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Addressing the Pitfalls of Single Poverty Line in the Estimation of Poverty in Different Regions of Pakistan

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Abstract

Highlighting the importance of region- specific poverty lines, the study examines the biasness of single poverty line that is widely used in the measurement of poverty in Pakistan. Since consumption patterns and unit cost of calorie varies substantially across different regions, so the over-reliance on single poverty line is not viable as it suppresses all the relevant information and eventually result in misleading poverty assessment. Cost of basic needs approach is applied on the recently available HIICS/ HIES data of 2015-16 to evaluate estimates from single and regional- specific poverty lines. The comparison of poverty incidences revealed the biasness as results appear to be extensively dissimilar based on two approaches, such as the urban poverty is found to be higher than rural one in case of regional poverty lines indicating that the extent of urban poverty is systematically under-estimated by the use of single poverty line. Furthermore, the province-wise poverty rankings differ drastically in both cases. The study found that region-specific poverty lines are consistent and appropriate for poverty analysis as the estimates based on single poverty line fails to capture regional price variations and consumption patterns.

Keywords: Poverty, Poverty Line, Cost of Basic Needs

JEL Classification: I30, O15

1. Introduction

An essential economic drive for every government is to support individuals who are unable to fulfill the basic living requirements. Poverty is generally regarded one of the most pervasive and concerning issues afflicting millions across the globe including Pakistan. It is perhaps the most elementary source of misery on earth and is responsible for more avoidable deaths than anything else [Gordon (2002)]. Poverty refers to a paradoxical condition in which households not only find themselves at the bottom of the income distribution, but in which their basic needs are not met adequately. Pakistan is home to a significant proportion of the population living below a minimum subsistence level. Although Pakistan is on

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track to decrease, yet 24 percent of the population still lives below the poverty line.[2] With a steady internationalization of the poverty agenda, development organizations have demanded a template for a regular reporting of poverty. Poverty alleviation policies depend widely on sound diagnosis of the core causes and dimensions of poverty. In this regard, establishing the poverty line is the most fundamental step in ascertaining the poverty status of a household that specifies the minimum standard of living to which a household should be permitted. After determining a poverty line, poverty profiles can be constructed, which provide broad estimates of poverty. Setting a poverty line is, however, a very contentious task because the procedure involves many conceptual and practical problems.

In Pakistan, several attempts have been made in the past to construct poverty lines and make estimates of poverty. Various studies related to poverty line display diverse natures. Poverty line is being defined in different ways, covering different time periods. Researchers have applied different approaches in the past to make an estimation of Poverty Line in Pakistan. These can be broadly categorized as: Arbitrary Benchmarks, Food Energy Intake Approach (FEI) and Cost of Basic Needs Approach (CBN).[3] Some pioneer studies by Naseem (1973) and Alaudin (1975), followed by Kruijik and Leewan (1985), Ahmed and Ludlow (1989), Ahmad and Allison (1990), Zaidi (1992) attempted to determine poverty lines on the basis of arbitrarily fixed expenditure or income required by a household to fulfill basic needs. By the mid-1970s and through the early 1990s, the focus of researchers shifted from arbitrary bench marks to a minimum nutritional requirement according to household composition. A significant number of studies conducted during this era estimated poverty bench marks on the basis of nutritional requirements, i.e., food energy intake, a method that calculates the calorie intake [Naseem (1977), Irfan and Amjad (1984), Havinga et al. (1989), Ercelawn (1990), Qureshi and Arif (2001) and Government of Pakistan (2002)]. Embedding non-food needs into calorie intake, a more scientific approach called 'Cost of Basic Needs' (CBN) gives a relatively sound approach regarding poverty lines. Malik (1988), Ali (1995), Jafri and Khattak (1995), Qureshi and Arif (2001) and Government of Pakistan (2016) have used this approach in the context of Pakistan.

Review of the literature in Pakistan reveals that most of the earlier studies were conducted at national level or, at the most, with a focus of urban and rural

[2] Government of Pakistan (2015-16)

[3] Arbitrarily fixed approach is, in fact, no approach (Ali 1995) which subjectively specifies a monetary amount as poverty line, whereas FEI is entirely food-based approach (Ravallion 1998; Ravallion and Lokshin 2003). CBN is modification of FEI, as this approach considers not only an adequate level of food items, but also captures non-food items **(**Ravallion and Bidani, 1994).

segmentation.[4] However, as Tarp *et al*. (2002) have emphasized that the use of a unique consumption basket for all regions may yield inconsistent poverty comparisons. Pakistan has wide variations in socio-economic characteristics, climatic conditions, environment and land structure, all of which have led to wide differences in the prices of food and non-food items across country. Since prices and living standards differ across regions and provinces in Pakistan, it is more important to construct separate poverty lines for the regions of provinces. The official authorities have probably avoided an estimation of poverty at the province level because of political reasons, fearing the poorer provinces or regions may demand more resources to combat poverty in their regions [Gazdar (1999), Arif *et al*. (2011)].

Given the advantage of CBN over other approaches, it is a reasonable choice that offers careful treatments on the regional specifications. Following are the ramifying objectives of the present study:

i. To address the biases of considering National (Single) Poverty Line for all regions of country.

ii. To construct continuum of possible poverty lines emphasizing provincial specific bundles with urban and rural segmentation using the more recent data available Household Integrated Income and Consumption Survey (HIICS) 2015-16.

The paper is organized as follows: Section 2 describes the data used in the estimation of poverty lines. Section 3 summaries the approach used for constructing the poverty lines. Section 4 gives a brief description of poverty measure. Section 5 discusses the result while section 6 summarizes and provides concluding remarks.

2. Data Sources

The data source of the present study is Household Integrated Income and Consumption Survey **(**HIICS), conducted by Pakistan Bureau of Statistics (PBS), Government of Pakistan. HIICS, a different survey planned for 2015-16, is a combination of Household Integrated Economic Survey (HIES) and Family Budget Survey (FBS).[5] HIICS is designed to meet requirements of rebasing and generating

[4] Only few studies, for example, Ercelawn (1991), Malik, S. (1991, 1994), Gazdar *et al*. (1994), Cheema and Sial (2012,2014), Malik *et al.* (2014), Anwar and Qureshi (2002), Anwar (2002, 2006) are based on national, provincial and regional level.

[5] The HIES survey considers data on Consumption as per 'Classification of Individual Consumption of Purpose' while the focus of Family Budget Survey (FBS) is on the consumption goods of

HIES survey for a better coverage and quality of data in overall context of poverty reduction strategy.

The universe of the HIICS/ HIES consists of all the urban and rural areas of the four provinces of Pakistan but excludes FATA, and restricted military areas. The population of the uncovered areas constitutes around 2 percent of the total population. The sample size of HIES surveys varies from year to year. The number of primary sample units, that is, individuals covered in unrestricted rural and urban areas of four provinces from 2011-12 to 2015-16, are summarized in Table 1. The provincial distribution in the sample follows (more or less) the actual population shares in the respective province, indicating that the maximum number of individuals belong to Punjab, followed by Sindh, KPK and Baluchistan.

Table 1: Distribution of PSU's (Individuals) from HIES 2011-12 to HIICS/HIES 2015-16

Province	**2011-12 HIES**			**2013-14 HIES**			**2015-16 HIICS/ HIES**		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Punjab	40.6%	39.1%	39.7%	48.2%	34.7%	39.2%	41.5%	37.1%	39.9%
Sind	27.8%	25.6%	26.5%	20.1%	31.7%	27.8%	22.2%	27.4%	24.0%
KP	19.7%	24.1%	22.3%	22.9%	20.4%	21.3%	23.0%	26.0%	24.1%
Baluchistan	11.9%	11.2%	11.5%	8.8%	13.2%	11.7%	13.4%	9.5%	12.0%
Total	44,249	62,245	1,06,494	39,784	79,234	1,19,018	1,03,007	54,629	1,57,636

It is worth mentioning that in 2015-16, contrary to previous surveys, the representation of urban areas is almost twice the representation of rural areas. One of the fundamental objectives of HIICS/HIES (2015-16) was to explore the variations in consumption, which over the past few years was much pronounced in urban areas. As a result, more urban representation is found in the sample as opposed to actual population distribution.[6] To overcome this bias the survey results based on sample are adjusted by weights; the weights are given as per actual distribution of population in each region. Since a larger sample is drawn from urban areas, which have relatively less proportion in actual population, smaller weights are assigned to sample drawn from urban areas and bigger weights are assigned to

predetermined basket. The prime purpose of FBS is to derive weights required for the rebasing of Price Statistics. (www.pbs.gov.pk)

[6] HIICS / HIES (2015-16) is based on 451 consumption items, where in survey of 2013-14 only 172 consumption items were covered.

sample drawn from rural areas. The Table 2 presents the weighing scheme and a comparison of weighted and unweighted samples.

Table 2: Weighing Scheme for Primary Sample Units in HIES/HIICS (2015-16)

Provinces	Un weighted Sample Share (as per survey)			Weighted Actual Share (as per population)		
	Rural	Urban	Overall	Rural	Urban	Overall
Punjab	12.85%	27.09%	39.95%	37.61%	18.51%	56.12%
Sindh	9.50%	14.48%	23.98%	12.54%	12.66%	25.20%
KP	9.02%	15.04%	24.06%	11.39%	2.51%	13.91%
Baluchistan	3.29%	8.73%	12.02%	3.47%	1.31%	4.78%
Overall	34.66%	65.34%	100%	65.01%	34.99%	100%

Source: Pakistan Bureau of Statistics, Government of Pakistan (2015-16)

It is evident from Table 2 that actual weight of rural population is 0.6501 whereas that of urban population is 0.3499. Likewise, the actual weights of provinces are also different from sample shares. The present study shall consider the actual weights to aggregate the regional estimates of poverty.

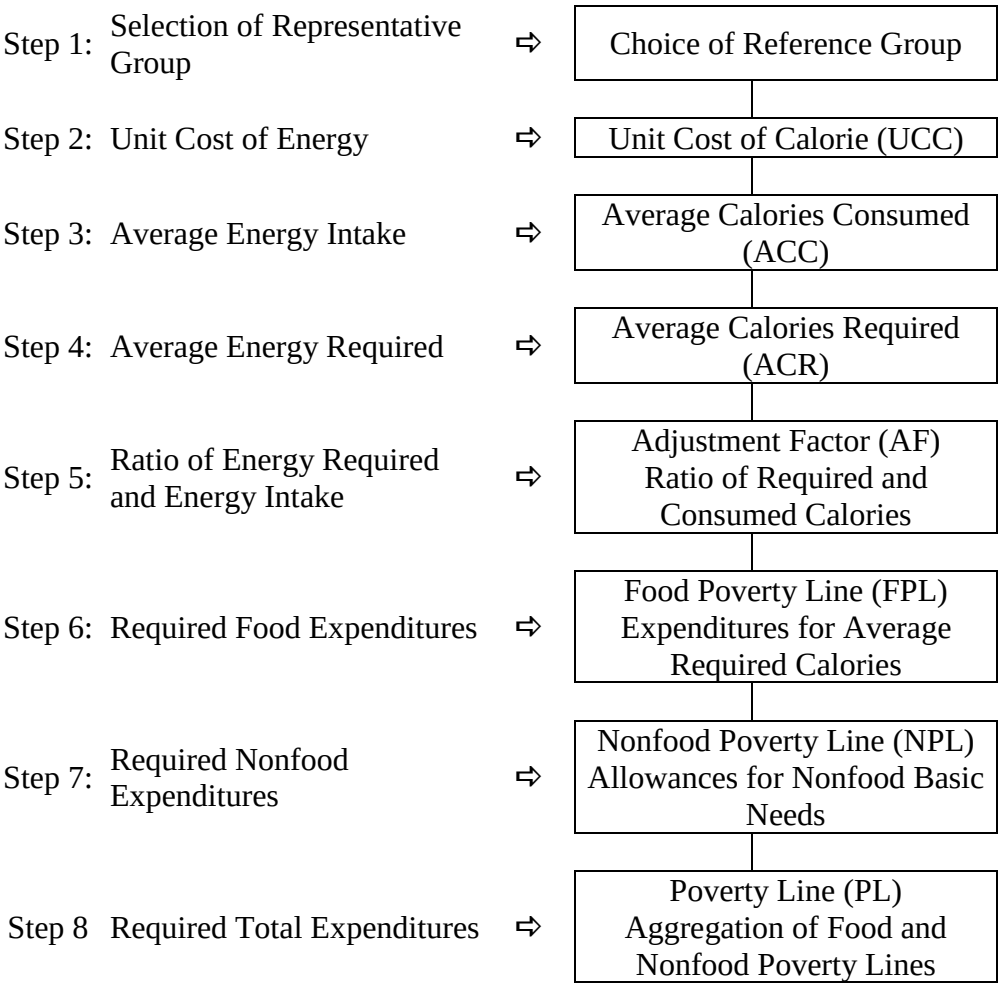
3. Methodology for Constructing Poverty Lines

The choice of welfare indicator and unit of analysis are the fundamental choices in constructing poverty lines. In this regard income and expenditures are the two potential indicators of welfare. The literature suggests that expenditure is a better measure of welfare. Deaton (1997) advocated expenditures on two grounds; expenditures are more reliably reported, and they are likely to give better insight of life-time resources of a household. Therefore, in this study the expenditures are taken as indicator of welfare. Regarding the unit of analysis, one approach is to consider per capita which treats all individuals equally irrespective of their nutritional requirements which vary with age and gender. The other approach is to consider the nutritional requirements of everyone instead of treating them identical. The present study shall consider the second approach. This paper follows the Cost of Basic Needs (CBN) approach to estimate region-specific poverty lines. Figure 1 illustrates the steps involved in the measurement of poverty line through CBN approach.

3.1. Choice of Reference Group

A reference group needs to be identified for the determination of consumption patterns and levels in poverty analysis. There are various choices of reference group: the general population or an "a priori" definition of a poor group.

Figure 1: Steps Involved in Estimation of Poverty Line through Cost of Basic Needs Approach



Government of Pakistan (2015-16) adopted households belonging to 2nd, 3rd and 4thdeciles of the distribution of per adult equivalent consumption expenditure, thereby excluding the poorest, middle class and the wealthiest households as recommended by best practice. In context of poverty estimation, reference group comprises of the households whose overwhelming expenditures are not likely to be on the luxurious, moreover their expenditures are not dominated by survival foods. Hence the expenditures of the households belonging to reference group are expected to reflect representative average consumption levels at common prices.

Following Government of Pakistan, the present study shall consider the same reference group.

3.2. Unit Cost of Energy (UCC)

Once the reference group has been selected, the next stage is to determine the unit cost of a calorie. We determine the cost of calorie by dividing the total amount of food expenditures evaluated at the market by the total calories' intakes for each household in the representative sample. It is calculated by following formula:

$$UCC = \frac{Total\ Food\ Expenditures}{Total\ Calories\ Consumed} \tag{1}$$

3.3. Average Calories Consumed

The next step is to calculate the average calorie consumed (ACC) per person. It is calculated by dividing total calories consumed with the number of consumers, irrespective of their gender and age. It gives the average share of an individual in total calories consumed in a region.

$$ACC = \frac{Total\ Daily\ Calories\ Consumed}{Population} \tag{2}$$

3.4. Average Calories Required (ACR)

The food poverty line necessitates the specification of a minimum daily food basket attached to calorie requirements. However, these calorie requirements vary with age and gender, for instance in general, adults need more calories than children and males need more calories than females. Therefore, calorie requirements are calculated by considering the age and gender of all individuals. Table 3 reports per day minimum calories requirement with respect to age and gender of an individual.

In Pakistan per day minimum required calories by an adult are 2350 kcal [Government of Pakistan (2015-16)]. The Average Calories Required (ACR) needed to meet energy requirements, is given by:

$$ACR = \sum_{i=1}^{n_m} (ER_i)(M_i) + \sum_{j=1}^{n_f} (ER_j)(F_j) \tag{3}$$

Where, ER_i is the energy required by males of i^{th} age group, ER_j is the energy required by females of i^{th} age group, M_i is the population share of males of i^{th} age group and F_i is the population share of females from i^{th} age group, such that

$$\sum_{i=1}^{n_m} F_i + \sum_{i=1}^{n_f} M_i = 1$$

Table 3: Minimum Calories Requirements (Per Day)

Age Group	Males	Equivalent-Factor	Females	Equivalent-Factor
less < 1	1010	0.4297872	1010	0.4297872
01-04	1304	0.5548936	1304	0.5548936
05-09	1768	0.7523404	1768	0.7523404
10-14	2816	1.1982979	2464	1.0485106
15-19	3087	1.313617	2322	0.9880851
20-39	2760	1.1744681	2080	0.8851064
40-49	3640	1.1234043	1976	0.8408511
50-59	2460	1.0468085	1872	0.7965957
60 & above	2146	0.9131915	1632	0.6944681
National Average	2350	1.0000000		

Source: Government of Pakistan (2003)

3.5. Adjustment Factor

It is to be noted that average calories consumed (ACC) gives the daily per capita consumption of calories in a region and Average Calories Required (ACR) gives the minimum calories requirement per person, adjusted with age and gender. The ratio of these two is the adjustment factor.

$$AF = \frac{ACR}{ACC} \qquad (4)$$

A ratio equal to one show that average intake is equal to minimum requirement, a ratio greater than one reflects that on average individuals are consuming less than minimum requirement and vice-versa.

3.6. Food Poverty Line

Food poverty line (FPL) gives the minimum expenditure required to purchase mandatory calories. It can be obtained in two ways; *first*, multiplying the Average Calorie required (ACR) by the Unit Cost of Calorie (UCC), *second*, multiplying Per Capita Food expenditures by the adjustment factor. Since ACR,

UCC, AF and per capita food expenditures are calculated at per day, therefore transforming their product into monthly terms will yield Food Poverty Line as given by following equations:

$$FPL = [ACR\ x\ UCC]\frac{365}{12} \quad (5)$$

$$FPL = \left[\left(\frac{Total\ Food\ Expenditures}{Population}\right)AF\right]\frac{365}{12} \quad (6)$$

3.7. Non-food Poverty Line

After estimating food poverty line, the next step is to work out the Non-food Poverty Line (NPL). It gives the minimum amount required to fulfill the basic non-food requirements including basic needs such as clothing, health facilities and shelter. A non-poor person should be able to purchase subsistence non-food bundle. In this regard we shall consider the non –parametric technique to determine the nonfood poverty line, as it needs no assumption regarding the function form of expenditure function. In non-parametric technique, a symmetrical interval of 10% is defined around food poverty line and then the weighted average non-food expenditures of the households, whose food expenditure belong to that interval, is calculated [Ravallion (1994, 1998)]. The weighting scheme is as follows:

Table 4: Weighing Scheme for Calculating Non-Food Poverty Line

Households with Food Expenditures in the range of Food Poverty Line	Weights for average Non-Food Per Adult-Equivalent Household Expenditures
99% - 101%	5/15
98% to 99% and 101% to 102%	4/15
97% to 98% and 102% to 103%	3/15
96% to 97% and 103% to 104%	2/15
95% to 96% and 104% to 105%	1/15

This method to calculate non-food component has been used by many studies including White and Masset (2003) and Qureshi and Arif (2001).[7] The reason to use this approach is that non-food consumption bundle of these 10% households is likely to be based on essentials only.

[7] In many studies such as Ravallion and Bidani (1994), Ravallion (1994, 1998) and Mukherjee and Benson (2003) instead of using food expenditure, total expenditures which lie around ±5% of the food poverty line are taken.

3.8. Poverty Line

Poverty line based on CBN is merely sum of the food and non-food poverty lines. It gives the minimum cost of essential food and non-food items required to escape from poverty. As discussed earlier, first we shall calculate single poverty line for whole population, and then, based on this poverty line we will estimate poverty in each region. At the second stage, we will consider regional poverty lines and repeat the procedure, so that each poverty line reflects differences in tastes, consumption preferences, demographic makeup of households, and prices. The comparison will unfold the biasness of considering single poverty line for all regions.

4. Measure of Poverty

Once the poverty line is established, the next step is to categorize households as poor and non-poor depending on whether their per capita expenditure is below or above the poverty line. In this regard, the most common measure is headcount index (P_0) which was initiated by Rowntree (1901). It gives the proportion of the population below poverty line:

$$P_o = \frac{N_P}{N} \qquad (7)$$

Where, N_P is the number of poor and N is total population, such that $0 \leq P_o \leq 1$, '0' indicating no poverty and '1' means that all are poor.

5. Results and Discussion

In this section we shall discuss results of the present study. This section comprises of two sections. In Section 5.1 we shall present the estimates of poverty based on single poverty line. The estimates of region-specific poverty lines and poverty are presented in Section 5.2.

5.1. Analysis Based on Single Poverty Line

This section presents results of National Poverty Line by using CBN approach for the selected reference group D_2 to D_4 of Pakistan. Following the traditional way of measuring Pakistan's official poverty measure, single poverty line is estimated on the assumption that the unit cost of energy (UCC) is the same throughout Pakistan. This approach may not be adequate to capture differences in consumption patterns and price levels across provinces and between urban and rural areas. The estimates of poverty line and poverty measures are discussed in the subsequent subsections.

5.1.1. Estimate of Poverty Line

As per our estimations, in Pakistan the average calories / energy required (ACR) per person per day is 2,190.58 kcal and the unit cost of calorie (UCC) is Rs. 0.0256. The food poverty line is obtained by transforming the product of these two in monthly terms. Hence the estimated food poverty line is Rs. 1708 per person per month. It can also be obtained by taking the product of per person average monthly food expenditures and the adjustment factor. The corresponding non-food poverty line is estimated to be Rs. 1431.76. Therefore, the overall poverty line is Rs. 3,139.76. It indicates that households with per person monthly expenditure less than 3,139.76 are classified as poor. After the estimation of poverty line, the next step is to calculate the proportion of poor in rural and urban segments of each province of Pakistan. Finally, the poverty estimates will be aggregated to workout overall poverty in Pakistan.

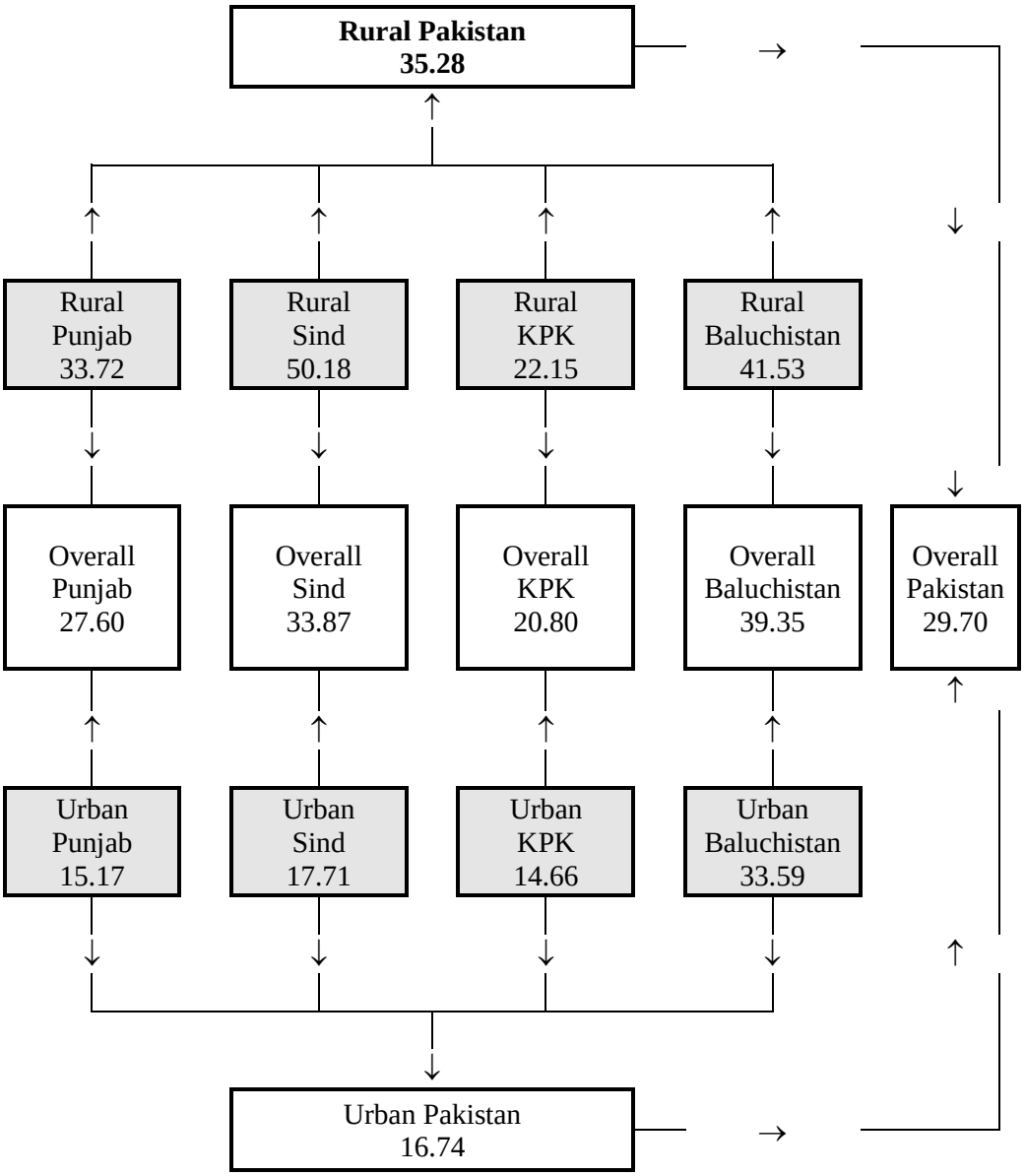
5.1.2. Measurement of Poverty

The estimates of Head Count Index (P_0), obtained for the year 2015-16 by using a single poverty line of Rs. 3,139.76 per month, are presented in Figure 2. The figure illustrates the prevalence of poverty at regional, provincial and national levels.

We first consider the rural and urban segments of each province. In the rural segment, the incidence of poverty is worst in Sindh where 50.18 percent of the population lives in poverty. The next worst cases are those of Baluchistan and Punjab, with 41.53 and 33.72 percent of the population living in poverty, respectively. The province with the lowest incidence of rural poverty is KPK (with a head-count index of 22.15 percent). Meanwhile, on the urban side, figures indicate that KPK is also the least poor province followed by Punjab and Sind, with the province of Baluchistan experiencing the highest incidence of poverty among all provinces.

The Head Count Indices obtained above, separately for urban and rural areas of each province, are aggregated to arrive at the overall poverty level. For this purpose, Headcount Index (P_o) of each region is multiplied by its corresponding weight / population share. For instance, provincial P_o's are aggregated by taking weighted average of P_o in each rural and urban segment of province where weights are the rural and urban population shares. Similarly, Rural Pakistan estimates of P_o are the weighted of all rural P_o's with share of each rural segment in all rural segments. Same procedure is applied for Urban Pakistan.

Figure 2: Aggregation of Head Count Indices Based on Single National Poverty Line



Source: Estimated from HIICS/ HIES, 2015-16.

Finally, the estimates of P_o for Pakistan are obtained as weighted average of P_o's in rural Pakistan and urban Pakistan with the share of each region in total population of Pakistan.

The figure shows that the incidence of poverty is significantly higher (almost double) in rural than in urban regions. In the rural region, 35.28 percent of the population lives in poverty in contrast to 16.74 percent of the population living in poverty in the urban region. These findings depict that poverty in Pakistan is fundamentally a rural phenomenon since it is significantly more pronounced in rural areas than it is in urban areas. Pakistan has initiated many rural development programs to enhance the productivity and quality of life of rural people. The most important is Pakistan's Rural Support Program (RSP) which has been implemented since 1982. Other programs include Village Aid Program, Basic Democracies system, Rural Works Program, Integrated Rural Development, Peoples Works Program, Local Govt. and Rural Development, Peoples Program, Tameer-e-Watan, Social Action Program, Khushal Pakistan, Tameer-e-Pakistan and Khushal Pakistan Program-1.[8] The purpose of these programs is social mobilization of the poor in order to empower them and increase their ability to influence the decisions that affect their lives. The poor are encouraged to participate actively in implementing and maintaining the projects, reflecting their own choices, with financial and technical support being extended by the programs. Despite these deliberate efforts, poverty is still pronounced in rural areas which indicate an ineffectiveness of these policies.

Apart from regional and provincial estimates, the figure shows that over 29 percent of the population is in the state of poverty at the national level, indicating that these individuals do not have enough to meet their basic food and nonfood requirements.[9]

5.2. Analysis Based on Region Specific Poverty Lines

5.2.1. Estimate of Poverty Lines

The resulting Region- Specific Poverty Lines (per person monthly figures), incorporating the calorie differences across gender and age, are presented in Table 5. These poverty lines reflect significant difference in prices and consumption patterns across the four provinces. The estimated national poverty line is Rs.

[8]For details, see Maqbool and Bashir (2009)

[9] It is to be noted that as per official estimates of 2015-16, 24 percent of population lie below poverty line. This difference is due to methodological differences. Government of Pakistan took 18 years as a benchmark. Individuals below 18 years are treated uniformly with the assumption that the consumption requirement of each non-adult is 80% of the consumption requirements of an adult. Further they considered that consumption requirements of adults are also uniform and do not vary across gender. The present study divided individuals into nine groups, as per their consumption requirements and also considered gender differences in consumption requirements (see Table 3).

3217.42 per person per month with food poverty line Rs. 1786.02 per person per month.

Table 5: Estimates of Region-Specific Poverty Lines

Regions	Food Poverty Line		Total Poverty Line	
	Urban	Rural	Urban	Rural
Khyber Paktunkhua (KPK)	1993.84	1745.31	3550.86	2961.86
Punjab	1844.74	1215.20	3609.98	2148.97
Sind	2165.47	1493.24	3760.98	2334.68
Baluchistan	1862.92	1664.81	3429.54	2927.49
Aggregated Poverty Lines for Rural and Urban Areas of Pakistan	1952.55	1472.01	3605.72	2485.27
Aggregated Poverty Lines for Pakistan	1786.02		3217.42	

Source: Estimated from HIICS/HIES, 2015-16.

It can be observed that this poverty line, based on region - specific characteristics, is higher than the single National poverty line calculated in section 5.1, as it incorporates regional variations. Moreover, the table shows that rural poverty lines are excessively lower than the urban ones. This reflects the fact that cost of living is higher in urban areas. The variations in consumption patterns across urban and rural area is due to differences in standard of livings in urban versus rural areas. Simple and easy living standard is associated with the rural areas. Higher average wealth and income in urban areas also results in consumption patterns for urban areas which, in general, are fairly different from those in rural areas. Differences in the poverty lines also reflect variations in the prices of food and non-food items across the provinces. Needless to mention that food resources are often easily accessible in rural areas on cheaper rates, while urban households have more expensive food tastes and pay more for each calorie. For these reasons, the estimated poverty lines are higher in urban areas than rural, pragmatically captured by region- specific poverty lines.

If the analysis is extended across provinces, it is seen that on the urban side, Sind has the highest poverty line, while on rural side the province of KPK has relatively highest poverty line. There can be several reasons explaining these findings. One of the main reasons is that Sind and KPK are facing unstable law and order situation. Further the deep inland location of KPK province leads to higher transportation costs which results in increase in input prices. On the other hand,

living cost is much higher in urban Sind, especially in Karachi. In rural Sindh, economic, social and political life is mainly asserted by large landlords. Moreover, political instability and rapid growing population can also be attributed for the difference in poverty lines.

5.2.2. Measurement of Poverty

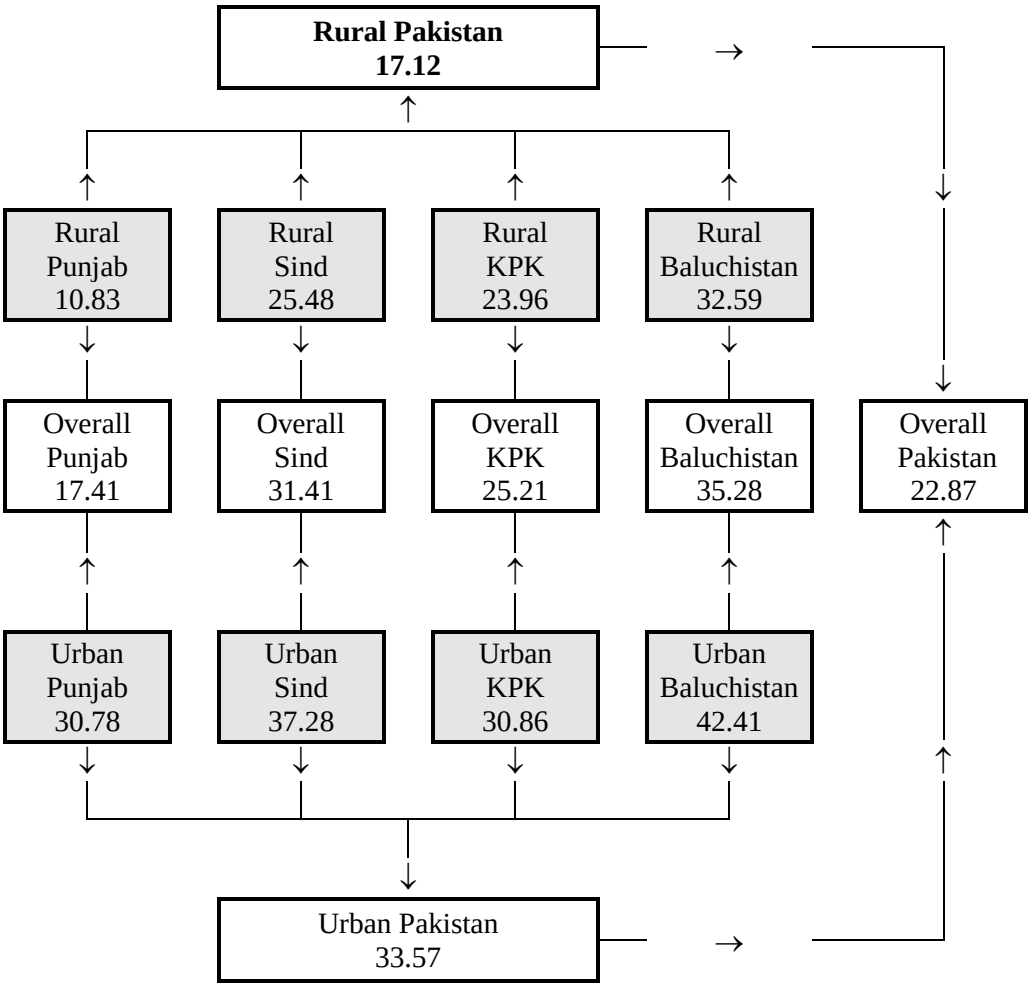
Figure 3 presents the results taken from re-estimating the poverty measures responsible for differences in prices and consumption patterns. Using reference poverty lines, estimates show that almost 22.87 percent of the population is living in poverty, with 17.12 percent of the population in rural areas and 33.57 percent of the population in urban areas are living below the poverty threshold.

Hence, in general, it can be concluded that the poverty rate has fallen substantially if compared to the past.[10] This decline in poverty can be associated with several initiatives taken by government over the past years to alleviate poverty and thereby improved living conditions of the people. Various governments in the past have aimed to reduce poverty by allocating a reasonable budgetary resource to implement numerous social safety net measures. Programs such as the Pakistan Bait-ul-Mal (PBM), Benazir Income Support Program (BISP), Pakistan Poverty Alleviation Fund (PPAF), Workers Welfare Fund (WWF) and Employees Old Age Benefits Institution (EOBI) have played a significant role in poverty alleviation. Besides, complementary interventions have been initiated to economically strengthen the lower economic segments of society. The most important of these include Waseela-e-Rozgar and Waseela-e- Haq (Microfinance), Waseela-e-Sehat (Life & Health Insurance) and Waseel-e-Taleem (Primary Education). Government also encourages the expansion of Microfinance sector, which is considered an important player by providing not only liquidity to the people near the poverty line, but also facilitate them through savings, insurance, and remittances services. Prime Minister's Interest Free Loan Scheme is being initiated to uplift small business for the poor youth. Similarly, under Business Loan Scheme, skilled, competent and trained youth is granted loan at subsidized markup of 8.0 percent (Pakistan, 2016-17). This decline could be due to several other factors, such as increase in support prices of agricultural products, improved verities of seed resulting in better yield per acre, improvement in the inflow of foreign remittances. All these helped in poverty reduction by dragging many poor households out of the poverty trap. Private philanthropy is another poverty reduction factor, as it constitutes more than

[10] Several studies including Haroon, J (2018), Idrees, M (2017) and Naveed, A et.al. (2016) had also confirmed the declining trends in poverty in Pakistan.

1 percent of GDP. Furthermore, an increase in female labor force participation rate might also have contributed to the decline in poverty. [Pakistan (2013-14)].

Figure 3: Aggregation of Head Count Indices Based on Region -Specific Poverty Lines



Source: Estimated from HIICS/HIES, 2015-16.

At national and provincial level, the estimates surprisingly suggest that, contrary to previous results, the incidence of poverty is worse in urban areas than rural. The urban headcount index of 33.57 percent is significantly higher than the rural headcount index of 17.12 percent. The estimates show that after adjusting for the cost of calories and price differences, urban households on average have significantly higher cost of living which indicates that probably residents of rural

areas are better nourished due to low cost of nutrients, or because unit prices of comparable food commodities are lower. The cost of living, as expected, is higher in urban areas as transportation, housing, education and medical services are more expensive. The higher cost of living requires higher earnings to flow out of poverty and to have subsistence access to basic facilities. Moreover, higher urban poverty could be due to a high influx of population from rural to urban areas, unemployment and a more highly skewed distribution of resources in urban regions than in rural regions.

A single poverty line, thus, fails to provide a correct picture of the prevalence of poverty within regions. The results based on regional-specific poverty line reveal that policies to combat rural poverty are more effective and suggest that policy makers in Pakistan may have to focus more in the urban areas.

When adjusted for price differences across regions, the figure reflects stark differences in the poverty incidence across provinces. Regional variations in the poverty incidence account for not only in natural endowment (land and water) but also for differences in institutional practices (tenancy and concentration of holdings). The headcount index of 25.21 percent for KPK is significantly higher than the headcount index of 17.41 percent for Punjab, indicating that KPK ranks second after the Punjab province. Sind and Baluchistan are found to be the poorest provinces with head count of 31.41 and 35.28, respectively. It is notable that this ranking of poverty is different from the single poverty line whose results suggest KPK as the least poor whereas Punjab ranks second among the four provinces. This is because the single poverty line fails to consider differences in prices across provinces and between rural and urban regions and thus provided a misleading ranking of poverty across provinces.

6. Conclusion

The central theme of this study was to examine the significance of regional-specific poverty lines on the estimates of poverty. CBN was applied to work out the occurrence of poverty for the recently available data HIICS/ HIES 2015-16 across rural/urban areas of each province of Pakistan. Poverty measures were estimated by two ways. Firstly, single poverty line was used to determine incidence of poverty. Secondly, by considering regional-characteristics of particular region, separate poverty lines were calculated for urban and rural areas of each province, which were further used to determine incidence of poverty. Ultimately, as far as the poverty analysis is concerned, regional-specific poverty lines deem to be more appropriate as they capture the regional characteristics, specifically, prices pertaining to a particular region. The poverty line varies across provinces and

between urban and rural areas, where the urban poverty line is found to be higher than rural poverty line, mainly due to higher prices and standard of livings in urban areas. Aggregating poverty line with per person consumption revealed that 22.87 percent of the population lives below the estimated poverty line. The results, in general, depict that poverty has declined from previous years in Pakistan. Moreover, the results indicate that there are significant differences in the incidence of poverty not only across provinces but also within provinces and across rural and urban areas. As far as rural and urban segments are concerned, poverty is more pronounced in urban areas than rural ones in the case of regional specific poverty line. The evaluation of poverty with the two methodologies has resulted not only in difference in magnitude but also in the regional trends.

Based on these results, we recommend an estimation of the poverty line taking into consideration the differences across provinces and rural urban areas. The results do suggest the use of regional targeting to reduce poverty due to a substantial disparity in poverty across all regions of country. Region-specific poverty lines should be considered more widely to enrich and complement poverty analysis. This has broader implications for targeting interventions and allocating resources to each region.

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