AN EVALUATION OF THE NEW ISTAT MEASURES OF ABSOLUTE POVERTY AND POSSIBLE DEVELOPMENTS OF DEFINITIONS, METHODS AND INDICATORS

Luigi Biggeri

Abstract. In October 2023, Istat (Italian National Institute of Statistics) published new measures of absolute poverty for the years 2022 and 2021. The objective of this paper is twofold. First, to evaluate merits and potential drawbacks of the new measures. Second, to present my vision on the developments of definitions, methods and indicators of poverty as a whole, taking into account all its manifestations and facets. The final suggestion is to implement a poverty data ecosystem in order to produce consistent public statistical information on all aspects of the phenomenon, essential for designing, implementing and monitoring adequate policies for poverty reduction at national and local level.

1. Introduction

The Istat (Italian National Institute of Statistics) is one of the few National Statistical Institutes that has been publishing estimates of Absolute Poverty or several decades (see Menyhért *et al.*, 2021; Istat, 2009). These estimates are very useful for understanding how poverty is widespread: which types of families and individuals it affects, with what intensity it strikes, and where, in which territories, it manifests within the country. This is indispensable statistical information for designing, implementing, and adequately monitoring policies to combat poverty (Bishop *et al.*, 2017; Biggeri and Pratesi, 2017), although there is no evidence that they have ever been used in Italy as a basis for designing measures.

Since 1996-97, Istat has been concerned with developing a methodology for estimating absolute poverty (Istat, 2009; Chelli, 2023; Saraceno, 2023). In 2003, Istat[1] established a Study Commission, composed of researchers from Istat and external experts, tasked with reviewing and modifying the previous approach to measuring poverty. Their work led to the publication of time series of estimates of absolute poverty starting from 2005, following the methodology extensively explained and justified in the aforementioned Istat (2009) volume.

The definition and measurement of absolute poverty adopted were anchored to the identification of a minimum basket of goods and services to satisfy a "minimum"

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[1] During my presidency of the Institute.

acceptable standard of living, sufficient to avoid severe forms of social exclusion. In general terms, the monetary valuation of the basket was carried out at the minimum prices accessible to families and individuals, considering the existing distribution channels in the various territorial zones of the country.

Minimum basket of needs should take into account changes over time and space in the economic, social, and environmental evolution cycle of population groups and society as a whole, as well as the classifications, definitions, and methods adopted in the collection of information to be used in estimating absolute poverty (Ravallion, 2016; Biggeri, 2022).

For these reasons, in December 2021, the then-president of Istat, Prof. Gian Carlo Blangiardo, appointed a new Inter-Institutional Scientific Commission tasked with proposing an adequate update and thorough review, rather than a substantial modification of the methodological framework (Chelli, 2023).

At the conclusion of the Commission's work, Istat published new measures of absolute poverty for 2022 and 2021 in October 2023 (Istat, 2023), and in November of the same year, Istat organized a Conference on "Absolute Poverty. Revision of the current methodology and perspectives on measuring the phenomenon", from which this paper draws inspiration.

As it is evident from the title of the paper, the objective is twofold. Firstly, to evaluate the innovations, merits, and any limitations of the new measure that should be sought to reduce. Secondly, to present detailed proposals for possible developments of definitions, methods, and indicators of poverty as a whole, taking into account all its manifestations and facets. The final suggestion is to implement a poverty data ecosystem in order to produce consistent public statistical information on all aspects of the phenomenon, essential for designing, implementing and monitoring adequate policies for poverty reduction at national and local level.

Therefore, the paper is organized into two parts. The first consists of two sections. Section 2 presents the most important innovations and the main merits of the new measures of absolute poverty. Section 3 is dedicated to exploring the possible limitations in the construction of the measure that it is advisable to discuss and potentially seek to reduce. The second part dedicated to the possible future developments of the poverty measure consists of four sections. Section 4 recalls the many characteristics and manifestations of poverty and the various approaches to the definition and measurement of absolute poverty. Section 5 indicates some of the problems and measurement methods that must be addressed if one wants to broaden the concept and measurement of absolute poverty. Section 6 briefly recalls the many available data on poverty and their reliability and validity for producing official statistics on the phenomenon. Finally, Section 7 concludes the paper by proposing the implementation of a Poverty Data Ecosystem specifically to achieve the goal of being able to produce all the necessary information.

2. The most important innovations and the main merits of the new measures of absolute poverty

The Inter-Institutional Commission, appointed in December 2021, began meetings in January 2022 with continued assistance for processing and experiments by Istat's researchers.

Let me applaud the Istat's researchers for the enormous work carried out with high competence and efficiency and in good time having published the data on absolute poverty in the month of October 2023.

The innovations introduced to the methodology and calculation of absolute poverty have been numerous, as highlighted in the Report of October 25, 2023 (Istat, 2023), in the many working documents presented in the Commission, and in the concise reports presented at the Conference on November 7, 2023 (https://www.istat.it/it/archivio/289274). I will outline the main ones here, referring to the aforementioned documents.

(a) The introduction of the new COICOP classification, the updated estimates from census data, and the new survey on household expenditure in 2022.

These innovations have allowed for the updating of reference frameworks and improved estimation of absolute poverty.

The COICOP 2018[2] has classified the set of goods and services purchased by households for consumption purposes, taking into account transformations from both the demand and supply sides, with better alignment with modern consumption patterns. Furthermore, this new classification was adopted in the 2022 household expenditure survey (usually called HBS), for which the size of the planned theoretical sample was also increased (from about 25,000 to 32,500 families).

The results of the Permanent Population and Housing Census obtained in the Autumn 2021 have provided updated information at the municipal level on the population by age and the characteristics of households, enabling the definition of 50 distinct household typologies, according to the size of the household and the age of its components (now, the age classes are 7 instead of 6, having divided the age group 18-59 into classes 18-19 and 30-59).

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[2] COICOP refers to the Classification of Individual Consumption According to Purpose adopted by the United Nations Statistical Commission. COICOP 2018 replaced the 1999 classification.

(b) The evaluation of the Absolute Poverty Thresholds (APTs) at regional level and for typology of municipality.

It is certainly the most significant innovation considering that all poverty scholars argue that, in order to carry out targeted interventions, poverty should be assessed at the local level, that is, in the local territorial areas where families live.

Since 2005 Istat has been estimating absolute poverty and absolute poverty thresholds by three geographical macro-areas (Nord, Center and South) and within them by three types of municipality. In the new measure introduced in 2023 the number of the geographical areas improved a lot because the estimations have been done for all the 20 Italian Regions.

(c) Innovations in the evaluation of the food component.

The main innovations introduced in the food component of the absolute poverty measure are the following:

- the daily needs are updated based on the new recommended intake levels of nutrients updated at 2018 and evaluated by the CREA Research Centers, Food and Nutrition;

- the number of foods considered is 96 for 12 food groups (in 2005 estimates they were 34);

- the monetary value is calculated on the basis of an average price obtained as a weighted arithmetic mean of the minimum prices charged in the various types of distribution channels at provincial and regional level (now, the database used is truly very broad). That is the minimum price accessible to all households, taking into account the actual characteristics of the offer in the different territorial realities.

(d) Innovations for the evaluation of the housing component.

The housing component consists of four elements: (i) rent, (ii) heating including gas for cooking and water heating, (iii) electricity, and (iv) durable household goods. Various changes have been made to the methods for their assessment However, the most significant innovation concerns the use of the real estate rental database from the Real Estate Market Observatory of the Revenue Agency, which has allowed for significant disaggregation by region, type of municipality, and housing surface class.

(e) *Analysis of the effects due to changes in the data used and calculation methodologies.*

Many impact analyses of the changes made have been conducted. In particular, evaluations of energy social bonuses and the use of the rental database instead of data from the sample survey on household expenses for assessing rents must be noted.

3. Some limitations of the measures: discussion and possible interventions

In this paragraph, I would like to present some possible limitations of the new absolute poverty measures with the aim of discussing them, verifying their actual consistency, and proposing possible interventions to reduce or eliminate them.

(a) *The hypothesis of national homogeneity in the basket of products and services.*

Even if the hypothesis is applied for each type of household - defined by the number of members and their age group, it is somewhat strong and difficult to fully accept. In fact, primary needs, and the goods and services that satisfy them, are not homogeneous across the national territory, but vary over time and space and can be satisfied differently over time and space. The food products considered are 96 and, therefore, quite numerous, with each food item being linked to one or more products considered in the consumer price survey.

However, the issue is that the principle of "Like-to-Like" is generally accepted, meaning that the products to be considered are assumed to be the same across the different territorial areas of the country, and only in some cases consumer preferences are taken into account[3].

I believe it would be appropriate to indicate the "Product Group" of the ECOICOP-8-digit classification to which each food item belongs, and then in each territorial area, within the product group, choose the product or products most purchased by consumers belonging to the first decile, or better ventile, of their distribution based on total consumption expenditure.

(b) *The hypothesis that family resources are equally shared among all members.*

The hypothesis that poverty affects all individuals in a poor household in the same way is certainly not always valid. In reality, there may be non-poor individuals even if they live in a poor household and individuals in poverty even in non-poor

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[3] In the "Like-to-Like" approach there is a high risk that not all the products are available in all territorial areas within a country.

households. Typical cases include: (i) different situations of women and men within a household (ii) the case of children in educational poverty even if they live in a non-poor household. However, for the current measure of absolute poverty, I believe it is advisable to maintain the aforementioned hypothesis.

(c) Monetary evaluation of products and services included in the "Absolute Poverty Basket" and purchasing behaviors of the poor.

The evaluation of food products is carried out in great detail, referring, in most cases, to the minimum prices of the products purchased, across different distribution channels, by the first quintile of consumer distribution per expenditure class.

Actually, that is the minimum price accessible to all households, taking into account the characteristics of the offer in the different territorial realities. These are not necessarily the prices paid by absolute poor households.

In fact, the consumption behaviour of poor households varies for quality of the commodities, channel of distribution, location of the markets, and, above all, the prices paid. To improve the adequacy of the minimum prices paid by the poor it is necessary to know the consumption behaviour of poor households at territorial level and their behavior in order to choose the cheaper products, in other words we should individuate the markets of the poor. A first tentative survey and analysis has been conducted by Istat in 2018 (Biggeri and Pratesi, 2022).

Further research is needed possibly by leveraging the larger sample size of the household expenditure survey and by using Small Area Estimation (SAE) methods.

(d) The estimated of Absolute Poverty Thresholds (APTs) at the territorial level.

In fact, by construction, they are calculated separately for each of the three types of municipality (Center municipalities of a metropolitan area; Suburb municipalities of a metropolitan area and municipalities with 50,001 inhabitants and above; Other municipalities up to 50,000 inhabitants). However, only eleven regions host "Center-municipalities of a metropolitan area". "Suburb municipalities of a metropolitan area and municipalities with 50,001 inhabitants and above" are present in eighteen regions (Regions Valle d'Aosta and Molise are missing because they do not have municipalities with more than 50,001 inhabitants and above); while "Other Municipalities up to 50,000 inhabitants" are present in all the 20 Italian regions. In my opinion, it is difficult to compare and interpret the APTs among the various regions because of the heterogeneity between the suburb areas of the metropolitan areas and the municipality with more than 50,000 inhabitants and the weight in terms of population that these two types of municipalites have in each region.

Therefore, it is first necessary to test extensively the homogeneity of the level of prices in the two different types of areas, and, second, it could be better and useful

to calculate the APTs separately for the areas of suburb municipalities of a metropolitan area and for the municipalities with 50,001 inhabitants and above.

(e) The method of calculating the residual component.

This macro component of the absolute poverty basket has been considered a weak point in the estimates of absolute poverty made by Istat since 2005 (Istat, 2009). In the new estimates the content of residual component has been better defined and some expense items have been evaluated separately. However, the quantities of individual goods and services that are included in the residual component have not been defined because it was not possible, in this context, to refer to specific regulations or scientific standards', as done for food and housing components. To assign a monetary value to this component, it was hypothesized that it would be influenced by family composition in a similar way to the food component. The value was, therefore, assigned based on the observed association between residual expenditure (as a whole) and food expenditure, estimating the coefficients through a regression model applied at the regional level, also taking into account the number of family members by age group.

However, the above mentioned hypothesis is not always justified. Therefore, since the residual component has a significant impact on overall spending (ranging between 20% and 25%), it is certainly appropriate to try to separately evaluate some relevant types of expenses, such as those for clothing and footwear, which cannot be correctly evaluated with the use of the mentioned regression model as they have no relation to food expenses.

(f) Evaluation of the reliability of absolute poverty estimates.

The problem is not currently explained in sufficient detail in Istat report (Istat, 2023), which does not mention that some estimates for detailed aggregates have rather high errors. These aspects will certainly be explored in depth in the volume on absolute poverty, in which Istat will present in detail both the new methodology and the main results.

4. Characteristics and manifestations of poverty: definitions, measures and theoretical approaches

In this second part of the paper, the aim is to propose possible developments of definition, measurement methods, and indicators of poverty as a whole, taking into account all its manifestations and facets.

During the Commission meetings, everyone agreed that in the future we must surpass the solely economic measure of absolute poverty. It is essential to incorporate non-economic poverty indicators and consider not only absolute poverty but also its various types (dimensions), introducing other components of well-being and/or ill-being. Some researchers are very critical of the available measures that predominantly emphasize material and monetary poverty (Amadi and Igwe, 2015). To this end, it is necessary to examine what types of poverty exist, how and where they manifest, and then develop two lines of consideration stemming from the following questions: (i) Is it possible to broaden the assessment of absolute poverty to other dimensions besides the purely economic one used thus far? And for these new dimensions, is it possible to identify a threshold below which individuals or families are considered in absolute poverty for that dimension? (ii) Is it feasible to develop a data and indicator system for all types of poverty?

It is important to bear in mind that poverty is a complex, multifaceted and multidimensional phenomenon, and its definition and measurement change depending on the dimensions considered. Identifying the phenomenon is, therefore, challenging because it is often latent, meaning it does not have readily observable manifestations that immediately provide full evidence of the phenomenon.

However, it is clear that there are many forms of poverty, and their definitions and measurements - which imply value judgments - have advantages and limitations, to the extent that their use often depends on the context and specific objectives of the anti-poverty policies one aims to implement.

Essentially, it can be said that there are many forms of poverty concerning various economic, social, environmental, etc., dimensions that are taken into account. It is a complex puzzle composed of many pieces that are often not disjoined.

Without claiming to be exhaustive, let us look at the main definitions and measures.

(a) Economic and non-economic poverty

Economic poverty refers to a situation where an individual or a family's income and asset availability (both real and financial) is insufficient to meet the needs for goods and services considered essential for maintaining a decent standard of living or deemed adequate in terms of food, housing, clothing, communication, transportation, education, and healthcare. This inadequacy often leads to significant deprivations.

However, poverty is not determined only by economic resources. Regardless of income levels, individuals or families may experience significant hardship due to lack of access to vital services such as education, healthcare, job markets, transportation, etc., or due to their inability to participate in social and political life.

These issues affect all members of family or only specific groups within it (such as the disabled and poor children, or worse, those facing educational poverty).

Moreover, in a society, inequalities are not limited to the distribution of material resources but also extend to human and social capital, health, etc. Poverty, therefore, encompasses emotional, mental, and spiritual states as well, representing both extreme unhappiness and a condition of moral narrowness and pettiness, aspects that are impossible to measure.

(b) Absolute and relative poverty

Absolute poverty is identified by the value of a minimum basket of goods and services necessary to satisfy a set of needs considered essential within the social context of reference. Relative poverty is identified in relation to a standard (average or median) relative to the reference population.

These two types of poverty can be assessed both in terms of income and consumption expenditure.

(i) Absolute economic poverty

It is typically assessed as the minimum consumption expenditure of essential goods and services, referring to the standard of living, while taking into account the actual ability of individuals and families to purchase such goods and services. The assessment depends on the basket of goods and services considered.

It follows that a person or a family may not be able to afford one or more components of the basket, leading to what is known as food poverty, housing poverty, clothing poverty, and so on (in addition to food poverty, we also talk about malnutrition and food insecurity).

Of course, the situation of individuals or families experiencing poverty for two, three, or more years, known as persistent poverty, is very difficult.

However, the situation is even more difficult for children living in poverty, as this can affect their future prospects and negatively affect their opportunities as adults (vulnerability to poverty).

Significant concern arises from the educational poverty of children and adolescents, defined by Save the Children as "the deprivation, for children and adolescents, of the opportunity to learn, experience, develop, and freely flourish their talents and aspirations." There is still a need to fully define educational poverty and identify suitable indicators to monitor and map it (Save the Children, 2015; Pratesi, 2022).

Lastly, in an even worse situation of destitution, we find the homeless. According to Istat's estimates, on December 31, 2021, in Italy there were 96,197 homeless individuals.

(ii) Relative economic poverty.

In this field, the European Union, through Eurostat, has established certain definitions and measures to be developed based essentially on data obtained through the EU-SILC survey (Eurostat, 2015; Eurostat, 2023).

In a country, families are considered relatively poor if their income (per equivalent adult) is less than 60% of the median income. Changes over time in this indicator also depend on variations in the median income, making it highly sensitive to economic conditions and to the income level of the reference area.

To complement this indicator, Eurostat has developed several multidimensional indicators. Risk of poverty or social exclusion includes people living in families with low work intensity, at risk of poverty, and in conditions of severe material deprivation. Material deprivation is based on 9 indicators: (a) Arrears in paying bills, rent, mortgage, or other loans; (b) Inadequate heating; (c) Inability to face unexpected expenses; (d) Inability to have a proper meal at least once every two days; (e) Inability to go on vacation for at least one week per year; (f) Inability to afford a color television; (g) Inability to afford a refrigerator; (h) Inability to afford a car; (i) Inability to afford a telephone. Being in 4 of these 9 situations indicates *severe deprivation*, which can be considered a kind of absolute poverty indicator. *Low Work Intensity* indicator is registered when people live in families with a work intensity lower than 0.20 (total months worked by family members divided by the total theoretically workable months).

As I said before it is now my intention to evaluate briefly if the poverty indicators mentioned above meet the indications of the following three theoretical approaches to defining poverty: (1) The Basic Needs Approach (BNA); (2) The Human Rights Approach (HRA); (3) The Capability Approach (CA), which I summarize referring to what is written in Biggeri and Cuesta (2021).

(c) The Basic Needs Approach (BNA)

This approach conceptualizes needs as those basic goods and services that must be distributed and accessible to all individuals for the full physical, mental, and social development of human personality. This approach primarily focuses on the minimum requirements for a dignified life (such as health, nutrition, water and sanitation services, etc.) and the goods and services necessary to achieve it (Streeten *et al.*, 1981).

(d) *The Human Rights Approach (HRA)*

The human rights-based approach is the cornerstone for establishing de jure rights (based on legal systems) and, therefore, through the legal system, determining, protecting, and ensuring freedom of opportunity and due process (Santos-Pais, 1999; Sen 2005, 2007). Analyzing the results in terms of rights fulfillment implies setting poverty limits for each dimension (or right) independently of the others. These poverty thresholds are such that being above them implies that the person has sufficient opportunities in quantitative and qualitative terms, and in accordance with the stage of their life cycle.

In this approach, dimensions of poverty are selected because they are expressions of unrealized rights, so they cannot be ranked against each other, and this is considered the most relevant difference compared to the standard economic logic of resource scarcity, which prioritizes poverty dimensions based on their individual or marginal impact on well-being.

It must be noted that some rights have an instrumental role towards others by enhancing them. For example, being educated or healthy is vital also in facilitating other dimensions, both in the short and long term. Furthermore, the BNA and HRA approaches are strongly complementary.

(e) *The Capability Approach-(CA)*

This approach incorporates many of the concerns regarding the BNA into a fully conceptual framework with an additional emphasis on empowerment (the achievement of self-awareness and control over one's choices, decisions, and actions, and on well-being). See Sen (1985, 1999); Nussbaum (2011).

The perspective of the Capability Approach enhances our understanding of the nature and causes of poverty and well-being deprivation by shifting primary attention from means to the ends that people have reason to pursue and, consequently, towards the freedom to be able to achieve those ends. It certainly goes beyond the resource-based approach, as resources are not considered the exclusive focus of interest for a matter of justice. It considers income as a relevant means but at the same time emphasizes the inadequacy of income as a proxy for people's freedom capabilities.

In line with the theory of capabilities, poverty can be seen as deprivation of opportunities and rights. Some observations on the Capability Approach: the transition from a situation of opportunity rights to that of factual remains a somewhat daunting challenge. It would be appropriate to further explore the theme of equality/inequality of opportunities and the important distinction between exclusive and non-exclusive goods.

It can be observed that many of the definitions and measures of poverty mentioned in the first part of this section use, at least in part, various approaches. I

believe that we should prioritize Amartya Sen's CA, but how to translate into practice, choices and operational definitions all the indications that derive from that approach is still a matter of discussion and improvement.

5. Some guidelines and open issues

5.1. Some guidelines for constructing new measures of absolute poverty

In section 4, I have referred to various situations of poverty in goods and services (and/or population groups) for which it would be appropriate to obtain measures and/or indicators to supplement those already existing on absolute poverty. The following are some examples: clothing poverty, transportation poverty, malnutrition and food insecurity, educational poverty for children and adolescents, and more often the lack of access to vital services such as education, health care, the job market, transportation, and infrastructure.

The Commission will need to address the issue of constructing measures on such aspects or domains by answering the following questions (based on a standard framework):

(i)   Is it possible to operationally define the poverty phenomenon or domain of interest?

(ii) Is it possible to measure its presence and intensity? Are there data and statistical information available to obtain such a measure?

(iii) Is it possible to define a threshold below which an individual would be considered in a situation of absolute poverty for the aspects under consideration?

The task is indeed very complex. For instance, referring to the lack of access to healthcare services, it is necessary to define within what distance such services should be available, their quality, cost, and so forth.

5.2. Some issues in interpreting the results of poverty measures

In general, the interpretation of data and indicators on poverty is made difficult by the influence of the time factor, namely the temporal validity of various indicators and particularly of the established thresholds, as poverty levels can change over time due to various factors such as economic fluctuations, policy changes, and natural disasters. Attention should be devoted also to the data quality, which requires careful consideration.

Two specific mentions concern information and methods to be used to correctly interpret the results.

First and foremost, to interpret the results of poverty measures accurately, it is essential to have statistical information on the factors and actors influencing poverty and its characteristics. These may include families, the labor market, the welfare system, social organizations, and the third sector, as well as the social backgrounds of individuals and the existence or absence of social support or safety net programs, and support/help/personal networks. (Saraceno *et al.*, 2020). Also, it is useful to have longitudinal data to monitor changes in poverty over time and assess the effectiveness of poverty reduction policies.

Furthermore, it is important to note that the sets of units (individuals or families) belonging to various types of poverty are "fuzzy" in the sense that units can simultaneously belong to multiple sets, making the interpretation of individual sets difficult. Real-world situations are often characterized by imprecision and vagueness. In this sense, fuzzy-set theory has been shown to be a powerful tool for describing the multidimensionality and complexity of social phenomena, including poverty (Betti and Lemmi, 2021). Additionally, given the multitude of variables under consideration, methods for jointly analyzing these variables and synthesizing them need to be developed (Brandolini, 2021).

6. Data and Statistical Information on Poverty available in Italy

In Italy, there are many indicators of poverty available, including long time series data (Brandolini, 2021).

Istat, following Eurostat's guidelines, has been producing estimates of relative and absolute poverty indicators, providing extensive information on the factors and actors influencing it (for indicators, see sections 4 and 5). These data are derived from both sample surveys and administrative archives and databases, with information also available at the local level.

The Bank of Italy has been conducting an annual survey on incomes and real and financial wealth held by families since the 1960s. Analyses of the results are presented in specific bulletins and reports, and sometimes also in the Governor's report of the Bank.

Many data on poverty are also produced and disseminated by various Public Administrations, whether belonging to the Sistan (the National Statistical System) or not. For example, an important database that contains valuable information about local-level policies is the Integrated Information System of Social Services (SIUSS).

Finally, many data are produced and disseminated by numerous non-profit organizations that focus on poverty and ways to alleviate it. It is not possible to

mention them all, but we can recall organizations such as Caritas, Banco Alimentare, Save The Children, Con I Bambini, ACLI, Ofam, and others.

It is important to note that, while this type of data is certainly useful for providing general indications and for data journalism, they have several limitations. Specifically, they are not always statistically valid and reliable, they are fragmented, and often not comparable with each other and with those published by official statistics.

Therefore, it is essential to engage in activities to integrate all these diverse types of data to make them comparable, thus increasing their "value" and obtaining a comprehensive overview of poverty in all its facets.

7.   Implementing a Data Ecosystem to address Poverty

Taking into account what was written in the previous section, my proposal is to initiate an inter-institutional process to implement a data ecosystem on poverty.

In simple terms, we can say that a data ecosystem is an environment that contains different and heterogeneous data from systems and databases of various entities interested in the phenomenon addressed by the system. It provides a data management infrastructure and applications for both scientific analysis and informed policy decision-making processes.

Implementing a data ecosystem to address poverty is a multifaceted endeavor that involves collecting, analyzing, and utilizing various types of data to understand the root causes of poverty, identify vulnerable populations, and design targeted interventions.

Implementing a data ecosystem for poverty analysis and alleviation requires collaboration across owners of data on poverty, which are government agencies, non-profit organizations, academia and the private sector, to harness the full potential of data-driven approaches in addressing one of the most pressing global challenges.

This operation requires a strong political will from stakeholders, the agreement of all actors, substantial investments in infrastructure and dedicated personnel, ensuring data quality (after cleaning and standardizing the original data) and their security and confidentiality with appropriate governance rules. However, the benefits it will produce in terms of increased information value are significant. For example, the following two activities will become very easy: (i) continuously monitoring key indicators and outcomes related to poverty to assess the effectiveness of interventions and make iterative improvements; (ii) conducting rigorous evaluations, including impact evaluations and cost-benefit analysis, to determine the long-term impact of poverty alleviation efforts.

Obviously, the implementation of the data ecosystem requires a project for identifying needs and priorities and implementing it incrementally step by step.

Is it an impossible challenge? I do not think so. On the contrary, I believe it should be faced, and I am confident of its success, especially because in recent years, Istat has gained considerable experience in building various important data ecosystems.

Acknowledgements

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Luigi BIGGERI, University of Florence, Italy, luigi.biggeri@unifi.it