

Multidimensional Poverty Assessment in Pakistan: Does Household Dependency Escalate Poverty?

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ABSTRACT

The household dependency ratio on young or old family members is considered a major determinant in poverty when human capital cannot support the family income. Since the elderly suffer a significant risk of poverty and make up an increasing percentage of the population, the country's economic inequality is quite sensitive to population ageing. Family size adversely affects household well-being when focusing on children under 15 and adults over 65. The dependency increases the burden on bread earners and reduces consumption expenditure. The current study uses family reliance and the multidimensional poverty concept to analyse how poverty is distributed throughout different provinces. The current study intends to provide poverty analysis across all four provinces of Pakistan using the Alkire and Foster method of multidimensional poverty indexes from Household Integrated Economic Survey data. The study found that increasing child dependence significantly reduces consumption and exacerbates poverty. The Seniors Dependency Indicator demonstrates that as the elderly population in Sindh, Punjab, and Khyber Pakhtoon Khwa (KPK) declines, poverty decreases. All provinces saw an increase in the prevalence of child poverty, with the highest KPK rates in Punjab (6%) and Sindh (4%), respectively.

Since the functional sector does not have to shoulder the full load, the government should set up safety support mechanisms for these segments to lessen the burden on wage workers. According to the survey, access to clean water and literacy rates are the other leading indicators of poverty alleviation.

Keywords: Alkire and Foster method, children and elder dependency, consumption expenditures, hies Pakistan, uni and multi-dimension poverty

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INTRODUCTION

Pakistan has struggled with poverty constantly since its independence. Numerous causes contribute to poverty in the region, such as natural disasters that cause financial losses, rapid population expansion, illiteracy, an unstable economy, and income disparities within a nation. The policymakers have always kept the state of poverty in mind while making policies, and it has always been a challenge for them to overcome (Naseem, 2012).

Poverty is a difficult subject to understand, especially due to its complexity. Many surveys have been conducted to define the factors, consequences, and causes of poverty, which are quite different but may seem indifferent at some level. Every bit, they go side by side. Poverty reduction improves socioeconomic status, such as education, health and employment. On the other hand, the deterioration of these dimensions also plays a significant role in aggravating poverty. Income helps the poor to get out of extreme poverty by improving their socioeconomic status and helping them to earn a higher income in the coming future. A person tends to be healthier than individuals with lower status when they have a reputable source of income (Bradley & Corwyn, 2002).

Health is considered the wealth of a nation; better health leads to higher income and a significant surge in economic growth, especially in the case of developing countries (Bloom et al., 2010). Consequently, the various aspects of socioeconomic statuses, such as the one mentioned above, are

considered to be the causes, effects, and factors of poverty, especially in developing countries where the socioeconomic situation of the population is generally depressing and depends on the household members for any kind of improvement (Khan & Zerby, 1981).

Until 1970, the concept of poverty was viewed in terms of money, but they did not accurately reflect and assess the condition of poverty. Therefore, there has since been a steady change towards non-income indicators to indicate poverty and a person's socioeconomic situation. Chakravarty et al. (2008) simultaneously consider multiple dimensions of deprivation, such as health, education, and living standards, to measure multidimensional poverty. The decomposition approach allows for the examination of the relative importance of each dimension in explaining overall poverty.

These non-income indicators of poverty include housing, literacy, and wellness. Sen's capabilities theory, which views poverty as a result of human inabilities like lack of freedom, provides substantial support for this claim. At the same time, Sen (1987) looked beyond that point by defining well-being based on the functional ability of individuals in a society. Individuals above the poverty line may even be pitiful if they cannot live up to basic functioning within a society due to a lack of health and education.

The multidimensional approach considers not just income but also other aspects, including health, housing, and social needs to determine poverty through a multidimensional poverty index developed

by Alkire and Santos (2010) using the “dual-cut-off method.” This method identifies a person who falls below several dimensions of poverty by establishing a poverty line of 1.90 USD per day for Pakistan. The method then estimates poverty by aggregating the various components and creating a relative deprivation index (Zeumo et al., 2014).

Multidimensional poverty is becoming increasingly common in many developing countries. The comparison of multidimensional poverty indicators is useful for understanding the state, characteristics and distribution of multidimensional poverty. The efficacy of targeted poverty alleviation measures on multidimensional poverty eradication is assessed by Wang et al. (2022), who also look at the spatial characteristics of poverty throughout China’s provinces and districts between 2010–2014 and 2016–2018. The relationship between education and China’s multifaceted poverty status is another topic covered in this paper.

In Ethiopia’s rural families, Bersisa and Heshmati (2021) evaluate the extent of multidimensional poverty and explore its causes. The findings indicate significant differences between the two measures of poverty’s intensity, severity, and depth. The unidimensional poverty measure shows that 36% of the households were poor, compared to 46% of multidimensionally poor households. Demographic, geographical, and household head factors also influence the poor status of households. The social and economic features of households mostly explain variations in the occurrence

and severity of multidimensional poverty. This investigation contributes to a better understanding of the underlying causes of multidimensional poverty and the required policy solutions for eradicating poverty in the rural areas of Tripura, India (Shah & Debnath, 2022).

Pakistan, a developing nation, has dealt with problems related to poverty since its independence; however, given the issue’s complexity, none of the policies to address it have been particularly effective. Naveed and Ali (2012) studied Pakistani poverty reduction strategies compared to China’s poverty reduction experiment. They concluded that no attempts had been made to target poor regions of the country for poverty reduction because policymakers pay little attention to how poverty is spatially distributed.

According to Padda and Hameed (2018), 44% of rural Pakistani households live in the lowest possible conditions, without access to clean drinking water, proper sanitation, decent housing, dirty energy sources, and financial means. According to the district-level data, Hyderabad, Thatta, and Sanger have the poorest rural populations. Therefore, additional funding from the federal, provincial, and local governments should be allotted for social welfare, education, sanitation, water supply, and agriculture development in rural areas of Pakistan to achieve sustainable development and poverty reduction.

However, there have been a few notable exceptions in this instance up to this point. For the first time (Jamal, 2005), the incidence

of poverty in Pakistan was measured using the Small Area Estimation (SAE) method on HIES 2004–2005 and Pakistan Social and Living Standards Measurement (PSLM) 2004–2005 data in each district of each Pakistani province. It failed to picture poverty in Pakistan's various provinces accurately. Instead, the results were limited to rural Baluchistan. The problem also seems to lie within the technique as SAE does not incorporate standard error when calculating probability to estimate district-level poverty. Cheema et al. (2008) only summarised poverty incidence in Punjab province by Multiple Indicators Cluster Survey (2003–2004).

Said et al. (2011) employed PSLM 2008–2009 to disaggregate poverty at the district level using Asset Index and Basic Need Index methods. In contrast, Multidimensional Poverty (MDP) has been calculated through various dimensions using the Alkire and Foster (2010) approach at the district level without explicitly mentioning the dimensions used. Kana et al. (2011) used 1998–1999 and 2007–2008 data to study multidimensional poverty within Pakistan. The results show that multidimensional poverty decreased from 43.35 percentage points to 38.71 percentage points throughout this period. The decrease in the pace of poverty was noticeable in rural regions. However, multidimensional poverty only increased in the case of urban areas of Sindh.

The analysis of the household data revealed that the incidence of multidimensional poverty was a common occurrence in the homes. The results

also indicated that the Multidimensional Poverty Index (MPI) in the study area was influenced by employment, sanitation type, fuel used for heating and cooking, and years of education. The findings also indicated that the household head's gender, years of education, membership in associations and cooperatives, availability of grants, and income affect the incidence of multidimensional poverty (Braide & Oluwatayo, 2022).

Ageing is globally viewed negatively. The perception is dominated by issues including skyrocketing expenses, the need for an adequate health care system, labour shortages, and the fragility of pension systems dominating the public view. Population ageing may result in unfavourable socioeconomic consequences for any developed or developing country. Bloom et al. (2010) stated that ageing causes a society's labour supply and individual savings rates to decline, slowing economic growth. It is particularly unsettling in poor countries when people may live to elderly age before becoming wealthy.

A higher dependency ratio would result in declining living standards and less care for the elderly, adding demographic stress to the ageing population (Deaton & Paxson, 1994). Various contributing elements typically define the relationship between ageing and inequality. The composition and magnitude of the population play a vital role in establishing a link between these two. Most empirical studies point to a positive connection between demographic ageing and income inequality (Faik, 2012;

Guerin, 2013; Peichl et al., 2012). Like ageing, an increase in children under 15 puts more strain on the household’s primary breadwinner and raises the overall poverty. Due to the disproportionately high costs associated with children’s education, health care, and nourishment, this places an even larger strain on the home economy than ageing does.

When human capital cannot maintain family income, the household dependency ratio—the proportion of young or elderly family members—is considered a primary determinant of poverty. As the elderly face a significant risk of poverty and make up a growing portion of the population, economic inequality in the nation is particularly sensitive to population ageing. A thorough analysis of poverty is required to develop effective programs to reduce poverty. This analysis should clearly define the target populations and support effective policies to address poverty.

Therefore, it is predicted that studying poverty at such a deep level will increase understanding of how poverty is distributed across different provinces and how policies should be focused geographically to provide better results. This study also identifies the falling provinces and requires policymakers’ immediate attention. Such a study will also demonstrate the effectiveness of programs in reducing poverty.

METHODOLOGY

Most traditional studies have used monetary indications such as consumption, expenditure, and income as a proxy for

well-being. Sen (1987), on the other hand, looked beyond and defined well-being based on the functional ability of individuals in a society. An individual who is technically above the poverty line cannot do well if they lack basic functioning within a society due to the absence of physical wellness and education. Alkire and Foster’s method averages multidimensional poverty in two steps: aggregation and identification. The first step consists of aggregating different indicators measured in different units.

It is achieved using matrix “y”, which consists of a list of all the indicators. Here, y_j^i represents the j indicator of human welfare for household i^{th} , whereas y_c^i indicates that observation is taken up to “c” indicators from household i^{th} . Similarly, from “n” household observations are taken from indicators j to c (Equation 1).

$$y = [y_j^1 \cdots y_c^1 \cdots y_j^n \cdots y_c^n] \quad (1)$$

$$z = [z_j \cdots z_c] \quad (2)$$

Moreover, based on the poverty line for each selected indicator specified as z_j , a censored matrix is attained (Equation 2), which is measured by substituting Equation 1 in place of each household lagging in that specific indicator while the rest are substituted by 0. Such a matrix is denoted by “g⁰” of ones and zeros, as shown in Equation 3:

$$g^0 = [1 \ 1 \ 0 \ 0 \ 0 \ 1 \ 1 \ 0 \ 1] \quad (3)$$

Another row-wise additive operation on vector “c” is performed to acquire the number of indications a household lacks.

Use a dual cut-off point moving forward that assigns a value to “k,” which is lower than the total number of indicators. Each household below this value of “k” will be further screened. Only the household whose value is non-zero is retained. “c” is now labelled as “c(k)” and is further divided by the total number of indicators before being averaged among each household to estimate average deprivation “A” which is further multiplied by “H,” headcount ratio, to calculate adjusted headcount “M(z,y).”

1. Headcount (H) shows the percentage of poor persons.
2. Average deprivation (A) displays the degree of deprivation experienced by people generally or within a particular group.
3. The Multidimensional Index (MI), created by multiplying $HD \cdot A$, determines the population’s poverty level. The population is thought to be poorer the higher the MI. It considers the percentage of the population regarded as being poor and the severity of their poverty.

Data and Variable Description

The study estimates the poverty in Pakistan at the provincial level with rural and urban segments by taking the data for 2010–2011, 2014–2015, and 2018–2019 collected from PSLM. PSLM is a survey conducted by the Ministry of Planning Development & Special Initiatives, and this study draws data from those surveys to derive its results. Although the four provinces differ in their rural-to-urban distribution, they are the same or barely differing for this study. The main dimensions used in this study for estimating

multidimensional poverty are standards of living, health, education, and reliance. The sub-dimensions are classified into twelve heads (Table 1).

The standard of living is categorised as residential status, energy source, toilet facility, cooking fuel, and assets. Dependency among family members affects the standard of living; therefore, dependency on a family member, such as old age (more than 65 years) and minors (less than 15 years), can also be considered a sub-dimension of the standard of livelihood. However, we will consider it the primary dimension for estimating multidimensional poverty here. The capacity of the family to read and write, as well as the number of school years, fall under the dimension of education. The dimension of health is further separated into water sources and basic health units.

Identification Stage

The cut-off approach is based on the threshold deprivation of the household, which determines whether they are poor (Table 1). The household is poor if they fall in the value of ‘0’; otherwise non-poor. If a household’s score is equal to or higher than the value of the notation “kit,” which serves as the cut-off for deprivation, it is regarded as poor or deprived in that dimension. According to three main dimensions, the ratio of ‘kit’ for deprivation is fixed at 33%. Each of the 12 sub-dimensions has a specific weight, the sum of which is one. The weights of sub-dimensions are mentioned in Table 2.

Table 1

Description of multi-dimension poverty

Dimension	Indicators	Indicator Cut-Offs Point and Nature
Standard of Living	Residential status	own house, personal residence (without rent), subsidised rent equal to 1, else zero
	The energy source for electricity	electricity, gas, kerosene oil equal to 1, deprived 0
	Type of toilet facility	flush (linked to septic tank) flush (linked to sewerage) flush (connected to the open drain) equal to 1, deprived zero.
	cooking fuel	kerosene oil, gas, electricity, coal/wood, cow dung equal to 1, deprived 0
	Assets	TV, AC, refrigerator, sewing machine, washing machine, motorcycle, car, agriculture land equal to 1, deprived 0
Health	Water source	tap, hand pump, well, water motor, tanker equal to 1, deprived 0
	Basic health unit	visit health unit once, often, always equal to 1, not visit 0
Education	read and write years of schooling	read, write equal to 1, else 0 greater than six years of schooling equal to 1, else 0
Dependency	Age>65 years	age of HH member > 65 equal to 1, else 0
	Age<15 years	age of child < 15 equal to 1, else 0

Table 2

Weights and indicators of multi-dimension poverty

Dimensions	Indicators	Weights	Indicators Weights
Standard of Living	Residential status		$(0.33) * (1/8) = 0.042$
	The energy source for electricity		$(0.33) * (1/8) = 0.042$
	Toilet facility	0.33	$(0.33) * (1/8) = 0.042$
	cooking fuel		$(0.33) * (1/8) = 0.042$
	Assets		$(0.33) * (1/8) = 0.042$
	Residential status		$(0.33) * (1/8) = 0.042$
	Age>65		$(0.33) * (1/8) = 0.042$
Age<15		$(0.33) * (1/8) = 0.042$	

Table 2 (Continue)

Dimensions	Indicators	Weights	Indicators Weights
Health	Water source	0.33	$(0.33) \times (1/2) = 0.167$
	Basic Health units		$(0.33) \times (1/2) = 0.167$
Education	Read / Write	0.33	$(0.33) \times (1/2) = 0.167$
	Years of schooling		$(0.33) \times (1/2) = 0.167$
Total		1	1

RESULTS AND DISCUSSION

Results

Table 3 shows the percentage of the underprivileged population that lives in poverty for each indicator of standard of living, health, and education using the Alkire and Foster method. Only 70% of the population has access to power, and it has been reported that individuals are most frequently without it for lighting purposes. It may be attributed to a constant electricity deficit. However, the data indicate that from 2010–2011 and 2018–2019, there was only a 3% improvement in electricity deprivation. Homeownership is the second most significant factor in deprivation, exhibiting two trends: a 5% increase in deprivation from 2010–2011 and a 6% recovery from 2014–2015 and 2018–2019. Homelessness has decreased by 1% overall. Poverty related to access to clean water increased from 86% to 94% from 2010–2011 and 2018–2019, but deprivation worsened after 2015–2016. The cost of construction has increased many times in the last two decades due to the depreciation of the exchange rate. Improved restrooms are also not accessible to many people, and statistics show that poverty in this area is rising from 58% to 77%. Visits

to health facilities and education levels, such as completion of grade ten or matriculation, are between 20 and 30 per cent. However, literacy rates in reading and writing deprived the population of 59% in 2018–2019, 4% higher than in 2010–2011.

Dependency on households, whether for the elderly or young, contributes to poverty. However, the burden of older people is lower than that of young people because spending on children's education, health, and nutrition is comparatively high. Since young people comprise the most population, the home has been deprived of approximately 80% of its inhabitants. The household deprivation rate for having children under 15 remains within the 80% range, indicating that the composition of youth in 2010–2011, 2014–2015, and 2018–2019 is stable. Children deprive the family in the same way as not having a home, electricity, or running water does.

The respondent in each data set of HIES or different years is not the same. The chi-square test is used to determine the mean value of each HIES data set is the same or not. The probability values are significant, showing that poverty varies across groups (data set). Therefore, the study concludes

Table 3

Deprived percentage

	2010–2011	2015–2016	2018–2019
Ownership	90.5%	95.5%	89.6%
Roof type	59.3%	58.7%	73.4%
Assets	2.8%	2.1%	2.5%
Toilet	58.0%	56.7%	77.6%
Lighting	98.4%	95.4%	95.9%
Cooking	37.2%	81.8%	45.1%
Years of Schooling	28.3%	50.3%	27.2%
Literacy	55.3%	49.7%	59.6%
Visit to Health Units	10.2%	13.4%	22.8%
Water	86.8%	85.1%	94.7%
Age >65	20.6%	19.0%	21.1%
Age <15	83.0%	85.0%	82.4%

Note. Deprived: Percentage of individuals whose indicator values are below the threshold

that poverty is cyclic and increases over time. In Pakistan, household size is proportional to income when household members are considered human capital. On the other side, as household size increases, dependency also increases.

Poverty estimates for headcount, adjusted headcount, and average deprivation (poverty) from Alkire and Foster method, along with their significance, are presented in Table 4. The coefficient indicates an increase in poverty for all three metrics at the national level from 2010–2011 to

2018–2019. A breakdown of the provincial-level poverty estimate is presented in Table 5. The highest population concentrations are in Punjab, followed by Sindh, KPK, and Baluchistan. The share of the population of Punjab's population share increased from 42 to 49%, indicating a population growth rate of 7%. While Sindh's population fell by 2% in 2014–2015 and increased by 3% in 2018–2019, Baluchistan experienced a negative population rate between 2010–2011 and 2018–2019, resulting in an 8% population loss.

Table 4

Poverty results

	2010–2011	2015–2016	2018–2019
H (Headcount)	0.828*** (0.003)	0.873*** (0.001)	0.943*** (0.002)
M (Adjusted headcount)	0.449*** (0.002)	0.509*** (0.001)	0.539*** (0.001)
A (Average deprivation)	0.543*** (0.001)	0.583*** (0.001)	0.572*** (0.001)

Note. Standard error is in braces

The range for poverty estimates is 0 to 1, with 0 denoting poverty and 1 denoting non-poverty. Estimates of multidimensional poverty are substantially lower than headcount ratios, indicating a wider scope of poverty than what the Uni-dimensional approach has already discovered (headcount). Baluchistan has the highest percentage of residents living below the poverty line, followed by KPK and Sindh. Regarding several wellness metrics, Baluchistan is far behind and the lowest. Although KPK is in better condition than Baluchistan, it still lags in the fundamental human standard of living. At the same time, Punjab is depicted as the least impoverished province in Pakistan (Table 5).

According to estimates of poverty, Punjab’s well-being has increased as poverty has decreased by 6% for both the headcount and MDP, although this statistic only refers to the years 2010–2011 to 2014–2015; from 2014–2015 to 2018–2019, poverty has remained same. Following 2014–2015, poverty in Sindh decreased by 6% for MDP and HD. Welfare in the KPK significantly improved, with poverty declining by 19% for the CDM and 23% for the Workforce. Baluchistan’s poverty decreases by 10% when employing a headcount. However, the MDP method shows a 3% increase in well-being (Table 5).

Table 5
Poverty estimates

Provinces	2010–2011			2014–2015			2018–2019		
	H	M	PS	H	M	PS	H	M	PS
Punjab	0.894	0.486	0.436	0.950	0.566	0.465	0.957	0.547	0.492
Sindh	0.841	0.462	0.251	0.854	0.491	0.238	0.914	0.520	0.260
KPK	0.762	0.407	0.181	0.801	0.457	0.166	0.992	0.591	0.187
Baluchistan	0.690	0.368	0.143	0.727	0.405	0.130	0.798	0.397	0.061
Total	0.828	0.449	1.000	0.873	0.509	1.00	0.943	0.539	1.00

Note. H = Headcount, M = Multidimensional poverty index, Ps = Population share

Table 6 (a–c) presents the multidimensional poverty for each dimension used in this study for the dataset 2010–2011, 2014–2015, and 2018–2019. Less than 10% of poverty is caused by home ownership, roof security, access to better and safer restrooms, light availability, and children’s presence. The percentages that education level and literacy rate contribute

are 10% and 20%, respectively. However, according to the statistics released for 2010–2011, about 30% of impoverished people lack access to clean water (Table 6a). The data set from 2014–2015 demonstrates that after five years, welfare improves as the share of each dimension falls, while the deprivation for each dimension rises in the 2018–2019 dataset.

Table 6a

*Adjusted multi dimension headcount (Mo = H*A) 2010–2011*

	Punjab	Sindh	KPK	Baluchistan	Total
Ownership	0.069	0.068	0.069	0.069	0.069
Roof type	0.058	0.053	0.053	0.032	0.053
Assets	0.004	0.003	0.001	0.0001	0.003
Toilet	0.053	0.043	0.057	0.051	0.051
Lighting	0.076	0.075	0.078	0.078	0.076
Cooking	0.034	0.037	0.031	0.031	0.034
Years of schooling	0.095	0.118	0.109	0.109	0.105
Literacy	0.202	0.213	0.194	0.182	0.201
Visit to health units	0.027	0.015	0.037	0.118	0.036
Water	0.299	0.297	0.283	0.248	0.290
Age >65 years	0.020	0.015	0.020	0.009	0.017
Age <15 years	0.062	0.063	0.068	0.073	0.065
Total	1.000	1.000	1.000	1.000	1.000

Table 6b

*Adjusted multi dimension headcount (Mo = H*A) 2014–2015*

	Punjab	Sindh	KPK	Baluchistan	Total
Ownership	0.066	0.069	0.069	0.073	0.068
Roof type	0.056	0.038	0.043	0.021	0.047
Assets	0.002	0.002	0.001	0.001	0.002
Toilet	0.051	0.035	0.056	0.018	0.045
Lighting	0.069	0.069	0.071	0.072	0.070
Cooking	0.050	0.066	0.070	0.072	0.059
Years of schooling	0.160	0.174	0.155	0.180	0.165
Literacy	0.157	0.157	0.152	0.184	0.163
Visit to health units	0.037	0.029	0.055	0.090	0.043
Water	0.277	0.269	0.247	0.211	0.264
Age >65 years	0.016	0.012	0.015	0.010	0.014
Age <15 years	0.058	0.063	0.066	0.069	0.062
Total	1.000	1.000	1.000	1.000	1.000

Table 6c

*Adjusted multi dimension headcount (Mo = H*A) 2018–2019*

	Punjab	Sindh	KPK	Baluchistan	Total
Ownership	0.066	0.068	0.056	0.079	0.065
Roof type	0.057	0.051	0.064	0.035	0.056
Assets	0.017	0.022	0.016	0.028	0.019
Toilet	0.063	0.048	0.068	0.041	0.059
Lighting	0.072	0.067	0.070	0.080	0.071
Cooking	0.033	0.023	0.054	0.028	0.035
Years of Schooling	0.076	0.100	0.083	0.092	0.084
Literacy	0.185	0.283	0.177	0.179	0.183
Visit Health Units	0.078	0.078	0.053	0.021	0.070
Water	0.278	0.287	0.279	0.318	0.282
Age >65 years	0.016	0.013	0.018	0.022	0.016
Age <15 years	0.058	0.061	0.062	0.078	0.061
Total	1.000	1.000	1.000	1.000	1.000

Changes in several aspects will have a varied impact on poverty in each province, as shown in Table 6 (a–c). All these various dimensions are mentioned to comprehend how changes in the dependency dimension affect poverty. When it comes to the first dimension, such as ownership, an increase in home ownership of just 1% would result in a 10% reduction in multidimensional poverty in Baluchistan from 2010–2011 to 2018–2019, while no such improvement could be seen in Punjab or Sindh. It has been observed that between 2014–2015 to 2018–2019, housing poverty in KPK increased by 13%. Implementing a national strategy for the fight against terrorism is one reason for the loss of homes, resulting in many households leaving their homes in search of safety, which increased poverty because fewer people had homes.

Improved brick roof construction will reduce poverty by 19% in KPK and 13% in Baluchistan, remaining the same for Punjab and Sindh. Increasing assets will significantly reduce poverty in all four provinces, but in Baluchistan, it does so by a factor of 27, while it does so by 15 in KPK, 20 in Sindh, and 15 in Punjab. The relationship between poverty and assets demonstrates that it lessens household deprivation by acquiring or possessing durable goods. People who can use their assets to generate more income and raise their living levels are less likely to live in poverty due to having more assets.

The data indicate that for the periods 2010–2011 to 2018–2019, the percentage of poverty was reduced for restrooms facility, electricity, schooling years, literacy, and visits to the health centres. It may be because

safe, drinkable water protects people from multiple waterborne diseases and keeps people well. However, access to secure drinking water has a considerably greater influence than one would think on reducing multidimensional poverty. As a result, extra expenses that would have been incurred are avoided. Hence, a 1% increment in this index will result in the highest reduction in poverty for Baluchistan by 20%. Data indicates that household poverty becomes severe for the access and availability of improved fuel for cooking purposes. Punjab has an increase in poverty of 17%, Sindh by 43%, KPK by 16%, and Baluchistan by 46%. It demonstrates that people utilise firewood and dung cake for cooking since gas and kerosene are scarce in Sindh and Baluchistan.

As the population of the elderly declines in Punjab, Sindh, and KPK, the indicator of old age dependency demonstrates how it lowers poverty in these regions. However, Baluchistan's elderly population is growing, which has resulted in a 1% increase in poverty from 2010–2011 to 2014–2015 and a 12% increase from 2014–2015 and 2018–2019. Every province has seen an increase in children's contribution to poverty, with KPK exhibiting the highest rate at 6%, followed by Punjab at 4% and Sindh at 2%. In Baluchistan, poverty, as measured by child reliance, declined by 9%. In Baluchistan, it has been noted that the population of the elderly is rising while that of children is falling.

DISCUSSION

Understanding poverty must be policymakers' first step to combat poverty in a nation. Policymakers used to acknowledge poverty through its economic indicators simply, but as time passed, poverty became more widely accepted and complex worldwide. Studies like this encouraged the use of non-income indices of poverty, such as health, housing, and literacy, to measure the welfare of society. How poverty is defined is crucial to the effectiveness of anti-poverty policies and programs.

Wang et al. (2016) conducted an empirical study to examine how the multidimensional poverty rate fluctuates with household income in China using the 2011 Health and Nutrition Survey (CHNS) data. Analysis reveals a 31% correlation between multidimensional and income poverty. In other words, 69% of households experiencing numerous deprivations are not categorised as low income. Although its influence is minimal, an increase in annual household income can dramatically lower the incidence of multidimensional poverty. The current study indicates a strong need for additional empirical research on multidimensional poverty to understand it better and develop strategies to combat it. The uni-dimensional estimates showed that Baluchistan has the most impoverished people while Punjab has the fewest; however, when multidimensional poverty estimates were used, the number of poor people grew even more. It further demonstrated that poverty is a phenomenon that affects all four provinces, with Baluchistan having

the highest rate, followed by KPK, Sindh, and Punjab. Establishing anti-poverty strategies per region to achieve the main goal makes sense since this will be more effective than implementing a uniform policy across the country. The best course of action for policymakers to adopt is to target the challenges of each province with policies designed particularly to target those concerns.

Through various methods, such as family size, household features are key in reducing poverty and enhancing public support. In the cases of Punjab, Sindh, and Baluchistan, it is estimated that the age of the household head is favourable and noteworthy. Since education and employment prospects are positively correlated, a higher level of education raises living standards. By raising consumer expenditures, more years of education raise living standards and lower poverty. The literature also supports the education and consumption hypothesis (Gounder & Xing, 2012; Gulyani et al., 2014).

When it comes to children under the age of 15 and individuals over 65, the size of the family negatively impacts the home's welfare. A larger dependency has a regressive impact on saving in the long run, although it has a progressive relationship to consumption in the short run. The dependency raises the burden on wage earners and reduces consumption expenditure. According to the current study, having more dependent children reduces consumption dramatically and has a negative impact on poverty. The results are

consistent with those (Libois & Somville, 2018)

Household well-being and poverty reduction in rural areas are significantly impacted by the residential characteristics of the home, such as ownership status, roof construction type, possession of durable goods, restrooms, electricity, and cooking facility. However, outcomes differ depending on the province. Like the cooking source is substantial and beneficial in Punjab alone, roof type is significant in three provinces except for Baluchistan. Given the trade-off between current consumption and the construction of household facilities, (Yang, 2009) found that households forego non-housing expenditure to construct housing facilities. Given that rich and poor households own their homes equally, the land size—one marla (30 sq M) or ten marlas—does not significantly reduce poverty. However, the characteristics of the home, such as the number of rooms per person, significantly impact household well-being.

The prevalence of poverty and the proportion of each area's population were noted. According to estimates of unidimensional poverty, this region is more prosperous than its rural equivalent because urban regions have a smaller population. Nevertheless, once the multidimensional poverty method was used, the number of poor showed a significant increase. Prior to now, officials have mostly concentrated on enacting laws to combat poverty for the urban population when the focus should have been on rural areas to address more

pressing challenges. It must be thoroughly studied in the future to comprehend how crucial it is to complete the task successfully.

According to the current study, poverty and dependency ratio are positively correlated, meaning that as the proportion of children or old people rises, so does poverty. The economy will suffer more if thoughtful policies are not implemented, particularly in Pakistan, as Ali and Kiani (2003) argue:

In the present scenario, the elderly do not form a large population segment but are expected to increase in the coming years. The absence of well-established social protection coverage has increased the vulnerability of the elderly. Being socially and economically dependent, they bear the brunt of rising poverty levels in the country (p.43).

Even though the total dependency ratio (0–14 and 65+ per 15–64) decreased from 71.2% in 2011 to 65% in 2019, the pattern would not continue, leaving us with more dependent people than before. Due to Pakistan's inadequate social security systems and lack of defined policies that would have benefited this population, they are much more at risk for economic instability and poverty, with few ways to get out. Additionally, the life expectancy ratio has significantly improved over the years both internationally and in Pakistan, which is bad news for a nation's economy and efforts to fight poverty. It is only accurate if the senior population over 65 continues to depend despite the rise in life expectancy.

If nothing is done to combat it, it will climb from 67.33 to 77.35 by the year 2050, leading to a further rise in poverty.

Several of them were carefully examined to ascertain how responsive different poverty measures were. It was noticed that among all the other indices, the contribution of literacy and access to safe drinking water appeared to be the most significant. More study is required, particularly on how poverty relates to these two variables, because it can be very useful for formulating future policies.

CONCLUSION

The results reveal that the unidimensional technique understates poverty in all of Pakistan's provinces when compared to multidimensional poverty estimates. Baluchistan emerges as the most distressed province based on the used indicators. The study emphasizes that social performance evaluations provide a more accurate assessment of poverty, contrasting with standard measurements that underestimate it. Moreover, poverty is unevenly distributed among provinces. Access to safe drinking water and literacy rate are identified as key factors in reducing poverty, along with other contributing factors.

The findings indicate rising contributions of indicators to poverty over time. In Baluchistan, reduced elderly population and increased child dependency helped alleviate poverty. All provinces experienced increased child dependency effects, particularly Baluchistan due to larger family sizes. The results demonstrate that dependency leads to poverty as working individuals

bear additional costs for consumption, healthcare, and education. Rising costs of children's education, food, and clothing further burden households and primary breadwinners.

It will be beneficial to develop efficient policies aimed at the elderly and children's segments of the economic system in order to reduce the strain on bread earners and alleviate the economy from the weight of poverty. The introduction of security support systems for these segments is the greatest approach for the government to address these problems since the working segment does not have to bear the entire burden alone. The government could step in and offer some kind of financial assistance to the old after they retire, such as pensions or jobs, and support the young by providing free healthcare or education, relieving more people. Implementing security support systems is the government's best approach, easing the burden on the working segment. Initiatives like pensions, jobs, free healthcare, and education can provide financial assistance and relief.

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