Gender Poverty Gap: A Comparative analysis of India and Pakistan

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ARTICLE DETAILS	ABSTRACT
History: *Accepted 25 May 2021* *Available Online June 2021*	*This paper attempts to estimate gender poverty gap in Pakistan using multidimensional poverty approach and compares it with India. Pakistan data have been used to compute multidimensional poverty. Findings of the paper suggest that there is gender poverty gap in Pakistan. Both India and Pakistan are suffering from poverty. Head count poverty is high in both countries but India has managed to lift more people out of multidimensional poverty. The paper recommends to design targeted oriented policies reduce gender poverty.*
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1. Introduction

Poverty is common, globalized curse and unique syndrome (Chosal, 2008). World community is belligerent against tenacious poverty. Process of reduction in poverty is lukewarm despite titanic measures taken by countries individually and by international agencies. Gender poverty is even more pervasive and persevered. According to Bureau of International Information Program, United States Department of State (2017), women of the developing world face poverty disproportionately. Picture of poverty is seen even bleak if one views it through the lens of multidimensional poverty. Unidimensional poverty does not cover the viscosity of deprivation suffered by poor segment of society. On the other hand, multidimensional poverty takes into account several overlapping deprivations experienced by poor people. Just like the speed of light which changes as medium through which its travels changes, scenario of poverty changes as we move from money – metric measure of poverty to multidimensional poverty -measure. According to Alkire and Jahan (2018), "for multiple overlapping deprivations the global Multidimensional Poverty Index (MPI) is suitable measure".

Umpteen empirical studies on multidimensional poverty considered household as a unit of identification (Rogan, 2016a; Klasen and Lahoti, 2016)1. Multidimensional approach for poverty suffers from some weakness. This approach assumes that all members of a household are considered multidimensional poor if household is identified as poor (Klasen and Lahoti, 2016). Women particularly in a household face inequality. They have no or limited access to economic resources. They are predominantly engaged in household caring jobs. Globally, unpaid domestic work is disproportionately carried out by female. Women, on average, spend two to ten time more time than their counterpart on domestic care work, left with insufficient time for personal care, leisure, paid work and other social and political activities (Karimli et al, 2016). In many developing nations women accept their role as unpaid domestic workers a divine right. In some Muslim societies women consider it a sin to question the authority of man. Notably, if a women in a household is not poor even then she is more vulnerable to poverty. An endoscopic examination of poverty is needed for exploratory diagnostic of intra – household disparity and female and male contribution of gender gap in poverty.

Countries like Pakistan and India use to invest far less on women workers than working me although women appear to be productive than men, In India poor families particularly depends on the earning of the women for their survival (World Bank, 2016). Both countries enviably manage to reduce poverty particularly multidimensional poverty during last two decades. About 270 million people in India moved out multidimensional poverty between 2006/06 to 2015/16 (UNDP; 2020).

Gender analysis of poverty could not make it place in Multidimensional poverty critique. Multidimensional poverty Index developed by Alkire and Foster (2011) is based on household's deprivation on three dimensions – education, health and standard of living. Since MPI is calculated from information from each household, so it is possible to consider the deprivations of male and female separately. Household survey data provides information regarding the characteristics of both male and female living in respective households. In order to find the gender gap in poverty, data can be decomposed according to male and female headed households and separate regressions can be carried for these sub groups to estimate the gender poverty gap (Lastrapes & Rajaram, 2016). The present study endeavors to estimate the gender poverty gap using money – metric and multidimensional approaches by decomposing the data into male and female household heads. No previous study arguably undertook gender dimension of poverty using both money and multidimensional approaches in Pakistan. This study may contribute significantly in enhancing the understanding regarding the gender aspect of poverty and hence, may facilitate in targeting gender poverty in Pakistan.

2. Literature Review

After introduction of capability approach by Sen (1976), the accent pf poverty debate has shifted from unidimensional poverty to multidimensional poverty which covers various dimensions of deprivation. Since then various approaches to estimate poverty incorporating different dimensions have been proposed. Cerioli and Zani (1990) were first to suggest a Fuzzy approach which include seven dimensions of deprivation. Cheli and Lemmi (1995) modified the Fuzzy approach and proposed a new approach called Totally Fuzzy and Relative (TFR) approach to estimate multidimensional poverty. Both approaches failed to mustered considerable support due to arbitrary aggregation adopted by these approaches.

A flexible approach was proposed by Alkire and Foster in 2007 which includes three dimensions – education, health and standard of living, education has two in indicators which include year of

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schooling and school attendance. Nutrition and Child mortality are the indicators of heath. Standard of living contains six indicators – Access to drinking water, improved sanitation, cooking fuel, type of floor of house of household, availability of electricity, Asset owned by household and fuel. This approach received tremendous support as being more dynamic and flexible. An index known as Multidimensional Poverty Index (MPI) was developed by Alkire and Santos (2007) which is very simple and easy to understand. This index is also decomposable into subgroup. The UNDP collaborated with Oxford Poverty and Development Initiative developed first global MPI in 2010 for UNDP flagship publication Human Development Report. Since then it is updated regularly to include newly released data. Globally, this index is used to compute multidimensional poverty head count and intensity both for individual countries and group of developing countries. Researches rigorously used this approach to have a clear picture of poverty. Among notable studies which used AF methodology are Batana (2008) for Sub – Saharan countries, Jamal and Harron (2007), Naveed and Islam (2010), Maqsood et al (2012) for Pakistan, Battiston et al for Latine America, Angulo et al (2003) for Colombia.

Literature on multidimensional poverty is growing momentously. Multidimensional poverty approach gained currency in recent years as being innovative and much representative. It covers broad dimensions of deprivation of poor. Supporters of multidimensional poverty are of the view that unidimensional poverty is not good measure of poverty. It covers just one dimension, that is, income. Unidimensional poverty takes a household into account as a unit of measurement thus ignoring intra – household disparities. So, this approach is gender blind. It is silent on resource allocation within the household. Multidimensional measure of poverty removes this deficiency. Multidimensional poverty is broader phenomenon. "The poverty is multidimensional phenomenon" (Atkinson, 2003). "Multidimensional poverty is capable of capturing key dimensions of deprivation such as health, housing, education, schooling, and standard of livings (Chravarty, 2003; Thornbeck, 2008). These were the big reasons that the poverty paradigm has shifted from a unidimensional to multidimensional approach" (Lugo, 2016). A handsome body of literature is present on multidimensional poverty explaining the vulnerability of female. Some popular approaches have been introducing for the measurement of multidimensional poverty. Methodology which gained respectable appreciation in the literature is one proposed by Alkire and Foster (2007, 2011). The approach has been further refined by Alkire et, al (2015).

Individual level poverty has been conducted by Vijaya et al (2005) identifying gender difference in poverty in Indian city of Karnataka. Concept of Multidimensional poverty received tremendous popularity in social scientists as being useful tool for policy makers. Seeing the importance of the phenomenon of multidimensional, a group of researchers especially OPHI took the responsibility to grill this measure of poverty. Brandolini (2008) conducted a study estimating multidimensional poverty for Italy, France, Germany and Britain kingdom.

Kabubu et al (2010) estimated the 'multidimensional poverty in Kenya.. Jamal (2009) worked on multidimensional for Pakistan. Results of the study are summarized, "In 2004-05, 54 percent of the population were multidimensional poor". The paper further divulged, "In urban areas the extent of multidimensional poverty is less than in rural areas. In rural areas 69 percent were poor than in urban areas 21 percent people".

Calvi (2016) found that poverty in women increased with age and intra-household inequalities were more pronounced in India. Gender poverty gap was not visible when household data is used but it was palpable when individual level data was used.

Lastrapes and Rajaram (2016) took new area of poverty and investigated effects of gender and social caste on penury in India for the period 2005-06. The paper used measures of household wealth from the National Family Health Survey (NFHS) of India. The paper used asset-based measures of poverty which were quite different from official measures. Official measures of India are based on consumption expenditures. However, main focus of the study was gender poverty and paper sorted data for head of families both for male and female. Logistic estimation results revealed that female-headed households generally and households belonging to marginalized social classes particularly were more likely to be poor than their counterparts. Marginalized social class was found to be more strongly associated with poverty. Whereas the gender of the household head is associated with poverty but not so robustly as marginalized social class.

Crawford et al (2017) examined gender dimension of multidimensionality of poverty in Fiji covering environment, health and unpaid [work dimension. Findings of the study revealed that about 91 % of women and 65 & of men were reported to be exposed to fumes related to cooking and heating. Women and men respectively on average were exposed to one hour and 45 minutes per day of perfumes related cooking and heating. Women suffered twice as more health problem as men linked to unclean cooking and heating fuel (25 percent of 12 percent). Female were more likelihood than male to be severely deprived and very deprived in raising their voice. Primary responsibility for water fetching in Fiji rests with women. Moreover, women were more than double likely than men to report no control over personal decision (5 percent of 1.4 percent).

Lasimbo et al (2017) analyzed empirically multidimensional welfare deprivation of women in rural and urban South-South (SS) Nigeria using secondary data from Nigeria Demographic Health Survey (NDHS, 2013). Sample consisted of 1965 women from

Alkire and Kanagaratnam (2018) computed global multidimensional index for 105 developing countries which constitute about 75 percent of world's population which covers approximately 5.7 billion people. Some new indicators have been incorporated. Child stunting and age – specific Body Mass Index (BMI) cutoffs have been included in health dimension. A new indicator namely "child deaths within the 5 years period preceding the survey" was considered in health dimension.

Tekgue and Akbulut,(2019) calculated multidimensional poverty in Turkey in four equally weighted dimensions using Survey of Living Conditions during 2006-15. The study used health, education level, employment status and household living conditions as indicators of the multidimensional poverty. Findings of the study suggested that employment led to faster reduction in gender poverty. Older individuals were vulnerable to poverty. Young cohort improved. The paper concluded that gender poverty gap existed in Turkey.

3. Methodology

The present study employs Alkire and Kanagaratnam (2018) methodology to compute multidimensional poverty index for Pakistan using Household Integrated Income and Expenditure Survey (2015 -16). Alkire and Kanagaratnam (2018) methodology is the latest description of Alkire and Foster (2010) methodology which is continuously being updated for newly released data. A brief description of the dimensions, indicators and cutoff point for each dimension is illustrated in following table.

Table (1) Cutoff Point for each Dimension

Dimension	Indicator	Deprived if	Not- Deprived if
	Read/ write	Can't read/write	Can read /write
Education		Can't conduct arithmetic operation	Can conduct arithmetic operation
	Year of schooling	<than 6 years of schooling	≥ years of schooling
	BHU	Does not visit at all, once a while	Always visit
Health	Water source	Open well, river, stream, ponds, other	Tanker truck, water fetcher, water motor, covered well, mineral water, water tap, hand pump
	Residential status	On rent, subsidized Rent	Personal residence, (self-hired, hired), without rent
	Energy source	Candle, firewood, other	Electricity, gas, kerosene oil
Standard of Living	Types of roof	Wood/bamboo, other	Rec/BRC
	Types of toilet	Facility not available (linked to open drain) other	Privy seat, flush (linked to septic tank)
	Cooking fuel	Fire-wood, sticks etc. cow dunk, cakes coal, wooden coal, other	Electricity, gas, kerosene oil
	Assets	Does not possess TV, AC	Does possess all Refrigerator, sewing machine, assets, washing machine, motor cycle, car

Own calculation based on AL Methodology (2018)

4. Multidimensional Poverty Measurement
Following steps are involved in Alkire and Foster methodology.
- Dual cut-off identification which identifies poor from non- poor. Dual cut – off implies deprivation cut off and poverty cut - off between poor and non- poor. This describes which person is deprived in an indicator and whether that person is deprived enough to be considered poor.
- Calculating the headcount ratio of multidimensional poverty, H. Proportion of poor people.
- Calculating the intensity of multidimensional poverty, A. Average deprivation shared by poor.
- Calculating the M_0 which is:

$$M_0 = H* A$$

5. Multidimensional Poverty, National Results

In the table (1) national results of multidimensional poverty are reported. These results have been generated using Demographic Health Survey (DHS) 2013 -14 survey data. Since Household Integrated Icome and Consumption Survey (HIICS) 2015 -16survey was conducted for rebasing purpose by combining two data sets, Household Integrated Economic Survey (HIES) and Federal Bureau of Statistics (FBS). Since health section is not reported in HIICS 2015 -16, therefore, DHS survey data for 2013 -14 has been used for estimating national and provincial multidimensional poverty.

Table 2 MPI, National Results

		Coefficient	Std. Error	(95% C.I)	
	H	0.40	0.006	0.774	0.774
Main	Mo	0.208	0.004	0.464	0.480
Additional		0.52	0.002	0.613	0.623

Results are based on statistical package STATA

Results shown in table (2) suggest that head count for Pakistan is 40 percent and intensity is 52.0 percent. Multidimensional poverty index is 20.8 percent. This means that in Pakistan almost 21 percent people experienced deprivation in all dimensions. This is worth noting that MPI varies at different cutoff level. Higher the cutoff point lower is the multidimensional poverty index.

6. Decomposition by Region

Table (3) MPI by Region

	Baluchistan	Islamabad	KPK	GB	Punjab	Sindh	Total
H	0.60	0.813	0.661	0.673	0.714	0.56	0.663
M_o	0.29	0.56	0.350	0.36	0.411	0.364	0.364
Pop	0.177	0.059	0.192	0.105	0.256	0.211	1.00

Indices by subgroup (absolute)

Table(4) Aggregate

	Baluchistan	Islamabad	KPK	GB	Punjab	Sindh	Total
H	0.162	0.075	0-191	0.107	0.814	0.272	0.193
M_o	0.153	0.087	0.183	0.0.093	0.511	0.278	0.207

Contribution of subgroup to indices

7. Gender Analysis of Multidimensional Poverty

After calculating national multidimensional poverty index gender analysis of multidimensional poverty is accomplished. There are 3535 household heads of which 32 87 are male and 248 are female headed households. Only 3027 observations are available for male headed households because of missing values and 224 female headed households are included for analysis.

8. Multidimensional Poverty of Female Population

Table (5) MPI Female Member of Household

	Coefficient	St. Error	95% C. I	
H	0.219	0.004	0.211	0.226
MO	0.21	0.003	0.181	0.194
A	0.958	0.001	0.856	0.860

Calculations are based on statistical Software STATA

It is apparent from the results shown in the table (5) that multidimensional poverty index is 0.188 which lower than overall MPI index. Next, MPI for male population is calculated.

9. Multidimensional Poverty for Male Population

Table (6) MPI for Male Population

	Coefficient	St. Error	95 Percent	C.I
H	0.245	0.004	0.237	0.233
MO	0.209	0.003	0.202	0.26
A	0.854	0.001	0.852	0.856

Calculations are on Statistical Software STATA

10. Multidimensional Poverty for Female Headed Households and Male headed Households

As the main objective of present study is to analyze the gender poverty gap in Pakistan, so, this section serves the data analysis regarding gender poverty. To accomplish the purpose Multidimensional poverty for female headed house is calculated. Pakistan DHS data has been sorted to get the heads of households. Then female and male headed households have been segregated to get separate analysis for female and male headed households. In this section multidimensional poverty for female headed households is calculated. First deprivation of female household heads in each indicator is demonstrated.

Table (7) Deprivation of Female Headed Households in Each Indicator

Indicator	Type	Weight	Deprived %
Year of schooling	Binary	0.17	31.946
School Attendance	Binary	0.17	10.00
Cooking fuel	Binary	0.08	39.732
Floor	Binary	0.08	58.929
Water	Binary	0.08	86.161
Toilet	Binary	0.08	73.661
Underweight	Binary	0.08	86.607
Nutrition	Binary	0.17	81.250
Assets	Binary	0.04	67.411
Electricity	Binary	0.04	16.875

Calculations are on Statistical Software STATA

Results shown in the table (7) reveal that highest deprivation faced by female headed households is in accessibility of electricity followed by child of head suffering from underweight problem. It is heartening that all the female household heads have minimum deprivation in education dimension because majority of them manage to complete their 5 years schooling and also minimum of them did not attend the school.

Table (8) MPI for Female and Male Headed Households

Male Headed Household		Female Headed Household	
Coefficient		Coefficient	
H	0.263	H	0.28
Mo	0.209	Mo	0.21
A	0.754	A	0.75

Calculations are based on software STATA

A comparison between female and male heads of household suggests that female headed households are slightly multidimensional poorer than their counterpart male headed households. Hence, answer of research question is given, that is, there is gender poverty gap in Pakistan.[2]

11. A Comparison of Contribution of Each Indicator to Multidimensional Poverty

Table (9) Contribution of each Indicator

Indicator	Female Headed	Male Headed
	Mo	Mo
Years of schooling	0.050	0.000
School attendance	0.200	0.200
Cooking fuel	0.100	0.100
Floor	0.100	0.100
Water	0.100	0.100
Toilet	0.100	0.100
Underweight	0.200	0.200
Nutrition	0.100	0.100
Assets	0.05	0.05
Electricity	0.05	0.05

Calculation are based on Statistical Software STATA

A comparison between multidimensional poverty contributed by each indicator shown in table suggest that only years of schooling by the family member of household head contributes more to multidimensional poverty. All other indicators contribute equally towards the multidimensional poverty.

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2 It is worth noting that rural area present worse situation of Multidimensional poverty. 1.1 billion people in rural area while 0.2 billion people in urban areas live in multidimensional poverty globally (World Bank Group, 2018)

12. Multidimensional Poverty Index: Comparison with India

India's poverty reduction performance is exceptionally good. If we talk of multidimensional poverty, India got along to drag out 271 million people from multidimensional poverty between 2005 – 06 and 2015 -16. Thus, cutting poverty rates from formidable 55 percent to decent 28 percen.. A comparison of multidimensional poverty index between Pakistan and India is portrayed in table (10).

Table 10 Comparisons MPI and Sever Poverty: India and Pakistan

Region/Country	Survey	Year	MPI	Head Count	Intensity	Number of Poor People	In sever Poverty %
East Asia& Pacific	DHS	2015-16	0.025	5.9	43.1	117.7 m	
East Europe& Central Asia	DHS	-	0.009	2.4	38	3.5m	
Latin America	-	-	0.042	10.10	41.8	52.3m	
South Asia			0.143	31.3	45.8	545.9m	
Sub - Sahara	-	-	0.317	57.8			
Pakistan	DHS	2012-13	0.228	43.9	52.0	84,772,712	24.7
India	DHS	2015-16	0.121	27.7	43.9	364,224,988	8.6

Source: OPHI, 2018

From the table (10) it can be concluded that MPI and sever poverty for India is far below than Pakistan.

13. Conclusion

Multidimensional poverty results suggest that 23 percent people in Pakistan suffered deprivation in, education, living standard and health services. Gendered analysis of multidimensional poverty suggests that female headed households are poorer than male headed households. Performance of India in reducing poverty is enviable.

14. Future Research

The analysis can further be improved by utilizing individual level information in the estimation model. Furthermore, incorporating attribute like women's empowerment in the model can translate gender gap in poverty more explicitly.

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Appendix

Table Comparison of poverty: India & Pakistan									
Country	Year of Survey	MPI	%	Headcount 2016	Intensity of Deprivation	Population Vulnerable to Multidimensional poverty	National Poverty Line 2006-17	PPP$1.90 a day	Population in sever Multidimensional Poverty
India	2015-16	0.121	27.5	364.225	43.9	19.1	21.9	21.2	
Pakistan	2012-13	0.228	43.9	79.773	52	14.5	29.5	6.1	

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