

The Development of Household Empowerment Index among Rural Household of Pakistan

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ABSTRACT

The key objective of this study is to develop a household Empowerment Index for a quick description of household empowerment. Household empowerment was gauged through the first-hand data gathered through face-to-face interview of household head from the rural households of Pakistan. In the process of data collection, multi-stage cluster sampling method was employed which involved twenty-four villages of southern Punjab and 600 heads of the household who were interviewed. With a view to assigning a weight of indicator variables, Principal Component Analysis (PCA) was applied. The findings indicate that there are three pillars of the household empowerment: economic empowerment, social empowerment and above all political empowerment. The said three pillars are based upon the ten sub-pillars which further contain 42 indicators that contribute significantly to household empowerment.

Keywords: Composite index; economic empowerment; household empowerment; political empowerment; social empowerment; rural household

INTRODUCTION

Empowerment is an elusive, contested and ambiguous concept. So far, even many varying definitions of the term have not produced clarity on its meaning. While theorizing about empowerment, it

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is crucial to mention that the term refers to an intrinsically subjective experience. Empowerment refers to a process of change. The fundamental essence of the word empowerment relies upon the idea of power. In discussing the concept of empowerment, Cattaneo and Goodman, (2015) claimed that empowerment refers to the people who are able to take care of their own lives as they have the ability to do things by their own being capable of determining their own goals and agendas. In this connection Kabeer (1999) pointed out that a useful way of thinking about empowerment is to reflect on its opposite 'disempowerment'.

The notion of empowerment is inescapably bound up with "disempowerment and refers to the process by which those who have been denied the ability to make choices acquire such an ability" (Kabeer, 1999, p. 2). Empowerment involves not only greater extrinsic control but also a growing intrinsic capability as well. In defining empowerment Sen and Batliwala (2002) argued that the term involves "greater self-confidence and an inner transformation of one's consciousness that enables one to overcome external barriers to accessing resources or changing traditional ideology" (p. 18). In essence, the concept of empowerment is entangled in the notion of agency, the ability to define one's goals and act upon them (Kabeer, 1999). A lot of research has been conducted on rural household poverty and analysed with the help of empowerment. A strong relationship between empowerment

and household welfare has been reported by many studies¹ though, none have measured household empowerment comprehensively for the rural household.

In the case of Pakistan, Table 1 shows the estimates of poverty and the incidence of poverty for urban and rural areas of Pakistan. A general consensus is that in the 1990s, absolute poverty increased. Conversely, in rural areas poverty increased more rapidly. In 1992-93, urban poverty levels were 20.0 percent while in 1998-99 it increased to 20.9 percent. The rural poverty level in 1992-93 was 27.6 percent and increased to 34.7 percent during 1998-99 (Government of Pakistan, 2002). The low economic growth of 4 percent in the 1990s was due to high absolute poverty and it was quite high (economic growth) in 1980s (6 percent per annum).

A significant decline in the incidence of poverty from 34.5 percent to 12.4 percent in 2011 to 2011 is shown by official measures of poverty in the past decade. Around 24 percent incidence of poverty declined in rural areas during that period compared to the urban counterpart (Government of Pakistan, 2014) as shown in Table 1. In contrast with the official trend of decreasing poverty incidence, using a national and a regional and time specific form of the

¹Khan, Rehman, & Abrar-ul-Haq, (2015), Chaudhry and Rehman (2009), Chaudhary et al., (2009): Qureshi and Arif (2001): Arif et al., (2000), Arif (2000)

official methodology, Nazli, Whitney and Mahrt (2015) demonstrates that poverty incidence rose steadily from 38.2 to 46.4

percent between 2001-02 to 2010-11 (Nazli et al., 2015; Whitney, Nazli & Mahrt, 2016).

Table 1
Trends in poverty indicators based on the official poverty line (1992 to 2011)

Year	Poverty Headcount			Poverty Gap			Severity of Poverty		
	Urban	Rural	National	Urban	Rural	National	Urban	Rural	National
1992-93	20.0	27.6	25.5	3.4	4.6	4.3	0.9	1.2	1.1
1993-94	15.9	33.5	28.2	2.7	6.3	5.2	0.7	1.8	1.4
1996-97	15.8	30.2	25.8	2.4	5.3	4.4	0.6	1.4	1.1
1998-99	20.9	34.7	30.6	4.3	7.6	6.4	1.3	2.4	2.0
2001-02	22.7	39.3	34.5	4.6	8.0	7.0	1.4	2.4	2.1
2004-05	14.9	28.1	23.9	2.9	5.6	4.8	0.8	1.8	1.5
2005-06	13.1	27.0	22.3	2.1	5.0	4.0	0.5	1.4	1.1
2007-08	10.7	20.6	17.2	-	-	-	-	-	-
2010-11	7.1	15.1	12.4	-	-	-	-	-	-

Source: Government of Pakistan (2008, 2014) and Nazli et al., (2015)

Note: “-” indicates that these results were not published for that year

However, poverty is multidimensional and the extent of poverty varies according to geographical locations. There is a significant difference between urban and rural areas in term of diversity and frequency of occurrence of poverty, especially in remote areas. In remote areas, people have limited access to the development infrastructure, employment and income opportunities. People living close to the towns and semi-urban areas have relatively more access to income generating resources and employment opportunities compared to the rural areas.

Likewise, tribal groups live in remote or rural areas, which are marginalized and they often face vulnerability due to acute shortage of basic necessities such as food and shelter. The incidence of poverty is

relatively higher in these communities (Nazli et al., 2015; Whitney et al., 2016). However, poverty reduction policies and strategies have rarely taken into account the diversity of poverty in rural and urban areas.

The poorest section of rural households failed to gain access to resources provided by various government programs. The poor failed to capture the benefits from these programs due to low education and lack of social networking within their community. Moreover, these programs did not focus on the social and political aspects of poverty. In addition, the poor have inadequate access to facilities provided by the government due to their low level of education and less social and economic empowerment. These factors account for more poverty than ever before. Therefore, due to the failure

of government policies, rural poverty has not been alleviated and it's getting worse (Whitney et al., 2016).

In this connection, the available poverty literature cannot explain how poverty-stricken people in these areas became reasonably well-off and respectable citizens by empowering them economically, socially and politically. The most previous studies used different proxy variables to measure household empowerment, whereas, the current research has developed a composite index to measure empowerment of rural households which may help to eradicate rural household poverty by adding in significantly in literature.

LITERATURE REVIEW

To understand the poor household's empowerment, Eyben et al. (2008) investigated the impact of social, economic, and political empowerment on household empowerment. A study based on survey data and qualitative interviews by Kabeer Mahmud and Tasneem (2011) examined the effect of women empowerment. They further investigated that how intra-household decisions are affected if paid women workers participate in the decision-making process. In this connection, Kondal (2014) challenged the relationship between provincial economy and juvenile young women. His study evaluated how operators add to both social and financial development. The research additionally highlighted the courses in which reciprocal benefactors and government can give compelling proficient and individual support to provincial young

women for their empowerment. However, empowerment as used here excludes those who are already enjoying some social and financial status. Moreover, the citizens by themselves, or with the help of others, are managing to achieve extra power over their lives. In this connection, the concept of household empowerment has been discussed in further three sub-sections namely; economic empowerment, social empowerment and political empowerment.

Economic Empowerment

Economic empowerment enables poor people to have greater control over their specific resources and lives. For example, it enables households to make their own choices regarding investments in education, health insurance, and taking risks to enhance their revenue. However, it is an established fact that some vulnerable groups' participation in decision making can be strengthened through economic empowerment. For example, programs of microfinance have strengthened women's power at a marketplace and the household. In addition, decision-making power and social status are increased by being empowered economically (Kabeer et al., 2011).

Moreover, economic empowerment will allow farmers to extract benefits from free trade agreements and facilitate access to markets, improve the terms in which producers assimilate markets, compete successfully and increase productivity.

However, there are risks associated with insertion and exports in global value chains and a tendency for programs and donors to

favour 'inclusive business' models which embrace commercial farmers compared to more marginalized rural producers (Dolinska & d'Aquino, 2016). Productivist approaches prefer economic empowerment over welfarist approaches (trade not aid). As per this approach, poverty is due to lack of market access and its solution is to introduce the producers into markets and support them through corporate social responsibility. This approach normally fails to understand poverty being the result of being subordinated by gender, ethnicity and class.

Social Empowerment

Social empowerment is an observed and established phenomenon which works by acting collectively and individually to change the social relationship and it develops a sense of self, autonomy and confidence. So-called social empowerment institutions have also excluded the poor in their discourse and hence kept them in poverty. Psychological (aspire to a better future, the ability to imagine, self-confidence and self-esteem), social (such as leadership relations, a sense of identity and social belonging), capabilities of all types (such as education and good health) and their individual assets strongly influence the ability to hold others accountable for the empowerment of poor people. People's capabilities and collective assets like identity, representation, organization and their voice are also important. Involvement of poor people in inter-community cooperation and local association's mechanisms may enable

them to enhance social empowerment by civilizing their self-perception, knowledge and skills (Khan & Bibi, 2011). Poor people organize their economic activities through self-help local associations, for example, microfinance groups and farming cooperatives. It is important to understand that associational life at the local level takes place predominantly in the informal sphere such as community-based groups, customary institutions, traditional and religious organizations.

Vulnerable groups like marginalized communities, women and the very poor often lack the confidence and skills to ensure community decision making, requiring appropriate support mechanisms. Collective action and public politics of poor people can be strengthened through participation in local associations. Research shows that building collective and individual capacities among the poor is a long-term process.

Political Empowerment

Participation is similar to political empowerment as coined by the United Nations Research Institute for Social Development (UNRISD). Political empowerment is characterized by producers organizing collectively and trying to enhance their bargaining power and influence in terms of developing policies process in relation to bodies such as donor agencies, non-governmental organizations (NGOs), global and regional institutions, national and local governments. The core aim of all these organizations is to evaluate if small-scale producers have a favorable or unfavorable

environment for their businesses (Barabas, 2002).

Political empowerment is about the limit of small producers to apply guarantees on such performing artists and foundations who are considered as responsible entities. Political empowerment is about the limit of small producers to have a voice and to exercise impact in the associations that claim to speak for them irrespective if are producer affiliations, NGOs or the developing cluster of private and multi-partner standard-setting activities, connected with a reasonable and moral exchange.

Also, it is equally necessary to know how they are governed as per the standards set by the regimes. The capacity to frame and re-frame the discourse, definitions of development and the struggle of ideas are also related to political empowerment. Political empowerment is about contradictions meant to ensure that blind spots, bodies of knowledge, the ability to contest approaches and assumptions which are taken for granted are exposed (Sen & Mukherjee, 2014).

In industrialized countries, political empowerment was central in the mid-twentieth century which was developing some degree of an agrarian welfare state. Protection against the vagaries of the market was provided through such arrangements for farmers. They were fundamentally an institutional outcome which was based on farmer's political empowerment that could negotiate policy as it was well organized. Generally, with economic empowerment strategies alone, none of this would have happened. The interests of the governance

of fair trade and encroachment of corporate sector would have increased through an exclusively economic approach (Abrar-ul-haq, Jali & Islam, 2016a). This would have implications in term of standards, its price and also who pays the associated costs. When the market access and price reconfigure by economic empowerment, it also requires to be complemented by political empowerment which reconfigures the power relations.

The development of household Empowerment index for rural households in Pakistan is far from over. Even though there are few studies they used the empowerment as a factor of poverty alleviation, their analysis was limited in the sense that they used a proxy variable to measure the empowerment such as education, income, wealth, access to market and household accessories. Moreover, the impact of these proxy variables was only limited to one aspect of empowerment, as the household empowerment is a multi-dimensional aspect. Therefore, these proxy variables are not a complete representation of household empowerment. The current study is more detailed and specific in term of household empowerment in the relation to poverty eradication and measures the composite index of empowerment among rural households.

Theory of Poverty

Bradshaw (2007), Aigbokhan (2000) and Rocha (1998) approached the theory of poverty from the perspective of its cause. Bradshaw submitted that since most

rural community development effort is to eradicate causes or symptoms of poverty, it therefore, makes sense to uncover the theory of poverty responsible for the problem. Anyway, with a view to observing factors which have strongly affected poverty rate, one finds increased employment rates, loss of job opportunities, movement of people from rural areas to urban areas, worse health conditions because of different kinds of sickness, lower availability of medical facilities and exploitation of resources by the previous management. Bradshaw (2007) asserted that “interdependence of factors creating poverty actually accelerates once a cycle of decline is started” (p. 14).

In the past few decades, the literature on poverty suggests that the structure of the economic system does not allow the poor to be in the equation. Bradshaw (2007) further stressed that poor families hardly get better jobs. This is complicated by the limited number of jobs available near them as well as lack of growth in the sector that supports lower-skilled workers. Households headed by women cannot be sufficient economically because the so-called minimum wage is too low. To compound the problem of the poor Oyekale (2011) suggests that incentives that are meant for the rural poor in southern Punjab, Pakistan are often diverted by the non-poor.

People, institutions and cultures in certain areas lack the objective resources needed to generate well-being and income and are unable to claim redistribution. Ghalib, Malki and Imai, (2015) pointed out that the geography of poverty is a spatial

expression of the capitalist system which is a perfect description of Pakistan’s rural poverty.

Likewise, De-Magalhaes and Santaaulalia-Llopis, (2015) observed that most studies find a rural differential in poverty. An increasing body of literature holds that advantaged areas stand to grow more than disadvantaged areas, even in the periods of general economic growth. These perspectives relate to this study, in that it recognizes the inherent problems associated with the rural communities of the southern Punjab, Pakistan and its inhabitants economically, politically, socially and geographically.

METHODOLOGY AND DATA COLLECTION

The area chosen for data collection was southern Punjab, Pakistan where more than twenty million people are inhabited. The three divisions of this region (Multan, D.G. Khan and Bahawalpur division) have the same environment, basic infrastructure and demographic elements. Therefore, the current study has employed multi-stage cluster sampling for the purpose of data collection. In this connection, the data was collected in four stages. In the first stage, three districts were randomly selected which include Vahari district from Multan division and Layyah from D.G. Khan and district Bahawalpur from Bahawalpur division. In the second stage, two tehsils (City) were selected out of every district. From Bahawalpur, tehsil Hasilpur and Kheirpur-tamywale whereas from district

Vehari, tehsil Mailsi and tehsil Vehari and two tehsils from district Layyah, tehsil Fatehpur and tehsil Layyah were chosen for data collection. In the third stage, two union councils from each tehsil and then two villages from each union council were chosen for data collection. Lastly, from each village, almost equal number of samples were selected as targeted population. The required information was duly collected from the household heads via structured interviews and 600 households from twenty-four villages (almost identical number of household form each village) were selected as a sample size. However, the sample size was adapted from Krejcie, & Morgan (1970)'s table.

Selection and Measurement of Variables

The aim of empowerment is to improve the terms under which producers integrate markets, enhance productivity and facilitate

market access and the income level of the household has been affected positively by empowerment. Table 2 depicts the measurements of various proxies such as political, social, and economic conditions which have been used to measure the household empowerment. Several items were identified by the researcher to measure a rural household's empowerment which includes household assets and factors that affect household's empowerment. Three dimensions have been used to measure household empowerment index namely; economic empowerment, social empowerment and political empowerment. In addition, the index was constructed based on ten sub-factors; namely: assets and property, livestock, health within household, house accessories, groups and networks, gender of household head, shelter, education, political participation and political action.

Table 2
Pillar and sub-pillar of household empowerment index

Index	Pillar	Sub-pillar	Items
		Assets and Property	Tube well Farm equipment Tractor Land leased Land owned Gold / silver / bonds
		Live Stock	Buffalo and cow Sheep and goat Availability of healthcare services Distance of Medical Center Serious disease (T.B, hepatitis, etc.)

Table 2 (continue)

Index	Pillar	Sub-pillar	Items
Household Empowerment	Economic Empowerment	House	Separate kitchen
		Accessories	Sewing machine
			Motorcycle
			Car / jeep
			Water pump
			Air-conditioner
			Refrigerator
			Television
			Personal computer or laptop
			Cell phone
			Room-cooler
		Washing machine	
	Radio		
	Social Empowerment	Groups and Networks	Membership in formal or informal organizations or associations
			Ability to get support from those other than family members and relatives in case of hardship
		Gender of Household Head	Head of Household is male or female
			Marital Status of head of household
		Shelter	Building types (size and type of martial)
			The availability of electricity
			Sanitation system (latrines)
			Personal house or rented
			Size of the house
			Access to school
			Average education of the household
Distance of School			
Education of household head			
Political Empowerment	Political Participation	Registration of vote	
		Vote cast in the last election	
	Political Action	Political knowledge	
		Political interest	
		Political contacts	

Likewise, the first pillar measuring economic empowerment is based on twenty-four items grouped into four sub-pillars: assets and property, livestock and health in the household and household accessories. The

pillar aimed at measuring the ability to perform basic arithmetic operations supposed necessary for household's information about its economic empowerment. The pillar social empowerment gathered together thirteen

indicators grouped in four sub-pillars: education, shelter, gender of the household head and groups and networks. The pillar described the actual knowledge about social empowerment of that household. The third and last pillar political empowerment gathered five indicators grouped into two sub-pillars namely; political participation and political action. The current pillar described the information about political empowerment of that household.

Construction of Household Empowerment Index (HMPI)

A useful technique to evaluate the empowerment of poor people is to assess their participation in the decision-making process and in social affairs. There are different methods to assign weights to indicator variables such as ad-hoc weights. Considering the difficulties of previously used processes for weights, this study used Principal Component Analysis (PCA) to allocate weights.

The PCA refers to a statistical method used to convert the possibly correlated variables into the smaller and uncorrelated set of variables. Firstly, the applied PCA accounts for much of the variability in the dataset and the succeeding application of PCA accounts for the remaining variation in the data. “The PCA allows the reduction of a number of variables into one or fewer variables. However, in this connection, as per the following research (Abrarul-haq, Jali, & Islam, 2016; Alkire et al., 2013; Fukuda-Parr, 2006; Johnson & Measure, 2004; Rutstein, 2008; Rutstein, Rutstein,

1999) the PCA is an appropriate technique for assessing multidimensional components of household empowerment. In fact, a framework becomes authentic only if the latent factors are equal to the amount of the specific pillar or the sub-pillars of the said index.” Likewise, a pillar / sub-pillars dimension is confirmed if a unique latent dimension is found. The PCA method was employed to gauge the household empowerment that analysed the multiple correlation principles and can illustrate the variance of the controlled variable. The principal component analysis selects factors with eigenvalues greater than one which is deemed significant by employing the following formula:

$$I = \sum_{i=1}^n W_i X_i \quad (1)$$

Where, I = the weighted index; W = percentage contribution of each selected variable as the weight; X= the value of each variable; and \sum = the summation sign.

The loadings of factors, sub-pillar and pillar of “the household empowerment are calculated by using PCA. The PCA starts with the calculation of standardized values of variables and evaluates the eigenvalues that refer to the variance of the factors and then these values can be used to determine the components. If the manifested variables are homogeneous, then its mean is zero and the variance is equal to one for each. If there are ‘N’ identical manifest variables in our analysis, the summation of their variances is ‘N’. The PCA transforms the data such as the total variance components N distributed

at random between the components. The first eigenvalue is higher than the second one and the next to persevere with the n^{th} lowest eigenvalue. Currently, the factor coefficient ratings or factor loadings usually are calculated by block and sum of all eigenvectors. The value which we usually acquire is regarded as commonalities, factor loadings or extraction value.”

Besides, household empowerment index is generated through PCA is applied to choose these factors from correlation matrix; every factor is independent in this

method. Factors loadings extracted from this process are further used to develop household empowerment index; each indicator is given an equal weight within the index. Jolliffe and Cadima, (2016) claimed that normalizing the range of each indicator by dividing each indicator with its range and summing across the indicators... It can be seen that the dominant dimension led to an enhancement in household empowerment with a higher value of loading factor or extraction value.

Table 3
Description of variables

Name of Items	Measurement
Tubewell	If yes Assigned value 1, otherwise 0
Farm equipment	If yes Assigned value 1, otherwise 0
Tractor	If yes Assigned value 1, otherwise 0
Land leased	If yes Assigned value 1, otherwise 0
Land owned	If yes Assigned value 1, otherwise 0
Gold / silver / bonds	If yes Assigned value 1, otherwise 0
Buffalo and cow	Assign value 1 for one sheep or Goat
Sheep and goat	Assign value 5 for one Buffalo or cow
Availability of healthcare services	If yes Assigned value 1, otherwise 0
Distance of Medical Centre	Number of Kilo Meters
Serious disease (T.B, hepatitis, etc)	If yes Assigned value 0, otherwise 1
Separate kitchen	If yes Assigned value 1, otherwise 0
Sewing machine	If yes Assigned value 1, otherwise 0
Motorcycle	If yes Assigned value 1, otherwise 0
Car / jeep	If yes Assigned value 1, otherwise 0
Water pump	If yes Assigned value 1, otherwise 0
Air-conditioner	If yes Assigned value 1, otherwise 0
Refrigerator	If yes Assigned value 1, otherwise 0
Television	If yes Assigned value 1, otherwise 0
Personal computer or laptop	If yes Assigned value 1, otherwise 0
Cell phone	If yes Assigned value 1, otherwise 0
Room-cooler	If yes Assigned value 1, otherwise 0
Washing machine	If yes Assigned value 1, otherwise 0

Table 3 (continue)

Name of Items	Measurement
Radio	If yes Assigned value 1, otherwise 0
Membership in formal or informal organizations or associations	If yes Assigned value 1, otherwise 0
Ability to get support from those other than family members and relatives in case of hardship	If yes Assigned value 1, otherwise 0
Head of Household is male or female	If Household head is male assign value 1, otherwise 0.
Marital Status of head of household	If household head is married assign 1, otherwise 0
Building types (size and type of martial)	If the house is Mud assign value 0, for Sami- bricked assign 1 and for bricked assign 2.
The availability of electricity	If yes Assigned value 1, otherwise 0
Sanitation system (latrines)	If yes Assigned value 1, otherwise 0
Personal house or rented	If Personal Assigned value 1, otherwise 0
Size of the house	Assign value 0 if house is less the 3 (Marla), assign value 1 if house is up to 7 (Marla), otherwise 2
Access to school	If yes Assigned value 1, otherwise 0
Average education of the household	Assign value 0 if no education; assign value 5 if the education is at middle-level assign value 10 if the education is at college or university level
Distance of School	Number of Kilometres
Education of household head	Assign value 0 if no education; assign value 5 if the education is at middle-level assign value 10 if the education is at college or university level
Registration of vote	If yes Assigned value 1, otherwise 0
Vote cast in the last election	If yes Assigned value 1, otherwise 0
Political knowledge	If yes Assigned value 1, otherwise 0
Political interest	If yes Assigned value 1, otherwise 0
Political contacts	If yes Assigned value 1, otherwise 0

RESULTS AND DISCUSSION

The current study finalizes the index in three stages. In the first stage, the researchers conducted the PCA on items of each sub-pillar separately, in the second step the PCA was applied on the sub-pillars of each pillar separately and in the third step, again the PCA was applied on the pillars with a view to obtaining the value of household

empowerment index. The reliability of the construct was calculated through Cronbach's Alpha which is 0.664.

Step 1: Calculating Sub-pillars

In the first step, the factor loadings are computed for items of each sub-pillar separately and they generate sub-pillars by using these loadings as shown in Table 4.

Table 4
Results of the PCA at items level

HEMPI	Pillar	Sub-pillar	Factors	Factor Loading	Percentage of Sub-pillar	Percentage of Index
Household Empowerment	Economic Empowerment	Assets and Property	Tube well	0.747	15.03	2.39
			Farm equipment	0.879	17.69	2.82
			Tractor	0.872	17.55	2.80
			Land leased	0.980	19.72	3.14
			Land owned	0.511	10.28	1.64
			Gold / silver / bonds	0.981	19.74	3.14
		Livestock	Buffalo and cow	0.961	50.0	3.1
			Sheep and goat	0.961	50.0	3.1
		Health within Household	Availability of healthcare services	0.760	34.2	2.4
			Distance of Medical Center	0.872	39.2	2.8
			Serious disease (T.B, hepatitis, etc.)	0.591	26.6	1.9
		House Accessories	Separate kitchen	0.564	6.47	1.81
			Sewing machine	0.532	6.10	1.71
			Motorcycle	0.565	6.48	1.81
	Car / jeep		0.798	9.15	2.56	
	Water pump		0.603	6.92	1.93	
	Air-conditioner		0.805	9.23	2.58	
	Refrigerator		0.660	7.57	2.12	
	Television		0.613	7.03	1.97	
	Personal computer or laptop		0.576	6.61	1.85	
	Cell phone		0.932	10.69	2.99	
	Room and Appliances	Room-cooler	0.664	7.62	2.13	
Washing machine		0.696	7.98	2.23		
Radio		0.710	8.14	2.28		
Groups and Networks	Membership in formal or informal organizations or associations	0.631	50.0	2.0		
	Ability to get support from those other than family members and relatives in case of hardship	0.631	50.0	2.0		
Gender of Household Head	Head of Household is male or female	0.871	50.0	2.8		
	Marital Status of head of household	0.871	50.0	2.8		

Table 4 (continue)

HEMPI	Pillar	Sub-pillar	Factors	Factor Loading	Percentage of Sub-pillar	Percentage of Index
	Social Empowerment	Shelter	Building types (size and type of martial)	0.714	20.5	2.3
			The availability of electricity	0.666	19.1	2.1
			Sanitation system (latrines)	0.714	20.5	2.3
			Personal house or Rented	0.558	16.0	1.8
			Size of the house	0.829	23.8	2.6
			Access to school	0.552	20.1	1.8
		Education	Average education of the household	0.702	25.6	2.2
			Education of household head	0.735	26.8	2.3
			Distance of School	0.755	27.5	2.4
	Political Empowerment	Political Participation	Registration of vote	0.746	50.0	2.4
			Vote cast in last election	0.746	50.0	2.4
		Political Action	Political knowledge	0.989	37.5	3.2
			Political interest	0.862	32.7	2.8
			Political contacts	0.788	29.9	2.5

Source: Calculated from the Household Survey Data (2016)

Assets and Property. The study used six measures to assess the level of household's property and assets namely, land owned with loading value 0.511 represents 10.28 percent contribution in sub-pillar of asset and property, land leased with loading value 0.980 which contributes 19.72 percent, farm equipment with loading value 0.879 that contributes 17.69 percent, tractor with loading value 0.872 that contributes 17.55 percent, tube-well with loading value 0.747 contributes 15.03 percent and gold/silver/bonds with loading value 0.981 contributes 19.74 percent in asset and property (sub-pillar) as shown in Table 4.

Assets and Property = 10.28%(Land Owned) + 19.72%(Land Leased) + 17.55%(Tractor) + 17.69%(Farm Equipment) + 15.03%(Tubewell) + 19.74%(Gold/Silver/Bonds)

Livestock. Similarly, livestock is a crucial asset of rural households in Pakistan and have positive correlation with income. In this study cow/buffalo and sheep/goat are used to represent livestock. Both factors are significant with the same loading value 0.961 that represents 50 percent of each factor in the sub-pillar of livestock as shown in Table 4.

Livestock = 50%(Cow/Buffalo) + 50%(Sheep/Goat)

Health Status of the Households. In the current study, three proxies were used to assess the health status of the head of the household; they are, the availability of healthcare services, a distance between the medical centre and disease status (Chaudhary et al., 2009). The results of the study indicate that availability of healthcare services is significant with loading value 0.760 that represent 34.2 percent of health status of households, distance of medical centre was significant with loading value 0.872 which contributes 39.2 percent and serious disease also significant with loading value 0.591 that contributes 26.6 percent in household health as shown in Table 4.

Health Status of the Households = 34.2%(Availability of health care services) + 39.2%(Distance of medical centre) + 26.6%(Serious disease)

Household Accessories. House accessories are measured using thirteen indicators. These accessories consist of material things which economically beneficial to households. The accessories taken into account in this study including motorcycle, car/jeep, water pump, air conditioner, refrigerator, television, personal computer, cell phone, room colour, separate kitchen, sewing machine, washing machine and radio.

The results show that indicators were significant with extraction values 0.565 (6.48 percent), 0.798 (9.15 percent), 0.603

(6.92 percent), 0.805 (9.23 percent), 0.660 (7.57 percent), 0.613 (7.03 percent), 0.576 (6.61 percent), 0.932 (10.69 percent), 0.664 (7.62 percent), 0.696 (7.98 percent), 0.564 (6.47 percent), 0.532 (6.10 percent) and 0.710 (8.14 percent) contribute in household accessories respectively.

House Accessories = 5.47%(Separate kitchen) + 6.10%(Sewing machine) + 6.48%(Motorcycle) + 9.15%(Car/Jeep) + 6.92%(Water pump) + 9.23%(Air-conditioner) + 7.57%(Refrigerator) + 7.03%(Television) + 6.61%(Personal computer) + 10.69%(Cell phone) + 7.62%(Room colour) + 7.98%(Washing Machine) + 8.14%(Radio)

Groups and Networks. The study uses two factors to measure groups and networks, namely, membership in formal or informal organizations or associations and ability to get support from those outside the family at times of hardship. These factors are significant with the same factor loading which is 0.631 that represents 50 percent contribution from each factor as shown in Table 4.

Groups and Networks = 50%(Membership in formal/informal organizations) + 50%(support other than family members and relatives in case of hardship)

Gender of Household Head. The gender of the household heads has a significant effect on its participation in social and political activities. A strong relationship between

gender of the household head and rural poverty is reported by Bogale et al. (2005). This study used two factors namely, gender of the household head and marital status of head of household head. Both these factors are significant with the same factor loadings which are 0.871 and contribute 50 percent of each factor to sub-pillar of the social empowerment.

Gender of Household Head = 50%(Gender of household head) + 50%(Marital Status)

Shelter. Good housing atmosphere leads to good health and provides the base for enhancing economic productivity within the household and social empowerment. Five components were taken to explain shelter in the current study namely, types of building (a type of house material), the availability of electricity, the environmental indicator is concerned with the level of sanitation system (latrine), own house/rented and the size of the house. These indicators have been found significant with loading value 0.714 (20.5 percent contribute in shelter), 0.666 (19.1 percent), 0.714 (20.5 percent), 0.558 (16.0 percent) and 0.829 (23.8 percent) respectively as shown in Table 4.

Shelter = 20.5%(Types of building) + 19.1%(The availability of electricity) + 20.5%(Sanitation system) + 16%(Own house/rented) + 23.8%(Size of the house)

Education. Employment opportunities get better as a result of high educational ability, especially in the rural areas as the best knowledge of growing crops with new

agricultural technologies correlates with the best practices in their respective field. Results show that four indicators access to school, average education of the household, education of head of household and distance of school are significant with factor value 0.552 (20.1 percent), 0.702 (25.6 percent), 0.735 (26.8 percent) and 0.755 (27.5 percent) respectively as shown in Table 4.

Education = 20.1%(Access to school) + 25.6%(Average education of the household) + 26.8%(Education of head of household) + 27.5%(Distance of school)

Political Participation. To measure political participation, this study takes two indicators namely, registration of vote and vote cast in the last general elections. Both these factors are significant with the same factor loadings 0.746 which show each of the factors contributes 50 percent in political participation as shown in above Table 4.

Political Participation = 50%(Registration of vote) + 50%(Vote cast in last general election)

Political Action. The current study used three indicators to measure political action namely, political knowledge, political interest and political contacts. These factors are significant with the factor loading 0.989 which contributes 37.5 percent in political action, 0.862 that represents 32.7 percent of political action and 0.788 that shows 29.9 percent contribution in political action respectively as shown in Table 4.

Political Action = 37.5%(Political knowledge) + 32.7%(Political interest) + 29.9%(Political contacts)

Step 2: Calculating Pillars

Similarly, in the second step, this study calculates sub-pillars by multiplying the

factor loading with their items and get a summation of these factors separately for each sub-pillar. Once sub-pillar is applied to the principal component analysis at sub-pillar, its factor loading is obtained as shown in Table 4.

Table 5
Results of the PCA at Sub-pillar level

HEMPI	Pillar	Sub-pillar	Factor Loading	Percentage of Sub-pillar	Percentage of Index
	Economic Empowerment	Assets and Property	0.750	21.52	9.60
		Live Stock	0.979	28.09	12.54
		Health within Household	0.996	28.58	12.75
		House Accessories	0.760	21.81	9.73
Household Empowerment	Social Empowerment	Groups and Networks	0.592	20.31	7.60
		Gender of Household Head	0.980	33.62	12.58
		Shelter	0.690	23.67	8.86
		Education	0.653	22.40	8.38
	Political Empowerment	Political Participation	0.705	50.00	9.05
		Political Action	0.705	50.00	9.05

Source: Calculated from the Household Survey Data (2016)

Economic Empowerment. In the current study, economic empowerment consists of four sub-factors: livestock, property and assets, household accessories and household health. The percentage contribution of these factors is discussed in the following section. The PCA ensures that every sub-pillar is independent. These extraction values or factor loadings have been used to construct pillars. These four sub-pillars are significant with factor loading greater than 0.5 threshold value as cited by Falkenbach, Poythress, Falki, and Manchak (2007). Assets and property are significant with 0.750 factor

loading which contributes 21.52 percent in economic empowerment as shown and 9.60 percent contribute to household empowerment index in Table 5. Livestock has 0.979 factor loading which represents 28.09 percent in economic empowerment and contributed 12.54 percent in household empowerment as shown in Table 5. The third sub-pillar, health within a household has 0.996 factor loading, which contributes 28.58 percent in economic empowerment and contributes 12.75 percent in household empowerment index as shown in Table 5. The last fourth sub-pillar household

accessories' is significant with factor loading 0.760 which represents 21.81 percent of economic empowerment, moreover, this sub-pillar contributes 9.73 percent in household empowerment as shown in Table 5.

Economic Empowerment = 21.58% (Assets and property) + 28.09% (Livestock) + 28.51% (Health within Household) + 21.81% (Household Accessories)

Social Empowerment. Social empowerment comprises four sub-factors based on thirteen indicators. The four sub-pillars of social empowerment are groups and networks, the gender of household head, education and shelter. But these four pillars further consist of thirteen indicators. In this study, the sub-pillar with extraction value greater than 0.5 has been considered as significant. The following section checks its distribution in sub-pillar and its effect on social empowerment. The first sub-pillar, groups and networks are significant with the factor loading 0.592 which represents 20.31 percent of social empowerment, meanwhile, this sub-pillar contributes 7.60 percent in household empowerment index as shown in Table 5. The second sub-pillar, gender of the household head is significant with factor loading 0.98 which represents 33.62 percent contribution in social empowerment and its contribution in household empowerment is 12.58 percent as shown in Table 5.

The third sub-pillar education of the household is significant with factor loading

0.654 which contributes 22.38 percent in social empowerment and it contributes 8.38 percent in household empowerment index as shown in Table 5. The fourth sub-pillar, shelter is significant with factor loading 0.690 which represents 23.67 percent contribution in social empowerment and it represents 8.86 percent contribution in household empowerment index as shown in Table 5.

Social Empowerment = 20.31% (Groups and Networks) + 33.62% (Gender of household head) + 22.40% (Education) + 23.67% (Shelter)

Political Empowerment. The current study used two sub-pillars to measure political empowerment namely, political participation, political action, with sub-pillars further consist of five factors. The first sub-pillar, political participation is significant with factor loading 0.705 which represents 50 percent contribution in political empowerment, however, this sub-pillar contributes 9.05 percent in household empowerment index as shown in Table 5. The second sub-pillar, political action is also significant with the same factor loading 0.705 which also represents 50 percent contribution in political empowerment and its contribution in household empowerment is also 9.05 percent as shown in Table 5.

Political Empowerment = 50% (Political Participation) + 50% (Political action)

Step 3: Measuring the Household Empowerment Index

In the third step, this study calculated household empowerment index. The pillars are calculated by multiplying the factor loading of the sub-pillars to get a summation of these sub-pillars separately for each

pillar. Once pillar was generated then the principal component analysis is applied on these pillars to obtain its factor loading which is further used to establish household empowerment index as shown in Table 6 and Figure 1.

Table 6
Results of the factor analysis at pillar level

Index	Pillar	Factor Loading	Percentage
Household Empowerment (HEMPI)	Economic Empowerment	0.524	29.09
	Social Empowerment	0.637	35.37
	Political Empowerment	0.640	35.54

Source: Calculated from the Household Survey Data (2016)

Household Empowerment Index (HEMPI) = 29.09% (Economic Empowerment) + 35.37% (Social Empowerment) + 35.54% (Political Empowerment)

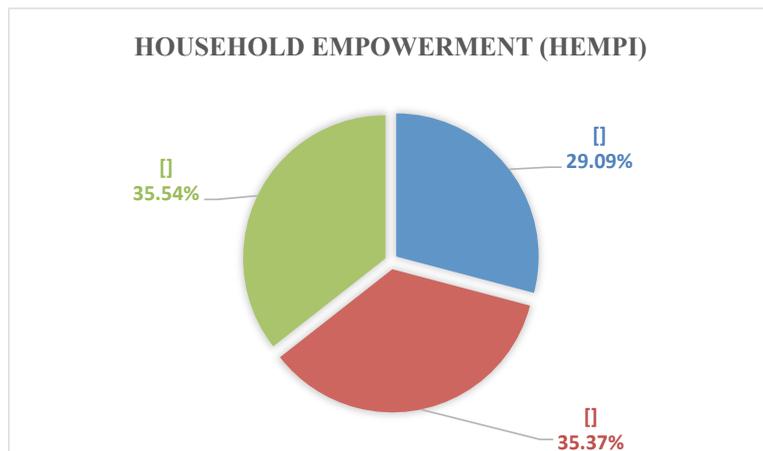


Figure 1. Household empowerment index

While discussing empowerment, Cattaneo and Goodman, (2015), posit that empowerment is about people taking control over their own lives: gaining the ability to do things, to set their own agendas, to change events in a way previously lacking. Kabeer et al. (2011) point out that a useful way of thinking about empowerment is to reflect on its opposite disempowerment. The current study develops an index for the measurement of household empowerment. For the measurement of household empowerment, three pillars are taken namely, economic empowerment, social empowerment and political empowerment of that household. These dimensions are a significant contribution to household empowerment. The factor loading of economic empowerment is 0.524 which represents 29.09 percent contribution in household empowerment index as shown in Table 6 and in Figure 1. The second dimension, social empowerment is a significant contribution to household empowerment with factor loading 0.637 that shows 35.37 percent contribution in household empowerment index. The third pillar, political empowerment is also significant with factor loading 0.640 that contributes 35.54 percent in household empowerment index as shown in Figure 1 and Table 6.

CONCLUSION AND RECOMMENDATIONS

The Household empowerment index (HEMPI) is a pilot exercise to take a quick glance of rural household poverty of the

Southern Punjab, Pakistan. Although, this study is not capable of addressing household poverty problem comprehensively it boosts the debate on household empowerment and its importance in protecting and elevating poverty through improving household empowerment. The article describes the steps followed in the construction of the index of rural household empowerment using three dimensions namely; economic empowerment, social empowerment and political empowerment.

These dimensions are further based on ten sub-pillars namely; education, gender of household head, networks & groups, shelter from social empowerment, assets and property, livestock, the health status of household's head, household accessories from economic empowerment, political participation and political action from political empowerment. These sub-pillars further consist of forty-two indicators namely: Tube well, Farm equipment, Tractor, Land leased, Land owned, Gold / silver / bonds, Buffalo & cow, Sheep & goat, Availability of health care services, Distance of Medical Centre, Serious disease (T.B, hepatitis, etc.), Separate kitchen, Sewing machine. Motorcycle, Car / jeep, Water pump, Air-conditioner, Refrigerator, Television, Personal computer / laptop, Cell phone, Room-cooler, Washing machine, Radio, Membership in formal or informal organizations or associations, ability to get support from those other than family members and relatives in case of hardship, Gender of Head of the Household, Marital Status of the head of

household, Building types (size and type of martial), the availability of electricity, Sanitation system (latrines), Personal house or rented, Size of the house, Access to school, Average education of the household, Distance of School, Education of household head, Registration of vote, vote cast in last election, Political knowledge, Political interest and Political contacts.

The study used primary data collected through the multi-stage cluster sampling from villages of Southern Punjab Pakistan and the sample size consists of twenty-four villages and 600 households are taken as respondents. The Principal Component Analysis (PCA) was used for deriving weights for the policy variables. The index has three stages: in the first stage, the researchers applied the PCA on items of each sub-pillar separately, in the second step, the PCA has been applied on the sub-pillars of each pillar separately and in the third step, again the PCA has been applied on pillars to obtain the value of household empowerment index.

Empirical results show that 29.09 percent household empowerment is represented by the economic empowerment, 35.37 percent household empowerment is represented by social empowerment and 35.54 percent household empowerment is represented by political empowerment of that household. The study concludes that the above-stated variables significantly contributed to household empowerment of rural households which may eradicate poverty incidence. The study may be helpful in formulating effective poverty reduction

policies for rural households by enhancing the household empowerment through improving in education, market access, better and favourable agriculture policies, health facilities as well as their political awareness. In addition the household empowerment index (HEMPI) developed in this study can be used for research whether the household empowerment is affecting another economic indicator significantly or not.

LIMITATIONS OF THE STUDY

This study is area-specific confined to the rural areas of the Southern Punjab, Pakistan. This study was only quantitative in nature, using a survey instrument to collect data.

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