


# Inequality in researchers' minds: Four guiding questions for studying subjective perceptions of economic inequality

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## Abstract

Subjective perceptions of inequality can substantially influence policy attitudes, public health metrics, and societal well-being, but the lack of consensus in the scientific community on how to best operationalize and measure these perceptions may impede progress on the topic. Here, we provide a theoretical framework for the study of subjective perceptions of inequality, which brings critical differences to light. This framework—which we conceptualize as a series of *four guiding*

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*questions for studying subjective perceptions of economic inequality*—serves as a blueprint for the theoretical and empirical decisions researchers need to address in the study of *when*, *how*, and *why* subjective perceptions of inequality are consequential for individuals, groups, and societies. To lay the foundation for a comprehensive approach to the topic, we offer four theoretical and empirical decisions in studying subjective perceptions of inequality, urging researchers to specify: (1) What kind of inequality? (2) What level of analysis? (3) What part of the distribution? and (4) What comparison group? We subsequently discuss how this framework can be used to organize existing research and highlight its utility in guiding future research across the social sciences in both the theory and measurement of subjective perceptions of inequality.

#### KEYWORDS

economic inequality, income distribution, methodology, perception, social comparisons

## 1 | INTRODUCTION

Is there too much inequality in our country, too little, or just enough? Is inequality on the rise, or have things always been this way? Who has more than whom, and why? Mirroring similar trends in the broader social sciences, economists, political scientists, sociologists, and psychologists have been increasingly interested in subjective perceptions of inequality—*people's subjective beliefs regarding the degree of inequality in society*.<sup>1</sup> Mounting evidence suggests that measures of subjective perceptions of economic inequality which are typically captured at the individual level and subsequently aggregated (e.g., people's perceptions of the level of income or wealth inequality in their country) are often more effective than measures of objective inequality captured at the aggregate level (i.e., a country's actual level of income or wealth inequality) in predicting individual, group, and societal outcomes such as policy attitudes, public health metrics, and overall well-being (Gimpelson & Treisman, 2018; Hauser & Norton, 2017; Niehues, 2014; Norton, 2014). As a result, the study of subjective perceptions of inequality has become increasingly prominent as scholars work to understand how people think, what they know, and how much they care about inequality (García-Sánchez et al., 2018, 2019; Kim et al., 2016; Sánchez-Rodríguez et al., 2019; Trump, 2020).

The rising interest in subjective perceptions of inequality has led to divergent—and sometimes conflicting—ideas on how researchers should approach it as a topic of empirical inquiry. Whereas most researchers acknowledge the importance of understanding how subjective perceptions of inequality differ from reality, they often adopt divergent assumptions and approaches in their

work. As a result, researchers often draw different conclusions on the basis of different methodological decisions (e.g., Chambers et al., 2014; Eriksson & Simpson, 2013; Hoy & Mager, 2018; Kiatpongsan & Norton, 2014; Kraus et al., 2019; Newman et al., 2018; Norton & Ariely, 2011; Page & Goldstein, 2016). These methodological debates, however, touch upon a deeper, and more essential, issue: The need for a unified framework for how to think about, conceptualize, and define subjective perceptions of inequality.

In this paper, we argue that the different methodological approaches to the study of subjective perceptions of inequality stem from different (and potentially conflicting) assumptions about *what inequality is* and *how it affects people*. Given that economic inequality in the past three decades has increased in many developed countries (United Nations, 2020), understanding and reconciling these different assumptions is critical for advancing research on the topic (e.g., Alesina & Giuliano, 2011; Stantcheva, 2021a). As politicians and policy makers search for a better understanding of this pressing problem, researchers are increasingly called upon to understand citizens' behaviors, preferences, and attitudes (Premachandra & Lewis, 2022). This puts the social sciences at a precarious position: To best understand the underpinnings of subjective perceptions of inequality, we first need to agree on our definitions and operationalizations of it. In this review, we bring these underlying dynamics to light and unpack the key decisions researchers face in the study of subjective perceptions of inequality.

More precisely, we suggest that the scrutiny that is often devoted to the study of *objective* indices of economic inequality (Cowell, 2011; Davydov & Greselin, 2020; De Maio, 2007; Giorgi & Gigliarano, 2017; Jasso, 1978) is often lacking when researchers examine *subjective* perceptions of it. Specifically, while the increasing availability of large-scale data sources, combined with increased computational power, has motivated researchers to examine the various correlates and consequences of objective measures of inequality across different levels of analysis (e.g., Blesch et al., 2022; Ngamaba et al., 2018), the same has not been true for research on subjective perceptions of economic inequality. Thus, by relying on large survey modules that measure subjective inequality in broad terms (e.g., the ISSP or WVS; Bavetta et al., 2017, 2020; Gimpelson & Treisman, 2018; Kelley & Evans, 1993, 2017; Niehues, 2014; Osberg & Smeeding, 2006) and by creating ad hoc measures that rarely pay attention to different types of inequality (e.g., Schmalor & Heine, 2022a, 2022b; Sprong et al., 2019), researchers have often traded-off efficiency for deeper-level understanding of the nature and drivers of subjective perceptions of inequality (Heiserman & Simpson, 2021; Marandola & Xu, 2021).

This relative lack of scrutiny devoted to subjective perceptions of inequality, we argue, impedes researchers' ability to understand and predict attitudes about, and support for, inequality-related policies (Alesina et al., 2012, 2018; Stantcheva, 2021b). Note that carefully distinguishing between different measures of *objective* economic inequality has allowed researchers to make concrete and specific policy recommendations. For instance, since wealth inequality is mainly driven by intergenerational accumulation of resources, policies focused on this type of inequality have mostly centered on redistribution of economic resources (e.g., "Baby Bonds"; Hamilton & Darity, 2010; Zewde, 2020). In contrast, since *income* inequality is mainly driven by both biased and unbiased skill valuations in the labor market, policies focused on this type of inequality have mainly centered on driving educational and occupational opportunities (Checchi & Peragine, 2010; Ramos & Van de Gaer, 2016). However, because research on subjective perceptions of economic inequality has often failed to make similarly granular distinctions in the types of inequality people perceive in the world, it has impeded researchers' ability to predict support for different policies related to these different inequalities (Stantcheva, 2021b; Wiwad et al., 2022). Thus, in addition to scrutinizing the different types of objective inequality in society, we argue that researchers ought

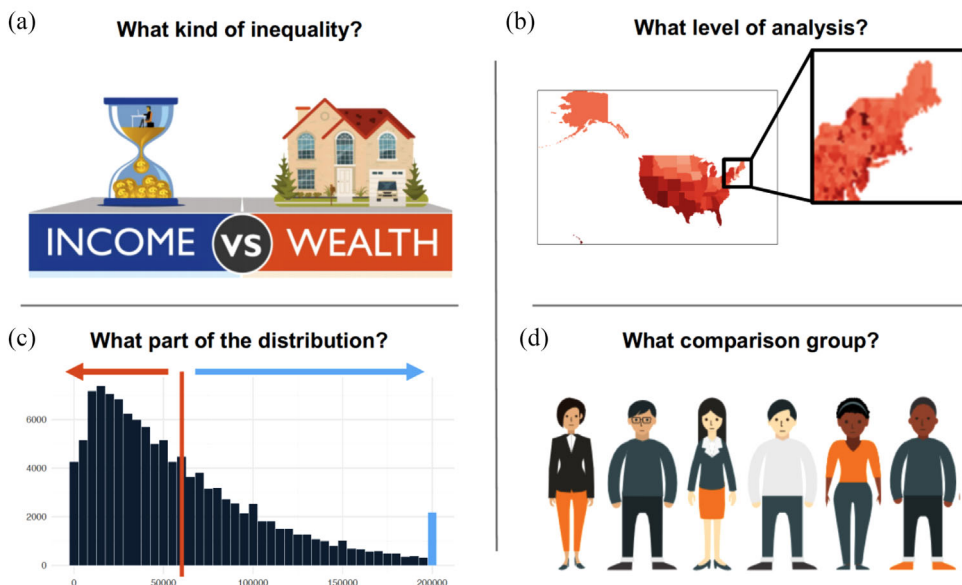
to focus on differentiating between people's subjective perceptions of economic inequalities. And, since research has had only limited success in calibrating subjective perceptions of inequality with reality (e.g., Engelhardt & Wagener, 2014; Kuziemko et al., 2015), paying closer attention to perceptions of different types of inequality may help researchers create better interventions to increase accuracy and shape subsequent policy preferences. In addition, a clarified understanding of subjective perceptions of inequality may also advance research on how inequality shapes other beliefs (e.g., evaluations of fairness and justice) and behavior (e.g., collective action) and may, in turn, help decision-makers design to intervene more effectively in line with their policy goals (Alesina et al., 2012, 2020). Thus, to capture the different components of subjective experiences of inequality and to better understand the policy implications of such experiences, the current review suggests a call-to-action for creating a more refined and nuanced study of subjective perceptions of inequality.

The framework we outline here can be summarized as a series of *four guiding questions* that build on advances in the study of objective measurements of inequality. These questions contribute to the emerging field of subjective perceptions of inequality by providing a scaffolding to improve conceptual clarity and to help researchers understand *when, how, and why* subjective perceptions of inequality are consequential for individuals, groups, and societies. In doing so, our framework organizes existing research and serves as a guide for future work on the topic.

*First*, researchers need to consider the kind of inequality to which people (and, more specifically, their research participants or survey respondents) are attending. People have different perceptions of inequality depending on whether they attend to differences in *opportunity* versus *outcome*, *income* versus *wealth*, *pretax* versus *posttax income*, and so on. To fully understand the role of subjective perceptions of inequality in society, it is therefore critical for researchers to determine the type of inequality people have in mind. *Second*, researchers need to consider the level of analysis at which people conceptualize inequality. Economic inequality appears at many different levels, ranging from hyperlocal inequality (e.g., between two neighbors) to global inequality (e.g., between nations or continents). Consequently, researchers need to determine the level of analysis they wish to study to recognize how people understand inequality at this specific level. *Third*, researchers need to consider what part of the distribution of resources people are focused on. Whereas some measures of subjective perceptions of inequality quantify the dispersion of resources across all ranks (e.g., the widely used Gini coefficient), variation in the concentration of income or wealth may trigger different beliefs about inequality (e.g., whether they are concentrated at the bottom, middle, or top of the distribution). *Fourth*, researchers need to consider the reference group against which people evaluate inequality. Although researchers often study subjective perceptions of inequality in an abstract and decontextualized manner (e.g., the general level of inequality within a nation), such abstract measures can inadvertently obscure differences within and between reference groups (e.g., inequality across gender, racial, or social class divides). Indeed, the consideration of reference groups highlights a critical difference between the study of inequality in experimental settings (where researchers examine perceptions of inequality within hypothetical societies or in small groups in the lab) and the study of real-world inequality "in the field."

Figure 1 visually depicts the guiding questions in our framework, offering researchers a roadmap for the theoretical conceptualization in the study of subjective perceptions of inequality. We subsequently briefly review different methodological approaches and highlight their conflicting underlying assumptions, before detailing our proposed framework. Note that we do not comprehensively review all literature on this topic. Instead, we aim to follow recent advances

## Four Questions for the Study of Perceptions of Inequality



**FIGURE 1** The four guiding questions framework for the study of subjective perceptions of inequality. Researchers need to consider (a) the kind of inequality their research participants are attending to, (b) the level of analysis at which people are conceptualizing inequality, (c) the part of the distribution of resources people are focused on, and (d) the reference group against which people assess to help infer inequality [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

in the objective inequality literature that we bring to bear on the study of subjective inequality perceptions.

## 2 | WHAT DO WE TALK ABOUT WHEN WE TALK ABOUT INEQUALITY?

Underlying the vast body of research about the individual and societal consequences of inequality is the implicit assumption that people accurately perceive the level of inequality in society and incorporate these perceptions into their preferences and choices (Gimpelson & Treisman, 2018; Hauser & Norton, 2017). Recent research, however, has cast substantial doubt on this assumption, finding sizeable misperceptions in people's ability to correctly identify their socioeconomic standing in society (Engelhardt & Wagener, 2014) as well as sizeable differences between the degree of inequality people view in the world and the actual level of inequality that exists in it (e.g., Chambers et al., 2014; Gimpelson & Treisman, 2018; Kiatpongsan & Norton, 2014; Kraus et al., 2019; Norton & Ariely, 2011; Schmalor & Heine, 2021). This divergence between perceived and actual inequality can lead to intriguing findings. Consider, for example, the relationship between economic inequality and redistributive preferences. Whereas actual inequality is a relatively weak predictor of support for redistribution, subjective perceptions of inequality are much better predictors of redistributive preferences (Alesina et al., 2018; Engelhardt & Wagener, 2014; Niehues,

2014; Schmalor & Heine, 2021). Indeed, an analysis of respondents from 27 different countries found a strong positive relationship between the levels of inequality that people believe exists in their country and the level of inequality that they believe *should* exist in it (Osberg & Smeeding, 2006). Consequently, interventions that correct misperceptions by altering perceived degrees of inequality have the potential to boost support for redistributive measures (Choi, 2019; Chow & Galak, 2012; Hauser, Kraft-Todd, et al., 2019; Irwin, 2016; Kuziemko et al., 2015; Ordabayeva & Fernandes, 2017), underlying the importance of such perceptions (for overviews, see Gimpelson & Treisman, 2018; Hauser & Norton, 2017).

At the same time, research has produced several conflicting results regarding subjective perceptions of inequality. Depending on how researchers think about and operationalize subjective perceptions of inequality, people have been shown to both underestimate (e.g., Kiatpongsan & Norton, 2014; Norton & Ariely, 2011) and overestimate its scope (e.g., Chambers et al., 2014; Eriksson & Simpson, 2013). Moreover, even when researchers agree that people underestimate the true level of inequality in society, studies find substantial variations in these misperceptions (Niehues, 2014; Page & Goldstein, 2016). We argue that this variety of findings reflects a lack of consensus regarding the conceptualization of subjective perceptions of inequality, highlighting the need to examine how perceptions of inequality affect people's preferences and choices. To illustrate, we discuss how different existing methods might arrive at divergent conclusions about the accuracy of inequality perceptions, before outlining our framework for uniting the different strands of research on the topic.

## 2.1 | Different approaches to perceived inequality reach different conclusions

In the past decade, various studies have reached different conclusions regarding subjective perceptions of inequality. In their highly cited and influential work on the topic, Norton and Ariely (2011) compared participants' estimations of the percentage of *wealth* that is held by *each quintile* in the United States with the actual distribution of wealth, finding that participants substantially underestimated the scope of inequality in society. For instance, whereas participants estimated that the wealth of the richest 20% of Americans is 20 times larger than the wealth of the poorest 20% of Americans, the actual ratio is closer to 800-to-1. In a follow-up paper, Kiatpongsan and Norton (2014) documented similar substantial underestimation of *income* inequality in 16 countries. They compared participants' estimations of the pay disparity between CEOs and unskilled factory workers (i.e., specific parts of the *income distribution*) with the actual pay disparity in each country (for similar approaches using data from the International Social Survey Program, see García-Sánchez et al., 2018; Kuhn, 2019; Pedersen & Mutz, 2018). For example, whereas American participants estimated that the median CEO in the United States makes 30 times more than the median unskilled worker, the actual pay ratio is closer to 354-to-1. A comparably substantial underestimation was documented by Kraus et al. (2019), which focused on lay perceptions of *racial* wealth inequality. In these studies, the researchers asked participants to estimate how much wealth is owned by a typical American Black family for every \$100 owned by a typical American White family, and compared these *reference group-based* estimations to the actual levels of racial economic inequality in the United States. As before, the researchers documented a vast underestimation of inequality. Whereas participants estimated that in 2016, a typical Black family had about \$89 in wealth for every \$100 owned by a typical White family, in reality Black families owned about \$10 in wealth for every \$100 owned by White families. Clearly, these different approaches

to subjective perceptions of inequality all point to the same conclusion: lay underestimation of inequality is vast.

Other approaches to the topic similarly conclude that people generally underestimate inequality, but that they do so to a significantly lesser degree. For example, Page and Goldstein (2016) measured subjective perceptions of inequality by asking participants to visually create income distributions. Although participants underestimated the scope of income inequality in the United States, they did so to a small degree, creating distributions with an average Gini coefficient of 0.34, rather than the actual 0.41. Stated differently, participants believed that the distribution of income in the United States is more similar to how income is distributed in Australia or Canada than the actual US distribution. Niehues (2014) found similar modest underestimation when examining responses to a question from the International Social Survey Program which asked participants to indicate which of five types of societal pyramids best describes how economic resources are distributed where they live (see also Arsenio & Willems, 2017; Barreiro et al., 2019; Flanagan & Kornbluh, 2017; Kelley & Evans, 1993, 2017).<sup>2</sup> Another approach has asked participants to select which pie chart they view as most similar to their country's income distribution (Hoy & Mager, 2020; Norton & Ariely, 2011). Notably, measuring subjective perceptions of inequality in such a manner does not depend on eliciting estimates of exact numerical differences, but instead relies on people's general beliefs based on abstract visual depictions of the distribution of income. Thus, using different approaches that measure perceptions based on visual-based depictions of inequality, researchers have found that people consistently, albeit weakly, underestimate inequality.

Still other approaches have found that lay people broadly *overestimate* rather than underestimate inequality in society. For example, in addition to asking participants to estimate the percentage of wealth owned by each quintile in the United States, Eriksson and Simpson (2013) asked participants to also estimate how much wealth was held, on average, by each quintile. Notably, focusing participants on the *amount* of wealth held by each group rather than its share of wealth in society resulted in an *overestimation* of inequality. Similarly, when Chambers et al. (2014) asked participants to estimate the percentage of Americans whose incomes fall into different income brackets, they found that they overestimated how many Americans earn less than \$35,000 a year, more so than they underestimated how many Americans earn more than \$75,000 a year, resulting in an overall overestimation of economic inequality.

## 2.2 | Disentangling mixed results by clarifying what each method measures

Although the accumulation of different (and sometimes contrasting) findings is the hallmark of a burgeoning scientific endeavor, it is important to consider why different studies that ask similar research questions reach such different conclusions. We suggest that the reason for this lack of consensus lies, at least in part, in the lack of an organizing framework for conceptualizing and operationalizing subjective perceptions of economic inequality. Specifically, we suggest that the differences in results stem from differences in how researchers define inequality which, consequently, affect the way they measure participants' perceptions of inequality (see also Bavetta et al., 2017).

Consider, for instance, the kind of inequality that researchers seek to measure. Although researchers often draw general claims about misperceptions of "economic inequality," they vary in whether they focus on measures of perceived wealth (e.g., Norton & Ariely, 2011) or income (e.g., Chambers et al., 2014). Since disparities in wealth are generally much larger than disparities in

income (Chetty, Friedman, et al., 2020a), and because people have a more difficult time observing others' wealth than their income (which is more closely linked to conspicuous consumption; e.g., Hauser & Norton, 2017; Ordabayeva & Chandon, 2011), it is likely that people may be more prone to underestimate wealth than income inequality, which may result in seemingly mixed findings (see also Page & Goldstein, 2016).

Even when focusing primarily on *income* inequality, researchers often draw general claims about misperceptions of the entire income distribution while measuring perceptions of only specific segments of it. For instance, whereas some researchers have operationalized income inequality as the perceived difference between two extremes of the income distribution (the very top and the very bottom; e.g., Kiatpongsan & Norton, 2014; see also Hoy & Mager, 2018; Siahpush et al., 2006), others have operationalized it in terms of the perceived difference between median-to-low income earners (e.g., an annual income of less than \$35,000) and modestly higher income earners (e.g., an annual income of more than \$75,000; Chambers et al., 2014). Because such different operationalizations likely evoke different representations of inequality in people's minds, they may lead to vastly different conclusions regarding subjective perceptions of inequality (Newman et al., 2018).

Finally, although inequality does not exist in a vacuum and often intersects with demographic factors such as people's race and gender (e.g., Chetty, Friedman, et al., 2020), studies of perceived inequality vary in the extent to which they focus participants on such dimensions. Whereas few studies explicitly ask participants to think about the distribution of income or wealth across different reference groups (e.g., Chambers et al., 2014; Kraus et al., 2019), most studies refrain from indicating the demographic breakdown of people along the economic distribution. Crucially, even when studies do not make explicit appeals to specific reference groups, participants are likely to be influenced by normative factors, such as racial and gender stereotypes, depending on the social and cultural context in which they are embedded (e.g., viewing the stereotypical American CEO as a White man and the stereotypical unskilled worker as non-White; Fischbach et al., 2015; Remedios et al., 2012). Thus, operationalizations of subjective perceptions of inequality that do not explicitly denote the reference group for comparison may be particularly noisy (to the extent that they may be vulnerable to normative influence), and participants are likely to vary in the extent to which they associate different income levels with different social categories (Kteily et al., 2017). Seemingly similar measures may therefore capture different conceptualizations of inequality in different people, depending on the reference groups they bring to mind (for a review, see Phillips et al., 2021).

These different conceptualizations of subjective inequality are due, at least in part, to the lack of an organizing framework for the study of subjective perceptions of inequality. Using existing approaches to the topic, we subsequently offer such a framework that highlights the critical decisions that researchers ought to make in studying perceptions of inequality.

### 3 | FOUR QUESTIONS TO GUIDE RESEARCH ON PERCEPTIONS OF ECONOMIC INEQUALITY

Drawing on a wide range of work from economics, psychology, sociology, and political science, we propose four guiding questions as an organizing framework for the study of subjective perceptions of inequality.



### 3.1 | First question: What kind of inequality?

When examining perceptions of inequality, researchers ought to pay close attention to the type of outcome their respondents are bringing to mind. While our focus here is on descriptive measures of subjective perceptions of inequality, we also acknowledge the potential influence of normative factors in these measures.

Prior research has distinguished between two broad types of inequality, based on different types of resources: inequality of *opportunity* and inequality of *outcomes* (Aaberge et al., 2011; Breen & Jonsson, 2005; Chetty et al., 2014; Davidai, 2018; Davidai & Wienk, 2021; Jasso, 1978; Lefranc et al., 2008; Reeves & Howard, 2013; Tilly, 1998). Whereas inequality of opportunity relates to the distribution of options, possibilities, and opportunities for advancement and attainment (e.g., with some people having more educational, occupational, and economic options available to them than others), inequality of outcomes refers to the distribution of tangible and material resources in society (e.g., with some people having more wealth or income than others).

Put differently, opportunities are the “inputs” into the process that determines what individuals can obtain, while outcomes are the eventual “outputs” of that process. Consequently, it is crucial that researchers specify whether they are interested in perceptions of these “inputs” or “outputs.” Because inequality of outcomes describes who holds what resources, subjective perceptions may rely on observable cues such as discretionary spending (e.g., Hauser & Norton, 2017; Ordabayeva & Chandon, 2011). In contrast, because inequality of opportunity describes *access* to (rather than ownership of) resources, it is harder to observe directly (e.g., Brunori, 2017) and may rely on popular narratives of what leads some people to succeed and others to fail (e.g., in the media; Kim, 2019), or ideological differences regarding the role of structural forces in success (Davidai, 2022; Piff et al., 2020).

In studying subjective perceptions of inequality, researchers also need to be aware of the potential influence of normative beliefs on the perceptions they are aiming to measure. For example, studies which consider people’s ideal ratios of CEO-to-worker compensation rates (Kiatpongsan & Norton, 2014) or ideal gender wage gaps (Bessen et al., 2020) often confound general intolerance of uneven distributions with their normative attitudes about inequity and fairness (Cappelen et al., 2007; Mohan et al., 2018; Son Hing et al., 2011). Similarly, research on perceptions of poverty often confounds people’s specific normative beliefs about “needs-based inequality” (i.e., whether people believe that more resources *should* be allocated toward those that need it the most) with their views of inequality in general. These distinctions are crucial, given that adult humans, toddlers, nonhuman primates, and even dogs are particularly sensitive to *inequity* (an unequal return on equal investments) rather than *inequality* (Brosnan & de Waal, 2014; Li et al., 2014; Starmans et al., 2017; Walster et al., 1973). Thus, to carefully disentangle participants’ normative beliefs of the level of inequality that *ought* to exist in the world from their subjective perceptions of the level of inequality that *actually* exists, researchers may need to both communicate and measure what participants spontaneously bring to mind when answering questions about their subjective perceptions of inequality (e.g., Alesina et al., 2012, 2020; García-Castro et al., 2019; Lewis, 2021).<sup>3</sup>

Even within the realm of inequality of outcomes, scholars need to make further important theoretically driven methodological choices. For example, although wealth is much more unequally distributed in the United States than income, research rarely distinguishes between the two. Consequently, using “inequality” as a catch-all term for both disparities in wealth (e.g., Norton & Ariely, 2011; Sprong et al., 2019) and income (e.g., Chambers et al., 2014; Shariff et al., 2016) limits generalizability and leads to extrapolations from perceptions of one to the other. Although wealth

and income are closely linked, there are substantial differences between the two, both in how they affect people's lives and in how they are displayed in society. While income is more closely related to resources that are available for consumption on a daily basis, wealth is an accounting construct, encompassing the difference between debts and assets.<sup>4</sup> And, while racial inequalities in the United States exist across different economic indices, they are markedly greater for wealth than income (Chetty, Friedman, et al., 2020; Kraus et al., 2019), making this distinction particularly important.

Lastly, researchers need to be clear about the type of resource they imagine people to have in mind when thinking about inequality. For instance, lay people may think about income inequality in terms of the time period with which they are most familiar (e.g., monthly versus annual; see Cruces et al., 2013) or in terms of disparities that exist pretaxation and those that exist posttaxation (Sologon et al., 2020). And, since people typically infer others' income from their spending behaviors (Ebert et al., 2021), they may more accurately perceive post-tax income disparities (which are exhibited in the spending of discretionary income) than pretax disparities. Moreover, given that people of different economic means often pay taxes at different rates, and since some disparities are more visible (such as houses, cars, yachts, and other status-signaling assets) than others (such as annual bonuses, stock options, and capital gains), perceptions of pretax income disparities may be substantially less accurate than perceptions of posttax disparities. More generally, perceptions of disparities in conspicuous consumption (Ordabayeva & Chandon, 2011) may be more accurate than perceptions of inconspicuous consumption (Nelissen & Meijers, 2011; Rothwell & Han, 2010) or perceptions of other, nonmonetary resources (e.g., time, social support, physical energy; Shaddy & Shah, 2018).

Thus, to accurately measure subjective perceptions of inequality, researchers need to consider, clearly identify, and explicitly articulate the *kind* of inequality in which they are interested. Given that the term "inequality" may evoke a wide variety of attributes in participants' minds, clear communication of the type of inequality in which researchers are interested in is likely to extend participants' understanding of what they are being asked to report.

### 3.2 | Second question: What level of analysis?

In addition to paying close attention to the *kind* of inequality, researchers need to attend to the *level* of analysis in which they are interested. By this, we generally mean the geographical unit (e.g., national, regional, neighborhood, etc.) at which economic outcomes are aggregated. The level of analysis is important both for how subjective perceptions of inequality are elicited and how participants' responses are statistically aggregated. Asking participants about inequality at the local or city level may evoke different responses, and the aggregation of participants' responses at the local or city level may lead to different outcomes.

Consider that personal exposure to cues of inequality in one's immediate environment shapes, at least partially, people's subjective perceptions of it (García-Castro et al., 2020; García-Sánchez et al., 2018; Schulz et al., 2022; for a review, see Phillips et al., 2021). Thus, researchers ought to consider the level of inequality in which they are interested and operationalize their measures accordingly while taking into consideration different theoretical and empirical implications (Ifcher et al., 2019; Newman et al., 2018; Xu & Garand, 2010).

As an example, imagine a resident of New York City who is asked about their perceptions of inequality in the city (e.g., see Newman et al., 2018). Although this person may be aware of the high level of inequality in New York City, their perceptions may inevitably be shaped by their

day-to-day experiences in their (relatively homogeneous) neighborhood. Consequently, treating New York City as the level of analysis may create an impression of misperception, leading this person to seemingly underestimate inequality as compared to city-level objective data. Thus, conclusions about the accuracy of subjective perceptions of inequality are clearly affected by the level of analysis on which researchers focus. Indeed, this problem may be further exacerbated as the size of the geographical unit and level of analysis increase. Asking a New York City resident to report their perceptions of inequality in New York State, the Northeast, or the entire the United States should technically yield different estimates, but it is unclear whether people are able to do so, particularly if they lack personal experience or access to inequality cues that facilitate such higher-level estimates. Indeed, subjective perceptions of inequality are driven by people's local environment even when estimating higher levels of analyses, such as their perceptions of the national income distribution (Cruces et al., 2013).

Moreover, different dynamics may unfold at different levels of analyses. For example, inequalities at the organizational level (e.g., in salaries) may reflect differences in performance, status, power, or a wide variety of other factors (Cantimur et al., 2016; Eriksson, 1999; Greer et al., 2018; Halevy et al., 2011; Hays & Bendersky, 2015; Shaw, 2014; Trevor et al., 2012). As such, employees' subjective perceptions of inequality within their organization may be driven by factors that are specific to this level of analysis (e.g., whether they are thinking about vertical inequality between managers and employees or horizontal inequality between people of similar ranks; Downes & Choi, 2014). Similarly, because people rarely have direct experience of inequality at the *national* level, their perceptions of national inequality may be more strongly swayed by the media than their perceptions of inequality at the *local* level (Coppini et al., 2018; Diermeier et al., 2017; Kim, 2019; McCall, 2013). At an even higher level of analysis, Westerners may underestimate global inequality—believing that developing and middle-income countries are better off than they really are—by drawing on the widespread narratives of globalized progress (Ziano & Onyeador, 2021). Thus, while people rely on what they know and observe to form perceptions of inequality at various levels of analyses, their perceptions of their state or country may be based on less personal and more mediated sources of information than their perception of their neighborhood, city, or county.

Although we focus on the geographical level of analysis, researchers may also need to consider *temporal* aspects in perceptions of inequality. Since perceptions of inequality are often based on “lived experiences”—the actual inequality people personally encounter on a daily basis—they may be affected by perceived changes in the world. For instance, although perceptions of the current level of inequality in the United States should be unrelated to people's past experiences, they are likely to be affected by whether respondents implicitly compare current-day society to their recollections of when they came of age in the 1960s (when inequality in the United States was comparatively low) or the early 2000s (when inequality was comparatively high; see also Kraus et al., 2019). Consequently, remembering a time of lower inequality may lead people to perceive the current level of inequality as much higher than remembering a period of higher inequality; similarly, being alerted to current levels of inequality may shape people's subjective perceptions of past inequality (Onyeador et al., 2021).

As a result, researchers ought to be clear about the *level of analysis* they are studying in a manner that reflects their underlying theoretical reasoning and the methods they use to assess subjective perceptions of inequality. In addition, researchers may measure the level of analysis that participants' spontaneously think about when conjuring images of inequality (e.g., Cruces et al., 2013). Failing to specify this level of analysis may lead to confusion, both on part of the participants as well as the research community (e.g., predicting attitudes toward inequality at the state or

country level based on perceptions of inequality formed at the neighborhood or city level; Minkoff & Lyons, 2019; Newman et al., 2015).

### 3.3 | Third question: What part of the distribution?

A third issue for researchers to consider is whether they are interested in subjective perceptions of inequality across the *entire* income distribution or in *specific* segments of it. Consider some recent immersive manipulations of inequality: In Sands (2017), as part of an unobtrusive field experiment (Hauser et al., 2017), participants walked past a confederate who was either poor or rich, and subsequently responded to a petition to support redistribution; in García-Castro et al. (2020), participants were asked to think about the poorest and richest person they know; in Wald-fogel et al. (2021), participants were shown real-life photos involving varying cues of rich and poor individuals; in Goudarzi et al. (2020), participants watched videos depicting homelessness; and in Sands and de Kadt (2020), participants responded to the presence of a luxury car in a poor neighborhood. This creative set of manipulations all share a focus on poverty in studying inequality and redistribution. However, they also differ in the degree to which they spotlight differences between “the poor” and “the rich” versus differences between participants’ own socioeconomic standing and others who are better-off or worse-off than them. As a result, such manipulations may implicitly evoke different subjective perceptions of inequality, even if the overall degree of inequality remains the same. Indeed, reframing the focus of inequality in terms of “the rich being better-off” (vs. “the poor being worse-off”) strengthens external attributions of wealth and increases support for redistributive measures among those who typically oppose such measures (Chow & Galak, 2012; but see Dietze & Craig, 2020).

Whether people focus on the entire distribution or specific parts of it is also evident in the ways that researchers measure, not just manipulate, subjective perceptions of inequality. Consider some recent measures of subjective perceptions of inequality that vary dramatically in the part of the distribution on which participants were focused: In Kiatpongsan and Norton (2014), participants estimated the annual compensation of CEOs and unskilled workers in their country; in Kteily et al. (2017) and Niehues (2014) participants estimated the number of people at each economic level; in Norton and Ariely (2011), participants selected between various income quintile distributions depicted in pie and bar charts; in Chambers et al. (2014), participants estimated the income thresholds to be considered among the top 1% in the United States; and in Siahpush et al. (2006), participants reported their views regarding the difference between “the poor” and “the rich.” While all these measures capture some version of subjective perceptions of inequality, they likely evoke different conceptualizations of it and subsequently capture different attributes of the income distribution. For instance, the same person may overestimate the threshold for being in the top 1% of the income distribution, underestimate the CEO-median worker income gap, and accurately perceive the overall distribution of income among different quintiles. In turn, beliefs about a specific aspect of a measured distribution (e.g., lower incomes) may uniquely influence attitudes toward redistribution (e.g., Page & Goldstein, 2016).

In addition, measures of actual and perceived inequality have a curious yet often overlooked aspect: although two income distributions can have identical Gini coefficients (i.e., a measure of the concentration of income or wealth across the entire range of distribution), they may still differ in the *shape* of the distribution and, more specifically, *where* most resources are concentrated (De Maio, 2007). For example, two countries may have the same Gini index but still differ in whether most of the inequality is concentrated in the bottom half of the population (e.g., low-income

earners vastly differ from middle-income and top-income earners, who are relatively similar to each other) or the top of the population (e.g., top income earners vastly differ from middle- and low-income earners, who are relatively similar to each other). As a result, operationalizing inequality by solely examining perceptions of how wealth or income are distributed across the entire population may fail to differentiate between people's perceptions of the overall level of inequality and their perceptions regarding where that inequality is concentrated (see also Page & Goldstein, 2016). Since inequality that is concentrated at the bottom of the income distribution (e.g., between the 10th and 50th percentile) may have different implications than inequality that is concentrated at the top of the income distribution (e.g., between the 90th and 99th percentile), it is important to clearly examine *where* people are focusing in the income distribution (Blesch et al., 2022).

To illustrate, consider two neighborhoods with very different Gini coefficients, which mostly vary due to the income of the top 1%. Because inequality that is concentrated among the super-rich is typically less accessible to most people so long as it remains hidden in the houses, cars, and swimming pools of affluent gated-communities, people are less likely to notice stark differences in inequality that is concentrated at the top of the distribution. That is, although the level of inequality in these two neighborhoods (as measured by an index of income distribution) would be strikingly different, people living in each neighborhood may not experience it as such, having similar access (or lack of access) to inequality cues, forming similar perceptions of the inequality in their respective neighborhoods, and having similar views on whether it is fair or unfair. Thus, failing to specify the part of the distribution in which researchers are interested in may overlook important differences in how people perceive inequality and the consequences of those different perceptions.

Of course, these differences may not matter for every research question or empirical method, and researchers may sometimes focus on the overall degree of inequality while remaining agnostic about where it is concentrated in society. However, we suggest that this lack of specificity may matter for the results and conclusions researchers can draw from their work and ultimately hinder progress toward a unified understanding of inequality. Thus, researchers may wish to carefully consider *why* they are agnostic about the source of concentration or, alternatively, use measures designed to assess both the degree and source of concentration (for a review, see De Maio, 2007).

In short, we urge researchers to clearly identify the *part of the distribution* in which they are interested and to strive for precision in their theorizing and operationalization (measurement or manipulation) of subjective perceptions of inequality.

### 3.4 | Fourth question: What reference groups?

Finally, researchers need to consider the reference groups they are interested in studying. Inequality does not exist in a social vacuum, and subjective perceptions of inequality should ideally be examined within the context of the distribution of resources, including age, gender, racial identities, and social class. Indeed, because people often surround themselves with similar-earning others, their perceptions of inequality are likely to be biased through the prism of their own social networks (e.g., Knell & Stix, 2020; Schulz et al., 2022). Unfortunately, research often overlooks such variation in these contexts, asking individuals to estimate the general degree of inequality in society rather than specific inequalities that exist between certain individuals or groups within it (for notable exceptions, see Chambers et al., 2014; Kraus et al., 2019). As a result, subjective perceptions of inequality can obscure important differences in how economic outcomes intersect

with various demographic factors that contribute to the existence and perpetuation of inequality (e.g., Chetty & Hendren, 2018; Chetty, Friedman, et al., 2020; Chetty, Hendren, et al., 2020).

Importantly, even if not explicitly asked to do so, perceptions of inequality may still reflect people's implicit views of reference groups in society (Hester & Gray, 2020; Ito & Urland, 2005; Martin & Slepian, 2021). For instance, since many Americans often treat "White men" as a default social category (Zarate & Smith, 1990; for organizational contexts see Cheryan & Markus, 2020; Eaton et al., 2020; Grossman & Porche, 2014; Wright et al., 2015), yet associate poverty with racial minorities (Bonam et al., 2020; de Goede, 1996), studying perceptions of inequality without clearly defining the reference group may lead participants to report their view of inequality between affluent White and impoverished non-White individuals. Thus, even when not explicitly prompted, implicit reference groups may shape subjective perceptions of inequality.

In contrast, making reference groups salient can affect subjective perceptions of inequality. Consider that organizational inequality may be driven by factors that represent both objective performance differences (i.e., rewarding higher productivity with higher salaries), as well as other nondiagnostic factors (e.g., age, gender, or race; Trevor et al., 2012). By making the reference group explicit, researchers may bring to light pervasive economic gaps that would have otherwise remain obscured (e.g., asking participants about inequality among male and female employees emphasizes gender pay gaps; Abraham, 2017; Botelho & Abraham, 2017). At the same time, making reference groups salient may inadvertently hide economic gaps that would have otherwise been salient (e.g., asking participants about Asian-American exemplars reduces perceptions of racial inequality; Kuo et al., 2020). Thus, careful consideration of reference groups and how they are presented is critical for studying perceptions of economic inequality.

In line with this reasoning, research has documented a bidirectional link between perceptions of upward mobility and lay beliefs about economic inequality (Shariff et al., 2016), finding that people who have personally experienced upward mobility tend to underestimate and justify economic inequality (Gimpelson & Monusova, 2014; Kelley & Kelley, 2009) and that underestimating economic inequality further bolsters the belief in upward mobility (Davidai, 2018; Heiserman et al., 2020). Making reference groups more explicit (e.g., comparing this relationship among White and Black Americans) may highlight the manifold historical, environmental, and institutional forces that have promoted upward mobility among White Americans to a greater extent than Black Americans (Davidai & Walker, 2021). Indeed, such a shift in reference groups may also affect the attributions people make about why some people move up the economic ladder (Davidai, 2022; Piff et al., 2020; see also Georgeac & Rattan, 2019), accrue large amounts of wealth (Kraus et al., 2019), or lack access to important social networks (Anicich et al., 2021)—and, consequently, the inferences researchers can draw from their findings.

Beyond individual demographic categories, researchers may also consider studying inequality within the context of intersectional reference groups (e.g., Hall et al., 2015; Hall et al., 2019; Ponce de Leon & Rosette, 2022; Purdie-Vaughns & Eibach, 2008). Integrating disparities among multiple demographic lines, including age, gender, race, and social class, may allow researchers to specify the kind of inequality they are studying in a more precise manner and move beyond the implicit decontextualized "default" that is widespread in current research. While recent work has made strides in studying perceptions of race- and gender-based inequality explicitly (Abraham, 2017; Kraus et al., 2019), most research disregards these critical dimensions of social hierarchy. Importantly, different processes are invoked by different intersectional groups (Hall et al., 2019; Martin et al., 2019) which may impact what participants bring to mind when thinking about inequality. For instance, in considering the intersectionality of race and class, liberals tend to be less sympathetic toward poor White (but not poor Black) people after considering the privileges of White

Americans (Cooley et al., 2019). More generally, people may evaluate their and others' economic standing relative to specific racial groups, which may have personal downstream consequences (Cooley et al., 2021).

The importance of reference groups in understanding inequality highlights some of the challenges inherent in studying perceptions of inequality in hypothetical and highly controlled experiments (e.g., within fictional societies or small lab groups; e.g., Hauser, Hilbe, et al., 2019; Heiserman et al., 2020; Jachimowicz et al., 2020; Sánchez-Rodríguez et al., 2019). While lab-based stimuli offer tight experimental control for assessing causality (Falk & Heckman, 2009), inequality manipulated in such settings can be overly abstract regarding unspecified or overgeneralized reference groups. Explicitly invoking or constructing artificial reference groups (e.g., relatively advantaged vs. disadvantaged players in a public goods game, played by other participants in the experiment) may lead to unrepresentative perceptions of inequality. Thus, by decontextualizing inequality from people's gender, race, and other social identities, the strengths of experimental control for studying perceptions of inequality may also be one of its weaknesses. That is, although experimentally manipulating economic inequality in the laboratory allows researchers to examine perceptions of inequality independent of other potentially confounding variables (e.g., by randomly allocating different amounts of resources to anonymized participants), doing so inevitably neglects the many different reactions that are typically evoked through people's social identities and which may shape perceptions of and reactions to inequality (e.g., Hester & Gray, 2020). Just as the detection of bias is influenced by whether it mainly impacts members of privileged or underprivileged groups (e.g., Waldfogel et al., 2021), subjective perceptions of inequality may be influenced by who seems to be benefitting from it—and are therefore difficult to study in experimentally decontextualized manners which lack the complex and multidimensional facets of people's actual perceptions (see also Jachimowicz, 2022). Although lessons learned from inequality within tightly controlled economic games are often used to generalize to subjective perceptions of inequality in broader society, doing so is unwarranted when knowledge of reference groups is *inherent* to how people perceive and make sense of inequality.

Finally, it is important to note that some reference groups are less mentally salient than others. For instance, recent research by Condon and Wichowsky (2019) found that the relatively weak relationship between economic inequality and support for redistribution in public opinion polling depends on who people compare themselves to. Whereas this relationship is weaker than one might expect when people engage in downward comparisons (i.e., to people who are worse off than them; Ashok et al., 2015; Kelly & Enns, 2010; Kenworthy & McCall, 2007), economic inequality is more strongly linked to support for redistribution when people engage in upward comparisons (i.e., to people who are better off than them). To the extent that wealthy individuals may be less salient in people's everyday life, evoking perceptions of inequality may require a careful consideration of how different methods of elicitation bring to mind otherwise "invisible" reference groups (Genicot & Ray, 2017).

Thus, researchers need to identify the inequality comparison group of interest, and justify the decisions to measure that specific inequality.

#### 4 | THEORETICAL AND PRACTICAL IMPLICATIONS OF THE FOUR QUESTIONS FRAMEWORK

Subjective perceptions of inequality pose important questions for researchers: What do people have in mind when they misperceive the level of inequality in society, what are the consequences

of these misperceptions, and how can we correct them? Laying the foundation for future research, we propose an organizing framework that guides researchers to answer *four questions* as they theorize, conceptualize, and operationalize their research: (1) What kind of inequality are people attending to? (2) What level of analysis are they thinking about? (3) What part of the distribution are they focused on? and (4) What is the reference group against which they assess inequality? Just as speaking a common language allows people from different regions to communicate effectively, we suggest that this framework can help bridge chasms across the social sciences. The methodological assumptions researchers make can inadvertently alter participants' mindset, responses, and the conclusions researchers draw from their work. By bringing these assumptions to the surface, our framework can advance the field's understanding of what people do (and do not) know about inequality.

One open theoretical question is whether people are sufficiently informed and sophisticated to distinguish between the different proposed dimensions, whether their perceptions of the different dimensions affect each other, and in what ways their perceptions of the different levels of economic inequality are influenced by person-level and situation-level factors. Crucially, by advancing a multidimensional view of subjective perceptions of inequality, our framework may inspire future research to uncover the underlying structure of such perceptions (e.g., Eisenberg et al., 2019). Consequently, such advances may help researchers trade off completeness with measurement error to arrive at comprehensive yet succinct measures of subjective perceptions of inequality (Li et al., 2021). Thus, our proposed framework may help form a more comprehensive understanding of how subjective perceptions of inequality are reflected in people's minds (for related work, see Phillips et al., 2021).

We aim for the current review to inspire the integration of different measures in large-scale datasets that go beyond current measures of subjective perceptions of inequality (e.g., ISSP or WVS). Because prior research has failed to distinguish between different types of subjective inequality perceptions, it is unclear whether these perceptions are more accurate for some dimensions of inequality than others. Rather than solely determine what dimensions of inequality people are more and less accurate about (which is difficult to do given the current state of research), we aim to highlight how failing to account for the nuanced distinctions in subjective perceptions of inequality leaves the question of accuracy ultimately unanswered. Delineating the key dimensions of subjective inequality perceptions may also help in the design of more effective strategies that promote public support for policies that address inequality (e.g., Stantcheva, 2021a, 2021b).

It is important to note that the nuanced approach to subjective inequality research along the dimensions we propose also affords researchers the ability to ask more fine-grained research questions that may help address inconsistent findings in the literature. Although widely available large-scale datasets can have many advantages, solely relying on their measurements of perceived inequality limits the types of research questions that can be explored. Thus, by advancing a more nuanced approach to measuring subjective perceptions of inequality, we argue that research can explore more nuanced research questions. Consequently, doing so will allow researchers to move beyond broad questions (e.g., "Do people perceive a lot of inequality in society?") to more multidimensional questions (e.g., "What kind of inequality are people more likely to notice? How do people think about economic inequality along different social categories? What dimensions of inequality motivate support for redistribution, and what dimensions impede such support?"). Crucially, this multidimensional approach to subjective perceptions of inequality may also allow researchers to better understand people's attitudes toward policies focused on reducing inequality (e.g., Alesina et al., 2020; Stantcheva, 2021b).



In addition to guiding future research, greater conceptual clarity can help organize the abundance of findings in the literature into a more coherent theoretical framework. For example, the question of whether people under- or overestimate inequality can be re-evaluated by considering which types of inequality people are most or least likely to misperceive, what units of analyses they bring to mind when estimating inequality, whether people are equally prone to misperceive inequality along different areas of the distribution, and what reference group they (often implicitly) imagine. Similarly, by highlighting the type of inequality on which organizational researchers focus on (e.g., whether they operationalize it as vertical inequality or as horizontal inequality between team members) and by distinguishing between inequality and *inequity* (e.g., whether performance is proportionally rewarded with greater salaries and bonuses), researchers can reach greater clarity regarding the positive and negative consequences of organizational inequality (Benedetti & Chen, 2018; Mohan et al., 2018; Park et al., 2017; Shaw et al., 2002). These examples illustrate the promise of our framework, and suggest that both ongoing debates and future research may stand to benefit from adopting it. Thus, as illustrated in Table 1, our framework highlights the difficulty of drawing generalized conclusions from studies that fundamentally vary in their measurement and operationalization of subjective perceptions of inequality and the need for broader empirical consensus on how to better measure these (in part drawing on prominent studies described in Knell & Stix, 2020; Marandola & Xu, 2021).

In addition to facilitating cross-disciplinary cooperation, our framework may also help scholars to better understand the process of how people *form* perceptions of inequality (for a review, see Phillips et al., 2021). For instance, clearly identifying the type of inequality and level of analysis may help scholars recognize the social, physical, and informational cues that shape people's subjective perceptions of inequality. Similarly, clarifying the part of the distribution of interest may influence, which cues participants, attend to (e.g., whether they focus on particularly wealthy or poor individuals; Cruces et al., 2013; Xu & Garand, 2010). Thus, conceptual clarity in measurement and operationalization can deepen the field's understanding of the underlying processes that contribute to subjective perceptions of inequality.

Our suggested framework may also have important applied implications. For instance, Kuziemko et al. (2015) found that informing participants of the level of national economic inequality increased support of redistribution and higher estate tax rates, suggesting an important role for the accuracy of perceptions of inequality. Note, however, that the accuracy-inducing intervention in this study included three different components: (1) explicit information about the type of inequality that participants ought to bring to mind by showing them the current income distribution (2) a counterfactual which emphasized normative beliefs about equality (rather than equity or need-based distribution) by showing what participants would have made if economic growth since 1980 had been shared evenly, and (3) data highlighting historical economic outcomes as relevant reference points by showing that economic growth was higher when top tax rates were higher. Each of these manipulations taps into related but distinct perceptions of inequality and provides insight into different inequality-generating mechanisms. A better understanding of how people think about inequality will allow researchers, educators, and policymakers to design interventions that most effectively increase accuracy about inequality. And, given that such interventions may affect attitudes toward certain policies but not others (e.g., increasing top income tax rates vs. the minimum wage; Kuziemko et al., 2015; Stantcheva, 2021b), better understanding them may allow the design of policies that best align with people's underlying perceptions of inequality.

Finally, our framework makes practical recommendations for future research. First, the four questions framework emphasizes the importance of precisely defining inequality along the type and level of analysis, the part of the distribution, and the relevant reference group. Ideally, this

**TABLE 1** An illustrative overview (using several prominent studies in the literature) of the difficulty of comparing different measures of perceived inequality, as viewed through the lens of the four questions conceptual framework

	<b>What kind of inequality?</b>	<b>What level of analysis?</b>	<b>What part of the distribution?</b>	<b>What reference groups?</b>	<b>Concluded accuracy of perceptions</b>
Norton and Ariely (2011)	Percentage of wealth held by different quintiles...	... at the national level...	... across the entire distribution...	... with unspecified reference groups	Underestimation
Kiatpongpan and Norton (2014) <sup>6</sup>	Amount of income...	... at the national and organizational level...	... between low- and high-income earners...	... with unskilled workers and CEOs as reference groups.	Underestimation
Kraus et al. (2019)	Amount of wealth and income...	... at the national level...	... at average/middle of the distribution...	... between White and Black Americans	Underestimation
Page and Goldstein (2016)	Number of income earners...	... at the national level...	... across the entire distribution...	... with unspecified reference groups	Broadly accurate (if anything, small underestimation)
Newman et al. (2018)	Amount of income...	... at the local level...	... across the entire distribution...	... with unspecified reference groups	Broadly accurate (subjective and objective positively correlate)
Gimpelson and Treisman (2018) <sup>7</sup>	Proportion of individuals...	... at the national level...	... below the poverty line...	... with unspecified reference groups	Both over- and underestimation <sup>8</sup>
Eriksson and Simpson (2013)	Amount of wealth held...	... at the national level...	... across the entire distribution...	... with unspecified reference groups	Overestimation
Chambers et al. (2014)	Percentage of income earners...	... at the national level...	... between very low earners and middle-range earners...	... between unspecified reference groups and between White and Black Americans	Overestimation
Niehués (2014) <sup>9</sup>	Number of income earners...	... at the national level...	... across the entire distribution...	... with unspecified reference groups	Overestimation
Gimpelson and Treisman (2018) <sup>10</sup>	Proportion of household wealth...	... at the national level...	... owned by the wealthiest 1%...	... with unspecified reference groups	Overestimation

definition would be reflected in the theoretical development and measurement of subjective perceptions of inequality. Even short yet explicit statements such as “*we define inequality as the distribution of income at the local level across all income ranks and demographic groups*” or “*we define inequality as the concentration of wealth amongst the top earners at the national level, with a particular focus on racial disparities*” may help create a clear, cumulative, and interdisciplinary study of subjective perceptions of inequality.<sup>5</sup> Second, our framework calls for the inclusion of explicit discussion of issues of generalizability along the four questions introduced here. For example, researchers who focus on subjective perceptions of local income inequality could discuss whether they would expect similar results for national wealth inequality, and why that may (not) be the case. Such explicit discussion about boundaries to generalizability can highlight a paper’s contribution to the broader literature and inspire further work on the topic (see Cheon et al., 2020; Simons et al., 2017).

## 5 | CONCLUSION

Research on inequality has burgeoned across the social sciences, including economics, psychology, sociology, and political science. Ample theorizing suggests that *subjective perceptions of inequality* ought to predict a host of important outcomes, including health, well-being, and support for government and policies (e.g., Hauser, Hilbe, et al., 2019). However, as more work is published, increasing tensions have arisen. This partially stems, we argue, from a lack of specificity regarding what researchers mean when they study subjective perceptions of inequality. We offer a new organizing framework that invokes *four guiding questions* which researchers need to address when studying subjective perceptions of inequality. Using this framework as a blueprint for future research will help the scientific community create a shared language for the study of inequality and form a more cohesive understanding of the mixed findings in the literature. By better understanding the social and behavioral causes and consequences of subjective perceptions of inequality, researchers are better positioned to contribute to ongoing public discussions regarding inequality and how we can best address it.

With any fast-growing field, there is an opportunity and a need to pause and assess what has been studied. By taking stock, this burgeoning field can adopt a structure and more precision in what we study and how we study it, thus creating a generative and cumulative stream of future research. Doing so invites researchers from across disciplines to join forces, adopt a common language, and bring different theories and methodological training to shed light on this critical topic. Ultimately, we hope to ignite a tradition of understanding, specifying, and revisiting of critical concepts and tools that researchers use to study how people perceive the inequality around them, laying the foundation for comprehensive theoretical and empirical approaches to the study of subjective perceptions of inequality.

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## NOTES

- <sup>1</sup>While we focus on *economic* inequality, several attributes discussed in this review are also applicable to other social inequalities. As described, economic inequality does not exist in isolation, but stands in close relation to other social inequalities.
- <sup>2</sup>Importantly, whereas American, Norwegian, and Swiss respondents slightly underestimated inequality in their country, Hungarian, German, and French respondents overestimated it (Niehues, 2014). Thus, this measure does not seem to systematically bias responses and can be used to document both types of misperceptions.
- <sup>3</sup>The remainder of this review focuses on perceptions of inequality of *outcomes*, which have received the most empirical attention in prior literature. We refer interested readers to research on inequality of opportunity (e.g., Aaberge et al., 2011; Breen & Jonsson, 2005; Brunori, 2017; Chetty et al., 2014; Davidai & Wienk, 2021), inequity (Lowery et al., 2007; Pritchard et al., 1972; Ybema et al., 2001; Wall & Nolan, 1986), and needs-based inequality (Adams, 1965; Deutsch, 1975; Kornbluh et al., 2019; Reeskens & Van Oorschot, 2013).
- <sup>4</sup>One could further distinguish between inequalities in liquid wealth, which can more readily be converted into other resources, and inequalities in illiquid wealth such as disparities in homeownership or debt.
- <sup>5</sup>This suggestion mirrors calls for disclosures of research transparency more broadly, including the popular “21-word solution” (Simmons et al., 2012).
- <sup>6</sup>Note that the data in this paper come from the ISSP.
- <sup>7</sup>This data comes from the 2010 Eurobarometer survey.
- <sup>8</sup>The degree of accuracy depends on the different data sources used by the authors as comparison benchmarks.
- <sup>9</sup>This approach (i.e., asking participants to choose which one among several income distributions best reflects their beliefs) is used in several large-scale surveys, including the ISSP and the WVS.
- <sup>10</sup>This data comes from Ipsos MORI.

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