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APPROACHED TO MEASURING SUBJECTIVE POVERTY IN BOSNIA AND HERZEGOVINA

Note by Agency for Statistics of Bosnia and Herzegovina¹

Abstract

Poverty is still a big world problem and two SDG goals are dedicated to it directly and several of them indirectly. The first prerequisite for reducing this problem is its appropriate definition and measurement. National statistical offices are authorities in charge for measuring poverty and for this purpose; several indicators were developed and harmonized in order to provide international comparisons. The main goal of these indicators is to “objectively” measure the poverty. For all these reasons, national statistical offices mostly produce objective poverty indicators. However, the question arises: Are objective indicators of poverty sufficient to comprehensively explain and measure this complex problem? Since a large number of strategies for reducing poverty are implemented more slowly than planned, we can conclude that perhaps one of the causes of this may be the absence of considering this problem from all aspects. The subjective perception of poverty, as a complementary dimension to objective poverty, is rarely present in the reports of NSI’s and is mostly limited to some aspects of subjective assessments of living standards, which can, at best, only be used to indirectly measure subjective poverty. Nevertheless, appropriate and internationally comparable indicators of subjective poverty are still missing.

The aim of this paper is to present several indicators, which can be used in order to describe subjective poverty of Bosnian population and which are, more or less, in line with indicators used in other countries. These indicators are produced on the basis of survey questions which are not directly related to poverty, but refer to

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subjective assessments of various aspects of living standards. The majority of these indicators are of non-monetary nature and represent respondent's view of their situation regarding several main aspects of the quality of their lives. This type of indicator is very rarely used in poverty reduction strategies where objective poverty indicators played the main role. In absence of widely accepted and standardized indicators of subjective poverty, presented surrogate indicators can be used in order to complement poverty profile of the country and to verify objective poverty measures and their methodological bases (type of monetary aggregate, threshold, equivalence scale, deprivation indices, etc.). For the production of above-mentioned indicators data from 2015 Household Budget Survey in Bosnia and Herzegovina was used and all calculations were performed in IBM SPSS Ver. 23.0.

The paper ends with a critical review of the available indicators for Bosnia and Herzegovina and with proposals for improvement of measuring subjective poverty in nearest future.

Keywords: subjective poverty, objective poverty, standardized indicators

JEL classification: I310, I320

1. Introduction

The development of the human society is characterized by the unequal spread of this development around the world, which led to great differences in people's living standards. One of the achievements of this development is certainly social empathy and the desire to reduce and eliminate differences between people. The most common platforms that systematized such efforts is 2030 Agenda SDG aimed to end poverty, protect the planet and ensure prosperity for everyone by 2030. Poverty is one of the fundamental issues of this Agenda and has become a worldwide topic and subject of attention of many domestic and international organizations and individuals.

In order to reduce and/or eliminate a certain problem, it is first necessary to define and measure it, and on such a basis to make strategies for its elimination. Modern society invested huge efforts in defining the poverty and in measuring it in an "objective way". The poverty indicators used today are the result of the work of many academics and institutions of various profiles and help us to deal more successfully with this major global problem. The majority of them are "objective poverty indicators" and they are highly standardized in order to allow for international comparisons and unifying efforts to reduce this problem in society. These indicators are integral parts of many poverty reduction strategies and they are mainly produced by national statistical offices and/or international organizations. The fact that the results of many such strategies are implemented much more slowly than initially planned raises many questions. Are objective indicators of poverty sufficient to comprehensively explain and measure this complex phenomenon? Is the predominantly monetary valuation of poverty indicators informative enough for monitoring, measurement and elimination of this problem? Should non-monetary factors be

included in poverty indicators definitions and/or formulas? What is about subjective perception of poverty and could it be a complementary dimension to objective poverty indicators? And many more.

Some of above-mentioned dilemmas resulted in new approaches to measuring poverty and living standards, such as the development of quality of life index, human development index (HDI), multidimensional poverty index (MPI), subjective poverty indicators, each of them including several non-monetary factors in measuring poverty and standard of living. While the first three new approaches (or indices) in measuring poverty resulted with more or less standardized indicators, the comparable subjective poverty indicators are still missing. National statistical offices mostly produce objective poverty indicators; some of them additionally produce HDI and MPI or conduct quality of life surveys by using partially harmonized concepts. The lack of standardized statistical methodology for the production of subjective poverty indicators is one of reasons that national statistical offices do not produce such indicators. This limitation prevents the problem of poverty from being comprehensively considered, measured and, ultimately, solved.

This paper does not go into the methodological problems of measuring subjective poverty and searching for adequate solutions. It presents several indicators, which can be used in order to describe subjective poverty of Bosnian population and which are, more or less, in line with indicators used in other countries. These indicators are produced on the basis of survey questions which are not directly related to poverty, but refer to subjective assessments of various aspects of living standards. The majority of these indicators are of non-monetary nature and represent respondent`s view of their situation regarding several main aspects of the quality of their lives. For the production of above-mentioned indicators, data from 2015 Household Budget Survey in Bosnia and Herzegovina was used and all calculations were performed in IBM SPSS Ver. 23.0.

The paper also gives a critical view of the state of art of poverty analysis in Bosnia and Herzegovina and indicates steps for improvements.

2. Literature review

Poverty is usually defined as a general scarcity or the state of one who lacks a certain amount of material possessions or money. Defined in such a way, poverty is necessarily related to some monetary measure of this phenomenon such as income or consumption expenditure, which are widely used concepts for the calculation of poverty indicators. The use of both monetary measures for poverty analysis has a quite long tradition and has been investigated from various aspects from

both theoretical and empirical point of view. This approach implies a precise definition of the poverty threshold, i.e. the calculation of the poverty line like in early work of Mollie Orshansky (Orshansky 1963, 1965), Sen (1983), Foster, Greer and Thorbecke (1984) or latter work of Ravallion (2008, 2012a). Thanks to the works of these and many other authors we today inherit knowledge about the absolute and relative poverty line, the need for monetary aggregates to be normalized for cost-of-living differences and differences in the size and structure of households, etc. Their contributions to the development of poverty methodology were significant and motivated others to expand existing knowledge and methods in describing this phenomenon.

A common characteristics of the work of the authors working on monetary poverty indicators is their effort to find an „objective“ measure of poverty. The objectivity of these indicators was probably achieved by quantifying the indicators (using formulas for their numerical calculation), using (mostly) the same monetary aggregate and the absence of any subjective approach to this issue. Although there are differing approaches in measuring „objective“ poverty (for ex. absolute vs relative poverty, income vs consumption, various equivalence scales, etc.), it must be said that all these efforts resulted with a highly harmonized and standardized poverty indicators which are widely used by national statistical authorities.

However, many shortcomings of monetary indicators of poverty were noticed relatively quickly. Critics of this approach pointed out the exclusion of non-market goods and services as arguments in favour of alternative approaches which should allow for non-monetary factors to be included in poverty indicators calculation. New approaches have introduced POLI-Physical Quality of Life Index (developed by David Morris in the mid 1970s), HDI-Human Development Index (Ravallion, 2012b) and MPI-Multidimensional Poverty Index (Alkire and Santos, 2010; Ravallion, 2011) into the analysis of poverty. These contributions significantly improved the overall analysis of poverty by adding new dimensions to this phenomenon, such as infant mortality, life expectancy, education, health issues and living standards factors. But, these approaches opened new methodological dilemmas related to the problem of setting the trade-offs or relative weights across their dimensions. Another problem in the practical use of these measures of poverty and living standards are their very different implicit values in poor and rich countries (Ravallion, 2012a). Since the majority of these new indicators were calculated by using non-monetary factors, which do not have any subjective dimension, they also can be treated as objective poverty measures.

A more complete approach to poverty analysis should include another dimension in the poverty calculation - subjective poverty or subjective assessments of the wellbeing in order to cover the

real multidimensional nature of the poverty and to decide who is poor. In other words, the opinions of respondents in the surveys measuring well-being should be accounted for. In this way, objective measures of poverty, which are expert construction, are complemented by the views of society and should contribute to making the overall profile of poverty.

3. Measuring subjective poverty in Bosnia and Herzegovina

Poverty in Bosnia and Herzegovina is still measured on the basis of consumption expenditure data collected within household consumption surveys conducted approximately every four years. Up to now, these surveys were conducted five times: in 2004, 2007, 2011, 2015 and 2021/2022 on the basis of net samples of about 7500 households representing the general Bosnian population. Samples were designed as two-stage stratified samples where stratification was made by region (Federation of Bosnia and Herzegovina, Republika Srpska and Brčko district B&H), type of settlements (urban and non-urban) and quarters within the survey year. For the calculation of poverty indicators, the concept of relative poverty is used.

The main purpose of household budget surveys was to provide weights for consumer price statistics and data for national accounts statistics and for poverty analysis. Since we needed an analysis of social inclusion, but we were not able to conduct a EU-SILC, starting in 2011, the HBS survey instruments were expanded with an ad hoc module on social inclusion. This module contained several questions of the EU-SILC type allowing the analysis of the non-monetary aspects of living standard and the subjective assessment of the living conditions of Bosnian households. Although not intentionally designed, some of these questions allow us to partially analyze subjective poverty feeling.

3.1. Household poverty indicators

In order to compare monetary and non-monetary poverty indicators for Bosnia and Herzegovina data from 2015 household budget survey was used (data from HBS 2021/2022 is still unavailable). For the comparison of various poverty approaches, we used three poverty assessment concepts:

- relative poverty
- material poverty, and
- subjective poverty.

Relatively poor were those households whose per capita consumption is below the national relative poverty line. The national relative poverty line was set to 60% of median of the per capita consumption expenditure equalized by using OECD modified equivalence scale. The poverty threshold for Bosnia and Herzegovina in 2015 was 389.26 BAM per adult equivalent.

Those households that were deprived of 4 out of 8² items of material deprivation were marked as materially poor. The standard nine items list was used for material poverty definition.

For the definition of subjective poverty, we used a survey question, which is a proxy of The Center for Social Policy Poverty Line (Duvoux and Papuchon, 2019). This question reads as follows:

“In your opinion, how does your household survive (to make ends meet):

- very difficult
- difficult
- with certain difficulties
- not just easy
- easy
- very easy?”

Households that reported very difficult or difficult surviving were considered subjectively poor for the purpose of this paper.

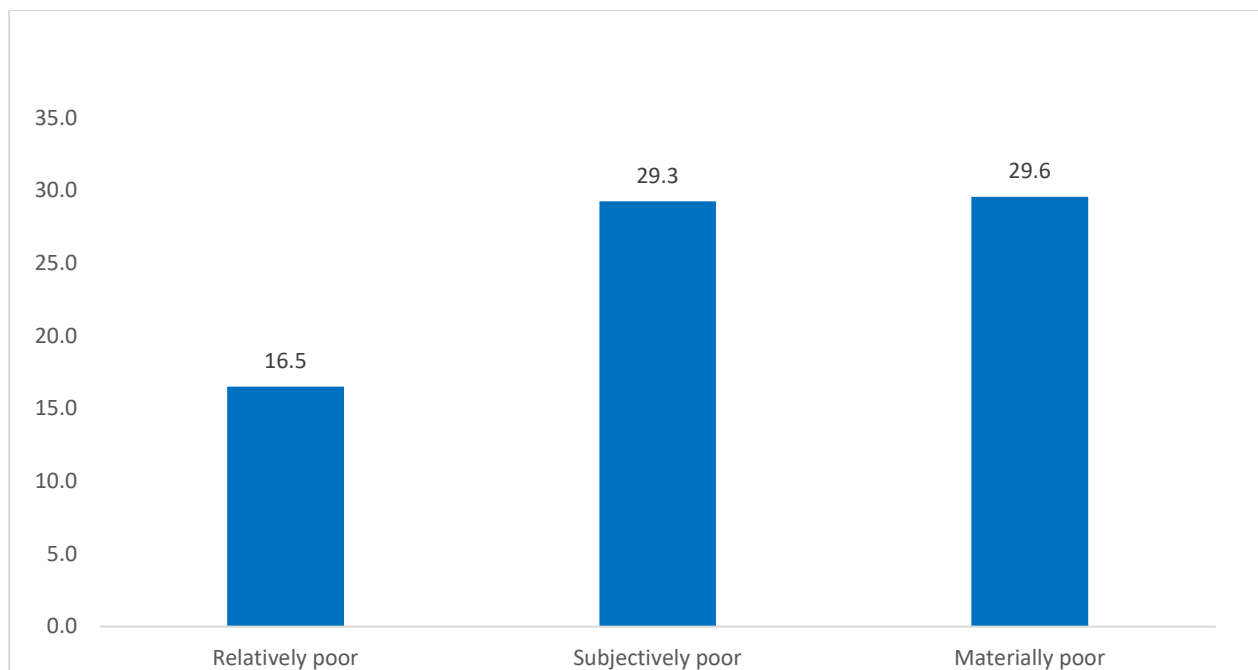
3.2.Results

In this section we present above defined basic poverty indicators for Bosnia and Herzegovina.

In 2015 29,3% of Bosnian households considered themselves as poor, a figure which is almost doubled to the official (and objective) poverty indicator and very close to the share of materially poor households (Graph 1).

Graph 1. Poverty indicators in Bosnia and Herzegovina (%), 2015

² We used 8 instead of 9 items of the material deprivation since data for one item (cannot afford a telephone) could not be properly calculated.



Source: 2015 HBS in B&H, author`s calculation.

Almost 7 out of 10 households who feel poor are not considered poor from an official (objective) monetary poverty assessment. 58,6% of the monetary poor households call themselves this way. The similar situation is evident in the comparison of material and monetary poverty. Almost 7 out of 10 households who are materially deprived, are not monetary poor and 58,8% of the monetary poor households are also materially poor. Monetary and subjective poverty and monetary and material poverty overlap in Bosnia and Herzegovina in some extent, but, it is evident that they refer to partially distinct social groups (Tables 1 and 2).

Table 1. Consumption (relative) and subjective poverty (%), 2015

	Relatively non-poor	Relatively poor	Total
Subjectively non-poor	90,3	9,7	100
Subjectively poor	66,9	33,1	100
Total	83,5	16,5	100

Source: 2015 HBS in B&H, author`s calculation.

Table 2. Consumption (relative) and material poverty (%), 2015

	Relatively non-poor	Relatively poor	Total
Materially non-poor	90,3	9,7	100
Materially poor	67,1	32,9	100
Total	83,5	16,5	100

Source: 2015 HBS in B&H, author`s calculation.

A slightly better overlapping was observed between subjective and material poverty as shown in Table 3:

Table 3. Subjective and material poverty (%), 2015

	Subjectively non-poor	Subjectively poor	Total
Materially non-poor	86,8	14,2	100
Materially poor	34,9	65,1	100
Total	70,7	29,3	100

Source: 2015 HBS in B&H, author`s calculation.

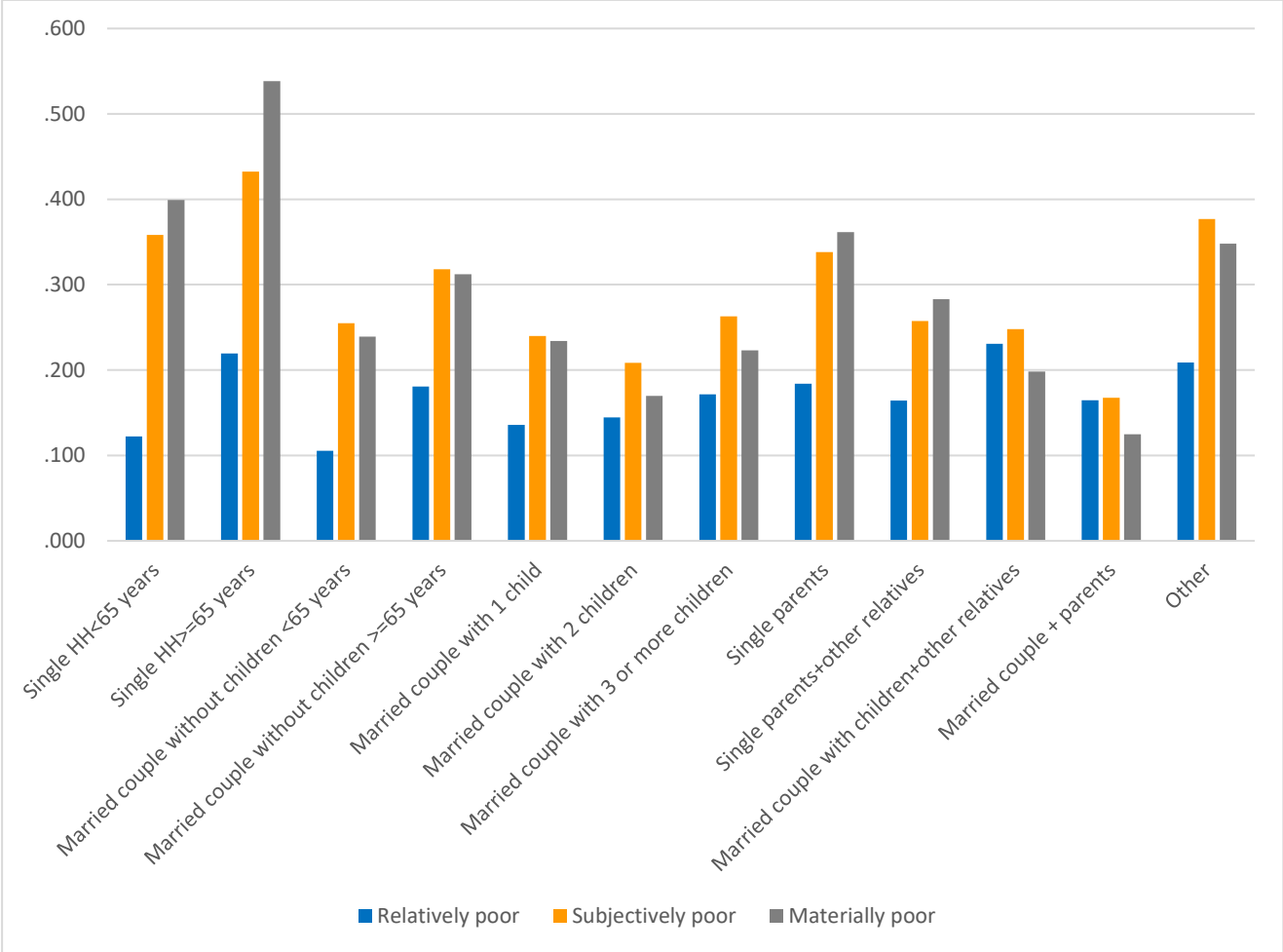
About two thirds of the materially poor households subjectively feel poor.

It seems that official (monetary) poverty assessment in Bosnia and Herzegovina does not target very well materially and subjectively poor households and that there is a better matching between material poverty and subjective poverty feeling.

3.2.1. Who is poor in Bosnia and Herzegovina?

When measured monetary, the poverty in Bosnia and Herzegovina was also underestimated in comparison to its material expression and subjective feeling. For the majority of households types, there is better matching between material and subjective poverty statuses compared to relative poverty status (Graph 2).

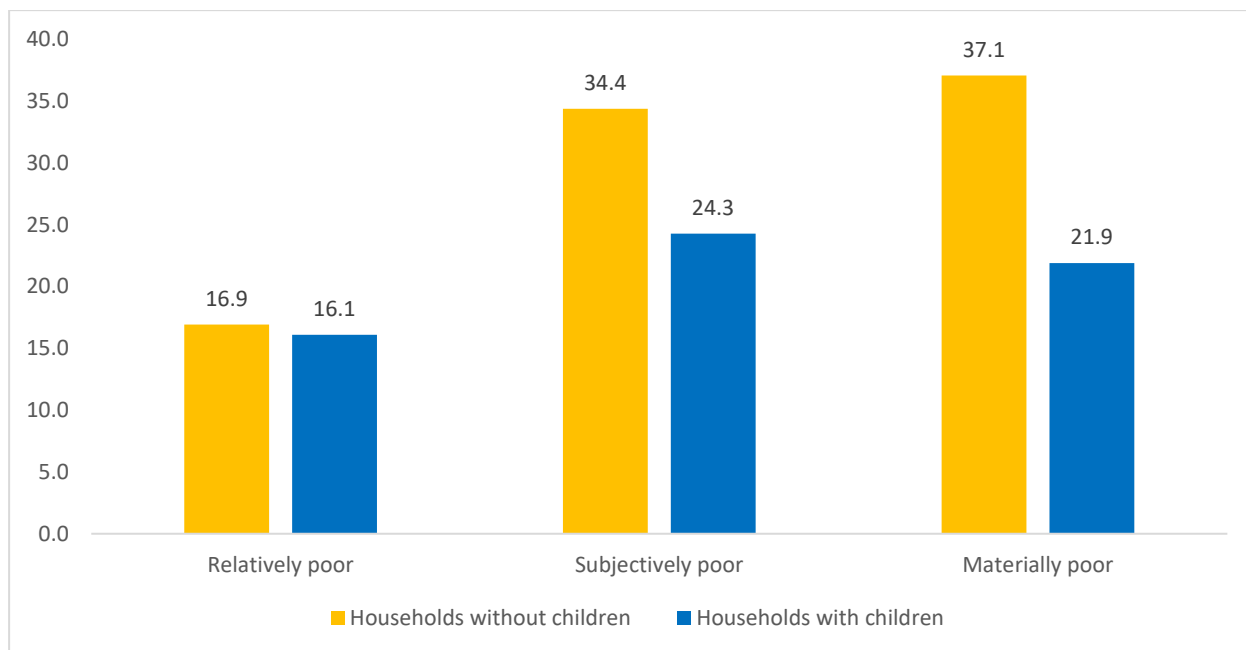
Graph 2. Poverty indicators by types of households (%), 2015



Source: 2015 HBS in B&H, author`s calculation.

Since several SDG targets are related to child poverty, we would like to show poverty indicators separately for households with and without children in order to get more completed household poverty profile.

Graph 3: Poverty indicators by households with and without children (%), 2015



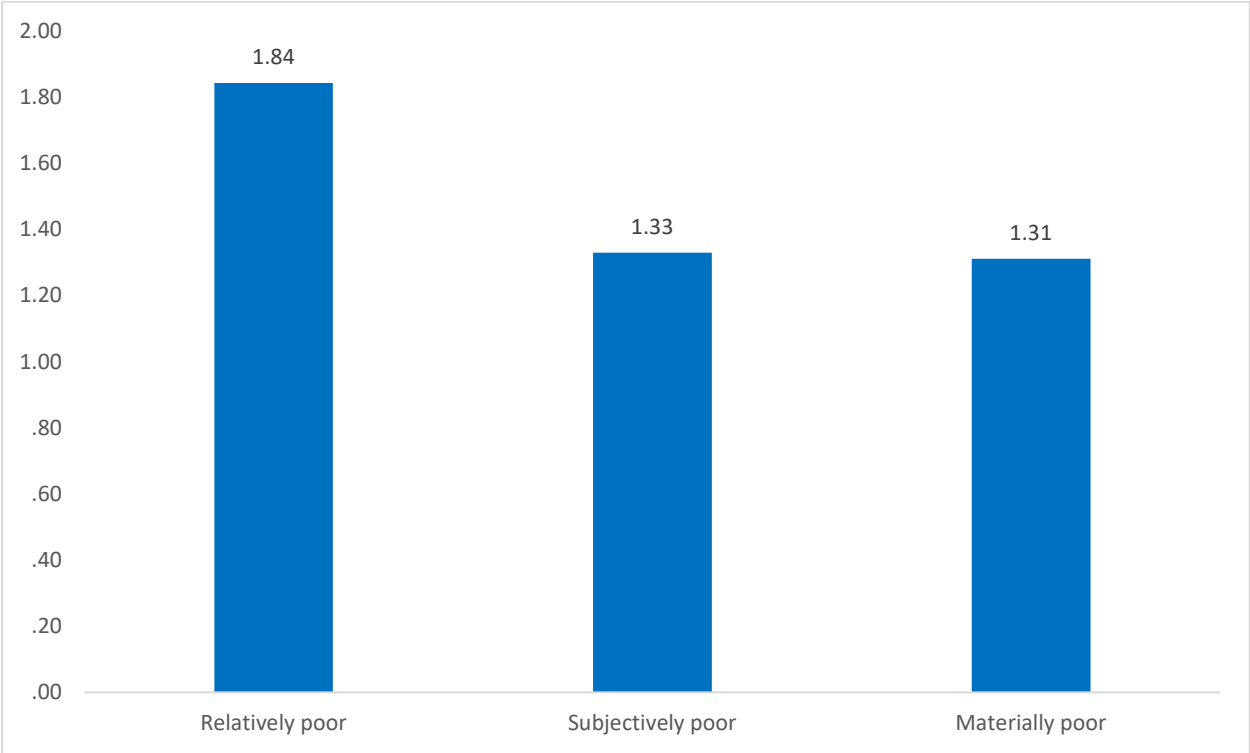
Source: 2015 HBS in B&H, author's calculation.

While there is not a huge difference in monetary poverty between households with and without children, the differences are larger in terms of subjective and material poverty. Bosnian households without children reported themselves poor in larger extent in comparison to those with children. The similar situation is when analyzing material poverty.

In addition to the above used definition of the subjective poverty, the survey instruments contained a question about the minimum net income which would meet the needs of the households. This also can be used for the description of subjective poverty. But, since the poverty analysis on the basis of household budget data in Bosnia and Herzegovina was calculated on the basis of consumption expenditure as a monetary aggregate and not the income, appropriate comparative analysis on the basis of this question are difficult to implement at least not without some (weak) assumptions.

Anyway and for descriptive purposes, we will additionally do just few comparisons of three poverty indicators on the basis of the actual household consumption expenditure and self-declared minimum net household income which can satisfy the needs. This analysis is based on the (weak) assumption that self-declared minimum income would be fully spent for household needs. We will compare average ratios between the minimum household income per capita and actual household consumption expenditure per capita for poor households within each of three definitions of poverty (Graph 4).

Graph 4. Ratio of minimum income p.c. to the consumption expenditure p.c., 2015

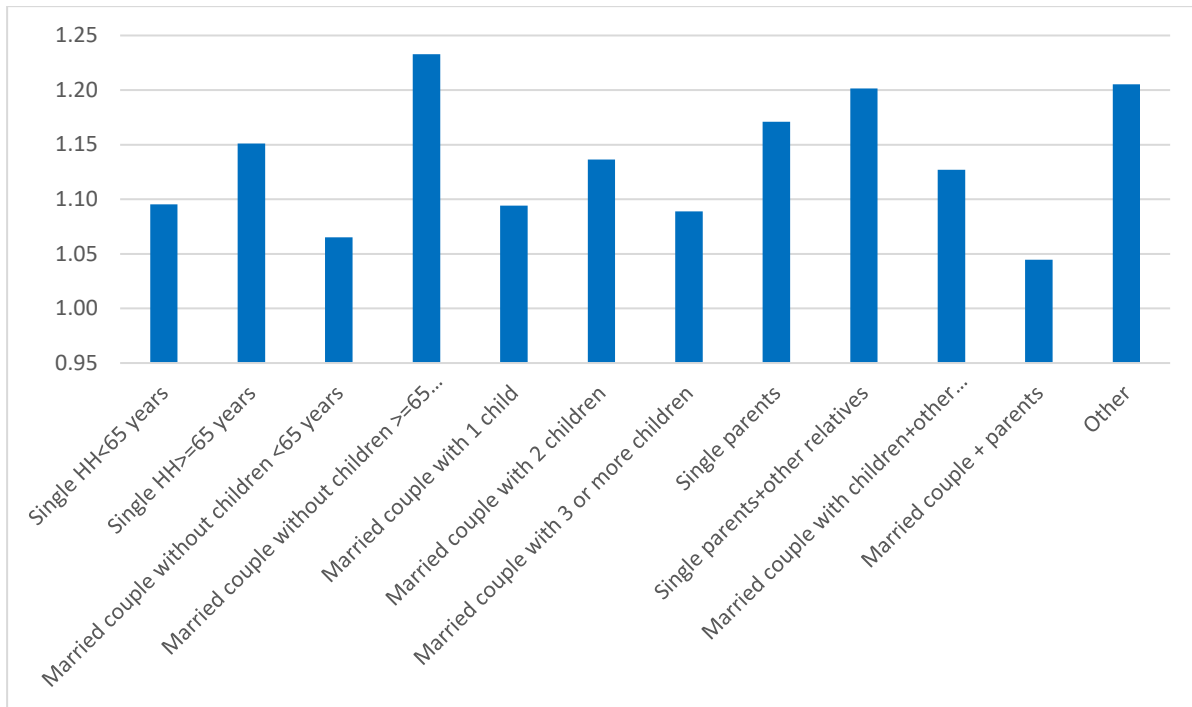


Source: 2015 HBS in B&H, author`s calculation.

The discrepancy between minimum needed net income per capita and the actual consumption expenditure per capita is the largest within relatively poor households and significantly different in comparison to subjectively and materially poor households that do not differ in terms of this measure.

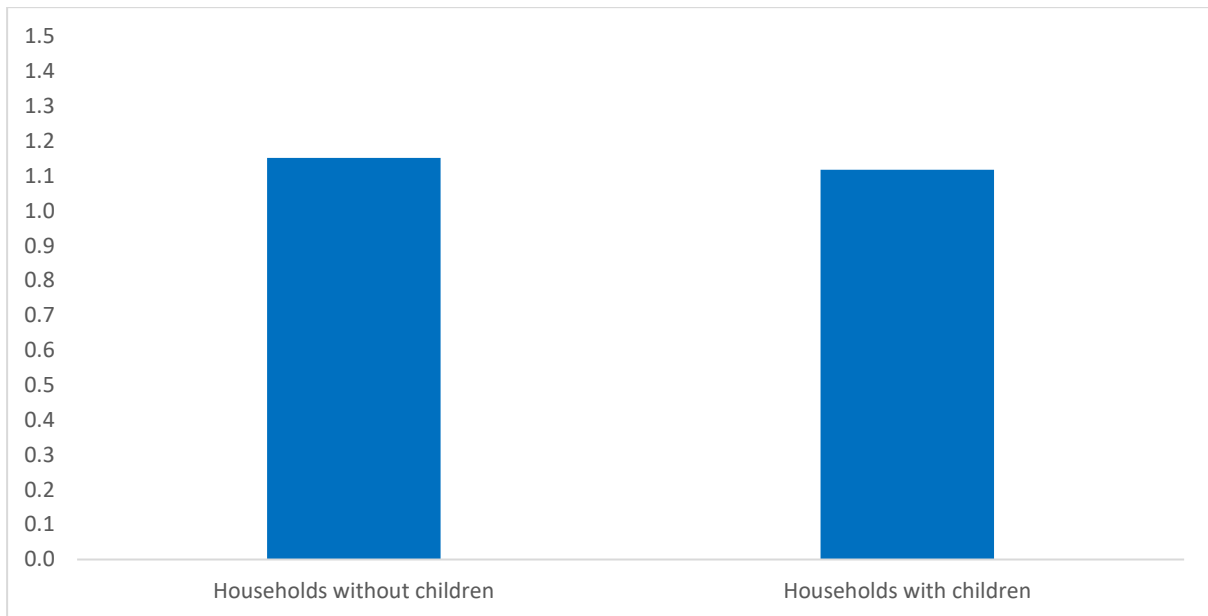
Among various household types, married couples without children, single parents with relatives and other types mostly suffer from the insufficient income while there is no difference between households with and without children (Graph 5 and 6).

Graph 5. Ratio of minimum income p.c. to the consumption expenditure p.c. by household types, 2015



Source: 2015 HBS in B&H, author's calculation.

Graph 5. Ratio of minimum income p.c. to the consumption expenditure p.c. by household with and without children, 2015



Source: 2015 HBS in B&H, author's calculation.

4. Conclusion

Subjective poverty is not analyzed in Bosnia and Herzegovina and survey instruments were not intentionally designed to measure this phenomenon. The above presented analysis is based on questions that can be considered as proxy sources of information describing subjective poverty feeling.

However, some conclusions can be drawn from the previous analysis. First, subjective data offer to expand the information set traditionally used for assessing poverty. The analysis of such data helps to differentiate the household groups affected by relative poverty on the one hand, and those affected by subjective and material poverty, on the other hand. Although there are overlapping between these three groups of households, we indicated a significant group of non-overlapping households especially when compared subjectively or materially poor households with monetary poor households. On the basis of these differences, the analysis of poverty in terms of material deprivation and subjective feeling can be used as a complementary measure of the monetary poverty. It draws attention to some aspects of poverty that are not in the primary focus of monetary poverty and thus are not easy to detect. In the end, it contributes to making a better poverty profile in the country. Second, the analysis of non-monetary poverty can help identifying the most vulnerable groups in the society and to contribute to the analysis of inequality in order to eliminate it. Third, this approach highlights the importance of linking statistical surveys dedicated to poverty and living standards to the sociological studies related to perception of social status and quality of life issues. Further, combining monetary and non-monetary poverty measures can contribute to faster development of the European ICW statistics.

Our analysis certainly has significant shortcomings. First of all, the analysis was not performed on the basis of intentionally designed surveys for measuring subjective poverty. It was based on the proxy pieces of information which were collected for the purposes of social inclusion analysis in order to enrich traditional poverty analysis. Second, the analysis does not contain income data since this data, although collected, was not analyzed within household budget surveys in Bosnia and Herzegovina. Further, factors at the level of households and at the individual level which influence subjective poverty feeling were not analyzed.

First step for improvement the poverty analysis in Bosnia and Herzegovina is to use data collected within EU-SILC. Our first full-scale SILC is conducted in spring 2022 and data should be available for the analysis in 2023. In this way, the analysis of relative poverty will be fully harmonized with EU standards. In order to allow at least a basic subjective poverty analysis, some survey questions should be better designed in order to cover subjective assessment of poverty. This should be a

basis for more sophisticated statistical analysis of various aspects of poverty in Bosnia and Herzegovina and for alignment with best practices.

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