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Measuring perceived economic inequality: a systematization of methods

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Introduction

This issue of Research Digest focuses on systematizing different ways of assessing perceived economic inequality. Rising economic inequality is one of the global challenges facing modern society (Wilkinson & Pickett, 2017). Different patterns of behavior and well-being among members of society are related not only to the objective level of economic inequality, but also to perceptions of how different indicators of well-being (e.g., income) and opportunities are distributed among members of society (Bavetta, Li Donni, & Marino, 2019; Kim, Huh, Choi, & Lee, 2018). While ways of assessing the objective level of inequality are widely presented in the literature, measuring people's perceptions of inequality is more difficult. This digest presents a systematic analysis of existing ways to assess perceived economic inequality. Fifty-seven articles from the scientific citation databases Scopus and Web of Science that studied perceived economic inequality were selected for analysis. The methods presented in these articles are categorized according to the tasks that the respondent is asked to perform, and are described in the digest.

Assessing the level of inequality

One of the most common ways to measure perceived inequality is through the use of questions organized along the lines of Likert scales (for example: “In your opinion, how severe is economic inequality in our society?”). Typically, the respondent is asked to select an answer on a scale where the number of gradations between the lower and upper limits of the assessment can vary considerably depending on the specific purpose of the survey.

The obvious advantages of this method are its brevity and relative ease of use, which often makes it popular among researchers. However, these advantages are also associated with serious drawbacks.

First of all, the brevity of the question does not address, and sometimes even exacerbates, the problem of interpreting the results obtained. When answering abstract questions about inequality, respondents may be thinking of radically different options: inequality of opportunities for different groups of people, inequality in the assessment of outcomes, specific examples of wealth distribution in the population, or they may be thinking in general about the fairness of the existing distribution of wealth (Heiserman & Simpson, 2021). Taken together, there can be a lot of variability in potential perceptions of inequality and the specific associations that an individual focuses on when answering a question, thus significantly impairing the quality of the predictions that can be made based on respondents’ answers.

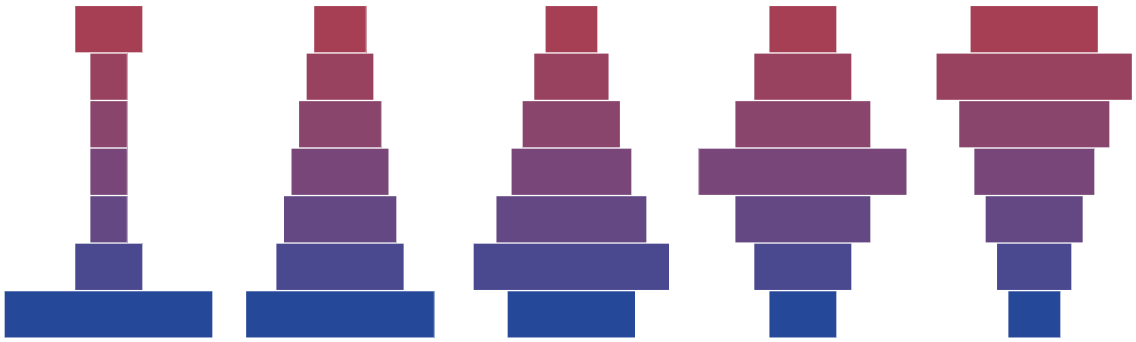
Using more specific language (e.g.: “In your opinion, how wide or narrow is the income gap between the rich and the poor in the United States?” (Heiserman & Simpson, 2021); “To what extent do you believe that society today is unequal in the distribution of economic resources?” (Melita, Velandia-Morales, Iruela-Toros, Willis, & Rodríguez-Bailón, 2020)) addresses the issue only partially. Certainly, “narrowing” the concept of “inequality” to a specific indicator brings respondents closer to the original object of assessment, while the “narrow” wording of the question makes it relatively easy for the respondent to identify the purpose of the question and, as a result, can lead to a high level of social desirability in the response.

Equally important is the fact that any questions based on Likert scales do not help identify opinions of people who do not have sufficiently clear ideas about the level of economic inequality in society. Most likely, such respondents would be shifting their assessments to the middle of the scale when answering the question, which is rather uninformative for building predictive models. Finally, the use of Likert scales to study perceptions of inequality does not allow to understand whether a person overestimates or underestimates the level of existing inequality (Heiserman & Simpson, 2021). Thus, such measurements can rather be considered as attitudes towards inequality, which tell us much more about attitudes towards this phenomenon than about the specifics of its perception.

Choosing from alternatives

Measurements of this type most often involve graphical representations of conditions from which the respondent is asked to select the one that best matches his or her perceptions. One of the most popular examples of such inequality measurement is offered by the International Social Survey Program (ISSP: http://w.issp.org/). Respondents are presented with a visual representation of 5 diagrams (see Figure 1), from which they are required to choose the one that best corresponds to the economic structure of society. Each diagram shows 7 bars that denote groups of people with different levels of income and resources. The bottom bar describes the number of poor people with minimal resources, and the top bar describes the number of rich people with abundant resources.

Figure 1.
An example of assessing the perceived level of economic inequality.



Type A
A small elite at the top, very few people in the middle and a lot of people at the bottom

Type B
A small elite, a medium number of people in the middle and a large number of people at the bottom

Type C
A small elite, a medium number of people in the middle and few people at the bottom

Type D
Most people in the middle, a small elite and a few people at the bottom

Type E
Most people at the top, a small number of people at the bottom

According to researchers, this way of assessing inequality is relatively simple and straightforward (Hadavand, 2018), as it is visual and does not require respondents to understand how the real distribution of income is transformed into the diagrams presented (Fatke, 2018). In addition, it allows comparing the respondent's choice with the objective reality and thus understanding whether people overestimate or underestimate the level of inequality (Hauser & Norton, 2017).

The difficulties and limitations of this method become most obvious at the stage of processing the obtained data. First of all, the proposed 5 options of income distribution are an extremely limited set to choose from, which in principle cannot correspond to the multitude of possible opinions of respondents about the structure of society. As a result, the degree of measurement accuracy is significantly compromised.

Further, in order to compare the respondent's choice with the objective level of inequality, the resulting data need to be processed. To translate the results of the choice of different diagrams into numerical indicators, V. Gimpelson and D. Treisman (2018) suggest calculating the Gini

index[1] for each diagram. However, converting the diagrams into a Gini index eliminates some fundamental differences between the types of society represented (Hadavand, 2018). Thus, diagrams D and E represent fundamentally different societies, but their calculated Gini indices are almost identical (0.20 and 0.21). Thus, the accuracy of measuring perceived economic inequality with this method may not be very high and may depend directly on the way the data are processed.

[1] An economic indicator that reflects the degree of income stratification of society and takes values from 0 (absolute equality) to 1 (absolute inequality).

Distribution

In this case, the respondent is asked to imagine that society is divided into 5 quintiles, each comprising 20% of the population, and that people's wealth increases while moving from bottom to top quintile (Norton & Ariely, 2011). The respondent's task is to indicate what percentage of total population income they believe falls within each quintile. In this case the level of perceived economic inequality is calculated by comparing the "wealth" of the top and bottom quintiles. Accordingly, the greater the difference, the greater the perceived economic inequality in society. It is possible to determine whether an individual overestimates or underestimates the level of inequality by comparing the resulting distribution against objective data. K. Erikson and B. Simpson (2012) slightly modified this task by asking respondents to determine not the percentage of total wealth that falls into each quintile, but the average income of people in each quintile.

The main problem with this type of task is that it is difficult for respondents. It is quite hard for people to think in terms of quintiles and ranks. These are well understood by researchers, but in reality society is not split into groups of 20%, which makes it very difficult for respondents to visualize such groups and their respective income levels (Heiserman & Simpson, 2021). Moreover, it is often hard for people to realize that income quintiles should be ordered by rank. As a result, lack of precision in measurement due to the specifics of the task significantly impairs data quality and the ability to make relevant predictions.

An alternative matching task based on perceptions of average income for each quintile (Eriksson & Simpson, 2012), besides the mentioned problem with their perception and understanding, also involves a significant overestimation of income in the top group (5th quintile). When estimating the average incomes of people in the last quintile, respondents mentioned unrealistically large amounts, which may indicate that they do not have any clear ideas about how much exactly very rich people earn (Heiserman & Simpson, 2021).

The matching task that overcomes the limitations described above, uses a "reverse" design. In this case, the respondent is presented with ranges of monthly/annual incomes (e.g., 20,000 to 30,000 USD, 30,000 to 45,000 USD, 45,000 to 60,000 USD, etc.) and is asked to determine how many people in the general population have incomes in each range (see, for example, Chambers et al., 2014). The number of ranges given can vary and depends on the objectives of the study. The level of perceived economic inequality, as in the cases described above, can be determined by comparing the number of people earning the minimum and maximum income in a country. To determine the correlation between subjective assessment and objective indicators of inequality, respondents' answers can be transformed into the Gini index (see, e.g., Heiserman & Simpson, 2021).

Self-categorization

Another way to assess the perceived level of economic inequality is to ask a person to identify his or her place in the social hierarchy (subjective socioeconomic status). The most common method of measuring subjective socioeconomic status is the MacArthur ladder (Adler, Adler, Epel, Castellazzo, & Ickovics, 2000). The ladder has 10 rungs, with those in the best social status (lots of money, prestigious education, and good jobs) at the top and those in the worst social status (very little or no money, no education, bad jobs, or no job at all) at the bottom. Respondents are asked to indicate which rung of the ladder they stand on.

To determine the level of perceived economic inequality, G. Choi (2019) suggests treating respondents' self-categorization on the ladder as a distribution for which the mean and median can be calculated. The ratio of mean to median will indicate the level of perceived economic inequality. To find out whether individuals overestimate or underestimate the level of economic inequality in society, we need to divide the obtained ratio of the mean to the median by the ratio of the real average income in the country to the median (Engelhardt & Wagener, 2014).

The main limitations of this method are due to the peculiarities of self-perception. People tend to place themselves in the middle of the social hierarchy (Lindemann, 2007), which reduces the accuracy of perceived inequality estimates. In addition, the very task that requires individuals to place themselves at some position in the social hierarchy can be interpreted in a variety of ways. In general, researchers agree that socioeconomic status in everyday perceptions is most likely related to individuals' income (Manstead, 2018). However, individuals' self-categorization can also be related to a range of other factors, including intangible ones, such as respect from others or a sense of power (Anderson, Kraus, Galinsky, & Keltner, 2012).

In addition, unlike the ways of assessing perceived economic inequality described above, the MacArthur ladder does not allow for assessment at the level of a specific individual, but can be used primarily in group comparison tasks (e.g., cross-cultural studies).

Conclusion

The ways of assessing perceived economic inequality presented above combine several key points that are crucial for planning social research, interpreting the results correctly, and relating the data to each other.

First of all, we should note that there are different interpretations and ways to operationalize economic inequality, which are equally valid. In particular, inequality is often presented as differences in income, resources, fairness, etc. Most often, researchers study a single aspect of perceived inequality, which dramatically "narrows" the reality under investigation, undermines data reliability and creates major issues when correlating the results of studies that focus on different aspects of inequality.

Another feature is that virtually all ways of measuring perceived economic inequality create a bias in the estimates due to their limitations. Researchers should recognize that no measure is perfect and try to offset the deficiencies of each particular measure by controlling for additional factors. One way to obtain more reliable data is to look at the different dimensions through which inequality is operationalized and employ different ways of its assessment in one study. A multidimensional measurement space will reveal both robust results and artifacts that relate to a particular measure of inequality (Bavetta et al., 2019; Heiserman & Simpson, 2021).

Choosing the right way of assessing perceived economic inequality, taking into account its advantages and disadvantages when planning a study can help to significantly improve the quality of the obtained data and build predictive models of social behavior.

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