 2011 were utilised to examine several elements of housing conditions for families headed by women. Five variables have been used in this study to determine the socioeconomic status of female-headed families in rural Haryana. They are as follows;

    i.   Radio (X_1),
    ii.   Televisions (X_2),
    iii.   Internet (X_3),
    iv.   Number of mobiles (X_4),

The following formula has been used to determine the socioeconomic status levels for each indicator in a district:

$$\text{Z-Score} = \frac{Xi - Mean}{Standard\ Deviation}$$

The "composite Z score" was created by adding the "Z scores" of each of the four indicators that were chosen. Levels of electrical assets among female-headed families in rural Haryana have been established based on composite Z scores. The "composite Z score" value that was so acquired was divided into three groups. It is expected that any number greater than 1.0 is regarded to be at a high level, while any value between minus -1.0 and plus +1.0 is considered to be at a medium level, and any value less than -1.01 is thought to be at a low level for a district. Finally, tables were created to understand and analyse the data, and maps were created using Arc GIS.

Result & Analysis

The availability of radio, television, internet, mobile devices, and bicycles is displayed district-by-district in Table 1. We can see that in rural Haryana, just 13.30 percent of households have radios in their homes. On the other hand, 61.48 percent of families with female heads had mobile phones, compared to 59.85 percent of homes with televisions. A bicycle is owned by 33.57 percent of people, compared to 1.05 percent who use internet services.

Table 1: Electrical Assets of Female-headed Households in Rural Haryana, 2011

Districts	Radio	Television	Internet	Mobile
Ambala	13.63	73.89	02.08	57.35
Bhiwani	15.00	49.70	00.78	65.49
Faridabad	10.45	59.96	01.71	61.00
Fatehabad	14.60	47.90	00.82	60.79
Gurugram	13.99	64.30	01.72	67.18
Hisar	15.69	47.18	00.61	64.22
Jhajjar	16.16	63.35	01.05	63.45
Jind	11.72	54.24	00.79	61.53
Kaithal	14.74	58.14	00.89	60.46
Karnal	11.31	61.72	00.88	58.31
Kurukshetra	13.36	70.02	01.48	60.56
Mahendragarh	13.67	47.69	00.99	66.91
Nuh (Mewat)	05.91	12.65	00.22	54.38
Palwal	06.95	42.90	00.69	50.37
Panchkula	10.37	69.76	01.51	57.13
Panipat	09.95	61.87	01.26	60.31
Rewari	14.54	58.13	01.56	63.44
Rohtak	14.10	62.02	00.94	62.58
Sirsa	15.77	50.45	01.11	62.59
Sonipat	13.43	61.37	01.13	60.60
Yamunanagar	09.85	63.72	01.11	56.04
HARYANA	**13.30**	**55.89**	**01.05**	**61.48**

Source: Census of India, 2011.

Spatial Pattern of availability of assets in Female-Headed Household in Rural Haryana
Radio/ Transistor

The clear frequency of radio creates the backbone of an effective society. However, the challenges of providing these services in rural female-headed households become a huge task. As Map 2 documents, the pattern of availability of radio in rural Haryana. More the 1/7th part (13.30) of rural households have assessed radio at their homes. The minimum distribution of radio asset is female-headed of providing these securities in the rural female-

headed Haryana, Jhajjar district has the highest availability of radio assets that is 16.16 percent while the Mewat has the lowest availability of radio with 5.91 percent. Although, there is a huge gap among the district level in the availability of assets varies from district-to-district ranges from less than 5.0 percent to above 20.0 percent. Total 21 districts of Haryana are categorized into five groups as under:

High Radio Assets– In the category of rural Haryana's large percentage of homes with a female head of family, only thirteen districts have radio assets of this scale. The high group includes the districts when the range of radio asset availability is (13.01 -16).

Moderate Radio Assets -The distribution of radio assets indicates that the western and southern districts of Haryana fall into groups like the moderate category, which includes districts with ranges between 10.01 and 13.

Low Radio Assets – The percentage of homes with a female head of household was low in the two districts studied, with scores ranging from 7 to 10%. In families with female heads of family, Mewat and Palwal districts have used the fewest radio resources. Low-use districts are those with fewer than 7% of their students using the facility (Table 2).

Table 2: Radio Asset in Female-Headed Households in Rural Haryana, 2011

S. No.	Categories	Range	No. of Districts	Name of Districts
1.	High	>13.01	13	Jhajjar, Sirsa, Fatehabad, Hisar, Bhiwani, Rohtak, Sonepat, Mahendergarh, Rewari, Gurgaon, Kaithal, Kurukshetra, Ambala
2.	Moderate	10.01 – 13.0	4	Panchkula, Jind, Karnal, Faridabad
3.	Low	< 10.0	2	Yamunanagar, Panipat, Mewat, Palwal

Source: Calculated by Author.

Television Asset

The Ambala district in rural Haryana has the greatest asset availability, at 73.89 percent, while the Mewat district has the lowest television asset availability for female-headed families. Haryana's total 21 districts are divided into the following five groups:

High Television – The amount of television-related assets was quite high in two districts. The majority of these districts were situated in Haryana's northern region. The percentage of residents in these districts who watch TV is usually around 70%. These districts are Ambala

and Kurukshetra. In rural Haryana, 8 districts in the state have a high number of families led by women. The high group includes the districts with television asset ranges (60.01 -70).

Moderate Television -According to the spatial distribution of television assets, the moderate category includes the northern and southern districts of Haryana that fall between the range of (50.01-60). In the districts of Sirsa, Kaithal, Jind, Rewari, and Faridabad, the cooking facility was utilised (Table 3).

Low Television - The concentration was modest and varied between 40 and 50 percent in 5 districts. These districts, which were dispersed throughout the state, filled in the spaces between densely populated regions and sparsely populated ones in terms of geography. The only Mewat district where female-headed families have utilised the least television equipment (Map 3).

Table 3: Television Asset in Female-Headed Households in Rural Haryana, 2011

S. No.	Categories	Range	No. of Districts	Name of Districts
1.	High	>60.01	10	Kurukshetra, Ambala. Panchkula, Yamunanagar, Karnal, Panipat, Sonepat, Rohtak, Jhajjar, Gurugaon
2.	Moderate	50.01 – 60.0	5	Sirsa, Kaithal, Jind, Faridabad, Rewari
3.	Low	<50.0	6	Mewat, Palwal, Hisar, Bhiwani, Fatehabad, Mahensdergarh

Source: Calculated by Author.

Internet Service
An efficient and socially conscious society is built on the foundation of internet connection in rural regions. The Ambala district in Haryana has the highest availability of internet resources, at 2.08 percent, while Mewat has the lowest availability, at 15.81 percent. Although there is a significant disparity between districts in terms of asset availability, it spans from less than 0.50 percent to above 2 percent. Haryana's total 21 districts are divided into the following five groups:

High-Level Internet Service – In the state, only one district is classified as having a very high concentration (fig. 1.3). This area is known as Ambala. In rural Haryana, 4 districts of the state fall under the category of high female family headcount. Districts with internet

access (1.5–2.0) are considered to be in the high category. In the districts of Panchkula, Rewari, Gurgaon, and Faridabad, high internet services were utilised.

Moderate Level Internet Service -According to the spatial distribution of toilet facilities, Haryana's northern and southern districts fall into all of the different categories. For example, the districts with internet service ranges between 1.01 and 1.50 are considered to be in the moderate category (Table 4).

Low-Level Internet Service –Between 0.50 and 1 percent of rural homes with female heads of household were aware of internet services. These districts, which were dispersed throughout the state, filled in the spaces between densely populated regions and sparsely populated ones in terms of geography. With regard to rural homes led by women, Mewat district has the lowest usage of internet services (Map 4).

Table 4: Internet service in Female-Headed Households in Rural Haryana, 2011

S. No.	Categories	Range	No. of Districts	Name of Districts
1.	High	>1.51	5	Ambala, Panchkula, Rewari, Gurgaon, Faridabad
2.	Moderate	1.01 – 1.50	6	Kurukshetra, Yamunanagar, Jhajjar, Panipat, Sonepat, Sirsa
3.	Low	< 1.0	10	Mewat, Fatehabad, Hisar, Jind, Kaithal, karnal, Bhiwani, Rohtak, Mahendergarh, Palwal

Source: Calculated by Author.

Mobile Phone

The Gurgaon district in Haryana has the greatest rate of mobile phone usage—67.18 percent—while Palwal has the lowest rate—50.37 percent—among rural families with female heads of household. Although there is a significant disparity between districts in terms of toilet facilities, it ranges from less than 50% to above 65%. Haryana's total 21 districts are divided into the following five groups:

Very High Mobile phone - Three of the state's districts fall under the heading of "extremely high concentration" (fig. 1.4). Over 65% of people in these areas use mobile phones. Most of these districts are found in the state's northern region. In rural Haryana, 12 districts fall under the category of high mobile phone density. Districts in the high group have ranges between (60.01 and 65).
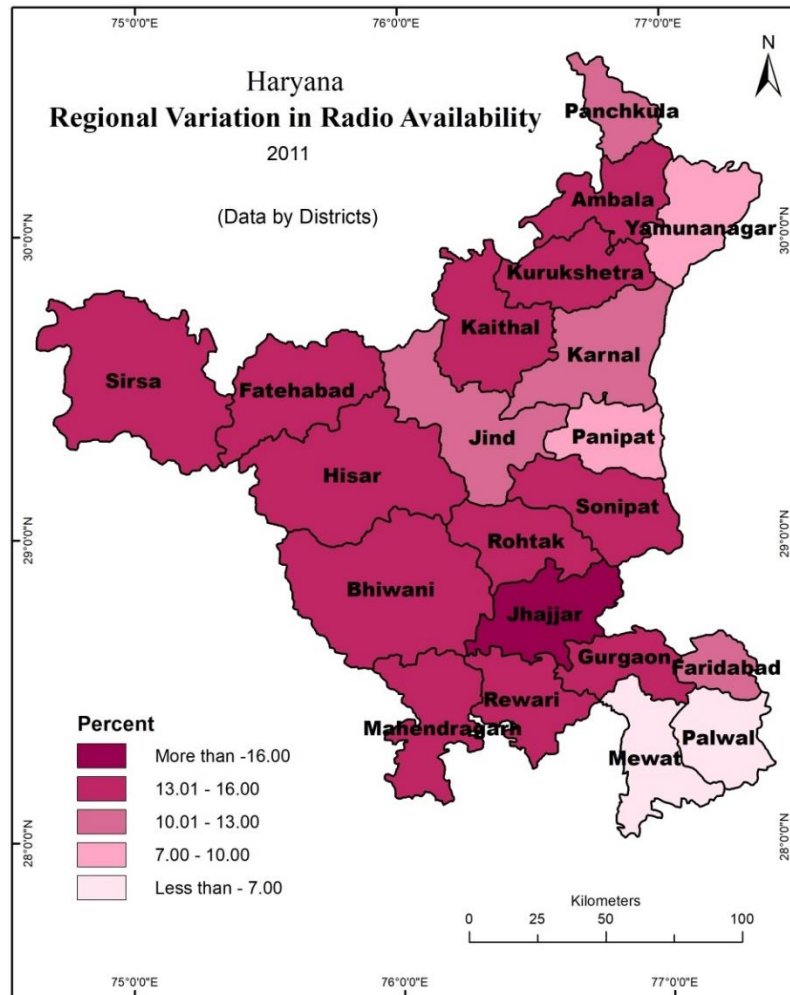
Moderate Level Mobile Phone -According to the mobile spatial pattern, all of Haryana's northern districts fall within the moderate group, which includes those with a range of (55.01 - 60). The state's districts utilised the mobile facilities that were available (see fig. 1.4). Mewat, at 54.38 percent, is the only district that fits this description. Palwal District falls under this heading (Map 5).
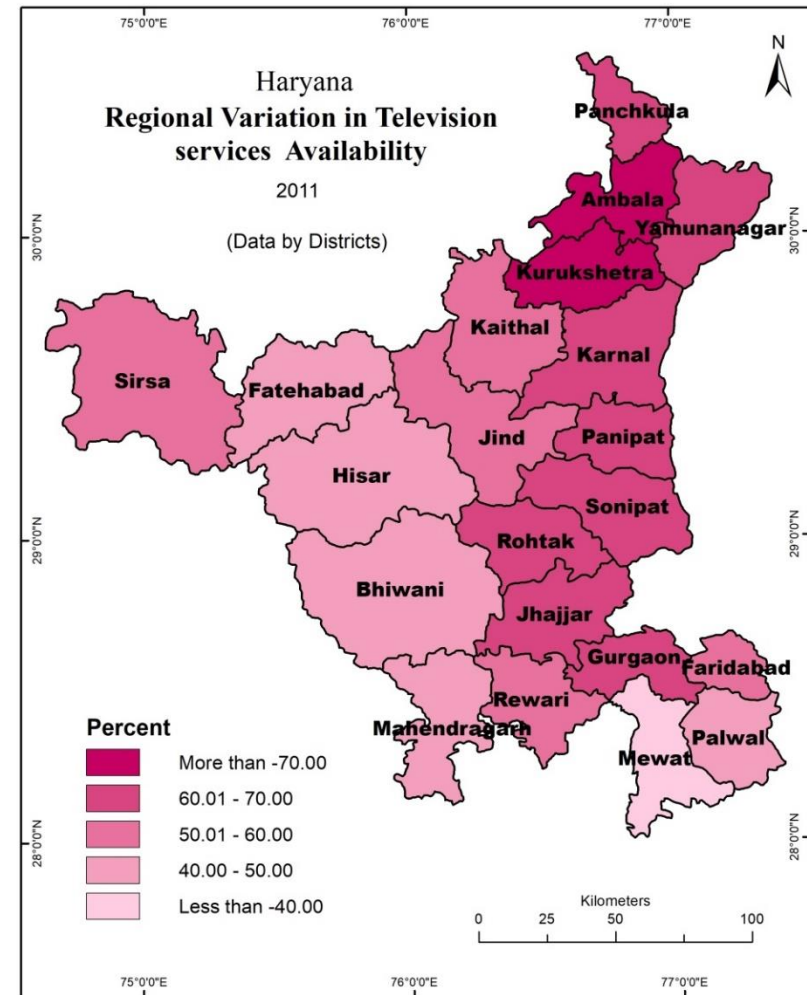
Table 5: Mobile phones in Female-Headed Households in Rural Haryana, 2011

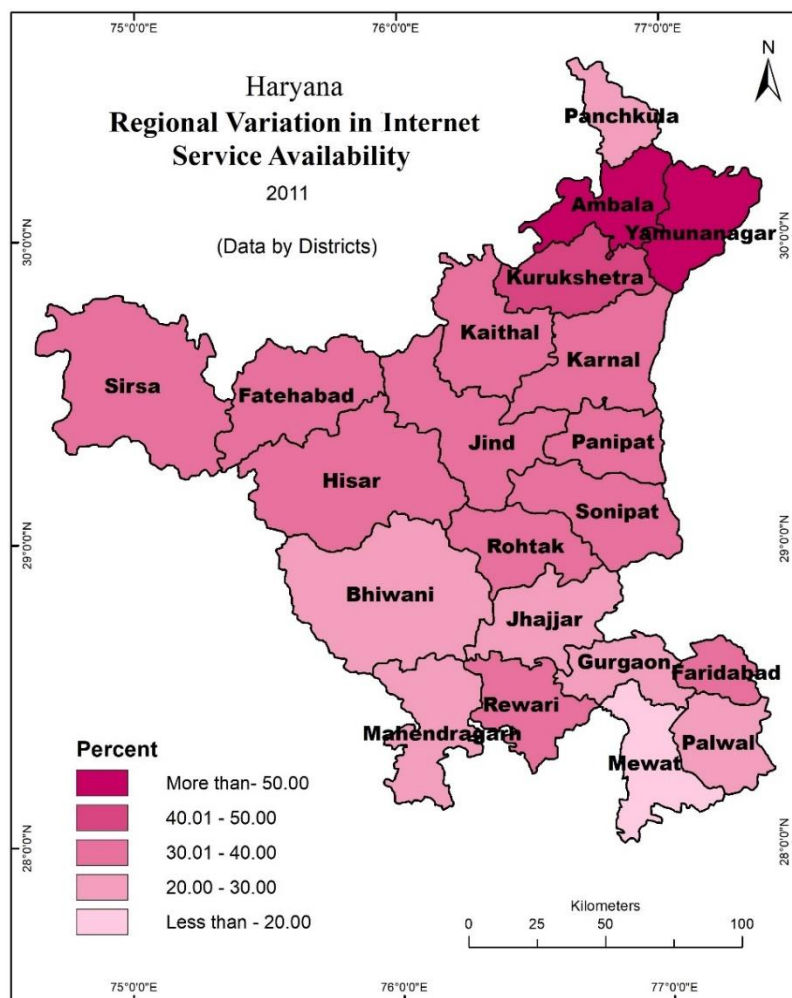| S. No.	Categories	Range	No. of Districts	Name of Districts
1.	High	>60.01	15	Bhiwani, Mahendergarh, Gurugaon, Sirsa, Fatehabad, Hisar, Kaithal, Jind, Kurukshetra, Panipat, Sonepat, Rohtak, Jhajjar, Rwari, Faridabad
2.	Moderate	55.01 – 60.0	4	Panchkula, Yamunanagar, Ambala, Karnal
3.	Low	<50.0	2	Mewat & Palwal

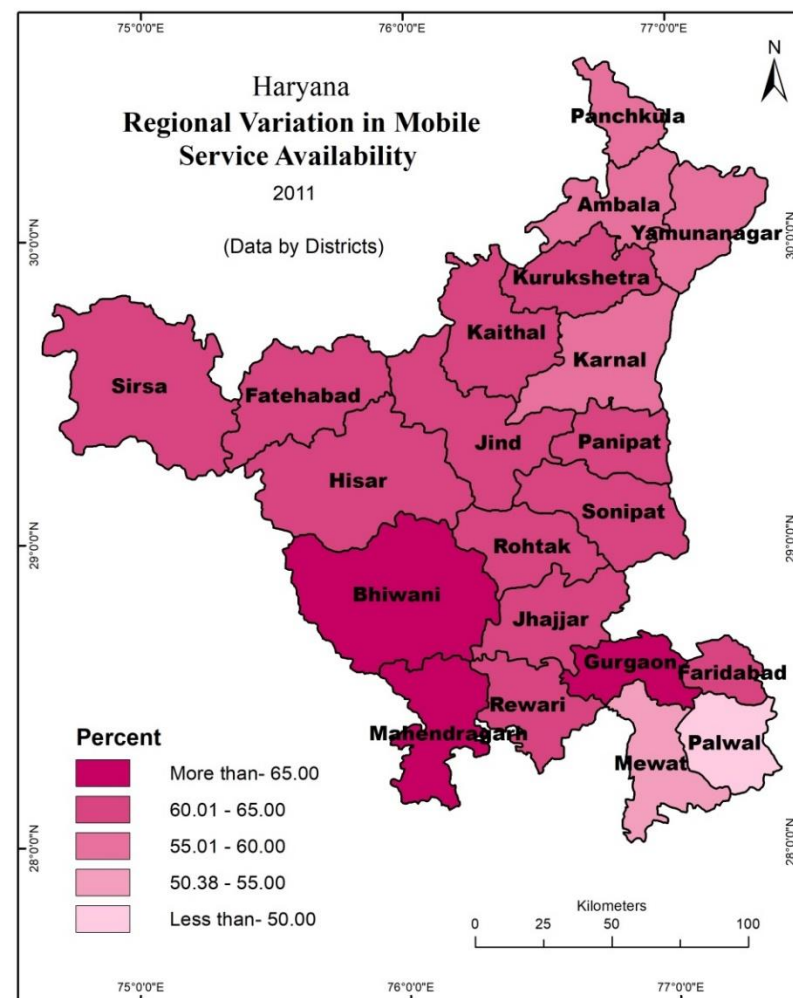Source: Calculated by Author.

Map: 2

Map: 3

Map: 4

Map: 5

Areas of high Socio-economic status (> 1.00)

As a result, we can state that 7 out of the 21 districts have composite index scores more than 1.0. The fact that all of the districts in this group have a high level of radio, television, internet, cellphone, and bicycle use has been cited as an indicator of high socioeconomic position. Gurugram ranks first among these districts (1.04).

Table 5: District-wise Z score of Selected Amenities of Female-Headed Households, 2011

Districts	Radio	Television	Internet	Mobile	Composite Index
Ambala	0.35	1.39	2.26	-0.83	0.79
Bhiwani	0.85	-0.51	-0.77	1.2	0.19
Faridabad	-0.79	0.29	1.4	0.08	0.25
Fatehabad	0.7	-0.66	-0.68	0.02	-0.16
Gurugram	0.48	0.64	1.42	1.62	1.04
Hisar	1.1	-0.71	-1.17	0.88	0.03
Jhajjar	1.27	0.56	-0.14	0.69	0.60
Jind	-0.34	-0.16	-0.75	0.21	-0.26
Kaithal	0.75	0.15	-0.51	-0.06	0.08
Karnal	-0.48	0.43	-0.54	-0.59	-0.30
Kurukshetra	0.26	1.09	0.86	-0.03	0.55
Mahendragarh	0.37	-0.67	-0.28	1.55	0.24
Nuh (Mewat)	-2.43	-3.43	-2.08	-1.57	-2.38
Palwal	-2.06	-1.05	-0.98	-2.58	-1.67
Panchkula	-0.82	1.07	0.93	-0.89	0.07
Panipat	-0.97	0.44	0.35	-0.09	-0.07
Rewari	0.68	0.15	1.05	0.69	0.64
Rohtak	0.52	0.46	-0.4	0.47	0.26
Sirsa	1.13	-0.46	0	0.47	0.29
Sonipat	0.28	0.41	0.05	-0.02	0.18
Yamunanagar	-1.01	0.59	0	-1.16	-0.40
HARYANA	**0.23**	**-0.03**	**-0.14**	**0.2**	**0.07**

Source: Calculated by Author.

Areas of Moderate socio-economic status (-1.0 to +1.0)

This area is proportionally sharing 50 percent of Haryana. 11 out of 21 districts come under this category. The moderate status has been noticed in all parts of Haryana likewise Ambala (0.79), Rewari (0.64), Jhajjar (0.60) in the North, Mahendragarh in the south.

Areas of Low socio-economic status (Below -1.0)

Table (5) shows that there are only 2 districts are come in this category. The southern part of Haryana has low socioeconomic status. The southern part is mostly consisting two districts namely Nuh (Mewat) (-2.38) and Palwal (-1.67). These two have very low per capita income, low literacy rate, and steady rate of urbanization. These districts have also large families due to the high level of fertility.

Conclusion

The geographical distribution of asset availability in rural families led by women exhibited similarities to developed and underdeveloped rural Haryana areas. Most of the northern or rural Haryana districts have values above the national average. The bulk of residents in the bottom five districts, Mewat, Palwal, Sirsa, and Hisar, were from the south and west.

Since just 1/7th of the state has been radio categorised for female-headed households in rural parts of Haryana, it is apparent that there has been substantial variation in each category of assets. The calculated tabular numbers clearly demonstrate that half of Haryana uses television facilities.

According to Table 5, Haryana's southern districts have a lower socioeconomic standing than the northern and other regions of the research area. In terms of other factors like urbanisation, employment, and education, this region is likewise behind.

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