



Economic Commission for Europe**Conference of European Statisticians****Sixty-eighth plenary session**

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**Report, guidelines and recommendations prepared under the umbrella of the Conference:
Disaggregated poverty measurement****Poverty measurement: Guide to data disaggregation – short
version¹****Note by the Task Force on disaggregated poverty measures***Summary*

The present document is an extract of the *Poverty Measurement: Guide to Data Disaggregation*. The purpose of the Guide is to provide methodological and practical guidance on poverty disaggregation to enhance further international harmonisation.

The extract contains of Chapter I “Introduction”, which also includes a summary of recommendations proposed in the Guide, and Chapter 6 “Future Work – measuring what matters”.

The document was prepared by the Task Force on disaggregated poverty measures consisting of Austria (Chair), Canada, Czechia, Italy, Mexico, Slovakia, Russian Federation, Switzerland, United Kingdom, United States, Interstate Statistical Committee of the Commonwealth of Independent States, Eurostat, European Union Agency for Fundamental Rights, Organisation for Economic Co-operation and Development, Istanbul Regional Hub of the United Nations Development Programme, UNECE, United Nations Children's Fund, the World Bank, the Oxford Poverty and Human Development Initiative, and the University of Sienna.

The full text of the Guide has been sent to all members of the Conference of European Statisticians (CES) for electronic consultation. It is available at the Conference webpage: <http://www.unece.org/index.php?id=53381>.

Subject to a positive outcome of the consultation, the CES plenary session will be invited to endorse the Guide.

¹ This document was scheduled for publication after the standard publication date owing to circumstances beyond the submitter's control.



I. Introduction

A. Why this Guide?

1. The Guide on Poverty Measurement (UNECE, 2017a) laid out important standards for the measurement of poverty in the UNECE region with a view of SDG 1 “End poverty in all its forms everywhere”. The present Guide intends to provide further guidance to consolidate the measurement of poverty as well as inspiration for the practice of statistical offices.

2. First and foremost, this requires that all population groups are counted. People living in poverty are increasingly missed by household surveys, particularly if they belong to ethnic or other minorities whose life circumstances differ from the general population. Therefore, the Commission on Global poverty, chaired by Tony Atkinson recommended that: “There should be an investigation of the extent to which people are “missing” from the global poverty count, and proposals made for adjustments where appropriate at the national level for survey underrepresentation and noncoverage by surveys; ...” (World Bank, 2017, recommendation 3: 33).

3. Governments and stakeholders may have quite different views on how to eradicate poverty. Different policy approaches are typically connected to different measurement approaches, such as consumption or income-based measurement (Rio Group, 2006: 140f). This is a challenge to the first of the United Nation’s Fundamental Principles of Official Statistics which demands relevance, impartiality and equal access (UNSD, 2014). The measurement of poverty by independent statistical offices does not only serve governments. It has to consider all stakeholders involved in the political debates, including the public at large. Statistical offices provide reliable data infrastructures. They have to be neutral as to whether poverty should be reduced by redistribution through cash transfers, economic growth and active labour market policies or addressing unmet needs directly through non-cash transfers for certain groups among the poor. But governments may formulate their targets effectively and be held accountable for it based on these data.

4. Regardless of how accurate the national measures of poverty are, their usefulness will be limited if they mask existing disparities within societies. For example, it is still a true description that some countries are poorer than others. However, it would be misleading to donors of foreign aid to assume that all people in a poor country are poor. Income distributions are overlapping between rich and poor countries. Everyone who travels can see the same cars, clothes and food in almost any country – albeit such signs of material wealth are clearly not available for everyone. Relative poverty may be on the rise when certain segments of the population take more advantage from rapidly increasing levels of prosperity. With ongoing progress, it becomes more important to identify fault lines within countries.

5. The pledge of the 2030 Agenda for Sustainable Development is to reach the furthest behind first and leave no one behind (UN, 2015). Evidence based policies need to know who is poor and where support is needed the most. The General Assembly Resolution “Transforming our world: the 2030 Agenda for Sustainable Development” therefore calls for “high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts” (A/RES/70/1).

6. The measurement and disaggregation of poverty measures provides a particular description of the social world. Amartya Sen understood description as choice (Sen, 1980). He did however reject the idea of Orshansky that deliberate decisions of poverty measurement are the result of purely subjective value judgements, resting solely in the eye of a particular “beholder” (Orshansky, 1969). It may be helpful to rather think of measuring poverty like constructing a map to be potentially used for reaching different destinations or using different paths. Human rights principles are essential for that. It must be guaranteed that vulnerable populations can participate, are protected from any harm and can benefit from the results. Further, privacy and self-identification must be respected and transparent processes must be followed (OHCHR, 2018).

7. For example, the European Union has established a transparent legal framework for the measurement of poverty in the European Union Statistics on Income and Living Conditions (EU-SILC), including access to micro data and quality reports. The framework reflects (rather than imposes) different ideas about economic growth and employment policy as much as about redistribution or social and human rights. Indicators on poverty (and their disaggregation) hence provide a common ground for rational policies with potentially opposed objectives. Its function is comparable to that of the consumer price index in a collective bargaining process which ensures that negotiations maintain a minimum of shared empirical foundation. The choices made in disaggregations have a similar function and hence are far from arbitrary.

8. Disaggregation has practical consequences. Measurement of poverty may be called good, if it supports the effective allocation of various resources such as food banks, medicines, teachers or law enforcement. If for example household income inadequately reflects children's needs for such resources, it is probably not the ideal measure for that group.

9. International standards provide an important point of reference for government and non-government stakeholders, especially when no specific national policy objectives are articulated (Till and Keindl, 2015). These standards need to be internationally comparable and often help to assess the need and impact of foreign aid and development partnerships. If priorities are set accordingly, limited resources can be spent efficiently. Harmonisation of disaggregated poverty measures also allows countries to benefit from each other's experience in tackling poverty and reaching further those in need. Joining efforts across countries and regions would help to identify similar patterns that would permit policymakers to search for already existing solutions and to address together challenges that trigger inequalities. Such challenges are for example related to women who tend to earn less than men, persons with no post-compulsory training who often have less employment opportunities, elderly who by and large live in poorer housing conditions, or children in rural areas who are less educated than those living in the cities.

10. The guidance offered on the definitions and operationalization of the disaggregations aims to serve as an international standard for poverty disaggregation while respecting differences in national realities or in the existence of international standards. This guidance can further be refined when results of other methodological developments become available.

A. Background

11. The first United Nations handbook on poverty measurement of was published by the United Nations Statistical Division in 2005 (UNSD, 2005). It responded to the increased need for measuring poverty in the context of the Millennium Development Goals. The diversity of approaches around the globe was addressed in four regional workshops and was supported by a survey among statistical offices which was answered by 91 countries. Globally, measures based on consumption were found to dominate, while in the UNECE region, most responding countries were measuring poverty on the basis of income. Only a few countries reported that they measured poverty on the basis of unmet basic needs (UBN), and disaggregation was mentioned in this handbook only with reference to geographic disparities.

12. An Expert Group on Poverty Statistics (Rio Group) which involved 22 countries and 18 regional or international organisations was active between 1996 and 2006. It had found that a universally applicable handbook was difficult to accomplish given the heterogeneity of methodologies, degrees of sophistication and policy purposes. Instead, a compendium of different practices was published, which included monetary poverty as well as non-monetary measures of deprivation. Apart from geographical disaggregation, the compendium addressed the measurement of poverty among children. It particularly acknowledged that the needs of children differ in degree and kind from the adult population and thus require specific approaches to measurement.

13. Within the narrower focus of monetary poverty, the World Bank published a streamlined handbook on the poverty and inequality (Haughton and Khandker, 2009) and maintains the ADePT software to obtain standard disaggregation tables from micro data

(Foster et al., 2013). The Commission on Global Poverty led by Sir Tony Atkinson raised a number of caveats concerning the monetary approach which were summarized in 21 recommendations. The recommendations include the use of a multidimensional poverty indicator as a complement to the \$1.90/day measure (World Bank, 2017). Such a global multidimensional indicator was developed by the Oxford Poverty and Human Development Initiative (OPHI) and UNDP. It is regularly published since the first publication of the Multidimensional Poverty Index (MPI) of the Human Development Report in 2010 (e.g., UNDP, 2019). A handbook on how to implement national versions of the global MPI has recently been published (UNDP and OPHI, 2019).

14. Against the background of these mainly global initiatives, the present Guide focuses on the practical approaches currently followed in statistical offices of countries participating in the Conference of European Statisticians (CES)². Most UNECE countries (34) already participate in the collection of EU-SILC. This statistical instrument has been designed explicitly to provide harmonised indicators for the coordination of EU policy processes. Therefore, the European Union has also set up a so-called Indicators Subgroup (ISG) which is a special committee of statistical and social policy experts for the continuous development of indicators to guide policies on social inclusion.³

15. EU-SILC is based on a common legal framework and reflects fundamental methodological decisions for the measurement of poverty which were originally proposed by Tony Atkinson et al (Atkinson et al, 2002). Eurostat updates comprehensive guidelines (Doc65) for the implementation of every new round of the EU-SILC data collection.⁴ Quality reports which include information how closely these implementation guidelines were followed are published regularly both by Eurostat as well as the Member States.⁵ The continuous evolution of indicators and methodologies are also documented in two important Eurostat publications (Atkinson and Marlier, 2011; Atkinson et al 2017).

16. The UNECE Statistical Division has been involved in poverty statistics since 2012. The activities started with an in-depth review of this topic prepared by the State Statistics Service of Ukraine and Eurostat for the Bureau of the Conference of European Statisticians (CES Bureau). Since then, expert meetings and capacity-development workshops on poverty measurement were held regularly on an annual basis.

17. During these meetings, the Interstate Statistical Committee of the Commonwealth of Independent States (CIS-STAT) - among other participants - regularly presented updated information about the progress made in the 11 CIS countries. The latest of these reports noted that national SDG platforms with roadmaps, lists of indicators as well as data and metadata became increasingly available for certain indicators (CIS-STAT, 2019: 2). Nonetheless, common regional standards to obtain comparable measures for monetary or multidimensional poverty are yet to be established (CIS-STAT, 2019: 5). Neither the global poverty line nor the global MPI seem appropriate for the context of rapidly developing middle income countries. Most CIS countries already publish disaggregated poverty measures (CIS-

² The Conference of European Statisticians is composed of national statistical organizations in the UNECE region (for UNECE member countries, see http://www.unece.org/oes/nutshell/member_states_representatives.html) and includes in addition Australia, Brazil, Chile, Colombia, Japan, Mexico, Mongolia, New Zealand and Republic of Korea. The major international organizations active in statistics in the UNECE region also participate in the work, such as the statistical office of the European Commission (Eurostat), the Organization for Economic Cooperation and Development (OECD), the Interstate Statistical Committee of the Commonwealth of the Independent States (CIS-STAT), the International Monetary Fund (IMF) and the World Bank.

³ <https://ec.europa.eu/social/main.jsp?catId=830&langId=en>

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https://circabc.europa.eu/faces/jsp/extension/wai/navigation/container.jsp?FormPrincipal:_idcl=FormPrincipal:_id1&FormPrincipal_SUBMIT=1&id=334d943f-6f71-4f4b-9c7e-a6767a3fe164&javax.faces.ViewState=JwW05173o2Dvufk86FDq%2B13s4dGhWgIjenexRTXh12jKnzZh01ftwoaJz0VG7IDMf6D417EEa00cQbME8b6E1QYt3Tc3T3fGOMsc0h1TS7UyeOOeZALTRVdnwwwkzWtfrms%2FUBEdRfo1wdTcxQgqZGp%2BVU%3D

⁵ <https://ec.europa.eu/eurostat/web/income-and-living-conditions/quality/eu-and-national-quality-reports>

STAT, 2019: 6) but obtaining sufficiently large samples for representative data and especially the definition of persons with disability remain problematic (CIS-STAT, 2019: 8).

18. In addition, to the expert meetings, task forces mandated by the CES and composed of national statistical offices and international organizations have been working on poverty-related issues. A first such task force produced and published in 2017 the Guide on Poverty Measurement (UNECE, 2017a). The Guide provided an overview of data requirements and measurement issues related to various approaches for poverty measurement and made recommendations for improving the international comparability of poverty statistics. The Guide also highlighted methodological challenges such as measurement of resource sharing within households and coverage of hard-to-reach populations and the population living in institutions. It was stressed that comparability of poverty measures across population groups will depend on other factors taken into consideration that go beyond pure income or consumption measures at the national level, for example on the inclusion of assets and housing wealth or social transfers in kind. The Guide advised additional work to be conducted on several topics, where no clear-cut recommendations were made due to insufficient evidence from the current practices, such as hard-to-reach populations, imputed rent and housing cost, individual level poverty measures, wealth, spatial differences with regard to income and consumption poverty, subjective poverty and comparability of welfare aggregates.

19. In February 2017, the CES Bureau established the Steering Group on Measuring Poverty and Inequality to provide direction to the CES work on poverty and inequality statistics. Based on the challenges identified in the Guide on Poverty Measurement and in consultation with countries' experts, the Steering Group recommended establishing a task force to take further the methodological work and develop recommendations to countries on data disaggregation for poverty measurement. The CES Bureau approved the task force's terms of reference in 2017. The task force consisted of 30 statistical experts from UNECE member countries, other developed countries participating in the work of the Conference of European Statisticians, international organizations and academia. The experts in poverty measurement worked through 2018-2019 to develop the present Guide on data disaggregation.

20. The objective of the Guide is to consolidate current and emerging good practices in disaggregating poverty indicators and in assessing their robustness. The Guide provides methodological and practical guidance on data disaggregation to improve poverty-related measures at a national level and further enhancing international harmonisation. The Guide takes into consideration the SDG reporting needs and already available international guidance on data disaggregation. Drawing on the experiences of countries in the UNECE region, the Guide includes specific recommendations to national statistical offices and sets minimum standards on disaggregation of poverty measures that could serve as guidance.

C. Outline of the Guide

21. The ethical and practical purpose of disaggregating poverty measures has at least four implications that define the structure of this Guide. Firstly, there should be clarity about the definition of the groups to be considered. Secondly, every effort must be taken to ensure coverage of groups that are most vulnerable in data collection. Thirdly, it is paramount to continuously assess and document the quality of the poverty measures. Fourthly, poverty profiles obtained from conventional measures should be compared to profiles that would be obtained from supplemental measures to assess their robustness. Where this appears necessary, complementary measures need to be published together with conventional measures.

22. Chapter **Error! Reference source not found.** provides methodological and practical guidance on standard core variables for poverty disaggregation with the purpose to enhance further international harmonisation. The chapter offers recommendations to improve the quality, relevance and use of data, consistent with international human rights norms and principles for the identification of policy-relevant groups. It suggests a set of essential variables with background information, concepts and definitions of the variable and related

categories, and implementation guidelines. Reference questions are provided to illustrate implementation of data disaggregation in practice.

23. Some vulnerable or disadvantaged groups are particularly hard to count in general population surveys – either because they are hard to reach, such as the homeless, undocumented migrants, members of ethnic minorities or older people living in institutions, or because they are hard to identify, such as gender minorities. Chapter 3 looks at how to adapt data collection to fulfil the 'no-one left behind' commitment and reach beyond the traditional and established survey methodologies to capture those groups, that are most exposed to the risk of poverty.

24. To establish trust in poverty measurement and prevent misguided policies, statistical offices have to regularly assess and continuously improve the quality of their processes and accuracy of their data. Quality reports which describe the quality criteria and explain any instances in which these criteria could not meet, or statistical concepts could not be correctly applied will not only assist the correct interpretation but can also provide the basis for future improvements. Chapter **Error! Reference source not found.** provides analysis of how response rates and sampling precision may be improved in the measurement of poverty among relevant social groups. The chapter contains practical recommendations for national statistical offices on controlling sampling and non-sampling errors for small domains, weighting and improving coverage for hard-to-reach population groups.

25. Any methodology for measuring poverty relies on several assumptions and a multitude of decisions about how to set the poverty threshold, how to define resources and how to implement any particular methodology. While it is impossible to avoid these assumptions or “arbitrary” decisions, countries are developing supplemental or experimental poverty measures to assess their impact and improve the accuracy of the measurement. Chapter 5 describes individual country experiences with adjustments for difference in cost of living across regions and household circumstances and measurement issues such as social transfers in kind, disability cost or high medical expenditures, housing wealth, imputed rent, assets poverty and unequal sharing of resources within households as well as multi-dimensional poverty measures.

26. An outlook on pending issues for future work is presented in Chapter 6.

D. Summary of recommendations

1. Chapter 2: Standard core variables for disaggregation

27. Recommendation 1: Development and use of measures for disaggregation of poverty should follow the Human rights-based approach to data with emphasis on principles of self-identification and participation.

28. Recommendation 2: In line with the Recommendation 4 in the Guide on Poverty Measurement and considering other emerging needs, especially in the context of SDGs, the following variables are suggested for poverty disaggregation, wherever relevant and permitted by national legislation: age, sex, disability status, migratory status, ethnicity, household type, employment status, tenure status of the household, receipt of social transfers, educational attainment and degree of urbanisation.

2. Chapter 3: Including hard to reach groups in poverty measurement

29. Recommendation 3: Countries are encouraged to first identify, and then quantify, parts of the population not sufficiently covered in their poverty statistics. This assessment should especially address ethnic minorities, persons who are homeless, live in institutional households or have disabilities. They should further explore the causes and challenges why these or other populations may be underrepresented or not covered.

30. Recommendation 4: Countries should develop suitable methods to facilitate participation of hard-to-reach households in their survey programmes. The principle of self-identification or the use of survey instruments in different languages are simple examples for some basic measures, which aim to establish trust and improve accessibility.

31. Recommendation 5: If it is not feasible to include hard-to-reach groups on existing survey programmes, countries should develop targeted surveys to collect data on poverty and social exclusion specific to the groups, to be run at least every 5 years.

32. Recommendation 6: Censuses and large-scale surveys should include questions on self-identification of ethnicity, which allow for multiple identities. It helps to establish sampling frames which are needed to target ethnic minorities and hard to reach groups. This requirement is critical for the objective of leaving no one behind and to disaggregate survey data and poverty statistics for vulnerable groups.

33. Recommendation 7: Interviewer training for surveying minority groups should address cultural and group-specific aspects. Persons of the target populations should be involved in the set-up and development of fieldwork materials.

34. Recommendation 8: Further research should be directed at creating supplementary measures of poverty to reflect that the living circumstances of target groups do not always fit with standard household definitions.

35. Recommendation 9: Further research is needed to explore the possibilities for alternative sampling approaches, such as non-probability designs including online surveys, to measure poverty in hard-to-reach populations.

3. Chapter 4: Assessing and improving survey methods

36. Recommendation 10: Document coverage, precision and any departure from international standards in quality reports to be issued with each data release.

37. Recommendation 11: Strictly adhere to probability sampling and refrain from substitution.

38. Recommendation 12: Adjust the sample design and allocation for the required disaggregation. As a minimum the sample size for each group should never be below 50 units. Ideally estimation domains will be used as strata so that their size may be controlled.

39. Recommendation 13: Where available, consider the use of administrative or register data since it can limit response burden and increase accuracy.

40. Recommendation 14: Establish a clear collection protocol and monitor field work to ensure that it is respected. This should include sufficient interviewer training, ensuring a sufficient number of contact attempts and procedures to address barriers to survey response for at-risk groups (for instance, translations to address language barriers).

41. Recommendation 15: Ensure that vulnerable populations participate in the design of the study, are protected from any harm and can benefit from its results.

42. Recommendation 16: Minimize the impact of item non-response through imputation. Because poverty status is usually derived from several variables that have to be observed simultaneously; it is essential that group representation be preserved by adequate and transparent imputation rules.

43. Recommendation 17: Compensate for unit non-response and other sources of variation by applying a non-response adjustment and calibration. Ensure that these adjustments remain reasonable by limiting to adjustment factors (for instance to between 1/3 and 3).

44. Recommendation 18: Carefully assess the variance of all key estimates. Publish confidence intervals or coefficients of variation with the survey estimates and in quality reports so their precision can be compared to other surveys and over time.

45. Recommendation 19: Establish filtering rules for publications that eliminate unreliable estimates. Do not publish results based on fewer than 20 observations. Similarly, do not publish results with a coefficient of variation that is too high or a confidence interval that is too wide.

4. Chapter 5: Supplemental or experimental poverty measures

46. Recommendation 20: As a general rule, poverty measurement has to ensure equivalence of standards of living for all regions and groups within a country, notably with regard to needs of children/ persons with health impairments or disabilities. When disaggregating poverty estimates for smaller geographies, methodologies that take into account spatial differences in the cost of living are important, particularly in large countries with heterogeneous cultural norms and price levels. Relative thresholds such as those used in the European Union are a convenient practical alternative.

47. Recommendation 21: Equivalence of measurement should be assessed empirically. Sensitivity analysis can compare poverty profiles of official poverty measures with supplemental poverty measures using alternative equivalence scales. While simple equivalence scales based on the square root of family size are useful for international comparability, countries should explore the empirical development of equivalence scales that go beyond family size to include differences in needs based on age, disability status and health. If Social Transfers in Kind (STiK) are included in resources, special consideration needs to be given to appropriate equivalence scales.

48. Recommendation 22: Further research on the special needs of persons with disabilities is necessary to ensure these are taken into account in poverty measures. These adjustments may be done on the thresholds, perhaps through equivalence scales, or on the resource-side of the measure.

49. Recommendation 23:

- a) While the measurement of Social Transfers in Kind (STiK) continues to pose serious challenges, it is important to develop a mechanism to take them into account when estimating poverty and the impact of these transfers on poverty estimates. Supplemental or alternative poverty measures are important tools for illustrating the impact of these transfers on economic well-being. STiK can be particularly relevant for comparisons between different welfare systems, where STiK are more important than cash transfers in one country (or group) than another.
- b) Figures on total STiK should be presented together with poverty measures wherever possible as a useful indicator in its own right.
- c) STiK should be included in the measurement of poverty if their value can be empirically estimated on household or individual level with sufficient precision. Particularly relevant for poverty measurement are STiKs for food, shelter, clothing, and utilities. Some countries also make provisions for health care and education. If STiK are included in the resource measure this may affect the equivalence scale.
- d) If poverty headcounts of relevant groups would change by 10% after STiK some consideration in the poverty measure is highly advisable. If however measurement is very poor or its effect on poverty profiles is within the margin of sampling error, STiK should not be included in poverty measures.
- e) STiK can be valued at equivalent insurance cost or actual consumption or as a mix. Its total value and estimated number of recipients need to be assessed against administrative data on the total public cost on STiK.
- f) The value of STiK needs to be capped to a meaningful maximum. If STiKs are included in the resource measure, its value should never exceed the poverty threshold.
- g) If the value of STiK received is too difficult to obtain, the deduction of out-of-pocket expenses from the resource measure are a viable alternative. In such a situation however some poor individuals who have already curtailed certain expenditure may eventually appear as non-poor.
- h) Given the unavoidable and essentially arbitrary methodological choices regarding valuation and distribution of STiK, these need to be made fully transparent in regularly updated quality reports. In any case, users should be given the possibility to assess poverty measures with and without adjustments for STiK.

50. Recommendation 24:

- a) As an alternative to imputing rent, residual income after actual housing cost may be considered as a resource measure which reflects housing equity.
- b) Surveys should consider adding questions to measure housing costs and property values to facilitate the calculation of imputed rent.
- c) Given that the choice of method may depend on the available data and may contain essentially arbitrary elements, methodological choices need to be made fully transparent in regularly updated quality reports. In any case, users should be given the possibility to assess poverty measures with and without adjustments for imputed rent.

51. Recommendation 25: Assets are an important resource for determining well-being and countries should continue to experiment with ways to measure both income and asset poverty. At this point, the two-dimensional approach with a separate asset-based poverty rate calculated in addition to income poverty seems to be the easiest to communicate to the public.

52. Recommendation 26:

- a) In the immediate term, official poverty rates, collected at the household level, should be routinely disaggregated by sex and age. This has to consider especially the life cycle and specific living circumstances of prime age women who have children and/or live without a partner (e.g. in lone parent households).
- b) More research is needed to determine how best to address intra-household resource sharing in order to develop sub-household measures of poverty status. This is particularly important for the disaggregation of poverty estimates by sex and age. Surveys should continue to experiment with questions designed to determine individual control of resources and to measure material deprivation at the person level.
- c) Where possible, official poverty rates for men, women, children or other socio-demographic subgroups should be accompanied with results that consider unequal sharing of resources. At a minimum, national statistical offices should carry out sensitivity analysis for poverty profiles contrasting the conventional full pooling assumption with partial pooling and full separation of resources.
- d) To validate assumptions on within-household income distribution, income and material living standards should be considered in combination, wherever possible. Questions on sharing of personal income and/or personal material living standard can be adapted with relatively little additional effort from EU -SILC.

53. Recommendation 27: Following the SDGs, countries should implement multidimensional poverty measures to complement existing monetary measures of poverty. These multidimensional measures should be tailored to the national context and policy priorities and be tracked over time.

54. Recommendation 28:

- a) Deprivation measures need to be based upon a clear and explicit theory or normative definition of poverty in order to ensure that each indicator is a valid measure, i.e. that it measures poverty and not some other related (or unrelated) concept such as wellbeing or happiness.
- b) The validity of each indicator should be demonstrated, i.e. the amount of systematic error should be formally assessed and indicators should be dropped if they have a low validity.
- c) The reliability of each indicator should be determined, i.e. the amount of random error should be formally assessed and indicators should be dropped if they have a low reliability.
- d) A deprivation or poverty index should only ever be weighted if this results in a reduction in measurement error, i.e. if the differential weights improve the validity and/or reliability of the index.

55. Recommendation 29:

- a) Countries should use available datasets, such as Multiple Indicator Cluster Surveys (MICS) or household surveys to develop child-specific and life-cycle adapted multidimensional poverty measures that reflect the needs of children at different stages of development and allow for identification of intra-household differences between children. This type of measure can be performed at intervals of 3-5 years to complement more frequent disaggregated national measures, as this will give greater insight into childhood and adolescent poverty.
- b) In order to enhance availability and use of child poverty data, countries should collect data on all key dimensions related to children's rights, including health and nutrition, and introduce lifecycle appropriate indicators to measure the situation of each child in the household. Countries should consider introducing innovative ways to collect, monitor and report on child poverty data, including ways to encourage child participation in the monitoring and discussion of child poverty data and potential policy responses.
- c) In accordance with national definitions of monetary and multidimensional poverty, countries should revise and adopt survey tools to best serve their national needs for poverty measurements. Both household budget surveys (HBS) and MICS are flexible and can be adapted to reflect a national context, but without compromising cross-country comparability. MICS offers the potential to obtain data on a broader list of child-focused indicators that can be used to measure multidimensional child poverty.
- d) Statistical data is an important source for evidence-based decision making by policy makers, not only at national but also at regional and international level. Therefore, it is important to make statistical data openly available for all users. Hence countries should make all poverty-related data, including micro-data, publicly available and easily accessible for scientific research and production purposes. This would enhance research, policy design and policy innovation in this field, which is of utmost importance for devising policies for poverty reduction.

VI. Future work – measuring what matters

56. The recommendations presented in this Guide focus on the specific issues for which the Task Force on Disaggregation of Poverty Measures has been mandated. It is hoped that they will also contribute to the further improvement and convergence of measuring poverty.

57. National statistical offices operate in quite different legal environments and with often very different capacities. Yet their methodological problems are often rather similar and a model of “mutual learning” is vital to be efficient and effective in achieving the common target of measuring poverty. This Guide is an example of the fruitful collaboration between transatlantic partners which already have powerful statistical systems and reflects the dynamic progress in the countries of Eastern Europe and Central Asia.

58. With the creation of EU-SILC, the European Union has arguably been leading the development of harmonised methodologies for comparative measurement of poverty in the region over the last two decades. Eurostat guidelines proved especially useful for transition countries which previously could not draw on a tradition of statistical instruments for measuring poverty such as EU-SILC. Even more importantly however statistical indicators take a firm place for policy coordination in the European Union. As a rule it may be said, that what matters for the European Union needs to be measured first.

59. The new European Commission's framework regulation (EC 2019/1700),⁶ which will become effective in 2021, will have serious impact on EU-Member States. It aims to ensure consistent data collections on income and living conditions as well as labour force, health, education and training, use of information and communication technologies, time use and consumption and breakdowns for disaggregation. The regulation also aims at improving

⁶ <http://data.europa.eu/eli/reg/2019/1700/oj>

quality, timeliness, regionalisation and responsiveness to emerging policy needs. Priorities like these and the ongoing modernisation of data collections (notably the wider use of registers and online communication) are major challenges for future poverty measurement in the whole region.

60. Strong working relationships between statisticians who work on measuring poverty together needs to be built continuously through workshops, conferences, study visits and collaborative research projects which involve partners from across the whole region. A lot remains to be done. This chapter gives an overview of some of these immediate priorities.

A. Pending problems in measurement of resources

61. This Guide presented selected examples how social transfers in kind and housing cost and wealth are accounted for in practice. The adequate inclusion of stocks of wealth and non-monetary resources in the measurement of monetary poverty does however remain an important field for research. This holds especially for comparisons between countries which have quite different volumes of non-monetary transfers or different house ownership rates. Those comparisons are critically affected by the way such resources are considered in measurement.

62. It is important to emphasise that even the absence of appropriate adjustments comes down to the unwarranted assumption that such resources are zero. This assumption is clearly violated. For example, in high income countries of the European Union social transfers in kind for education amount to between 5% and 11% of adjusted gross disposable income. Non-monetary transfers in health have been estimated to between 3% and 13% (Eurostat 2019) while housing amounted to between 14% and 25% of adjusted net disposable income in OECD countries (OECD 2014). Together, these components will easily exceed one third of total income. These resources will hence gain increasing importance for countries in transition to higher incomes which are also characterised by increasing aggregate values for social transfers in kind, housing stock or other forms of wealth.

63. Any adjustments regarding resources which at best are known only on an aggregate level will inevitably require critical assumptions on their distribution. There is currently no agreement on methods to impute fictitious rental income or the value of public services. Even among high capacity countries of the European Union such consensus appears far away (Törmälehto and Sauli, 2017). Also, it remains unclear if not for the purpose of measuring poverty it would be more appropriate to instead consider out-of-pocket expenditures for housing or health and education services which can be observed empirically. In either case there may be reasons to demand a capping of the maximum value of resources that will be accounted for in the measurement of poverty. Otherwise poverty measurement would face the conceptual problem that individuals who happen to be rich according to their imputed resources may in reality be unable to fulfil daily needs which require cash.

64. In most developed countries income-based poverty measurement has gradually replaced or at least complemented consumption-based poverty measurement. This partly reflects the active role of the government in redistribution through tax and transfers. With further increasing prosperity, inequalities in wealth have emerged which may play an increasingly important role also for the assessment of relative poverty measures. This Guide provided only the first empirical examples. More countries are expected to explore wealth-based resource measures.

65. The implications of different approaches to measure resources would need to be assessed systematically with empirical data. Instead of only investigating the potential impact within one country however, comparative assessments which compare results from different countries and different approaches are crucially required to inform guidelines that could eventually support countries in adopting a common methodological approach.

B. Pending problems in measurement of needs

66. Like the measurement of resources, there remains unfinished business with regard to the assessment of needs. This is most evident with regard to the relationship between the cost of living and characteristics of the household, such as the number of adults, children or persons with special needs due to old age, care or disability. In the short run it will be advisable to establish guidance on a conventional equivalence scale for the region of Eastern Europe and Central Asia. The implicit cost of children reflected in that scale should be compared to empirical estimates for consumer demand, subjective income needs or material deprivation as well as conventional scales used for social security benefits.

67. Within ageing societies the empirical assessment of need for care cannot be limited to children only but has to include the cost for health expenditure, long term care and disability. This research is unlikely to be successful without close cooperation between Central Statistical Offices and agencies which have practical experience with these groups or are responsible for their social protection.

68. Problems in the assessment of needs are also inherent in the definition of multidimensional measures of poverty. The estimates obtained from the global MPI for the region indicate an extremely low incidence and would be hardly useful for practical purposes. Instead the elements of the various existing national MPIs need to be compared and possibly aligned to obtain comparable estimates. The same holds for the need to clarify the definition of a child specific multidimensional poverty index. Increased coordination between national stakeholders in the region as well as OPHI and UNDP on one side and UNICEF on the other appears essential.

C. Microsimulation and impact of transfers

69. Over the past decades, microsimulation has been developed as a powerful instrument to study redistribution mechanisms which operate in the modern welfare state. This opens new opportunities both for designing social policy as well as the production of statistics.

70. In the European Union, EUROMOD has become a widely used tool by academics and policy makers to evaluate and/or launch policy reforms. This tool combines policy rules as well as input microdata sets which are commonly used in the measurement of poverty. Through simulation it becomes possible to investigate the anticipated “overnight” effect if for example pensions or child benefits would be increased or entitlements altered. Such simulations also help to anticipate the macroeconomic impact of new social policy instruments or pension reforms. EUROMOD can also be useful to trace to what extent past developments can be attributed to actual policy intervention rather than business cycle or random events.

71. Moreover, the growing accessibility and the use of administrative data in the Statistical Institutes allow new synergies between microsimulation techniques and fiscal data sources. The use of tax returns as benchmark for the micro-simulated outputs together with the sample data (as in the case of the microsimulation model of the University of Siena), in some cases allows to avoid the potential issues in the exclusive use of a microsimulation model, mainly due to the survey under-reporting, and those ones of the fiscal data that could be affected by incomplete coverage, or tax avoidance and tax evasion.

72. To make such studies beneficial it is advisable to ensure close collaboration between those who set up the simulation machine and the producers of microdata. This involves also many technical aspects such as the level of aggregation as well as the imputation of unobserved income components. On the other hand, microsimulation techniques can help to constantly improve the empirical data base, for example if amounts which are collected only on gross level need to be converted into net values or vice versa (when only net income information are available from the survey).

D. Dedicated surveys on hard-to-reach populations

73. The target of eradicating poverty in all its forms implies that the phenomenon is likely to be more difficult to observe in the future with conventional methods. Remaining pockets of poverty are often particularly difficult to access. Increased attention will therefore be required to ensure that the measurement of poverty does not leave behind those population groups which are at highest risk.

74. Conventional household surveys are usually not designed to represent small or hard to reach populations. Increasing sample size and improving allocation as well as taking measures to better accessibility (e.g. by adequate interviewer training, target group participation, translation) may be helpful. This may not be successful for all population groups, especially if the measures of poverty do not appear appropriate, for instance when the normal subsistence involves irregular or clandestine activity, such as day labour, begging or smuggling, or consumption and income have less importance, such as with persons living in institutions.

75. Dedicated surveys may be used to overcome the constraints of conventional household surveys adopting specific techniques to investigate living conditions of hard to reach populations, as in the case of homeless persons or Roma people. Such special data collections can complement traditional poverty measures. To improve the use of dedicated surveys, increasing coordination and exchange of experiences between the involved organisations appears crucial.

76. It is worth to cite the case of Multiple Indicator Cluster Survey (MICS), as the number of countries which are supported by UNICEF to conduct MICS is increasing. Many of those countries opted to have special samples among the Roma population. Likewise, the EU Agency for Fundamental Rights (FRA) has developed a methodology for sampling Roma and other vulnerable groups. Both operations point beyond conventional monetary measurement of poverty. In order to achieve comparability within the poverty estimates for the whole population it is important to better coordinate activities with such operations. This coordination includes the use of common questionnaire modules as well as sampling.

E. Use of registers

77. Most Member States of the European Union have already moved towards an increased use of administrative data for statistical purposes. This move is driven mainly by the need to reduce the cost of data collection, to reduce the burden on respondents, and reuse existing information.

78. The use of administrative data does however require initial investments, including in legal and technical frameworks. The usage of administrative information has important implications on all quality dimensions, including breaks in series, timeliness, comparability and privacy.

79. Administrative sources include population registers, tax registers, social security data, and health and education records. Even if most countries are using one or many of these sources, the degree to which administrative information is considered in the measurement of poverty varies between countries and across statistical domains. In particular, some countries have chosen to design their samples according to the selected respondent model, in which only one person per household is interviewed and information on cohabitants is exclusively derived from register information. This model differs in many ways from the conventional approach and will be reflected in the results.

80. Moreover, registers in some cases do not provide enough information about poor persons and it is necessary to complement this information with data coming from the surveys. Given the potential impact on results, further exchange of experience in using registers in the measurement of poverty is most urgently required to ensure efficient use of the available information and methodologies but also to potentially improve comparability.

F. Link to macro aggregates

81. Monetary poverty is measured on income or consumption. In this Guide, the need to consider aggregates has been discussed especially with regard to social transfers in kind and imputed rent. It turns out that the aggregates and moreover the growth rates are not strictly comparable between microdata and macro data. The latter relate in particular to the UN System of National Accounts. It is noteworthy however, that its definitions are followed to varying degrees by countries and are often subject to revisions.

82. Users who seek robust policy implications would expect that producers have carried out a reconciliation or provide explanations when discrepancies occur to. The necessity of reconciling household survey information with the national accounts has been recognized in the work of international and national statistical agencies (see for example Fesseau, Wolff, and Mattonetti 2013 and Mattonetti 2013 on the work of an OECD-Eurostat Expert Group). A recent Eurostat working paper addressed specifically the reconciliation of EU-SILC and the national accounts (Törmälehto 2019).

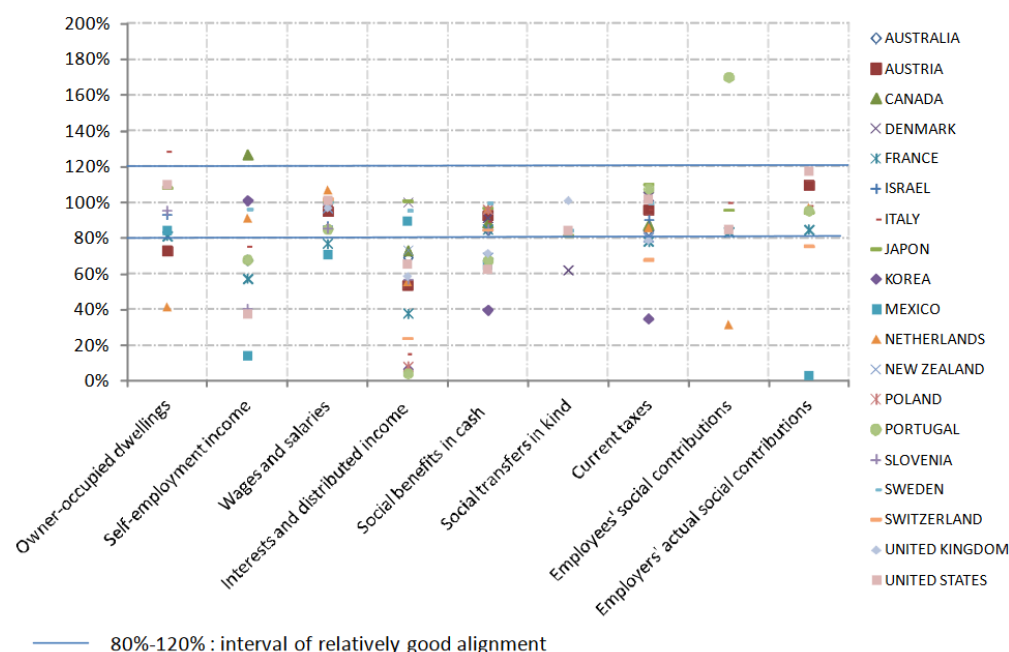
83. The discrepancies which are observed empirically are capable of altering poverty profiles quite drastically. For example ROSSTAT (2017) estimated that in 2012 about 30% of the corresponding macro-economic aggregate was missing in its income survey. As a consequence, ROSSTAT established a special calibration to adjust the income distribution and ensure better coherence. This measure approximately halved the discrepancy with the macroeconomics aggregate but has also reduced the estimated poverty rate from 15.8% to 12.4%. For OECD countries, discrepancies within 80% to 120% of the corresponding national accounts data are considered as a relatively good alignment, given the presence of differences in definition as well as other errors on both sides. For some components of income and in some countries the discrepancy does however exceed by far that reported by the Russian Federation.

84. It is increasingly difficult to obtain quality data from household surveys, due to both falling response rates and concerns with the accuracy of survey responses. One method to evaluate the quality of survey responses is to compare aggregate estimates from surveys to administrative benchmarks, such as aggregates from the national accounts. In addition, some national statistical offices adjust survey estimates to align them more closely with these administrative benchmarks.

85. While these comparisons and adjustments are useful, they should be made with caution given the conceptual differences between survey income concepts and administrative income concepts. For example, for the United States, surveys measure “money income” which is cash regularly available to households while the national accounts measure “personal income” which is the aggregate value of compensation including cash and non-cash benefits. Administrative reports of expenditures on social transfers in kind may include many administrative costs that should not be attributed to individual households. Second, survey sampling universes may not align with the administrative universes. Most surveys include only households in the sampling frame while administrative data has a more inclusive universe.

86. Future work should examine best practices by national statistical offices in the utilization of macro aggregates to evaluate and/or adjust estimates from household surveys. Also, the analysis of inequality would also benefit from integrated data-that allows the joint assessment of distributions of household income, consumption and wealth (Stiglitz et al, 2018b).

Figure 1
Difference between national accounts aggregates and income micro data



Source: Fesseau et al, 2013: 21.

G. Dynamics of poverty and exclusion (panel data)

87. To understand the ways in and out of poverty which are relevant to policy makers, it is important to track changes over time in the circumstances of individuals. Without longitudinal data it is quite impossible to distinguish between opposite extremes of permanent poverty or perfectly fluid poverty. For example, a poverty rate of 16 per cent would be perfectly consistent with the same one sixth of the same population remaining permanently below the poverty threshold or a population where everyone spends one year in six in poverty.

88. Only panel data can determine how much mobility there is within the poverty population. Available longitudinal data has shown that even when poverty rates do not change there can be substantial turnover (Till and Eiffe, 2010). This has two implications. Firstly the assumption that all the poor remain persistently in the same disadvantaged condition can be rejected. Secondly, the number of persons who experience poverty is actually larger than can be seen from cross sectional data. The transitions between different statuses reveal that sometimes poverty transitions do not lead very far from the poverty threshold. Hence, the longitudinal study of poverty provides an opportunity to distinguish individuals in persistent, transitory and oscillating poverty from individuals who are very unlikely to ever become poor. The fact that existing longitudinal data remains underused (Eiffe and Till, 2014) indicates a need to strengthen the capacity within statistical agencies as well as to improve access to longitudinal micro data for researchers.

89. A number of mainly academic panel surveys exist in the region. These operations have cumulated considerable methodological and research experience which should be reflected more critically by official statistics. For example, the Panel Survey of Income Dynamics (PSID) by the University of Michigan the United States which was started in 1968 is probably the longest running panel survey used to study poverty dynamics (Bane and Ellwood, 1983). In 1983 the US Census Bureau decided to launch its own Survey on Income and Programme Participation (SIPP) to be able to better address the dynamics of poverty in its official measurement of poverty (Mahanty, 2019).

90. Since the 1980s Panel surveys have been widely used for poverty measurement in Europe, including the German Socioeconomic Panel (GSOEP) run by the German economic research institute (DIW); the British Household Panel Study (BHPS) or its successor the Understanding Society Survey run by the University of Essex (Ferragina et al, 2013). The

Russia Longitudinal Monitoring Survey (RLMS) started in 1994. When such academic surveys exist in parallel the assessment of their consistency with poverty measures published by statistical offices is essential to maintain credibility towards users.

91. The measurement of poverty with panel data involves special methodological problems, such as panel attrition and the loss of representativity with regard to migration which happened after the panel was started (UNSD 2005). For example, in the case of the RLMS only 29 percent of the original sample were followed up after 20 years (Kozyreva et al, 2016). It is hence extremely important to carefully weigh the purpose of measuring the extent of poverty with the purpose of understanding its dynamics.

92. A genuinely comparative source for poverty statistics in the European Union during the 1990s was the European Community Household Panel Survey (Fourage and Layte, 2005). It was terminated after seven years, partly because the political process of the European Union required more robust cross-sectional poverty indicators which should also be anchored firmly in the official statistical system. The rotational EU-SILC design therefore has a much larger cross-sectional sample than the ECHP but a relatively short panel duration and a small sample size for the panel component. Research examples include persistent poverty (e.g. Weber, 2019) as well as transitions (e.g. Vaalavuo, 2015, Guggisberg et al, 2019).

H. Privacy and access to microdata

93. Steps taken by national statistical offices to prevent any outside entity from identifying individuals or businesses in the statistics they publish are known as disclosure avoidance, disclosure limitation or disclosure control. Disclosure avoidance methods have evolved over time but historical methods cannot completely defend against threats posed by today's technology. Growth in computing power, advances in mathematics, and easy access to large, public databases pose a significant threat to confidentiality. These forces have made it possible for sophisticated users to ferret out common data points between databases using only our published statistics. If left unchecked, those users might be able to stitch together these common threads to identify the people or businesses behind the statistics. The process is called re-identification, and that threat has become more real with today's technology.

94. For the 2020 Census, the U.S. Census Bureau is moving to a new, advanced, and far more powerful confidentiality protection system, which uses a rigorous mathematical process that protects respondents' information and identity. The new tool is based on the concept known in scientific and academic circles as "differential privacy." It is also called "formal privacy" because it provides provable mathematical guarantees, similar to those found in modern cryptography, about the confidentiality protections that can be independently verified without compromising the underlying protections.

95. "Differential privacy" is based on the cryptographic principle that an attacker should not be able to learn any more about a person from the statistics published using your data than from statistics that did not use your data. After tabulating the data, the Bureau will apply carefully constructed algorithms to modify the statistics in a way that protects individuals while continuing to yield accurate results. This method assumes that everyone's data are vulnerable and provide the same strong, state-of-the-art protection to every record in our database.

96. Future work should examine best practices in disclosure protection techniques, helping national statistical offices balance the competing demands of data accessibility, transparency and privacy protections.

I. Comparative quality reporting

97. This Guide has highlighted the need to regularly assess the quality of poverty measurement and inform users about any departures from conventional international standards. The Guide also helps producers to document their work and continuously improve quality of data. If quality reports from different countries are consolidated, this can generate a rich repository of methodological practices. This can also support mutual learning and a

long-term convergence of data production and enhanced comparability. To make this possible, international agencies can play an important role. UNECE, Eurostat and CIS-STAT already fulfil important functions to facilitate coordination of methods as well as statistical indicators.
