Mapping the Drivers of Women's Health Empowerment Disparities: Evidence from Pakistan

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ARTICLE DETAILS	ABSTRACT
History: Accepted: 11 September 2024 Available Online: 30 September 2024 *Keywords:* *CPEC; Hedging Alignment;* *Soft Power;* *NeoColonialism;* *Economic Imperialism* **JEL Codes:** I12 I11 J16	**Objective:** The present study aims to quantify women's health empowerment in the first stage and determine the factors affecting it in the second stage. The study also highlights regional differences in women's health empowerment through spatial mapping. **Research Gap:** The role of women cannot be denied for high economic growth in modern economic literature. Improving the health and wellbeing of all individuals, particularly women is a global goal under the SDGs. Poor health status and lack of healthcare facilities not only affect women's well-being negatively but also affect economic growth through the reduction in their productivity. Pakistan is one of the few countries where women face issues in health empowerment. Health empowerment is one's ability to make healthcare decisions. The study is novel in nature to quantify health empowerment and factors affecting it. **Design/Methodology/Approach:** The study employs the data from the Pakistan Demographic and Health Survey (PDHS) for this purpose. Descriptive and Ordinary Least Square method have been used for the analysis. To check correlation among variables, Principal Component Analysis is done. Spatial Analysis is performed to estimate regional differences in women's health empowerment. **The Main Findings:** Regression analysis suggest that women's empowerment, age and education have significant impact on health poverty. Women residing in urban areas face less barriers to health care access as compared to women residing in far flung areas. **Theoretical / Practical Implications of the Findings:** The findings of the study suggest empowering women through provision of educational opportunities, access to economic resources and autonomy through social and culturally sensitive intervention. **Originality/Value:** Preceding studies have not quantified women's health empowerment. This study is groundbreaking in identifying factors affecting health empowerment of women. Additionally, it provides spatial analysis of situation of health empowerment in the country.

1. Introduction

Sustainable development and inclusive growth are not possible without gender equality and women's empowerment (Bayeh, 2016; Mishra et al., 2020). It requires a level playing field for women in legal rights, access to education, financial services, and healthcare (Kochhar et al., 2018). Higher gender equality leads to better allocation of a valuable resource (female labor), which enables economic growth (Bertay et al., 2020). In this

regard, women's empowerment and gender equality is vital for economic growth and development goals. Empowerment is a multidimensional concept, and its definition varies substantially. It is commonly derived by indicators such as decision-making, financial inclusion, educational and job opportunities, health conditions, and mobility. Women empowerment is just not an outcome, but a variable that affects other development goals. Improvement in health and nutrition status is connected to women's empowerment (Cornwall, 2016; Wei et al., 2021).

Women's access to and control over resources affects their health status, which consequently impacts their ability to be responsible for their healthcare needs (Sahn & Younger, 2009; Mabsout, 2011; Ross et al., 2015). However, women face multiple barriers which include a lack of transportation, financial resources, information, and cultural and social barriers in developing countries. These factors deteriorate women's health status. Deterioration in health results in a decline in their productivity (Lee et al., 2021), which reduces economic growth (Arora, 2001).

Pakistan is among a few countries in the world where the gender gap in health still exists. The country has closed 94.4 percent of the gender disparity in health (National Gender Policy Framework, 2022). Women constitute 49.5% of the total population of the country. Men and women don't have the same kind of health facilities in Pakistan (Rizvi et al., 2014). The disparity in the provision of health services affects almost half of the population of the country i.e. women. Furthermore, this deprivation is due to socio-cultural factors and a lack of facilities and health infrastructure in the country. These factors determine health poverty among women in the country.

Health empowerment is the capacity of a person to make his/her health decisions. Women's health empowerment in Pakistan is complex issue with deep rooted social and cultural factors. Norms and religious practices often dictate women's health empowerment by impacting herk of mobility and decision making. Lack of mobility However, earlier research has not quantified health poverty among women in Pakistan. Therefore, this study aims to quantify women's health empowerment and the factors affecting it. This study shall also diagnose regional differences in women's health empowerment through spatial mapping. The study is organized into five sections. The literature review is discussed in Section 2. Section 3 presents data and methodology. We, then, present and discuss the results in Section 4. In Section 5, the study is concluded with policy implications.

2. Literature Review

In developing countries, health disparity among gender remains a concern. Men and women don't have equal access to healthcare services (Azad et al., 2020). Women face various well-documented barriers to health access. Inclusion of the women in the financial decisions of the household affects women's reach to healthcare services (Habib et al., 2021). In patriarchal societies, men usually control household spending including healthcare. Women's role is limited to domestic chores management. This control over spending makes women's health depends on the men of the household. Girl's health is usually neglected because they have to leave the house due to marriage. Cultural practices and norms in some societies place the burden of household tasks on women and discourage them from land holdings and ownership. These barriers consequently affect women's empowerment (Asaolu et al., 2018).

In primary healthcare, location, distance, and transport availability act as a hurdle in healthcare accessibility for women (Panezai et al., 2017). Moreover, women face significant challenges in accessing health care services. These barriers include a lack of transportation, financial resources, information, and cultural or social barriers (Habib et al., 2021).

Women in previous studies have also revealed social and cultural barriers to getting proper health treatments which include not getting permission or money to go to the hospital and their unwillingness to go alone to the health facility etc., which indicates less autonomy in decision-making (Asaolu et al., 2018; Htun et al., 2021). Another factor, Technology, also plays a vital role in building women's capacities and resources. Information Communication Technology (ICT) intervention aids women in the provision of health services, health literacy, and other domains which empower women (Mackey & Petrucka, 2021).

Moreover, empowerment of women also affected by the women's mobility (Mainuddin et al., 2015). Their freedom of mobility makes them more empowered (Abrar-ul-haq et al., 2017). Women as household heads have

greater autonomy in decision-making and are more mobile than other women. Furthermore, women who earn more are also more mobile (Baig et al., 2018). Therefore, freedom of mobility reflects the empowerment of women.

According to existing literature, Education, in general, and health literacy, in particular, are important factors affecting healthcare access to women (Nwogwugwu, 2019; Azad et al., 2020; Htun et al., 2021; Tavananezhad et al., 2022). Health literacy and women empowerment are two important components of women's health improvement strategies (Tavananezhad et al., 2022). They define health literacy as "acquisition of required cognitive and social skills to enable women to access, understand, appraise, and use the information needed to maintain and enhance their health conditions". Educated and self-reliant women are more empowered. (Muhammad et al., 2021) Therefore, women's health empowerment can significantly be improved by educational interventions (Sabouri et al., 2022).

Furthermore, exposure to mass media, access to information, and economic empowerment not only improve the economic conditions of the women, but their health conditions as well (Nwogwugwu, 2019; Abbas et al., 2021; Seidu et al., 2021; Lassi, Ali, & Meherali, 2021; Sserwanja et al., 2022). Empowered women have better access to healthcare services and decision-making authority in health-seeking (Nwogwugwu, 2019). Such women can make better decisions for their children as well (Mainuddin et al., 2015).

Moreover, Qureshi and Sheikh (2007) assert that four power institutions of the society i.e. family, community, the health care system, and the state should do joint efforts to provide equal access to health care to women in Pakistan.

3 Data and Methodology
3.1. Data
For the analysis purpose, the present study has used data from Pakistan Demographic and Health Survey (PDHS, 2017-18). PDHS provides the latest comprehensive data on health indicators of women and members of their households at the national level. A survey has been conducted by the the ICF, funded by USAID and Pakistan National Institute of Population Studies. Data from 50,495 ever-married women were taken for analysis. To construct our output variable, Health Poverty Index, we considered three barriers to access health care faced by women. These barriers include (i) the person who decides about the respondent's health care, which reflects decision-making regarding the health of women (HP_D1), (ii) distance from the health care facility (HP_D2), and (iii) the Availability of medicines (HP_D3). Data on the availability of medicines were available for 27436 women in the data set. Therefore, we computed two health poverty indexes. First, Health Poverty Index (HP_O) was computed using all observations and two barriers to access to health care i.e. HP_D1, and HP_D2. Whereas second index (HP_O1) was computed using 27,436 observations and three barriers which also included HP_D3. HP_O and HP_O1 take the value 1 when the woman is deprived of health care access, and 0 when she is not deprived.

Women empowerment index (WEI) is computed using ten variables from the data set, which can be grouped into five dimensions i.e. (i) Decision making (ii) employment, (iii) technological empowerment (iv) financial empowerment, and (v) mobility. Decision-making is evaluated based on four categories (person who usually decides on household purchases for daily needs, person who decides how to spend respondent's earnings, autonomy to sell the house, and autonomy to sell the house). Employment is assessed by: (whether respondents are working or not). Another dimension, technological empowerment, is analyzed by three items (owning a mobile phone, using the internet, and using the mobile phone for financial transactions), technological empowerment is determined using: (whether the respondent has an account in a bank or any other financial institution). Finally, women's mobility is checked through a variable (person who decides about visits to family and relatives). WEI takes the value 1 when a woman is not empowered and 0, when she is empowered in the above dimensions. Furthermore, other socio-demographic variables such as the age of the respondents and their educational attainment are also used in the analysis. Out of 50,495 women, 33163 women have no education or have not completed primary. 8749 women have completed the primary level of education. 3,903 women have completed secondary, and 4,680 women have received education higher than secondary education.

The frequency present in Table 1 suggests that out of 50,496 women in the selected sample, 52% of the women cannot make a decision regarding their healthcare. These decisions are taken by their husband or other family

members, whereas 48% of the women can make health care decisions for themselves. 49 % of the women in the available data set consider the distance from the healthcare facilities as a barrier to healthcare access, whereas 51% of the women don't face such a barrier. Table 1 suggests that 74% of the women don't have access to medicines and 26% of the women have access.

Table 1: No. of Deprived and Non-deprived Women from Health Care Access

Health Poverty Index	Deprived (1)	Not deprived (0)	Total
HP_O	15,170	35,325	50,495
	(30%)	(70%)	
HP_O1	8,638	18,798	27,436
	(31.5%)	(68.5%)	
Health Empowerment dimensions			
Person who decides about respondent's health care (HP_D1)	26,059	24,436	50,495
	(52%)	(48%)	
Distance from health care facility (HP_D2)	24,789	25,706	50,495
	(49%)	(51%)	
Availability of medicines (HP_D3)	20,407	7,029	27,436
	(74%)	(26%)	

Source: Authors' Estimation

Statistics shown in Table 2 for the dimension of women's empowerment indicate that 57% of women are not empowered to make decisions regarding their lives. These decisions are taken by other family members. However, other 43% of the women have the liberty to make their decisions. Moreover, as per the stats presented in Table 1, 85% of the women in a dataset are not employed, whereas 15% were employed, which is quite low. Women constitute 49% of the total population of the country. Low participation in the labor force depicted from our sample is another cause of not being empowered in general and health in particular. The technological empowerment dimension suggests that 61% of the women don't have access to technology i.e. phone, internet, or don't use them for financial transactions. However, 39% of the women in the data have access to technology and are technologically empowered.

The fourth dimension, financial empowerment suggests that 94% of the women in the data set don't have a bank account, whereas only 6% of the women have a bank account. This estimate shows poor financial empowerment among women and their dependency on other family members. Furthermore, 61% of the women don't have the liberty to make the decision regarding their mobility, which is quite a high percentage. They have to seek permission or be accompanied by someone to go to any place. These indicators suggest the situation of women's empowerment in Pakistan.

Table 2: No. of Women Empowered and Not Empowered in different dimensions.

Women Empowerment Dimensions	Not Empowered (1)	Empowered (0)	Total
i. Decision making (WE_D1)	29,007	21,488	50,495
	(57%)	(43%)	
ii. Employment (WE_D2)	43,020	7,475	50,495
	(85%)	(15%)	
iii. Technological empowerment (WE_D3)	30,592	19,903	50,495
	(61%)	(39%)	
iv. Financial empowerment (WE_D4)	47,225	3,270	50,495
	(94%)	(6%)	
v. Mobility (WE_D5)	30,787	19,708	50,495
	(61%)	(39%)	

Source: Authors' Estimation

Table 3 presents the relationship between the women empowerment index with barriers to healthcare i.e. person who decides about respondents' healthcare needs (HP_D1), distance to a healthcare facility (HP_D2), and availability of medicines (HP_D3). Cross Tabulations suggest that a significant number of women face barriers such as decision-making regarding health care. 59% of women are empowered as per the women empowerment index but don't have the liberty to decide about their healthcare needs, which is a significant amount. 23.5 % of women are not empowered in any domain.

Table 3: Relationship of Women Empowerment Index with Decision Making, Distance and Availability of Medicine as Barrier to Healthcare Access

		WEI		
		0	**1**	**Total**
HP_D1	0	16,177 (41)	8,259 (76.5)	24,436
	1	23,524 (59)	2,535 (23.5)	26,059
	Total	39,701	10,794	50,495
HP_D2	0	20,049 (50.5)	5,657 (52.4)	25,706
	1	19,652 (49.5)	5,137 (47.6)	24,789
	Total	39,701	10,794	50,495
HP_D3	0	5,511 (26.1)	1,518 (23.9)	7,029
	1	15,568 (73.9)	4,839 (76.1)	20,407
	Total	21,079	6,357	27,436

Source: Authors' Estimation

Moreover, 49.5% of the women who are empowered consider distance as a barrier to accessing healthcare. 50.5% of empowered women don't consider distance as a hurdle to accessing healthcare. Statistics regarding the availability of medicine indicate that 73.9% of empowered women face difficulty getting medicines. Whereas, 26.1% of the empowered women do not face problem in getting medicines. 76.1% of the deprived women don't have access to medicines. These statistics present deteriorated situation of women's health in the country.

Table 4 suggests that an increase in the educational attainment of women results in a decline in the percentage of women facing various barriers. This indicates that women getting higher education leads to less deprivation from healthcare.

Table 4: Relationship of Education with Decision Making regarding Healthcare, Distance and Availability of Medicine as Barrier to Healthcare Access

		Education				
		No Education or less than primary	Primary Completed	Secondary Completely	Higher	**Total**
HP_D1	0	13906 (42)	4927 (56)	2,397 (61)	3,206 (68.5)	24,436
	1	19257 (58)	3822 (44)	1,506 (39)	1,474 (31.5)	26,059
	Total	33163	8749	3,903	4,680	50,495
HP_D2	0	14097 (42.5)	5298 (61)	2,641 (67.6)	3,670 (78.4)	25,706
	1	19066 (57.5)	3451 (39)	1,262 (32.3)	1,010 (21.6)	24,789
	Total	33163	8749	3,903	4,680	50,495
HP_D3	0	4661 (22)	1331 (34.9)	492 (37.8)	545 (47.2)	7,029
	1	16501 (78)	2487 (65.1)	810 (62.2)	609 (52.8)	20,407
	Total	21162	3818	1,302	1,154	27,436

Source: Authors' Estimation

3.2. Methodology

After computing the index for health poverty and women empowerment, Principal Component Analysis (PCA) was done to check the correlation among variables of the health poverty index (HP_D1, HP_D2 & HP_D3). Further, following logit models presented in Equation 1 and Equation 2 were formulated to analyze the impact of the explanatory variables on the outcome variables.

$$HP_O = \alpha_0 + \alpha_1 WEI + \alpha_2 Age + \alpha_3 Edu + U_1 \tag{1}$$

$$HP_1 = \beta_0 + \beta_1 WEI + \beta_2 Age + \beta_3 Edu + U_2 \tag{2}$$

Where, HP_O represents the first Health Poverty Index, HP_1 represents the second Health Poverty Index, WEI represents the Women Empowerment Index, Age represents the age of the respondent, and Edu represents the educational attainment of the respondent.

4. Discussion and Conclusion

PCA has been done to check the correlation among variables on Health Poverty Index. To estimate the impact of explanatory variables on outcome variables, explanatory variables have been regressed on Health Poverty Index. Results are discussed in the next sections.

4.1. Principal Component Analysis

Principal Component Analysis results suggest that principal components are uncorrelated. The first component has a variance of 1.2620 explaining 42% of the total variance. The second principal component has a variance of 0.944 explaining 31% of the total variance. Both components are uncorrelated as they don't explain the same information. Values of PCA are presented in Table 5.

Table 5. Principle Component Analysis of HP_D1, HP_D2 & HP_D3

Component	Eigenvalue			
Comp1	1.2620			
Comp2	0.9448			
Comp3	0.7930			

Principle Components (Eigenvectors)				
Variable	Comp1	Comp2	Comp3	Unexplained
HP_D1	0.6137	-0.4466	0.6511	0
HP_D2	0.6574	-0.1676	-0.7347	0
HP_D3	0.4372	0.8789	0.1907	0

Source: Authors' Estimation

4.2. Regression Analysis

For the regression analysis, health poverty is taken as the outcome variable, whereas women empowerment, age, and education are taken as explanatory variables. Logistics regression estimates presented in Table 6. Logit models are used when dependent variable is a binary variable. Both Health poverty Index (HP_O, HP_O1) are binary variables have value 0 and 1. Estimates suggest that women's empowerment has a statistically significant impact on health poverty. Empowering women results in a decline in health poverty and women bear fewer barriers to health care. When women have greater control over their lives, they are more likely to make informed decisions about their health and seeking care. Furthermore, age has a statistically significant impact on health poverty.

Table 6: Effect of Women Empowerment, Age and Education on Health poverty (HP_O)

	Coefficient	P-value
WEI	-.2394***	0.000
Age	-.0079***	0.000
Educational attainment	-.0745***	0.000
Constant	.7298***	0.000

Source: Authors' Estimation

Coefficient estimates suggest that with an increase in age, women face fewer barriers to health care. These results are aligned with (Mumtaz & Salway, 2005; Habib et al., 2021), which suggested that younger women tend to face more socio-cultural restrictions as compared to older women. Lack of knowledge and financial constraints about their health conditions at the younger age aggravates the situation for young women.

Education is another important variable, which suggests that highly educated women are less deprived of healthcare access as compared to uneducated women. Muhammad et al. (2021) suggested that educated women are more empowered. Our results also suggest that an increase in the level of education of women results in a decline in health poverty by empowering women in other dimensions. Educated women are more likely to have health literacy and higher understanding of health care needs which enables them to make more informed decision.

Data for the availability of medicine was available for selected observations. Therefore, another index for health poverty (HP_O1) was computed using 27,436 observations and considering three barriers to accessing healthcare. Estimates in Table 7 are aligned with the results of the previous index. Women's empowerment, age, and educational attainment have a statistically significant effect on health poverty. Empowerment of women results in a decline in health poverty and makes the situation better for women, as previously suggested, young women face more hurdles, and an increase in age and educational attainment results in a decline in hurdles in health care.

**Table 7: Effect of Women Empowerment, Age and Education on Health poverty (HP_O1)**

	Coefficient	P-value
WEI	-.2234***	0.000
Age	-.0076***	0.000
Educational attainment	-.0754***	0.000
Constant	.6995***	0.000

Source: Authors' Estimation

4.3. Spatial Analysis

QGIS has been used to evaluate the regional difference in health poverty and women empowerment in Pakistan. Figure 1 presents the situation of health poverty among women across districts of the country. Figure 2 presents the situation of women's empowerment across various districts of Pakistan.

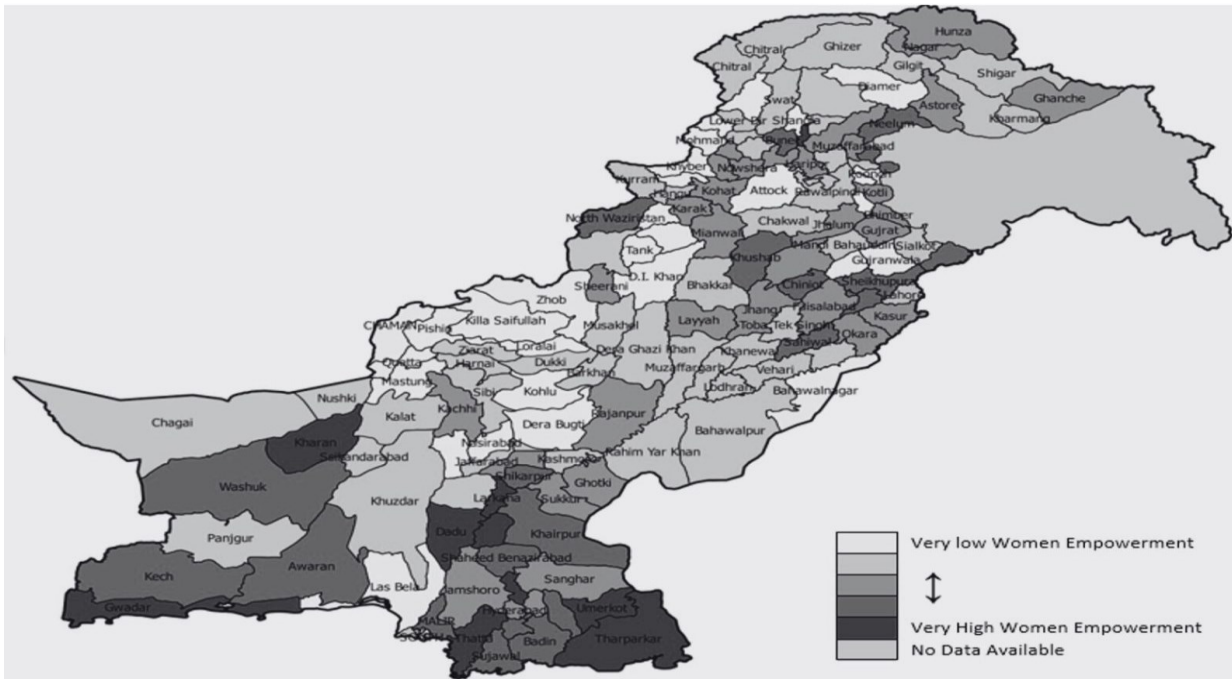**Figure 1: Situation of Health Poverty among Women in Districts of Pakistan**
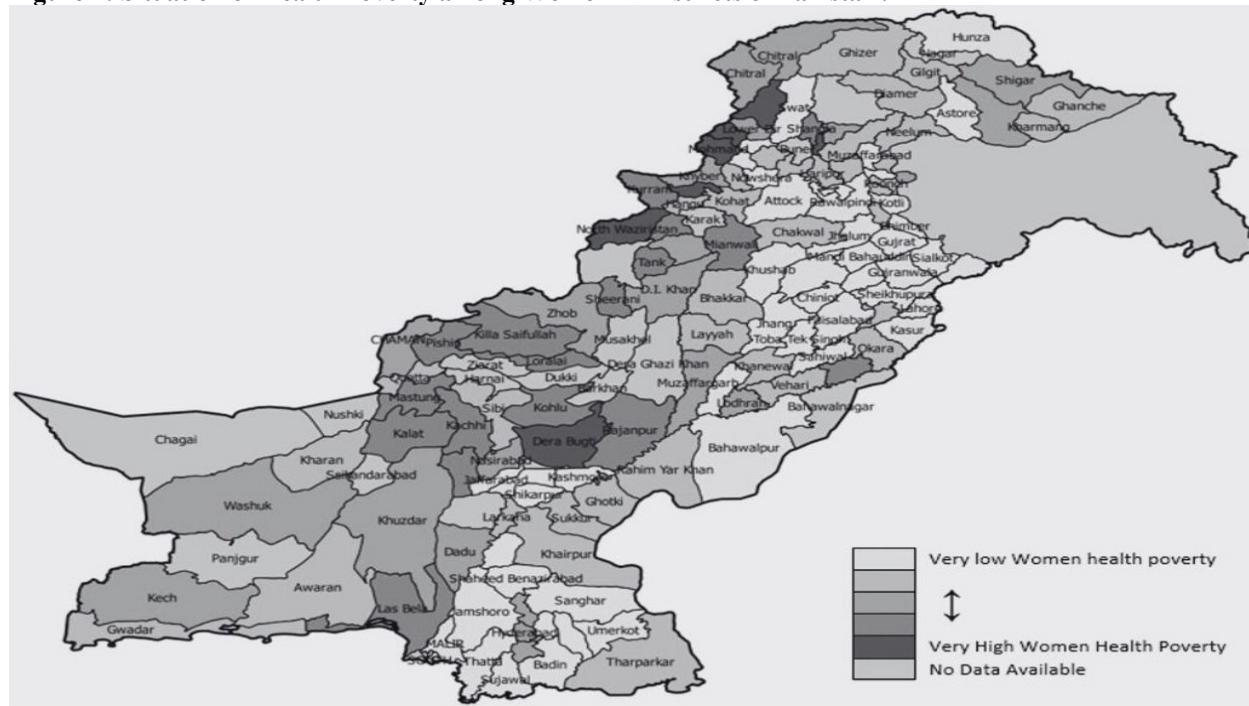
Source: Author's Compilation Based on Data

Spatial analysis of Pakistan presents that out of 143 districts in a data set, health poverty among women is highest in district Dera Bugti, followed by South Waziristan, FR Bannu, and Upper Dir district. However, health empowerment among women is highest in Narowal, Chiniot, and Kasur districts. Furthermore, women in urban districts of Karachi, Lahore, and Islamabad face fewer barriers as compared to women in rural districts such as Tor Ghar, Tank, and Pak Pattan. These estimates of health empowerment align with women empowerment estimates. Areas, where women are more empowered, are the same areas where health poverty is low among women. Data for a few districts were not available. Therefore, it is concluded that women face fewer barriers or health poverty when they are empowered in other domains such as decision-making, employment, technological empowerment, financial empowerment, and mobility.

Figure 2: Situation of Women Empowerment across Districts of Pakistan

Source: Author's Compilation Based on Data

5. Conclusion

This paper has quantified health poverty among women in Pakistan and the factors affecting it. The situation of women's health empowerment across districts in Pakistan is also discussed in the study. The data set was taken from PDHS 2018-19. We computed two indexes for health poverty and women empowerment index to understand the impact of women empowerment, age, and educational attainment on health poverty among women. Women face barriers at multiple levels to access health care. Three significant barriers include the decision to spend on her health care needs, distance, and availability of medicine. Data on medicine was available for 27,436 observations. Therefore, two health poverty indexes were computed. The first index was computed by taking all observations and two barriers. The second index was computed using selected observations and three barriers to health care. Furthermore, the women empowerment index was computed by selecting ten variables and putting them in five categories. These categories are decision-making, employment, technological empowerment, financial empowerment, and mobility. Cross tabulations show that percentage of deprived women in each category is more than 50% and is highest in financial empowerment. 94% of the women in the country are not financially empowered. These estimates present the worrisome situation of women's empowerment in the country. The health poverty index also suggests that a large number of women in the country are deprived of healthcare and face these barriers.

Furthermore, regression analysis suggests that women's empowerment, age, and educational attainment have a significant impact on health poverty. Empowering women and educational interventions can improve health and poverty conditions in the country. Young women have poorer health conditions as compared to older women. With the increase in age, health poverty declines. Spatial analysis has also been done using QGIS. District-wise averages of health poverty suggest that women in district Dera Bugti face most barriers to accessing health care and thus have poor health conditions. Women in urban districts such as Karachi, Lahore, Islamabad, Narowal, etc. have better health access. These averages align with women empowerment averages. Areas, where women are empowered, are the same areas where health poverty is low.

Therefore, Health care access and empowerment are closely linked in the case of women. Empowering women is significant to improve health outcomes by addressing the underlying social, cultural, and economic challenges. Women who have better education, access to economic resources, and enjoy autonomy are more likely to have better health outcomes. Equal access and the use of digital technologies are central to the empowerment of women and girls. However, improvement in the current situation of health care services requires interventions, which are

gender sensitive and culturally appropriate. It requires interventions that consider the experiences and needs of women to address the cultural and social barriers they face.

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