MULTIDIMENSIONAL WELL-BEING DEPRIVATION AMONG ITALIAN YOUTH

Elisabetta Segre, Alessandra Tinto, Miria Savioli,
Anna Villa, Romina Fraboni [1]

Abstract. The aim of this work is to examine the deprivation of young people (18-34) living in Italy along several dimensions of well-being. We use the Alkire-Foster (A-F) methodology, which relies on a dual-cut off method of identification to calculate a multidimensional deprivation indicator with several desirable characteristics, including decomposability. The identification of dimensions and indicators is grounded on the framework implemented by Istat to measure Equitable and sustainable well-being (BES framework, from the Italian acronym). Since the A-F methodology requires data for all indicators at the individual level, we use the multipurpose households' survey on Aspects of Daily Life yearly conducted by Istat, covering a wide range of BES dimensions and indicators. We identify five dimensions (Health, Work and education, Subjective well-being, Social cohesion, and Living context). From the results, we can draw conclusions on the trend, the dimensions and the population groups contributing the most to well-being deprivation. Those living in the south show the highest levels of deprivation, especially in the Work and education dimension. The dimension contributing the most to youth well-being deprivation is Social cohesion. Special attention should be devoted to the Health dimension: its contribution to the overall level of multidimensional deprivation is relatively higher in the northern regions, and this dimension is the only one that shows a steady worsening over time.

1 Methodological approaches to multidimensional poverty measurement

Over the last few decades, the conceptualisation of poverty has undergone a significant transformation, shifting from a predominantly income-based approach to a broader, multidimensional framework. This evolution reflects growing recognition that income alone is not sufficient to capture the complex and interrelated aspects of deprivation that individuals experience. Early theoretical contributions by Anand and Sen (1997, 2009), Atkinson (2003), Bourguignon and Chakravarty (2003), were instrumental in challenging the prevailing unidimensional paradigm. These scholars emphasized the need to account for various dimensions of well-being—including

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[1] Authors contributions: Romina Fraboni and Anna Villa paragraphs 1 and 2; Elisabetta Segre paragraph 3; Miria Savioli and Alessandra Tinto paragraph 4; Elisabetta Segre and Alessandra Tinto paragraph 5 and Conclusions.

health, education, housing, and social participation—which together provide a more comprehensive assessment of human development and deprivation.

Despite its normative appeal, the multidimensional approach remained a relatively novel and emerging research stream until the early 2000s. According to Aaberge and Brandolini (2014), the literature on multidimensional poverty and inequality was still developing at that time. A recent systematic review by D'Attoma and Matteucci (2024) confirms this trend, showing that over 60% of the academic publications on multidimensional poverty between 1999 and 2019 appeared only after 2015.

Among the various approaches developed to elaborate a measure of multidimensional poverty at the individual level, the Alkire-Foster (AF) method (Alkire and Foster, 2011) emerges as the most widely applied. This method, which requires the availability of data on a wide set of dimensions for the same individuals, operationalises multidimensional poverty using a dual cutoff strategy. Individuals are first identified as deprived within each selected dimension, and then classified as poor if the weighted sum of their deprivations exceeds a chosen threshold. The method yields several poverty measures, including the headcount ratio, the intensity of deprivation, and an adjusted headcount that captures both prevalence and breadth. The flexibility of the AF method—allowing for context-specific choices of dimensions, indicators, weights, and poverty thresholds—has made it particularly suitable for national adaptation, while remaining comparable across contexts. One of the most prominent applications of the AF method is the Multidimensional Poverty Index (MPI), first introduced by Alkire and Santos (2010) and included in the Human Development Reports published by the United Nations Development Programme (UNDP, 2010). The MPI focuses on three core dimensions—health, education and standard of living—using ten indicators to assess deprivations at the household level.

Although the AF method dominates empirical applications, it is not the sole methodology employed in multidimensional poverty research. Alternatives are based on fuzzy set approach, pioneered by Cheli and Lemmi (1995) and later developed by Betti, Cheli, and Lemmi (2006), or on multivariate statistical techniques, like principal component analysis (PCA) and factor analysis (see D'Attoma and Matteucci 2024 for a review). These are particularly helpful for large datasets with numerous variables but limited theoretical guidance on weighting. However, the reliance on statistically derived weights may lead to measures that lack normative clarity or interpretability for policy purposes (Aaberge and Brandolini, 2014).

The AF method has been applied predominantly in the global south. Yet, in recent years, the application of these methods has expanded to high-income countries. The AF method has been applied by Suppa (2016, 2018) for Germany, by Glassman

(2024) and Dhongde and Haveman (2017) for the United States. Whelan *et al.* (2014) and Alkire and Apablaza (2016) have used the AF to assess poverty and social exclusion across EU countries, while Billi and Scotti (2018) and De Rosa (2022) applied it in the Italian context.

The paper is structured as follows. In the next paragraph we state the aim of this study, in paragraph 3 we briefly present the AF method, in paragraph 4 we present indicators and thresholds and in paragraph 5 we analyse the results obtained by applying the AF method to the survey data to get insights on the youth condition in Italy from a multidimensional point of view. We devote the last paragraph to the conclusions.

2 Aim

In this paper, we apply the AF method to the Italian context, focusing on the youth condition and grounding the measurement of multidimensional poverty on the concept of well-being deprivation. Young people are a very complex and heterogeneous group. In recent decades, it has become increasingly challenging for young people in Italy to reach their full potential and take advantage of opportunities. This has led to discouragement in participation at various levels (political, social and cultural) and a postponement of the transition to adulthood. For these reasons, the population of interest ranges between 18 to 34 years. As the method requires the availability, on the same individuals, of multi-dimensional information from a unique data source, we use the households' survey on Aspects of Daily Life conducted yearly by Istat. Specifically, here we focus on the 2019-2023 time period, to check whether the Covid-19 pandemic has influenced young adults' deprivation. We rely on the ISTAT framework for measuring well-being (BES) to identify relevant dimensions and indicators.

3 The Alkire and Foster methodology

The AF methodology is a counting-based approach used to identify and aggregate multidimensional poverty (Alkire and Foster, 2011). It involves two key steps: identification and aggregation.

In the identification step, a person is considered deprived in a given dimension if their achievement falls below a defined cutoff. Then, a weighted sum of deprivations is calculated for each person. A person is identified as multidimensionally poor if their total deprivation exceeds a poverty threshold k.

Formally, let y_{ij} be the achievement of individual i in indicator j, and let z_j be the deprivation cutoff for dimension j. Define:

$$g_{ij} = \begin{cases} 1 \text{ if } y_{ij} < z_j \\ 0 \text{ otherwise} \end{cases}$$

Let w_j be the weight of indicator j. Then the weighted deprivation score for person i is:

$$c_i = \sum_{j=1}^{d} w_j g_{ij}$$

The person is identified as poor if $c_i \geq k$, where k is the poverty threshold. We set the threshold at 0.33: to be classified as poor, an individual must be deprived in at least 1 out of 3 indicators of each dimension.

The Adjusted Headcount Ratio M_0 is the mean of the censored deprivation score $c_i(k)$, which is the deprivation score censored of all deprivations, lower than k:

$$M_0 = \frac{1}{n} \times \sum_{i=1}^{n} c_i(k)$$

The M_0 can also be written as the product of H (incidence of poverty) and A (intensity of poverty):

$$M_0 = H \times A = \frac{q}{n} \times \frac{1}{q} \sum_{i=1}^{q} c_i(k)$$

where q is the number of persons identified as poor in the dual-cutoff approach.

The MPI is decomposable by population subgroup and by dimension, making it highly informative for policy targeting. It captures both the prevalence and breadth of poverty and allows for nuanced poverty tracking across time and space.

The decomposability property allows to assess which subgroups contribute most to overall multidimensional poverty. Additionally, the M_0 can be broken down into dimensions or indicators, allowing to assess the contribution of each to overall poverty. For the purpose of this study, we will refer to M_0 as multidimensional well-being deprivation index.

4 Dimensions, indicators, data

We rely on the framework to measure equitable and sustainable well-being, BES from the Italian acronym (Bacchini *et al.*, 2021; Istat, 2024), to identify relevant dimensions and indicators taking into account the specificity of the youth population. Yet, while the BES framework is measured through a dashboard of multisource

indicators, the AF method requires data to be taken from a unique data source. We use the multipurpose households' survey on Aspects of Daily Life conducted yearly by Istat, since 1993, which allows us to calculate individual indicators for a wide range of relevant dimensions within the conceptual framework of the BES (such as subjective well-being, social relations, cultural participation, etc.) and allows comparability over time. Where feasible and appropriate, we replicate indicators included in the BES dashboard using similar definitions and classifications. For example, we computed an indicator of employment and school enrolment using Aspects of Daily Life data, which proxies the NEET indicator included in the BES dashboard and computed using Labour Force Survey data. Five relevant dimensions are identified and described by three indicators each. We obtain a framework of fifteen indicators to which we assign the same weight (1/15).

Different criteria were used to define the deprivation cutoffs depending on the indicator in question. In some cases, the indicator itself identified distress (e.g. the alcohol consumption indicator); in other cases, a theoretical threshold was defined based on the score (e.g. a life satisfaction score below 6, in a 0-10 scale); and for other indicators, the cutoff was defined based on the distribution (e.g. the trust in parliament cutoff was identified as the average young person's score). The indicators and their respective deprivation cutoffs are shown in Table 1.

Table 1 − *Dimensions, indicators and cutoffs.*

Dimension	Indicator*	Cutoff
HEALTH	Perceived health	Do not report "good" or "very good" health conditions
	Alcohol use	Report at least one risky behaviour in alcohol consumption (overconsumption or binge drinking)
	Mental health	Mental Health Index below the first quintile of the distribution calculated for the 18-34 year old population (mh=56)
WORK, EDUCATION AND TRAINING	Employment and school enrolment	Neither employed nor education or training
	Cultural participation	During the past year, did not engage in any of the nine cultural activities considered: 1. at least four times to the cinema; 2. at least once to the theater; 3. at least once to museums and/or exhibitions; 4. at least once to archaeological sites; 5. at least once to monuments; 6. at least once to classical music/opera concerts; 7. at least once to concerts of other music; 8. reading the daily newspaper at least three times a week; 9. reading at least four books;

Table 1 (cont.) – *Dimensions, indicators and cutoffs.*

Dimension	Indicator*	Cutoff
WORK, EDUCATION AND TRAINING	Educational achievement	20-34 years old with at most a high school degree; 18-19 years old with at most a middle school degree and are not enrolled in school, courses or institutes
SUBJECTIVE WELL-BEING	Life satisfaction	0 to 5 on a scale 0 to 10
	Future perspectives	They think that in the next 5 years their situation will get worse
	Leisure time satisfaction	They are little or not at all satisfied with leisure time
SOCIAL COHESION	Social relation satisfaction	They are little or not at all satisfied with relationships with friends
	Civic and political participation	They do not engage in any of the activities considered: 1. talking about politics at least once a week; 2. getting informed about the facts of Italian politics at least once a week; 3.expressing opinions on social or political issues through websites (e.g. blogs, social networks, etc.) in the last 3 months
	Trust in parliament	On a scale of 0-10 they rated below the average for young people=3.6 (<4)
LIVING CONTEXT	Satisfaction with landscape	They say that the landscape of the place where they live is affected by degradation (dilapidated buildings, degraded environment, deteriorated landscape)
	Satisfaction with environmental quality	They say they are little or not at all satisfied with the environmental situation (air, water, noise, etc.) of the area where they live
	Difficulty in accessing services	They declare great difficulty in accessing 3 or more essential services out of the 11 considered: 1. pharmacies 2. emergency room 3. post office 4. police, carabinieri 5. municipal offices 6. nursery school 7. kindergarten 8. primary school 9. junior high school 10. grocery shops, markets 11. supermarkets

* The same weight is assigned to each indicator (1/15).

5 Results

In 2023 the 22% of the population aged 18-34 years living in Italy was multidimensionally deprived (H) (Figure 1). Those identified as deprived are above the deprivation threshold, on average, in 41% of the indicators (A).

Figure 1 – *Incidence (H) and intensity (A) of well-being deprivation among the youth. Italy 2019-2023.*

Source: Elaboration on Aspects of Daily Life data.

Combining incidence and intensity of deprivation, in the same year, the value of the adjusted multidimensional well-being deprivation index M_0 is 0.09, the lowest level in the time series (Figure 2). Looking at the evolution over the 5-year period of the M_0, we observe a peak during the pandemic in 2021, due to a sharp increase of H (27%), while the intensity shows a rather stable pattern.

Figure 2 – *Adjusted multidimensional well-being deprivation index (M_0). Italy 2019-2023.*
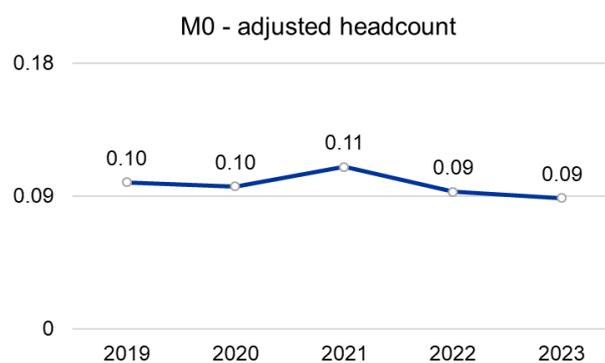
Source: Elaboration on Aspects of Daily Life data.

In the Italian context it is relevant to consider territorial inequalities. The M_0 score, which can be calculated by macro regions (Nuts1), shows a higher index in the southern regions (including the main islands Sicily and Sardinia) throughout the entire period under consideration. Figure 3 also shows that the M_0 score in 2023 is lower than in 2019 in all macro territorial areas, indicating an improvement in the well-being of young people.

**Figure 3 –** *M_0 for macro-regions. Italy 2019-2023,*
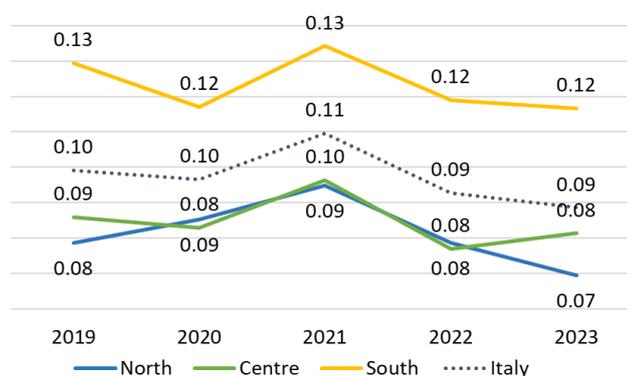
Source: Elaboration on Aspects of Daily Life data.

The previous analysis suggests that in the southern regions, the youth suffer more from multidimensional well-being deprivation. The additive nature of M_0 allows us to compute the percentage contribution of each population subgroup to overall multidimensional well-being deprivation when relative population size is accounted for. This analysis confirms that the highest contribution comes from those living in southern regions, although, during the pandemic crisis, we witnessed a temporary increase in the contribution coming from youths living in northern regions (Figure 4).

The M_0 can also be decomposed to look at the contribution of each dimension to the overall level of deprivation: the dimension contributing the most is Social cohesion (26.3% in 2023), followed by Work, education and training (22.1% in 2023) (Figure 5).

Figure 4 – *Percentage contribution of population subgroups to the overall level of M_0. Italy 2019-2023.*
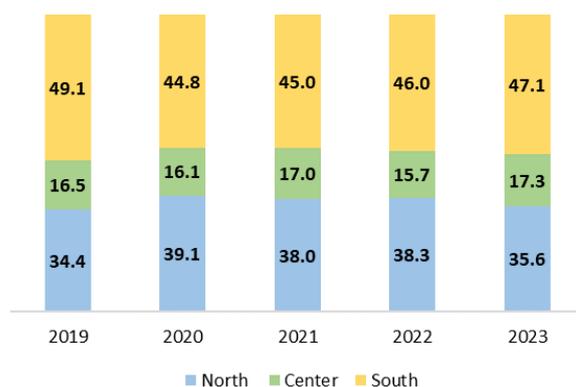
Source: Elaboration on Aspects of Daily Life data.

Monitoring the evolution over time shows how this latter dimension has been the most affected by the pandemic crisis, in fact its contribution peaked to 25.3% in 2021, but in 2023 it decreased to a lower level than what was observed in 2019. Special attention should be devoted to the Health dimension, for which it emerges a steadily increasing contribution over time, from 14.9% in 2019 to 16.8% in 2023.

Figure 5 – C*ontribution of each dimension to the overall level of M_0. Italy 2019; 2021; 2023*
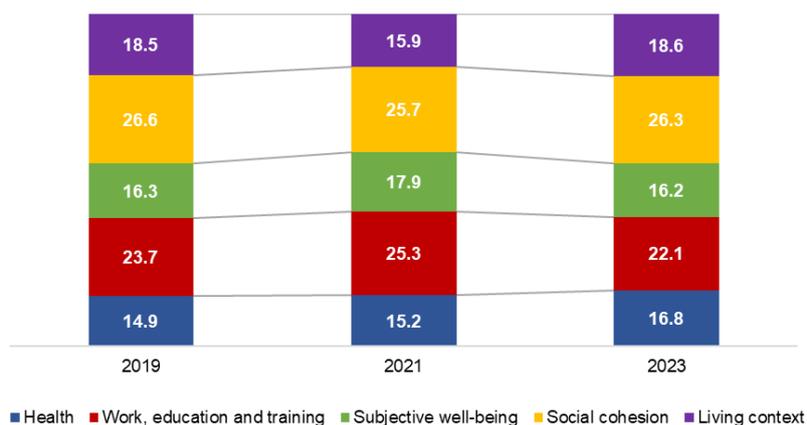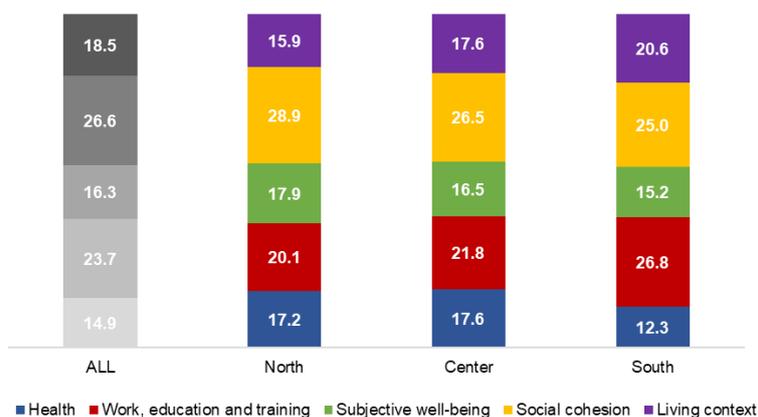

Source: Elaboration on Aspects of Daily Life data.

The underlying structure of youth well-being deprivation differs markedly across macro-regions. The Social cohesion dimension shows the highest contribution for each population subgroup in the North and Centre (over 27%), but slightly lower in the South (25.2%). Instead, in the southern regions, the highest contribution is given by the Work, education and training dimension (26.1%, compared to 18% in the North and 19.7% in the Centre).

In the North, the second highest contribution comes from the Health dimension (20.3%, compared to 16% in the Centre and 14.4% in the South), which follows Social cohesion and overcomes the Work education and training dimension.

Figure 6 – C*ontribution of each dimension to the overall level of M_0 by macro regions. Italy, 2023.*

Source: *Elaboration on Aspects of Daily Life data.*

6 Conclusion

In 2023, 22% of people aged 18-34 living in Italy were multidimensionally well-being deprived, on average across the 41% of the 15 considered indicators. The impact of the pandemic on youth well-being deprivation is evident, particularly in terms of a higher incidence. However, in 2023, Italian youth were in better conditions in terms of well-being deprivation compared to 2019 (the pre-pandemic benchmark).

When looking at territorial inequalities in youth deprivation, the Adjusted multidimensional well-being deprivation index M_0 is consistently higher in the southern regions (including the main islands) throughout the period under consideration.

The dimension contributing the most to youth well-being deprivation is Social cohesion. Those living in the South show the highest levels of deprivation, and special attention should be devoted to the Work, education and training dimension. Another critical issue arises the Health dimension: its contribution is relatively higher in the northern regions. Moreover, this dimension is the only one that shows a steady worsening over time.

Despite its many advantages, the multidimensional approach is not without limitations. Methodological choices such as the selection of dimensions, indicators, weights, and poverty thresholds are often contested as arbitrary. As future developments of our work, we aim at assessing sensitivity of results using different deprivation and poverty cutoffs.

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Elisabetta SEGRE, Istat, elisabetta.segre@istat.it
Alessandra TINTO, Istat, alessandra.tinto@istat.it
Romina FRABONI, Istat, romina.fraboni@istat.it
Miria SAVIOLI, Istat, miria.savioli@istat.it
Anna VILLA, Istat, anna.villa@istat.it