

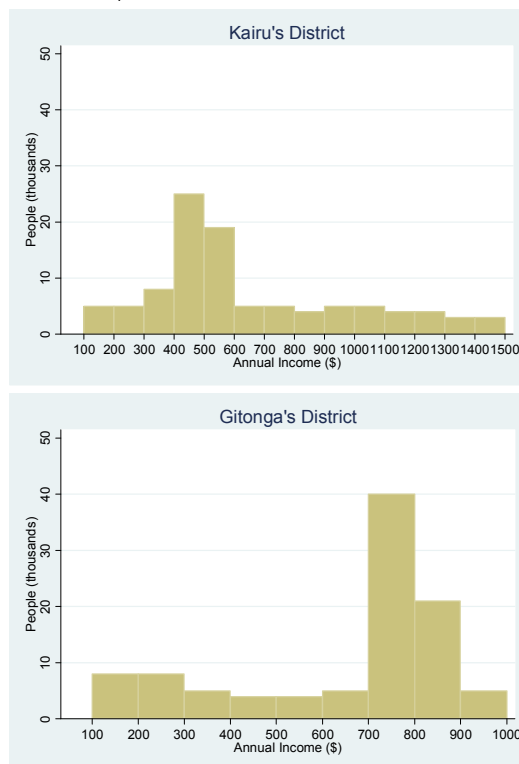
Issue Paper

HUMAN RIGHTS REASONS FOR PREFERRING INDIVIDUAL MEASURES OF INEQUALITY TO AGGREGATE MEASURES

Gary W. Reinbold *

Two Districts in Kenya

Kairu lives in a district in southern Kenya and has an annual income (in equivalent U.S. dollars) of \$300. There are 100,000 people in his district and their annual incomes (rounded to the nearest \$100) are distributed as shown below. Gitonga lives in a neighboring district and also has an annual income of \$300. There are also 100,000 people in his district, with annual incomes distributed as shown below. Both districts have a mean income of \$600, but Kairu's district has a median income of \$500 whereas Gitonga's district has a median income of \$700.



Which district is more unequal? Are all of the people in each district affected the same by the inequality in their district? In which district does the inequality pose greater difficulties for a poor person such as Kairu or Gitonga? What are the human rights implications of the inequality in these districts?

The answer to the first question depends entirely on how we define inequality. The second question almost certainly requires a negative answer. In particular, the poorest people in each district are likely to suffer more

from the inequality in their district than the richest people, who might even benefit from that inequality. With respect to the third question, we would probably expect Gitonga to face greater difficulties in his district because of the income gap between him and the concentration of people in his district who earn more than twice as much as he does. The fourth question turns out to be closely related to the third – an assessment of the human rights implications of inequality necessarily involves an assessment of the impact of that inequality on specific individuals and groups.

Aggregate Versus Individual Inequality Measures

An extensive body of research considers the effects of economic inequality within a society on individual health and other human development outcomes. There are several alternative hypotheses regarding these effects and studies of these hypotheses use many different measures of inequality. However, these measures fall into two broad categories: aggregate inequality measures and individual inequality measures.

Aggregate inequality measures attempt to assess the overall level of inequality within an area and are the same for all people within that area. They include ratio measures such as the ratio of income earned by the richest 20 percent to the poorest 20 percent and index measures such as the Gini index. (Gini indices range from 0% to 100%, with 0% representing complete equality and 100% indicating complete inequality.) Individual inequality measures are unique to each person and mainly include difference-based measures, such as the difference from an individual's income to the poverty line or to the mean or median income in the individual's area.

The choice of inequality measure in a particular study or report may be dictated by data limitations — if only aggregate data are available, an aggregate inequality measure may be the only option. It should also be guided by theoretical considerations. Many different mechanisms have been proposed to explain how within-area economic inequality may affect individual human development outcomes. For example, one hypothesis argues that societal inequality affects the level of social capital in a society, which in turn af-

MHR Issue Papers

are quick dissemination pieces intended to stimulate policy discussion on evidence-based policy and programming to the realm of human rights policy. Available from:

hks.harvard.edu/cchrp/mhr

Inequality Measures

Common Aggregate Economic Inequality Measures:

- Gini index
- Theil index
- Atkinson index
- Coefficient of variation
- Ratio of richest decile's income to poorest decile's income
- Ratio of richest quintile's income to poorest quintile's income
- Ratio of 90th percentile's income to 10th percentile's income
- Percentile rank of area mean income among all areas in the population

Common Individual Economic Inequality Measures:

- Difference from individual's income to poverty line
- Difference from individual's income to mean area or population income
- Difference from individual's income to median area or population income
- Percentile rank of individual's income among all individuals in the area or population

Measurement and Human Rights Program

The MHR Program is specifically designed to bring evidence-based policy and programming to the realm of human rights.

MHR Program

The Carr Center for Human Rights Policy

Harvard Kennedy School
79 JFK street (box 14)
Cambridge, MA 02138

E-mail: mhrp@ksg.harvard.edu

Director: Andrea Rossi

ffects individual human development outcomes. An aggregate inequality measure might be best to evaluate a society's ability to form social capital, but an individual inequality measure might be more appropriate to assess an individual's ability to access that social capital.

However, assessing the impact of inequality within a society on individuals is ultimately a human rights issue (as compared with assessing the overall income or poverty in a society, which are development issues). Thus, human rights considerations should also inform the choice of inequality measure. In reports by governmental and non-governmental organizations, aggregate inequality measures are often the only practical choice, although even these reports should disaggregate these measures by subgroup when possible. Inequality studies using individual survey or census data typically have more options though and the parties involved should recognize that individual measures are more consistent with the human rights concerns that underlie their studies.

There are many analytical reasons for preferring individual inequality measures to aggregate measures. Aggregate measures give a rough overall assessment of the degree of economic inequality in a society, but do not show how that inequality impacts specific individuals and groups. It is also more difficult to understand causation when using aggregate measures of economic inequality, both in terms of identifying underlying conditions that caused and perpetuate the inequality and in terms of determining how that inequality influences individual human development outcomes. Similarly, designing social interventions and assessing their impact are easier with individual measures of inequality. Using individual inequality measures also facilitates measuring progress over time.

In addition to these analytical advantages, there is a more fundamental reason to prefer individual inequality measures from a human rights perspective. Many human rights instruments recognize an individual's right to an adequate standard of living. This standard is best determined by reference to a level such as the poverty line or the mean or median income in the individual's country or community, which are the exact issues addressed by individual inequality measures. There is no similarly recognized human right to live in an economically equal society, which is the concept captured by an aggregate measure such as a Gini index.

Inequality in the Two Districts

Returning to the two districts described above, Kairu's district has an income Gini index of 31%, while Gitonga's district has a Gini index of 21%. So, Kairu's district is more unequal by that measure and we might therefore expect the within-district inequality to create greater difficulties for Kairu. However, the difference between Kairu's income and the median income in his district is \$200, while the difference between Gitonga's income and the median income in his district is \$400. Thus, with this individual inequality measure, we would expect the within-district inequality to present greater problems for Gitonga.

The Gini index seems to fail us here. Using this measure not only assumes that inequality has the same effect on all of the people in each district, but also suggests that the within-district inequality is a greater problem for Kairu, which is contrary to our expectation. Most other commonly used aggregate inequality measures would share these problems.

The individual inequality measure fares better. It is (by definition) unique to each person and better quantifies the difficulties that inequality presents for poor people such as Kairu

and Gitonga. It is not immediately clear whether the median district income or some other measure, such as the mean district income or the poverty line, is the correct standard to judge adequacy from a human rights perspective, but further research would help us make that determination. The key is that an individual measure enables this research and allows us to determine when societal inequality violates an individual's human rights.

Conclusion

Whenever possible, studies of the impact of economic inequality on human development outcomes should use inequality measures that are unique to individuals. In some cases, the particular mechanism being studied or the available data may necessitate the use of an aggregate measure. However, when using individual census or survey data, individual inequality measures are typically feasible and the human rights concerns that are inherent in inequality studies argue strongly for the use of these measures. The technical appeal of capturing an entire economic distribution in a single coefficient such as a Gini index comes at a cost that will usually be too high for the human rights community.

* Summer 2008 MHR Associate Research Fellow

"[W]hen using individual census or survey data, individual inequality measures are typically feasible and the human rights concerns that are inherent in inequality studies argue strongly for the use of these measures." "