UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

Subjective Poverty

Report

prepared by the UNECE Task Force on Subjective Poverty Measures

Acknowledgements

This Report has been prepared by the UNECE Task Force on Subjective Poverty Measures, which consisted of the following members representing national statistical offices, international organizations, and academia:

Thesia Garner, U.S. Bureau of Labor Statistics – Chair of the Task Force

Nikki Graf, U.S. Bureau of Labor Statistics
Jake Schild, U.S. Bureau of Labor Statistics
Andrew Heisz, Statistics Canada
Kimberly Newman, Statistics Canada
Christine Laporte, Statistics Canada
Eric Olson, Statistics Canada
Alex Miller, Statistics Canada
Rania Abdulla, Statistics Canada
Rana Maarouf, Statistics Canada
Jarl Quitzau, Statistics Demark
Daniel Gustafsson, Statistics Demark
Yafit Alfandari, Israel
Ellys Monahan, Office for National Statistics
Ellys Croal, Office for National Statistics
Tim Vizard, Office for National Statistics
Andrew Zelinsky, Office for National Statistics
Anna Szukiełoć-Bieńkuńska, Statistics Poland
Maria Vyshnikova, Belarus
João Hallak Neto, Brazilian Institute of Geography and Statistics (IBGE)
Leonardo Santos de Oliveira, Brazilian Institute of Geography and Statistics (IBGE)
Agata Kaczmarek-Firth, Eurostat
Estefania Alaminos Aguilera, Eurostat
Carlotta Balestra, OECD
Elena Danilova-Cross, UNDP Regional Bureau for Europe and CIS
Esther Dzifa Bansah UNDP Regional Bureau for Europe and CIS
Alexander Kirianov, CIS-Stat
Gerardo Leyva, INEGI Mexico
Adriana Pérez, INEGI Mexico
Gwyther Rees, UNICEF
Siraj Mahmudlu, UNICEF
Sabina Alkire, OPHI
Fanni Kovesdi, OPHI
Tomas Zelinsky Durham University (United Kingdom)
Martina Mysikova Institute of Sociology of the Czech Academy of Sciences

Table of Contents

Chapter 1. INTRODUCTION

Objective poverty measures alone are not sufficient to understand the complexity of poverty and that subjective measures can complement them in important ways, especially with regard to reaching the poorest and making their voice heard.

Given this fact, during the 2019 Conference of European Statisticians Bureau meeting, subjective poverty measurement was selected as a topic for in-depth review (/ECE/CES/2019/14/Add.13). This was followed up by an in-depth review of subjective poverty measures which was presented before the Bureau of the Conference of European Statisticians (CES) in October 2021. This was largely based on a paper prepared by Statistics Poland summarizing survey responses from National Statistical Offices from 52 countries, with additional information regarding international activities. Reference is also made to another study which was conducted by the United Nations Development Programme of 15 countries/territory in Europe and Central Asia region. This study was conducted during the COVID-19 outbreak in 2020.

A summary of the in-depth review follows (from document ECE/CES/BUR/2021/OCT/2):

1. Both the literature review and research practices indicate different ways of understanding and defining the term subjective poverty. This indicates a need to clarify terminology and develop a system of concepts related to the measurement of subjective poverty.

2. At present, both at national and international level, objective indicators play a dominant role in monitoring the phenomenon of poverty, and statistical offices give priority to the production of these data. The measurement of subjective poverty is generally very limited or not considered at all.

3. In the framework of "official statistics", direct self-identification as poor is very rarely used. In most countries, household surveys include questions on subjective assessments of living standards, which can provide a basis for calculating indirect measures of subjective poverty. However, in practice these data are not fully exploited for the analysis of subjective poverty.

4. The omission of the subjective approach, as complementary to the objective measurement, significantly weakens the diagnosis of poverty. In this context it seems important to disseminate knowledge on the usefulness and interpretation of subjective data on poverty.

5. Taking into consideration the conclusions of the review of methods used to measure subjective poverty and the opinion of National Statistical Offices on the usefulness of work in this area at international level, it is proposed to develop a guide on methods for measuring subjective poverty and to agree on a short list of harmonised subjective poverty indicators for international comparisons. To ensure the implementation of these tasks it is proposed to establish under the umbrella of the Conference of European Statisticians a Task Force on Subjective Poverty Measurement.

The Bureau asked the UNECE Secretariat, together with the Steering Group on Measuring Poverty and Inequality, to prepare a proposal for follow-up work addressing the priority areas raised in the in-depth review, considering the discussions on subjective poverty at the meeting of the Group of Experts on Measuring Poverty and Inequality in December 2021. During the December meeting it was suggested that a task force be created to consider going beyond quantitative approaches to measuring poverty to include qualitative measures as well.

The UNECE Secretariat together with the Steering Group on Measuring Poverty and Inequality prepared terms of reference for the Task Force on Subjective Poverty Measures. The objective of the Task Force was to develop a guide on measuring subjective poverty, including a set of subjective poverty indicators that could be used for international comparison. As noted from CES Bureau discussions in October 2021 and February 2022, the proposed list of subjective poverty indicators to be developed should be coherent, holistic, and short. The indicators should relate to existing international work, i.e., to the measuring of subjective perception of living conditions defined in the EU Survey on Income and Living Conditions (EU-SILC), and to the OECD guidelines on measuring subjective well-being. The proposed guide on measuring subjective poverty should include a list of indicators, the related conceptual considerations, and guidelines on how to develop the indicators. In follow-up, electronic consultations with the CES member States on the in-depth review of subjective poverty measures were conducted in April-May 2022 (for reference, see ECE/CES/2022/9/Add.1, 31 May 2022). The following 13 countries replied to the electronic consultation: Austria, Belarus, Canada, Costa Rica, Denmark, Finland, Hungary, Lithuania, Mexico, Poland, Russian Federation, Turkey, and Ukraine.

A summary of comments from these consultations follows:

1. All responding countries welcomed the outcome of the in-depth review paper and expressed support for further steps in the area.
2. The proposal to develop a guide on measuring subjective poverty containing description of approaches and best practices, system of indicators and methodology behind their measurement as well as further recommendations for statistical services concerning international comparisons was highly valued.
3. Poverty in general as well as subjective poverty are complex phenomena. Clarified terminology and unambiguous interpretation are preconditional for international harmonisation. Different economic, social, political, and cultural conditions across countries should be taken into consideration when measuring subjective poverty.
4. The use of the subjective approach as complementary to the objective measurement can be a very useful and efficient diagnostic tool of poverty. It allows for a better understanding of what poverty means to people and verifying whether objective evaluations of poverty are consistent with social experience. At the same time, nationally and at the policy level having more than one measure of poverty could be challenging and likely to require a large dissemination effort to make use of additional measures of poverty sufficiently widespread.

5. There was some agreement that the proposed list of subjective poverty indicators to be developed should be coherent, holistic, and short.

According to Members of the Task Force and experts responding to the survey and electronic consultation with National Statistical Offices representatives, subjective poverty measurement is not an alternative to objective poverty measurement but should be considered as complementary. The subjective approach shows the problem of poverty from a completely different perspective than the objective one.

Applying a subjective approach allows for a better understanding of what poverty means to people, as well as to verify whether objective evaluations of poverty are consistent with the social perception of this phenomenon. Subjective measures also provide information on 'public moods,' which can influence people's behaviour in both the economic, social and political spheres. Statistical analyses related to the use of subjective and quasi-subjective measures may also be used to verify and even construct measures of an objective nature (e.g., the consensus method for constructing deprivation indices, verification of equivalence scales used).

The purpose of this guide is to enrich the subjective assessment of poverty by improving the understanding of what people think it means to be poor and by going beyond a purely economic approach to poverty measurement. This guide builds upon existing UNECE networks of experts in measuring poverty and inequality and follows the methodological work under the Conference that has led to the publication of the Guide on poverty measurement in 2017 and the Guide on disaggregated poverty measures in 2020.

Chapter 2. FOCUS ON SUBJECTIVE POVERTY

I. INTRODUCTION

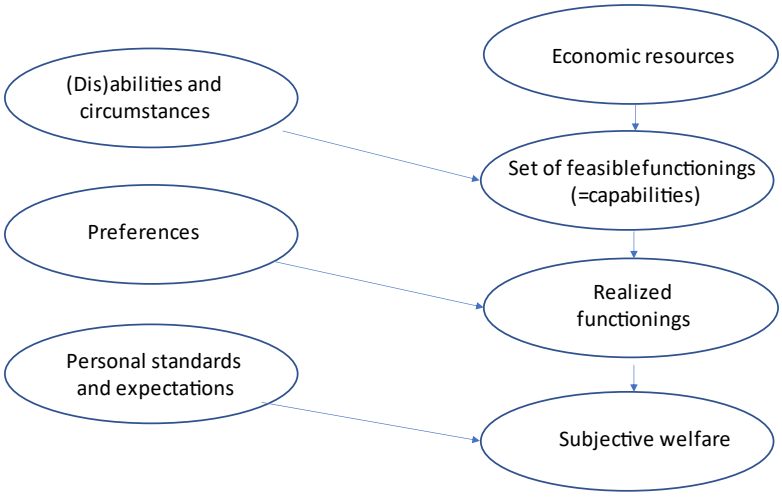
Scholars across different disciplines of the social sciences agree that poverty is a multidimensional phenomenon. It is well recognized that traditional resource-based indicators (e.g., income compared to an official poverty line) alone cannot fully capture the complex nature of well-being, and thus ignoring other than the traditional or objective income/expenditure-based poverty measures can distort the overall picture. Like objective measures, the focus of this report is poverty defined in terms of people not having economic resources to realize a set of basic "functionings" or minimum level or standard of living (Sen 1985, 1993).[1] But how to determine whether this minimum level has been achieved can be measured using subjective measures, not just objective ones.[2] Like for other measures of

[1] An alternative conceptualization of poverty is based on the *scarcity theory* (Mullainathan and Shafir, 2013). Following this theory, poverty can be defined as "the gap between one's needs and the resources available to fulfil them" (Mani et al, 2013, 976). Identifying one's need and this gap is based on subjective assessments and can be used to define poverty.

[2] There is much research on the dynamic relationship between the subjective and objective measures. For example, many sociologists write about it regarding social boundaries and identity, for example Lamon and Mizrachi (2012), Mizrachi and Zawdu (2012), and Harold et al. (2021). Blanchflower and Bryson (2023) explore the role COVID-19 and the Great Recession had on objective and subjective well-being.

poverty, this achievement can be influenced by many factors (see Figure 1). While poverty can be approached from various perspectives, including domains such as human rights or sustainable development, for example, the UNECE Task Force on Subjective Poverty determined that its primary focus would be on economic poverty.

Figure 1. Concepts used in the definition or measurement of poverty



From Karel Van den Bosch, *Identifying the Poor Using subjective and consensual measures*, Ashgate Publishing, Hampshire, England, 2001, page 6.

The challenge for National Statistical Offices is to develop measures that can tie various aspects of poverty together, and that then could be used by governments to determine how effective policies are in supporting people in meeting minimum needs. We propose that subjective measures be included among the set of assessment tools used by countries. We are not proposing that these replace objective measures or multidimensional measures; rather that these be included in the arsenal used by countries to assess poverty. The Stiglitz et al. (2009) report cites the need for wider perspective and recommends that objective and subjective measures of well-being be included in a dashboard. The OECD references this report and its recommendations as a motivation behind collecting subjective well-being data (OECD, 2013). Additionally following the report, Eurostat developed the EU-SILC ad-hoc module on "wellbeing" in 2013. All of which has led to the creation of the OECD Better Life initiative (2023) which includes objective and subjective measures but no measure of poverty specifically. The primary purpose of this chapter is to provide an overview of the theoretical and conceptual background of subjective poverty measurement.

II. DEFINITION OF SUBJECTIVE POVERTY

To understand the concept of subjective poverty, we start with a description of what is subjective, emphasizing its relevance within the context of welfare. Something is subjective if it reflects one's personal views, experiences, preferences, attitudes, values, or background and arises out of one's own perceptions. In developing these perceptions, individuals compare their perceived status against their own standards of desirability. These perceptions are

influenced by each respondent's own income/expenditures/wealth, personality, family influences (e.g., background such as religion, disability of family members), and subjective well-being (e.g., happiness, life satisfaction in general) plus views regarding one's community, society at large, and the general economy. Along these lines, many people now are familiar with the more broadly defined concept of "subjective well-being," which focuses on life satisfaction or happiness (Mahoney 2023). Indicators of subjective poverty can be seen as complements to indicators of subjective well-being, with both drawing on how to measure these.[3] An early contribution to the quantification of happiness in surveys was Cantril's (1965) idea of the "ladder of life." With reference to subjective well-being, for example see Diener (1984), Kashdan (2004). Early applications of subjective welfare concepts in economics included van Praag (1968), Kapteyn and van Praag (1976), and Easterlin (1974). Though the origins of subjective welfare come from happiness or life satisfaction, we focus here on subjective economic welfare and specifically subjective poverty.

The determination of whether an individual or household is poor is based on their situation compared to a standard which could be objectively or subjectively determined and could be assessed in terms of a money-metric response (e.g., with respect to levels of income, expenditures, consumption, or wealth) or qualitative categorical response (e.g., one's perception of being poor or satisfaction with one's income). For subjective poverty, measures do not rely on any externally given absolute or relative resource-based threshold or measure. Rather, they rely on individuals' own assessments of their economic situation, or that of others' economic situations. For example, being in poverty based on a subjective measure means could mean being below a subjectively defined national threshold, experiencing a state of being that is less than that of others, or experiencing a state of being that is less than one's own standard such as reporting having great difficulty making ends meet. The majority of subjective assessments, particularly those associated with poverty, reflect the respondent's own situation; however, other questions refer to hypothetical situations or families. Assessments referring to another's living conditions or expectations regarding minimum living standards are often referred to as hypothetical or consensual. In this report we consider hypothetical/consensual measures as a type of method for assessing subjective poverty. A detailed discussion comparing the use of the respondent's own situation or a hypothetical one is provided in Chapter IV.

A. Contrast to objective poverty

Subjective and objective assessments of poverty are related; however, they are distinct. When considered together, they provide a more comprehensive view of poverty. Objective approaches are typically based on household income, expenditures, consumption, wealth, access to or possession of various goods or services or "attainment" of certain observable and "objectively" measurable variables. On the other hand, subjective approaches rely on respondents' self-assessments of their own or another's financial and/or material situations and reflect all circumstances of their living conditions. With subjective measures there are particular concerns about methodological issues such as comparability (across people and time), validity, reproducibility, and generalizability cross-nationally. While objective

[3] See Simona-Moussa (2020) for a recent study of subjective wellbeing and measures of vulnerability to poverty considered together.

measures, such as a specific income level, can be influenced by these same circumstances, the reporting of this income is not expected to be influenced by one's self-assessment of one's financial situation. The objective approach is typically the preferred option by national and international statistics offices as the data are often readily available from large-scale household surveys and cross-country comparisons are more easily understood; however, (low) income only represents one dimension of poverty.

To produce valid and practical poverty standards for a country, subjective assessments are also needed. These assessments provide insight into how well people are faring personally and adapting to policies to alleviate poverty. In addition, they can be used as indicators of economic insecurity or vulnerability regarding needs that are unmet by current policies.[4] For example, a family may have income that is just above an objectively defined poverty threshold, but still may have difficulty meeting its material needs due to circumstances not accounted for in this objective measure. In this case, a subjective measure can provide additional information for the development of policies to improve the economic well-being of such families that income alone has not been able to address.

B. Frameworks for subjective poverty

Recent UNECE studies have proposed alternative frameworks to group questions that can be used for the measurement of subjective poverty. The UNECE Guide on Poverty Measurement (2017) proposed grouping questions into three groups: (1) ability to meet various needs focused on financial restrictions faced by the household; (2) considering oneself as poor via individual self-assessment; and (3) income necessary to make ends meet and households' minimum perceived needs. In a 2021 report published by the Conference of European Statisticians, Statistics Poland presents a framework based on responses to a survey on current country practices for measuring subjective poverty (2021). They classify questions as (1) direct identification, (2) perceived financial difficulty, and (3) a subjective poverty line approach. The subjective poverty line approach is divided into two subcategories: perceived poverty line and statistical methods.

The purpose of subjective poverty questions is to provide a subjective measure of the welfare space, where the "welfare space" is defined as economic poverty. To measure the welfare space, we first need to operationalize it. Ravallion (2014) suggested there are two approaches to measuring subjective poverty based on responses. The first approach asks for a money metric of subjective welfare, and the second approach uses qualitative categories in the welfare space. Adopting Ravallion's suggestion, we propose a framework for thinking about subjective poverty questions based on the same two approaches. Our framework aligns closely with the work by Statistics Poland and the UNECE proposal, while also taking into consideration the qualitative categorical classification proposed by the OECD in their 2023 report, Subjective Well-being Measurement: Current Practices and New Frontiers.[5]

[4] For an example, see Duboux and Papuchon (2019a,b) and Bertolini et al. (2017).

[5] Alternative frameworks are available when discussing subjective wellbeing more generally, rather than subjective poverty specifically. For example, Ryff (1989) discusses wellbeing questions using the framework of eudaimonic (psychological) and

Money metric questions ask respondents to report a specific monetary value. The subject of these questions is typically income or expenditures with respect to some attribute, such as ability to make ends meet, satisfaction, or adequacy of consumption, and were designed for estimation of subjective poverty lines.6 Though attempts have been made to apply simpler methods, such as averaging responses to subjective quantitative questions (such as respondents reported minimum income to meet basic needs), or contrasting the responses directly to the actual income (comparing respondents actual income to their reported minimum incomes), these (naïve) methods lead to less reliable results. This is because individuals often misperceive the true minimum income. Econometric methods have been developed that are based on the intersection of actual and reported minimum incomes that produce reliable results (Knight and Gunatilaka, 2012; Garner and Short, 2005). It is the multidimensionality of factors considered by respondents and the heterogeneity in their answers that predetermines the necessity to apply appropriate econometric techniques to analyze the subjective quantitative questions.7

In contrast, qualitative questions rely on categorical responses, rather a specific monetary value, and typically ask respondents about perceptions of their (or a hypothetical household's) material, financial, or economic situation. For instance, does the respondent consider his/her family to be poor? Yes or No. The goal of such questions is for respondents to assess their situations holistically as opposed to providing a particular income or expenditure. When assessing their financial or economic situation, respondents are expected (and sometimes asked specifically) to consider factors such as income sufficiency, the extent of their savings and other financial assets, their ability to repay debt, and their capacity to cover unexpected expenses. Within the concept of qualitative questions, we further operationalize the welfare space by specifying three subcategories or groups based on what the question is asking of the respondent: evaluation, identification, and prediction. More detailed descriptions of the money metric and qualitative categorial questions, as well as examples, are provided in Chapter IV Section A.

hedonic (life satisfaction, negative affect, and positive affect). In their 2013 report "Subjective Well-Being: Measuring Happiness, Suffering, and Other Dimensions of Experience," the National Academies of Science (NAS) build of Ryff's framework. They classify subjective wellbeing questions as evaluative, experienced, and eudaimonic. The 2023 OECD report, Subjective Well-being Measurement: Current Practices and New Frontiers, presents a similar framework, classifying questions as evaluative, affective, and eudaimonic (page 6) as follows. (1) Life evaluation: Evaluative measures of subjective well-being refer to the general assessments people make of their lives, or specific aspects of it, and is most commonly captured through an indicator asking respondents to reflect on how satisfied they are with their lives (i.e. life satisfaction). Domain satisfaction measures, relating to how satisfied one is with various aspects of one's life, also fall under the evaluative heading. (2) Affect: Affective measures capture people's feelings, emotions or states, often measured with respect to a defined time period (e.g., "over the course of yesterday", etc.).)3) Eudaimonia: Eudaimonia can be thought of as psychological flourishing, operationalised in the Guidelines as a measure of feeling one's life has purpose or meaning, though also containing aspects of autonomy, competence and self-actualisation.

[6] While subjective monetary measures that ask about income or expenditures might be more useful in developed countries, measures focusing on consumption could be more relevant for lesser developed ones. Consumption-based measures typically focus on one's assessment of the value of consumption needed for the respondent to feel well-off and account for not just income but all resources available, for example, home production and uses of credit and access to wealth.

[7] See Chapter IV Section B for an overview of the most common estimation procedures.

C. Collection and analysis of subjective poverty at National Statistical Offices

Measurement and analysis of subjective poverty tend to be neglected or omitted by most National Statistical Offices. This was the conclusion of Statistics Poland based on an in-depth review of current country practices for measuring subjective poverty that was tasked by the Bureau of the Conference of European Statisticians, under the auspices of the United Nations Economic Commission for Europe (UNECE 2021).[8] Seven of the 52 countries surveyed did not report collecting any information or conducting any work related to subjective poverty.[9] Among the remaining 45 countries, all reported asking subjective poverty questions, but only a small subset of these regularly produce, analyze, and publish data in this area. However, 37 of the respondents saw a need to prepare a guide providing an overview of the methods used to measure subjective poverty, and 34 countries were in favor of working on a short list of subjective poverty indicators for international comparison.

Another study with data collected from national statistical offices was conducted by the United Nations Development Programme (UNDP). The focus of this study was Socio-Economic Impact Assessments (SEIAs) of households and their response to COVID-19 (Danilova-Cross 2022). Information was collected from 15 countries with six of them reporting the collection and use of subjective poverty measurement;[10] five of these embarked on the collection of primary data to support the measurement; and one, Serbia, reporting making use of subjective poverty measures in its annual national surveys. In the surveys, households were asked questions to assess their perceptions of the Covid-19 pandemic on changes in the household levels of income, their ability to meet material and non-material needs or household expenses as they fall due. This approach "gave a voice to respondents and sought to determine poverty criteria on the basis of their opinions and experiences resulting from the pandemic. Employing this method in socio-economic impact assessments is of particular importance as it helps gauge where economic hardship is being experienced in the face of a global pandemic" (page 6).

It should be noted that the results of the study conducted by Statistics Poland and the one conducted by the UNDP (Danilova-Cross 2022) are based on National Statistical Offices regarding country specific measurement and analysis. Several statistical offices have conducted analyses in an experimental capacity or commissioned research to be done by individuals outside of their agency. Much of this work is cited and discussed in the brief review of the literature provided in the next chapter.

D. Collection and analysis of subjective poverty at International Agencies

In contrast to the lack of work in this area by National Statistical Offices, several international

[8] A copy of the report can be found via the following link: https://unece.org/sites/default/files/2021-10/02_In-depth_review_Subjective_poverty.pdf.

[9] These seven countries are Azerbaijan, Czech Republic, Dominican Republic, Georgia, Japan, Mongolia, and United States. Although the Czech Republic did not report collecting data related to subjective poverty, they participate in the European Union Statistics on Income and Living Conditions Survey, which does collect data related to subjective poverty. It should also be noted, after this survey was conducted the United States began collecting data related to subjective poverty via the Household Pulse Survey. For more information about this question see Garner et al. (2020).

[10] These six include: Kyrgyz Republic, Moldova, Serbia, Tajikistan, Ukraine, and Uzbekistan.

organizations have demonstrated positive practices in measuring some aspects of subjective poverty. Two agencies in particular are Eurostat and the OECD.

At the European level, EU-SILC[11] is the EU reference source for comparative statistics on income, social inclusion and living conditions.[12] The EU-SILC survey, which is managed by Eurostat (European Commission), is a household and individual data collection which output is harmonised as it is regulated by legislations.[13] Among the different variables that EU-SILC collects, some of them (e.g., in the field of subjective assessments of living standards, questions about making ends meet) constitute a potential data source for measuring some aspects of subjective poverty at the European level (e.g., estimating quasi-subjective poverty lines or calculating indirect measures of subjective poverty).

On the basis of EU-SILC data, analytical work in the area of subjective poverty has been carried out by various research centres (Zelinsky et al., 2022). In addition, Eurostat, on the basis of a harmonised question included in EU-SILC, calculates and publishes on its website the indicator "Inability to make ends meet" as a monetary measure of subjective poverty.[14] This makes it possible to compare, at the European level[15], measures of objective poverty with people's feelings of subjective economic poverty, identified as stress in the survey.

The OECD has been collecting evidence on subjective poverty through Compare your Income (CYI), a web-based interactive tool that allows users to explore income statistics and compare how well or badly off they are, and test whether their perceptions are in line with the actual situation in their country.[16] The web-tool was launched in 2015 and has so far, collected more than 2 million entries. Over the course of years, the web-tool attracted a varied audience, thanks to the fact that it covers all OECD countries (except Colombia, for which internationally comparable income data are currently missing), is available in eight languages, and has been widely promoted. The OECD uses the data from the CYI in two ways. First, subjective poverty lines and equivalence scales are derived and compared with the equivalence scale use by the OECD for official reporting. The results of this analysis are unpublished at the time of writing this report. Second, although not focused on subjective poverty, data on perceptions of income inequality across countries have been published in an OECD report, Does Inequality Matter?: How People Perceive Economic Disparities and Social Mobility (2021).

III. WHY MEASURE SUBJECTIVE POVERTY AND A BRIEF REVIEW OF THE LITERATURE

A. Why measure subjective poverty?

The conventional and the most commonly adopted approach to measuring poverty is based on an indirect or so-called "welfarist" approach. This approach relies on the assumption that

[11] EU-SILC - the European Union Statistics on Income and Living Conditions Survey
[12] See: https://ec.europa.eu/eurostat/web/income-and-living-conditions/overview
[13] In addition, Eurostat issues yearly methodological guidelines which provide extended explanations and recommendations on the implementation of the data collection.
[14] See: https://ec.europa.eu/eurostat/databrowser/view/ILC_MDES09__custom_6666774/default/table?lang=en
[15] EU-SILC provides cross-sectional and longitudinal data for the 27 European Members States, Iceland, Norway, Switzerland, Albania, Kosovo, Montenegro, North Macedonia, Serbia and Türkiye.
[16] See: https://www.oecd.org/wise/compare-your-income.htm

individuals are rational and can reasonably be considered the most capable assessors of the kind of life and pursuits that optimize their personal satisfaction and happiness (Duclos and Araar, 2006). Within this conceptual framework, assessments of poverty are typically based on measures of income or resources. As these indicators are observed and generally considered objectively measurable, we can also refer to it as to the objective approach. In this context, along with an additional set of assumptions, income is seen as a measure of individual welfare as all welfare-relevant goods and services can be purchased through market transactions. When based on resources to include in-kind transfers and home production, the attainment of an individual's welfare is not limited to market transactions. Shortfalls in income or resources can be interpreted as shortfalls in economic welfare or poverty. Nanda and Banerjee (2021) as well as van Praag and Ferrer-i-Carbonell (2006) point out that objective measures of poverty based on income may not be appropriate for developing nations because such societies are not completely "monetarized" and there is a considerable amount of home production and in-kind transfers. For such countries, the broader resource measure would be more appropriate. Or as suggested by Ravallion (2016), consumption could be a better measure of welfare particularly when considered in terms of individual's subjective evaluation of the adequacy of their consumption. Furthermore, there is no generally agreed objective standard for where to draw the income threshold that defines poverty.

To build an argument for the addition of subjective measures to assess poverty, we again to turn Sen (2007) who noted:

> *"Poverty is about the inability to lead a decent – minimally acceptable – life, and while low income does make it difficult to lead a life of freedom and wellbeing, an exclusive concentration of seeing poverty as lowness of income misses out a great many important connections."*

This definition is founded within his argument that welfare should be thought of in terms of a person's capabilities or the functionings, not just income, that a person is able to achieve (Sen, 1985, 1993). Based on this approach, someone is poor when they have limited freedoms or chances of realizing their own lifestyle. Also noted by Sen (1992, p. 107) is the following warning, "We are not entirely free to characterize poverty in any way we like…There are some clear associations that constrain the nature of the concept [i.e., poverty]." Given this guidance and wisdom, one could attempt the Sisyphean task of trying to define "limited freedoms" in order to establish a poverty threshold or the task could be given to the people via subjective poverty questions, thereby establishing poverty criteria on the basis of public opinion. Alternatively, one can ask about financial difficulty, minimum income, and other subjective poverty questions directly as measures of a person's ability or inability to lead a decent – minimally acceptable – life.[17] Regardless of the subjective measures selected, drawing upon the UNECE (2020) recommendation for deprivation measures (28.1), a key criterion is that the measures be "based on clear and explicit theory or normative definition of poverty to ensure that the questions used are valid indicators of poverty as opposed to unrelated concepts of

[17] See Van den Bosch (2001) for a discussion of this options in his treatise on *Identifying the Poor Using subjective and consensual measures*.

general wellbeing or happiness."

It should be noted that although we provide an argument for measuring subjective poverty, we do not advocate for subjective poverty to replace objective measures. Rather, measures of subjective poverty should be seen as complements to objective measures. This recommendation aligns with the recommendations made by the Commission on the Measurement of Economic Performance and Social Progress (Stiglitz et al., 2009). Their report emphasizes the importance of developing robust measures of social connections, political voice, and insecurity that can predict life satisfaction, using both objective and subjective data. And, in addition, the report highlights the need for statistical offices to incorporate objective and subjective indicators that capture people's life evaluations, hedonic experiences, and priorities in their surveys.

B. Evolution of subjective poverty measurement

Early subjective well-being questions and measures were modified to a narrow definition of economic welfare. For example, the Cantril ladder was designed to ask respondents to rank themselves on a ladder with steps numbered from zero at the bottom to ten at the top, supposing that the top of the ladder represents the best possible life, and the bottom of the ladder represents the worst possible life. This scale has been used to assess subjective well-being with results currently included in the OECD WISE dashboard for countries.[18]

An example of using such a ladder for subjective qualitative poverty measurement is a rich/poor scale included in the Eurobarometer survey for the first time in 1976 (Riffault, 1991). The ladder included seven rungs with the bottom rung representing "poor". An example of directly labelling the rungs with respective to poverty explicitly (e.g., "poor", "borderline", "non-poor") was used by Mangahas (1995). In the economics literature, these types of questions are also referred to as the Economic Welfare Question or Economic Ladder Question (Ravallion and Lokshin, 2002, Ravallion, 2014). The current European survey EU–Statistics on Income and Living conditions (EU-SILC) applies a 6-point scale question asking households to self-evaluate their ability to make ends meet with respect to their income, which is a monetary version of the question that can be used to assess subjective poverty.

The most common approach to identify poor populations using qualitative categorical responses to an Economic Ladder Question is to set an arbitrary threshold based on one or more bottom ladder rungs (Carletto and Zezza, 2006, Mysíková et al., 2019). Though a threshold must be selected by the researcher (i.e., a category below which the household is identified as poor), the advantage is that such an approach does not require specifying a monetary value of the subjective poverty line (Duvoux and Papuchon, 2019). Attempts to estimate the subjective poverty line based on the categorical welfare ladder questions are less frequent (Piasecki and Bieńkuńska 2018, Pradhan and Ravallion, 2000, Želinský et al., 2020, see section III.B). The references cited represent three different estimation methods; however, only the method by Pradhan and Ravallion – explained below – has been used in several other papers, but mostly by the same group of authors.

[18] See https://www.oecd.org/wise/measuring-well-being-and-progress.htm

Pradhan and Ravallion (2000) proposed employing a different type of qualitative categorical question, the Consumption Adequacy Question (CAQ). Using this question avoids asking respondents (in Jamaica and Nepal; Lokshin et al., 2006, applied the CAQ in Madagascar) about a precise amount of income needed to make ends meet. Households, especially in rural areas, may have different concepts of income, making the answers to Minimum Income Questions (MIQ) less comparable. The raised issues concerned inclusion of cash income only versus other components of total income such as imputed income from own housing and production (e.g., a family farm) or production costs. Therefore, instead of asking about minimum income, respondents were asked to evaluate if their consumption of various commodities (food, housing, clothing) was adequate or not. Thus, this approach drops the monetary component and applies categorical questions instead to facilitate respondents' answers.

Another source of objections to subjective indicators arises from latent heterogeneity, a phenomenon occurring when people with similar observable characteristics (for example, age, income, education) but different latent personality traits provide different responses to subjective welfare questions (Ravallion, 2014). In other words, people may employ different criteria when assessing their well-being, as they may hold distinct perceptions of what constitutes "wealth" or "poverty" and what signifies satisfaction or dissatisfaction in their lives (Beegle et al., 2012). As further argued by Ravallion, even individuals with similar observable and latent personality traits may use different criteria to assess their welfare, which can be influenced by a "frame-of-reference" bias (Ravallion, 2008). To address this concern, Beegle et al. (2012) used vignettes to test for bias due to latent heterogeneity in individual scales of subjective welfare. Respondents were asked: "Imagine a 6-step ladder where on the bottom, the first step, stand the poorest people, and the highest step, the sixth, stand the rich. On which step are you today?" In a later section of the questionnaire, respondents were asked to place four vignettes of hypothetical families on the six-step ladder and then to place themselves on the same scale. Their findings demonstrate the presence of a frame-of-reference effect on individuals' SWB, indicating that people from diverse socioeconomic backgrounds consistently employ distinct scales when responding to inquiries about their welfare. Nevertheless, their results indicate that this factor is not a significant source of bias in producing subjective poverty lines.

In contrast, money metric questions, at times, ask individuals to state a concrete amount that represents a certain living standard. While asking for very specific amounts of money, objections to such questions also arise. The concept of a money metric approach to measure subjective economic poverty was first introduced by van Praag (1968, 1971), with the Income Evaluation Question (IEQ). The IEQ asked respondents to provide explicit income values that they considered "very bad" to "very good", with a number of options in between. The answers to the IEQ from all respondents were fitted to a utility function with the formula of the log-normal distribution function (van Praag and Kapteyn, 1994). The derived poverty line is referred to as the Leyden Poverty Line (LPL). Such questions were primarily designed to be used for econometric modelling of subjective poverty lines, which then would be compared to respondents' actual income.

The foundation of a model-based approach to produce subjective poverty lines is the MIQ, a specific case of IEQ. MIQ, and again a monetary-based subjective question (Kapteyn et al.,

1988, Kapteyn, 1994, Goedhart et al., 1977) asks what income is needed to make ends meet. The Subjective Poverty Line (SPL) is econometrically estimated such that the expected minimum income equals actual income across the population rather than at the individual household level (see section III.B for estimation details). Objectively measured income normalised by the SPL is used as the welfare indicator, i.e., actual income below SPL identifies the subjectively poor population. Flik and van Praag (1991) compared the LPL and SPL and concluded that LPL seems to be theoretically superior to the SPL given the fact that IEQ is a multi-level question, while MIQ is a one-level question, which makes the latter more likely to be subject to random response fluctuations.

Simplified methods based on averaging responses to questions of subjectively evaluated living standards or comparing the responses directly to the actual income (referred to as the individual method) are less common but have been applied, for instance, by Vrooman and Hoff (2004), Thijssen and Wildeboer Schut (2005), and Mysíková et al. (2019). These latter approaches are presumed to produce less reliable subjective poverty measures than those based on the model-based subjective poverty lines. The simplified or naïve methods have been criticized for "heterogeneity, such that people at the same standard of living can give different answers on subjective welfare" (Ravallion, 2014, pp. 146–147; Pittau and Zelli, 2023). One way to control for this heterogeneity is to use monetary-based subjective questions to estimate model-based subjective poverty lines (Goedhart et al., 1977, Kapteyn et al., 1988).

Rather than derive the subjective poverty lines based on income, Morissette and Poulin (1991) for Canada and Garner and Short (2003, 2004) for the U.S., used a similar question, the Minimum Spending Question (MSQ) to assess poverty based on subjective questions. For the U.S., Garner and Short (2005) compared MSQ-based lines to household expenditure outlays. They concluded that such a question resulted in poverty thresholds/ rates similar to those based on NAS methods (NRC 1995).

A similar approach was introduced by the Centre for Social Policy (CSP). For this approach, the subjective line is derived based on the MIQ question but is only applied to a subsample of respondents (Deleeck, 1977, Deleeck et al., 1984). The subsample is selected based on a monetary, categorical question that asks respondents to evaluate on a 6-point scale how they can make ends meet with their actual household disposable income. This question is known as a "Deleeck" question (also included in EU-SILC survey, see Chapter III, Box 7) and the derived poverty line as a CSP poverty line. The method only selects respondents who classified themselves as making ends meet "with some difficulty", as these are assumed to be on the margin of poverty and consequently to have the best knowledge of the situation. After excluding outliers, the CSP poverty line is derived as an average value of the minimum between the actual household income and the reported subjective minimum income (from MIQ).

The selection of the subsample assumes that the poverty line must be determined by respondents who are at the border of poverty as these have the best knowledge of the situation. Some researchers considered this assumption to be too strong and disagreed with the strong dependence of the poverty line on the choice of the subsample of respondents, especially because the reference group could possibly include only a few people (Flik and van Praag, 1991). Alternative methods and modifications broadly based on LPL, SPL or CSP lines have

been further developed in the literature.

Subsequent literature raised concerns about how respondents interpret the MIQ (Garner and de Vos, 1995) and that the concept of income may not be well-defined for respondents, especially in developing countries (Pradhan and Ravallion, 2000).[19] De Vos and Garner (1991) analyzed the relationship between expenditures and responses to MIQ. Consequently, perceptions of minimum expenditures started to supplement or supplant income.

Garner and Short (2003, 2004) discussed a notion that respondents consider a higher living standard when answering the MIQ than the MSQ. The reasons might be that respondents could include savings or loan payments in the minimum income, while they are asked to focus specifically on spending and basic necessities such as food, shelter, clothing and other essential items for daily living in the MSQ. The MIQ refers to a broader set of needs than MSQ. Therefore, they suggested the higher MIQ-based line as representing a "social minimum standard", while the lower MSQ-based line could be considered a "subsistence minimum standard". The difference between MIQ-based and MSQ-based SPLs was shown on the U.S. data.

Similar to the CSP method in that qualitative and quantitative questions were used together to estimate the poverty line, Pradhan and Ravallion (2000) used responses to the Consumption Adequacy Question (CAQ) in combination with actual reports of consumption. Specifically, respondents were asked to evaluate if their consumption of various commodities (food, housing, clothing) was adequate or not. Two methods were used to estimate the subjective poverty line, both based on regressions. Method (1) anchors the subjective poverty line to the perceived adequacy of food consumption alone; Method (2) also includes non-food consumption, but the approach is the same in both cases. The difference is that in Method (2) Pradhan and Ravallion also estimate a reduced-form Engel curve to make "an allowance for the remaining components of spending which is an estimate of the expected value for someone consuming the subjective poverty line level for core expenditure."

Chapter 3. APPROACHES FOR MEASUREMENT AND ANALYSIS

I. APPROACHES TO MEASUREMENT

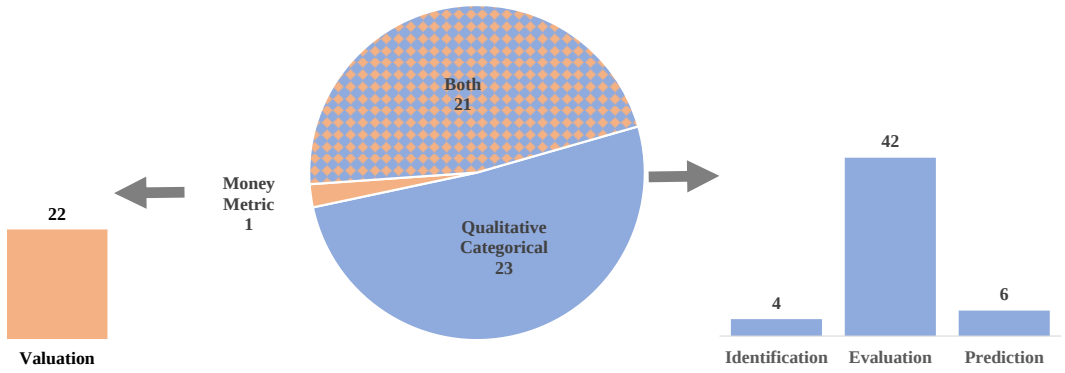
Following the framework developed in the Chapter 2, we provide a discussion of the various approaches to measuring subjective poverty. We divide qualitative categorical response questions into three groups: identification, evaluation, and prediction. The first two align closely with what are considered standard notions of poverty, while prediction more closely aligns poverty with economic insecurity or vulnerability. In contrast a money metric question requires a specific money value response. A description of each type of question is provided in this section. To help elucidate this framework, along with the descriptions we provide examples of subjective poverty questions, we limit our presentation to the country responses to

[19] This is the case especially for subsistence farmers, who are a significant group of poor, but may not impute income/expenditure for the produce which they use for their own consumption.

the 2021 UNECE survey developed by Statistics Poland.

Figure 1 presents the number of countries asking subjective poverty questions by type as collected in the 2021 UNECE survey. The pie chart in the center of the figure shows 29 countries report asking only monetary subjective poverty questions, 3 countries report asking only non-monetary questions, and 13 countries report asking both types of questions. Among country representatives who reported asking monetary questions, as well as countries who reported asking non-monetary questions, "evaluation" was the most frequently reported subcategory, with 40 countries reporting monetary evaluation questions and 14 countries reporting non-monetary evaluation questions. A more detailed breakdown of the questions can be found in Table A.1, which provides counts of the number of questions by type, by country.

Figure 1: Number of Countries Asking Subjective Poverty Questions by Type



Note: Data comes from the responses to the UNECE survey developed by Statistics Poland.

Several responses to the survey fell more into the area of measuring deprivation, social exclusion, or well-being, rather than subjective poverty, which are outside the guidelines of this Task Force. Therefore, we did not include them in our analysis; however, we do make a record of these responses in Table A.1. They are classified as "other." 22 countries reported asking at least one question that fell outside the scope of subjective poverty.

A. Qualitative Questions not Focused on Specific Levels of Income (or Consumption)

Identification

"Identification" is the most direct way of collecting data on subjective poverty. This type of question asks respondents to identify themselves as poor or experiencing poverty in a qualitative sense based on a categorical response. Countries can then use the responses to this

question to produce simple statistics to describe the subjective poverty status of their population. Only four of the 52 countries (i.e., Columbia, Israel, Kyrgyz Republic, and Viet Nam) reported questions in which the respondent was asked to identify themselves or their household as poor or feeling at risk of poverty. There was no standard question wording across countries. See Box 1 for examples of questions from Columbia and Kyrgyz Republic.

Box 1. Examples of Qualitative Categorical Identification Questions

[Colombia] *Do you consider yourself poor?*

- *Yes*
- *No*

[Kyrgyz Republic] *How do you assess the circumstances of your household?*

- *Rich*
- *Average*
- *Poor*
- *Very poor*

Evaluation

Qualitative categorical evaluation questions ask respondents to assess their economic or financial situation holistically with respect to some attribute such as satisfaction. 14 countries report asking a categorical evaluation question, with the most frequently used question wording asking respondents about their current financial situation. See Box 2 for examples. Canada, Hungary, Norway, and Switzerland reported asking questions using this phrasing.[20] Five countries asked respondents to indicate their level of satisfaction with their financial situation using a scale from 0 to 10; however, the scales were not uniformly defined. Canada designates their scale as "very dissatisfied" (0) to "very satisfied" (10), whereas the other countries have scales that range from "not at all satisfied" to "completely/very satisfied" (10). In addition to the 0 to 10 scale, Canada also includes a satisfaction question where the responses follow a 5-point Likert scale.[21] Even though the questions are worded similarly across countries, because the scales are defined differently, cross-country comparisons, specifically with Canada, are not possible.

Box 2. Examples of Qualitative Categorical Evaluation Questions, Current Financial Situation

[Canada] *How do you feel about your finances?*

0 – Very dissatisfied

…

10 – Very Satisfied

[Switzerland] *In general, how satisfied are you with the current financial situation of your household?*

[20] In the UNECE CIS report (2023), Kazakhstan was also identified as asking a categorial evaluation question with wording focused on satisfaction with one's financial situation.

[21] The 5-point Likert scale used by Canada was (1) very satisfied, (2) satisfied, (3) neither satisfied nor dissatisfied, (4) dissatisfied, and (5) very dissatisfied.

0 – Not satisfied at all
…
10 – Completely satisfied

The next most common qualitative categorical question is to ask respondents how they perceive their current financial or economic situation compared to a reference point in the past. See Box 3 for examples. Two countries, Colombia and Ukraine, ask respondents to consider "12 months ago" and "the last 12 months," respectively. In contrast, Belarus and Finland use the "previous year" as the reference point, with Finland specifying the calendar year in the question. The different wording can result in different reference periods. For example, consider an individual being interviewed in December of 2020. A respondent asked to consider the last calendar year (all of 2019) will likely answer differently than if their reference point was the previous 12 months (December 2019 through December 2020) or even 12 months ago (December 2019). All counties use a 5-point Likert scale for responses.

Box 3. Examples of Qualitative Categorical Evaluation Questions, Current Financial Situation Compared to the Past

[Columbia] *How do you consider the economic situation of your household compared to 12 months ago?*

(1) Much better
(2) Better
(3) Same
(4) Worse
(5) Much worse

[Finland] *Compared to the previous year, that is [20XX-1], has your financial situation:*

(1) Changed significantly for the better
(2) Changed somewhat for the better
(3) Remained unchanged
(4) Changed somewhat for the worse
(5) Changed significantly for the worse

Another frequently reported qualitative categorical question asked respondents to select a phrase from a set of options that best describes their current financial situation. See Box 4 for examples. Denmark, Lithuania, and Netherlands all report asking this type of question. The phrases respondents select from can provide a detailed picture of their financial situation. For example, one of the options Lithuania offers is "we are having to draw on our savings." However, similar to the problem previously encountered when asking respondents how they feel about their financial situation, cross-country comparisons are only possible if the response options are worded in a comparable manner.

Box 4. Examples of Qualitative Categorical Evaluation Questions, Describe Current Financial Situation

[Denmark] *How is the present financial situation of your household, or in other words:*

- *Do you spend more than you earn?*
- *Do you find it difficult to make ends meet?*
- *Are you able to put money aside?*

[Lithuania] *Which of these statements best described the current financial situation of your household:*

- *We are saving a lot*
- *We are saving a little*
- *We are just managing to make ends meet on our income*
- *We are having to draw on our savings*
- *We are running into debt*

Prediction

The final type of qualitative categorical question is "prediction," which asks respondents to consider how they think their current financial, material, or economic situation will change over a specified period. See Box 6 for examples. Four countries report asking this type of question: Belarus, Colombia, Hungary, and Ukraine, and all four use the next twelve months or next year as the prediction period. However, a country could also ask about the next six months, two years, or even longer, depending on whether they are interested in measuring respondents' short- or long-run perceptions.

Box 6. Examples of Qualitative Categorical Evaluation Questions, Prediction

[Columbia] *What do you think your household's financial situation will be like* ***in 12 months compared to now****?*

- *Much better*
- *Better*
- *Same*
- *Worse*
- *Much worse*

[Ukraine] *How do you think the material status of your household could change* ***for the next 12 months****?*

- *It will get better*
- *It will remain without any changes*
- *It will get worse*
- *It is difficult to specify*

[Belarus] *How do you think the material situation of your household will change* ***next year****?*

- *It will get better*
- *It will remain without any changes*

It will get worse

As with the previous questions, the question wording and response options were not standardized across countries. Both Belarus and Ukraine report asking respondents to evaluate potential change in their material situation over the next 12 months, but Belarus asks respondents to consider how the material situation "will change" over the next year, whereas Ukraine asks respondents to consider how things "could change." Although the wording is only slightly different, the choice of "will" or "could" may impact how a respondent evaluates the future. Both Colombia and Hungary also ask respondents to consider how their financial situation will change over the next 12 months but provide different response options. Colombia uses a 5-point Likert scale, whereas Hungary only uses a 3-point Likert scale.[22]

Other types of qualitative categorical questions refer to money in particular. These are presented in the next section

B. Qualitative Categorical Questions Focused on Specific Income (or Consumption)

Evaluation

Qualitative categorical evaluation questions ask respondents to evaluate their income with respect to some attribute, such as ability to make ends meet, satisfaction, or adequacy of consumption. Responses to these types of questions are categorial and can be used to create simple statistics to describe the subjective poverty status of a country's population. Responses to these evaluation questions can also be combined with money metric valuation questions, questions that require the respondent to report a specific dollar value such as the minimum income question, to create a subjective poverty threshold.[23] See Section II. B in this chapter for more information regarding the estimation of such thresholds.

Forty countries report asking at least one qualitative categorical question that was focused on income in particular. The overwhelming popularity of this type of question is, in part, a result of it being included in the EU-SILC. The exact wording of the question reported by the EU-SILC countries is slightly different but follows the same general pattern of asking respondents to evaluate their ability to make ends meet with respect to their income. EU-SILC survey offers response options following a 6-point Likert scale. See Box 7 for an example.[24] This type of question is also known within the literature as a Deleeck question.

Box 7. Examples of Qualitative Categorical Evaluation Questions Focused on Income, EU-SILC Countries

[EU-SILC participating countries] *A household may have different sources of income and more than one household member may contribute to it. Thinking of your household's total*

[22] Colombia's response options are "much better," "better," "the same," "worse," and "much worse." Hungary's response options are "it will get better," "it will not change," and "it will get worse." Colombia's 5-point Likert scale could be converted to a 3-point Likert scale to make the responses comparable to Hungary.

[23] This approach is also known as the Deleek Method of measuring subjective poverty. See Flik and Praag (1991) for more details about this method.

[24] The example provided is the suggested wording of the monetary evaluation question provided by the 2021 EU-SILC Guidelines. Each country's statistical office must translate it into their country's official language, so the exact wording may vary from country to country.

income, is your household able to make ends meet, namely, to pay for its usual necessary expenses?

- *With great difficulty*
- *With difficulty*
- *With some difficulties*
- *Fairly easily*
- *Easily*
- *Very easily*

Of 12 non-EU countries that reported asking a qualitative categorical evaluation type question focused on inomce, five of which (Armenia, Brazil, Russian Federation, Turkey, and Ukraine) report asking a question that is akin to the one asked in the EU-SILC.

Respondents are asked to evaluate their ability to make ends meet with respect to their income. Additionally, the response options that were reported follow the 6-point Likert scale. Since these countries and those participating in the EU-SILC asked similar income evaluation questions with similar response options, it is possible for subjective measures of the ability to make ends meet to be compared across these countries as well as the EU-SILC participating countries.

A closely related qualitative categorical question asks respondents to evaluate their income, but instead of asking respondents about their ability to make ends meet, respondents are asked to describe their current income by selecting from a list of descriptions. Belarus, Colombia, Mexico, New Zealand, Ukraine, and Uzbekistan report asking this type of question; however, response options are substantially different, making cross-country comparison difficult. See Box 8 for examples.

Box 8. Examples of Qualitative Categorical Evaluation Questions Focused on Making Ends Meet, Descriptive Responses

[Belarus] *How do you assess the total income of your household?*

- *Income is barely enough to buy food.*
- *Income is enough to buy food, but it is difficult to buy clothes and other necessary goods and services.*
- *Income is enough to buy food, clothes and other necessary goods and services but it is difficult to buy durables (TV, refrigerator, other).*
- *Income is enough to buy durables, but expensive goods (car, etc.) are difficult to buy.*
- *Income is enough to buy everything we think we need.*

[Columbia] *Your household income…*

- *is not enough to cover minimum expenses.*
- *is enough to cover the minimum expenses.*
- *covers more than the minimum expenses.*

The remaining questions classified as qualitative categorical evaluation focused on income or a related resource measure are either unique to the country or only asked by one other country. For example, Belarus reports asking respondents "how satisfied" they are with their money income. Costa Rica provides respondents with a reference household and asks them to evaluate whether the monthly income for the household is enough to live on. Both the Netherlands and Slovakia ask respondents how their income has changed compared to the previous year.

Prediction

Similar to the earlier qualitative question that did not refer to income specifically, the qualitative income-focused version of "prediction" asks respondents to evaluate how their income will change over a specific period in the future, eor will be in some future period. Only two countries, Canada and Netherlands, reported asking thes types of question. See Box 9 for the specific question wording.

Box 9. Examples of Qualitative Income-focused Prediction Questions

[Canada] *In the next two years do you think your [and your family's] total income will increase, decrease, or stay the same?*

- *Increase*
- *Decrease*
- *Same*

[Netherlands] *Do you expect your income/total household income to increase, stay the same or decrease over the next 12 months?*

- *Increase*
- *Stay the same*
- *Decrease*

[Canada] *Taking all of the various sources of retirement income into account for your household (including government sources as well as personal and occupational pensions and provisions), how adequate do you think your household income in retirement will be to maintain your standard of living? Will it be…?*

- *More than adequate*
- *Adequate*
- *Barely adequate*
- *Inadequate*
- *Very inadequate*

C. Money Metric Valuation Questions

Money metric valuation questions ask respondents to provide a specific value of income or money they think is necessary for the specified situation. 22 countries report asking a valuation question. 17 of these countries report asking respondents to provide the minimum

income they believe is needed to "make ends meet,"[25] "meet the basic needs,"[26] or "cover all normally necessary expenses"[27].[28] Of the 5 remaining countries, three report asking similar questions but set the reference for the minimum at different points. This type of question is referred to in the literature as a Minimum Income Question (MIQ). See Box 10 for examples. Kyrgyz Republic and Ukraine set the minimum at avoiding poverty instead of making ends meet.[29] Republic of Moldova asks two questions; the first asks for the minimum income needed to live day-to-day, and the second asks for the minimum income needed for a decent life. Although some of the reference points are similar, such as "making ends meet," "avoiding poverty," and "live from day-to-day," it is not guaranteed that they will evoke the same image for a respondent. Thus, responses to these questions should not be compared across countries and cannot be used to create the same subjective poverty threshold.

Box 10. Examples of Money Metric Valuation Questions, Minimum Income Question (MIQ)

[Brazil] *Taking into account the current situation of your family, what would be the minimum monthly income needed to "make ends meet"?*

[Ukraine] *What do you think: how much money (according to today's price level) for one of your household members is needed in order to not feel poor?*

[Kyrgyz Republic] *What is your opinion, how much money on average per month at today's price are needed for the family with the same number of people as you have in order to avoid poverty?*

[Moldova] *What monthly cash income would meet the minimum needs of one person in order to 'live from day to day'?*

[Belarus] *In your opinion, what amount of money does your household need to have monthly to meet[satisfy] the minimum needs of all its members?*

The remaining two countries, Armenia and Hungary, do not ask respondents to report only the minimum income needed to make ends meet or avoid poverty. Instead, they ask respondents to report the income needed for a variety of living standards. This type of question is also referred to in the literature as an Income Evaluation Question (IEQ). See Box 11 for the specific question wording. Brazil and Turkey also report asking a multi-point valuation

[25] Austria, Belgium, Brazil, Cyprus, Germany, Ireland, Italy, Lithuania, Luxembourg, Malta, Republic of North Macedonia, Russian Federation, and Spain use the phrase "make ends meet."

[26] Costa Rica uses the phrase "meet the basic needs," and Belarus uses the phrase "meet the minimum needs."

[27] Switzerland and Turkey use the phrase "cover all normally necessary expenses."

[28] A few of the countries that report asking this type of question indicate that it is asked as part of the EU-SILC. However, not all the EU-SILC countries that responded to the survey reported a valuation question. 12 of the 29 EU-SILC countries that participated in the survey reported asking a minimum income question. Hungary does not report asking a minimum income question but does report asking a valuation question. The remaining 16 countries did not report asking any type of valuation question. Because these countries did not report any valuation questions, we do not include them in the analysis, even though the EU-SILC was reported to include a minimum income question at the time of the survey.

[29] Kyrgyz Republic sets the minimum income at what is needed "to avoid poverty," whereas Ukraine sets the minimum at what "is needed to order not to feel like the poor."

question using a similar five- and three-point scale, respectively.

Box 11. Example of Money Metric Valuation Questions, Income Evaluation Question (IEQ)

[Armenia] *How much money does your family need monthly to make ends meet (survive)? How much money does your family need monthly to live well? How much money does your family need to live very well in a month?*

[Hungary] *What (net) amount of income do you think your household would need in a month to live on…*

- *a very low standard of living?*
- *a low standard of living?*
- *an average standard of living?*
- *a high standard of living?*
- *a very high standard of living?*

II. ANALYSIS

The literature provides numerous examples of applications of estimation techniques in relation to subjective welfare or subjective poverty. Some of these assess factors related to subjective welfare and search for determinants that explain the variation in responses. Others are applied to estimate subjective poverty lines that allow for the identification of subjectively poor subpopulations and, hence, the subjective poverty rates. After a brief overview of relevant determinants of subjective poverty in the literature, we introduce several estimation techniques to derive subjective poverty lines with respect to different types of subjective poverty questions.

A. Relationships

The empirics concur on the fact that there is a positive correlation between income level and subjective welfare (e.g., Herrera et al., 2006), and in turn subjectively based poverty. When analyzing responses to questions that ultimately are used to assess subjective poverty, these relationships need to be acknowledged and accounted for in measurement.

A huge stream of literature focuses on the relationship between income and subjective welfare, mostly defined in a broader sense, e.g., in terms of happiness and/or life satisfaction (e.g., Easterlin, 2001). The correlation was found to be stronger in developing countries than in developed ones (Herrera et al., 2006). However, it was also realized that the correlation is not perfect and that it is not only current own income that matters (Ravallion and Lokshin, 2002), but also past incomes, income expectations and aspirations, and/or relative/comparison incomes (Clark and Oswald, 1996).

The empirical literature broadly analyses factors of subjective poverty, where survey responses have been regressed on individual and household characteristics. Besides income, other factors

such as household size, age and gender composition, education and employment status, and regional dummies are commonly controlled for in model estimations. For an example of a wide list of analyzed characteristics, Ravallion and Lokshin (2002) examined how the answers to a nine-rung economic welfare question (with the rungs ranging from "poor" to "rich") varied with various variables grouped in three areas: (i) supplementary objective indicators of personal or household circumstances (expenditure, assets and durables, education, health, employment status, age and marital status), also utilizing the panel nature of the applied data (past incomes); (ii) measures of relative income (variables measuring the individual's relative position within certain reference groups, e.g., position within the respondent's household or within the locality where they live); and (iii) attitudinal variables (e.g., expectations about future welfare, perceived insecurity of employment, and whether the government cares about people), which, however, may have raised concerns about endogeneity.

Some of the variables might affect subjective welfare through effects on expected future income or perceived riskiness of individuals' current incomes. Lower subjective welfare of divorced or widowed individuals may stem from perceived lower economic security. Relative income within one's locality were found to account for almost all the variance attributable to geographic effects; people in richer areas felt relatively worse off. Ravallion and Lokshin (2002) concluded that "results clearly reject any notion that one only gets noise from the answers to subjective questions. However, it is also unclear whether the systematic factors that influence self-rated welfare will all be deemed relevant to the types of inter-personal welfare comparisons that are required for making specific policy choices." (p. 1471).

The type of regression modelling utilized will be based on how the dependent variable is defined. When subjective welfare is represented by ordinal data from a welfare ladder question, ordered probit regression models are typically applied. When continuous data is used as the dependent variable, such as with the MIQ, standard OLS regression is commonly applied. Researchers have mostly agreed that if regression models are used to estimate subjective poverty lines, covariates, such as household size, should be included in order to get unbiased estimates of other variables (Garner and de Vos, 1995).

B. Subjective Poverty Lines

In this section we present an overview of the two most known approaches to estimate subjective poverty lines based on money metric valuation questions: the Leyden Poverty Line based on Income Evaluation Question (IEQ) and the Subjective Poverty Line based on Minimum Income Question (MIQ). Though both the approaches were developed around the 1970s, the latter gained more interest in the literature because of the availability of the questions in recent surveys. While the IEQ was rarely included, the MIQ was asked annually in the EU-SILC up to 2020.[30]

[30] The related variable is likely to be collected every six years in the EU-SILC 6-yealy rolling module 2026 on "over-indebtedness, consumption and wealth". This module will be legally adopted by the end of 2024. The module will be collected every six years starting in 2026.

Leyden Poverty Line based on Money Metric Evaluation Question

The construction of the Leyden Poverty Line (LPL) relies on estimating parameters of the individual welfare function of income (income utility function), which is typically based on the so-called IEQ. The IEQ (presented in Box 11) asks respondents to report what they consider to be *(very) bad/(in)sufficient/(very) good* income, in their circumstances (van Praag, 1968, 1971). The amounts corresponding to these categories are used to form the individual welfare function, and this function is further used as a basis for estimating the LPL (see Box 12). Within this framework, it is necessary to decide upon the value of a parameter α – the welfare (utility) level under which a household is considered poor. Ultimately, a household is considered poor if the total household income falls below a certain level of welfare (α). Note that the parameter α is arbitrarily chosen.

Box 12. Leyden Poverty Line

The individual poverty line $y_{\alpha i}$ is defined by solving (Flik and van Praag, 1991):

$$\Phi\left(\frac{\ln(y_{\alpha i})-\mu_i}{\sigma_i}\right)=\alpha\,, (1)$$

where α is the welfare (utility) level below which a household is considered poor, $\Phi(\cdot)$ denotes the cumulative distribution function of the standard normal distribution; μ_i and σ_i are the mean and standard deviation estimated from responses to the IEQ.

Assuming that $\mu_i=\beta_0+\beta_1\ln(y_i)+\beta_2\ln(s_i)$, (2)

we get: $\ln(y_{\alpha i})=\beta_0+\beta_1\ln(y_i)+\beta_2\ln(s_i)+\sigma\,\Phi^{-1}(\alpha)$. (3)

Fixing σ at the population average $\bar{\sigma}$, the log of national LPL can be computed as:

$$\ln\left(y^*_\alpha\right)=\frac{\beta_0+\beta_2\ln(s)+\bar{\sigma}\;\Phi^{-1}(\alpha)}{1-\beta_1}\,. (4)$$

A specific LPL can be found for each value of household size. In addition, further household characteristics can be included in the equation.

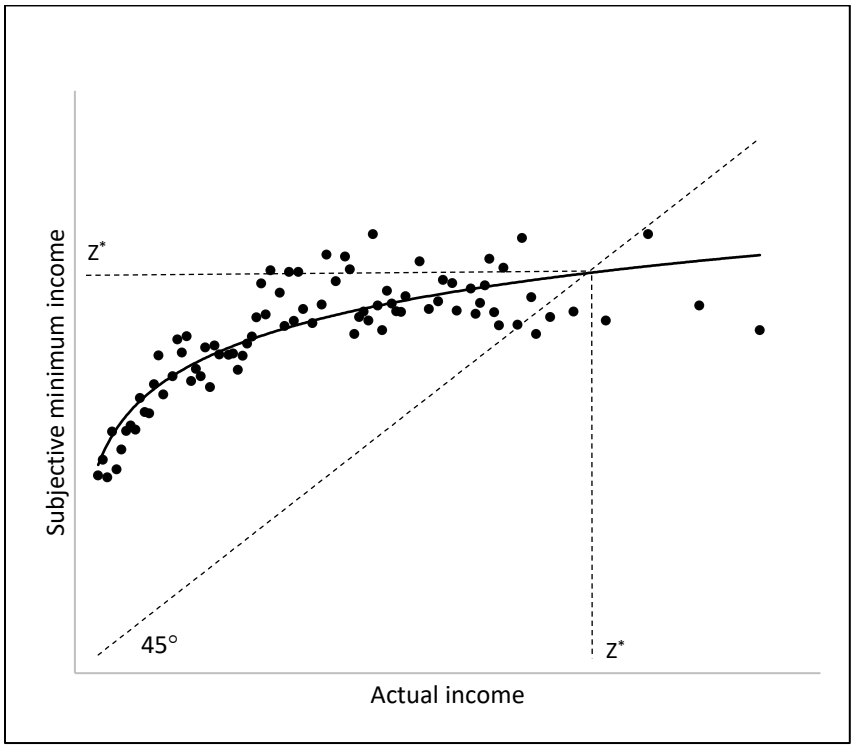
Intersection Method Based on the Minimum Income Question

Intermediate approaches developed in the 1990s aimed to identify cost and/or utility functions based on subjective money metric valuation questions. The most well-known approach derives the Subjective Poverty Line based on subjective valuations of MIQ (Box 10), first introduced by Goedhart et al. (1977). It is model-based in the sense that individual's responses do not directly generate the poverty line (Keptayen et al., 1988). There were attempts to define the poverty threshold as anyone whose actual income was lower than their reported subjective minimum; however, as people at the same standard of living can provide different answers to the MIQ. This heterogeneity must be accounted for because it would lead to inconsistencies in the poverty measures otherwise (Pradhan and Ravallion, 2000, Ravallion, 2014).

It has been shown that there exists a positive relationship between the expected answer to MIQ and actual income. More generally, the income effect on subjective welfare has been identified as robust across countries, within countries, and over time in the literature (Stevenson and

Wolfers, 2008; Clark et al., 2008). The *intersection method* conditions the existence of SPL on subjective minimum income being an increasing function of actual income, more concretely, a concave function as illustrated by Figure II.1. The intersection (Z*) of the lines representing the equality of minimum and actual incomes (i.e., the 45-degree line in Figure II.1) determines the Subjective Poverty Line. The intersection point assumes that only respondents with actual incomes equal to their subjective minimum incomes have a realistic idea of the minimum income level. Richer respondents tend to overestimate their minimum necessary income while poorer respondents tend to do the opposite.

Figure II.1 Subjective Poverty Line based on Minimum Income Question



Source: Illustrative picture.
Notes: Z* is the estimated Subjective Poverty Line.

The seminal paper by Goedhart et al. (1977) estimated the subjective minimum income as a function of actual income and household size only, but the authors suggested that "any quantifiable factor that has a measurable effect" might have been incorporated (p. 518). Subsequent studies extended the set of explanatory variables as differentiating factors for the subjective poverty lines (e.g., García-Carro and Sánchez-Sellero, 2019; Mysíková et al., 2021, 2022; Želinský, 2022). These commonly included employment status, sex, age, education, and degree of urbanization. Discussions on the inclusion of explanatory or control variables mostly argue that even if a variable causing a significant effect is not accepted as a factor differentiating the poverty line, it should be included in order to obtain unbiased estimates of other variables (e.g., Garner and de Vos, 1995). Though effects caused by differences in

personality, tastes, lifestyles, or, for instance, incomes of reference groups (household or community) or recent income changes may contribute to explain the variance in subjective minimum income, they would unlikely be considered relevant to policy choices (Ravallion and Lokshin, 2002).

Depending on the authors' judgements about the empirical, theoretical and/or political relevance of the explanatory variables to the poverty lines, the methods to calculate subjective poverty lines differ (Garner and Short, 2004). One way would be to calculate a single poverty line holding the explanatory variables at their national averages (or, more frequently, a set of lines differentiated by the variables defining subpopulations of interest, holding the values of other control variables at their national averages), while the other would employ all (relevant) explanatory variables to calculate household-specific lines. The latter approach is particularly useful when the key aim is distinguishing populations below and above the lines, rather than a definition of the line itself (Želinský et al., 2022). However, the approach is different from simply calculating the number of households reporting actual household income that is less than the household expected minimum income or setting the average reported MIQ as the poverty line. See Box 13 for an example of the estimation of a SPL,

Box 13. Subjective Poverty Line and the intersection method

In practical applications, standard OLS regression model is applied to estimate the subjective minimum income as a function of actual income. Natural logarithms of both subjective and actual incomes are used instead of original values. The estimated function is:

$$\ln(\hat{Y}) = \alpha + \beta \ln(X), \text{ (1)}$$

where Y is the subjective minimum income, X represents the actual household income, and α and β are the estimated coefficients. At the intersection point, where $Y = X = Z^*$, rearranging the equation yields:

$$\ln(Z^*) = \frac{\alpha}{1-\beta}, \text{ with necessary conditions } \alpha > 0 \text{ and } 0 < \beta < 1. \text{ (2)}$$

A household i is identified as subjectively poor if the following inequality holds:

$$X_i < Z^*. \text{ (3)}$$

Employing control variables in Equation (1) we obtain:

$$\ln(\hat{Y}) = \alpha + \beta \ln(X) + \sum_{k=1}^{K} \gamma_k V_k, \text{ (4)}$$

where V_k, $k = 1, \ldots, K$ are control variables and γ_k are the corresponding estimated coefficients.

The definition of SPL extends to:

$$\ln(Z^*) = \frac{\alpha + \sum_{k=1}^{K} \gamma_k V_k}{1-\beta}. \text{ (5)}$$

The intersection method can also be used to estimate SPL based on Minimum Spending Question (MSQ) instead of MIQ. An example of a MSQ is provided in Box 15. Garner and Short (2003, 2004) found the MSQ-based poverty lines to be lower than the MIQ-based poverty lines, because the MSQ refers to a more narrowly defined set of needs than the MIQ (See Box 14). Compared to the MIQ-based poverty lines, the MSQ-based poverty lines were more like the absolute poverty lines applied in the U.S. (Garner and Short, 2003).

Box 14. Minimum Spending Question in SIPP in 1995

In your opinion, how much would you have to spend each year in order to provide the basic necessities for your family? By basic necessities I mean barely adequate food, shelter, clothing, and other essential items required for daily living.
SIPP – Survey of Income and Program Participation (Garner and Short, 2003)

In addition, subjective poverty lines have been compared to population-based means and median incomes, and objective and relative poverty thresholds. For example, de Vos and Garner (1991), reported that for both the U.S. and the Netherlands, the SPLs lied in the range of 60–75% of *mean* incomes in most household size groups. In addition, with respect to the Netherlands, the subjective poverty line would have been higher than the objective and relative income poverty line currently applied in the EU (i.e., with the poverty line set at 60% of *median* equivalised household income). With the same actual income compared to each threshold, the subjective poverty rate would have been highest. In addition, Saunders et al. (1994) found that the poverty rates resulting from the use of thresholds derived from subjective measures were markedly higher than those based on relative income poverty thresholds (i.e., with the poverty line defined as 50% of *median* equivalised household income) for Australia and Sweden around the 1980/1990s. García-Carro and Sánchez-Sellero (2019), using the national EU-SILC data between 2008 and 2016, found the subjective poverty rate to be about 40% for Spain, as compared to the official relative income poverty (at risk-of-poverty rate, AROP) rate of roughly 20%.

As opposed to country case-studies, the recent study by Želinský et al. (2022) compared the subjective poverty rates based on SPLs with the *relative* "at risk of poverty" (AROP) rates in all EU member states over the period of 2004–2019. It showed a substantially greater variation in subjective poverty rates than AROP rates across the EU countries: the subjective poverty rate substantially exceeded the AROP rate in some Eastern and Southern European countries, while it was lower in Scandinavian countries.

Quasi Leyden Poverty Line Based on the Deleeck Question

As the IEQ puts a burden on respondents, it is rarely integrated in statistical surveys. Piasecki and Bieńkuńska (2018) propose an alternative way to estimate a subjective poverty line using the intuition behind the LPL utilising the Deleeck-type of question (Box 7). In the first step, the approach assigns a utility level to each response option presented in the 6-categorical Deleeck question. In the second step, it is necessary to estimate parameters of a regression function modelling the level of actual income at which the household would find itself on the poverty threshold. The value of the poverty threshold at a (arbitrarily) given utility level (α) depends on the size of the household and may also depend on additional characteristics of the household. See Box 15.

Box 15. Quasi-Leyden Poverty Line
The estimation procedure has several steps:
(1) Assigning a value of utility to the evaluation of actual income for each household using the transformation

$$u_i = (j_i - 0.5)/m, \quad (1)$$

where j_i is answer of household i to the Deleeck question, m is the number of categories (m = 6 for the Deleeck question integrated in EU-SILC survey).

(2) Estimating parameters of an OLS regression function:

$$\ln(y_{\alpha i}) = \gamma_0 + \gamma_1 \ln(s_i) + \gamma_2 \Phi^{-1}(u_i), \quad (2)$$

where $y_{\alpha i}$ is the actual income of household i, s_i is the household i size, α is the utility level proxied by u_i, and $\Phi^{-1}(u_i)$ is the value of the inverse function of standard normal distribution for u_i.

(3) The estimated regression coefficients then allow us to derive the subjective poverty lines for different values of household size (s_i). In formula (2), we employ α, which is an arbitrarily chosen parameter representing the level of utility from being at the poverty threshold. Piasecki and Bieńkuńska (2018) report estimations based on different values of α (0.25; 0.3; 0.33; 0.4; 0.5). Including further control variables also allows us to derive the poverty thresholds for other subgroups of households.

Note that the estimated value of a subjective poverty line is also determined by the value of u_i which corresponds to the assumed utility level (α). The subjective poverty line estimated for a certain household size depends on an arbitrarily chosen welfare level below which households are considered poor. Nevertheless, individual poverty lines can be estimated for each household and aggregating poverty lines across households can help to address this concern.

An Approach Based on Proportional Odds Logistic Regression

Utilizing ordered categorical data (such as the Deleeck question, Box 7) allows us to employ proportional odds logistic regression, as recently suggested by Pittau and Zeli (2023). Adopting the alternative specification of ordered probit/logit model, as discussed by the authors, allows a direct interpretation of the estimated intercepts as thresholds on the scale of income. The poverty line is constructed as described in Box 16.

Box 16.

As the original (ordered) responses correspond to the self-declared status (e.g., the ability to make ends meet elicited on scale 1 – 6), the following parametrization of the model is required:

$$y_i = \begin{cases} 1 \text{ if } z_i \le c_{1.5} \\ 2 \text{ if } z_i \in (c_{1.5}, c_{2.5}] \\ \vdots \\ 5 \text{ if } z_i \in (c_{4.5}, c_{5.5}] \\ 6 \text{ if } z_i > c_{5.5} \end{cases}$$

where

$z_i = x_i + \varepsilon_i, \varepsilon_i \sim \mathrm{N}(0, \sigma^2)$.

Adopting this parametrization, intercepts $c_{1.5}$, $c_{2.5}$, …, $c_{5.5}$ can be directly interpreted as thresholds on the scale of income.

Considering the proportional odds model:

$$\log\left(\frac{\text{Prob}(y \le k)}{\text{Prob}(y > k)}\right) = c_k + x\beta,$$

where

c_k are the intercepts, i.e. the cut-points that need to be estimated,

x is income,

β is the regression coefficient that needs to be estimated;

the estimated thresholds can be transformed in the scale of income using a simple re-parametrization:

$\hat{c}_{1.5} = \frac{\hat{c}_{1|2}}{|\hat{\beta}|}; \hat{c}_{2.5} = \frac{\hat{c}_{2|3}}{|\hat{\beta}|}$; etc. , where $\hat{\beta}, \hat{c}_{1|2}, ..., \hat{c}_{5|6}$ are the estimates of the standard parametrization provided within a statistical software output.

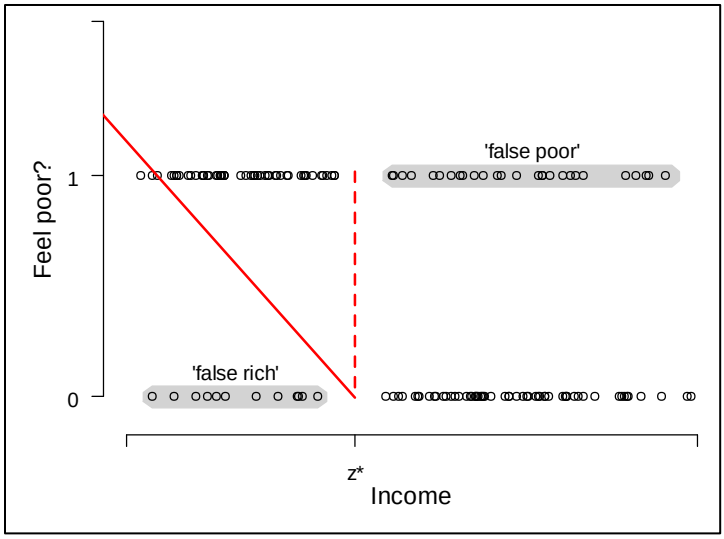
For further details, refer to the study by Pittau and Zeli (2021).

An Approach Based on Dichotomized Data

An alternative way to estimate monetary subjective poverty line when having categorical variables has been produced by Želinský et al. (2020). This method was designed to apply a dichotomized variable. However, the current most frequently applied question in the EU is a 6-point scale variable, the ability to make ends meet question (Box 7), integrated in the EU-SILC survey. A way to proceed is first dichotomize the question responses (e.g., households who report great difficulty to make ends meet are deemed poor and all other households are deemed as non-poor). This step is rather arbitrary, but it is necessary to assess the robustness of results by considering alternative dichotomizations.

Once the responses are converted to a binary variable, we can utilize an approach proposed by Duclos and Araar (2006) allowing for the estimation of subjective poverty lines with discrete information. This approach relies on a binary variable (or a dichotomized multi-categorical variable) with 1 representing subjectively poor and 0 otherwise. The working assumption is that respondents compare their actual income to an unknown subjective poverty line Z^* which is unobserved and must be estimated. As shown by Figure II.2, with the binary classification of (non-)poor, some respondents can misclassify their own situation, i.e., individuals with high income classify themselves as poor ("false poor"), while individuals with low income classify themselves as non-poor ("false rich"). To estimate the subjective poverty line Z^*, it is necessary to minimize the numbers of "false poor" and "false rich".

Figure II.2 Estimating a subjective poverty line with binary categorical variable



Source: Želinský et al. (2020, p. 2); based on Duclos and Araar (2006, p. 125).

Notes: Z* represents the subjective poverty line.

Following this intuition, Želinský et al. (2020) propose utilization of the Youden *J* index as an option to estimate the unknown subjective poverty line. The Youden Index estimates the poverty line by selecting the value of income at which the numbers of "false-poor" and "false-rich" individuals are minimized. As illustrated in Figure II.2, the cut-off point *Z** (subjective poverty line) is defined as the income level that differentiates households which are subjectively poor from those who are not. The poverty line can be operationalized as in Box 17.

One of the disadvantages of this approach is that it does not automatically allow for considering control variables, and subjective poverty lines need to be estimated separately for each subgroup of interest to account for household/individual characteristics.

Box 17. Subjective poverty line based on dichotomized data

Statistically, the Youden index, *J*, is a function of *c* which maximizes the sum of sensitivity (*Se*) and specificity (*Sp*) classification measures:

$$J(c) = \max_c\{Se(c) + Sp(c) - 1\}. \quad (1)$$

At a given *c*, *Se(c)* and *Sp(c)* denote the probabilities of correctly identifying subjectively non-poor and poor households. Denoting $X_1, X_2, \ldots, X_m$ and $Y_1, Y_2, \ldots, Y_n$ as the income levels of the non-poor and poor household groups, respectively, the Youden index is calculated as:

$$J(c) = \max_c\left\{\frac{\sum_{i=1}^{m} I(X_i \geq c)}{m} - \frac{\sum_{j=1}^{n} I(Y_j > c)}{n}\right\}, \quad (2)$$

where *I(D)* is an indicator function with *I(D) = 1* if *D* is true, 0 otherwise. Subsequently, the optimal value of *c* is the one which maximizes the value of *J*, or equivalently, the number of correctly classified households. Statistically, the Youden *J* index is based on

maximising the sum of sensitivity and specificity classification measures. $J = 1$ represents a perfect classification while $J < 1$ indicates otherwise.

The Youden (1950) index was initially introduced in medical literature to assess the ability of a biomarker test to classify individuals as either diseased or non-diseased, based on which side of a cut-off point, *c*, their biomarker values fell on along the distribution of possible values. The Youden index can be adapted to the poverty context by defining the cut-off point as the income level that differentiates households which are subjectively poor from those which are not. Nevertheless, the classification exercise is not limited to the adoption of the Youden index but can also be based on alternative metrics such as those based on a Receiver Operating Characteristics (ROC) curve.

C. Country/international organization examples

From the in-depth review of current country practices organized by the Bureau of the Conference of European Statisticians, only two countries reported using responses to monetary subjective poverty questions to produce such thresholds. The Italian National Institute of Statistics reports using the Subjective Poverty Line (SPL) method. The Brazilian Institute of Geography and Statistics reported periodically using the SPL method as well as exploring the possibility of using the Leyden Poverty Line (LPL) and the Center of Social Policy Poverty Line (CSP) methods. [*Add when Stat Poland gives us info: Statistics Poland reported developing its own method inspired by the LPL approach.*]

Chapter 4. STATCAN contribution

Methods of data collection and guidelines

This section focuses on data collection methods for subjective poverty research, offering an overview of various approaches and guidelines, including their characteristics, benefits, and limitations. It underscores the importance of survey frame quality and sample selection in method selection, providing organizations with a comprehensive toolkit to choose the most suitable approach. Additionally, it hints at a forthcoming systematic review of questions conducted across the UNECE region by 15 countries in subjective poverty research, aiming to provide a comprehensive resource for organizations seeking to gather relevant data for their specific needs and priorities.

The initial step in gathering and validating subjective poverty data involves understanding the range of collection methods in use. This section provides a description and comparison of common approaches, focusing on major methods and offering specific use cases. These approaches span from complex sampling surveys to simpler web panel data collected through crowdsourcing, summarized in Table 1. While this table does not serve as an exhaustive study comparing these methods, it offers an overview based on Statistics Canada's experience, considering factors such as data quality, sample control, duration, and cost. Notably, there is a trade-off between cheaper and quicker surveys with higher error rates and limited generalizability to population estimates, impacting the ability to study subpopulations as opposed to more expensive tradition surveys which are designed to produce higher quality

data. Therefore, aligning data collection methods with specific research needs is a critical initial step, and Table 1 serves as a helpful starting point for organizations engaged in subjective poverty research.

In essence, this section outlines the importance of understanding various subjective poverty data collection methods and introduces a practical reference tool, as seen in Table 1, which organizations can use to make informed decisions based on their resource constraints and research objectives.

Table 1 – Data collection methods

Data collection type	Description	Control over sample	Approximate Duration (planning to execution)	Cost	Country Use Cases
Traditional Survey	'Specialized need'	Very high control	1+ year	Most expensive	EU-SILC
Opinion Poll Survey	'Specialized need'	Some control	1+ year	Medium expense	United States – Gallup Poll
Omnibus Survey	'General Social Data'	High control	9 months	Medium expense	Canadian Social Survey
Rapid Response	'Quick and Stand alone'	Some control	7-8 months	Medium expense	Bureau of Labour Statistics
Web panel[31]	'Rapid indicator'	Low control	4 months	Low expense	Statistics Canada
Crowdsourcing	'Pulse check'	Voluntary (low sample control)	Shortest (4 month turn around)	Low expense	Statistics Canada
Administrative data	Used to improve sampling and calibration of surveys	Often mandatory (tax data)	n/a	Varies	Statistics Denmark (for EU-SILC)

Source: Statistics Canada, 2022

Survey Frame and sample considerations

Prior to elaborating further on each of these survey designs it is worth mentioning two overarching considerations common to all approaches. One of them is the necessity of a high-quality survey frame, and the second is sample selection. Better descriptions of a survey frame can be found elsewhere as this chapter assumes a certain degree of prior knowledge of surveys by its audience. However, a very broad review is helpful here to help understand the following descriptions. There are two types of frames used at Statistics Canada: a list frame and an area frame. Qualities of a good frame include:

[31] Program and proceedings (statcan.gc.ca)

- **Relevance:** the extent to which the survey frame corresponds and permits access to the target population.
- **Accuracy:** includes evaluation of coverage errors to minimize and assess coverage and classification errors of the statistical units in the frame.
- **Timeliness:** how up-to date is the frame with respect to the survey reference period and current affairs.
- **Cost:** the total cost to develop the frame in comparison to the total cost of a survey. (Statistics Canada, 2010).

The second consideration is sample selection when choosing a data collection method. Sample selection poses the following questions: (1) Is the survey mandatory or voluntary? (2) Is it a probability or non-probability sampling? (3) How large is the sample size? Like the previous consideration, better references exist for more systematic review of survey design and sample considerations[32]. The following section is written in an accessible way such that, with the descriptions above, a more complex understanding of survey frames and samples is not needed. The details of each should be considered as secondary to the broad overview of approaches described below.

The shift towards online surveys is increasing. Online surveys have gained popularity due to their cost-effectiveness, quick distribution, and utilization of multimedia elements. However, online surveys often differ in terms of sampling principles. Many online surveys do not use probability sampling, which allows for unbiased estimates and accuracy calculations. Instead, they rely on self-selection of respondents (Bethlehem, J., 2008). This departure from probability sampling leads to biased results and prevents the application of probability theory.

Self-selection surveys are not a viable solution. However, web surveys conducted within the framework of probability sampling hold potential, either as standalone surveys or as part of mixed-mode approaches. In these cases, web surveys can contribute to addressing the dilemma of limited budgets and increased information demands.

Traditional surveys

The first approach is traditional surveys whose strength resides in standardization, generalizability[33], and versatility. It is a method of gathering information from a set of people with the purpose of generalizing the results to a larger population. Surveys are used to understand the choices, preferences, and experiences respondents. They are longer and more detailed than polls and can be conducted in-person, over the phone, or online. When compared to non-survey-based data collection techniques such as focus groups traditional surveys are

32. References for developing samples including: Survey Methods and Practices (statcan.gc.ca)
    1. American Association for Public Opinion Research (AAPOR): Survey Practice
    2. The U.S. Census Bureau Our Surveys & Programs (census.gov)
    3. The World Bank's Data Quality Assessment Framework (DQAF): Data Quality Assessment Framework (DQAF) for the International Comparison Program (ICP) : paper for session five (worldbank.org)

[33] Generalizability is a measure of how representative your sample is to the target population, also known as external validity.

more cost effective to capture data on a population but are the most expense data collection technique reviewed here. Strict control over the survey sample facilitates probability sampling and improves generalizability to the target populations.

The European Statistics on Income and Living Conditions (EU-SILC) is an example of a traditional survey. It collects timely, cross-sectional, and longitudinal microdata from multiple European countries on income, social inclusion and living conditions cover objective and subjective aspects in monetary and non-monetary terms for households and individuals. Anchored in the European Statistical System (ESS), this survey was launched in 2003, replacing the European Community Household Panel (ECHP), which expired in 2001. The data it collects is comparable between the member countries on: (a) income, (b) poverty, (c) social exclusion, (d) housing, (e) labour, (f) education, (g) health. They are used to monitor the Europe 2030 targets of the European Pillar of Social Rights Action Plan[34], particularly its poverty reduction targets.

The reference population includes all private households and their residents who were in the country at the time of data collection. All household members are considered, but only those aged 16 or older are interviewed. Persons living in collective households or institutions are excluded from the target population.

Case Study 1: National Survey of Self-reported Well-being (ENBIARE) 2021 of Mexico

The National Survey of Self-reported Well-being (ENBIARE) [35]2021 in Mexico aims to capture people's subjective well-being perceptions. This survey was conducted in two questionnaires, one for housing and households and another to collect data from adults aged 18 and older, covering various dimensions of well-being, life events, and financial difficulties, including perceptions of income sufficiency and future financial outlook. It employs a probabilistic, stratified, three-stage sampling method, resulting in a national sample of 37,000 housing units. ENBIARE uses a Master Sample provided by Mexico's National Statistical Office, INEGI, to select diverse clusters for data collection. The data are available five months after collection, and the survey is expected to be conducted biennially. Data collected from June 3rd to July 23rd, 2021, revealed that 64% of respondents faced difficulties paying household expenses in the past year, and 43% anticipated insufficient income for the following month. The survey provides valuable insights at both national and state levels into well-being and financial challenges among Mexico's population.

ENBIARE questions about the minimum income sufficient to pay for monthly home needs. Once the minimum sufficient income has been declared, ask if the person considers that their household will be able to reach e the minimum income sufficient. This question is applied to an adult person, 18 years or older, selected from each household who share a common expense and reside in the homes assigned for the survey. The selection of the appropriate informant begins with the identification of the usual members of the household who are within the

[34] EU 2030 target on social protection aims that "out of 15 million people to lift out of poverty or social exclusion by 2030, at least 5 million should be children.". The European Pillar of Social Rights Action Plan (europa.eu)

[35] National Survey of Self-reported Well-being (ENBIARE) 2021 (inegi.org.mx)

established age range of 18 years of age or older, based on the information collected in the Household Questionnaire. Additionally, you meet the criteria of knowing how to read, write, and speak Spanish.

Minimum income perception question:

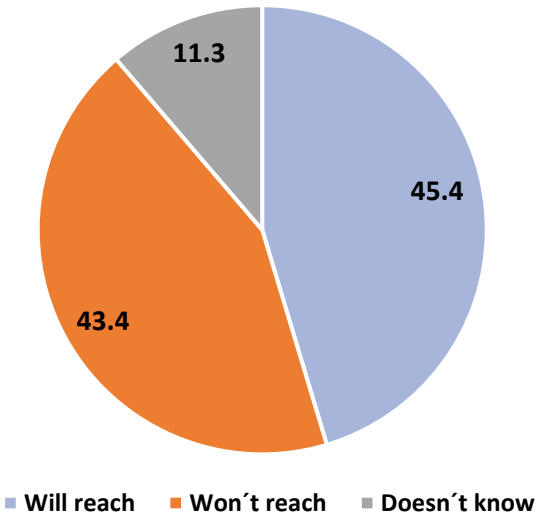
MINIMUM INCOME	PERCEPTION OF MINIMUM INCOME
In your opinion, how much income would be enough to meet all your household needs for a month? $\|\_\_\_\| ,\|\_\_\_\|\_\_\_\|\_\_\_\| , \|\_\_\_\|\_\_\_\|\_\_\_\|$ *PREFERS NO TO RESPOND 9 999 999*	**Do you consider that you or your home will reach this income level next month?** Yes.....1 No .....2 Doesn´t know 9

In ENBIARE the definition of minimum income refers to the amount of income from various sources, defined by the person, sufficient to meet all their household needs in a month.

Results:

The population that considered they would not get the minimum income necessary to meet household needs next month was 43.4%, 11.3% did not know, and 45.4% declared they would get it.

Figure 1. Share of households by perception of getting the minimum income level, 2021



Source: INEGI. National Survey of Self-reported Well-being (ENBIARE) 2021, Database.

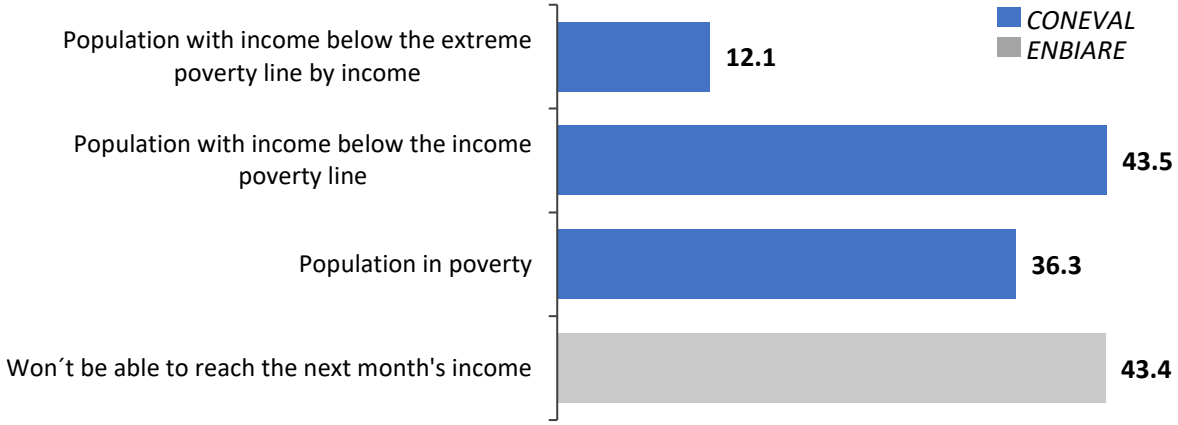
Encuesta Nacional de Bienestar Autorreportado (ENBIARE) 2021 (inegi.org.mx)

Regarding conceptual and statistical design, the ENBIARE target population is adults aged 18 years or over who are literate and Spanish-speaking. Observation units are the sample selected housing units, the households, the population residing in households, and the chosen people aged 18 years and over who can read, write, and speak Spanish. ENBIARE provides estimations with a geographical breakdown at the national and state levels. The indicator of subjective poverty in ENBIARE refers to the household where the adult population resides. The household income necessary to make ends meet is based on the personal perception of his household's minimum needs.

On the other hand, Mexico has an official, objective measurement of multidimensional poverty. This means that, in addition to considering the insufficiency of economic resources, it considers several additional dimensions on which social policy should focus. Under the General Law of Social Development, the guidelines and criteria to define, identify, and measure poverty are issued by the National Council for the Evaluation of Social Development Policy (CONEVAL, by its Spanish acronym). CONEVAL must use the information generated by INEGI through the National Survey of Household Income and Expenditure (ENIGH) to estimate poverty.

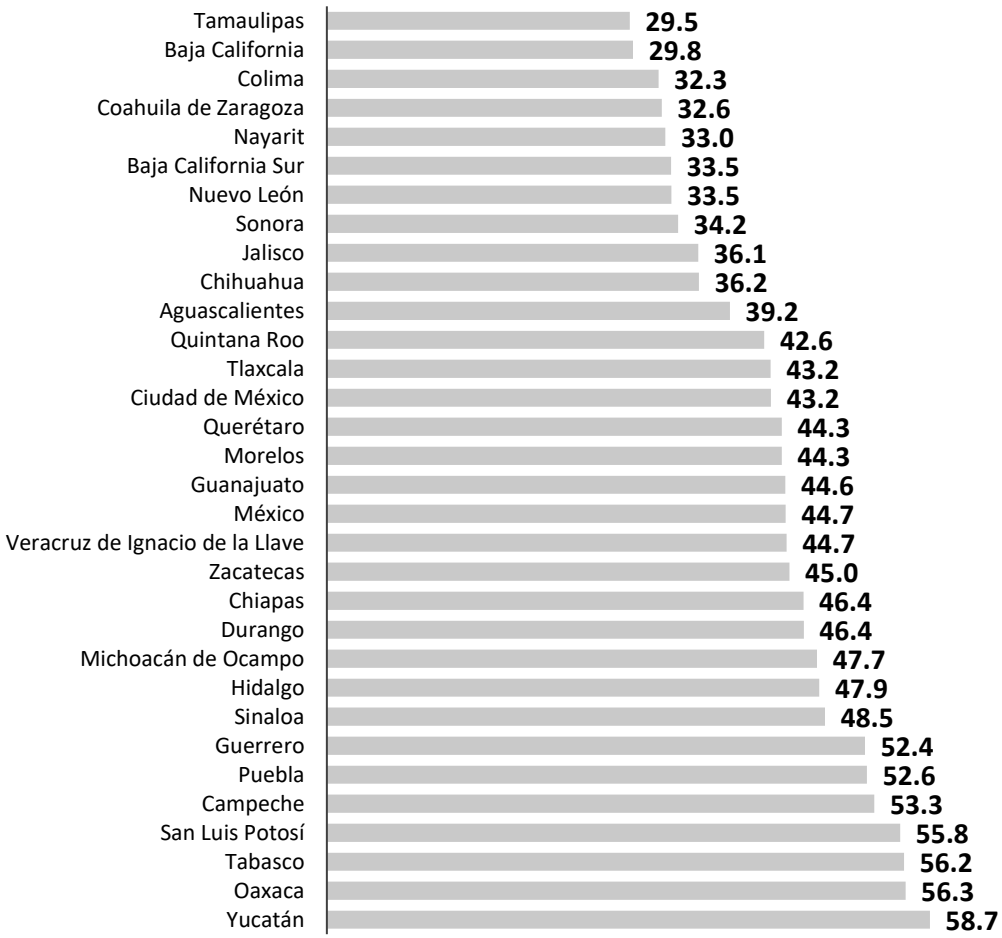
The following graph compares the subjective poverty indicator (43.4%) with the population in poverty, those with income below the poverty line, and those below the extreme poverty line by income. The subjective indicator reports a similar level to the objective indicator that captures the population below the income poverty line (43.5 percent).

Figure 2. Subjective poverty indicator and objectives poverty indicators, 2021 and 2022



Source: INEGI. National Survey of Self-reported Well-being (ENBIARE) 2021, Database.
Encuesta Nacional de Bienestar Autorreportado (ENBIARE) 2021 (inegi.org.mx)
National Council for the Evaluation of Social Development Policy (CONEVAL, by its Spanish acronym)
https://www.coneval.org.mx/Medicion/MP/Paginas/AE_pobreza_2022.aspx
Note: ENBIARE data refers to the year 2021. CONEVAL data refers to 2022.

Figure 1. Percentage won´t be able to reach the next month's income, 2021



Source: INEGI. National Survey of Self-reported Well-being (ENBIARE) 2021, Database.

Encuesta Nacional de Bienestar Autorreportado (ENBIARE) 2021 (inegi.org.mx)

Omnibus Survey

An omnibus survey is collects data on a wide variety of subjects in the same interview while sharing the common demographic data collected from each respondent. They provide a convenient and efficient way to collect data from a consistent group of respondents. They allow researchers to leverage the same sample over time, thereby improving the accuracy of their results, optimizing survey procedures, and potentially reducing costs associated with recruiting new samples for each individual survey. This approach is particularly valuable when there is a need for quick and frequent insights across different subjects within a population. Case Study 2 below elaborates on an omnibus survey methodology.

Case Study 2: The Quality of Life framework for Canada

Canada's Quality of Life Framework, introduced in the 2021 budget alongside the report "Measuring What Matters," aims to move beyond GDP and incorporate social, economic, and environmental factors into Canada's assessment of quality of life. This framework acknowledges the multifaceted nature of well-being and incorporates both subjective and objective measures, some of which can be adapted to assess subjective poverty. It aligns with global trends seen in frameworks from countries like New Zealand, Scotland, Iceland, and the UK[36], which blend subjective and objective indicators in response to recommendations from the 2009 Commission on the Measurement of Economic Performance and Social Progress.

The Canadian Quality of Life Framework consists of 84 indicators organized into five domains: prosperity, health, environment, good governance, and society. Statistics Canada gathers data for many of these indicators through surveys and administrative sources, with 58 of them presently defined on the Quality of Life hub. Some indicators relevant to subjective poverty include job satisfaction, financial well-being, self-rated health, and trust. Data collection primarily relies on the Canadian Social Survey (CSS), a versatile survey that examines various social issues every three months and pools the data over a year to track changes in living conditions and well-being, showcasing Statistics Canada's approach to studying subjective well-being.

Opinion Poll Survey

Opinion polls serve as a rapid means to gather public sentiment on specific topics and can be conducted through online, paper, in-person, or phone surveys. A poll is a method of collecting data by asking a single question with a limited number of answer options. Polls are generally used to make quick decisions and are conducted at various stages. These polls are particularly useful for gauging majority opinions and can be applied to assess perceived poverty levels or evaluate the validity of official poverty thresholds. With an adequate sample size and randomization, opinion polls offer reliable insights across various demographic groups and are generally cost-effective compared to traditional surveys. An illustrative example is a 1989 Gallup poll in the United States that revealed public opinion placed the Official Poverty Measure thresholds 19% higher than calculated using conventional objective methods. In Canada, government departments often collaborate with external organizations to conduct public opinion research, utilizing their expertise in questionnaire design and occasionally involving subject matter experts, such as psychologists or sociologists, to refine questionnaire wording and content.

Rapid response

Rapid response surveys are ad-hoc surveys that provide snapshots of a population on specific issues and can obtain information directly on the most pressing data needs. While this shares many common features as typical surveys, when timeliness is of great importance, certain

[36] Our Living Standards Framework | The Treasury New Zealand, Quality of life in the UK - Office for National Statistics (ons.gov.uk), National Performance Framework | Our Place, Iceland – Wellbeing Framework : Wellbeing Economy Alliance (weall.org)

parameters are loosened, such as randomization of the sample. This allows the survey to be developed and fielded faster than a typical survey.

The benefit of this is that it can provide a pulse on a particular subject. These have been used widely during the pandemic, when the rapidly changing economic and political environment due to the ongoing health crisis necessitated more timely information for decision makers than had previously been built into official data collection strategies. The drawback to this speed is that often they are less representative of the target population and are considered of lower quality data.

Case Study 3: The U.S. Census Bureau Household Pulse Survey Financial Well-being Question

In response to the COVID-19 pandemic, the U.S. Census Bureau launched the Household Pulse Survey (HPS)[37] in collaboration with multiple federal agencies. This survey aimed to provide timely and efficient data compared to traditional surveys. The HPS operates in two-week survey periods, with a one-week gap between them, and data releases about a week after each survey period ends[38]. Since, the beginning of HSP in 2020, federal agencies contribute critical questionnaire items to inform their missions and understand the pandemic's impact on individuals, families, and households. The questions are periodically reviewed and updated to address evolving economic conditions and agency-specific needs.

The HPS sampling frame combines the Census Bureau's Master Address File with email addresses and mobile phone numbers. Participants receive email or text invitations to complete the online questionnaire, and follow-up reminders are sent if there's no response. Each survey period involves approximately one million households, resulting in about 80,000 respondents despite low response rates of around 8%. Weight adjustments ensure that responses are representative of the U.S. population. The HPS collects a wide range of data, including both objective and subjective well-being dimensions. Objective questions cover household income, employment experiences, healthcare access, educational disruptions, and vaccination status. Subjective questions focus on perceptions of food and housing security, physical and mental health, and general financial well-being. Garner, Safir, and Schild (2020)[39] [40]analyzed responses to the financial difficulty questions and in relationship to income using data collected from August 19 to 31, 2020. The data shows that financial difficulty is correlated with income, with 59.1% of those earning less than $25,000 reporting some financial difficulty compared to 7.5% among those earning $200,000 or more. Depending on how poverty is defined, it ranges from one-third of the population experiencing some difficulty to 8.3% facing both difficulty and lower income.

---

[37] Additional details about the Household Pulse Survey and the public use data can be at the following link: https://www.census.gov/programs-surveys/household-pulse-survey.html

[38] This schedule is how the survey is currently being conducted but is not how it has always been conducted. Additional information about how the survey was conducted during earlier cycles can be found in the technical documentation available on the Census Bureau's Household Pulse Survey webpage. See Footnote 1 for link.

[39] https://www.bls.gov/opub/mlr/2020/article/changes-in-consumer-behaviors-and-financial-well-being-during-the-coronavirus-pandemic.htm

Web-panel

Web panel surveys are a fast and cost-efficient method in market surveys thanks to the continued use of the internet and increasing nonresponse rates and prices. Per Bethlehem (2008), web-panels are just another mode of data collection. Questions are not asked face-to-face or by telephone, but over the Internet. The difference is the principles of probability sampling are not applied. By selecting random samples, probability theory can be applied, making it possible to compute unbiased, more accurate estimates. Web surveys often rely on self-selection of respondents instead of probability sampling having serious impact on the quality of survey. There are also risks of coverage and measurement errors. The absence of an inferential framework and of data quality indicators is an obstacle against using the web panel approach for high-quality statistics about general populations.

Crowdsourced surveys

Crowdsourcing involves collecting information by accessing a large community of online users on a given topic. Statistics Canada has conducted several crowdsourced surveys via means of a mobile application and engagement. This method lessens the burden for respondents and allows for quick responses on a variety of subjects. Case 4 below provides more information on Statistics Canada's use of crowdsource surveys to collect subjective poverty data.

Crowdsourcing is less costly than traditional surveys, quicker than other survey types, and can be a tool to improve how information is collected by filling data gaps. Its strengths, however, come with risks of population bias due to the lack of sampling control.

Case Study 4: Using crowdsourced data

Two Statistics Canada papers discussed the methodological issues that arise from integrating crowdsourced data into existing data sources. The goal is to use existing data sources to improve accuracy and remove bias in the crowdsourced data. The two approaches were the *sample matching method* (Poirier, 2021) and the *small area estimation technique* (Ding and Chatrchi, 2021). Both papers explored the Canadian Perspective Survey Series (CPSS) — an initiative that began during the pandemic to improve data timeliness. It collected data on just over 32,000 Canadians every month.

The *sample matching method* combined the larger sample of the CPSS crowdsourced survey with an online web-panel survey, a quarter of its size. Only provincial estimates could be provided due to the smaller sample size. The web-panel survey used a probability sample of randomly selected respondents aged 15 years and older from the Labour Force Survey (LFS). The probability sample applied sample weights from the LFS to a portion of the CPSS respondents, thus reducing bias in the crowdsourced data, with the caveat that the bias reduction depended on the variable of interest.

The small area estimation technique used a basic area-level model to evaluate the

effectiveness of a crowdsourced survey to reduce the variance in web-panel estimates. It adopted a similar methodology to the LFS. The small area estimate is based on two quantities: the direct estimate from the survey data and a predication-based model, also known as a synthetic estimate. The results from the first round of modeling were successful for the domains of province, age group, and sex. For the other domains of interest, such as the Census Metropolitan Area (CMA)[41], the results were unsatisfactory. The area-level model may have improved the precision of estimates, yet achieving a suitable model remains a challenge.

Administrative and registry data

Administrative and registry data are valuable for enhancing survey data and reducing response burden, although they are not typically used directly to measure subjective poverty. These data sources, including demographics, income, wealth, labor market participation, and education, can improve data quality through methods like weight calibration after sampling. For instance, a census dataset linked to administrative data like income or education allows statisticians to oversample low-income households, enhancing the accuracy of subjective poverty surveys.

In countries with low response rates and biases in voluntary household surveys, calibrating survey weights based on factors such as income and demographics can help mitigate these biases, provided there is a strong correlation between these factors and the measure of subjective poverty under investigation. However, one limitation of administrative data is its timeliness, as income data may not align with survey collection periods, necessitating the use of preceding years' data or preliminary income information.

Case Study 5: Use of administrative data for sampling and calibration of EU-SILC at Statistics Denmark

In Denmark, the EU-SILC[42] survey serves as the primary source for data on subjective poverty, with a voluntary participation rate of 52% in 2022, leading to biased responses where low-income households participate less frequently. To address this bias, Statistics Denmark employs administrative registers extensively for both sampling and post-calibration of survey weights.

Using an anonymized version of the Danish Central Personal identifiers (CPR), Statistics Denmark links surveys and administrative data, obtaining comprehensive information on both respondents and non-respondents. The Danish census is continually updated, providing an up-to-date sampling frame for EU-SILC. To ensure adequate coverage of less populated regions,

[41] A Census Metropolitan Area (CMA) is formed by one or more adjacent municipalities centered on a population center (known as the core). A CMA must have a total population of at least 100,000, based on data from the current Census of Population Program, of which 50,000 or more must live in the core based on adjusted data from the previous Census of Population Program. Source: Dictionary, Census of Population, 2021 – Census metropolitan area (CMA) and census agglomeration (CA) (statcan.gc.ca)

[42] Documentation of statistics: Survey on Living Conditions (SILC) - Statistics Denmark (dst.dk)

the EU-SILC sample is stratified regionally (NUTS-2) and incorporates preliminary income data to oversample households likely to have incomes below 60% of the median.

Following data collection, the survey undergoes calibration using administrative data on age-groups, household size, income groups, and socio-economic status for the entire population, ensuring more accurate and representative results. This comprehensive approach leveraging administrative data helps mitigate bias and improve the quality of subjective poverty data in Denmark's EU-SILC survey.

Note:

1. Eurostat is the statistical office of the European Union. Who we are - Eurostat (europa.eu).
2. Nomenclature of Territorial Units for Statistics (NUTS-2).

Sources of error: concerns with response and representativeness

This section delves into sources of error and precision requirements related to EU-SILC (European Union Statistics on Income and Living Conditions), emphasizing the importance of studying error sources and standardizing quality measures across EU countries. In 2021, new legislation brought changes to EU-SILC data collection[43], including precision requirements at national and regional levels for poverty and social exclusion indicators. The legislation, Regulation (EU) 2019/1700[44], establishes standards for geographical coverage, sample characteristics, data gathering periods, and data processing, striving to align with the EU's regulations.

The section identifies six measures of error: standard errors, coverage errors, measurement and processing errors, non-response errors (both unit and item), sampling error, and representativeness error. Standard errors gauge data reliability and were considered during EU-SILC's design to ensure an absolute precision of about one point for the at-risk-of-poverty rate. Coverage errors relate to imperfections in the sampling frame and are influenced by the use of population registers or census databases, necessitating frequent updates. Measurement and processing errors can arise from questionnaire design and data collection complexity, impacting data accuracy.

Non-response errors, including unit and item non-response, are inevitable and can introduce bias, particularly if specific survey patterns emerge such as a particular question being skipped by a significant number of respondents. Corrective measures, such as post-stratification or logistic regression models, are employed to address non-response. Sampling error is recognized as a challenge when measuring subjective phenomena due to susceptibility to non-

[43] Legislation - Income and living conditions - Eurostat (europa.eu)
[44] Regulation (EU) 2019/1700 establishing a common framework for European statistics relating to persons and households (IESS regulation). https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.LI.2019.261.01.0001.01.ENG

sampling error, such as changes in respondent mood or external factors affecting perceptions.

Representativeness error, particularly in the context of crowdsourced surveys where population bias can occur, may lack control over sample representativeness, potentially leading to biased outcomes.

Validity and relationship to other measures of poverty and economic well-being

This section offers guidance on validity and reliability, beginning by examining the advantages and disadvantages of subjective measures in comparison to alternative measures. It also complements the decision regarding data collection methods and question design by summarizing typical errors related to responsiveness and representativeness, regardless of the chosen approach.

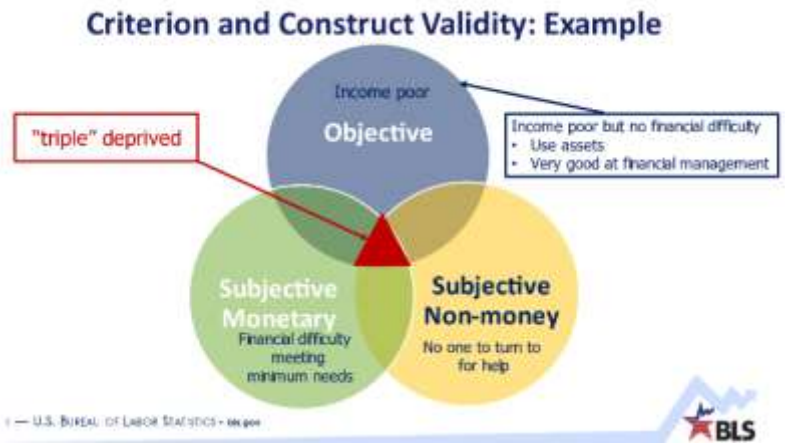
Quality reports and validating data

The national quality reports for EU-SILC[45] are specified in EU regulation 2019/1700 on European statistics relating to persons and households, and regulated by EU regulations 2019/2180 [46]and 2019/2242[47], delves into the importance of validating collected data and its relation to other reliable sources. It emphasizes the need for countries to submit quality reports to Eurostat, following specific regulations, to ensure data accuracy. These reports cover various aspects, including sample design, data collection procedures, measurement errors, and data comparability.

Regarding subjective well-being (SWB) assessment, the EU-SILC reports reveal an alignment between respondents' hypothetical scenarios and their anticipated SWB rankings. Factors influencing this alignment include a sense of purpose, perceived control over life, family happiness, and social status. The research draws upon data from diverse sources, with an 83% alignment rate between SWB and choices. However, systematic differences in some instances warrant investigation.

Figure 1. Criterion and Construct Validity

[45] See Quality - Income and living conditions - Eurostat (europa.eu)
[46] EUR-Lex - 32019R2180 - EN - EUR-Lex (europa.eu)
[47] EUR-Lex - 32019R2242 - EN - EUR-Lex (europa.eu)



Source: Bureau of Labour Statistics (?)

Each measure identifies about 20% of the population as poor. 33% of the population with at least one indicator and only 5.7% as experiencing all three.

Furthermore, the report underscores the challenges in assessing various dimensions of poverty and social exclusion. It highlights the lack of overlap among measures such as deprivation, subjective poverty, and income poverty. The study explores overlapping poverties and different permutations, concluding that multiple measures are essential for reliable results. Various factors contribute to the lack of overlap, including transition, differing perceptions of poverty, and technical considerations like housing costs and income distribution within households. Ultimately, using multiple measures can lead to more accurate and nuanced insights into poverty.

Advantages of subjective poverty measures

Subjective poverty measures offer several advantages, including their multidimensionality, as respondents can consider various factors such as income, costs, living conditions, and societal norms in their assessments. Unlike one-dimensional income-based measures, subjective approaches reflect what individuals consider necessary to avoid poverty and meet their family's needs, considering socio-psychological factors that influence well-being.

Disadvantages of subjective poverty measures

Subjective poverty measures, despite their value in reflecting people's perceptions of their circumstances, come with certain drawbacks. They rely on individual opinions to identify deprivations, which can vary significantly based on location, culture, aspirations, age, and other factors, making it challenging to define adequate needs universally.

Subjective measures of welfare, while valuable, come with several challenges. One major concern is the potential for response errors, variations in interpreting survey questions, mood fluctuations, and differences in personality and tastes among respondents (Ravallion and Lokshin, 2002, p. 1471). People may have diverse ideas about what it means to be "poor" or

"rich," leading them to interpret subjective welfare questions differently (Ravallion, 2014, p. 182–183). This subjectivity can lead to frame of reference bias, where individuals in vulnerable positions may adapt their preferences to their circumstances, resulting in an underestimation of their actual hardship (Graham, 2010). Conversely, those with objectively comfortable lives may express dissatisfaction, causing lower subjective welfare ratings than those who are objectively worse off (Ravallion, 2014, p. 160).

Another challenge is the variability in responses over time, with studies showing fluctuations in reported subjective well-being for the same individuals when interviewed at different times Ravallion (2014, p. 153). Additionally, the framing and context of questions can impact responses, whether through interviewer-administered surveys or self-administered ones (Conti and Pudney, 2011, p. 1093). These challenges emphasize the complexity and subjectivity inherent in measuring welfare and well-being, making it crucial to consider multiple factors and sources when assessing individuals' economic and overall well-being.

Differences in personal opinion

Subjective indicators pose challenges when the cutoffs are set relative to the sampled population. This can complicate the interpretation of poverty trends because changes in poverty may result from changes in either the indicator thresholds or the relative threshold's adjustment. For example, if the subjective poverty threshold is recalibrated with each new dataset according to the sampled population, it can impact the axiomatic properties of measures, potentially rendering some axioms inapplicable (Alkire and Foster 2011).

Most multidimensional measures typically set indicator thresholds based on consistent international or national standards, adjusting them transparently every decade or so. These standards often incorporate expert opinions, participatory exercises, international regulations, and development targets. Having fixed and given indicator thresholds simplifies policy interpretation and allows policymakers to track progress and allocate resources effectively based on observed disparities in poverty levels (Alkire, Kanagaratnam and Suppa 2018). However, changes in the population's frame of reference and aspirations could lead to shifts in subjective poverty thresholds, making it challenging to interpret objective improvements alongside measured decreases in subjective poverty.

Timeframe for data collection and release

Subjective poverty is influenced by various factors and can be either a lasting or temporary condition. Yafit Alfandari (2020), states that when measuring temporary subjective poverty, determining the appropriate time frame is crucial. A one-year time frame is recommended because it is less susceptible to temporary fluctuations caused by short-term circumstances. This period provides a robust assessment of subjective poverty.

Moreover, subjective poverty indicators should not be considered in isolation but should be compared to indicators from different domains. Using a one-year time frame for data collection allows for insights into both the present scope and nature of the phenomenon and estimates of assistance required. Lifetime experience data, collected over the years, provides an overall picture of the total number of individuals affected by subjective poverty, offering a

comprehensive perspective. This approach is consistent with measuring other complex social phenomena like violence against women.

Cross-sectional versus longitudinal data collection

In marketing research, there has been increasing concern about the validity of cross-sectional surveys by editors, reviewers, and authors. These validity concerns center on reducing common method variance bias and enhancing causal inferences. Longitudinal data collection is commonly offered as a solution to these problems. A study by Rindfleisch et al. (2008) looked at the role of longitudinal surveys in addressing these concerns and provided a comparison of the validity of cross-sectional versus longitudinal surveys using two data sets and a Monte Carlo simulation by reducing the threat of common method variance bias and enhancing causal inference. Under certain conditions, cross-sectional data exhibit validity comparable to the results obtained from longitudinal data. Though longitudinal surveys offer advantages in terms of reducing these two validity threats, is appropriate when the temporal nature of the phenomena is clear and unlikely that intervening events could confound a follow-up study, or alternative explanations are likely, a cross-sectional approach may be more adequate for studies that examine concrete and externally oriented constructs, sample highly educated respondents, employ diverse measurement scales, and are strongly rooted in theory (Rindfleisch et al. 2008).

Marketing researchers recommended using longitudinal analysis and multilevel modeling to minimize the random measurement error and common method bias by measuring the study variables at multiple time points. A study by Shashanka et al. (2021) adopted the multilevel structural equation modeling (ML-SEM) to analyze the longitudinal data of the factors influencing the shoppers' Impulse purchase behavior (IPB). Structural equation modeling (SEM) was conducted to examine changes in the causal effects at each time point of data collection. The results of ML-SEM indicate significant fluctuations in the factors influencing IPB over time. Results from the SEM indicated that few factors (like store ambience and salesperson interactions) have had a significant influence on IPB initially, during the first store visits of shoppers, but lost significance over time. The findings suggest that the store crowd, secondary customers influence, and in-store promotions show a significant influence on the IPB. Therefore, the study results of both longitudinal and cross-sectional modeling of the research model at five-time points indicated that the model validity is not significant over a period. This study enhances the statistical validity of the research model by analyzing the fluctuations in the research model over a period of time (Shashanka et al., 2021).

OECD subjective well-being guidelines

The OECD Guidelines for Micro Statistics on Household Wealth publication introduces a set of internationally agreed guidelines for producing micro-level statistics on household wealth, addressing a crucial gap in existing global guidance for measuring different aspects of individuals' economic well-being. These guidelines aim to resolve common conceptual, definitional, and practical challenges that nations encounter when generating such statistics and to enhance the comparability of country-specific data. They are essential for integrating micro-level data on household wealth with information on other dimensions of economic well-being, such as income and consumption. Understanding the composition and distribution of

household wealth at the micro-level is valuable for policymakers as it provides insights into various aspects, including debt distribution, homeownership drivers, liquidity constraints, and the impact of economic shocks on wealth and indebtedness.

To meet the increasing demand for micro-level wealth statistics and integrated economic well-being data, the OECD Committee on Statistics established an Expert Group in 2010[48]. This group was tasked with developing guidelines for collecting and presenting household wealth statistics, resulting in a comprehensive report (2013). These guidelines complement the Framework for Statistics on the Distribution of Household Income, Consumption, and Wealth. While macro-level statistics are already well-established, focusing on economy-wide performance and institutional sectors, micro-level wealth statistics delve into the ownership and distribution of wealth among individual households, necessitating some conceptual and practical distinctions. These guidelines help address these differences and provide recommendations for conducting wealth surveys and addressing challenges in measuring asset and liability components. They emphasize the importance of a life-cycle perspective when analyzing wealth data, as wealth accumulation and usage vary across different life stages. The report also underscores the need for periodic reviews and refinement of these guidelines to stay aligned with evolving measurement methodologies and analytical requirements, encouraging countries to test and adapt them according to their specific contexts.

Income, consumption, and wealth are three distinct dimensions of economic well-being, and this framework describes their central concepts, relationships, and additional elements that together form a self-contained system for assessing household economic well-being. The OECD framework[49] recognizes that higher levels of income and wealth can contribute to higher economic well-being by enabling greater consumption and saving for future consumption. It also considers capital transfers, in-kind income, and expenditure payments as key elements in understanding household economic resources and transactions. While households are the primary unit for analysis, the report recommends reporting both household- and person-weighted statistics to provide a comprehensive view of economic well-being, considering factors like economies of scale in larger households. It suggests a one-year reference period for implementing the framework and discusses practical data collection methods, including the use of surveys, administrative sources, and statistical matching. Additionally, the report highlights tools for presenting and analyzing information on household economic well-being and suggests ongoing testing and refinement of the framework to adapt to evolving practices and emerging research needs.

Hypothetical assessments of subjective poverty

The following section focuses on hypothetical questions to assess subjective poverty. Researchers often employ hypothetical questions to ask respondents to consider the basic needs of a reference or hypothetical family, such as what would be required for a family of two adults and two children to make ends meet or not be considered poor. This approach allows researchers to maintain control over the survey context and reduces concerns about

[48] OECD Guidelines for Micro Statistics on Household Wealth | OECD iLibrary (oecd-ilibrary.org)
[49] OECD Framework for Statistics on the Distribution of Household Income, Consumption and Wealth | OECD iLibrary (oecd-ilibrary.org)

respondents' current situations.

What is the role of question wording?

The role of question wording and survey design in subjective questions is critical, impacting the data collected. Research suggests that respondents often prefer precise, straightforward language and questions categorized by components (e.g., shelter, transportation, food) (Morrissette and Poulin, 1991). While considering respondents' preferences can reduce response burden, it remains uncertain whether this enhances data accuracy due to the lack of consistent measures of external validity for subjective questions.

Notable studies, such as Andrews and Withey's (1976) quality-of-life surveys, have explored effective scales like delighted/terrible (D/T) for measuring income-related feelings. Kapteyn et al. (1979) focused on income equation questions (IEQ) and D/T scales for assessing an individual's welfare function of income (WFI), with a preference for annual income reporting. Antonides et al. (1968) examined ten alternative methods for measuring welfare functions, emphasizing the need for further research. Garner's work (1991) compared data between the United States and the Netherlands, highlighting variations in responses attributed to question wording, survey design, and data collection instruments. These studies underscore the significance of question formulation and survey design in subjective data collection but also highlight the complexities in achieving consistency across responses.

Statistics Canada

A study conducted at Statistics Canada by Morrissette and Poulin (1991) found, using an Income Satisfaction Survey (IS), that question wording had a significant impact on the average minimum income reported by respondents. Using more restrictive language reduced the average minimum income by between 12% to 32% based on the 1987 and 1988 survey questions. The 1987 IS was split into two sample groups, each being asked a variation of the minimum income question, with the notable difference of using ‘considered necessary’ in one and ‘absolutely necessary’ in the second. The more restrictive language found in Figure 2 Version 2 led to a 12% decrease in the amount of income reported.

Figure 2 – More restrictive language lowers reported minimum income

Version 1 (1987)	**Version 2 (1987)**
To meet the expenses you **consider necessary**, what do you think is the minimum income a family like yours needs, on a yearly basis, to make ends meet (if you are not living with relatives, what are the minimum income needs of an individual like you)?	What do you think is the smallest yearly income a family the size of yours would need to meet **absolutely necessary** expenses (if you are not living with relatives, what is the smallest yearly income an individual like you would need?).

Source: Morrissette and Poulin (1991)

As in the 1987 IS survey, the 1988 IS survey had two subsamples. It found an even larger impact due to question wording. Compared with using 'consider necessary' language and an additional qualifier of 'before tax' income, the more restrictive language referring to 'basic needs' in Figure 3 Version 2 reduced respondents' minimum income by 32%.

Figure 3 – 'Before tax' in the question has a large impact on income reported

Version 1 (1988)	Version 2 (1988)
To meet the expenses you **consider necessary**, what do you think is the minimum income, **before tax**, a family like yours needs, on a yearly basis, to make ends meet (if you are not living with relatives, what are the minimum needs, before tax, of an individual like you)?	In your opinion, how much do you have to **spend** each year in order to provide the **basic needs** for your family? By basic needs I mean barely adequate food, shelter, clothing and other essential items required for daily living.

Source: Morrissette and Poulin (1991)

It is important to note that these surveys also contained unchanged questions, which helped ensure that the distributions of average minimum incomes were relatively stable over time. The data obtained from the original unchanged questions for 1983, 1986, and 1987 confirmed this (Morissette, 1991). It emphasizes the importance of consistency with question wording over time.

Other examples, such as the General Social Survey (GSS) ran extensive cognitive testing on the new concepts of criminal victimization were to better understand the ways in which sensitive survey topics such as family violence required greater security. While it was determined that cognitive tests were needed to study sensitive topics, researchers started to run cognitive tests to evaluate subjective poverty question.

Cognitive tests Bureau of Labor Statistics

Stinson (1997 and 1998) ran a series of cognitive tests to evaluate the effectiveness of various subjective poverty questions and alternative approaches to asking questions. The questions that were tested in 1996 included the Minimum Income Question (MIQ), Minimum Satisfaction Question (MSQ), Income Evaluation Question (IEQ), and Delighted/Terrible (D/T) 7-points scales ranging from a deep frown to a broad smile. The 1997 cognitive test looked at alternative measures to test respondents' feelings about the questions by using images such as faces, feeling thermometers, D/T, circles, economic attitudes, income balance,

and positive and negative lines scales[50]. Both tests revealed important lessons for subjective poverty questions, as demonstrated below in waves 1 and 2.

Wave 1 findings showed that questions about feelings towards income and expenses were informative but complex and burdensome, with hidden internal questions increasing respondent burden. Language framing and response categories were also ambiguous, suggesting the need for clearer language to enhance response precision.

In Wave 2, cognitive testing introduced new question wording and formats. Respondents preferred a segmented MIQ question, breaking it down into food, shelter, clothing, utilities, and work expenses, making it simpler and easier to understand. About 67% of respondents favored a shorter IEQ version. These findings emphasized the importance of question format in consistency of responses and revealed some inconsistencies between feelings expressed and objective assessments. Overall, respondents preferred simple, traditional survey question wording.

Framing and mode effects

Research has emphasized the significance of frame and mode effects in survey design and delivery, particularly when examining subjective phenomena. Frame effects, influenced by the survey's content or theme, have been observed to impact responses to subjective indicators. A study comparing the General Social Survey (GSS) and the Canadian Community Health Survey (CCHS) revealed that the GSS's changing theme led to variations in life satisfaction responses, mainly due to framing effects (Waverock et al., 2023). These effects were responsible for substantial year-over-year fluctuations in average self-reported life satisfaction.

Mode effects, on the other hand, are influenced by the method of data collection, such as interviews, online surveys, or paper questionnaires. These effects have been found to create differences in self-reported life satisfaction, particularly across various socio-demographic backgrounds. Furthermore, the design and content of welcome screens in online surveys play a critical role in influencing response rates. Factors like the stated survey duration and the emphasis on explaining privacy rights on the welcome screen significantly impact participants' decisions to engage in web surveys.

Both effects have the possibility of influencing a respondent, but the potential impact is greater for subjective questions. Individuals' responses can be 'primed' by preceding questions. The mode effects respondents experience, leading to a social desirability bias (Atkeson, Adams and Alvarez 2014; Tourangeau and Yan 2007) by responding differently if they believe they will

[50] Face: When used by Andrews and Withey, the faces formed a seven (7)-point scale ranging from a deep frown to a broad smile. In Stinson 1998, test was restricted the scale to five (5) faces. The "Feeling Thermometer" is a graphic device printed on a card that looks like a thermometer. It is, in fact, a nine (9) point scale ranging from 0 degrees (very cold or unfavorable feeling) up to 100 degrees (very warm or favorable feeling). The Delighted/Terrible (DT) Scale is a 7-point scale with a "mixed" category as the midpoint. In a previous test of this question, we found subjects generally unwilling to endorse extreme category as an expression of their feelings about their income. The Circles Scale is a series of seven circles that have each been divided into six segments. At the lowest end of the range, the six segments have all been labeled with minus signs; at the highest end of the range, there are plus signs placed within each segment. Of all the question formats that were tested, this series of five short-answer questions (dubbed as "economic attitude" questions), was the only section universally approved and applauded by all respondents. The Income Balance was single short-answer question asking respondents to compare the amounts of the income and expenses. The Line was a simple flat line with one end point labeled with a "+" and the other end point labeled with a "-." In-between the poles were three equally spaced vertical marks. Respondents were instructed to place their feelings about their total family income at the appropriate place along the line.

be viewed negatively by the interviewer, resulting in differences depending on the method of data collection.

Measurement errors in surveys like EU-SILC can stem from various sources, including the questionnaire, interview process, respondent, and data collection methods. To ensure data accuracy, it's crucial to construct questionnaires that facilitate accurate and efficient responses. This involves drawing insights from pilot surveys and past EU-SILC waves to identify and address potential issues. Pre-testing questionnaires helps anticipate problems and enhance the data collection process.

Subjective poverty and the evolution of measures

Subjective poverty is a concept rooted in individuals' personal perceptions and assessments of their economic well-being, influenced by factors like income, personality, and societal perspectives. Unlike objective measures, which rely on externally set thresholds, subjective measures assess poverty based on personal evaluations and can encompass both monetary and non-monetary aspects. Monetary measures often center on respondents' perceptions of the income required for financial security, while non-monetary measures assess aspects like the ability to make ends meet or afford specific items.

Subjective poverty can also be viewed through the lens of scarcity theory, which sees poverty as the gap between one's needs and available resources. Subjective income expectations play a significant role in this context, shaping how individuals perceive their welfare levels and make decisions regarding consumption and savings. While subjective and objective poverty assessments are related, they are often treated separately, with comprehensive measures considering both. This recommendation comes from the Stiglitz et al. report (2009) and has manifested in initiatives like the OECD Better Life Index (2023), which encompasses objective and subjective measures.

This section explores various perspectives on developing subjective poverty measures, including consensual methods[51] that define minimum needs or standards through responses about hypothetical situations and methods based on respondents' assessments of their own family or situation, which are more commonly used and theoretically grounded. These approaches aim to provide a holistic understanding of subjective poverty, offering valuable insights for policy development beyond income considerations.

Case Study 5: Subjective assessments versus objective measures of poverty – discussion of the definitions of selected poverty measures based on the Polish edition of the EU-SILC survey

Anna Bieńkuńska, Tomasz Piasecki

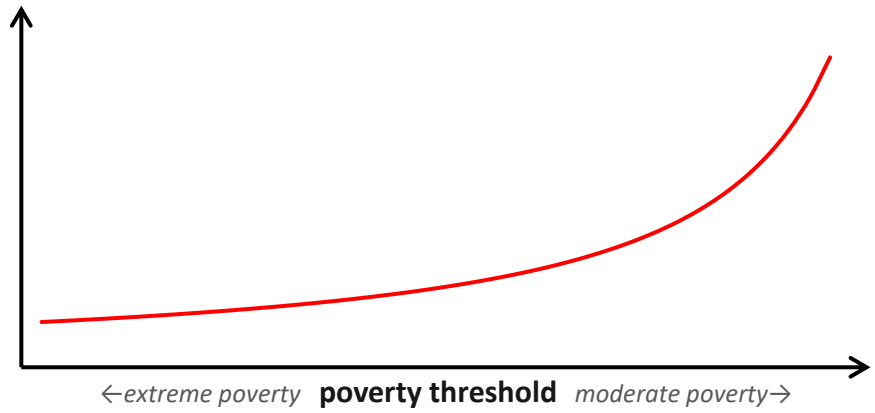
Measuring poverty is essential for social policy planning and evaluation, but it is a complex concept with multiple definitions and measurement approaches, including objective and subjective ones. Subjective assessments complement objective measures, offering a different

[51] Van den Bosch, 2001, p. xvi.

perspective on poverty and enabling a more comprehensive diagnosis of the phenomenon. These assessments can also verify and discuss the definitions of objective measures. An analysis based on 2019 micro-data from the Polish edition of the European Survey on Income and Living Conditions (EU-SILC) examines the relationship between objective poverty assessments and respondents' subjective evaluations of their material situation. It compares various objective poverty measures and demonstrates how subjective assessments can verify and interpret objective measures, including the discussion of poverty thresholds.

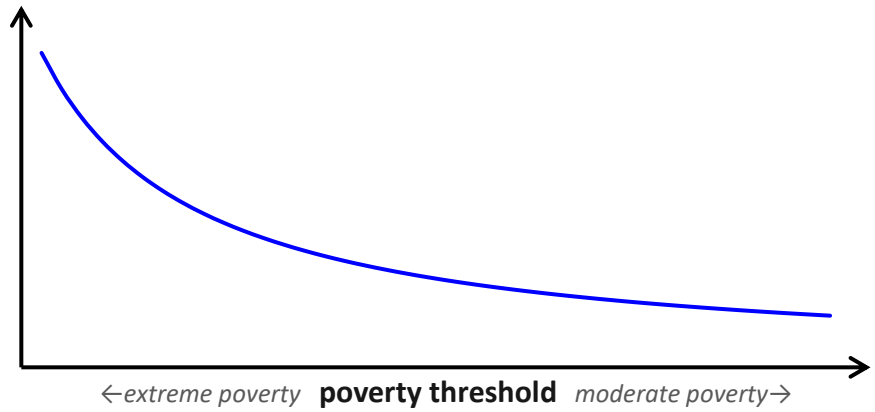
The EU-SILC survey does not directly measure subjective poverty but provides variables for indirect methods of measurement. This analysis focuses on indirect methods and uses a question about the ability to make ends meet to calculate an indicator of subjective economic stress, serving as an indirect measure of subjective poverty. The indicator represents the percentage of people in households struggling to make ends meet. Additionally, the study considers both commonly used poverty measures like the 'at-risk-of-poverty rate' (AROP) and the 'severe material and social deprivation rate' (SMSD)[52] for international comparisons and more specific indicators related to income poverty and deprivation.

Figure 3. 'False poverty' rate by poverty threshold (restrictiveness of the poverty definition) – theoretical model



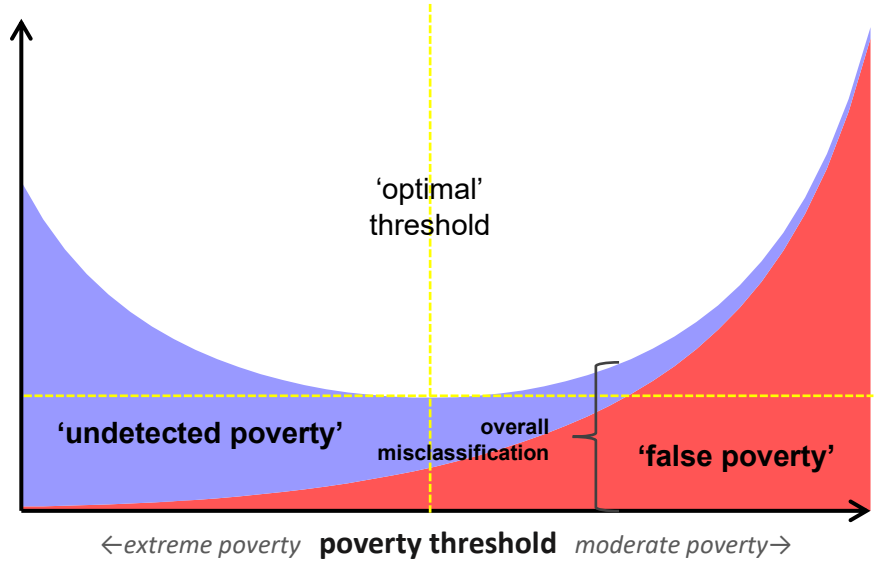
[52] See Glossary: Severe material and social deprivation rate (SMSD) - Statistics Explained (europa.eu)

Figure 4. 'Undetected poverty' rate by poverty threshold (restrictiveness of the poverty definition) – theoretical model



Figures 3 and 4 illustrate the expected relationship between the restrictiveness of the poverty threshold and various poverty indicators. A more restrictive threshold indicates extreme poverty, suggesting that those considered poor under such conditions should have worse living conditions on average, making it less likely for people with positive assessments of their material situation to be classified as poor ('false poverty'). Conversely, less restrictive poverty thresholds may lead to more frequent cases of 'false poverty' among those experiencing less acute poverty. Additionally, cases where individuals with a negative assessment of their situation are not considered poor ('undetected poverty') are more likely with restrictive thresholds. As the threshold becomes less restrictive, the incidence of 'undetected poverty' should decrease. Any decrease in threshold restrictiveness accompanied by changes in the false poverty or undetected poverty rates would raise doubts about the relationship between the chosen poverty measure and economic hardship, potentially questioning the validity of the measure itself.

Figure 5. 'False poverty', 'undetected poverty' and overall misclassification – shares in the whole population (theoretical model)



The relationship between 'false poverty' and 'undetected poverty' and the restrictiveness of the poverty threshold should follow the same pattern for the total population, leading to an overall misclassification. This overall misclassification reaches a minimum at a certain threshold value. This suggests that there exists an optimal threshold value for the objective poverty measurement method analyzed, where the classification of people into poor and non-poor aligns most closely with subjective assessments. This approach allows for the evaluation of poverty threshold values in terms of optimality and facilitates comparisons between various poverty measurement methods that use threshold values as parameters set at different levels.

This in-depth analysis delves into the relationship between various objective poverty measures and individuals' subjective assessments of their economic well-being. It aims to understand the extent to which these different measurements align and examines the impact of poverty thresholds on these alignments.

One key finding of the study is that the severe material and social deprivation indicator (SMSD) exhibits the highest consistency with subjective assessments among the objective poverty measures considered. In this regard, individuals classified as experiencing deprivation according to SMSD criteria tend to report greater economic stress and difficulties making ends meet. This suggests that SMSD effectively captures non-monetary aspects of poverty, providing a more comprehensive view of individuals' material conditions.

Conversely, the study highlights some anomalies when considering extremely low-income thresholds to define poverty. Surprisingly, among those classified as extremely poor based on income criteria, a significant proportion still reports making ends meet easily or fairly easily. This raises questions about the accuracy of identifying extreme poverty solely through income-based measures, indicating that additional factors may influence individuals' perceptions of their material situation.

The analysis emphasizes the complexity of poverty as a multifaceted phenomenon and underscores the importance of using a combination of both objective and subjective measures to comprehensively assess it. It argues that subjective assessments should complement objective measures, as they offer unique insights into individuals' experiences of poverty. However, the study also highlights the need for clear communication about the strengths and limitations of each measure to avoid misinterpretation and ensure that policymakers and the public have a nuanced understanding of poverty.

What is the role of defining minimums in assessing one's subjective poverty position?

A decent lifestyle in socio-economical terms is the quality, quantity, and price of the goods and services required for a decent life, which should be sufficient to meet one's physiological, psychological and social needs and enable full participation in society. It comprises goods and services needed in everyday life so that people can 'get by' and their life goes smoothly while feeling oneself as part of the surrounding society. A decent minimum describes a consumption level that is necessary for all members of society in order to live a decent life but excludes commodities that are not necessary. A decent lifestyle necessary for preventing poverty is often defined in relation to the average consumption level without paying attention to the fact that the present average consumption in western welfare states is ecologically unsustainable (Lettenmeier et al 2014).

An approach to defining minimums is a basic need one—having less than objectively defined. This method defines the absolute minimum in terms of "basic needs," such as food, clothing, and housing. It requires the assessment of a minimum amount necessary to meet each of these needs. These amounts are added up to arrive at a poverty line in terms of income. In the Netherlands, budget experts from the Social Services Administration in Leeuwarden have calculated a poverty line based on this approach. The poverty line, while somewhat arbitrary, is differentiated according to household composition (Hagenaars, A., & de Vos 1988).

A simpler approach is defining the subjective minimum income, which is based on a survey question used to observe the income level that people consider to be "just sufficient" for their household. If their actual income level is less than the amount they consider to be "just sufficient," they are considered poor. Comparison with the actual household income puts the household in the category poor or non-poor. This subjective poverty definition is based on the assumption that the expressions "sufficient" and "insufficient" are associated with the same welfare levels by everybody (Hagenaars, A., & de Vos 1988).

A third approach is the subjective minimum consumption definition which reconciles the subjective poverty and the basic needs definitions. Essentially it asks people what they consider to be basic needs and to specify how much they need to meet these necessities. The amount people consider to be minimally necessary for food is compared to the actual amount spent on food to the subjective minimum used to categorize the household as poor or non-poor (Hagenaars, A., & de Vos 1988).

In the Finnish welfare state, the minimum level of social benefit should guarantee a decent and

dignified lifestyle. People living on minimum income ought to have not only sufficient means for fulfilling basic needs (such as having a shelter or adequate nutrition) but also means for participation (such as having a phone, recreational activities and other forms of social participation). Thus, in Finland, reference budgets were compiled by using consumer panels to define which products and services are regarded necessary and parts of a decent lifestyle. The budget contains: food, clothing and footwear, household appliances, entertainment electronics, information and communication technology, health and personal care, leisure, participation, transport, and housing. The material footprint, measured by total material consumption which is based on the material requirement of an economy minus the export-based resource use, for a decent minimum based on the reference budget is approximately 20 tons per year. The households studied show that in the present Finnish society people living on minimum income is roughly between 15-20 tons per person per year. This affords them decent housing, adequate nutrition, means for participation and possibilities for recreational activities as well as some basic services. Below this amount, deprivation such as, homelessness or eating only leftover food would occur (Lettenmeier et al 2014).

The rate of success of a reference budget depends on its accuracy in identifying the essential products, consumption quantities, prices, and the life span. The reference budgets should enable consumption that meets a decent minimum standard of living and allows participation in society, in the form of decent clothing, proper nutrition and eating out, and the opportunity to obtain and transmit information, based on today's society. To determine quantities of products used, statistics, calculations, and the Finnish Household Budget Survey were used. Evaluation of the quantities and life spans of commodities was extracted from group discussion participants. The price and quality level chosen is the average, and items are expected to last a reasonable time. Low-quality or cheap products were not included in the study. Price information is available on the Internet, and price levels of food items and the differences in prices between various trade groups in different parts of Finland were gathered from a food price survey of the National Consumer Research Centre (Lehtinen et al 2011).

What is the role of geographic differences in prices?

While geographic differences in the cost of living are part of popular discourse, assessing these differences faces both data availability and conceptual challenges. Despite the obvious large gaps in prices that prevail in different areas, most studies take no account of geographic price differences or attempt to control for them (Carrillo et al. 2016). Since 1968, the Council for Community and Economic Research has produced the American Chamber of Commerce Researchers Association (ACCRA) price indices for six broad categories of goods and an overall consumer price index for many urban areas (Carrillo et al. 2016). One study attempted to construct an interarea housing price index for each metropolitan area and the non-metropolitan part of each state in 2000. It was based on a large data set with detailed information about the characteristics of dwelling units and their neighborhoods. For most areas, the price index for all goods—other than housing—is calculated from the ACCRA price indices, using a regression model explaining differences in the composite price index for non-housing goods for the areas where it is available, and used to predict a price of other goods for the uncovered areas. The price indices for housing services and other goods were combined with data from the Consumer Expenditure Survey to produce an overall consumer price index for all areas of the United States. The fit of the hedonic equation used to estimate price indexes

were consistent with popular views about differences in housing prices. The resulting overall consumer price index is not sensitive to the expenditure weights used and it differs little from a simple ideal consumer price index that accounts for how individuals alter their consumption in response to changes in relative prices (Carrillo et al. 2016).

Since there is no national database that includes rural areas to assess the perception of these regions having lower prices, it may lead researchers to a faulty conclusion. Adjusting the poverty threshold for differences in the 'cost of living' based on perceptions of lower cost in rural areas superficially reduces poverty rates for rural areas, lowering federal funding and placing rural low-income families at greater risk. Rural residents commonly face higher prices for food and electricity than their urban counterparts due to the higher operating costs. Differences in the material conditions of rural living also lead to additional costs not typically found in urban areas. While interarea price comparisons assume that the material conditions of living are the same, Zimmerman et al. (2008) looked at the differences in rural versus urban living. They found that there were additional costs incurred for residents in the rural counties. For instance, in all eight U.S. rural counties studied, extended area phone service would have doubled the cost of having a phone compared to that in the urban areas. There were costs that price comparisons alone did not capture. In some cases, going to the grocery store to buy food meant on average driving 30 miles round trip. This would add additional cost to the price of the food purchased in order to cover transportation. Some median household income levels might be artificially inflated due to only parts of a rural area being more prosperous. For example, counties not part of a micropolitan area, yet adjacent to an interstate, may have a median household income level similar to the state as a whole, therefore increasing their home prices. However, the higher income level may be influenced by a small area that in one case was dominated by high-income lake-based tourism with luxury boats and second homes, while the bulk of the county is sparsely populated with a limited number of businesses. Without a better understanding of the material conditions of rural life and local research there is a risk of exacerbating place-based inequities (Zimmerman et al 2008).

Another study by Yilmazkuday (2017) focused on the determinants of the expected number of consumers searching for gas prices before making a purchase across zip codes. It was based on geographic, demographic and economic characteristics. Per the maximum likelihood estimation of a consumer search model, they recovered the distribution of search costs for each zip code in the U.S. by considering the gasoline purchasing behaviour of consumers. Consumers in zip codes suffering from poverty search for more gas stations before purchasing gasoline, while consumers at or above 150% of the poverty level do not search more than other consumers. Consumers double their expected number of stations searched when the average distance goes up, when the zip code area is tripled in size, and when the population density goes. Gasoline price spreads are higher in zip codes with spatially dispersed gas stations. Consumers would halve their expected number of searches when their income is quadrupled. This is obviously due to the opportunity cost of searching for lower gasoline prices where higher income consumers do not find it profitable enough to do so. The expected number of stations searched is halved when commuting time is quadrupled (Yilmazkuday 2017).

What is the role of household composition and assumptions regarding sharing?

The role of sharing was found to have an impact depending on the type of household composition. Based on the 2010 Luxembourg Income study data by Tai (2017), research examines cross-national patterns of rates of youth poverty using household composition. The increase in poverty following young adults' leaving the parental home indicates not only the tremendous impact of household composition, but also the marginalization of young adults in welfare states due to prolonged education and postponed entry into the labor market and marriage. School-leavers, first-time job seekers, and young adults cycling between education and work may cease to be eligible for unemployment benefits or social assistance. Thus, young adults are likely to meet economic needs by living with their parents, pooling their household income, and sharing living expenses. The prevalence of co-residence with parents is critical for the economic well-being of East Asian and Southern European young adults. If Taiwanese young adults had the same living arrangements as young adults in Scandinavian countries, the poverty level of Taiwanese young adults would increase by 5 to 9 percentage points. With 62% of respondents residing with their coupled parents, the household composition of Taiwan seems to be the most economically beneficial for young adults. In addition, many young people live in households with their grandparents, other relatives, or non-family household members. Young adults living with coupled parents or with their spouse are less likely to be poor. Scandinavian single parents are actually better off than single young adults without children due to Nordic welfare regimes providing generous social provisions for families with children. Single mothers are most vulnerable, with poverty rates ranging from 13.5% for Japan to 94.5% for Germany (Tai 2017).

Snyder et al. (2006) looked at race and residential variation in the prevalence of female-headed households with children and how household composition is associated with several key economic well-being outcomes using data from the 2000 U.S. Census. Household poverty is highest for female-headed households with children that do not have other adult household earners. Earned income from other household members lifts many cohabiting and grandparental female-headed households out of poverty, as does retirement and Social Security income for grandmother headed households. Poverty was found to be at its highest among racial/ethnic minorities and for female-headed households with children in non-metropolitan areas compared to central cities and suburban areas. The presence of other earners in non-metro female-headed households with children is an important income source that lifts many out of poverty. The economic benefits of other household earners are important for white cohabiting households, and for black and Hispanic grandmother-headed households. When the effect of another earner is added in the model, cohabiting female-headed households with children remain significantly less likely to be poor compared to single mother only families, indicating that this factor accounts for some of the association between household composition and household poverty. It was also found that an additional 100 hours worked by the household head in the prior year translates into a reduction in the odds of poverty by 14%. The earnings of a male partner are especially important for non-metro female-headed cohabiting households with children as it cuts poverty in half for these households for all ethnic groups considered. The presence of additional earners in the household is associated with a significant reduction in household poverty. This confirms the need to evaluate household composition, as it is an important determinant of household poverty due to the

economic resources that are available to specific household living arrangements (Snyder et al 2006).

Tai (2009) reviewed data on individuals in households with older adults for 22 countries in the Luxembourg Income Survey. It looked at the risk of poverty to the type of state welfare regime and comparing it to the situation in Taiwan; the characteristics of the household head, number of earners, older adults, and children. It finds that persons in households with older adults are significantly less likely to be poor in countries with social democratic welfare regimes than in Taiwan, where there are limited social welfare programs. Living with fewer children, more older adults, and more earners lowers the risk of poverty, as does having a married and better educated household head. For persons residing in a household with an older adult, having a single man or a woman rather than a couple heading the household is linked to a greater likelihood of poverty. In households with more earners, people are less likely to be poor if only because stronger ties to the labor market bring greater income. An additional older adult in the household is associated with lower risks of being poor if only they are eligible for old-age benefits. The risk of poverty and the likelihood of older people living with others are more common where state provisions for dependents and families are limited. Family co-residence and welfare state provisions are alternative strategies that help older adults and their kin to cope when their market income shortfalls. Given the values of societies placed on families such as those in southern Europe and East Asia, it is not surprising that state welfare programs have been slow to develop in these regions, which is the opposite of what is observed in generous welfare such as Nordic countries (Tai 2009).

What is the role of Social Transfers in Kind (STIK)?

According to research conducted by Eurostat, social transfers in kind (STiKs) [53]are significant contributors to household income, particularly for those with lower incomes. These transfers, provided by governments or non-profit organizations, encompass various services and support for needs such as education, health, childcare, and long-term care. The analysis conducted by Alaminos and Geske specifically focuses on health related STiKs received by households from governments. Understanding the impact of these social transfers is crucial for assessing material well-being, especially in Europe, both before and during economic crises.

Household disposable income represents the income available to a household after taxes and can be spent or saved. It comprises both monetary and non-monetary components. Traditional monetary income indicators, derived from disposable income, are frequently used to analyze poverty and inequality. People are considered at risk of monetary poverty when their equivalized disposable income falls below the at-risk-of-poverty threshold, typically set at 60% of the national median disposable income after social transfers. However, these indicators do not account for non-monetary income. Adjusted disposable income, which includes both monetary income and Social Transfers in Kind (STiKs), provides a more equitable measure of income distribution. International statistical guidelines recommend using adjusted disposable income to analyze the total redistributive impact of government interventions in the form of benefits and taxes on household income.

[53] Impact of health social transfers in kind on income distribution and inequality - Statistics Explained (europa.eu)

Non-monetary indicators complement traditional monetary measures and help explore aspects of inequality not covered by monetary indicators. In Eurostat's analysis, the EU-SILC survey microdata on disposable income is augmented by imputing health-related STiKs to calculate health STiK adjusted disposable income. These health related STiKs align with government health expenditure profiles by age and gender, as reported in the National Accounts. The study examines the impact of health related STiKs on income distribution and inequality measures like the Gini index. The findings demonstrate that health STiKs contribute to a more equitable distribution of household income across income quintiles, reducing income shares in the highest quintiles and increasing them in the lowest. Without these health related STiKs, income inequality would significantly worsen, especially for those needing to cover primary health expenditures from their own pockets.

What is the role of housing wealth and imputed rent?

Non-financial assets such as the principal residence represent the largest component of wealth for most households. Per Maestri (2015), imputed rent for owner-occupied accommodation is the most important form of non-cash income advantage. The difficult perception of this economic advantage is due to the dual nature of housing, representing at the same time consumption and investment. Living in social housing is another form of housing advantage. The rental equivalence approach consists of estimating the market rent that homeowners or below-market rate tenants should pay if they had to rent their places at full price. For homeowners, the capital market approach can be applied, which is the imputed rent that can be estimated as the rent that they would pay if the house were rented (net of costs such as mortgage interests). For tenants in social housing or under rent control, imputed rent is estimated as the difference between market and paid rent. The inclusion of tenants with below-market rent reduces relative poverty and inequality. On the other hand, the inclusion of homeowners only as beneficiaries of imputed rent leads to inequality and relative poverty tends to increase. If market rent is imputed for tenants with below-market rent as well, inequality and relative poverty decrease (Maestri 2015).

There are three ways of estimating imputed rents. First is the rental equivalence approach, which calculates the value of housing from equivalent units in the private rental market. Rents are estimated per square metre and housing costs deducted and compared to owner-occupied housing to arrive at a market value. This method finds that imputed rents reduce income inequality as the distribution of imputed rents, while right skewed, is less unequal than the distribution of other income (Maestri 2015).

The second estimation method is the capital market approach, which sees housing as capital income from an investment and assumes a return on its value in housing. Using the capital market approach reduces the dampening effect of imputed rent on income inequality.

The third method is the self-assessment method, which uses subjective estimates provided by the owners on rent from their housing to measure the opportunity cost of renting out owner-occupied housing and is then used as a proxy for rent. This method leads to the smallest reduction in inequality (Maestri 2015).

Using the 2010 EU-SILC data to provide an assessment of the impact of the housing situation

of households shows that relative income poverty and inequality decrease if imputed rent is taken into account, while they increase if housing expenses are considered. Therefore, the deduction of housing expenses provides a better measure of relative poverty. To add imputed rent, it can be estimated from rental equivalence and capital market methods. To deduct housing expenses from disposable income, it can be obtained from the out-of-pocket approach. The comparison of disposable income plus imputed rent, minus housing expenses and perception of housing costs provides useful hints on the distributional effects of housing in different housing systems and sheds some light on their possible future developments (Maestri 2015).

In another study, the Household Finance and Consumption Survey (HFCS) conducted by the European System of Central Banks was used to estimate non-cash income from owner-occupied housing, subsidised rental housing, and free use of the main residence in Austria. The HFCS provides detailed information on mortgages, debt of renters in cooperative housing and subjective information provided by interviewers on the dwellings and building quality. It enabled the evaluation of the impact of non-cash income from housing on the full unconditional household income distribution. Imputed rents have an equalising effect on the distribution of income, and we find similar evidence for non-cash income from subsidised rents. However, imputed rents from owner-occupied housing equalise the upper part of the income distribution, and subsidised housing has an (albeit smaller) equalising effect for the lower part of the income distribution (Fessler et al 2016).

What is the role of differences in "culture" and religion?

A study by Yurdakul (2016) on the role of religion discusses how religion may alter beliefs about the causes of poverty, helping the poor with coping mechanisms. These beliefs are classified as individualistic (poverty is related to the lack of ability or effort), structural (causes of poverty are the economic and social systems), and fatalistic (poverty is not caused by the individual or the system, but by forces such as chance, luck, and fate). Fatalistic beliefs in this case are closely related to religion. The discourses of informants from a Turkish panel reveal that religion helps them in resolving the tensions between reality (their poverty) and desire (especially the desire to consume). Religious beliefs can contribute to the different stances low-income consumers take towards their poverty, affecting the level of internalization and resistance to the poverty stigma, and how people respond to the marketing institution. When resistance is directed toward the desire to consume, arguments are often fueled by religious beliefs. The effects of religious beliefs differ when used for resistance versus non-resistance strategies stemming from different interpretations of Islam. Whereas resistant informants emphasize religious ethics regarding worldly issues, such as greed, sin, improperness of desire, non-resistant informants emphasize self-blame, fatalism, and the afterlife.

Yurdakul's findings indicate the empowering aspect of religious arguments in providing low-income consumers with the strength to cope by resisting consumer culture and re-creating meaning beyond consumption. Informants further disclose a form of subtle resistance when they intentionally stay away from consuming beyond the basic necessities for survival. Non-resistant informants, especially in the cases of fatalism and belief in the afterlife, disclose that internalized poverty stigma leads to negative feelings and contributes to perceived vulnerability. Religiosity is more prominent among non-resisters who are more fatalistic in

their beliefs. Participants with a more critical stance are more active in their efforts to improve their current situation, such as taking an active role in the workers' unions, trying to break up the vicious cycle of persistent poverty, or engaging in subtle forms of resistance such as non-consumption (Yurdakul 2016).

A study by Atkin (2016) on India's National Sample Survey of 1983 and 1987–1988 asked households about their consumption of a broad set of foods as well as about their migration particulars to look at the relation between culture and deprivation. The surveys record household expenditures and quantities for each food item consumed in the last 30 days. The surveys also provided information on expenditures on non-food items as well as household demographics and characteristics. The findings suggest that interstate migrants consume fewer calories per rupee of food expenditure compared to their non-migrant neighbours, even for households on the edge of malnutrition. Migrants make calorically suboptimal food choices due to strong preferences for the favoured foods of their origin states. Migrants bring their origin-state food preferences with them when they migrate and that these preferences are stronger when there are more migrants in the household. The most adversely affected migrants would consume 7% more calories if they possessed the same preferences as their neighbours. These results provide insight into the value that households place on their culture. Even households on the edge of malnutrition are willing to substantially reduce their caloric intake to accommodate their cultural food preferences (Atkin 2016).

Deprivation theory holds that poverty will be associated with high levels of religious identification for those who are already affiliated with a religion. Hoverd (2013) used a large national probability sample to gather information about religious affiliation (state of having a commitment to a religion) and level of religious identification (strength of their religious commitment among those who stated having a religious affiliation). Results indicate that deprivation initially predicted religious affiliation, but only because deprivation tapped into variance also shared with ethnicity. When statistically adjusting for ethnicity, deprivation did not predict whether people affiliated with a religious group. To measure deprivation, the New Zealand Deprivation Index 2006 (NZDep2006) was used. This index allocates a deprivation score to each neighbourhood based on the proportion of adults receiving a government-supplied welfare benefit; household income; not owning their own home; single-parent families; unemployed; lacking qualifications; household crowding; no telephone access; and no car access. To examine whether deprivation was associated with levels of religious identification, a model including education and ethnicity among other factors was constructed. Results suggested that when controlling for deprivation, more educated participants were more likely to be strongly identified with their religious group. When ethnicity was added to the model, it revealed that cultural inheritance affected the strength of identification in connection with poverty (Hoverd 2013).

In a 2002 Hunt study, three dependent variables were examined in a stratification survey that was conducted in southern California measuring the importance attributed to individualistic, structuralist, and fatalistic reasons for poverty. A series of statements representing possible explanations for why some people are poor were presented to respondents. Separate measures were constructed. Individualistic beliefs are composed of personal irresponsibility, lack of discipline, effort, thrift, ability, talent, money management among those who are poor. Structuralist beliefs are concentrated on low wages and lack of good jobs in some businesses

and industries, failure of society to provide good schools, discrimination. Fatalistic beliefs are measured simply with just bad luck as an explanation for poverty. Findings reveal that Protestants and Catholics are most likely to endorse the historically dominant individualistic interpretation. Minority religions are most likely to support structural challenges to poverty. Catholics and Jews are most likely to take the fatalistic view of poverty. Significant race/ethnic group differences are found between religious affiliation and structuralist and fatalistic beliefs. Among Whites, Protestants are significantly less likely than the other examined affiliations to endorse structuralist beliefs, while among Blacks and Latinos, Protestantism is significantly more positively aligned with structuralist beliefs. For racial and ethnic minorities in America, Protestantism is more collectivist in orientation. Catholics are similar to Protestants on individualistic beliefs but are significantly more likely than Protestants to "system blame" for poverty. Among Blacks and Latinos, unlike Whites, being Catholic is significantly more predictive of fatalism arising from the need for an alternative account of inequality to supplement the explanatory limits of individualism. It is important to intersect race/ethnicity and religion in research on stratification beliefs. Cultural differences between Protestants and Catholics in America in ideological beliefs about poverty differ among Blacks, Latinos, and Whites (Hunt 2002).

Concluding remarks on hypothetical questions

Hypothetical assessments can be framed as second-order beliefs, where respondents are asked not to provide their opinion but to estimate what other respondents would answer on average. This approach helps assess social norms, which can shape individuals' first-order beliefs and influence what they find acceptable. Some argue that second-order beliefs are better predictors of behavior than personal beliefs and can be incentivized to reduce social desirability bias (Babin, 2019). However, it is essential to recognize that hypothetical household questions represent a departure from the more common subjective approach, as they gauge respondents' perceptions of a hypothetical family's welfare rather than their own, resulting in different conceptualizations of poverty.

Lessons learned from COVID-19

In this section, we explore the dynamic landscape of subjective poverty research, driven by several key factors such as declining response rates in national surveys and the rapid adoption of online data collection methods, a trend notably accelerated by the COVID-19 pandemic. As a response to the challenge of survey fatigue, statistical agencies have increasingly prioritized shorter surveys and concise questioning to maintain respondents' engagement (Statistics Canada, 2019[54]). This shift in survey design has profound implications for the study of subjective phenomena, including subjective poverty.

The section opens by providing a comprehensive overview of the OECD's ongoing research into subjective well-being indicators, which significantly overlaps with the broader subject of subjective poverty. It highlights the importance of understanding and measuring well-being from a subjective perspective, emphasizing the need for nuanced indicators that capture the multifaceted nature of poverty and well-being. Furthermore, the discussion pivots to the

[54] Modernization: a key to Statistics Canada's efforts to reduce response burden (statcan.gc.ca)

emergence of Socio-Economic Impact Assessments (SEIAs) conducted across 15 European and Central Asian countries during the onset of the COVID-19 pandemic. These assessments play a vital role in enhancing our comprehension of subjective poverty by examining the socio-economic impacts of the pandemic on individuals and communities. Through SEIA questions and comparability analyses, we gain valuable insights into how subjective poverty evolves in the face of crises.

This section underscores the transformative impact of the COVID-19 pandemic on the landscape of subjective poverty research and the need to adapt research methodologies to effectively capture and understand subjective experiences, especially concerning poverty and well-being assessments. It also underscores the significance of international organizations like the OECD and UNDP in coordinating global efforts to advance subjective poverty research, shaping the future of this field.

Subjective Poverty in SEIA Questionnaires and Comparability Analysis

In the context of Socio-Economic Impact Assessments (SEIA) conducted across the UNECE region by 15 countries, six of them incorporated subjective poverty measurements into their assessments: Kyrgyz Republic, Moldova, Serbia, Tajikistan, Ukraine, and Uzbekistan. Among these, five countries collected primary data to support these measurements, while Serbia utilized secondary data from its 2018 and 2019 annual surveys conducted by the Statistical Office of the Republic of Serbia (SORS). Data collection primarily focused on households and enterprises, with one exception being Mahalla-level [55]administration in Uzbekistan.

Subjective poverty was predominantly assessed through direct methods in SEIA questionnaires. Households were queried about their perceptions of financial and material changes resulting from the COVID-19 pandemic. These questions aimed to understand how the pandemic affected household income, their capacity to meet material and non-material needs, and timely household expenses. This approach allowed respondents to voice their experiences and opinions, offering insights into poverty criteria based on their pandemic-related experiences. In contrast, traditional poverty measurements evaluate household material resources and categorize households as poor if they fall below a certain threshold. The use of direct methods in socio-economic impact assessments is especially significant as it helps identify areas of economic hardship in the context of a global pandemic.

The questionnaires employed in SEIA included inquiries using minimum income and economic ladder questions. Thirteen of the participating countries conducted primary data collection, primarily through quantitative surveys. While randomness and representativeness criteria were generally met, household-level data collection was less common, with nine countries conducting household surveys and one focusing on municipal-level data. Over and above the secondary data collection, high-frequency data, statistics, and desk reviews that were used, some countries employed adapted Post Disaster Needs Assessment[56] methodologies and qualitative studies to complement quantitative and secondary data. Some countries even utilized Big Data sources like telecom and satellite data for a more

[55] The smallest state administrative unit in Uzbekistan which consists of households.
[56] https://www.undp.org/publications/pdna

comprehensive view of the pandemic's impact.

Table 2 provides a summary of the countries and data collection methods on subjective poverty used in SEIA. Multiple subjective poverty approaches were adopted in SEIA questionnaires, which will be explored further below.

Table 2 – Summary of data collections in SEIA

Country	Primary data collection	HH Survey	Other Surveys	Use of digital survey	Use of big and alternative data
Armenia	Yes	3550 households	2100 local governance service providers	Yes, Kobo	No
Azerbaijan	Yes	No	No	No	No
Belarus	Yes	No	No	No	No
Bosnia and Herzegovina	Yes	2182 respondents	No	No	No
Kazakhstan	Yes	12024 households	No	No	No
Kosovo*	Yes	1412 respondents	No	No	No
Kyrgyzstan	Yes	2340 respondents (1371 women) based on random sampling	No	No	No
Moldova	Yes	UNDP analysis of the ad hoc module of the NBS Household budget survey	450 company respondents	No	**Yes** Telecom and Satellite. Micronarratives (300 collected)
Montenegro	Yes	1006 households	No	No	No
Tajikistan	Yes	1250 Enterprises, individual entrepreneurs and dehkans (farmers)	in-depth interviews (150 HHs, including 100 women and girls and 100 youth, and 50 MSMEs)	No	No
Turkey	Yes	No	No	No	No
Ukraine	Yes	1098 households	No	Yes, Kobo	No
Uzbekistan	Yes	No	Mahalla survey 3670 mahallas surveyed	No	No

Poverty defined in a fully subjective way (direct self-identification as poor, feeling of poverty)

Several countries, including Kyrgyz Republic, Moldova, Tajikistan, and Uzbekistan, adopted the method of self-identification to assess the feeling of poverty. Respondents were asked questions to determine if they had felt poor in the past, currently, or anticipated feeling at risk of poverty in the near future due to the pandemic's impacts. This approach was widely used in the surveys and adaptable, with questions often focusing on respondents' expectations regarding their household's financial well-being.

Perceived financial difficulties

Countries utilizing subjective poverty measures in their SEIA assessments often included questions aimed at assessing respondents' subjective economic stress. Questions inquired about the ability to meet expected/unexpected expenses, make ends meet, or satisfy basic needs. These questions considered not only traditional basic needs but also pandemic-related necessities, such as access to the internet for online schooling or personal protective equipment. Assessments mainly focused on changes in income-to-expense ratios and coping mechanisms.

Subjective poverty line approach – perceived poverty line

The Kyrgyz Republic employed this method, which involves questions about the income needed to secure a basic standard of living or meet necessities. Respondents were asked to estimate the amount of money required by a family with the same number of members to avoid poverty, considering prevailing price levels. Open-ended questions were also used to capture changes in respondents' lives related to the pandemic.

Subjective poverty lines assessed with the use of statistical methods (so-called objectivised, quasi-subjective poverty lines)

The Kyrgyz Republic and Ukraine directly employed this method in their SEIA assessments. Respondents were questioned about household assets or funds, which were used as indicators of deprivation. This approach focused on assessing financial restrictions resulting from cost-related inaccessibility of essential items.

Perception of poverty as a social phenomenon

Kyrgyz Republic included questions on respondents' views regarding poverty as a social phenomenon. These questions encompassed definitions of poverty, perceptions of poverty's extent in the country, its causes, and the role of the government in poverty reduction. They also examined opinions on the government's anti-crisis measures and the type of assistance needed personally.

Other Approaches

In addition to the subjective poverty measures outlined above, various other approaches were adopted as well, including inquiries about the availability and access to food, estimations of fair expenses on basic needs, and negative coping mechanisms adopted by households due to pandemic-induced income reductions. Some questions assessed the dependence of individuals on their families during economic hardships. The approaches listed in this paragraph were used by countries such as the Kyrgyz Republic and Tajikistan.

An overview of UNDP Socio-Economic Impact Assessments (SEIAs) for households in countries of UNECE region

The SEIA assessments revealed varying impacts across countries, with differences in intensity based on economic structure, social protection systems, and other vulnerabilities. At the individual and household levels, the assessments highlighted the unwinding of development gains, increased poverty, and rising inequality. Regional and rural-urban disparities were observed, particularly affecting informal businesses in urban areas. The assessments also underscored the need to reconsider social protection systems to cover new classes of vulnerability, often referred to as the "missing middle." Challenges encountered during SEIA implementation included designing research methodologies, questionnaires, and sampling methods, as well as targeting vulnerable groups, dealing with fieldwork constraints, and ensuring data comparability. Coordination with various institutions, access to data, and data sharing by government and big data providers were additional hurdles. Nevertheless, some best practices emerged, including Digital SEIA, innovative use of Big Data, combining "thick" data[57] (micronarratives[58]), high-frequency data, and other methods for sense-making during the pandemic.

The process of sensemaking involved the integration of various pieces of evidence during the SEIA assessments, as seen in Table 2 – Summary of data collections in **SEIA**. This integration encompassed the use of qualitative studies to complement quantitative and secondary data. Additionally, certain countries leveraged Big Data sources, such as telecom and satellite data, to gain insights into the context of the COVID-19 pandemic.

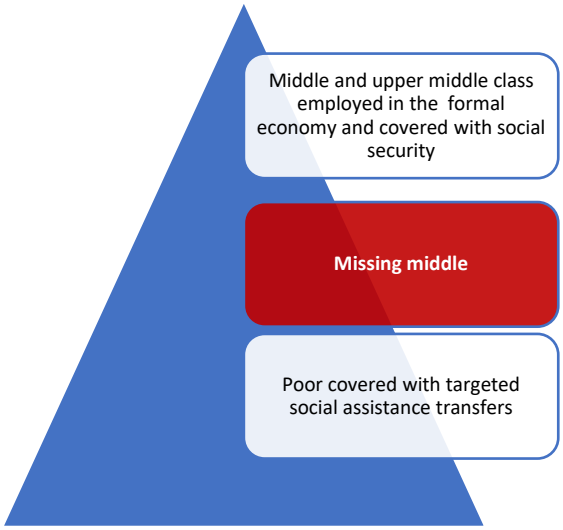
Emerging issues from the SEIA assessments conducted reveal differentiated impacts. Income disparities are exacerbated by increasing unemployment, especially in urban areas, as well as reduced income, higher food and healthcare costs, and limited savings for many households. Gender disparities are notable, with women disproportionately affected in the labor market, while multi-dimensional consequences, including long-term education and health effects, contribute to rising inequalities among different groups. Entrepreneurs, migrant laborers, and informal workers face heightened vulnerabilities, with youth and women bearing the brunt of these impacts. School closures and ineffective remote learning exacerbate long-term challenges for children.

[57] Thick data is a term that refers to qualitative data that reveals the contexts, emotions, and stories of the subjects being studied.
[58] Micronarratives are a collection of short stories written by survey respondents

Macro-economic vulnerabilities have been exposed to varying degrees due to external and internal shocks, including declines in exports, remittances, and oil prices, as well as lockdowns. These vulnerabilities translate into micro-economic consequences affecting individuals, households, and small and medium-sized enterprises (SMEs). Demand-side shocks have led to falls in remittances and household incomes, reduced demand in sectors like tourism and hospitality, border closures disrupting supply chains, and increased household costs for essential goods and services. Supply-side challenges include temporary border closures affecting value chains and labor movement, plummeting commodity prices, currency depreciation, higher import costs, financial risks, and debt servicing burdens, as well as fixed costs and SME weaknesses. The impact of these macro-economic vulnerabilities varies among countries, with commodity-dependent nations facing a double shock from declining oil and gas prices. As the pandemic persists with multiple waves of infection, uncertainty rises, placing increased pressure on public policies and recovery efforts, particularly in terms of debt and fiscal space. Socio-economic impact assessments underscore the disproportionate effects on vulnerable groups, households, smaller enterprises, and disparities between urban and rural areas.

Moreover, SEIAs reveal the need to reassess social protection systems to encompass new classes of vulnerability often referred to as the "missing middle." This group includes formerly non-poor informal workers who lack basic security, occasional and gig workers who supplement their income with occasional work, long-term unemployed individuals who have lost eligibility for unemployment benefits, and labor migrants and seasonal workers who face challenges earning money abroad due to travel restrictions and increased costs. These findings emphasize the importance of adapting social protection systems to address evolving vulnerabilities in the wake of the pandemic.

Figure 6. Missing Middle



Source: Socio-Economic Impact Assessments, Statistics Canada (2022)

Case study 6: Self-assessed Financial Well-being: comparing objective and subjective measures

This case study from Statistics Canada below examines the comparison between subjective and objective measures in the context of self-reported financial well-being and official poverty measures, such as the market basket measure. It contributes to the evolving understanding of subjective poverty measurement trends.

Due to the impact of the COVID-19 pandemic, Statistics Canada undertook the task of establishing a timelier approach to collecting data, enabling a monthly assessment of households' financial well-being. As a result, a supplementary question was introduced into the Labour Force Survey (LFS) from April 2020 onward. This question inquired about the ease or difficulty that households experienced in meeting their financial needs in various areas, including transportation, housing, food, clothing, and other essential expenses over the past month.

This monthly incorporation of the question presents Canada with a distinctive opportunity to enrich its comprehension of official poverty measurements by adopting the perspective of subjective poverty. This approach offers advantages such as adaptability to evolving information demands, cost-effective data collection, and time-saving benefits for survey participants. Nevertheless, there are drawbacks, as the data must undergo an extensive validation process before being disseminated, which can introduce delays from approval to results. This is where the monthly LFS data proves advantageous, as it expedites data collection for swifter outcomes. However, this comes with increased costs and potential data reliability concerns. Combining monthly and administrative data appears to bridge the gaps between subjective and objective poverty measures.

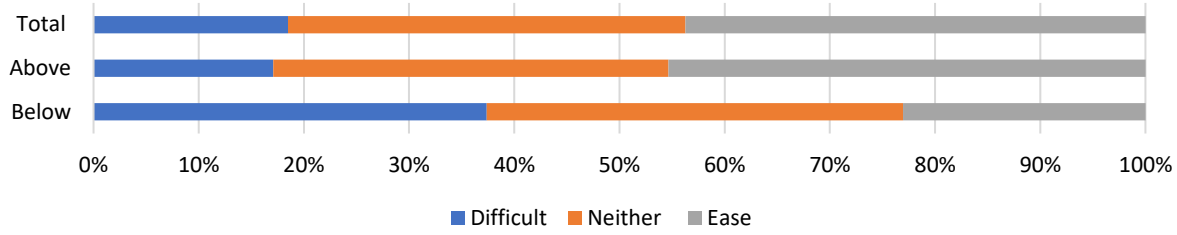
This new incorporation thus offers the possibility to construct an indicator that amalgamates socio-demographic variables and income data from the Canadian Income Survey (CIS) to provide a more comprehensive analysis of subjective poverty. Research studies have been conducted to investigate sociodemographic characteristics in cases where individuals' financial well-being diverges from the anticipated official poverty line. Linking the CIS 2020 data with the financial difficulty data extracted from the supplemental LFS between January 2021 and July 2021 allows comparisons between subjective and objective poverty measures.

The advantages derived from juxtaposing perceived financial well-being with official poverty measures can be observed in this case study by Statistics Canada. It delves into a comparison between employed and unemployed individuals, focusing on their Market Basket Measure (MBM) in relation to their financial well-being. The age group under examination was restricted to individuals aged 25 to 54. Results revealed that 43.7% of employed individuals reported financial comfort (Figure 7), in contrast to 21.0% of the unemployed cohort (Figure 8). A larger percentage of individuals above the poverty line, among the unemployment group, reported financial difficulty compared to the unemployed. This shows that one’s perception of poverty is not aligned with their objective poverty.

Numerous avenues exist for understanding poverty, but the aim of this case study is to merge the subjective and objective dimensions to conceptualize and understand poverty more profoundly. Accordingly, Statistics Canada has been employing yearly data to calculate the

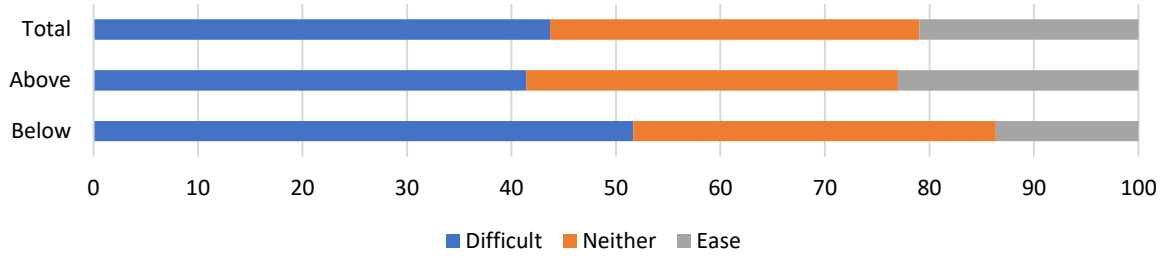
MBM, while the LFS relies on monthly data. By linking these two datasets, a deeper insight into subjective poverty and its nuances is achieved. The example offers just a glimpse of the potential when these two poverty conceptions converge. Yet, there remains a wealth of opportunities to explore further aspects, such as gauging the proximity to the poverty line and juxtaposing it with the ability to meet financial needs or examining the proportion of immigrants and visible minorities experiencing poverty at income levels exceeding the poverty threshold. These represent only a subset of the possibilities that could stimulate an array of future research endeavors.

Figure 7:
Comparing MBM to subjective financial well-being in age group 25-54 - Employed persons



Source: Statistics Canada, Canadian Income Survey, 2020 and Labour Force Survey, September 2020 to September 2021.

Figure 8:
Comparing MBM to subjective financial well-being in age group 25-54, Unemployed persons



Source: Statistics Canada, Canadian Income Survey, 2020 and Labour Force Survey, September 2020 to September 2021.

Overlaps in Dimensions of Poverty

To further this, the article, *Overlaps in Dimensions of Poverty*, explores the overlap among three dimensions of poverty and finds that there is minimal overlap in the group of individuals considered poor by these dimensions, largely due to differences in reliability and validity of

measures (Bradshaw and Finch, 2003). This lack of overlap implies that the policy response to poverty will vary depending on the chosen measure. For example, cumulatively poor individuals, those poor in multiple dimensions, exhibit different characteristics and social exclusion patterns compared to those poor in only one dimension. This suggests that cumulatively poor individuals might be a more reliable way to identify poverty and distinguish between different levels of poverty. The article recommends using a combination of measures in future poverty studies to provide a more robust basis for drawing conclusions, as relying on a single dimension has limitations in terms of reliability and validity.

Implications regarding experience with COVID outbreak

The Socio-Economic Impact Assessments (SEIAs) conducted during the COVID-19 outbreak faced several challenges. One major challenge was ensuring the accuracy and suitability of primary data collection, including research methodology, questionnaire design, sampling methods, and reaching vulnerable groups. Designing questionnaires proved complex, particularly for household-level assessments, given the multidimensional nature of impacts and the need to avoid respondent fatigue during remote data collection.

Sampling presented its own challenges, as some countries had to balance the rapid need for data with the potential for wider margins of error with smaller sample sizes. Others faced the trade-off of collecting larger samples, which required more time for data collection fieldwork. Remote data collection made it difficult to reach hard-to-reach and vulnerable groups like informal workers and migrants.

Timing for data collection preparations varied across countries, influenced by factors such as country size, partnerships, and the pandemic's onset. Fieldwork constraints arose due to quarantine measures, lockdowns, and movement restrictions, further delaying data collection. Remote data collection methods, including telephone interviews and digital tools, became essential.

Ensuring data comparability across SEIAs posed a significant challenge. Different countries employed context-specific approaches with varying questionnaires and sampling strategies, affecting cross-country comparisons and data aggregation. Maintaining questionnaire comparability for time-series comparisons with earlier surveys conducted in 2020 was also a concern.

Data sharing by government partners and big data providers presented another hurdle. While some countries had open-source secondary data, others had lengthy processes to access data from partners. Additionally, primary data collected by various entities was often shared in forms for end-users, not as raw datasets, and some government counterparts were reluctant to share sensitive primary data. These challenges underscore the complexity of conducting SEIAs during a global crisis.

In summary, subjective poverty measures in SEIA assessments demonstrated interconnections and provided valuable insights into the impacts of the COVID-19 pandemic on households. These measures allowed affected households to establish poverty criteria and express their opinions about needed assistance. Gathering opinions about poverty and necessary support

proved invaluable in shaping government policies, including subsidies, direct cash transfers, and bill payment deferments. Regular adoption of subjective poverty measures, not only in SEIA but also at the country level, can inform government policymaking effectively.

Conclusion

Subjective poverty measures are gaining popularity, but their relationship with existing monetary and multidimensional poverty measures needs clarification. Key questions revolve around overlaps and discrepancies in identifying poverty and their relevance for public policy. It remains uncertain how much information subjective measures capture that monetary and multidimensional measures already encompass, what novel insights they offer, and whether they should stand alone or complement other measures. It is imperative that efforts to understand subjective poverty elucidate their utility for policymakers combating poverty. Future research should address the proportion of those reporting subjective poverty who also experience multidimensional or monetary poverty and explore what unique information subjective measures reveal for those not deemed poor by conventional standards. Additionally, it should discern when subjective measures provide value for those classified as poor by conventional criteria and when they reflect adaptive preferences. Whether subjective measures should replace or work alongside other poverty metrics is a critical consideration for guiding policymaking effectively. Caution is advised against portraying subjective questions as simplistic, as their adoption could potentially displace more robust multidimensional measures, necessitating a balanced approach to ensure a comprehensive understanding of poverty. It is recommended that subjective poverty questions always complement rather than replace multidimensional ones to avoid sacrificing valuable insights into poverty's multidimensional nature.

Chapter 5. RECOMMENDATIONS

Chapter 2 addresses the questions “what is subjective poverty”, “what is a subjective poverty measure” and “why should National Statistics Offices (NSOs) measure subjective poverty”?

As its name suggests, subjective poverty is based on the personal perspective and evaluation of individuals. In subjective poverty, poverty is assigned in one of two ways. In the first way, individuals or households are asked to evaluate their life situation, thereby identifying themselves as “poor” or finding it “very difficult to make ends meet” through their response to a question. In the second, a household makes an evaluation of what resources are required to meet a standard such as “making ends meet”, which can in turn be converted into a “subjective poverty line”. Subjective poverty measures can capture aspects of poverty missed by traditional monetary poverty metrics. Subjective poverty incorporates the fundamental aspect of reflecting citizen’s perspectives on what constitutes poverty – an aspect which is, perhaps surprisingly, under-considered in policy development.

Recommendation 1

Subjective measures of poverty should be included among the set of assessment tools used by countries. These do not replace objective measures or multidimensional

measures; rather, they are a complement. Countries with dashboards of poverty indicators should include subjective assessments among the poverty indicators.

Chapters 2 and 3 relate non-monetary subjective poverty measures to the more common measures of subjective well-being, such as the Cantril ladder, and introduces the most common non-monetary subjective poverty question forms. They also introduce the most common monetary subjective poverty question forms including the "Daleeck" question and the "Minimum Income Question".

Examples of subjective poverty measures include some that ask respondents to self-identify as poor: (*Do you* consider *yourself poor?*); evaluate their own situation as one of "making ends meet" (*Thinking of your household's total income, is your household able to make ends meet, namely, to pay for its usual necessary expenses? With great difficulty, With difficulty, With some difficulties, Fairly easily, Easily, Very easily*); or provide a subjective valuation of a poverty line (*Taking into account the current situation of your family, what would be the minimum monthly income needed to "make ends meet"?*). The second of these questions is known as the "Deleeck" question and is found in the EU-SILC. The last of these questions is known as the Minimum Income Question (MIQ).

The chapter then describes various ways that subjective questions can be used to create a subjective poverty line. The MIQ is one type of subjective poverty question that can be used to create a subjective poverty line, using a method known as the *intersection method*.

Recommendation 2

Given their inclusion in EU-SILC, and their utility in identifying subjective poverty, the Deleeck **and Minimum Income Question questions should be considered by NSOs as a standard for international comparison purposes.**

A household may have different sources of income and more than one household member may contribute to it. Thinking of your household's total income, is your household able to make ends meet, namely, to pay for its usual necessary expenses? (With great difficulty, With difficulty, With some difficulty, Fairly easily, Easily, Very easily). EU-SILC Question HS120.

In your opinion*, what is the very lowest net monthly income that your household would have to have in order to make ends meet, that is to pay its usual necessary expenses? Please answer in relation to the present circumstances of your household, and what you consider to be usual necessary expenses (to make ends meet).* EU-SILC variable HS130.

Recommendation 3

Utilize the Minimum Income Question and the intersection approach as the primary methods for estimating subjective poverty lines.

Chapter 4 examines in depth good practises associated with surveys which can be used to determine subjective poverty. Several different survey types can be considered for subjective poverty content. While subjective poverty measures are not considered replacements for objective poverty measures, their inclusion on "pulse", "omnibus", "crowdsourced" and

opinion polls can provide timely information on individuals self-assessments of poverty status. Nevertheless, different survey models may have implications for results. Similarly, experimental results show that small differences in question wording or changes in question wording over time can have large effects on observed results.

Chapter 4 also examines several efforts made by statistical agencies worldwide to rapidly pivot to provide rapid information during the COVID-19 pandemic. For example, Socio-Economic Impact Assessments (SEIA) were conducted across the UNECE region by 15 countries. The example underscores the transformative impact of the COVID-19 pandemic on the landscape of subjective research and the need to adapt research methodologies to effectively capture and understand subjective experiences, especially concerning poverty and well-being assessments. It also demonstrated challenges in applying rapid collection approaches, multi-nationally, in a quickly changing environment. In the conclusions, Chapter 4 underscores the need to continue to demonstrate, through empirical studies, the policy utility of subjective poverty measures. As with other measures of poverty. Subjective poverty is concentrated among particular groups. A similar breakdown of disaggregated groups suggested in the UNECE publication Poverty Measurement: Guide to Data Disaggregation should be used for disaggregation of subjective poverty. These would include 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.

Recommendation 4

NSOs and analysts should consider the possible impacts of survey mode, context (framing) and sampling methods and wording differences when analysing subjective indicators such as subjective poverty.

Recommendation 5

NSOs and analysts should continue to demonstrate the utility of subjective poverty measures, considering issues of overlap with objective poverty measures and policy applications.

Recommendation 6

Subjective poverty measures should be disaggregated to at-risk groups, in a similar fashion as recommended in UNECE's guide to disaggregation.

Appendix

Table A.1: Question Types Reported Being Asked by Country in UNECE (2021) Study

	Qualitative Categorical			Money Metric	Total # of Subjective Poverty Questions	Other
Country	Identification	Evaluation	Prediction	Evaluation		Deprivation, Social Exclusion, Well-being
Armenia		1		1	2	8
Austria*		1		1	2	3
Azerbaijan						
Belarus		5	1	2	7	2
Belgium*		1		1	2	
Bosnia and Herzegovina		1			1	1
Brazil		1		1	4	
Bulgaria*		1		1	1	
Canada		8	1	1	9	
Colombia	1	4	2	1	7	9
Costa Rica		1		1	2	
Croatia*		1		1	1	6
Cyprus*		1		1	2	
Czech Republic*						
Denmark*		2		1	2	
Dominican Republic						
Estonia*		1		1	1	8
Finland*		2		1	2	17
Georgia						
Germany*		1		1	2	
Hungary*		3	1	1	5	8
Ireland*		1		1	2	
Israel	2	1			3	
Italy*		1		1	2	
Japan						
Kyrgyz Republic	1				2	1

Latvia*		1		1	1	
Lithuania*		2		1	3	
Luxembourg*		1		1	2	6
Malta*		1		1	2	
Mexico		1		1	1	1
Mongolia						
Montenegro*		1		1	1	
Netherlands*		3	1	2	4	12
New Zealand		1		1	1	10
Republic of North Macedonia*		1		1	2	10
Norway*		2		1	1	
Portugal*		1		1	1	
Republic of Moldova					2	
Romania*		2		2	2	2
Russian Federation		2		1	3	4
Republic of Serbia*		1		1	1	
Slovakia*		2		2	2	3
Slovenia*		1		1	1	
Spain*		1		1	2	
Sweden*		1		1	1	
Switzerland*		2		1	3	1
Turkey		1		1	3	1
Ukraine		3	1	2	5	7
United States						
Uzbekistan		1		1	1	
Viet Nam	1				1	1
Total # of Countries	4	42	6	40	45	22