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Poverty in Somalia: Are the Multidimensionally and Monetarily Poor Populations the Same?

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Abstract

This study examines the relationship between monetary and multidimensional poverty in Somalia, highlighting overlaps and mismatches in identification. Using data from the 2022 Somalia Integrated Household Budget Survey (SIHBS), we apply the Alkire-Foster method to construct the national Multidimensional Poverty Index (MPI) and compare it with monetary poverty measured through the cost-of-basic-needs approach. We use a biprobit model to analyse the characteristics associated with being multidimensionally and/or monetarily poor. The results show that 45.5% of the population is simultaneously poor under both measures, while 21.4% are multidimensionally poor only and 8.9% are monetarily poor only. Households that are poor by both measures are characterised by larger household sizes, more children, low levels of education, and being resident in urban areas. Deprivations are most acute in the cooking fuel, overcrowding, school attendance and food security indicators. These findings underscore the importance of considering both monetary and multidimensional approaches to capture the complexity of poverty in Somalia.

Keywords: Monetary poverty, multidimensional poverty, Somalia, biprobit models

JEL classification: I32, I38

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1. Introduction

A growing body of literature has examined differences in the empirical outcomes of monetary and multidimensional poverty measures (Klasen 2000, Roelen 2017, Roelen 2018, Evans, Nogales et al. 2024) and mismatches in identification. Studies consistently show that who is identified as being poor differs depending on the measure used (Tran, Alkire et al. 2015, Bader, Bieri et al. 2016, Alkire and Shen 2017, Salecker, Ahmadov et al. 2020), yet most analyses focus on outcomes rather than mechanisms.

Comparative studies using the same dataset provide stronger evidence. Burchi, Rippin et al. (2018), drawing on World Bank International Income Distribution data for 92 countries, found a strong but non-linear correlation between multidimensional and monetary poverty, indicating that the two measures do not always move in tandem. Panel data analyses further highlight volatility. Tran, Alkire et al. (2015) showed that both measures in Vietnam fluctuate similarly, with mismatches persisting over time. Hicham and Qingjie (2024) reported minor differences in Morocco, noting that changes in one measure do not consistently correspond to changes in the other. Seff and Jolliffe (2017) identified comparable patterns in Ethiopia.

Evidence also points to weak links between consumption-based indicators and specific dimensions of multidimensional poverty. Ballon, Cockburn et al. (2018), Das, Paria et al. (2021), Klasen, Tran et al. (2015), Suppa (2016), Suppa (2018), Bader, Bieri et al. (2016) and Lekobane (2022) all document limited correlations. Roelen (2017) found stronger correlations in Vietnam than in Ethiopia but significant differences in identifying multidimensionally poor versus financially poor children.

Somalia illustrates these challenges. With a gross national income per capita of US\$1,610 in 2023, and one of the lowest levels of human development in the world (United Nations Development Programme (UNDP) 2025), it ranks among the poorest countries globally by both monetary and non-monetary measures (World Bank 2025). Cycles of conflict and political unrest have weakened institutions, eroded assets and deepened poverty (Jaffer and Hotez 2016, Nor and Razak 2024, Nor and Raheem 2025). Human development indicators remain low, including those on education, access to clean water, sanitation and child health (Somalia National Bureau of Statistics (SNBS) and Federal Government of Somalia 2020).

The Ninth National Development Plan (NDP-9, 2020–24) underscored the need for reliable data. The Somalia Integrated Household Budget Survey (SIHBS 2022), conducted by the Somalia National Bureau of Statistics (SNBS), provided comprehensive socioeconomic indicators. Results show that 54.4% of the population lives below the poverty line, defined as US\$2.06 per day using the cost-of-basic-needs method. Poverty is most severe among nomadic groups, followed by rural and urban populations, though urban

residents account for more than half of the poor population (Somalia National Bureau of Statistics (SNBS 2023). Repeated shocks have eroded household assets and reduced purchasing power. Between 2019–23, real gross domestic product (GDP) growth averaged only 2% annually, while real GDP per capita declined by 0.8% per year (World Bank 2025).

Conflict and climatic shocks have stalled development, and limited data constrain poverty analysis. National reports (Somali Health and Demographic Survey 2020, SIHBS 2022, Somalia High Frequency Survey (SHFS) 2017, 2018) highlight non-monetary deprivations but remain largely descriptive and focused on monetary poverty. Some studies estimate poverty and inequality (Pape and Wollburg 2019, Takamatsu, Yoshida et al. 2022), while others examine determinants of poverty (Hassan, Muse et al. 2024, Mohamed Bobe 2025). Few address non-monetary measures directly. In 2024, the national MPI for Somalia was launched by the Minister of Labour and Social Affairs and the SNBS. The results revealed that 67% of people in Somalia were multidimensionally poor; 63.3% were multidimensionally poor and faced deprivations in cooking fuel; 55.4% were multidimensionally poor and deprived in overcrowding; 47.8% were multidimensionally poor and deprived in years of schooling. Overall, 45.5% of the population were both multidimensionally and monetarily poor (Somalia National Bureau of Statistics (SNBS) and Ministry of Labour and Social Affairs (MoLSA) 2024).

This paper examines overlaps and mismatches between monetary and multidimensional poverty in Somalia. Using a bivariate probit (biprobit) model, we estimate the probability that households are simultaneously classified as poor under both measures. The biprobit approach, suitable for binary outcomes influenced by unobserved factors, allows us to assess the extent to which the two measures align or diverge. By accounting for correlations in unobserved factors, it provides deeper insight into the structural causes of mismatches.

2. Methods

2.1 Data

We use the 2022 Somalia Integrated Household Budget Survey (SIHBS), which offers the most recent and comprehensive data on poverty in Somalia. Importantly, the SIHBS goes beyond household consumption and expenditure data, incorporating a wide range of socioeconomic indicators such as health, education, energy, water, sanitation, housing conditions, employment, economic activity and food security. This breadth of information enables a comparative analysis of both monetary and multidimensional poverty for the same population, providing a more nuanced understanding of poverty dynamics in Somalia.

The SIHBS is designed to be representative across diverse population groups, including regional, urban, rural and nomadic communities. The survey follows a stratified, multi-stage probability cluster sampling design. Approximately 35 enumeration areas were randomly selected from each of the 17 regions covered by the survey, giving a total of 601 enumeration areas nationwide. Within each enumeration area, 12 households were surveyed, yielding responses from 7,212 households overall.

Of the total households surveyed, 60 lacked data on consumption, preventing their inclusion in the analysis of monetary poverty. Moreover, for the calculation of the MPI, a complete deprivation profile is necessary. Therefore, any household missing data for any of the MPI indicators was excluded from the analysis, leading to the removal of an additional 38 households. This left a final sample of 7,114 households – 98.6% of the original survey sample.

2.2 Poverty measures

2.2.1 *Alkire-Foster method and the national MPI of Somalia*

The national MPI of Somalia is constructed using the Alkire-Foster method. This counting-based approach to measuring multidimensional poverty was developed by Alkire and Foster (2011) and offers a nuanced way of measuring poverty, recognising that it extends far beyond just a lack of income, and acknowledges that poverty is a complex phenomenon, where individuals may experience multiple deprivations simultaneously in various aspects of their lives.

As shown in Table 1, the Somalia national MPI consists of 5 dimensions and 13 indicators, following a nested weighting system. In this system, each dimension is equally weighted and the indicators within each dimension are also assigned equal weights. The Somalia national MPI uses the household as the unit of identification, meaning that data for all household members are considered collectively, and each member is assigned the same deprivation score. This approach views deprivation as something that affects the entire household, recognising the interconnectedness of household members in terms of caring and resource-sharing. For instance, if one child in the household is not attending school (for children aged 6 to 13), the entire household is considered deprived in this indicator, as the deprivation has an impact on all members. However, the unit of analysis – the way results are reported – focuses on the number of individuals identified as multidimensionally poor. This ensures that findings reflect the prevalence of poverty among people, not just households. The 2024 national report (Somalia National Bureau of Statistics (SNBS) and Ministry of Labour and Social Affairs (MoLSA) 2024) contains more details on the selection of indicators, dimensions and cutoffs used in the Somalia national MPI.

Table 1. National MPI of Somalia

Dimension	Indicator	Deprivation cutoff	Weight
Education	School attendance	A household is deprived if a school-age child is not attending school	1/10
	Years of schooling	A household is deprived if no member older than school age has eight years of education or more	1/10
Health	Food security	A household is deprived if any member ate only a few kinds of foods, or skipped a meal, or ate less than they thought or were hungry but did not eat, or ran out of food or went without eating for a whole day because of a lack of money or other resources	1/10
	Access to healthcare	A household is deprived if any member has been sick in the last month and did not seek any advice or treatment for their condition	1/10
Living standards	Housing	A household is deprived if the housing materials are non-permanent (exterior walls, roof, floor) and it is not nomadic	1/15
	Cooking fuel	A household is deprived if it cooks with solid fuels and, if nomadic, it does not have a separate room, or cooking takes place inside the dwelling	1/15
	Overcrowding	A household is deprived if a room used for sleeping is shared by more than three members	1/15
Services	Electricity	A household is deprived if its main source of lighting is firewood, torch, kerosene, candles or other, and it is not a nomadic household.	1/15
	Water	A household is deprived if it does not have access to an improved source of drinking water or if the household has access to improved water but the main source of water for drinking is not located in its own dwelling, own yard or piped to a neighbour, and the roundtrip time to get water is more than 30 minutes. For nomadic populations, the distance is not considered.	1/15
	Sanitation	A household is deprived if it does not have access to improved sanitation or it is shared with other households and the household is not nomadic	1/15
Inclusion	Assets	A household is deprived if it does not own more than two small assets and does not own any livestock	1/15
	Shocks	A household is deprived if it experiences a reduction of assets or income due to shocks	1/15
	Unemployment	A household is deprived if any working-age member is unemployed and has been looking for a job or trying to start a business during the past four weeks and has been available to start a job during the last two weeks	1/15

Source: (Somalia National Bureau of Statistics (SNBS) and Ministry of Labour and Social Affairs (MoLSA) 2024).

2.2.2 Monetary poverty

For the measurement of monetary poverty, we used the poverty lines calculated by the SNBS, employing the cost-of-basic-needs approach. This method estimates the minimum consumption necessary to meet basic needs, both in terms of food and non-food essentials, and calculates the cost of this consumption bundle at reference prices (Somalia National Bureau of Statistics (SNBS) 2023).

First, the food poverty line is established, which is based on the average caloric requirements of the Somali population. This line reflects the minimum cost needed to ensure an adequate daily intake of calories, which for Somalia is 2,200 kcal per person per day. The unit kilocalorie cost is used as the food poverty line, which equals US\$425 per person per year. Once the food poverty threshold is determined, the next step involves estimating the non-food poverty line, which captures essential household expenditures

beyond food. These non-food costs are added to the food poverty line to reflect the full spectrum of a household's basic needs, which is calculated at US\$329 annually. The final poverty line, combining both food and non-food components, represents the total expenditure required by a household to meet basic living standards. It is expressed both annually and on a per-day basis. According to the SNBS estimates, the combined poverty line for Somalia shows that a person requires US\$754 annually, or approximately US\$2.06 per day, to meet both food and non-food essential needs.

2.3 Independent variables

To understand the determinants of being multidimensionally and monetarily poor, we used a suite of independent variables associated with the characteristics of the household head (sex, age, marital status, level of education and employment); household composition (household size, number of children under 12 years old and number of adults 65 years or older); and some contextual variables, such as area of residency (rural, urban or nomadic) and region of residence.

2.4 Analytical strategy

The initial phase of our analysis is descriptive in nature. We begin by comparing estimates of two poverty measures to assess mismatches and overlaps (Lekobane 2022). Specifically, we employ cross-tabulations of monetary and multidimensional poverty incidence to classify the population into four mutually exclusive groups: (1) individuals who are poor according to both measures (*overlap*); (2) those only multidimensionally poor (*mismatch*); (3) those only monetarily poor (*mismatch*); and (4) those who are non-poor (*no overlap*). This classification is then extended to population subgroups to explore variations in the degree of overlap and mismatch across different demographic and socioeconomic categories.

To understand the aspects associated with being monetarily and multidimensionally poor, we estimate the joint probability that a person lives in a multidimensionally poor household that is also monetarily poor. The principal purpose of this analysis is to identify what variables are jointly associated with being multidimensionally and/or monetarily poor.

This bivariate probit model can be expressed as follows (Greene 2020):

$$y_1^* = X_1' \beta_1 + \varepsilon_1, \quad y_1 = 1 \text{ si } y_1^* > 0, 0 \text{ otherwise} \quad (1)$$

$$y_2^* = X_2' \beta_2 + \varepsilon_2, \quad y_2 = 1 \text{ si } y_2^* > 0, 0 \text{ otherwise} \quad (2)$$

$$\begin{pmatrix} \varepsilon_1 \\ \varepsilon_2 \end{pmatrix} | X_1, X_2 \sim N \left[\begin{pmatrix} 0 \\ 0 \end{pmatrix}, \begin{pmatrix} 1 & \rho \\ \rho & 1 \end{pmatrix} \right]$$

Where y_1 represents the poverty status using the MPI; y_2 is the poverty status according to the monetary poverty measure; and ρ is the tetrachoric correlation between y_1 and y_2 . Assuming $x_1 = \beta_1 = x'\gamma_1$, and γ_1 includes all nonzero elements of β_1 , the bivariate probit model estimated is:

$$Pr(y_{1i} = 1, y_{2i} = 1|X) = \Phi_2(x'_i\gamma_1, x'_i\gamma_2, \rho); \quad (3)$$

$$Pr[y_1 = 1 | y_2 = 1, x] = \frac{\Phi_2(x'_i\gamma_1, x'_i\gamma_2, \rho)}{\Phi(x'_i\gamma_2)} \quad (4)$$

Where Pr is the probability that a person i is classified as poor by both measures at the same time (Greene 2020). We computed marginal effects at the individual mean. All the analyses are conducted using Stata 18.

3. Results

We identified that, in 2022, 45.5% of the Somali population was simultaneously monetarily and multidimensionally poor, with only 24.2% of the population non-poor for either measure, 21.4% multidimensionally poor but not monetarily poor and 8.9% monetarily poor but not multidimensionally poor (Table 2). An analysis of households experiencing both monetary and multidimensional poverty identified that 50.7% are headed by females, with the average age of the head of the household being 42.2 years. On average, households that are both monetarily and multidimensionally poor have a larger number of children under 12 years old (4.1, compared to 2.6 for households who are not poor by either measure), and almost 9 out of 10 households that are poor by both measures are in urban areas and headed by a person with no formal education. No important differences were identified in aspects related to the employment status of the head of the household, the existence of a member with a disability in the household, or the number of adults older than 65 years (Table 3).

Table 2. Cross-tabulation of population that are multidimensionally poor and monetarily poor

		Monetary poverty		
		Non-poor (%)	Poor (%)	Total (%)
Multidimensional poverty	Non-poor	24.15	8.88	33.03
	Poor	21.42	45.54	66.97
	Total	45.57	54.43	100

Source: Authors' calculations, 2022 Somalia Integrated Household Budget Survey (SIHBS).

Table 3. Poverty mismatch and overlap by household characteristics

Subgroup	Both MPI and monetarily poor (%)	Only MPI-poor (%)	Only monetarily poor (%)	Non-poor (%)	Population share (%)
<i>Headship</i>					
Female headed	50.65	53.50	51.18	50.24	51.21
Male headed	49.35	46.50	48.82	49.76	48.79
<i>Disability status</i>					
Household has someone living with a disability	15.49	16.96	12.97	15.96	15.69
No disability	84.51	83.04	87.03	84.04	84.31
Mean age of household head (years)	42.24	40.88	44.06	44.33	
<i>Years of education of household head</i>					
No education	86.91	78.61	67.81	51.41	74.99
1 to 6 years	5.93	8.47	4.30	6.87	6.57
7 to 12 years	7.04	10.83	25.16	31.32	15.21
More than 12 years	0.11	2.09	2.73	10.40	3.23
<i>Working status of household head</i>					
Working	41.37	38.99	45.19	40.27	59.07
Not working	58.63	61.01	54.81	59.73	40.93
<i>Marital status of household head</i>					
Married	83.66	80.51	80.77	77.69	18.70
Not married	16.34	19.49	19.23	22.31	81.30
<i>Household size</i>					
1 to 3 members	1.78	7.95	2.65	6.49	4.31
4 to 6 members	27.61	38.81	22.16	35.91	31.53
7 to 9 members	40.36	36.04	37.77	32.07	37.21
10 to 12 members	24.13	13.90	27.92	18.94	21.02
More than 13 members	6.12	3.30	9.50	6.59	5.93
<i>Geographic characteristics</i>					
<i>Area</i>					
Rural	29.78	20.62	25.55	16.32	24.19
Urban	53.90	70.99	58.10	80.99	64.48
Nomadic	16.32	8.39	16.35	2.69	11.33
<i>Region</i>					
Awdal	3.65	4.32	6.16	10.22	5.60
Bakool	4.93	2.97	0.13	0.27	2.97
Banadir	11.40	17.33	10.46	16.92	13.92
Bari	4.33	6.68	7.26	7.85	5.94
Bay	8.08	10.34	2.14	2.44	6.67

Subgroup	Both MPI and monetarily poor (%)	Only MPI-poor (%)	Only monetarily poor (%)	Non-poor (%)	Population share (%)
Galgaduud	4.35	5.63	7.55	3.93	4.80
Gedo	5.15	6.23	0.22	2.43	4.29
Hiraan	7.43	2.56	2.37	0.91	4.36
Lower Juba	5.39	5.58	0.53	1.66	4.09
Lower Shabelle	7.78	5.88	22.09	13.94	10.13
Waqooyi Galbeed	8.35	9.29	12.25	16.37	10.83
Middle Shabelle	7.14	1.98	6.23	0.52	4.35
Mudug	8.36	2.85	7.41	4.05	6.05
Nugaal	2.45	3.97	2.90	4.30	3.27
Sanaag	3.86	6.40	2.17	3.87	4.26
Sool	3.19	1.92	2.83	2.63	2.75
Togdheer	4.17	6.07	7.29	7.68	5.72
<i>Household composition</i>					
Mean household size (n)	8.05	6.92	8.53	7.58	
Mean of number of children below 12 years (n)	4.13	3.26	3.61	2.61	
Mean of number of adults above 65 years (n)	0.15	0.15	0.18	0.22	
Total (n)	22,024	9,834	4,189	11,166	

Source: Authors' calculations, 2022 Somalia Integrated Household Budget Survey (SIHBS).

Notes: All percentages estimated at the population level using sample weights.

When analysing the levels of deprivation of households that were both monetarily and multidimensionally poor compared to other groups, we identified that a higher proportion of these households are deprived in 9 of the 13 indicators. Specifically, 94.6% of these households lack access to clean cooking fuel, 88.1% live in overcrowded homes, 75.7% live in households where a child is out of school and 72.0% face food insecurity. The most important differences are observed in the indicators of overcrowding, food security and school attendance, where households who are monetarily and multidimensionally poor face, on average, deprivations three times higher than households that are neither monetarily nor multidimensionally poor (Table 4).

Table 4. Levels of deprivation across the 13 MPI indicators

Dimension	MPI indicator	Both MPI and monetarily poor (%) <i>n=22,024</i>	Only monetarily poor (%) <i>n=4,189</i>	Only multidimensionally poor (%) <i>n=9,834</i>	Non-poor (%) <i>n=11,166</i>
Education	School attendance	75.74	35.96	59.65	23.57
	Years of schooling	35.96	28.34	64.21	16.54
Health	Food security	71.96	26.35	66.70	15.71
	Access to healthcare	7.35	1.10	9.57	1.83
Living standards	Housing	68.61	37.85	59.26	25.46

Dimension	MPI indicator	Both MPI and monetarily poor (%) <i>n</i> =22,024	Only monetarily poor (%) <i>n</i> =4,189	Only multidimensionally poor (%) <i>n</i> =9,834	Non-poor (%) <i>n</i> =11,166
Services	Cooking fuel	94.59	84.56	94.40	70.33
	Overcrowding	88.13	52.93	71.39	28.09
	Electricity	37.29	5.44%	22.85	1.54
	Water	37.40	11.11	35.32	16.36
	Sanitation	55.82	13.00	53.67	14.84
Shocks	Assets	56.69	39.02	59.99	39.19
	Shocks	48.18	19.43	41.34	15.58
	Unemployment	10.46	5.92	17.07	12.26

Source: Authors' calculations, 2022 Somalia Integrated Household Budget Survey (SIHBS).

After analysing the different deprivations that people in each group face, we estimated the biprobit model to identify the characteristics associated with belonging to each of the groups. The results indicate that the probability of experiencing overlapping poverty (being both monetarily and multidimensionally poor) increases by 0.6 percentage points (pp) for every additional household member. In addition, the number of children in the household is positively associated with a higher probability of belonging to this category (5.3 pp). In contrast, households with a larger number of adults aged 65 years or older have a lower probability of simultaneously being monetarily and multidimensionally poor (0.8 pp). The probability of being in this group decreases by 5.8 pp for female-headed households compared to male-headed households and, as expected, an increase in the years of education of the household head also reduces the probability of experiencing overlapping poverty.

Living in urban areas is inversely associated with the probability of being both monetarily and multidimensionally poor (20.1 pp), in comparison with people in rural areas, but is positively associated with being multidimensionally poor only (7.4 pp). Nomadic populations have a higher probability of being monetarily and multidimensionally poor than those living in rural areas (9.8 pp) but a lower probability of being multidimensionally poor only (13.9 pp). Households with at least one member with a disability have a significantly higher probability (4.8 pp) of being multidimensionally poor only compared with households without members with disabilities, but a 2.9 pp lower probability of being monetarily poor only. No significant differences were identified between households with and without members with disabilities and the probability of simultaneously being monetarily and multidimensionally poor.

Finally, when analysing the monetarily poor population only, the probability of belonging to this group increases with household size (1.4 pp) and a greater number of adults aged 65 years or older (0.4 pp). Notably, female-headed households are 2.5 pp more likely to fall into this category. Among the head of the household's characteristics, both higher levels of educational attainment (0.6 pp) and employment status (0.7 pp) are associated with an increased likelihood of experiencing monetary poverty only. However, the most substantial determinant is belonging to a nomadic group, which increases this

probability by 10.2 pp. For households who are only multidimensionally poor, the probability of belonging to this group increases when the household is in an urban area (7.4 pp), while the presence of a member with a disability raises the probability by 4.8 pp. Conversely, some factors act as buffers against being in multidimensional poverty only. The probability of belonging to this group reduces in the case of female-headed households (2.3 pp), when the household head has a higher level of education (0.2 pp for every additional year of education), and when the household head is working (1.2 pp). Table 5 presents the marginal effects for each group.

Table 5. Marginal effects, biprobit regression for each group

	Both MPI and monetarily poor	Only monetarily poor	Only multidimensionally poor	Non-poor
Household size	0.006*** (0.001)	0.014*** (0.000)	-0.024*** (0.001)	0.004*** (0.001)
Number of children	0.053*** (0.001)	-0.010*** (0.001)	0.001 (0.001)	-0.044*** (0.001)
Number of adults aged 65 years or older	-0.008* (0.005)	0.004* (0.002)	-0.004 (0.004)	0.008** (0.004)
Household has a person with disability	0.008 (0.005)	-0.029*** (0.002)	0.048*** (0.004)	-0.027*** (0.004)
Female head of the household	-0.058*** (0.005)	0.025*** (0.002)	-0.023*** (0.004)	0.056*** (0.003)
Age of head of the household	0.000 (0.000)	0.001*** (0.000)	-0.001*** (0.000)	0.000 (0.000)
Level of education of head of the household	-0.025*** (0.000)	0.006*** (0.000)	-0.002*** (0.000)	0.021*** (0.000)
Working head of the household	0.003 (0.004)	0.007*** (0.002)	-0.012*** (0.003)	0.002 (0.003)
Head of the household is married	-0.023*** (0.005)	0.003 (0.002)	0.003 (0.004)	0.017*** (0.004)
Urban	-0.201*** (0.005)	-0.005** (0.002)	0.074*** (0.004)	0.132*** (0.003)
Nomadic	0.098*** (0.006)	0.102*** (0.005)	-0.139*** (0.004)	-0.061*** (0.003)
Region of residence				
Bakool	0.347*** (0.012)	-0.073*** (0.004)	0.005 (0.011)	-0.279*** (0.009)
Banadir	0.093*** (0.011)	-0.018*** (0.005)	0.017* (0.009)	-0.093*** (0.010)
Bari	-0.041*** (0.011)	-0.004 (0.005)	0.007 (0.010)	0.038*** (0.011)
Bay	0.267*** (0.012)	-0.054*** (0.005)	0.014 (0.011)	-0.226*** (0.010)
Galgaduud	0.098*** (0.012)	0.013** (0.006)	-0.036*** (0.010)	-0.075*** (0.011)
Gedo	0.225*** (0.012)	-0.060*** (0.005)	0.055*** (0.010)	-0.220*** (0.010)
Hiraan	0.390*** (0.012)	-0.026*** (0.006)	-0.112*** (0.009)	-0.251*** (0.009)

	Both MPI and monetarily poor	Only monetarily poor	Only multidimensionally poor	Non-poor
Lower Juba	0.212*** (0.012)	-0.049*** (0.005)	0.035*** (0.011)	-0.198*** (0.010)
Lower Shabelle	-0.004 (0.011)	0.127*** (0.007)	-0.137*** (0.008)	0.014 (0.011)
Waqooyi Galbeed	0.065*** (0.011)	0.038*** (0.006)	-0.063*** (0.009)	-0.041*** (0.010)
Middle Shabelle	0.338*** (0.012)	0.050*** (0.007)	-0.162*** (0.009)	-0.225*** (0.009)
Mudug	0.126*** (0.012)	0.061*** (0.007)	-0.099*** (0.009)	-0.088*** (0.011)
Nugaal	0.009 (0.011)	-0.015*** (0.005)	0.027*** (0.010)	-0.022** (0.011)
Sanaag	-0.041*** (0.012)	-0.031*** (0.005)	0.070*** (0.011)	0.002 (0.012)
Sool	0.046*** (0.012)	-0.014*** (0.005)	0.022** (0.010)	-0.054*** (0.011)
Togdheer	0.000 (0.012)	0.000 (0.006)	-0.001 (0.010)	-0.000 (0.011)
Observations	45,241	45,241	45,241	45,241

Source: Authors' calculations, 2022 Somalia Integrated Household Budget Survey (SIHBS).

Notes: Standard errors in parentheses. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

4. Discussion

This article analyses the characteristics of households who are simultaneously monetarily and multidimensionally poor in Somalia. We identified that 45.5% of the population in Somalia are simultaneously monetarily and multidimensionally poor and 24.2% are non-poor by either measure. As expected, people who are poor by both measures present higher levels of deprivation in most of the indicators (9 of 13), and are therefore worse off, than people who are either only poor by one measure or non-poor. We used a biprobit regression analysis to identify the characteristics associated with being multidimensionally or monetarily poor, or poor by both measures, and identified that people living in households who are poor under both measures are more likely to live in rural areas and belong to larger households. Furthermore, these households are characterised by a larger number of children and household heads with notably lower levels of education. In contrast, those people who are only monetarily poor are more likely to be in female-headed households and, interestingly, these households often have heads with higher levels of education or who are actively employed.

Those who are both monetarily and multidimensionally poor present higher levels of deprivations across all the indicators of the MPI. This group represents the largest segment of the Somali population and exhibits the highest level of need, with individuals living in chronic and extreme poverty. Policies that aim

to target the deprivations of this group must move beyond simple income transfers. Effective strategies should aim to increase the capabilities of individuals and households, prioritising better access to education, healthcare and basic services while simultaneously fostering opportunities for increased income generation. The second-largest group in Somalia includes people who are exclusively multidimensionally poor, representing 21.4% of the population. The probability of a household belonging to this group increases with an increase in the number of children, having a household member with a disability and residing in an urban area.

Given the lower deprivation levels that nomadic populations present, belonging to this group reduces the probability of being classified as multidimensionally poor. However, this does not imply that nomadic populations are less vulnerable; rather, it suggests that standard MPI indicators may not fully capture the specific nature of their deprivation due to their unique lifestyle. There is a critical need to develop specialised metrics that accurately reflect the vulnerabilities faced by nomadic communities so that they are not overlooked in broader development agendas.

Policies aiming to reduce deprivations for people who are multidimensionally poor only should focus on reaching those groups who are usually left behind, such as people with disabilities, people living in rural areas and households where the head has lower levels of education or is unemployed. Rather than a one-size-fits-all approach, interventions should be tailored to the needs of these groups, ensuring equitable access to essential services and socioeconomic opportunities.

Analysis of the relationship between monetary and multidimensional poverty is fundamental to understand which policies should be implemented to eliminate poverty and deprivation. In the case of Somalia, this study shows that although the levels of both monetary and multidimensional poverty are high, they do not perfectly overlap. In addition, there is a significant percentage of people who are multidimensionally poor but not monetarily poor, indicating that multidimensionally poor households have distinct socioeconomic characteristics compared to households experiencing monetary deprivation only.

Somalia faces important challenges to reduce poverty, given that almost half of its population experience the compounding effects of both monetary and multidimensional poverty. To make meaningful progress towards the Sustainable Development Goals, it is fundamental that the country establishes policies that target people who are facing both types of poverty and a larger number of deprivations. Social protection programmes should focus on increasing the productive capacity of individuals and households as well as prioritising investment in fundamental human capabilities, specifically through access to quality education and healthcare and access to basic services including water, sanitation, electricity and proper housing. Given Somalia's competing development priorities, analysis of the intersection of monetary and

multidimensional poverty can be used for the targeted, evidence-based design of social protection programmes and the monitoring of those programmes.

5. Conclusions

Our analysis demonstrates that monetary and multidimensional poverty in Somalia overlap substantially but also diverge in important ways. Nearly half of the population experiences both forms of poverty, yet significant mismatches remain, with some households identified as poor under only one measure. The results highlight that household size, number of children, education of the household head and area of residence are key determinants of poverty status. Urban households are more likely to be multidimensionally poor, while nomadic households face higher risks of being poor under both measures. Deprivations in overcrowding, cooking fuel and food security are particularly severe among households that are poor by both measures. These findings emphasise the need for integrated poverty reduction strategies that address both income and non-income aspects, ensuring that policies capture the full scope of deprivation experienced by Somali households.

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Appendix

Table A1. Proportion of people living in households who are multidimensionally and/or monetarily poor or non-poor by consumption decile

Consumption decile	Both MPI and monetarily poor (%) <i>n=22,024</i>	Only multidimensionally poor (%) <i>n=9,834</i>	Only monetarily poor (%) <i>n=4,189</i>	Non-poor (%) <i>n=11,166</i>
Q1	9.62	0	0.38	0
Q2	9.17	0	0.83	0
Q3	8.58	0	1.48	0
Q4	8.02	0	1.99	0
Q5	7.12	0	2.81	0
Q6	3.03	3.66	1.39	1.92
Q7	0	5.25	0	4.76
Q8	0	5.04	0	4.95
Q9	0	3.98	0	6.07
Q10	0	3.49	0	6.44
Total	45.54	21.42	8.88	24.15

Source: Authors' calculations, 2022 Somalia Integrated Household Budget Survey (SIHBS).