

Oppel, Annalena

**Working Paper**

## Communication matters: Sensitivity in fairness evaluations across wealth inequality expressions and levels

WIDER Working Paper, No. 2023/86

**Provided in Cooperation with:**

United Nations University (UNU), World Institute for Development Economics Research (WIDER)

*Suggested Citation:* Oppel, Annalena (2023) : Communication matters: Sensitivity in fairness evaluations across wealth inequality expressions and levels, WIDER Working Paper, No. 2023/86, ISBN 978-92-9267-394-9, The United Nations University World Institute for Development Economics Research (UNU-WIDER), Helsinki, <https://doi.org/10.35188/UNU-WIDER/2023/394-9>

This Version is available at:

<https://hdl.handle.net/10419/283782>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*



UNITED NATIONS  
UNIVERSITY  
**UNU-WIDER**

WIDER Working Paper 2023/86

**Communication matters: sensitivity in fairness  
evaluations across wealth inequality expressions  
and levels**

Annalena Opperl\*

July 2023

**Abstract:** This paper seeks to understand whether the way in which inequality is communicated through measurements influences individuals' fairness perceptions regarding wealth inequality. It begins from the premise that prominent measures of inequality, such as the Gini coefficient, fall short of providing an intuitive understanding of inequality for most people. Following approaches in the behavioural economics domain, the paper explores the effects of four different presentations of inequality in a survey experiment. In this way it aims to see whether individuals' fairness evaluations change across different levels of inequality. To do so, it introduces three different inequality scenarios, respectively corresponding to Gini coefficients of 32.8, 46.8, and 60.3. The scenarios are presented using different expressions: large-stake and small-stake units for absolute expressions, and percentages and multiples for relative expressions. The results point to a notable difference in fairness evaluations based on whether respondents are presented with absolute versus relative expressions of inequality: absolute expressions lead to a larger decline in fairness evaluations for higher levels of inequality. More broadly, the paper's contribution highlights the importance of 'intuitive' measures of political matters such as wealth inequality. It further indicates that this may be particularly vital in highly unequal countries such as South Africa. This concerns public and policy discourses alike. The paper suggests avenues for further exploration to bring more nuance and context to the patterns observed.

**Key words:** fairness perceptions, inequality, survey experiment, wealth, measurement

**JEL classification:** D31, D83, D90, I0

**Acknowledgements:** The author would like to thank colleagues at UNU-WIDER for their helpful comments and inputs throughout the data collection and analysis process.

---

\* London School of Economics, UK, [A.Oppel@lse.ac.uk](mailto:A.Oppel@lse.ac.uk)

This study has been prepared within the project [The impacts of inequality on growth, human development, and governance—@EQUAL](#), supported by the Novo Nordisk Foundation Grant NNF19SA0060072.

Copyright © UNU-WIDER 2023

UNU-WIDER employs a fair use policy for reasonable reproduction of UNU-WIDER copyrighted content—such as the reproduction of a table or a figure, and/or text not exceeding 400 words—with due acknowledgement of the original source, without requiring explicit permission from the copyright holder.

Information and requests: [publications@wider.unu.edu](mailto:publications@wider.unu.edu)

ISSN 1798-7237 ISBN 978-92-9267-394-9

<https://doi.org/10.35188/UNU-WIDER/2023/394-9>

Typescript prepared by Merl Fluin.

United Nations University World Institute for Development Economics Research provides economic analysis and policy advice with the aim of promoting sustainable and equitable development. The Institute began operations in 1985 in Helsinki, Finland, as the first research and training centre of the United Nations University. Today it is a unique blend of think tank, research institute, and UN agency—providing a range of services from policy advice to governments as well as freely available original research.

The Institute is funded through income from an endowment fund with additional contributions to its work programme from Finland and Sweden, as well as earmarked contributions for specific projects from a variety of donors.

Katajanokanlaituri 6 B, 00160 Helsinki, Finland

The views expressed in this paper are those of the author(s), and do not necessarily reflect the views of the Institute or the United Nations University, nor the programme/project donors.

## 1 Introduction

Inequality is a widely recognized challenge. It features as prominently in research as it does in politics and popular discourse. Although it is an intuitive concept, it can also be fairly abstract. No individual alone can be unequal. Hence, through economic, social, and political comparisons, different forms of inequality can be a daily encounter for many. However, inequality has also become a scientific and political project, fuelled by the aim to measure its occurrence, extent, or trends. Prominent measures such as the Gini coefficient are known by many but explained by few. Most people would not have an intuitive understanding of the material and political reality that a two-point reduction in the Gini coefficient presents. Nonetheless, actual or potential changes in the Gini coefficient are often used in the policy space and may thus present a ‘selling point’ for voter buy-ins. In addition, most people under- or overestimate inequality and misplace their own position when presented with distributions (Engelhardt and Wagener 2014; García-Sánchez et al. 2020; Hauser et al. 2019; Xu and Garand 2010). In part, this has been explained by a tendency to extrapolate the information and clues obtained from one’s local environment, and hence from what one is familiar with, to draw inferences about a broader unknown picture (Hauser and Norton 2018).

This paper builds on existing research that seeks to understand preferences and fairness evaluations concerning inequality. These considerations matter for broader political tendencies such as demands for redistribution (Alesina and Angeletos 2005; Durante et al. 2014) or general concerns about inequality (Mijs 2018). To explore this, the presented approach zeroes in on the question of whether the expression of inequality matters, thereby returning to the aforementioned critique of measures of inequality that are dominant but less intuitive or comprehensible outside scholarship. It draws on a survey experiment that exposes respondents to four different expressions of inequality (small-unit and large-unit as absolute expressions, and percentages and multiples as relative expressions) across three different levels of inequality (low, medium, and high, corresponding to different Gini coefficients). It constructs a sensitivity measure that captures how individuals’ fairness evaluations change across these inequality levels. Using variations of an ordinary least squares (OLS) linear multiple regression, the paper compares how sensitivity in fairness evaluations changes across inequality expressions while controlling for respondents’ wealth profiles, ideological tendencies, trust levels, and other sociodemographic indicators. The paper finds the most notable differences across absolute versus relative expressions concerning fairness evaluations. It thus brings a novel perspective to the importance and choice of measurements in policy dialogues and public discourse, particularly concerning wealth inequality in a highly unequal context and society.

The remainder of this paper is structured as follows. Section 2 discusses relevant literature and introduces the key concepts operationalized in the empirical approach. Section 3 presents the data, including the experimental set-up and sample informing the research. The empirical approach is detailed in Section 4, followed by Section 5, which elaborates on the results gained from the modelling approach. Section 6 concludes.

## 2 Literature review

Inequality is a widely acknowledged challenge that spans debates on various topics, from global trends (Lakner and Milanovic 2016; Milanovic 2013) to global agendas such as the Sustainable Development Goals (UNDP 2015) to innovative approaches in social neuroscience (Baron-Cohen

et al. 2013). It has become a term that most people would presumably be acquainted with or have heard of in one form or another, including in recent political movements around climate change and Black Lives Matter. It can be said that inequality has many lived realities, faces, and layers in the world. As a consequence, there should be as many social and political perceptions of it.

In the past, scholars have explored how individuals make sense of inequality when faced with decision-making processes that have wider implications for society. This especially concerns preferences and decisions that shape material forms of public solidarity—in other words, demands for redistribution. Meltzer and Richard's (1981) model of inequality and demands for redistribution constitutes the theoretical workhorse in classical economics. Here, the median voter as a representative individual perceives inequality as a difference between their own income and the national average. Based on the statistical concept of skewness, higher inequality in the form of a greater distance between the mean and the median will result in a greater demand for redistribution. Within the abstraction of such earlier models, utility theory dominates, and hence the motives and social orientations of individuals are narrowed down to self-interest and optimization. However, since the work of Kahneman (2012; see also Kahneman and Tversky 2000), empirical and theoretical approaches have shifted to allow individuals' social decision-making to be governed by more complex notions.

More suited to capture some of these notions, a burgeoning body of empirical work has sought to understand social behaviours and preferences around inequalities based on experimental set-ups. For example, scholars have explored notions of fairness in economic decision-making (Durante et al. 2014; Falk et al. 2008; Fehr and Schmidt 1999, 2005). They have also paid attention to how social class identities affect prosocial behaviour (Piff et al. 2010) and how individuals tend to be more generous towards 'in-group' members, i.e. those with whom they associate themselves (Abbinck and Harris 2019). Others have explored how individuals' justifications of outcomes—e.g., overestimating the role of effort versus luck in determining success—leads them to view higher outcomes as deserved, and hence gives rise to lower demand for redistributive taxation (Fehr and Vollmann 2020). While experiments also use abstractions to elucidate specific social dynamics, they are closer to capturing the social complexity of inequality in comparison with earlier theoretical models. For example, the prominent dictator game, in which one party splits a given amount with another based on their own preference, allows researchers to observe social decision-making in practice. While insights have been gained, it has also been suggested that there may be differences between the behaviours observed in experiments and those we perform in our daily lives. Often experiments have a clear design and some rigidity—e.g., social relationships and interactions within experiments are assumed to last. When allowed 'moral wiggle room' insofar as they are able to leave the relationship or social interaction, individuals turn out to be less generous than previously observed (Dana et al. 2007). However, introducing the fluidity, change, and unpredictability of our social lives—although these are important in our decision-making—represents a challenge when one is observing behaviour within a set time period and a designed framework.

In part, these shortcomings have generated a greater awareness of inequality as a daily encounter and experience. In going about one's daily life, one encounters situations where one experiences contrasts and differences. How one evaluates these contrasts can be linked to two elements. Within the field of cognitive psychology, the first element is often referred to as a theory of mind. This, *inter alia*, captures neural processes that underpin the causal explanations we give for experienced outcomes when we do not know what generated those outcomes in the first place. Here, individuals tend to draw on available information and past experiences (Baron-Cohen et al. 2013). Imagine a narrative or inner voice that comes into being when someone encounters a person without shelter: what are the explanations that come into the former's mind when they are making sense of the latter's situation, and how did they gather those explanations? The second element is

social values and norms. These determine where outcomes and explanations sit on a normative scale from good to bad, just to unjust, fair to unfair. One ideology that is on the rise is meritocracy (Young 1994; see also Fehr and Vollmann 2020). Meritocracy explains unequal outcomes as solely the result of variations in individuals' talents and efforts. In this way, inequality is often considered legitimate and fair (Sandel 2020). In addition, meritocracy is often associated with a decline in concern for inequality and the need to address it (McCoy and Major 2007; Mijs 2019; Mijs and Savage 2020). More broadly, this ideological approach to inequality and its embeddedness in our social worlds illustrates how complex inequality is in reality. It highlights that inequality is inherently a part of social encounters and can be seen as a relative and social concept. Inequality is therefore notoriously difficult to study as a whole.

Despite its social complexity, a common denominator that captures the prevalence of inequality is its measurement. Important works such as Piketty's *Capital in the 21<sup>st</sup> Century* (2014) and *Capital and Ideology* (2019) or Milanovic's (2013) work on global inequality build on a core element: the distribution of welfare goods such as income and wealth. Such distributions enable one to see who holds how much (although the 'who' tends to be more concealed in global studies). Distributions reveal absolute and relative positions: where one sits in the distribution, and where one sits in relation to others. However, it has been found that it is difficult for individuals to make accurate assessments of both their own position and the shape of the distribution overall (Engelhardt and Wagener 2014; Hauser and Norton 2018). This is in part explained by the fact that we tend to draw from our local environments, which gives rise to certain biases—e.g., we may evaluate inequality by thinking of everyone as lower or higher in socio-economic status (e.g., Piff et al. (2010) study this concerning subjective socio-economic rankings).

However, in popular discourse, individuals are rarely presented with the entire distribution of income or wealth; rather, they are presented with summary measures of them—most prominently, the Gini coefficient. Despite the latter's popularity, this paper begins from the premise that most individuals do not have an intuitive understanding of it. 'Intuitive' is understood here in the sense that one would be able to evaluate what, say, a two-point or 10-point reduction meant in terms of actual distributional outcomes. Moreover, if the Gini coefficient is insensitive to different parts of the distribution, measures such as the Atkinson (1970) indexes tend to be even more complex. This paper contributes to work that brings inequality measurements to a socially complex world. It works at the intersection of how individuals make sense of information about inequality, particularly how it is communicated, and how it influences their evaluations of fairness.

Research that has focused on expressions of inequality and corresponding behaviours or preferences has explored *inter alia* the 'stake size effect'. This refers to a variation in the amount that is to be split between two parties in an ultimatum game<sup>1</sup>—say, US\$100 versus US\$10,000. In general, evidence on this effect is mixed. Some research suggests that if the stake size increases, there is less generosity offered by the provider as well as less acceptance by the receiver (Munier and Zaharia 2002; Tompkinson and Bethwaite 1995; Zhang et al. 2018). Others suggest that an increase in stake size does not significantly affect cooperation, the latter being understood as voluntary contributions to a public good (Kocher et al. 2008). Based on these inconclusive results, it has been suggested that other factors might be in play, such as risk attitudes, justice orientations, or personality characteristics (Karagözoğlu and Urhan 2017). This reiterates the challenge of

---

<sup>1</sup> The ultimatum game is a variation of the dictator game. Instead of Party 1 (the provider) simply dividing the stake as in the dictator game, i.e. without giving the receiver a choice, Party 2 (the receiver) now gets to decide whether to accept or reject the offer. If the receiver rejects the offer, then both parties receive nothing. If the receiver accepts, the provider keeps the stake minus the amount provided to the receiver, and the receiver gets the amount provided.

abstraction in experiments that often tend to ignore relevant personal traits and sociopolitical contexts.

Another aspect is relative and absolute expressions of inequality. While some researchers have compared the effect of inequality as an absolute difference between a person's income and a reference group (Fehr and Schmidt 1999), others have assessed it as a proportional difference in individuals' incomes as a relative share of the total income of a relevant group (Bolton and Ockenfels 2000). Both approaches have yielded the same finding: greater inequality increases generosity in the form of a demand for redistribution. Insights from social psychology support the argument that relative status matters more than absolute status in determining one's satisfaction, contentment, and health (e.g., Bellet 2019; Boyce and Daly 2014)—and perhaps ultimately one's likelihood to share more or share less, depending on one's sense of 'having enough' or 'not having enough' in comparison with others.

This paper takes a broad-based approach that compares how individuals evaluate different expressions of inequality in terms of fairness, taking some personal and sociopolitical factors into account. It centres on the following research question: how does the expression of inequality influence individuals' fairness perceptions across different levels of inequality? In this regard, expressions of inequality are guided by approaches to the stake size effect and absolute versus relative expressions. To answer the research question, the paper uses a survey experiment that presents respondents with different inequality scenarios as well as relevant local contexts and individual traits, as will be described below. It therefore sits between experimental abstractions and research efforts that try to capture contexts that are relevant to inequality. It is important to mention that the extent to which the context is captured is limited by the scope of the survey and the pilot nature of the research. Nevertheless, the paper suggests some channels for more context to observe comparisons among inequality interpretations and evaluations.

### **3 Data**

This section describes the design of the survey experiment as well as the sample, which was drawn from a standing research panel accessed via the service provider Qualtrics.

#### **3.1 Experiment**

The survey experiment was set up as follows. In a first step, three fictive distributions were generated using a random number generator in Stata. Each of these distributions was manipulated to correspond to a different Gini coefficient, one in the lower, one in the medium, and one in the higher band concerning inequality levels. The distribution with low inequality corresponded to a Gini coefficient of 32.8, that with medium inequality to 46.8, and that with high inequality to 60.3. The use of the Gini coefficient as a measure assesses inequality levels overall, rather than pinpointing where inequality occurs across a distribution—say, whether there is a larger gap between low and middle or middle and high incomes. When the distributions were manipulated to correspond to inequality levels, the entire distribution was changed, reducing the incomes at the bottom and increasing those at the top, using different factor weights to achieve the different inequality levels. However, the distributions in themselves were of secondary importance. They mainly served the purpose of representing consistent inequality scenarios across different expressions of inequality in the experiment.

Inequality levels based on the three different distributions remained the same across the four expressions of inequality, so that in total there were 12 expressions of inequality (low, medium, and high, across four different ways of presenting inequality). Hence, all of the respondents saw and evaluated three different inequality levels, but the way those inequality levels were presented differed. Thus, the four different expressions of inequality varied across the respondent groups, as shown in the column headed ‘Inequality expression’ in Table 1. The first expressed inequality as a small unit and the second as a large unit (borrowing from the stake size effect). The third and fourth were relative rather than absolute expressions, one being percentage shares and the other multiples of shares held.

Table 1: Randomly generated inequality scenarios

Experiment	Inequality expression	Points of distribution	Example: a person holds...
1 (N=512)	Small unit		0.002 units, 10 units, 20 units
2 (N=510)	Large unit	Poorest,	130 units, 515 units, 999 units
3 (N=512)	Percentage	median,	0.1%, 9%, 18.9%
4 (N=513)	Multiples	richest	0.5 units, 1900 times as much, 3900 times as much

Source: author’s compilation based on randomly generated distributions using a number generator in Stata.

Respondents were not presented with the entire distribution. Instead, they received the following information: first, how much a person at the very bottom end of the distribution held (minimum); second, how much a person who sat exactly in the middle of the distribution held (median); third, how much a person at the very top end held (maximum). In Table 1, the column labelled ‘Example: a person holds...’ displays one inequality level (that corresponding to low inequality and thus to a Gini coefficient of 32.8) and how it would be expressed given the four different ways of doing so. To further set the focus on the expression of inequality, respondents were informed that they were evaluating fictive units and distributions that did not correspond to an existing country or specific currency.

Each of the inequality expressions set out to test the following: does an individual evaluate proportionality differently depending on whether it is presented as absolute (large or small) or relative (percentage and multiples) units? It further set a specific focus on whether some expressions yielded greater sensitivity (as defined below) to changes by evaluating inequality as more or less fair—particularly when respondents were assessing different inequality levels. Fairness evaluations were captured by respondents’ assignment of scores ranging from zero (‘not fair at all’) to 100 (‘completely fair’).

The experiments were run using an online survey accessed through and facilitated by Qualtrics. Using random allocation, respondents were assigned to one of four subgroups and thus presented with one of the four inequality expressions when evaluating the three different inequality levels. In addition, the order of presentation of the different inequality levels was also randomized. Hence, some respondents evaluated low inequality first, others medium inequality, and others high inequality. This was implemented to control for whether the first inequality level presented to respondents functioned as a reference point for subsequent evaluations. Apart from the experiment itself—which focused on fairness evaluations—the survey gathered additional information about respondents, including variables relevant to wealth inequality and taxation (described in Section 4). While the respondents evaluated fictive units and distributions, the context and theme of the survey focused on wealth inequality and taxation. The next subsection describes the sample and context. The paper will then go on to detail the empirical strategy.



## 3.2 Sample

The survey was conducted in South Africa, one of the most unequal countries in the world. In 2014, the Gini coefficient stood at 63 (World Bank 2022). Concerning wealth inequality, it has been argued that little has changed since apartheid ended. According to the World Inequality Lab (2023), in 2021 the net personal wealth of the top 10 per cent stood at 85.6 per cent, and the top one per cent held 54.9 per cent; in addition, the ratio of net national wealth to net national income stood at 390 per cent. Particularly with regard to incomes, the top end of a distribution is not captured by the national census, and it might be argued that net personal wealth is even higher if one takes account of the fact that some assets are held abroad. Hence, wealth inequality is a major constraint on inequality reduction in South Africa, including on the achievement of better and more equal opportunities for all. Policy efforts have been put in place that touch upon aspects of wealth. The Broad-Based Black Economic Empowerment affirmative action programme has a pillar on ownership concerning shareholding in the private sector (Government of South Africa 2003). In addition, the land reform, including its various initiatives, seeks to tackle the uneven distribution of land, which remains primarily in the hands of White South Africans as a legacy of apartheid (South African Government 2023). Yet despite these efforts, wealth inequality remains stark, and more drastic redistributive measures may be needed to reduce inequality more broadly. However, this paper does not focus specifically on the South African context, as it primarily evaluates the insights gained from the survey experiment.

For its sample, the survey drew on a standing research panel that was representative of South Africa's population. It included 2,044 respondents in total, yielding roughly 500 respondents per experiment group. The sampling process used the following stratification criteria. Respondents had to be above the age of 18 years, i.e. only adult respondents were included. The sample as a whole as well as within each experiment group was balanced with regard to gender (female and male) and educational level (primary, secondary, and tertiary levels completed). However, when the survey had reached roughly 65 per cent completion, the sampling for education was shifted from balanced to population quotas, as there was insufficient access to respondents with primary education. This was primarily because the online research panel tended to include South Africans who had Internet access and the devices required to complete the survey. Thus, the sample overall represented those who were slightly better off, and it can be assumed that it left out the very bottom of the income distribution. It is important to keep this in mind when interpreting the results. However, for the evaluation of how people made sense of different expressions of inequality, this presented less of an obstacle to the validity of the comparisons, given that the composition concerning respondents' characteristics was consistent in each experiment group.

In terms of representation, half of respondents (50 per cent) identified as female, 48 per cent identified as male, and the remaining two per cent identified as non-binary or preferred not to say (Table A1 in the Appendix). On average, respondents were 30.6 years of age, ranging between a minimum of 18 and a maximum of 75 years. About 22 per cent had completed primary, 38 per cent secondary, and 34 per cent tertiary education, with the remaining six per cent having no completed education level. About two thirds (63.3 per cent) of respondents identified as Black, 12 per cent as Coloured, five per cent as Asian/Indian, 20 per cent as White, and less than one per cent as 'other'. The greatest share (46 per cent) worked in the private sector, followed by the public sector (26 per cent). A further 11 per cent worked in the third sector, and 17 per cent in the informal sector. About a third of respondents earned less than ZAR6,000 per month, a little over a third between ZAR6,000 and ZAR24,000 per month, about 18 per cent between ZAR24,000 and ZAR42,000 per month, and 10 per cent above ZAR42,000 per month. Note that ZAR24,000 was the national average for net monthly earnings (Saifaddin 2022).

The survey also collected some information about respondents' wealth (Table 2). About 23 per cent of respondents stated they had inherited wealth in the past, and slightly more than half (53 per cent) stood to inherit some wealth in the future. Concerning ownership, half of respondents owned financial assets, and slightly fewer (45 per cent) owned some form of property. This was interesting, as it provided an almost even split between those who had versus those who did not have some form of wealth. In addition, the survey captured respondents' meritocratic tendencies,<sup>2</sup> asking them to assign a score to meritocratic and non-meritocratic attributes depending on whether those attributes were important for getting ahead in life. The scoring was continuous and ran from zero ('not important at all') to 100 ('essential'). Meritocratic attributes included talent, hard work, education, and skill (Castillo et al. 2021), while non-meritocratic attributes included gender, race, social networks, and political connections. Meritocratic tendencies were then simply calculated as the share of average meritocratic attributes out of the total score: a higher score meant a respondent gave heavier weighting to meritocratic attributes when evaluating success. On average, respondents explained two thirds of their own success (in getting ahead in life) by meritocratic attributes. This suggests that the ideology of meritocracy is highly prevalent in South African society. Lastly, respondents evaluated whether wealth in South Africa was fairly distributed or not (on a score from zero to 10, where zero represented 'not fair at all' and 10 was 'completely fair'). The average score of 3.5 (below the 'neutral middle' of five) suggested that most considered the wealth distribution to be unfair. However, the high standard deviation suggested that there was quite some variation in respondents' views.

Table 2: Wealth-related variables

Wealth context			
N=2044	%	Mean	Standard
Has inherited (yes/no)	23.2		
Will inherit (yes /no)	52.9		
Owns property (yes/no)	45.0		
Owns financial assets (yes/no)	50.0		
Meritocratic tendency (%)		0.64	0.13
Wealth in South Africa fairly distributed (0–10)		3.53	2.69

Source: author's calculations based on primary data collected in October and November 2022.

## 4 Estimation strategy

### 4.1 Consistency in fairness evaluations across inequality expressions

This section elaborates on the steps taken to estimate the differences in respondents' fairness evaluations across the three inequality levels and the four different expressions. To recap, respondents were asked to assign scores to distributions depending on how fair they considered them to be. In each experiment group this was done across three levels of inequality, as described in Section 3.1. Recall that the scoring ranged from zero ('completely unfair') to 100 ('completely fair'). The survey first tested whether the fairness evaluations were broadly consistent across inequality scenarios, i.e. whether respondents who tended to assign higher or lower fairness scores

---

<sup>2</sup> Meritocracy is an ideology that supports the view that differences in economic outcomes are merely the result of differences in individuals' talents and efforts (Young 1994). While meritocratic tendencies have often been explored in connection to income inequality and redistributive demands (see the brief discussion in Section 2), they have not been explored in association with wealth inequality. The survey thus piloted this association to explore how meritocratic tendencies might factor in concerning wealth, particularly in the context of inheritance.

did so across all inequality levels: if a respondent assigned a higher fairness score to the low-inequality scenario, did they also assign a comparatively high fairness score to the medium- and high-inequality scenarios? Overall, there was a positive association, meaning that individuals who tended to score fairness more highly generally did so across all inequality levels (Figure A1 in the Appendix). This held across all four experiment groups, meaning that at first glance it seemed to be independent of the way in which inequality was expressed. In the subsequent estimation strategy, the model specification therefore controlled for *avg*, i.e. the respondent’s average fairness score across the three inequality scenarios, to control for its effect (say, a person’s general fairness orientation) on sensitivity (described below). Across all four experiment groups, the average fairness score per respondent was fairly similar, ranging from 36.2 (when inequality was presented as percentage shares) to 39.5 (when inequality was presented as multiples) (Table 3). Although the standard deviations were high, the average scores were fairly low, within the bottom half of the scoring range —meaning that overall, wealth inequality was considered to be rather unfair. However, there was significant variation across the experiment groups. Whether this was due to the inequality expressions or depended on other factors, such as respondents’ characteristics, will be explored later.

Table 3: Average fairness scores across inequality scenarios per experiment

	Experiment mean (standard)				Levene's test
	1	2	3	4	
Fairness average	36.5 (26.5)	38.9 (25.8)	36.21 (23.22)	39.52 (27.56)	0.000
N	512	510	512	513	

Source: author's calculations based on primary data collected in October and November 2022.

## 4.2 Sensitivity measures

A primary interest of this paper is in how evaluations of fairness change across inequality levels depending on the expression of inequality. For this purpose, a simple measure was constructed termed ‘sensitivity’ (recall the experiment design described in Section 3.1). Sensitivity ( $S$ ) is expressed in two ways,  $SH$  and  $SM$ .  $SH$  measures the distance between an individual’s ( $i$ ) fairness score for high-inequality scenarios ( $FH$ ) and their fairness score for low-inequality scenarios ( $FL$ ).  $SM$  applies the same rationale but compares the fairness score for medium inequality ( $FM$ ) with the score for low inequality. Thus, for high to low inequality,  $SH_{ie} = FH_{ie} - FL_{ie}$ ; for medium to low inequality,  $SM_{ie} = FM_{ie} - FL_{ie}$ .

Sensitivity is anchored at low inequality and expresses changes in fairness scores across inequality levels. A negative value shows that a respondent considers the lower-inequality scenario to be fairer compared with the scenario with higher inequality. A positive value indicates the opposite. Interestingly, the way sensitivity changes across inequality scenarios varies noticeably across different expressions of inequality, particularly between absolute and relative expressions. Contrary to the initial assumption that multiples will be more accessible or intuitive, respondents—at first glance—seem to change their fairness evaluations more drastically when inequality is presented in large units (Table 4). Similarly, inequality expressed in small units yields greater changes in fairness scores. As these scores are also greater overall, fairness declines more noticeably when inequality changes (i.e. increases) in absolute expressions. Based on this initial comparison, absolute measures of inequality seem to lead to greater changes in fairness evaluations than relative measures (an average of -11.2 and -13.3 versus -1.9 and -0.9 when respondents evaluate fairness across low- and high-inequality scenarios).

Table 4: Sensitivity across experiments and levels

Inequality expression	SH	SM	N
N=2249	Mean change (standard)		
Small stake, unit	-11.2 (27.9)	-6.6 (25.7)	512
Large stake, unit	-13.3 (28.6)	-9.8 (26.9)	510
Percentage	-1.9 (24.3)	-0.2 (24.8)	512
Multiples	-0.9 (26.3)	-0.7 (20.1)	513

Source: author's calculations based on primary data collected in October and November 2022.

Sensitivity scores also enable a comparison of whether the distance in *SH* is greater than in *SM* and thus in line with rising inequality levels across the presented scenarios. It can be observed that in general, and as expected, fairness scores change more drastically from high to low inequality than from medium to low inequality. This may be because differences overall may be more noticeable in more extreme expressions of inequality. Again, the observed differences are more notable with absolute expressions of inequality.

Further, for both of these sensitivity measures, three groups can be established, as the next subsection describes.

### 4.3 Three sensitivity groups: insensitive, inequality-positive, and inequality-negative

Respondents can be further distinguished into three groups depending not only on whether they are sensitive to changing inequality levels but also on whether their sensitivity is consistent with rising inequality—in other words, whether their fairness scores decline when inequality rises and vice versa. These three groups are labelled ‘insensitive’ (their fairness scores do not vary across inequality levels), ‘inequality-negative’ (their fairness scores decline with rising inequality), and ‘inequality-positive’ (their fairness scores increase with rising inequality). Rather than interpreting inequality as positive or negative in a normative or political sense, these labels reflect a statistical rationale, i.e. whether the fairness scores are positively or negatively correlated with higher or lower inequality levels.

If one assumes that individuals’ fairness scores should drop as inequality levels rise, then roughly half of respondents across the inequality expressions got it ‘right’. Table 5 shows the three sensitivity groups for both sensitivity measures across inequality expressions, and hence the four experiment groups. The highest proportion of inequality-negative fairness evaluations is found in large-stake expressions of inequality, and the lowest proportion in presentations of inequality as multiples for *SH*. Between 21 per cent (multiples) and 12 per cent (percentages) of respondents are insensitive. This generally means that their scores do not change between high- and low-inequality scenarios. However, this should not be interpreted as meaning that these respondents are insensitive to inequality per se: both scores might be zero (‘not fair at all’), and hence these respondents might be averse to any level of inequality. It simply means that they do not change their fairness evaluations, regardless of the level of inequality with which they are presented. The subsequent modelling approach therefore takes account of average scores as a proxy for general fairness perceptions (as discussed earlier). Similar patterns can be found for *SM* concerning inequality-negative-oriented respondents. For both sensitivity measures, the highest proportion of inequality-negative evaluations can be observed when inequality is presented as a percentage. Overall, we can thus see some variation in how respondents evaluate the fairness of distributions given the information available and—more importantly—how it is presented.

Table 5: Sensitivity in fairness evaluations across inequality scenarios and experiments

Inequality expression	Insensitive	Inequality-negative	Inequality-positive	Total
		N (%)		N
Low to medium inequality				
Small stake, unit	88 (17.2)	256 (50.0)	168 (32.8)	512
Large stake, unit	77 (15.1)	288 (56.4)	145 (28.4)	510
Percentage	60 (11.7)	230 (44.9)	222 (43.4)	512
Multiples	103 (21.0)	224 (43.6)	186 (36.3)	513
Low to high inequality				
Small stake, unit	89 (17.4)	289 (56.4)	134 (26.2)	512
Large stake, unit	71 (13.9)	309 (60.1)	130 (25.5)	510
Percentage	81 (15.8)	233 (45.5)	198 (38.7)	512
Multiples	94 (18.3)	227 (44.2)	192 (37.4)	513

Source: author's calculations based on primary data collected in October and November 2022.

In addition, the analysis assesses whether respondents' sensitivity is consistent overall across levels (as discussed earlier), i.e. whether their sensitivity from low to high inequality is greater than their sensitivity from low to medium inequality. Table 6 compares this across different inequality expressions. Around 20 per cent of respondents do not change their fairness scores between low to high and low to medium inequality measures (i.e. both sensitivity measures indicate a distance of 40). This generally includes individuals whose fairness scores for higher inequality levels change to the same extent concerning low inequality. It also includes those who always evaluate inequality as either completely fair (a score of 100) or completely unfair (a score of zero). Across inequality expressions, more respondents increase their sensitivity to rising inequality when inequality is expressed as a percentage (38.8 per cent) or multiples (39.2 per cent). This also applies when those whose scores do not change are excluded.

Table 6: Consistency in sensitivity across inequality levels and experiments

Inequality expression	SH=SM	SH>SM	SH>SM, excl. SH=SM
N=2249			
In percentage shares			
Small stake, unit	20.6	27.8	31.9
Large stake, unit	20.4	32.6	35.4
Percentage	16.4	38.8	41.8
Multiples	21.0	39.3	43.8

Source: author's calculations based on primary data collected in October and November 2022.

Overall, there are some patterns worth unpacking. At first, it is evident that there are differences in evaluations across the four experiment groups. This suggests that the way in which inequality is expressed influences fairness evaluations. However, it seems to influence respondents' fairness evaluations in multiple directions: for some respondents, fairness declines when they are presented with greater inequality, while others show the opposite effect. Before estimating the relationship between sensitivity and expressions of inequality by controlling for respondents' general attitudes and sociodemographic and economic profiles, the paper will now discuss another element of the experiment design. This concerns the order in which different inequality levels are presented to respondents within the experiment groups.

#### 4.4 The sequence of inequality levels

As the presentation of inequality levels shown to respondents was randomized, there was variation as to whether respondents saw the low, high, or medium inequality level first. This was done in order to control for whether the first presented scenario served as a mental anchor or reference point for subsequent fairness evaluations—in other words, as a base for comparison.

For most inequality expressions, sensitivity in fairness scores from low to high inequality ( $SH$ ) changes more noticeably when the high-inequality scenario is presented first (Table 7). An exception to this is when inequality is presented in large units: in this case, respondents change their fairness score more when presented with the medium scenario first. Being presented with high inequality first also matters for respondents who evaluate inequality based on multiples. Here, a negative average of -2.4 (fairness declines with higher inequality) is turned into a positive score (fairness declines with lower inequality) when respondents see medium inequality first (average of 1.2); yet again, there is a negative average when they see low inequality first (-1.2).

Table 7: Sequence of inequality scenarios

Inequality expression	Low scenario first	Medium scenario first	High scenario first	Total
	Mean changes in SH (standard)			N
Small stake, unit	-9.58 (27.0)	-12.0 (30.7)	-15.0 (26.9)	512
Large stake, unit	-13.6 (29.0)	-15.4 (29.6)	-11.2 (27.1)	510
Percentage	-0.9 (23.4)	-0.4 (23.3)	-5.3 (27.4)	512
Multiples	-1.2 (27.9)	1.2 (20.3)	-2.4 (26.7)	513
	Mean changes in SM (standard)			
Small stake, unit	-6.4 (24.9)	-5.8 (26.1)	-9.3 (27.4)	512
Large stake, unit	-10.4 (25.9)	-11.2 (28.6)	-7.1 (28.0)	510
Percentage	-0.9 (24.1)	1.2 (23.4)	1.1 (28.2)	512
Multiples	-0.6 (22.9)	-0.7 (16.6)	-1.9 (19.2)	513

Source: author's calculations based on primary data collected in October and November 2022.

Similar changes can be observed for sensitivity from low to medium inequality ( $SM$ ). Here again, when respondents are presented with inequality as large units, seeing the medium scenario first causes greater changes in the fairness scores. For those who evaluate multiples, seeing the high-inequality scenario first leads to greater declines in fairness from low to medium inequality. Overall, it is evident that the sequence of presentation matters. Hence, two dummy variables are included in the subsequent model specifications: *lowfirst* (equal to one if low inequality is the first scenario presented, zero otherwise) and *highfirst* (equal to one if high inequality is the first scenario, zero otherwise).

#### 4.5 Estimating sensitivity

The dependent variable is the sensitivity measure described above, which is a continuous score. To estimate the effects of inequality expressions on this sensitivity measure, an OLS linear multiple regression model is assumed. The effects of the experiments are explored in three ways. First, the analysis explores whether variations in inequality expressions generally matter for the specified sensitivity measure  $S_i$ . Here, attention is paid to whether different expressions of inequality yield different effects on sensitivity, and if so, whether that difference is significant at all. Hence, the independent variable  $E_i$  is simply a categorical variable, with each category representing one of the experiment groups and hence the inequality expressions. Second, the analysis specifically explores the stake size effect and thus only compares the effect on sensitivity in two experiment groups, i.e. Experiment 1 (small units) and Experiment 2 (large units). The independent variable  $ST_i$  is a

dummy variable, with one designating large units and zero designating small units in terms of inequality expressions. Third, a comparison is drawn between absolute and relative expressions of inequality, so that Experiments 1 and 2 (units) are compared with Experiments 3 and 4 (percentages and multiples). Thus, independent variable  $A_i$  is once again a dummy variable, with one representing absolute expressions and zero representing relative expressions of inequality. The three specifications are as follows:

How do variations in expressions of inequality generally matter?

$$S_i = \beta_0 + \beta E_i + \beta SD_i + \beta SP_i + \varepsilon_i \quad [1]$$

How does stake size matter?

$$S_i = \beta_0 + \beta ST_i + \beta SD_i + \beta SP_i + \varepsilon_i \quad [2]$$

How do absolute versus relative expressions matter?

$$S_i = \beta_0 + \beta A_i + \beta SD_i + \beta SP_i + \varepsilon_i \quad [3]$$

$SD$  represents respondents' sociodemographic and socio-economic characteristics such as age, gender, education completed, and monthly income.  $SP$  represents sociopolitical variables relevant to the topic of wealth, to be described below. Lastly,  $\varepsilon_i$  represents the error term. The model also includes sociopolitical variables deemed relevant for fairness evaluations. Besides the inheritance and wealth ownership variables shown in Table 2, additional variables are listed in Table 8. These include whether an individual has been exposed to information about wealth inequality in the past 12 months, a scale of general trust towards others and the government, a general fairness score for the distribution of wealth in South Africa, and respondents' subjective wealth rankings in the overall distribution on a continuous score from zero (at the very bottom) to 100 (at the very top). Lastly, the model includes individuals' meritocratic tendencies, as described above. Most variables have a within-group distribution that does not differ significantly across the four experiment groups. Respondents have differing exposures to inequality information across the experiment groups; trust levels concerning government also differ significantly. However, as respondents did not select their own experiment groups, these variations can be assumed to have occurred at random, and they are controlled for in the subsequent estimation.

Table 8: Sociopolitical control variables

Variables	Experiment				Chi <sup>2</sup>
	Large unit	Small unit	Percentage	Multiples	
	Mean (standard)				
Inequality info (yes=1)	43.2%	52.6%	44.4%	47.7%	0.036
Trust people (0–10)	3.7 (2.3)	3.9 (2.6)	3.6 (2.3)	3.7 (2.5)	0.347
Trust government (0–10)	2.3 (2.5)	2.5 (2.8)	2.2 (2.4)	2.6 (2.7)	0.011
South Africa wealth fair (0–10)	3.5 (2.7)	3.6 (2.8)	3.3 (2.5)	3.7 (2.8)	0.365
Wealth rank (0–100)	31.1 (25.4)	34.9 (25.3)	32.2 (25.6)	34.9 (27.6)	0.747
Merit tendency (%)	65.3%	63.5%	64.3%	63.3%	0.139

Note: equality of variance tested using Pearson's Chi<sup>2</sup> test, with Levene's test for the continuous variable 'merit tendency'.

Source: author's calculations based on primary data collected in October and November 2022.

## 5 Results

### 5.1 Predictors of sensitivity in fairness evaluations

The results of the analysis suggest that expressions of inequality matter overall for individuals' sensitivity in fairness evaluations (Table 9). While the effect of the categorical variable 'experiment' is not interpretable per se, it is significant and suggests that sensitivity across both low to high and low to medium inequality scenarios is conditional on how inequality is expressed. The effect is positive overall, which also suggests a tendency for inequality to be evaluated as fairer as experiments move from absolute to relative expressions. This becomes more evident in subsequent model comparisons.

Another element that seems to have an impact sensitivity in fairness evaluations is individuals' merit tendencies. This appears to have a negative effect on sensitivity, with a -11 point difference in the scores when respondents are evaluating fairness across low- and high-inequality scenarios (Model 1). This suggests that individuals' sensitivity changes such that wealth inequality is evaluated as less fair as meritocratic tendencies rise. However, for the effect to be significant, there must be a notable contrast concerning inequality, as it is not significant when individuals evaluate low to medium inequality scenarios. This is interesting, as it suggests a dynamic that is opposed to earlier findings (Alesina and Angeletos 2005; Mijs 2018, 2019; Mijs and Savage 2020). Meritocracy tends to see inequality as the outcome of hard work and talent. Hence, differences in outcomes (mostly income) are often interpreted as proportional to one's inputs, so that any differences or inequalities are seen as the result of a fair process. What this finding suggests is that this may not hold when individuals are thinking about wealth rather than income. Arguably, wealth has a weaker association with hard work, as historically (and in the present day) processes of wealth accumulation have been linked to inheritance. This finding is worth further exploration, as it may suggest that individuals' meritocratic tendencies in general do have a strong influence on their fairness orientations—although meritocratic tendencies with regard to income inequality seem to be in opposition to meritocratic tendencies with regard to wealth inequality.

Individuals' monthly income is another significant predictor (Model 1). Individuals who sit in higher income brackets show a slight tendency to evaluate wealth inequality as less fair when inequality increases from low to high, and to a lesser extent from low to medium. It may be worth exploring which sectors and occupations correspond to this tendency in order to understand why this is the case. It may indicate that among high-income earners, more of their income is derived from labour than from capital (see Markovits 2019), and hence wealth distributions may be considered to create unfair advantage. However, Milanovic (2021) argues that high incomes are more diversified across capital and labour (homoploutia), which may be another phenomenon worth exploring.



Table 9: Estimation results

	Model 1		Model 2		Model 3	
	All experiments		Stake size effect (large unit=1)		Multiples versus % (multiples=1)	
	SH	SM	SH	SM	SH	SM
Experiment	4.08*** (7.70)	2.7*** (0.49)				
High stake			-1.93 (1.77)	-3.1* (1.67)		
Multiple					0.41 (1.58)	-0.83 (1.45)
Fairness average	-0.02 (-0.57)	0.01 (0.02)	0.02 (0.04)	0.03 (0.04)	-0.04 (0.04)	0.01 (0.03)
High first	-2.48* (-1.76)	-0.35 (1.31)	-0.51 (2.06)	0.56 (1.93)	-3.85** (1.94)	-0.42 (1.77)
Inequality information	-0.48 (-0.38)	-0.34 (1.17)	-0.83 (1.86)	-0.97 (1.75)	0.57 (1.68)	0.75 (1.54)
Wealth in South Africa	0.41 (1.42)	-0.20 (0.27)	0.08 (0.43)	-0.17 (0.41)	0.71* (0.39)	-0.29 (0.36)
Trust people	-0.11 (-0.33)	0.06 (0.31)	-0.20 (0.49)	-0.19 (0.46)	0.07 (0.44)	0.38 (0.39)
Trust government	0.57* (1.69)	0.46 (0.31)	0.56 (0.48)	0.54 (0.45)	0.63 (0.45)	0.39 (0.41)
Merit tendency	-10.51** (-2.20)	-6.93 (4.42)	-18.9*** (6.95)	-15.4** (6.51)	-1.83 (6.53)	1.71 (5.96)
Has inherited	-1.18 (-0.76)	0.17 (1.46)	-1.27 (2.38)	2.12 (2.22)	-1.29 (2.08)	-2.42 (1.90)
Will inherit	1.31 (1.00)	-0.63 (1.23)	2.85 (1.99)	-0.74 (1.87)	-0.00 (1.76)	-0.31 (1.61)
Owns property	0.33 (0.23)	1.54 (1.33)	-0.30 (2.13)	0.80 (1.99)	1.43 (1.94)	2.62 (1.78)
Owns fin. assets	-0.78 (1.45)	-1.81 (1.34)	-1.68 (2.14)	-4.01** (2.00)	-0.04 (1.94)	0.59 (1.77)
Age	0.12* (0.06)	0.42 (0.059)	0.16* (0.09)	0.04 (0.08)	0.08 (0.09)	0.04 (0.08)
Female	1.06 (1.20)	0.23 (1.11)	1.59 (1.77)	-0.86 (1.66)	0.49 (1.61)	1.53 (1.47)
Education	0.39 (0.71)	-0.36 (0.66)	0.74 (1.1)	-0.10 (1.01)	0.37 (0.95)	-0.25 (0.86)
Income	-0.89*** (0.27)	-0.45* (0.25)	-1.12*** (0.39)	-0.59 (0.37)	-0.75** (0.35)	-0.41 (0.32)
Constant	-13.3** (4.63)	-5.86 (4.30)	-3.09 (6.56)	5.74 (6.15)	-3.21 (6.02)	-3.61 (5.50)
N	2044	2044	1020	1020	1024	1024

Note: significant effects denoted by \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Source: author's calculations based on primary data collected in October and November 2022.

## 5.2 Stake size effect and relative measures

The second model compares respondents' tendencies in Experiment 1 (small unit) with those in Experiment 2 (large unit). Concerning the stake size effect (Table 9, Model 2), an expression of inequality as large versus small units only seems to matter when individuals evaluate inequality scenarios where differences are subtler (from low to medium inequality). Here, inequality is viewed as less fair (sensitivity coefficient -3.1, i.e. negative) when it is expressed in larger units. In addition, whether the individual owns financial assets or not seems to matter for this effect. If an individual owns financial assets, they tend to evaluate inequality as less fair (from low to medium), which is somewhat in opposition to what one might expect. An interesting perspective to explore is whether status-seeking behaviour or upward-bias orientations play a role in guiding these fairness orientations (see e.g., Brown-Iannuzzi et al. 2015) While the value of the financial assets held by respondents is not known in this study, whether the amount held also plays a role is another interesting question worth further investigation. As observed previously, individuals' meritocratic tendencies are significant for stake size effect comparisons across both sensitivity measures: they follow the same pattern as those discussed above, whereby more meritocratically oriented individuals evaluate wealth inequality as less fair when it decreases from low to medium (-18.9) or low to high (-15.4). This also adds some consistency concerning the direction of the effect of the model specification discussed earlier.

When one compares Experiment 3 (percentages) with Experiment 4 (multiples), there are no noticeable differences in fairness evaluations across the inequality expressions. What does cause a notable difference in fairness sensitivity is whether respondents see the high-inequality scenario first. Being exposed to high inequality first leads to greater sensitivity: inequality is evaluated as notably less fair when it is compared with the low-inequality scenario expressed in multiples versus percentages. However, this may be a random effect observed for these two experiment groups, and it is not necessarily linked to inequality expressions per se. It may also indicate that when inequality is expressed in multiples, the initial information received serves more as an anchor for subsequent evaluations compared with when inequality is expressed in percentages. Overall, sensitivity in fairness evaluations is slightly lower in Experiments 3 and 4 (see Table 4).

## 5.3 Absolute versus relative measures

Lastly, absolute versus relative measures are compared. Here, respondents in Experiments 1 and 2 are grouped and compared with respondents in Experiments 3 and 4. The most notable difference in fairness sensitivity can be observed when one compares absolute and relative expressions of inequality (Table 10, Model 4). Absolute expressions of inequality are associated with a significant decline in fairness evaluations when inequality increases from low to medium (-7.7) and low to high levels (-10.6). This broadly suggests that individuals tend to pick up changes in inequality more readily when they receive information about inequality expressed in absolute values. In addition, absolute values (due to the negative effect) are then also associated with a greater decline in fairness scores as inequality increases. In addition, for absolute versus relative comparisons, meritocratic tendencies only matter when individuals evaluate greater contrasts (from low to high inequality), with fairness declining with rising inequality (-10.9). Another significant predictor here is trust in government. Greater trust in government is generally associated with a slight tendency to evaluate inequality as fairer across the low- and high-inequality scenarios (0.56). Rather than being a predictor for inequality expressions per se, this indicates that respondents who evaluate absolute expressions also trust their government more, although this may be a random effect of the algorithm that selected respondents into the experiment groups. In the overall model (Model 1), the same effect applies, which broadly suggests that higher trust in government can be associated with lower sensitivity and is in favour of inequality.

Table 10: Estimation results continued

	Model 4	
	Absolute versus relative (absolute=1)	
	SH	SM
Unit expression	-10.6*** (1.18)	-7.7*** (1.1)
Fairness average	-0.01 (0.03)	0.02 (0.03)
High first	-2.10 (1.41)	-0.05 (1.31)
Inequality information	-0.18 (1.25)	-0.17 (1.16)
Wealth in South Africa	0.41 (0.29)	-0.19 (0.27)
Trust people	-0.08 (0.33)	0.08 (0.31)
Trust government	0.56* (0.33)	0.45 (0.31)
Merit tendency	-10.9** (4.74)	-7.21 (4.40)
Has inherited	-1.26 (1.57)	-0.00 (1.45)
Will inherit	1.35 (1.31)	-0.67 (1.22)
Owens property	0.51 (1.43)	1.57 (1.33)
Owens fin. assets	-0.76 (1.44)	-1.81 (1.33)
Age	0.12* (0.06)	0.04 (0.06)
Female	1.10 (1.19)	0.25 (1.11)
Education	0.43 (0.71)	-0.34 (0.66)
Income	-0.90*** (0.26)	-0.46* (0.25)
Constant	2.18 (4.41)	4.63 (4.10)
N	2044	2044

Note: significant effects denoted by \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Source: author's calculations based on primary data collected in October and November 2022.

This research is something of a pilot in the way it tests sensitivity in fairness evaluations based on how inequality is expressed. Based on the initial insights gained, it is possible to conclude that the way in which inequality is expressed tends to matter for fairness evaluations of wealth inequality, including after controls for relevant ideological tendencies, wealth ownership, trust levels, and other sociodemographic factors such as age and gender. Furthermore, across absolute expressions of inequality, the stake size effect matters more when there are subtler differences in inequality levels. When respondents evaluate relative expressions of inequality, the sequence in which the inequality levels are presented seems to matter for fairness evaluations: a higher-inequality scenario leads to more sensitivity (i.e. fairness is evaluated as lower for higher levels of inequality). The most notable difference occurs when the experiment groups are combined and one compares absolute versus relative expressions of inequality and their effects on fairness sensitivity. Respondents tend to pick up differences in inequality more readily and to consider them less fair as inequality rises when the latter is expressed in absolute versus relative measures.

## 6 Discussion

This paper represents one attempt to understand how individuals make sense of inequality measures and expressions. Of particular interest is whether the way in which inequality is communicated has an impact on whether individuals then evaluate inequality differently. In order to investigate this, the paper has drawn on a survey experiment that randomly divided respondents into four groups. Within each of these groups, respondents saw three different inequality scenarios: high, low, and medium inequality, each corresponding to a different Gini level. While the presented inequality levels stayed the same across the experiment groups, each of the four groups used different expressions of inequality. To test the stake size effect, the first group saw inequality expressed as large units and the second as small units; the third group saw multiples, and the fourth group saw percentages, both being relative expressions of inequality. In addition, while respondents evaluated fictive units and distributions, the survey was set within the theme of wealth inequality and drew on an online sample of roughly 2,000 adult South Africans.

Based on the initial findings, this paper makes the following contributions and suggestions for further exploration. To determine how inequality expressions change fairness evaluations regarding wealth inequality, the paper has introduced a sensitivity measure. This allows researchers to capture changes across different inequality levels, anchored in how a respondent generally assesses fairness. Further, it compares different absolute and relative expressions of inequality and how they matter for fairness evaluations. In sum, the most notable difference is observed across relative and absolute expressions of inequality. Respondents who are presented with absolute versus relative expressions of inequality respond more strongly to changes in levels of inequality and consider increasing inequality to be significantly less fair. This is particularly true when low inequality is compared with high levels of inequality; hence, a certain notable contrast may be necessary to promote these responses. This is also confirmed by the subtler differences found with comparisons of relative expressions, where the first inequality level presented tends to prompt significant differences in fairness evaluations: seeing the high-inequality scenario first leads to a decline in fairness evaluations when inequality is expressed as multiples versus percentages.

Overall, this paper brings a novel perspective to the debate about whether relative or absolute measures should guide inequality evaluations and general political discourse. In terms of inequality measures, relative expressions such as the Gini coefficient<sup>3</sup> are more widely used and hence more

---

<sup>3</sup> Although it can also be measured in absolute terms, this is less frequently applied.

commonly known. While there is general recognition that most individuals do not have an ‘intuitive’ understanding of inequality measures, which often require an understanding of specific statistical concepts and measures, less attention is paid to the question of which measures resonate more closely with individuals’ conceptions of the inequalities they encounter in their daily lives, particularly concerning wealth inequality. Highlighting that inequality expressions matter emphasizes the importance of the way in which inequality is communicated in policy dialogues as well as public discourse. This may especially matter when one is evaluating inequality in order to determine one’s support for redistributive measures.

As this paper has represented something of a pilot study, it has certain limitations. First, it is anchored in the particular inequality levels chosen, which were based on fictive distributions and manipulated levels to match different Gini coefficients. Repeating the exercise with true presentations of wealth inequality or different inequality levels may contribute further robustness to the findings presented here. In addition, respondents’ unobserved characteristics may matter for their fairness evaluations. Such characteristics include their general numeracy skills, their ability to derive and make sense of presented information, and also their exposure to and general perceptions of inequality (although this research has captured respondents’ meritocratic tendencies, which are relevant in this respect). Adding in-field experimental set-ups to test these findings further and provide a more contextual lens may offer a valuable perspective on the more abstract patterns presented in this paper.

## References

- Abbinck, K., and D. Harris (2019). ‘In-Group Favouritism and Out-Group Discrimination in Naturally Occurring Groups’. *PLOS ONE*, 14(9): e0221616. <https://doi.org/10.1371/journal.pone.0221616>
- Alesina, A., and G.-M. Angeletos (2005). ‘Fairness and Redistribution’. *American Economic Review*, 95(4): 960–80. <https://doi.org/10.1257/0002828054825655>
- Atkinson, A.B. (1970). ‘On the Measurement of Inequality’. *Journal of Economic Theory*, 2(3): 244–63. [https://doi.org/10.1016/0022-0531\(70\)90039-6](https://doi.org/10.1016/0022-0531(70)90039-6)
- Baron-Cohen, S., M. Lombardo, and H. Tager-Flusberg (eds) (2013). *Understanding Other Minds: Perspectives from Developmental Social Neuroscience*. Third edition. Oxford: Oxford University Press.
- Bellet, C. (2019). ‘The McMansion Effect: Top House Size and Positional Externalities in U.S. Suburbs’. SSRN Scholarly Paper. <https://doi.org/10.2139/ssrn.3378131>
- Bolton, G.E., and A. Ockenfels (2000). ‘ERC: A Theory of Equity, Reciprocity, and Competition’. *American Economic Review*, 90(1): 166–93. <https://doi.org/10.1257/aer.90.1.166>
- Boyce, C., and M. Daly (2014). ‘A Social Rank Explanation of How Money Influences Health’. *Health Psychology*, January. Available at: [www.academia.edu/15634553/A\\_Social\\_Rank\\_Explanation\\_of\\_How\\_Money\\_Influences\\_Health](http://www.academia.edu/15634553/A_Social_Rank_Explanation_of_How_Money_Influences_Health) (accessed 5 June 2023).
- Brown-Iannuzzi, J.L., K.B. Lundberg, A.C. Kay, and B.K. Payne (2015). ‘Subjective Status Shapes Political Preferences’. *Psychological Science*, 26(1): 15–26. <https://doi.org/10.1177/0956797614553947>
- Castillo, J.C., J. Iturra, F.J.M. Rivas, L. Maldonado, and J. Atria (2021). ‘Measuring Perceptions and Preferences for Meritocracy’. SocArXiv. <https://doi.org/10.31235/osf.io/mwk52>
- Dana, J., R.A. Weber, and J.X. Kuang (2007). ‘Exploiting Moral Wiggle Room: Experiments Demonstrating an Illusory Preference for Fairness’. *Economic Theory*, 33(1): 67–80. <https://doi.org/10.1007/s00199-006-0153-z>

- Durante, R., L. Putterman, and J. van der Weele (2014). 'Preferences for Redistribution and Perception of Fairness: An Experimental Study'. *Journal of the European Economic Association*, 12(4): 1059–86. <https://doi.org/10.1111/jeea.12082>
- Engelhardt, C., and A. Wagener (2014). 'Biased Perceptions of Income Inequality and Redistribution'. CESifo Working Paper Series 4838. Munich: CESifo. <http://dx.doi.org/10.2139/ssrn.2463129>
- Falk, A., E. Fehr, and U. Fischbacher (2008). 'Testing Theories of Fairness—Intentions Matter'. *Games and Economic Behavior*, 62(1): 287–303. <https://doi.org/10.1016/j.geb.2007.06.001>
- Fehr, D., and M. Vollmann (2020). 'Misperceiving Economic Success: Experimental Evidence on Meritocratic Beliefs and Inequality Acceptance'. Working Paper. University of Heidelberg, Department of Economics. <https://doi.org/10.11588/heidok.00029071>
- Fehr, E., and K. Schmidt (2005). 'The Economics of Fairness, Reciprocity and Altruism: Experimental Evidence and New Theories'. IDEAS Working Paper Series. St Louis, MO: RePEc.
- Fehr, E., and K.M. Schmidt (1999). 'A Theory of Fairness, Competition, and Cooperation'. *Quarterly Journal of Economics*, 114(3): 817–68. <https://doi.org/10.1162/003355399556151>
- García-Sánchez, E., D. Osborne, G.B. Willis, and R. Rodríguez-Bailón (2020). 'Attitudes Towards Redistribution and the Interplay Between Perceptions and Beliefs About Inequality'. *British Journal of Social Psychology*, 59(1): 111–36. <https://doi.org/10.1111/bjso.12326>
- Government of South Africa (2003). 'Broad-Based Black Economic Empowerment Act 53 of 2003'. Available at: [www.gov.za/documents/broad-based-black-economic-empowerment-act](http://www.gov.za/documents/broad-based-black-economic-empowerment-act) (accessed 5 June 2023).
- Hauser, O.P., G.T. Kraft-Todd, D.G. Rand, M.A. Nowak, and M.I. Norton (2019). 'Invisible Inequality Leads to Punishing the Poor and Rewarding the Rich'. *Behavioural Public Policy*, March: 1–21. <https://doi.org/10.1017/bpp.2019.4>
- Hauser, O.P., and M.I. Norton (2018). '(Mis)perceptions of Inequality'. *Current Opinion in Psychology*, 18 (December): 21–25. <https://doi.org/10.1016/j.copsyc.2017.07.024>
- Kahneman, D. (2012). *Thinking, Fast and Slow*. London: Penguin.
- Kahneman, D., and A. Tversky (eds) (2000). *Choices, Values, and Frames*. Cambridge, UK: Cambridge University Press.
- Karagözoğlu, E., and Ü.B. Urhan (2017). 'The Effect of Stake Size in Experimental Bargaining and Distribution Games: A Survey'. *Group Decision and Negotiation*, 26(2): 285–325. <https://doi.org/10.1007/s10726-016-9490-x>
- Kocher, M.G., P. Martinsson, and M. Visser (2008). 'Does Stake Size Matter for Cooperation and Punishment?' *Economics Letters*, 99(3): 508–11. <https://doi.org/10.1016/j.econlet.2007.09.048>
- Lakner, C., and B. Milanovic (2016). 'Global Income Distribution: From the Fall of the Berlin Wall to the Great Recession'. *World Bank Economic Review*, 30(2): 203–32. <https://doi.org/10.1093/wber/lhv039>
- Markovits, D. (2019). *The Meritocracy Trap: How America's Foundational Myth Feeds Inequality, Dismantles the Middle Class, and Devours the Elite*. New York: Penguin.
- McCoy, S.K., and B. Major (2007). 'Priming Meritocracy and the Psychological Justification of Inequality'. *Journal of Experimental Social Psychology*, 43(3): 341–51. <https://doi.org/10.1016/j.jesp.2006.04.009>
- Meltzer, A.H., and S.F. Richard (1981). 'A Rational Theory of the Size of Government'. *Journal of Political Economy*, 89(5): 914–27. <https://doi.org/10.1086/261013>
- Mijs, J.J.B. (2018). 'Inequality Is a Problem of Inference: How People Solve the Social Puzzle of Unequal Outcomes'. *Societies*, 8(3): 64. <https://doi.org/10.3390/soc8030064>
- Mijs, J.J.B. (2019). 'The Paradox of Inequality: Income Inequality and Belief in Meritocracy Go Hand in Hand'. *Socio-Economic Review*, 39. <https://doi.org/10.1093/ser/mwy051>

- Mijs, J.J.B., and M. Savage (2020). 'Meritocracy, Elitism and Inequality'. *Political Quarterly*, 91(2): 397–404. <https://doi.org/10.1111/1467-923X.12828>
- Milanovic, B. (2013). 'Global Income Inequality in Numbers: In History and Now'. *Global Policy*, 4(2): 198–208. <https://doi.org/10.1111/1758-5899.12032>
- Milanovic, B. (2021). *Capitalism, Alone: The Future of the System That Rules the World*. Cambridge, MA: Belknap Press of Harvard University Press.
- Munier, B., and C. Zaharia (2002). 'High Stakes and Acceptance Behavior in Ultimatum Bargaining'. *Theory and Decision*, 53(3): 187–207. <https://doi.org/10.1023/A:1022815832351>
- Piff, P.K., M.W. Kraus, S. Côté, B.H. Cheng, and D. Keltner (2010). 'Having Less, Giving More: The Influence of Social Class on Prosocial Behavior'. *Journal of Personality and Social Psychology*, 99(5): 771–84. <https://doi.org/10.1037/a0020092>
- Piketty, T. (2014). *Capital in the Twenty-First Century*. Cambridge, MA: Belknap Press of Harvard University Press.
- Piketty, T. (2019). *Capital and Ideology*. Cambridge, MA: Belknap Press of Harvard University Press.
- Saifaddin, G. (2022). 'South Africa: Average Monthly Earnings 2015–2020'. Statista. Available at: [www.statista.com/statistics/1227081/average-monthly-earnings-in-south-africa/](http://www.statista.com/statistics/1227081/average-monthly-earnings-in-south-africa/) (accessed 23 May 2022).
- Sandel, M.J. (2020). *The Tyranny of Merit: What's Become of the Common Good?* London: Allen Lane.
- South African Government (2023). 'Land Reform'. Available at: [www.gov.za/issues/land-reform](http://www.gov.za/issues/land-reform) (accessed 5 June 2023).
- Tompkinson, P., and J. Bethwaite (1995). 'The Ultimatum Game: Raising the Stakes'. *Journal of Economic Behavior & Organization*, 27(3): 439–51. [https://doi.org/10.1016/0167-2681\(94\)00035-D](https://doi.org/10.1016/0167-2681(94)00035-D)
- UNDP (2015). 'Sustainable Development Goals'. Available at: [www.undp.org/content/undp/en/home/sustainable-development-goals.html](http://www.undp.org/content/undp/en/home/sustainable-development-goals.html) (accessed 5 June 2023).
- World Bank (2022). 'Gini Index: South Africa'. Poverty and Inequality Platform. Available at: <https://data.worldbank.org/indicator/SI.POV.GINI?locations=ZA> (accessed 5 June 2023).
- World Inequality Lab (2023). 'South Africa'. Available at: <https://wid.world/country/south-africa/> (accessed 5 June 2023).
- Xu, P., and J.C. Garand (2010). 'Economic Context and Americans' Perceptions of Income Inequality'. *Social Science Quarterly*, 91(5): 1220–41. <https://doi.org/10.1111/j.1540-6237.2010.00729.x>
- Young, M.D. (1994). *The Rise of the Meritocracy*. New Brunswick: Transaction.
- Zhang, Y., X. Chen, A. Liu, and C. Sun (2018). 'The Effect of the Stake Size on the Evolution of Fairness'. *Applied Mathematics and Computation*, 321 (March): 641–53. <https://doi.org/10.1016/j.amc.2017.11.013>

## Appendix

Table A1: Sample characteristics

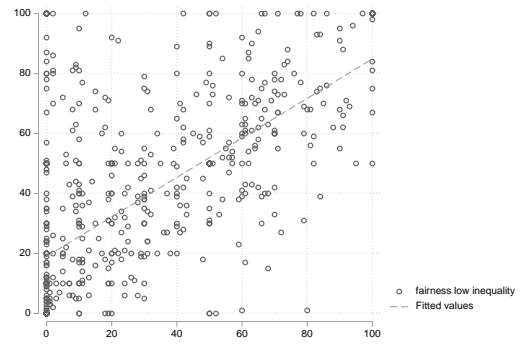
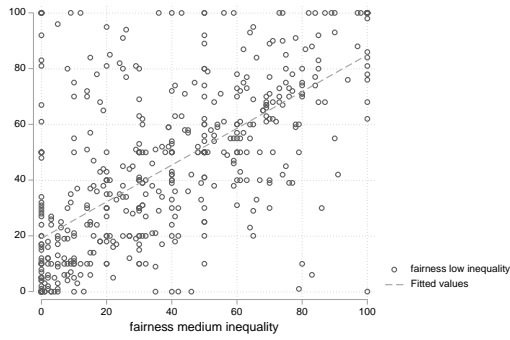
	Share (%)	Mean	Min.	Max.
<b>Age</b>		30.6	18	75
<b>Gender</b>				
Female	50.2			
Male	47.9			
Non-binary	1.3			
Prefer not to say	0.5			
<b>Education</b>				
Primary	21.9			
Secondary	38.0			
Tertiary	34.5			
None	5.7			
<b>Ethnicity</b>				
Black	63.3			
Coloured	12.2			
Asian/Indian	4.9			
White	19.9			
Other	0.8			
<b>Household</b>				
Household size		4.3	1	31
No. of minors		1.4	0	35
<b>Sector</b>				
Public	26.0			
Private	45.6			
Third	11.4			
Informal	17.0			
<b>Monthly income</b>				
<3000	20.0			
3001–6000	13.3			
6001–12000	15.8			
12001–18000	12.9			
18001–24000	10.3			
24001–30000	7.8			
30001–36000	4.9			
36001–42000	5.1			
>42000	9.9			

Source: author's calculations based on primary data collected in October and November 2022.

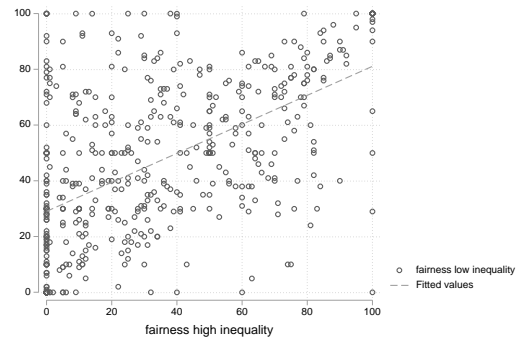
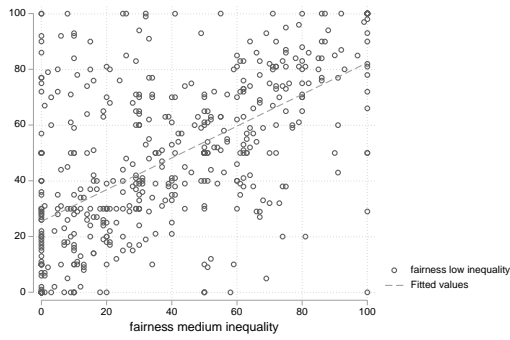


Figure A1: Consistency in fairness evaluations: comparisons across experiments and inequality scenarios

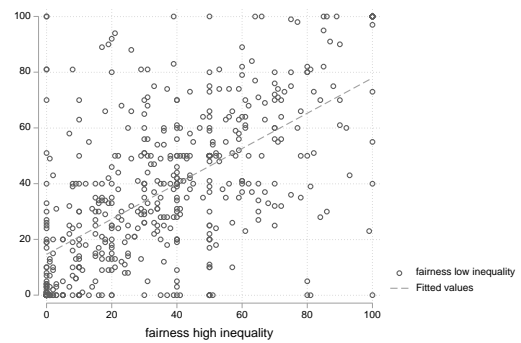
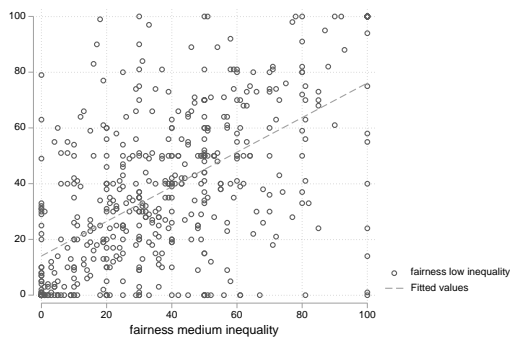
Experiment 1: Low stake, unit expression



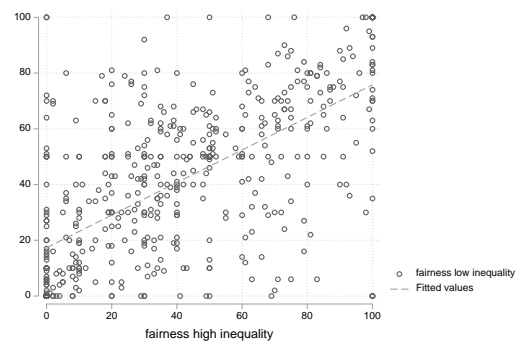
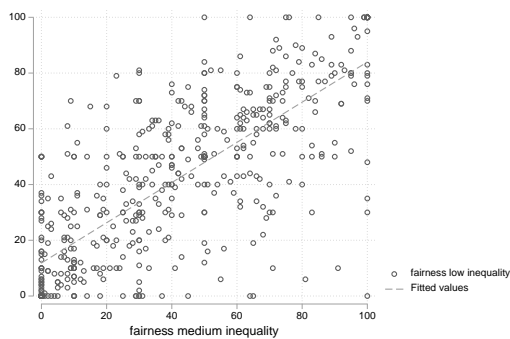
Experiment 2: High stake, unit expression



Experiment 3: Percentages



Experiment 4: Multiples



Source: author's calculations based on primary data collected in October and November 2022.